

NOTICE OF LODGMENT
AUSTRALIAN COMPETITION TRIBUNAL

This document was lodged electronically in the AUSTRALIAN COMPETITION TRIBUNAL and has been accepted for lodgment pursuant to the Practice Direction dated 3 April 2019. Filing details follow and important additional information about these are set out below.

Lodgment and Details

Document Lodged: Affidavit

File Number: ACT 5 of 2021

File Title: RMSANZ APPLICATION FOR REVIEW OF AUTHORISATION
AA1000542 DETERMINATION MADE ON 21 SEPTEMBER 2021

Registry: VICTORIA – AUSTRALIAN COMPETITION TRIBUNAL



REGISTRAR

Dated: 14/06/2022 12:17 PM

Important information

This Notice has been inserted as the first page of the document which has been accepted for electronic filing. It is now taken to be part of that document for the purposes of the proceeding in the Tribunal and contains important information for all parties to that proceeding. It must be included in the document served on each of those parties.

COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)



IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

AFFIDAVIT OF DAVID MALCOLM DU PLESSIS

I, David Malcolm Du Plessis, of 1/6 Newcomen St, Newcastle NSW 2300, affirm:

1. I am the Head of Health Service Contracting at Honeysuckle Health Pty Ltd (**HH**).
2. HH, together with nib health funds limited (**nib**), were the original applicants (**Authorisation Applicants**) for authorisation (AA10000542-1) (**Authorisation Application**) currently the subject of review before the Tribunal pursuant to proceedings ACT 4 and ACT 5 of 2021 (**Review Applications**).
3. I am authorised by the Authorisation Applicants to make this affidavit on their behalf.
4. I make this affidavit in support of the Authorisation Applicants' position that:
 - (a) the Proposed Conduct, as described in paragraphs 165 to 169, meets the public benefits test prescribed by section 90(7)(b) of the Competition and Consumer Act (**CCA**);
 - (b) accordingly, the Proposed Conduct should be authorised under section 88(1) of the CCA; and
 - (c) it is otherwise appropriate that:
 - (i) authorisation be granted for a period of 10 years;
 - (ii) Major PHIs be included in the Proposed Conduct, insofar as their participation is limited to BCPP.
5. I previously affirmed an affidavit in these proceedings on 28 January 2022, in support of the Authorisation Applicants' application for confidentiality orders to be made in respect of certain aspects of their submissions to the ACCC (**First Affidavit**).

A handwritten signature in cursive script, appearing to read "David Malcolm Du Plessis".

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6. I have had the opportunity to review the witness statements filed on behalf of the National Association of Practising Psychiatrists and the Rehabilitation Medicine Society of Australia and New Zealand (the **Applicants**).
7. Except where I otherwise indicate, I make this affidavit from my own knowledge. Where I state matters on the basis of information provided to me, I believe those matters to be true and correct.

Background and professional experience

8. nib is a major private health insurer which supplies private health insurance policies to Australian and New Zealand residents.
9. HH is a health services and data science company founded in December 2019 as a joint venture between nib and Cigna Corporation (**Cigna**). HH provides services to healthcare payers in Australia and New Zealand, including nib. These services currently include health analytics (e.g. measurement of impact of health interventions, population risk stratification and provider benchmarking), health management programs (e.g. telephonic programs to support patients transition from hospital and manage chronic diseases) and contract negotiation and management services for nib.
10. Cigna is a global health services company with a network spanning over 30 countries across North America, Europe, Asia and the Pacific offering an integrated suite of health services, such as medical, dental, behavioural health, pharmacy, vision, supplemental benefits, and other related products including group life, accident and disability insurance. Cigna has invested significant resources into data science, including digital health and utilising data analytics to improve the diagnosis and treatment of patients.
11. In October 2020, nib appointed HH to provide contract negotiation and drafting, data analytics, contract administration and management, dispute resolution and performance and compliance assessment services for nib's contracts and arrangements with hospitals, medical specialists and other healthcare providers.
12. I have held the position of Head of Health Service Contracting at HH since October 2020. I held the same position at nib from July 2018 to October 2020. In total, I have been responsible for overseeing hospital and health contracting for the Authorisation Applicants for approximately six years.



13. Prior to my involvement with HH and nib, I had worked in the health services industry more broadly for over 12 years, including in roles at Health Care Australia, Hunter Nursing and Edisse.
14. I hold a Bachelor of Science from the University of New South Wales and spent five years as an Officer in the Royal Australian Air Force.
15. As set out in paragraph 6 of my First Affidavit, in my current role, I am responsible and accountable for managing the hospital, medical and general treatment network development and relationship teams. These teams are responsible for engaging in contract negotiation with providers such as hospitals, medical specialists and allied health professionals to develop, manage and maintain agreements with hospital, medical gap and allied health networks for nib members. In addition to these traditional private health insurance networks, I also have led, and continue to lead, the development and implementation of the nib Clinical Partners Program. Finally I continue to be involved with Private Health Australia including through my participation in industry forums on reform to the sector.
16. By reason of this role and my long term experience in the health services industry, I have a sound understanding of:
 - (a) the private healthcare and private health insurance markets;
 - (b) the statutory regime and specific obligations private health insurers are subject to;
 - (c) health services contracting with medical specialists and hospitals, including:
 - (i) standard terms and obligations;
 - (ii) fee arrangements;
 - (iii) the practicalities of negotiating and entering into these contracts;
 - (d) the current role of and services provided by other private health insurers and buying groups;
 - (e) the ways in which private health insurers can and do utilise data analytics and value-based contracting to improve their service offerings.
17. In this affidavit, I describe:
 - (a) in **Part A**, private healthcare and the private health insurance market;



- (b) in **Part B**, funding and fees for medical specialists and hospitals and the way these are set through the Medicare Benefits Schedule and contracting with private health insurers;
- (c) in **Part C**, value based care and contracting;
- (d) in **Part D**, the application for authorisation and the Proposed Conduct;
- (e) in **Part E**, the benefits of the Proposed Conduct;
- (f) in **Part F**, aspects of the contracting arrangements proposed for the Broad Clinical Partners Program (or **BCPP**);
- (g) in **Part G**, why the Authorisation Applicants seek a 10 year authorisation;
- (h) in **Part H**, the conduct the Authorisation Applicants will engage in with and without authorisation.

Part A: Private healthcare and private health insurance market

Overview of private healthcare in Australia

18. In Australia, private healthcare operates alongside the public Medicare system. Medicare provides free hospitalisation in public hospitals as well as subsidised medical care. The Medicare system means that all eligible Australians are able to access hospital treatment as a public patient in a public hospital. However, public patients in public hospitals are not able to choose the hospital they are admitted to or the medical practitioners who will treat them.
19. Private healthcare provides two main types of cover.
 - (a) The first, cover for hospital treatment, provides cover for the cost of fees charged by a hospital for medical services and accommodation. Australians who have private hospital cover can elect to undergo hospital treatment in either a public or private hospital as a private patient.
 - (b) The second, cover for general treatment (or 'extras cover'), provides cover for a range of ancillary services not covered by Medicare including dental, optical and allied health.



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20. As at December 2021, approximately 44.9 per cent of the Australian population have hospital treatment cover and 54.7 per cent have general treatment cover. A copy of APRA's quarterly private health insurance statistics is at '**Annexure DD-4**'.
21. The private health insurance sector provides a number of benefits to the general public, including that it:
- (a) relieves pressure on the public health system: for example, private health insurance currently funds around 40 per cent of hospital admissions in Australia that would otherwise be funded solely by the public system; further, around 67 per cent of elective surgeries in Australia are performed in private hospitals, which reduces waiting times for elective surgery and lowers demand for hospital beds in the public system;
 - (b) reduces costs which would otherwise be paid for by taxpayers through the public health system;
 - (c) provides consumers with greater choice than in the public system, including choice of doctor, hospital and timing of health procedures, subject to:
 - (i) the medical practitioner of their choice being credentialed to work in a particular hospital;
 - (ii) the treating surgeons' choice of the medical practitioners who work with the treating surgeon during an episode of medical care (for instance, providing surgical assistance and anaesthesia);
 - (d) provides cover for hospital services that are partially paid for by Medicare and for extras services that are not paid for by Medicare;
 - (e) enables access to technologies and devices which may not be available otherwise to the patient in the public system due to cost constraints. For example not all devices on the Prostheses List are available to surgeons in public hospitals because of the cost of the device; likewise, access to robotics for certain procedures is limited in the public setting.
22. Patients receiving care in a hospital will often first consult with their general practitioner who identifies the need for treatment and makes a referral. In making a referral, the general practitioner will have regard to, among other things, whether the patient:



- (a) has private health insurance or is willing to self-fund the procedure;
- (b) is willing and able to cover any out-of-pocket expenses; and
- (c) wishes to be treated through the private or public system, including the patient's preferences (if any) as to their treating specialist.

Private hospitals and medical practitioners

23. As of 2 June 2022, there are 640 declared private hospitals in Australia and approximately 220 hospital groups. A hospital group is where a corporate entity owns and operates a group of private hospitals. For example, Ramsay Healthcare Ltd operates 72 hospitals in Australia. A list of all Commonwealth declared hospitals is at '**Annexure DD-5**'.
24. The top five hospital groups collectively control 61% of the private beds in Australia, with Ramsay holding 26.18%, Healthscope holding 15.36%, St John of God holding 9.48%, Epworth holding 5.57% and Aurora holding 4.07%. A table showing the market share of hospital groups in Australia is at '**Annexure DD-6**'.
25. There are approximately 100,000 medical specialists in Australia. Medical specialists practice in different specialties, including surgery (within which there are a range of different sub-specialities such as orthopaedic surgery), psychiatry and rehabilitation medicine.
26. As at 2016, of these medical specialists:
- (a) there were 1,236 orthopaedic surgeons employed in Australia, of whom 76.2% worked in the private sector;
 - (b) there were 3,327 psychiatrists employed in Australia, of whom 49.7% worked in the private sector;
 - (c) there were 451 rehabilitation medicine specialists employed in Australia, of whom 37.7% worked in the private sector.
27. A copy of the Department of Health fact sheet on each of these specialties is at '**Annexure DD-7**'.



PHIs and other healthcare payers

28. Section 10 of the *Private Health Insurance (Prudential Supervision) Act 2015* (Cth) prescribes that private health insurance can only be provided by a registered health fund. Health funds can either be open to all members or have restricted membership. Restricted membership funds are generally union or employer based and provide insurance to certain professions such as teachers and the defence force. Health funds providing private health insurance are referred to as private health insurers (**PHIs**).
29. There are 34 PHIs (including nib) supplying private health insurance in Australia. Of these 34 funds:
- (a) 9 have restricted membership;
 - (b) 5 are for profit and 29 are not for profit.
30. Of this 34, five health funds hold 78.6% of the market share in provision of hospital treatment cover: Medicare Private Limited, Bupa HI Pty Ltd (**Bupa**), Hospitals Contribution Fund of Australia Limited (**HCF**), or HBF Health Limited in respect of its operations in Western Australia (collectively the **Major PHIs**) and nib.
31. There are also a number of other healthcare payers in the market, including:
- (a) international medical and travel insurance companies who provide hospital coverage to overseas tourists and short-term overseas workers in Australia. Typically, tourists and short-term workers take out insurance in their home country before travelling to Australia. If the traveller requires medical services whilst in Australia, they will be required to pay the “rack rate” for the service out-of-pocket and then seek reimbursement from their insurer when they arrive home;
 - (b) government and semi-government payers of healthcare services such as:
 - (i) workers' compensation scheme operators: each of the eight Australian states and territories has their own workers' compensation scheme and the Commonwealth has three separate schemes. Each scheme manages their own contracts with medical and hospital providers;
 - (ii) transport accident scheme operators: each Australian state runs its own compulsory transport accident insurance scheme. In New South Wales, Queensland, South Australia and the ACT, drivers can choose from a



panel of compulsory third party providers. In the other states, transport accident schemes are provided by a state-owned or government-licensed insurer. Similar to workers compensation schemes, transport accident insurers typically manage their own contracts with medical and hospital providers;

- (iii) Department of Veterans Affairs (**DVA**) scheme: under the DVA scheme, eligible veterans are able to receive hospital services free with no gap expenses.

32. The market shares of PHIs and other healthcare payers in Australia are set out at '**Annexure DD-8**'.
33. PHIs can operate nationally or be based in a particular jurisdiction or region. Currently, each of the 34 PHIs is registered to operate on a national basis. A register of PHIs which lists the states they operate in and any restrictions on membership is at '**Annexure DD-9**'.
34. The market share of each PHI varies in each state. For example, as at 2019, Bupa had a 23.10% market share in Victoria and a 47.80% market share in South Australia. A table summarising the market share of each Major PHI in each state is at '**Annexure DD-10**'.
35. Some of the smaller PHIs have a greater market share in particular geographic areas. For example, Cessnock District Health fund is mostly based around the Hunter Valley whilst People Care has very strong representation on the South Coast of NSW.

Switching between PHIs

36. Section 78-1 of the PHI Act obliges PHIs to recognise waiting periods that have been served for hospital treatment with a previous PHI. This means that customers of PHIs can switch PHIs without being subject to any additional waiting times or exclusions. This is commonly referred to as the 'portability rule'.
37. Switching PHIs is an option that is utilised by customers. Between 2016 and 2021, the average number of customers that switched to or from nib each year was 53,203 and 40,444, respectively.
38. When a customer chooses to switch PHIs, their previous fund is required to send the new fund a transfer certificate within 14 days which outlines details of their previous cover, including any waiting periods served, the type of cover and claims history.



39. In circumstances where a customer is moving from a lower benefit to a higher benefit policy:
- (a) they will have to serve waiting periods for anything that was not covered by the previous policy (with the exception of mental health through the Mental Health waiver which permits a person, once in their lifetime, to upgrade their policy and be immediately covered for mental health services); and
 - (b) with respect to extras, the new health fund will match a customer's benefit in the first 12 months before the customer is entitled to the higher benefit. e.g. if a customer has \$800 for Major Dental on their old policy and they are moving to a new policy with \$1100 for Major Dental, then the new fund will match \$800 in the first 12 months before it is increased.
40. Private PHIs are unable to contract out of these portability rules and they must be clearly disclosed to customers. By way of example, materials used by nib to inform customers of its portability obligations are at '**Annexure DD-11**'.

Private health insurance products

41. PHIs (and in particular the Major PHIs) broadly offer the same types of products – hospital cover and extras cover.
42. Pursuant to Part 2B of the *Private Health Insurance (Complying Product) Rules 2015* which are made under the PHI Act, PHIs are required to classify their private hospital cover products as one of four tiers: Gold, Silver, Bronze or Basic. What is covered in each of those tiers is based on a pre-determined minimum standard of clinical categories. An example of a clinical category is 'bone, joint and muscle' or 'heart and vascular system'. Where a tier is required to cover a clinical category, it must cover all services relating to that category, either on a restricted or unrestricted basis. Covering services on a restricted basis means that PHIs are only required to pay the minimum benefits prescribed under the *Private Health Insurance (Benefit Requirements) Rules 2011* (made under the PHI Act) for hospital treatment and customers will still likely face significant out of pocket expenses. Unrestricted cover is a higher level of cover and other than their hospital excess, customers are likely to incur no or only small out of pocket expenses for their hospital stay.
43. The tiers of private health insurance have the following coverage requirements:



- (a) *basic cover*: must cover 3 clinical categories; this is the lowest level of hospital cover a health cover can offer under the legislation and it must offer rehabilitation, hospital psychiatric services and palliative care at least on a restricted basis;
- (b) *bronze cover*: covers the same benefits as the basic tier and provides unrestricted hospital cover for an additional 18 treatments and services (covering 21 clinical categories in total);
- (c) *silver cover*: covers the same hospital treatments found in Basic and Bronze policies. Silver health insurance also covers eight additional clinical categories on an unrestricted basis (covering 29 clinical categories in total);
- (d) *gold cover*: includes unrestricted cover for all clinical categories (38 clinical categories in total).

A table summarising the clinical categories required to be covered by each of the hospital product tiers is at '**Annexure DD-12**'.

- 44. PHIs can also offer policies that cover more treatments than required by the standard health insurance tiers. If they do so, these policies will include a '+' or 'plus' in the name and fall under one of three subset health insurance tiers: Basic+, Bronze+ and Silver+.
- 45. The level of cover selected by a customer is based on their needs, and policy characteristics such as cost and perceived quality of the cover provided. This may include considerations of financial limits and gaps, treatments and procedures covered, and the network of hospitals and healthcare providers available under a policy.
- 46. The Silver, Bronze and Basic tiers exclude or restrict benefits for some clinical categories in return for a lower premium payable. An exclusion is where a customer agrees not to be covered for certain services and a restriction is where a customer agrees that they will only be covered for certain services to a limited extent.
- 47. PHIs compete with each other in relation to price and additional services covered over and above the pre-determined minimum standard of the clinical categories for that product tier. A table which sets out the relative product pricing for NSW single \$500 excess payable showing pricing across products with all funds is at '**Annexure DD-13**'.
- 48. Section 66-10 of the PHI Act requires PHIs to apply to the Minister for Health for approval of any proposed increase to insurance premiums. Approval is subject to a public interest test pursuant to section 66-10(3). The approved form requires PHIs to



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justify the proposed increase, including by providing information on the products for which the premium change applies and relevant financial data, including forecasts of financial and operating data, such as contribution income, gross and net margins, management expenses, dividend payments, policy excesses and membership numbers. A copy of the Approved Form is '**Annexure DD-14**'.

49. The Minister actively relies on this provision and often rejects proposed premium increases where they are not satisfied that the increase is in the public interest (see for example '**Annexure DD-14A**'). Where premium increases are rejected by the Minister, this forces PHIs to better manage their operational costs and more efficiently administer services to their members. This, in turn, directly benefits members by ensuring that any premium increase in the future is lower than what it otherwise would have been.
50. The Minister has, in the past, written to the PHIs and communicated that the Minister has an expectation that the industry will limit premium increases to a target percentage.
51. Pursuant to section 93-25 of the PHI Act, where a proposed change to coverage will or might be detrimental to the interests of members, PHIs must ensure that its members are informed of this proposed change a reasonable time before the change takes effect.
52. The Private Health Insurance Code of Conduct (**PHI Code of Conduct**), was developed by Private Healthcare Australia and the Members Health Fund Alliance as the membership bodies which represent health funds and is a self-regulatory code promoting informed relationships between PHIs, consumers and intermediaries. It provides that in the context of hospital or general treatment coverage, the following are examples of 'significant' detrimental changes:
 - (a) where closing a product has a significant detrimental effect to a policy holder e.g. when they are required to move to an alternative product;
 - (b) a change in which an excess or co-payment may apply;
 - (c) the reduction of a limit or change to entitlement of such limit for an extras benefit.
53. Where a detrimental change is proposed, the PHI must give the affected customers at least 30 days' notice. Where that change is a significant detrimental change, 60 days' notice must be given.
54. A copy of the PHI Code of Conduct is at '**Annexure DD-15**'.



55. In addition, the Office of the Commonwealth Ombudsman's Termination and Transition Guidelines for Hospitals and Insurers (**PHIO Guidelines**) provides guidance around contractual disputes between insurers and hospitals and minimising disruption following a termination of contract. The guidelines are not legally enforceable but act as a guide for best practice. A copy of the PHIO Guidelines is at '**Annexure DD-16**'.

Part B: Funding and fees for hospitals, medical specialists and other health professionals

56. In this part of my affidavit, I describe:
- (a) funding and fees payable under the Medicare Benefits Scheme;
 - (b) fee arrangements between PHIs and medical specialists, hospitals and other health professionals;
 - (c) contracting services for PHIs;
 - (d) the clinical independence of practitioners in arrangements with PHIs.

Medicare Benefits Scheme

57. The *Health Insurance Act 1973* (Cth) and the Medicare Benefits Schedule (**MBS**) together regulate the Medicare benefits payable in Australia for medical services. The MBS lists a range of medical services which are subsidised by the Australian Government, allocating a unique provider number and a fee payable to each (referred to as a 'Schedule Fee'). Broadly, the types of services on the MBS include consultation and procedural services (including surgical), as well as diagnostic services. The MBS does not cover services provided by the hospital (e.g. accommodation and theatre fees).
58. The Schedule Fee is determined by the Medical Services Advisory Committee (**MSAC**) by reference to the average time involved in performing the service as well as its complexity and technical difficulty. MSAC is responsible for reviewing existing services funded under the MBS as well as appraising new medical services proposed for public funding. One of its key purposes is to ensure that the government funds cost-effective, evidence-based, best practice health care. In determining whether services should be funded, MSAC assesses the comparative safety, clinical effectiveness, cost-effectiveness and total cost of the service.



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59. The MBS also sets the rate at which the benefit for that service is to be calculated. Generally, consumers can claim from Medicare:
- (a) 100 per cent of the Schedule Fee for services provided by a general practitioner;
 - (b) 85 per cent of the Schedule Fee for other out of hospital services provided by a medical practitioner;
 - (c) 75 per cent of the Schedule Fee for in-hospital services provided by a medical practitioner to patients admitted to hospital as private patients.
60. Out of hospital services are services provided by medical specialists in the community (for instance, where a patient visits a dermatologist for a skin consultation). Pursuant to section 69-1 of the PHI Act, PHIs are not permitted to cover customers for out of hospital services listed on the MBS.
61. In-hospital services are all services that are provided by a medical practitioner during an episode of hospital treatment when the patient is admitted as a private patient. Pursuant to section 72-1 of the PHI Act, PHIs must pay 25 per cent of the Schedule Fee for in-hospital services. This means that where a customer has private health insurance, Medicare and the customer's PHI together pay 100 per cent of the Schedule Fee.
62. Medical specialists are not limited to charging the Schedule Fee. The Schedule Fee is a government subsidy and often materially lower than the prevailing market rate. The amount ultimately received by a medical specialist for their services depends on the amount, if any, the medical specialist charges in addition to the Schedule Fee and the arrangement, if any, between the medical specialist and a patient's PHI.
- (a) In out of hospital settings, medical specialists may accept 85 per cent of the Schedule Fee as full payment from Medicare without requesting any further payment by patients or PHIs. This is referred to as 'bulk billing'.
 - (b) Alternatively and more commonly, medical specialists may set a higher fee than the Schedule Fee. The difference between the Schedule Fee and the actual fee charged by the medical specialist is known as a 'gap', 'medical gap' or 'gap fee' and must be paid by the patient or, depending on the patient's private health insurance coverage, their PHI.



- (c) Medical specialists also enter arrangements with PHIs that limit the amount of 'medical gap' or 'gap fee' they charge. I discuss these further below in paragraphs 67 to 80.
63. Where a patient has private health insurance, they assign their right to the Medicare component of the Schedule Fee to the PHI. The PHI collects the Medicare component of the Schedule Fee on behalf of the patient. The PHI then pays to the medical specialist as one lump sum:
- (a) the Medicare component of the Schedule Fee;
 - (b) the 25 per cent of the Schedule Fee required to be paid by the PHI; and
 - (c) any additional component, depending on the type of private health cover the patient has purchased as well as the terms of any agreement entered into by the PHI and relevant medical specialist.

Arrangements between PHIs and medical specialists

Legislative provisions

64. Since 1995, and the introduction of the *Health Legislation (Private Health Insurance Reform) Amendment Act 1995* (Cth) (the **Reform Act**), PHIs and medical specialists have been permitted to enter into medical purchaser provider agreements (**MPPAs**) where the PHI agreed to pay the medical specialist an amount in excess of 25 per cent of the Schedule Fee, in return for the specialist agreeing to charge the patient:
- (a) no extra fees (referred to as a "no gap contract");
 - (b) a fixed extra fee (referred to as a "known gap contract").
65. At this time, the take up of MPPAs was very low. This was because doctors were initially reluctant to enter into MPPAs with PHIs in circumstances where the negotiation and execution process was complex, administratively burdensome and time consuming. There was also a general reluctance to be seen to be contracting with a PHI.
66. Due to these apprehensions, in 2000, the *Health Legislation Amendment (Gap Cover Schemes) Act 2000* (Cth) (**Gap Cover Act**) was introduced and broadened the scope of MPPAs to enable PHIs to cover the gap without the need for a negotiated agreement between the PHI and medical specialist through 'gap cover schemes'. This allowed PHIs to enter into arrangements with medical specialists through a simple registration process



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with standard terms and conditions instead of needing to have individual contracts with doctors.

Gap cover schemes

67. Under gap cover schemes, PHIs publish their terms and conditions and medical specialists may choose to register for the scheme and, additionally, opt in or out of the scheme on a case by case basis per patient or procedure. This creates a network of providers that PHIs can promote as offering their customers a no gap or known gap experience.
68. Like no gap or known gap contracts, gap cover schemes may provide for the PHI to cover, and the medical specialist to charge:
 - (a) no extra fees (referred to as a “no gap scheme”);
 - (b) a fixed extra fee (referred to as a “known gap scheme”).
69. Medical specialists can sign up to a PHI's gap scheme by registering directly with the PHI. For example, a copy of the form medical specialists can use to register with nib's MediGap scheme is at '**Annexure DD-17**'.
70. Each PHI offering a gap scheme will have its own terms and conditions that the medical specialist is required to adhere to. A copy of the terms and conditions for nib's MediGap scheme is at '**Annexure DD-18**'. The MediGap rates paid to medical specialists for provision of services are generally based on a percentage of the MBS Schedule Fee. This is a lever PHIs can use to encourage high value care or discourage low value care (concepts I explain further in Part **C** below): for instance where PHIs determine procedures to be low value care they have capacity to either freeze or reduce the rates paid.
71. Unless the PHI and medical specialist have another arrangement, if a specialist does not register and opt in to the gap scheme for a particular patient and procedure, the PHI will pay 25 per cent of the Schedule Fee to the medical specialist and the patient will be liable to pay any gap charged by the medical specialist.
72. Initially, the introduction of gap cover schemes was opposed by a number of peak medical bodies, including the Australian Medical Association, on the basis that it was perceived to undermine the clinical autonomy of medical specialists and 'invite the introduction of US-style managed care concepts into the Australian health system'. A



copy of the Australian Parliamentary report into the Reform Act insofar as it relates to MPPAs is at '**Annexure DD-19**'.

73. Today, these arrangements are very prevalent in the private health market. This can be seen in a table extracted from the Private Health Insurance Ombudsman State of the Health Funds Report 2021, outlining the level of gap schemes open member health funds provide in each state, which is at '**Annexure DD-20**'.
74. The gap cover schemes benefit PHIs in that they:
- (a) give PHIs additional certainty about the amounts owing to medical specialists;
 - (b) assist PHIs to attract customers by offering known or no gap fees across a broader treatment network;
 - (c) improve relationships with medical specialists through providing higher fees to keep pace with the cost of providing services.
75. No gap schemes offer substantial utility to both customers and providers. In particular, no gap schemes:
- (a) provide financial certainty to customers and help avoid the financial stress of being charged an unexpected gap fee;
 - (b) give greater certainty to medical specialists that the gap fee will be covered and paid quickly (by the relevant PHI rather than by the customer). This also allows medical specialists to minimise administrative costs as they do not have to issue accounts to patients nor follow up late payments with patients.
76. The uncertainty around the extent of gaps that consumers face in the private healthcare system is one of the major concerns or causes of dissatisfaction for consumers. For example, according to IPSOS' 2019 Healthcare & Insurance Australia Study, the most important driver for customer satisfaction with respect to their health insurer is 'Rebates on Services' (i.e. out-of-pocket costs) with the average fund scoring 5.8 out of 9 on this aspect. This uncertainty is partly derived from the multitude of contractual relationships that are created when a patient receives hospital treatment – separate contracts between the patient and the private hospital, medical specialist, anaesthetist, assistant surgeon, radiologist and pathologist.



77. A table comparing payments made by the Major PHIs pursuant to their existing gap schemes is set out in '**Annexure DD-21**'. As is apparent from that Annexure:
- (a) nib's medical gap scheme does not allow a medical specialist to charge a gap to its members whereas the Major PHIs allow medical specialists to collect up to \$500 in gap payments from their members; and
 - (b) this means that the surgeon is likely to be able to earn more in fees under the medical gap schemes of the Major PHIs than with nib.
78. As I stated in paragraph 67 above, medical specialists can choose to opt in or out to gap cover schemes on a patient by patient and procedure by procedure basis. This means that while the gap cover schemes offer specialists a higher guaranteed minimum payment than would otherwise be available, they fail to provide certainty or complete protection for the insured consumer in every case. A consumer could undergo a routine procedure one year with a specialist, and the specialist could use and cover them under the gap scheme. The subsequent year they could face an out-of-pocket with the same specialist for the same procedure. Whether a specialist chooses to opt out of the no gap scheme in a particular instance is closely linked to what a specialist thinks the patient can pay. Patients who come from more affluent postcodes are more likely to be charged an out of pocket fee or a higher out of pocket fee by a specialist than if they came from less affluent areas. For example, electorates with the lowest portion of bulk billing in the country include Canberra, Curtin, Brisbane, Warringah, Goldstein and Higgins, whereas electorates with the highest proportion of bulk billed patients include Chifley, Fowler, Werriwa, Parramatta and Lalor. A table of the highest and lowest bulk-billing rates across Australia by electorate is at '**Annexure DD-22**'.
79. Under the current gap cover schemes, in order to access surgical procedures, patients are required to deal with multiple medical specialists, including an initial interaction with their specialist and then independent interactions with the hospital, anaesthetist, assistant surgeon, as well as radiology and pathology providers who may be involved in the surgical treatment and hospital stay. While all these providers (other than the hospital) may be registered for the PHI's medical gap scheme, not all of them will opt in to the scheme in relation to each of their patients because of the variation in the complexity of each patient's condition and the discretion the providers have to charge higher fees. This means that the patient may be faced with one or more out of pocket bills associated with the treatment. For patients, this makes it difficult to understand the amount that they will have to contribute and they may not have an understanding of this



until after the treatment is complete and they receive a bill. Even if a patient can access information from their PHI about the surgeon's and other specialists' participation with their PHI's gap cover scheme, these secondary provider interactions are often not transparent as patients usually have no engagement with those medical specialists ahead of receiving treatment from them. It is highly unlikely that a consumer will have the entire episode of care completely covered without one or more of these providers charging out of pocket costs.

80. By way of example, a patient may have a knee joint replaced. When they meet the surgeon, the surgeon agrees to use the medical gap scheme of the fund which allows them to charge a \$500 known gap. The patient then undergoes the procedure and is discharged a week later from hospital. A few weeks later the patient receives an invoice from the anaesthetist for \$1,500 as this anaesthetist does not use their PHI's gap cover scheme. A week later the patient then receives a number of small bills from radiologists and pathologists for the X-ray and blood work completed as part of the surgery. The patient anticipated originally that they would have to pay a \$500 excess at the hospital and a \$500 known gap with their surgeon. They now have out of pocket costs totalling \$3,000 when they had originally anticipated and budgeted for \$1,000.

MPPAs, including the BCPP and similar programs

81. In addition to gap cover schemes, some PHIs offer MPPAs directly to medical specialists. Unlike under medical gap schemes, medical specialists generally do not opt out of MPPAs on a patient-by-patient basis as they are designed to eliminate gap payments for patients and provide funding certainty for these specialists. MPPAs can contain price and non-price terms.
82. For instance, nib has MPPAs with medical specialists that fall into two categories – MPPAs with radiologists and pathologists and the MPPAs for the Broad Clinical Partners Program (**BCPP**).
83. nib has MPPAs with radiologists and pathologists in relation to members with GU health policies who provide services such as x-rays, ultrasounds and blood tests to customers during their admission at a private hospital that is part of nib's network (i.e. nib has an HPPA with that private hospital). These services are not included in the scope of services that are provided to patients by the private hospital. They are services provided directly to the patient by the radiologist or pathologist under separate contractual arrangements with the customer. Without an MPPA, patients may incur out-of-pocket



expenses for the radiology and pathology services received during a hospital admission. These kinds of MPPAs are commonly entered into by nib and some of the other Major PHIs.

84. nib also has MPPAs with medical specialists who provide services for hip and knee joint replacement surgery through the Clinical Partners Program (CPP), which I refer to as the **Broad Clinical Partners Program** or **BCPP** (as nib and HH intend to broaden the scope of the program as I discuss in paragraph 85 below). The BCPP provides a “no gap experience” to nib customers for a single course of treatment involving multiple specialists while enabling providers to refer clinically appropriate patients to in-home rehabilitation which in turn reduces the cost of treatment. nib and HH achieve this through entering into MPPAs with all the associated specialists (surgeon, anaesthetist and assistant surgeon if required). These MPPAs require that all nib patients having hip and knee joint replacements are not charged an out-of-pocket fee and obligate nib to pay medical specialists a higher rate than would otherwise be paid under the standard nib Medigap program. At present, the BCPP has a narrow scope in terms of the treatment it provides (hip and knee joint replacement surgery), its geographic location (it presently only operates in NSW and QLD) and the number of providers it engages (currently 35).
85. nib is currently in the process of expanding the program to cover other orthopaedic procedures provided by the same surgeons such as ACL repairs, knee arthroscopes and shoulder procedures. This is to make it easier for referring general practitioners, who know that all procedures with these specialists are covered under the BCPP (not just total joint replacements), and it also extends the benefits of this program (which I discuss in Part E below) to a wider group of procedures and thus customers. Ultimately, nib and HH propose to expand the BCPP to cover a broader group of medical specialists covering more types of treatments and geographical areas. At this stage, nib and HH see opportunities to expand to broader orthopaedic surgeries, cardiac procedures, obstetrics, ENT, Gastroenterology and vascular surgeries.
86. The BCPP is different from no or known gap schemes because it:
- (a) provides a guaranteed no-gap experience in relation to all medical specialists involved in an episode of care;
 - (b) requires participating medical specialists to treat all relevant customers of a PHI under the program (that is, the medical specialist cannot opt in or out of the BCPP on a patient by patient basis).



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87. I am aware that some of the Major PHIs use MPPAs incorporating a similar model for hip and knee replacement surgeries. These are Medibank's Zero Out of Pocket (**ZOOP**), and HCF's No Gap Joints Program which I describe under paragraphs 88 to 89 below).
88. Medibank's ZOOP was established in 2021, for no out of pocket costs hip and knee replacement surgeries, which are performed as a short stay hospital admission with rehabilitation provided in the patient's home. Based on my discussions with a medical specialist involved in this program, I understand that in return, Medibank pays the medical specialists a higher rate than the Medibank Known Gap Fee. A description of this program as described on its website is at '**Annexure DD-23**'.
89. Similarly, HCF's No Gap Joints Program, was established in 2021 for no gap hip and knee replacement surgeries. The program is currently available in four participating hospitals in NSW and Victoria, and patients can experience no out of pocket costs from hospital admission through to discharge and post-surgery rehabilitation (whether at-home or in-clinic). A description of this program as described on its website is at '**Annexure DD-24**'.
90. PHIs have focused on these areas as they have provided the best opportunity to improve value through avoiding known and quantifiable low value care associated with longer than required lengths of stay and excessive conversion of patients to in-patient rehabilitation. This, combined with the large expense and volume of these procedures, makes it the obvious place to start in developing and testing models of care that improve value through direct partnership with surgeons.
91. These programs are not offered by all PHIs. For example, I understand that Major PHI HBF does not have a program equivalent to the BCPP which provides a no-gap experience for their customers for an entire episode of hospital treatment.

Arrangements between PHIs and hospitals

92. The Reform Act also enabled PHIs and private hospitals to enter into hospital purchaser provider agreements (**HPPAs**) with PHIs. Under HPPAs:
- (a) PHIs generally agree to pay private hospitals:
- (i) higher daily rates than the minimum benefits under the *Private Health Insurance (Benefit Requirements) Rules 2011* for the cost of hospital accommodation (determined by reference to the MBS procedure number



and inclusive of costs of allied health and nursing staff and normal use consumables);

(ii) rates for operating theatres determined by reference to MBS surgical items (again inclusive of staff and consumable costs);

(iii) specific high cost consumable items for specific procedures; and

(b) hospitals agree to limit or not charge the patient any out of pocket costs, aside from any co-payment specified in the HPPA.

93. Where a customer attends a private hospital with which their PHI has a HPPA, the customer will have certainty about any hospital related costs arising from their stay (but not medical costs). This agreement will dictate whether the customer has to pay any out of pocket expenses at a standard rate, a lower agreed rate or none at all.

94. If a private hospital does not have an HPPA with a PHI, the hospital is free to set its own charges and the PHI is liable to pay:

(a) benefits at least equal to the “minimum benefits” also known as “basic default benefits” under the *Private Health Insurance (Benefit Requirements) Rules 2011* (Cth);

(b) alternatively, if the private hospital has applied and been approved under section 121-8 of the PHI Act to be a “second tier default benefits eligible hospital”, at least 85 per cent of the average payment payable for the relevant treatment under the PHI's HPPAs with comparable private hospitals in the same state.

95. In either case, the customer will be liable to pay any “gap” between the minimum benefits or second tier benefits and the fees charged by the hospital. Where no HPPA exists, this will generally mean that the customer of the PHI will be liable to pay a gap fee or at least a higher gap fee than they otherwise would be required to.

Arrangements between PHIs and other health professionals (general treatment networks)

96. PHIs also contract separately with allied health and other providers of 'extras' services which are not provided in hospitals, such as physiotherapists, dentists and optometrists. The types of extras services which are covered will depend on the level of cover the customer has.



97. I describe these arrangements as 'general treatment networks', where the PHI and provider agree to a standard set of rates and terms for each type of service. The out of pocket cost, if any, that a customer will have to pay will depend on the rates agreed as well as the level of cover the customer has purchased.
98. Generally there are two types of product which cover these services. "Percentage back" products where the fund will cover a specified percent of the covered services and "fixed cover" products, where the fund will pay a set amount for each visit and the remainder of what the provider charges is paid by the customer. Some products include both types of funding models for different types of services.
99. For example, if nib and a physiotherapist have agreed that a consultation will cost \$100 and a customer has purchased cover which gives them 50% or more back when they make a claim, nib will be obligated to pay \$50 or more towards the consultation.
100. Most PHIs have limits on the amount of extras that can be claimed on an annual basis. Some types of cover also implement sub-limits which is a maximum amount of money that can be claimed for a specific service, deducted from the annual limit.
101. If there is an arrangement between a PHI and the health professional and the health professional is part of the PHI's general treatment network, the customer will have access to no-gap services such as dental check-ups or reduced pricing on certain services.

Contracting services for PHIs

102. "Contracting services" for PHIs include:
- (a) contract negotiation and drafting;
 - (b) data analytics;
 - (c) contract administration and management;
 - (d) dispute resolution (in relation to contractual arrangements);
 - (e) management of complaints; and
 - (f) performance and compliance assessment (reporting and oversight of parties' adherence to terms and conditions of contractual arrangements).



103. The Major PHIs (as well as the PHIs acquired by and operated by the Major PHIs), other than nib, undertake their contracting services with medical specialists and hospitals networks internally.
104. The remaining 27 PHIs use buying groups to undertake some of their contracting services:
- (a) 23 use buying group Australian Health Services Alliance (**AHSA**);
 - (b) four use buying group Australian Regional Health Group (**ARHG**);
- (together, **existing buying groups**).
105. I understand that HBF contracts directly with hospitals in Western Australia and indirectly through the AHSA in all other states.
106. The AHSA and ARHG were formed in 1994 and 1995, respectively. Both were formed for the purpose of increasing the bargaining power of smaller funds. They are the only two buying groups that have been established in Australia for PHIs. In its promotional materials, AHSA has described its strength as *'the combined market share of the participating funds which enables [it] to negotiate commercial advantageous relationships on their behalf'*. A copy of these promotional materials are at '**Annexure DD-25**'.
107. The ARHG primarily services health funds operating predominantly in regional areas, whereas the AHSA is much broader.
108. Over its history, the AHSA has had minor changes of membership mostly related to small funds selling to larger funds (e.g. when GU Health was sold to nib in 2018). The most significant change to membership was when nib exited the AHSA in 2010 after being a member since August 2005. At the time, nib was the largest fund in the AHSA and this significantly impacted the size of the insurer population controlled by the AHSA. nib withdrew from AHSA because it built its own internal contracting function.
109. Existing buying groups charge members an annual fee to provide contracting services on their behalf. These fees are generally based on rate per member insured to scale the fee to the relative size of the insurer.
110. Existing buying groups use collective bargaining to negotiate contracts on behalf of their members with hospitals and, to a limited extent, with medical specialists. I understand that AHSA offers hospital contracting services and limited medical specialist contracting



services to its members, and ARHG only offers the former. The AHSA's medical contracting is predominantly limited to known gap schemes which the participant funds can elect to join as part of their buying group services. In contrast, I understand that ARHG provides some administrative support services for its members' gap schemes but that each member PHI runs its own bespoke no gap or known gap schemes. I understand that limited MPPAs are also in place for radiology and pathology services however, programs such as the BCPP or value based contracting with medical specialists are not offered by either of the existing buying groups. I am not aware of any MPPAs between individual buying group member funds and medical specialists.

111. I estimate that the cost of building an internal contracting function today would be approximately \$2 to \$3 million and would cost approximately \$4.5 million per annum to run. The size and cost of this function is largely independent of the size of the health insurer. Any health insurer that has national coverage and maintains its own health services contracting function would need to support a function of a similar size due to the breadth of the provider networks (that is, the number of hospitals and medical specialists).
112. For instance, nib's network of providers consists of 565 private hospitals, 21,764 medical specialists, 3,049 general treatment clinics and over 15,900 providers. This requires nib to negotiate over 500 contracts per year and manage over 3,500 agreements.

Clinical independence of practitioners

113. Section 172-5(1) of the PHI Act requires that agreements between PHIs and medical practitioners do not limit medical practitioners' clinical autonomy and independence, by providing that if a private health insurer enters into an agreement with a medical practitioner for the provision of treatment to persons insured by the insurer, the agreement must not limit the medical practitioner's professional freedom, within the scope of accepted clinical practice, to identify and provide appropriate treatments.
114. This provision was introduced by the Private Health Insurance Bill 2006 to ensure '*that the contracts that doctors have with insurers may not limit the clinical freedom of doctors to choose the most appropriate treatment for their patients*'. A copy of the Bill's Second Reading Speech is at **Annexure DD-26**.
115. I am not aware of any investigation or action in relation to a breach of section 172-5 being commenced or taken against a PHI.



116. Where a breach of a provision in the PHI Act is suspected, the Minister is permitted to begin an investigation into the operations of a PHI via which a PHI can be compelled to give evidence or produce documents (see Division 194 of the PHI Act). Where the Minister is satisfied that a PHI has failed to comply with an obligation under the Act (such as section 172-5), they may apply to the Federal Court for a number of remedies including a declaration of contravention and/or compensation order (see Division 203-1 of the PHI Act).

Part C: Value based care and value based funding and contracting

117. In this section of my affidavit, I describe:

- (a) value based care;
- (b) how value based care informs value based funding and contracting in the public and private healthcare systems in Australia;
- (c) the role and current use of data collection and analytics in value based care and value based funding and contracting, including by the Authorisation Applicants.

Value based care

118. Value based care is described by the Australian Commission on Safety and Quality in Health Care (**ACSQHC**) as “achieving the best care possible for each patient while maintaining an efficient use of resources”: ACSQHC, *'The State of Patient Safety and Quality in Australian Hospitals'* (2019) (**2019 ACSQHC Report**). The benefits of value based care are described in the 2019 ACSQHC Report. A copy of this report is at **'Annexure DD-27'**.

119. Value based care distinguishes between:

- (a) high value care, which improves outcomes for patients for the same relative cost or provides equitable outcomes for lower costs;
- (b) low or no value care, which is care that is ineffective, harmful or provides equitable outcomes for higher costs.

120. High value care can reduce both immediate and longer term costs for PHIs and other healthcare payers. Fundamentally this is care with clear evidence and research to support that it materially improves the conditions and/or disease state of the patient and which, when compared with alternative forms of treatment, is cost effective relative to



these outcomes. An example of high value care would be the use of a weight bearing x-ray to diagnose osteoarthritis of the knee. This procedure is relatively inexpensive to provide and, compared with the alternative invasive knee arthroscopy procedure, holds significantly lower risk to the patient and cost to the health system. Where clinically indicated, the use of a weight bearing x-ray instead of knee arthroscopy is an example of how high value care brings improved efficiency to the health care system and reduces risks of complication to patients. Improved outcomes for patients may result in shorter hospital stays, reduced rates of complications or re-admission to hospital rates. Consequentially, this may result in overall improved health outcomes with a longer term consequence of reduced cost to the health care system and health insurance premiums.

121. Conversely, low or no value care can increase both immediate and longer term costs for PHIs and other healthcare payers by requiring longer hospital stays, or leading to complications or readmissions. Fundamentally, low value care is care which is provided where there is no clear evidence or research to support that it will improve the condition and/or illness of the patient and which will use resources in the health care system that could otherwise have been directed towards more effective treatment. Generally low value care occurs where providers are able to apply care to receive benefits with limited or no requirement to evidence clinical need for the care. It is also more generally associated with treatments or care where limited evidence exists of its effectiveness or, alternatively, the cost to deliver the care is disproportionately higher than other treatments which have equitable or better outcomes. A copy of an article in the Medical Journal of Australia describing the risks of low value care and the relative merits of high value care is at '**Annexure DD-28**'.
122. By way of example, a 2017 study found that rehabilitation pathways incorporating inpatient rehabilitation did not achieve better joint-specific outcomes or health scores than alternatives not including inpatient rehabilitation. The study found that given the substantial cost differences, better value alternatives should be considered for patients after uncomplicated total knee arthroplasty. In circumstances where, in-patient rehabilitation is likely to cost approximately \$10,000 per treatment, compared with other forms of in-home rehabilitation, which cost around \$2,000, this relative cost for in-patient care is disproportionately high to achieve the same outcomes as home base alternatives. A copy of this study is at '**Annexure DD-29**'.
123. There are numerous other examples of changes to clinical advice being made as a direct consequence of low-value care being identified. For example:



- (a) in February 2018, the Australian Rheumatology Association released a statement warning against unnecessary arthroscopic knee surgery in circumstances where "the research shows that arthroscopic surgery for knee osteoarthritis does not seem to affect a patient's outcome and in some cases, the procedure can actually do more harm than good". A copy of the relevant media release is at '**Annexure DD-30**'. As noted in this media release, despite the lack of scientific evidence that the procedure works, approximately 43,000 Medicare Benefit Scheme funded arthroscopic knee surgeries were performed in the 2016-2017 financial year, costing around \$22 million in Medicare benefit payments.
- (b) the National Health and Research Council released guidelines on the clinical indication for frequency of colonoscopy for diagnostic investigations to reduce risk to patients from complications associated with the procedure. A copy of these updated guidelines and analysis about issues arising from repeat colonoscopies are at '**Annexure DD-31**' and '**Annexure DD-32**';
- (c) Choosing Wisely Australia is part of a global healthcare initiative to improve the safety and quality of healthcare. Its website contains multiple examples of clinical guidelines and recommendation issued in consultation with peak medical bodies which have arisen by reason of low value care being identified. An example of this is the recommendations for rehabilitation medicine produced in conjunction with the Australasian Faculty of Rehabilitation Medicine at '**Annexure DD-33**'.

Value based funding and contracting

- 124. Value based funding and value based contracting is one way to identify and promote high value care and discourage low value care. Under these models, the funding or price paid to medical specialists or hospitals for services is adjusted to match the value of those services.
- 125. Value based funding and contracting is intended to be distinguished from the existing "fee for service" model under the MBS. The term "fee for service" is used to describe where medical specialists and hospitals receive payment from government agencies and insurance companies for each service they provide to patients. The number of services and procedures performed on the patient determines the amount of payment the doctor bills for. These payments are not bundled and every item is billed and paid separately.
- 126. Under the MBS fee for service model, medical practitioners are paid for particular services provided to patients, regardless of the outcomes of those services. The more



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services, and the more high-cost services that are provided, the more the medical practitioner is paid. Conversely, practitioners who provide fewer or low-cost services are paid less and practitioners who provide services that are not funded under the MBS cannot receive payment for those services. For example, if an orthopaedic surgeon wishes to run a pre-admission patient clinic to enable a short stay joint replacement model, this would erode the earnings of the surgeon as they would conduct more work with some work not paid for.

127. By using payment levers, value based funding and value based contracting encourages hospitals and medical specialists to provide and refer patients to high value care and avoid no or low value care. By doing so, it reduces both immediate and longer term costs for PHIs and other healthcare payers, as I described in paragraphs 120 to 123 above.
128. Value based funding or contracting can also facilitate (by providing or funding) the adoption of new technologies, products or care pathways that improve outcomes for patients (but that are not funded under the MBS). Again, by improving outcomes for patients, this reduces both immediate and longer term costs for PHIs and other healthcare payers.

Move towards value based funding in the public health system

129. Over the past five years, the public health system has begun to move towards a value based care funding model. For instance:
 - (a) In 2015, the ACSQHC and Independent Hospital Pricing Authority (**IHPA**), which is responsible for setting the national efficient price and cost for Australian public hospital services, investigated and reported on implementing national “best practice pricing” for hip fracture care in Australian public hospitals. “Best-practice pricing” is described in the report as “purchasing of healthcare services for a specific procedure or intervention at a price that reflects the elements that constitute best-practice”. The report recommended, amongst other things, that the IHPA develop a “national best practice price” to incentivise care that aligns with the ACSQHC’s clinical care standards for hip fracture. A copy of the report is at '**Annexure DD-34**'.
 - (b) The 2019 ACSQHC report noted that the ACSQHC supports value-based health care and describes the benefits value based care offers for patients, medical practitioners and governments (see '**Annexure DD-27**').



- (c) In 2019, IHPA engaged KPMG to prepare a report outlining key outcomes and suggestions for an Australian approach focused on value-based health care. A copy of that report is at '**Annexure DD-35**'.
- (d) In 2019, the Department of Health established the Practice Incentives Program Quality Improvement Incentive (**PIPQI**) for general practitioners, described as “a payment to encourage practices to participate in quality improvement activities, aimed at improving patient outcomes through the delivery of high-quality care”. A copy of the PIPQI Fact Sheet published by the Royal Australian College of General Practitioners is at '**Annexure DD-36**'.
- (e) In 2021, through the National Health Reform Agreement, the Commonwealth and State and Territory governments have committed to moving towards value based care in the Addendum to the National Health Reform Agreement 2020-2025 and Long-term Health Reform Roadmap. A copy of the agreement and addendum are at '**Annexure DD-37**' and '**Annexure DD-38**'.
- (f) At a state level, NSW Health has released the 'Commission for Better Value Strategy from 2021 to 2024'. This strategy is aimed at shifting the focus from outputs to outcomes and is aimed at accelerating the state wide move to value based care. The strategy is built off successful implementation to improve value base contracting in the northern NSW Local Health District which redesigned the medical imaging services to align with outcomes in 2020. The strategy aims to have embedded value based healthcare in and across the system by June 2023 and have monitored and evaluated the impacts by June 2024. A copy of this document is at '**Annexure 33-39**'.

Value based contracting in the private health system

130. PHIs, including nib and the Major PHIs, currently engage in limited value-based contracting with hospitals and with medical specialists in the programs I outlined in paragraphs 88 to 89 above. In respect of hospitals, this generally takes the form of increasing the fees payable under a HPPA by an additional amount if the hospital provider is able to evidence a reduction in the provision of low-value care. With respect to medical specialists this usually takes the form of requiring the sharing of additional outcomes and quality data and the use of best practice guidelines in the delivery of care, as I describe further in relation to nib's BCPP in paragraphs 264 to 272 below.



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131. Value based contracting either reduces the costs payable by PHIs and the out-of-pocket expenses experienced by consumers or increases the quality in the system for the same relative cost. In my experience, this in turn results in lower premium increases payable by PHI customers and/or provides more value for the customer without a corresponding premium increase (a “quality adjusted price”).
132. Reduced premium increases also encourages participation in the private health insurance system, which in turn reduces pressure on the public health system as described in paragraph 21 above.

BCPP value based contracting outcomes

133. nib’s BCPP (described in paragraph 84 above) is an example of a value based contracting model. The primary object of the BCPP is to provide a complete no gap experience for nib customers undergoing knee and hip replacement surgery. The secondary objective of the BCPP is to establish a high-quality post-surgery ‘at-home’ patient rehabilitation and support program, and make that program available to the relevant nib members, where clinically appropriate. This program is provided either as hospital substitution care or as part of a chronic disease management program (described further in paragraph 266 below) and is delivered under the direct clinical supervision of the admitting surgeon who remains responsible for the patient.
134. That objective is reflected in the MPPA, which requires, subject to clinical appropriateness, that providers admit eligible customers to undertake the post-surgery ‘at home’ Patient Rehabilitation Support Program (clause 7.1(g)) and work towards ensuring that admission to overnight inpatient programs are approximately 30 per cent of nib’s eligible customers undergoing joint replacement (clause 7.1(e)). Since its launch in 2019, the BCPP has achieved the following outcomes:
 - (a) reduced the average rate of inpatient rehabilitation following joint replacement from 33% to 13% of patients, consistent with rates seen in public hospitals system in Australia (circa 17%). A journal article which explores the high rates of inpatient rehabilitation in the Australian private health sector is at '**Annexure DD-40**';
 - (b) reduced the average acute length of stay of patients following joint replacement from 6 days to 4.6 days, consistent with public hospital acute lengths of stay for non-trauma joint replacements in the Independent Hospital Pricing Authority (IHPA) price determination for Total Hip and Total Knee Joint Replacements. A copy of this IHPA price determination for 2021-22 is at '**Annexure DD-41**';



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- (c) provided access to rehabilitation in the home (**RITH**) to 60% of members who have undergone a Total Hip or Total Knee Joint Replacement.

135. These objectives are consistent with both Commonwealth and State public health policy. For instance:

- (a) The 2020-2021 Commonwealth budget committed to expanding home and community based care to allow patients to recover and rehabilitate in their own homes, on the basis that most patients preferred at home rehabilitation, it was a more cost-effective option than in-hospital care, and would increase capacity in hospitals.
- (b) The 2020-2021 Victorian budget committed \$120.9 million to the 'Better at Home' initiative, which supports the delivery of more rehabilitation services in the home. Further funding of \$698 million was committed in the 2022-2023 Victorian Budget.

Copies of these announcements are at '**Annexure DD-42**' and '**Annexure DD-43**'.

136. HH has also provided BCPP providers with access to the following technologies or products with the goal of improving outcomes for patients:

- (a) the 'mymobility' application which provides personalised care plans including both pre and postoperative exercises, education, questionnaires, and reminder notifications;
- (b) the '360 Med Care' system, an application which, by inputting the patients' specific requirements allows:
 - (i) a "virtual operation" to be performed repeatedly to determine up with the best solution in terms of factors such as which implant to use, and how it is aligned;
 - (ii) operation planning, the details of which can be fed into computer navigation and robot systems to assist the surgeon;
 - (iii) a complete rehabilitation regime for a period of up to a year;
- (c) sophisticated post-operative compression devices.

137. The BCPP has been very popular with nib customers. The proportion of nib customers who choose to participate in the BCPP for knee or joint replacements is at present:



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- (a) nearly 20% annually of all joint replacements for nib customers nationally;
 - (b) approximately 65% annually of all major joint replacements for nib customers in the Hunter region of New South Wales (where most of the surgeons participating in the BCPP are located).
138. nib has received positive feedback from nib members about the BCPP since 2019. An subset of anonymous testimonials provided to nib about the BCPP are at '**Annexure DD-44**'. These testimonials are either unsolicited or provided in response to a request for feedback. I understand that at least one patient has flown interstate to intentionally book with a surgeon signed up to the BCPP so they could gain access to the guaranteed no out of pocket cost.
139. The net promoter score (**NPS**) is a market research metric used to measure a customer's willingness to return for another service as well as to make a recommendation to their family, friends or colleagues. Patients are asked to provide a rating from 1 to 10 and then grouped into 'promoters' (a score of 9 to 10), 'passive' (a score of 7 or 8) and 'detractors' (a score of 0 to 6). The NPS is calculated by subtracting the detractors from the promoters and the final score can range from -100 to 100. The NPS for nib with members who attended surgeons involved in the BCPP is 71 (which is very high) as compared to a score of 31 for nib with members who attended non-BCPP surgeons. Likewise, the NPS for surgeons with patients who received care under the BCPP is 86 compared to non-BCPP surgeons' NPS of 77 with patients.

Role and current use of data analytics, including to support value based care and value base funding and contracting

Data collection and analytics in the public system and by PHIs

140. In the public system, the move towards value based care has been accompanied by a focus on the need for access to data and data analytics. As described in the NSW Health CBV Strategy 2021 – 2024 referred to in paragraph 129(f) above, the use of evidence and data is a principle pillar underpinning the move to value based care. Data is needed to plan, implement, evaluate and continuously improve the value based services.
141. Data analytics is used both to determine pricing and improve health outcomes in the public and private health systems.
142. Examples of the use of data analytics in the public health system include:



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- (a) the ACSHQ actively works with patients, carers, clinicians and various organisations (including private sector) to improve outcomes for patients by providing resources and publications about safety and quality measured in the health system. For example, ACSQHC's *Australian Atlas of Healthcare Variation Series*, which identifies rates of health care events and procedures at a population rate level by geography and identifies where significant variations of care occur, the possible reasons for it and actions to reduce unwarranted variation in clinical practices. The 2021 report highlights variation across a broad range of health issues from women's health and pregnancy through to surgical procedures, medication dispensing and chronic conditions. A copy of that report is at '**Annexure DD-45**';
- (b) there are various other registries operating in Australia which are aimed at providing benchmarking information to organisations and clinicians with the aim to improve outcomes for patients. These range from registries on hip fractures to diabetes, prostate cancer, and cardio thoracic surgery. The primary purpose of many of these registries is the benchmarking of key performance indicators to allow clinicians and organisations to set targets for improvement in their quality improvement cycles. They also generally publish annual or periodical reports with participating sites in a comparative de-identified format. The National Joint Registry measures the rates of revision of prostheses used for major joint replacements and identifies prostheses with higher than anticipated revision rates. This Registry also provides surgeons with their own outcomes for revision, relative to peers to allow them to understand and address any issues in their clinical practice which may be leading to adverse outcomes for patients. A report issued by the ACSQHC in 2016 describing the role of these clinical quality registries is at '**Annexure DD-46**'.

Data collection and analytics by PHIs

143. The Department of Health manages a number of hospital related data collections from public and private hospitals as well as PHIs. This data facilitates service evaluation and helps to inform decisions on health services. It describes the characteristics of public and private hospitals, non-admitted patient care, admitted patients and the care they receive in hospital, and elective surgery and emergency department waiting times.
144. All registered PHIs are required under the PHI Act and the *Private Health Insurance (Data Provision) Rules (Data Provision Rules)* to submit Hospital Casemix Protocol



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(HCP) data to the Department of Health, which includes clinical, demographic and financial de-identified information for privately insured admitted and non-admitted patient services. The inpatient data (HCP1) is collected monthly and the outpatient data (HCP2) is collected quarterly. The PHIs receive this data from public and private hospitals, who are required under the *Private Health Insurance (Health Insurance Business) Rules* to provide this information to the PHIs. These de-identified data sets are a valuable tool both for service evaluation and research for industry and government. Registered PHIs are also required under the PHI Act and the Data Provision Rules to provide de-identified data on general treatment dental services to the Department of Health. The data includes information on patient demographics, type of dental service, charges and benefits, and PHIs receive this information from dental service providers.

145. Other organisations separately collect data which is relevant to their medical speciality. For example, the Australian Rehabilitation Outcomes Centre (**AROC**) collects and publishes data about rehabilitation outcomes in both inpatient and ambulatory setting. The Private Mental Health Alliance has created the Centralised Data Management Service (**CDMS**) which collects and publishes data in relation to the private mental health sector. Neither the AROC or CDMS data is publicly available to PHIs but the data used by AROC is predominantly derived from the HCP data they already have access to.
146. A major limitation of small PHIs using data to move towards value-based contracting is the depth of data that individual small funds will have (rather than the quality or breadth of the data collected). That is, the ability to derive value from the quality data collected by funds through claims, HCP and member information is limited if the data is not statistically relevant. While the small funds receive equivalent data to the Major PHIs, because they have fewer customers, they do not have sufficient volumes of admissions to be able to effectively use this data to benchmark and determine the relative quality in the system. In comparison, Major PHIs can more readily infer from their higher volume of data alone the quality and value associated with the hospital and medical providers. Increasing the volume of available data facilitates better data analytics, which in turn facilitates a value based contracting model.
147. Examples of the use of data analytics by Major PHIs include:
 - (a) Medibank's Urology Surgical Variance Report, released in 2015, which used hospital and medical specialist claims data submitted to Medicare to analyse how many patients were required to be readmitted and reoperated on. The purpose of this report was to assist surgeons in understanding clinical variance across their



profession and improve their practice in line with their peers, as well as to help Medibank understand the spectrum of out of pocket costs being charged by these same surgeons.

- (b) Medibank's and the Royal Australasian College of Surgeons' (**RACS**) review of same-day surgery for hernia repairs, released in 2017, conducted a systematic literature review using Medibank's administrative data-set as well as clinical practice guidelines and published data from a range of countries to assess the nature of hernia repair surgeries and the suitability of having them as day procedures. The study allowed a number of recommendations to be made, including that patients having certain forms of hernia surgery can be managed as day patients.

Copies of these reports are at '**Annexure DD-47**' and '**Annexure DD-48**'.

Data collection and analytics by HH

148. HH currently provides nib with a range of data analytics services. It has also performed some limited data science services to other PHIs on an ad hoc basis. Its team of data scientists work in conjunction with artificial intelligence and machine learning platforms to deliver services which include predictive health care modelling, translational health assessments, proactive patient identification and targeting, predictive risk stratification, health cost predictions and supporting data warehousing, infrastructure, reporting and smart alerts. Presently, HH has the following data science capabilities:

- (a) applying machine learning algorithms which allow it to undertake predictive modelling and timeseries forecasting with respect to treatment approaches;
- (b) undertaking health assessments, whereby a retrospective case control methodology is used to measure the value delivered by clinical programs. This allows patients that have had a medical intervention to be matched and compared with equivalent patients who did not receive the treatment, producing important data about treatment effectiveness and measuring the relative savings or costs associated with the treatment;
- (c) adopting sophisticated targeting methodologies which help identify patients who will respond best to clinical interventions;
- (d) undertaking population insight analysis to identify areas of need by reference to historical admissions by procedure, ICD10 diagnoses (an international



classification of disease), and distribution of spend between membership and the subsequent claiming behaviour of each segment. HH is able to advise customers which members are at a higher risk of disease and who could benefit from interventions which may delay or avoid members having hospital admissions;

- (e) analysing health insurance data to predict the future avoidable healthcare cost per individual;
- (f) rolling out a modern survey platform which captures patient reported outcomes and experiences which can then feed back into the above analysis tools.

149. To support these data analytics, nib collect from medical specialists and hospitals and provides to HH de-identified claims and demographic data about customers. This includes claims information relating to hospitalisations, use of general treatment providers, medical claims, diagnosis and procedure information, gender, age (in years) and general location information (suburb and postcode). HH is then able to use this information to link the progressive claims and health outcomes of member across multiple interactions with the health care system including determining quality measures such as hospital acquired complications through to avoidable readmission to hospital.

150. Data analytics have enabled HH to conduct benchmarking across medical specialists including by measuring and identifying those medical specialists who when compared to their peers have:

- (a) higher hospital acquired complication rates;
- (b) higher conversion to critical care rates;
- (c) longer length stays;
- (d) higher charges for prosthesis items;
- (e) billed significantly more MBS items;
- (f) a significantly higher overnight versus day rate;
- (g) a lower inpatient rehabilitation rate; and
- (h) a higher rate of avoidable readmission.

151. This benchmarking data allows nib and HH to determine areas of low or no-value care including to assess and investigate medical specialists and hospital providers that

appear to have systematic negative outcomes with patients. For example, using benchmarking, HH has to date identified a number of medical specialists and hospital providers operating significantly outside the scope of national clinical averages, including:

- (a) a medical specialist with a 67% conversion rate to ICU after major joint replacement when the national average is 2.4%. This was raised with the hospital group and HH is continuing to work with them to remediate this behaviour. HH now holds quarterly meetings with the group and individual hospital, and are implementing more stringent contractual obligations to remove financial incentives for this conversion when not clinically indicated;
- (b) a hospital provider with a 50% readmission rate back to hospital for mental health within 28 days where the national average is 7%. Since HH began working with this provider and providing benchmarking against peer hospitals and public hospitals, they have been able to improve their discharge planning and support to reduce this rate to 19%;
- (c) a medical specialist with a conversion rate to in-patient rehabilitation rate of 85% when the national average is 40%.

152. In my opinion, identifying, understanding and addressing those issues will benefit future patients and is plainly in the best clinical interest of patients and consumers in general who contribute to subsidising this care through their insurance premiums.

153. Specifically in relation to rehabilitation, HH and nib currently use benchmarking to determine which hospitals and medical specialists are admitting patients with very high functional scores in independence to overnight hospital care for rehabilitation when these patients are indicated, through the Guidelines for Recognition of Private Hospital-Based Rehabilitation Services (**National Rehabilitation Guidelines**), as only requiring day program or outpatient care. A copy of the National Rehabilitation Guidelines is at '**Annexure DD-49**'.

154. This data is also used to assess the efficacy of rehabilitation care through the calculation of a Functional Improvement Measure (**FIM**) efficiency score. The score indicates the relative effectiveness of the treatment to improve the patient's function. An FIM efficiency score of 1 or better is considered good in that the patient has improved by 1 point on the FIM score system each day throughout the admission (on average). Using this data, HH and nib can understand which medical specialists are admitting patients who are unlikely



to receive a significant benefit from rehabilitation and how they are applying the care. This allows HH and nib to assess services against other medical specialists and adjust funding to encourage improved outcomes for patients by either not increasing funding when conducting future contract negotiations or, making an increase in funding in future contract negotiations contingent on improving the outcomes for patients.

155. In relation to rehabilitation, HH intends to continue to utilise these data capabilities to identify medical specialists that are referring patients to care that is not improving patient outcomes, assess the relative value of those specialists against other specialists and adjust funding to those medical specialists to encourage them to provide care that improves patient outcomes.
156. Specifically in relation to the BCPP, HH has been able to, on behalf of nib and in relation to the BCPP, target negotiations and spend more in respect of providers that are providing higher quality services.
157. More generally, using data analytics, HH has worked with medical specialists to improve outcomes for patients and the health system overall in the following practical ways:
 - (a) improving selection of patients for in-patient rehabilitation by better aligning with the National Rehabilitation Guidelines and its guidance around when overnight nursing care is required. This is achieved in partnership with the specialists through the introduction of standard clinical assessment tools (such as the Risk Assessment and Prediction Tool (**RAPT**)) to assess relative need for what type of rehabilitation is required by the patient, and thereby reducing the number of patients inappropriately assigned to high cost and avoidable in-patient care;
 - (b) reducing readmission rates for patients accessing mental health services by working with identified providers to implement improved discharge practices including better reintegration of patients back into appropriate community support services. This ensured that the discharge process met the requirements under the National Standards for Mental Health Services and Guidelines for Determining Benefits for Private Health Insurance Purposes. copies of which are at '**Annexure DD-50**' and '**Annexure DD-51**'.
 - (c) reducing ICU conversion rates post major joint replacement, having regard to best practice and data collected by HH which indicated that only a small proportion of patients should require intensive care post a hip or knee joint replacement (see report at '**Annexure DD-52**'). By identifying this, HH has been able to inform and



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contract with providers in such a way to improve unnecessary admittance of patients to the ICU;

- (d) reducing the number of double puncture procedures in cardiac services. A double puncture refers to where a patient undergoes a diagnostic interventional angiogram to determine if they have occlusions of their coronary arteries which require stenting. Delaying the stenting to a subsequent surgical procedure can increase the risk to the patient due to delay in intervention plus the associated risk of undergoing another surgical procedure. It also substantially increases the cost to the health care system (more than doubles the health care costs). The recent MBS review by MSAC identified and changed cardiac MBS items such that medical specialists are no longer eligible to be paid for the second procedure if it was not indicated to be done at a later time. These changes are summarised at '**Annexure DD-53**'. Using this reporting, HH have proactively identified to hospital provider groups which specialists have higher than average rates of delayed stenting. This has enabled these provider groups to raise this at medical advisory meetings at the relevant hospitals to ensure appropriate clinical indication exists for why these procedures were delayed.

Data transparency

158. In my opinion, one of the largest challenges facing improvement in health care in Australia is the lack of transparency of data on the outcomes and quality of care provided by medical specialists and other providers. Although various registries collect information about the clinical practices of medical specialists, this information is not discoverable by consumers. For example, consumers cannot see how many of a particular procedure a specialist has conducted (an accurate indicator of proficiency in undertaking that procedure), nor any clinical outcomes relating to the procedure. HH intends to improve access to this information not only for consumers, but importantly, to refers through platforms such as HH's GP Utility Tool.
159. By way of example, the National Joint Registry actively collects and holds information on all orthopaedic joint replacement surgery. This registry contains information that is relevant to a consumer, and to general practitioners who act as referrers, in choosing a surgeon for a joint replacement. This includes the revision rates of the surgeon in 1, 3, 5 and 7 years as well as other information relevant to the consumer. However, the consumer, and payers of health care, are not able to access this information. Similarly, the Department of Health collects and stores HCP data for all private hospital admission



at private hospitals in Australia. This data contains information such as the hospital acquired complication rates, conversion rates to intensive care, rehabilitation and other relevant quality information. This data is not made available to consumers who may be accessing services from a specialist or hospital and to whom the rates of infection, falls or complications are highly relevant when selecting their specialist and location of care. While PHIs can make this information available through their claims data, small funds are at a distinct disadvantage as they will not have sufficient admission data to allow them to determine issues on quality with hospital providers or specialists.

160. In addition, consumers are not readily able to access accurate information on the likelihood of the costs associated with medical procedure with the associated specialists. This places consumers at a distinct disadvantage in the selection of the best specialist for their financial situation including where they may be apprehensive to change specialists after already paying for an initial consultation with a specialist and the relative complexity of doing so.

161. HH has sought to increase transparency of data about pricing by releasing:

- (a) the Find a Provider tool, which provides information to customers about which medical specialists are within nib's network and the average out-of-pockets they may expect to pay with that specialist;
- (b) the GP Utility Tool which provides this information to the general practitioner through an eligibility check. This ultimately allows the general practitioner to confirm the level of coverage held by their patient as well as select the best specialist for their clinical and financial needs.

162. The Commonwealth Government has also released its own Medical Costs Finder tool which, at present, assists patients to obtain an estimate of how much their procedure is likely to cost. It is intended that this tool will eventually be expanded to include the costs of individual specialists, although that functionality is not yet available.

Data privacy

163. Health information is sensitive in nature and must be treated carefully. PHIs and health service providers are subject to strict privacy laws under the Commonwealth *Privacy Act 1988*, and relevant state-based health privacy legislation including the *Health Records Act 2001* (Vic), *Health Records and Information Privacy Act 2002* (NSW) and *Health Records (Privacy and Access) Act 1997* (ACT). The relevant Privacy Principles and



Health Privacy Principles in these Acts pertain to the collection, use, disclosure and protection of the security of health data. Specifically, in collecting and analysing patient data, nib and HH adhere to:

- (a) HH's Privacy Policy;
- (b) Data Governance Policy and
- (c) Information Security Management Policy.

A copy of these policies is at '**Annexure DD-54**', '**Annexure DD-55**' and '**Annexure DD-56**'.

164. When members take out private health insurance, they will generally provide their consent for their personal information to be disclosed by hospitals to PHIs, for PHIs to use this information to pay their members' claims, and to be sent promotional material from their PHI. In addition, where HH provides direct services which require identification of the member, the customer will first receive a call from nib gaining explicit consent for HH to contact them in relation to the health management program. Medical specialists operating under the BCPP, actively gain consent from the patient for HH to contact them to coordinate the BCPP.

PART D: The application for authorisation and the Proposed Conduct

The application for authorisation and the authorisation process

165. On 24 December 2020, the Authorisation Applicants jointly applied for authorisation from the ACCC under section 88(1) of the CCA for HH to form a joint buying group and provide contracting and related services to PHIs and other healthcare payers. A copy of that application is at '**Annexure DD-57**'.
166. On 8 April 2021, the Authorisation Applicants submitted an amended application. A copy of the amended application is at '**Annexure DD-58**'. This amended application responded to the ACCC's concerns around the HH Buying Group representing 100% of the national private health insurance market by narrowing the scope of the Proposed Conduct (as defined in the application) in relation to Major PHIs.
167. On 6 May 2021, the Authorisation Applicants submitted a further amended application. A copy of the further amended application is at '**Annexure DD-59**'. This further amended application limited the scope of the Proposed Conduct (as defined in the application)

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further such that the HH Buying Group was only allowed to represent a maximum of 80% of the national private health insurance market in relation to the BCPP.

168. The Authorisation Applicants described the 'Services' in their further amended application as:

'the provision of some or all of the following services by HH to some or all of the Participants collectively through the HH Buying Group, and the acquisition of those services by the Participants from HH, in relation to arrangements between the Participants and hospitals, medical specialists, general practitioners, allied health professionals or other health providers (Providers) for the funding of health services:

- (a) *contracting negotiations and drafting;*
- (b) *contract administration and management;*
- (c) *dispute resolution;*
- (d) *data analytics;*
- (e) *administration and management of medical gap schemes and the general treatment networks;*
- (f) *performance and compliance assessment of Providers;*
- (g) *any other service notified by HH to the ACCC.*

169. On 21 September 2021, the ACCC issued its final determination, authorising:

- (a) the formation and operation of a buying group (the **HH Buying Group**) by HH, including the BCPP, involving the provision of services to Authorised Entities; and
- (b) the acquisition of contracting services by Authorised Entities from HH;

(together the **Proposed Conduct**).

170. "Authorised entities" was defined in the determination to mean:

- (a) HH and nib;
- (b) PHIs except for the Major PHIs;
- (c) international medical and travel insurance companies;



- (d) government and semi-government payers of healthcare services such as workers' compensation and transport accident scheme operators, and the Department of Veterans Affairs scheme; and
- (e) any other payer of health services or goods other than a Major PHI, as notified by HH to the ACCC,

(in this affidavit referred to as **Participants**).

171. The Authorisation was subject to a condition that Major PHIs not join the HH Buying Group. The ACCC did not seek to prohibit HH from providing services directly to Major PHIs on an individual basis.

172. The ACCC authorised the Proposed Conduct for a period of five years.

Overview of the Proposed Conduct

The HH Buying Group

173. HH intends to negotiate a bilateral participation agreement with each Participant.

174. Participants will be able to opt to purchase some or all of the contracting services offered by HH. Major PHIs will be able to opt to purchase the BCPP services.

175. Membership fees will be set based on the size of the Participant (based on insured member numbers) to ensure that the relative costs are equitable between insurers of variant size. The fee for Participants will correlate with transactional costs so that any savings that arise as Participant numbers increase, would be distributed between Participants under the Participation Agreement through reduced fees.

176. Participation will be non-exclusive and Participants will be able to purchase some or all of the contracting services offered by HH. Certain programs will fall under per episode billing arrangements (such as the BCPP) and will be billed as a service to the PHI under a chronic disease management program. Other programs will be funded through a subscription approach with the amount paid relative size of the PHI's membership.

177. I anticipate that:

- (a) PHIs that currently outsource their contracting services to AHSA or ARHG are the healthcare payers that are most likely to join the HH Buying Group.



- (b) Major PHIs may be interested in joining the BCPP to supplement their internal contracting function.

The contracting services

178. The contracting services HH proposes to offer include:

- (a) contract negotiation and drafting;
- (b) data analytics;
- (c) contract administration and management services;
- (d) dispute resolution services (in relation to contractual arrangements);
- (e) management of customer complaints; and
- (f) performance and compliance assessment (reporting and oversight of parties' adherence to terms and conditions of contractual arrangements).

179. Broadly, HH proposes to offer those contracting services to Participants in relation to HPPAs, MPPAs with medical specialists, gap cover schemes and general treatment networks.

180. Given the issues that have arisen between the parties in this review, in this affidavit I describe only two aspects of the contracting services proposed to be offered by HH:

- (a) contract negotiation and drafting for medical specialists; and
- (b) data analytics.

181. The remaining aspects of the Proposed Conduct are described in the Authorisation Applicants' applications to the ACCC (see paragraphs 165 to 167) .

Proposed contract negotiation services

182. HH proposes to offer Participants contracting services for HPPAs, MPPAs with medical specialists, existing gap cover schemes and general treatment networks. In this affidavit, I describe HH's proposal for contracting services in relation to MPPAs with medical specialists only (and, where relevant, how this interacts with gap cover schemes).



MPPAs with medical specialists

183. HH proposes to extend the BCPP MPPA model it currently provides to nib (described in paragraph 84 above) to Participants. This means that, in relation to medical specialists, HH proposes to offer Participants contracting services that will involve initially extending the BCPP to Participants and ultimately expanding the BCPP to cover a broader group of medical specialists covering more types of treatments and geographical areas. This will involve:

- (a) HH using any existing MPPA for the BCPP the medical specialist has with nib as the base agreement for the HH Buying Group (with new contracts to be negotiated upon the expiration of those agreements and with medical specialists who do not presently have an agreement with nib);
- (b) HH aggregating and analysing Participants' claims data for medical specialists to establish benchmarks for quality of service, price and application of services;
- (c) when negotiating new contracts, conducting collective commercial negotiations with medical specialists based on this aggregated data and other information obtained from Participants;
- (d) negotiating one set of terms and conditions including price schedules, business rules for payment of benefits and quality and performance targets for all Participants for each MPPA with a medical specialist;
- (e) if the Participant and medical specialist are content with the negotiated terms, coordinating the execution of the MPPA between the Participant and the medical specialist (HH will not be party to the executed agreement in its own right).

184. If a Participant or medical specialist is not satisfied with the terms proposed, they may:

- (a) agree to a different set of terms and conditions to those proposed by the HH Buying Group independently or by HH acting as an agent for the Participant; or
- (b) negotiate directly to enter into an agreement independently of the HH Buying Group; or
- (c) not enter any agreement at all.



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185. For medical specialists, participation in the BCPP and contracting with the HH Buying Group will be entirely voluntary. Medical specialists who do not wish to enter or continue with an MPPA with a Participant may instead:
- (a) participate in that Participant's or HH's medical gap scheme (for those Participants who opt in to the HH medical gap scheme); or
 - (b) charge patients a gap fee and receive 25 per cent of the Schedule Fee from the insurer.
186. Participants cannot bypass or boycott medical specialists who decline to contract with the HH Buying Group.
187. Medical specialists who enter an MPPA with a Participant will not be prevented from offering healthcare services to other insurers, buying groups or healthcare payers that are not participating in the HH Buying Group or restricted in the terms and conditions on which they may choose to enter such agreements.
188. As I described in paragraph 85 above, nib and HH are currently extending the BCPP to cover more procedures with orthopaedic surgeons already participating in the BCPP. In addition, nib and HH presently plan to expand the BCPP to cover additional specialty areas and see clear opportunities to do so in respect of cardiac procedures, obstetrics, ENT, gastroenterology and vascular surgeries. Any extension of the BCPP to new specialist areas will involve negotiation with those specialists, including peak bodies representing those practice areas.
189. In relation to gap cover schemes, HH proposes to offer the existing gap scheme it manages for nib to other Participants. In the event of authorisation, it is HH's intention to replace that scheme with a new HH scheme with new terms and conditions. The membership for the HH Buying Group will be adjusted for Participants who elect not to join the HH gap scheme (e.g. Major PHIs only purchasing BCPP services).
190. The Authorisation Applicants intend that nib and any other Participants will maintain medical gap cover schemes (either independently or by opting in to a medical gap scheme to be negotiated collectively by HH as described above). HH does not propose that the BCPP will replace gap cover schemes. Rather, HH intends that the BCPP will be an additional option for medical specialists who choose to participate in it (for treatments that are covered by the BCPP), in circumstances where:



- (a) the BCPP is at present confined to a small number of procedures and will not cover all of the procedures and associated work that a participating medical specialist may undertake;
- (b) even for specialist areas covered by the BCPP is likely to cover a small proportion of total medical specialists practising in that area. For instance, at present only 17% of all hip and knee joint replacements for nib customers were done through the BCPP program in 2021. In contrast, gap participation rates for the remaining procedures was at around 70%. Based on these figures, the Authorisation Applicants envision that only up to 20% of orthopaedic surgeons will participate in the BCPP in any localised area;
- (c) to date, where participating medical specialists have performed procedures not covered by the BCPP they have continued to claim for these procedures under the nib Medigap program;
- (d) there is a range of medical speciality areas and treatments that are and are not likely to be covered by the BCPP and as such there will be a need for a gap cover scheme for at least those areas and treatments;
- (e) HH will approach the expansion of the BCPP to other specialty areas and procedures on a case by case basis in consultation with relevant medical specialists in the field;
- (f) finally, it is in PHIs' best interests for medical specialists to opt in to a gap cover scheme rather than charge their customers a gap fee and this is a clear disincentive from dismantling the gap cover schemes.

191. HH does not propose to reduce coverage under the gap cover schemes. Any reductions in coverage of the current gap scheme would have a detrimental impact on members and PHIs would be required to provide advance notice to members of this change. In my experience, this could result in policy holder lapse and damage to the insurer's reputation with both their customers and with medical specialists.

Proposed Data analytics services

192. HH will offer data analytics services as part of contract negotiations (as described in paragraph 178 above) but also on an ongoing basis to assess the performance medical specialists, hospitals and general treatment providers, and benchmark their performance against the aggregated data for the HH Buying Group.



193. As HH presently does for nib, using the data capabilities described in paragraph 148 to 157 above, HH proposes that data obtained from Participants about the performance of all medical specialists, hospitals and general treatment providers will be benchmarked against aggregated data across the HH Buying Group and used to analyse:
- (a) quality of medical specialist and hospital providers (including the rate of hospital acquired complications, length of hospital stay, unplanned readmission to theatre, conversion to ICU);
 - (b) compliance of medical specialist (including accuracy of claims, compliance with the contract terms and complaints);
 - (c) benefits paid to the medical specialist (including cost per episode against national peer groups, change in cost over time and cost variability reporting across the network);
 - (d) access to the medical specialist and other provider services (including network coverage and member access issues); and
 - (e) efficiency and value of treatment provided by the medical specialist, hospital and other providers (including quality scoring and ranking of value and efficiency against quality).
194. Again, as HH presently does for nib (described in paragraph 148 to 157 above), HH intends to collect and aggregate claims data and HCP data of Participants to establish benchmarks on the outcome of services in relation to both procedures and Diagnosis Related Grouping (**DRG**). This outcomes-based data would then be normalised and risk-adjusted for the variances in patient population (e.g. age, co-morbidities and demographic factors including gender) and a relative outcome scale established for each medical specialist at a procedure level. This would include quality data and information such as Hospital Acquired Complications as well as efficiency data such as bed days or use of MBS item numbers. Once the quality scoring is established, HH will be able to use this benchmarking to assign a relative value score to each specialist at a procedure or DRG level as well as an aggregated weighted average for the specialist.
195. Members of the HH Buying Group will be required to adopt HH's policies for privacy and data protection described in paragraph 163 above as a condition of participation in the HH Buying Group. As I described in paragraph 164 above, patient information can only be shared between HH and the medical provider with the patient's express consent.



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PART E: Benefits of the Proposed Conduct

196. In the following section of my affidavit I describe the following overlapping benefits of the Proposed Conduct:

- (a) offering an alternative to existing buying groups;
- (b) expanding the benefits of value based contracting to more PHIs and their customers;
- (c) extending the benefits of data analytics to more PHIs and their customers;
- (d) extending out of pocket costs savings for more customers;
- (e) costs savings and efficiencies for PHIs and hospitals and medical specialists;
- (f) countervailing hospital bargaining power.

197. I also describe the benefits of allowing the Major PHIs to participate in the HH Buying Group in relation to the BCPP.

Alternative to existing buying groups

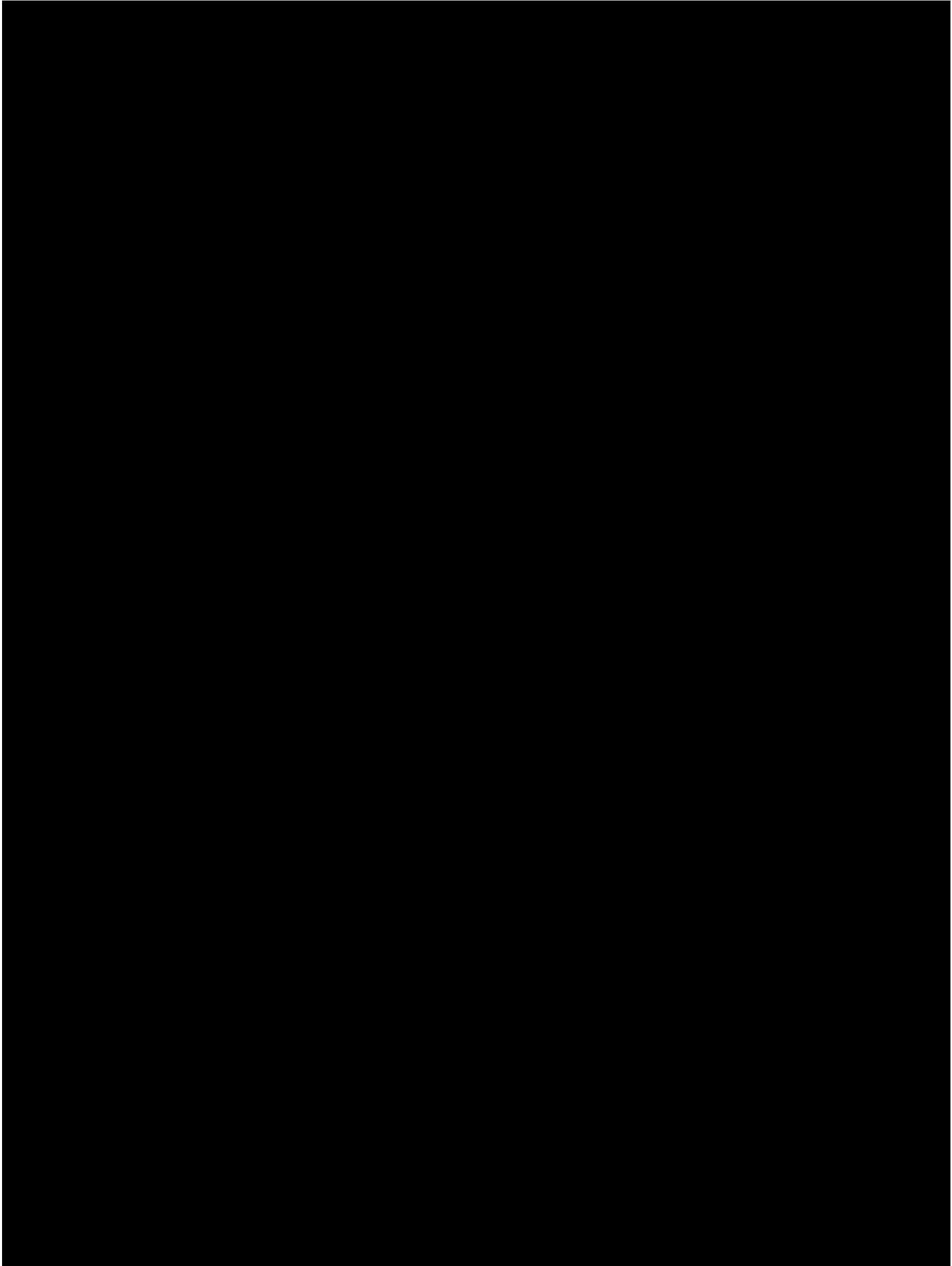
198. The HH Buying Group will offer an alternative to existing buying groups, AHSA and ARHG in four main respects:

- (a) offering an alternative contracting model that increases flexibility for Participants: see paragraphs 199 to 210 below;
- (b) offering value based contracting: see paragraph 211 below;
- (c) offering a greater range of medical specialist contracting than existing buying groups: see paragraph 212 to 214 below;
- (d) offering data analytics services not presently available in other buying groups: see paragraph 216 to 225 below.

Alternative to contracting model

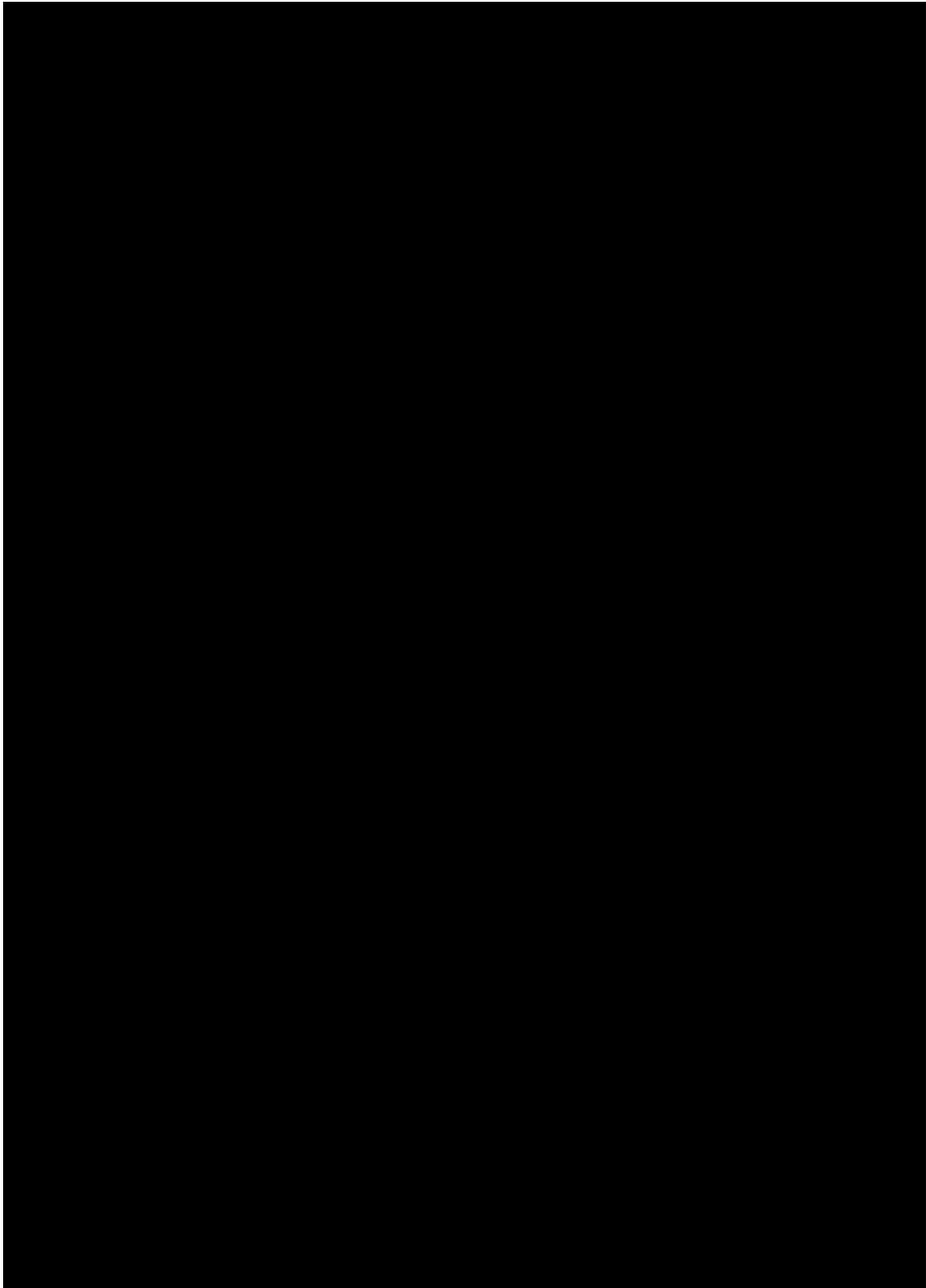
199. For smaller PHIs, including those in existing buying groups, the HH Buying Group will offer an alternative more flexible contracting model than the model offered by the AHSA.





Michael Lewis

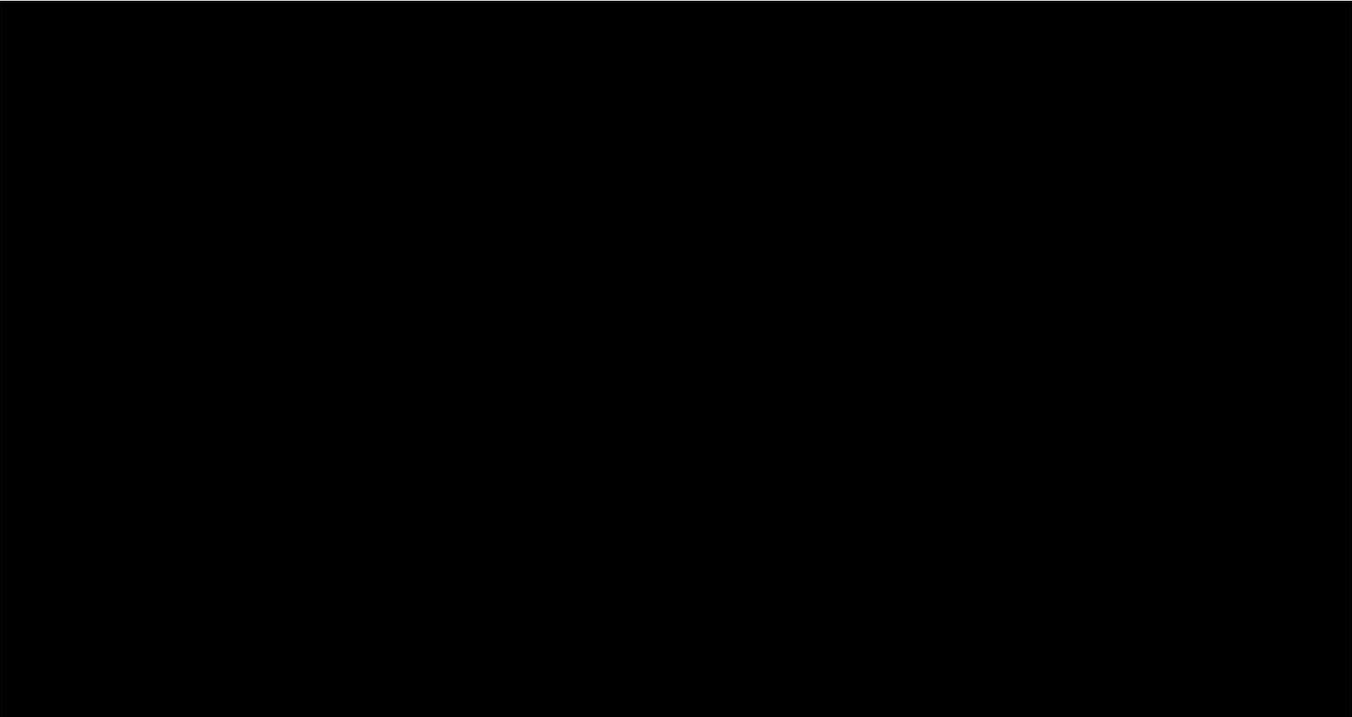
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Value based contracting model

211. The establishment of the HH Buying Group will extend HH's value based contracting model to Participants. This will:

- (a) create an alternative to the offerings of existing buying groups and Major PHIs;
- (b) extend the benefits of value based contracting to Participants and in turn to their customers.

Alternative value based contract offering

212. For smaller PHIs:

- (a) smaller PHIs do not have the scale and capabilities to achieve value based contracting of their own accord; and
- (b) existing buying groups do not offer a value based contracting model and in my opinion neither of the existing buying groups are capable of developing a value based contracting model because of the associated cost and requisite expertise required to establish these services.

213. For Major PHIs that do not presently offer value based contracting (see paragraph 91 above), it would take considerable cost and resources to establish these services.

214. For other Major PHIs, value based contracting is already utilised on a limited unilateral basis, as I described in paragraphs 88 and 89 above. However, the Authorisation



Applicants' model of value-based contracting will be superior to the value based contracting currently used by Major PHIs because of HH's technical data analytics capabilities and broader access to data as described in paragraphs 148 to 157 above.

Benefits of value based contracting

215. The benefits of value based contracting for PHIs are described in Part **C** above and include:
- (a) encouraging hospitals and medical specialists to provide and refer customers to services that are proven to improve health outcomes: see paragraph 127 above;
 - (b) facilitating adoption of new technologies or products that improve outcomes but that are not funded under the MBS: see paragraph 128 above;
 - (c) reducing costs for PHIs and other healthcare payers: see paragraph 128 above;
 - (d) in turn, exerting downward pressure on insurance premiums payable or quality adjusted prices: see paragraph 131 above; and
 - (e) offering an alternative of high value care with the certainty of no out of pocket costs for customers, without increasing costs for PHIs, Participants or hospitals, medical specialists or other providers.

Extending access to data and analytics

216. The establishment of the HH Buying Group will give Participants access to aggregated data from Participants and HH's data analytics capabilities described in paragraph 148 to 157 above. This will:
- (a) create an alternative to the data analytics offerings of existing buying groups and a superior offering to the data analytics of other PHIs;
 - (b) extend the benefits of HH's superior data analytics services to Participants;
 - (c) by increasing the amount of data available for analysis, help drive improved outcomes.
217. HH's analytical capabilities, applied to the aggregated data from all Participants, will give the HH Buying Group and its members significantly more information about the market, compared with the current data and analytics to which they have access. This includes the advanced analytics HH has developed on the quality of health care services



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associated with acute hospitalisations as well as the data science capabilities developed to normalise for patient complexity to understand the variability.

218. The establishment of outcomes data is complex by its nature and requires the establishment of outcome measures and quality based on relevant clinical and international literature, and the normalisation and risk adjustment of the patient population to ensure like-for-like comparison in the provision of services.
219. These data analytic capabilities are not currently available to most PHIs and the relative cost investment needed for this capability limits its access to the Major PHIs.
220. Smaller PHIs are restricted in their ability to access data analytics services as they do not have the management expense available to invest in the high cost of analytics and data science which can cost millions of dollars to acquire the requisite skills and experience as well as the associated cost of the infrastructure and technologies required.
221. Further, as I described in paragraph 146 above, the establishment of outcomes data requires the collection of sufficient data for statistical relevance. This is a difficult, if not exclusionary requirement for smaller PHIs. Smaller PHIs do not hold the requisite depth of data (due to their small market share) for more advanced data science matching models or machine learning. Ultimately, data science models require substantial amounts of data to 'train' the models and small funds do not have sufficient claims data to develop machine learning models. Without a significant volume of data to be used in the development of value and outcomes-based analytics, small funds are limited in their ability to identify, influence and improve performance or materially impact outcomes through negotiation given their relative market shares with any particular hospital, medical specialist or other provide.
222. Whilst presumably these smaller PHIs could rely on existing buying groups to aggregate and use the collective data of all participants of the buying group, to date existing buying groups have had limited to no involvement in this type of work due to:
 - (a) contractual terms prohibiting the sharing and analysing of information in this way (see paragraph 205 above); and
 - (b) the relative cost;
 - (c) lack of market pressures due to a lack of competitors with this capability.



223. The HH Buying Group would reduce the information asymmetry between Major PHIs and smaller PHIs by allowing the smaller PHIs to gain these same insights from the aggregated data of all Participants of a kind that they would otherwise not have access to and that to date have only been available to Major PHIs.
224. The benefit of access to this data analysis are described in paragraphs 148 to 157 above. In particular it will enable Participants to:
- (a) compete with Major PHIs more effectively;
 - (b) develop networks of providers who offer high value care including in geographic areas where Participants would otherwise have insufficient market share to develop such networks; and
 - (c) share with their customers information about the quality and value of providers, to enable customers to make informed choices about their healthcare.
225. The level of collection and aggregation of data proposed by HH is, in my opinion, essential to driving these benefits, because of the lack of transparency of data on the outcomes and quality of care provided by medical specialists.

Extending the no gap experience to more customers

226. The establishment of the HH Buying Group will give Participants access to the BCPP and allow the BCPP to be expanded to cover more specialists and treatments. This will extend the benefits of no gap experience of the BCPP to more customers. As I described in paragraph 76 above, uncertainty about gap payments is a key concern for consumers, and, as described in paragraph 137 above, the benefits of the BCPP have been recognised by nib's customers.
227. As set out in paragraph 78 above, existing gap cover schemes do not guarantee a no gap experience to customers, because they allow specialists to charge a 'known gap fee' and/or because certain specialists involved in the treatment may choose to opt out of the scheme on a patient-by-patient basis. This scenario does not occur under the BCPP, where each of the medical specialists involved in the treatment would be required to provide a no gap experience to the customer, as I describe in paragraph 86 above.
228. By creating a complete no gap experience for customers, I estimate that for a customer undergoing a hip or knee joint replacement, the average cost saving in out of pocket costs is upwards of \$1,850, based on the average out of pocket cost charged to a nib



member for these services was prior to the implementation of the BCPP with the participating specialists.

229. In 2020 and 2021, a total of 1,380 joint replacements were conducted through the BCPP and the resultant savings to nib customers during this period was approximately \$2.5 million. The average annual total savings to nib customers to date under the BCPP is approximately \$1.4 million.
230. As I described in paragraph 226 above, by offering the BCPP to Participants, it will be made available to the customers of those Participants, enabling those customers to access the benefits of the no out of pocket experience.
231. As I described in paragraph 226 above, HH proposes to extend the BCPP to cover more specialists and treatments. The establishment of the HH Buying Group will facilitate this expansion because specialists will be increasingly incentivised to participate in the BCPP, the more PHIs that are involved. In addition to creating more opportunities for customers to have a complete no out of pocket cost experience, if the BCPP is extended to other procedures which attract significant out of pocket expenses (such as urology for radical prostatectomy), I estimate that savings for customers will be even higher than those presently available to customers under the BCPP.

Cost saving and increased efficiencies

232. The HH Buying Group will create costs savings and increase efficiencies in the following ways:
- (a) savings and efficiencies for Participants not having to negotiate individually with medical specialists;
 - (b) reducing administrative costs for medical specialists;
 - (c) efficient establishment of new models of care.
233. First, any PHI seeking to undertake medical specialist contracting services themselves would require significant investment to engage a team both large and capable enough to undertake the requisite services and to provide the requisite analytics and systems to support the development of a national network. Negotiations with medical specialists for a program like the BCPP require a significant investment of time and resources. This process is particularly complicated because of the large number of contracts required, the diversity in the range of medical specialities and treatments to be covered as well as



the required customisation of agreements to meet the specialist's specific needs around models of care and payment. Based on my experience, I would estimate that the level of capital investment required to undertake these services would be in the range of \$1 million to \$1.5 million. This estimate is given by reference to the cost of developing the BCPP, as well as the cost of employing staff and developing technology to support it. As HH is currently undertaking this function for nib, the marginal cost of HH undertaking the function for each Participant would be low.

234. These efficiencies can be realised for PHIs that are already part of the AHSA or ARHG buying groups that switch to the HH Buying Group. HH modelling suggests that the participation fee for the HH Buying Group will be competitive with the AHSA's or ARHG's membership fees and would provide a broader scope of services particularly in relation to data analytics and medical specialist contracting. In any case, the HH participation fees would be substantially lower than establishing and running an effective internal contracting function. The basis of the modelling undertaken by HH in comparing the competitiveness of the participation fee for the HH Buying Group with other buying groups is at **Annexure DD-60**.
235. Secondly, it will simplify billing processes and thereby reduce administrative costs for medical specialists, by using consistent contracts, rates and billing rules for Participants who opt into the BCPP. The ongoing setup, management and coordination of variant models of care from providers with PHIs is administratively burdensome and complex. Having fewer contracts with standard terms and conditions allows providers to provide consistent and singular models of care. Additionally, their billing teams and billing agents have consistent terms and conditions to bill against. This ensures significantly lower administrative costs to providers in managing consistent funding arrangements with several contracts rather than individual contracts with different rates and terms across different PHIs.
236. Thirdly, it will enable medical specialists to introduce and establish new clinical practices efficiently by ensuring a sufficiently high volume of customers are funded for the same models of care. In my experience, the development of new medical models of care takes on average between 1.5 to 2 years. This time is needed to adequately engage and co-design the appropriate models of care with medical specialists, develop appropriate funding models, establish support networks and to test and pilot the programs. From this point, subsequent growth of the network for the model of care can vary greatly. However, on average, from commencement of discussion to the successful execution of a MPPA



with a specialist, takes approximately 3 to 4 months. While the requirements of specialists is completed concurrently, the development of this type of network is costly and resource intensive due to the customisation of each MPPA to match the care model delivery of the individual specialist. Empowering the HH Buying Group to build these models of care and expand their networks on behalf of a number of PHIs will see a more efficient establishment of new models of care.

237. For PHIs, administrative cost savings are passed on to consumers, either because PHIs are not required to increase insurance premium increases to cover higher administrative costs, and/or are able to offer more or better services to customers for the same price.

Countervailing hospital bargaining power

238. In my experience, certain hospitals or hospital groups have strong bargaining power relative to PHIs both when negotiating the fee arrangements under HPPAs and whether they choose to enter into HPPAs at all. This is because of:
- (a) their size and national network, location and/or reputation (for example, some of the smaller private hospitals have an “iconic” status or reputation, or are the only accessible hospital for particular regional or remote communities) which means PHIs must have agreements with them to attract and keep customers;
 - (b) the relative immediate risk that sits with the PHI should there be a termination event between a PHI and a large hospital group. This is due to several factors. Most notably, due to the transitional arrangements, the hospital’s revenue is protected and guaranteed under the current HPPA for at least 3 months after the termination date and up to 9 months post the termination date for some services. This means that, while the hospital faces no immediate consequence to the termination in relation to revenue, the PHI will face (due to media coverage and actions from the hospital group to encourage patients to switch to other funds) an immediate negative impact on customer sales, increased lapse of existing customer from the fund and negative brand association in the media. This disproportionately transfer the risk to the PHI during the first 6 to 12 months of a termination notice being issued;
 - (c) an additional consideration is that for the hospital provider, the impact of not having a contract with the PHI is significantly de-risked due to the ‘second tier default benefits’ (see paragraph 94). Under this arrangement the hospital is still guaranteed 85% of the average rate paid by the PHI to that hospital type in that



state. This, in combination with the hospital providers ability to charge an out-of-pocket cost to the member when they are second tier, once again significantly reduces the relative risk to the hospital provider. These factors serve to significantly, and disproportionately, favour the hospital in negotiation and allow them to achieve rates which are substantially higher than would be seen in a normal efficient free market; and

- (d) the option of 'second tier default benefits' provides an alternative for hospitals who do not wish to agree to HPPA terms and conditions offered by PHIs. As the second tier rates are a calculated average with a 15% discount, this means that many small hospital providers can achieve rates more than sufficient to provide a profitable service while not facing the obligations on that would be otherwise imposed by the PHI through a HPPA. As the large hospital providers are able to disproportionately elevate the price in the market, as explained in (b) above, this inflation of the average price is more than sufficient for hospital providers to have no requirement to enter into a HPPA to achieve viable and profitable rates from PHIs.

239. Hospitals with strong bargaining power can and do charge higher prices under an HPPA for the same procedures provided in other hospitals, without any commensurate increase in value for the customer. Two examples of this are procedures for cataracts (MBS item 42702) and oocyte retrieval (MBS item 13212) where the median cost charged by large hospital groups is 181% and 149% of the national median cost respectively. The fees charged by Adventist HealthCare Limited, Ramsay Healthcare Ltd, St John of HealthCare Ltd and Healthscope Pty Ltd (each of which holds a substantial market share) are consistently higher than their counterparts for the same procedure. A series of graphs which detail the average fee charged by different hospital providers for the same procedure are at '**Annexure DD-61**'.

240. By increasing the level of direct value based contracting with medical specialists, the Proposed Conduct incentivises hospitals with strong bargaining power to compete on price (which they are otherwise under no obligation to do). If hospitals are not price competitive, they will risk losing medical specialists to better-value hospitals (because under a value based contracting model, HH can incentivise medical specialists with higher fees for conducting procedures at more cost-effective day hospitals or hospitals that agree to models of care which can proactively reduce the length of stay of an admission while maintaining or improving the outcomes for patients).



Benefits of including Major PHIs in the HH Buying Group for the BCPP

241. The inclusion of Major PHIs in the HH Buying Group will allow HH to extend the BCPP to a broader group of customers, treatments, and geographical areas.
242. First, the participation of one or more Major PHIs in the BCPP would increase the volume of customers able to be serviced under the BCPP and thereby encourage more medical specialists to participate in the BCPP.
243. I have been informed by surgeons currently participating in the BCPP that they would prefer if the program applied to a broader range of customers and treatments to enable a more significant volume of work across the procedures they conduct as this would simplify their practice and standardise the model of care to be the same for all patients. They also see value in having referring doctors become aware that multiple (or ideally all) funds are covered under the BCPP and hence that all patients can have certainty on access to home based recovery and complete financial certainty on a no-gap experience.
244. In my opinion, some medical specialists may be deterred from participating in the BCPP if it does not cover a broad group of customers or treatments. This is because of the time and effort for the medical specialists in establishing a model of care that may only apply to 1 in 10 of their patients. This makes it difficult for the practice and surgeon to implement the care pathways into their normal clinical practice as the service is an outlier (in that it only applies to a small number of patients). It is also a barrier to establishing new models of care, if insufficient funding will be derived from this to pay the ongoing costs of running the model of care incurred by the specialist and their practice. For example, if a specialist wishes to employ a dietician to assist in the conservative management of patients who need weight loss, then the surgeon will require sufficient funds paying for this model of care to be able to afford the ongoing investment and labour cost associated with the model of care.
245. Generally speaking, we believe at least 20 per cent of a specialists' patients are required to be covered by a funding mechanism to allow the specialist to viably manage a model of care specific to the fund. My experience is that, due to this issue, areas where nib holds less than 15 per cent market share are significantly more difficult to establish the BCPP program. Based on this, the inclusion of a Major PHI would bring sufficient volume nationally (when combined with nib) to substantiate any models of care a specialist may want to run.



246. For customers of Major PHIs that do not have a program equivalent to the BCPP (see paragraph 91 above), this would allow also them to access the benefits of the “no gap experience” for an entire episode of treatment described in paragraph 84 above.
247. Second, Major PHIs have the financial resources and systems in place to design new models of care and help facilitate the expansion of the BCPP to other speciality areas as appropriate. This can be seen in the work undertaken by Medibank with Nexus Hospital to develop and implement the ZOOP model of care. Generally speaking, large PHIs have sufficient resourcing to invest in the clinical development of new models of care (as an example they employ Chief Medical Officers which small PHIs cannot afford) as well as sufficient relevance in market share to make it compelling to medical specialists to enter into arrangements and develop models of care that involve additional work.
248. For medical specialists, the inclusion of a Major PHI in the HH Buying Group for the BCPP may lead to higher fees payable under the BCPP. This is because medical specialists generally earn more in fees under medical gap schemes with Major PHIs other than nib (see paragraph 77 above). To attract those medical specialists to participate in the BCPP rather than the gap cover schemes, HH would need to increase the fees payable to medical specialists above the fees payable under the Major PHI’s gap cover scheme.
249. Major PHIs either already operate no gap experiences (see paragraph 88 to 89 above) or have the resources to act unilaterally to develop no gap experiences similar to the BCPP.
- (a) Major PHIs that do not presently have a program equivalent to the BCPP may join the HH Buying Group to access the BCPP. Presently, in my view, at least one Major PHI would find joining the HH Buying Group for the purpose of accessing the BCPP as an attractive option. This would save the time and resources required to establish and manage a comparable program and negotiate with participating medical specialists. As noted in paragraph 111 above, I estimate that the cost of setting up and managing an equivalent program would cost in the millions of dollars to establish the relative requisite expertise, systems and process as well as develop and implement models of care with specialists. Rather than outlaying those costs, they would pay HH a fee for the coordination of the service.
- (b) I expect Major PHIs that do have a program equivalent to the BCPP are likely to continue to conduct these functions internally and compete against the HH Buying Group. However, some Major PHIs may choose not to expand their existing



programs and instead join the HH Buying Group to access an expanded BCPP. For instance, those Major PHIs may continue their programs in some regions and use the BCPP in regions where they do not hold as much market share or cannot establish their own programs.

250. As described in paragraph 49 above, any cost savings by PHIs are likely to result in reduced premium increases for consumers.

PART F: Concerns raised about medical specialist contracting and data analytics

251. In this section of my affidavit, I address some of the concerns raised by the Applicants about HH's proposed model of medical specialist contracting and data analytics, specifically in relation to:

- (a) clinical independence;
- (b) clinical targets;
- (c) clinical guidelines;
- (d) benchmarking;
- (e) patient confidentiality; and
- (f) confidentiality of the MPPA.

Clinical independence

252. As an overarching principle, the Authorisation Applicants cannot legally, and do not intend to, interfere with the clinical decision making of medical specialists.

253. I described the legal obligations protecting clinical independence in paragraph 113 above. Those obligations are expressly acknowledged in: cl 10.2 of the MPPAs which will form the basis of collective negotiation by the HH Buying Group with medical specialists in the BCPP. The MPPAs create no legal obligation to act otherwise than in accordance with medical practitioner's clinical judgment. In addition, those MPPAs contain terms expressly requiring clinical autonomy to be maintained. This includes terms requiring providers to provide services in accordance with:

- (a) professional standards: cl 7.1(b) and 5.1;
- (b) best clinical and industry practice: cl 7.1(c);



- (c) applicable Medicare guidelines: cl 7.1(d);
- (d) what is clinically appropriate: cl 7.1(e), cl 7.1(g) and Schedule 2.

A copy of the MPPA is at '**Annexure DD-62**'.

- 254. Fundamentally, the concept of value based care on which HH's contracting model is based is, as I described in Part C above, based on achieving better outcomes for the patient. It is fundamentally inconsistent with value based contracting to achieve worse health outcomes for patients.
- 255. Under the BCPP, HH does not interfere in the clinical decision-making of the medical specialist. For instance, the medical specialist is not required to seek approval from HH before providing care.
- 256. The payment of fees for the performance of the obligations under the BCPP is intended to incentivise medical specialists to provide clinically appropriate high value care. As I explained in paragraph 126 above, medical specialists already have an incentive under the fee for service model to provide more and higher funded treatments to obtain higher fees.

Clinical targets

- 257. The current BCPP MPPAs include targets for the percentage of patients receiving rehabilitation at home: clause 7.1(b) and 5.1. This is because best practice demonstrates that a small percentage of people require hospital admission for rehabilitation following the surgery. The FIM data, submitted as part of the mandatory data submission to PHI from hospitals in the HCP data submission also supports this position. The vast majority of admission to inpatient rehabilitation in this data set indicated no clinical need for overnight nursing care, a requirement of the National Rehabilitation Guidelines. Including the target ensures that PHIs and medical practitioners are aligned about what represents good value practice.
- 258. The "target" rate for inpatient rehabilitation of 30% was set at slightly below the existing average rate of 33%. As I describe in paragraph 134 above, the average rate of inpatient rehabilitation has now reduced to 13% of patients overall for BCPP surgeons.
- 259. The clinical targets do not provide a financial incentive. The MPPAs currently underpinning the BCPP do not provide for a change to the fees paid to the doctor depending on an outcome. Medical specialists are paid the same amount regardless of



whether the patient is referred to in hospital or at home rehabilitation. Medical specialists are paid the same regardless of whether targets are met and no financial or other penalties are imposed on specialists who do not achieve such targets.

260. If a medical specialist did not comply with the condition, the PHI may consider whether to continue the MPPA. This is because should the additional cost of paying the specialists more not be offset by efficiencies in other care delivery, then it would not be viable for the programs to continue.
261. The targets are expressly subject to the medical specialist's determination of what is in the best clinical interests of patients and the medical specialist would not comply with the MPPA if the specialist provided treatment that was not clinically appropriate. In my view, clinical targets are not inconsistent with clinical independence or the best interests of patients. To the contrary, clinical targets are intended to encourage the specialist to achieve higher value care, which, for the reasons I describe in Part F above, is consistent with the best interests of patients.
262. In my experience, clinical targets are commonly imposed on hospitals and medical specialists. For instance, in hospitals a range of measured targets including in relation to hospital acquired complications, and access to preventative care to avoid hospitalisation are routinely measured. For example, ACSQHC sets a minimum compliance target that 80% of hand hygiene 'moments' (i.e. washing hands before and after touching a patient) be conducted when deemed necessary in hospitals. A copy of the latest audit report is at '**Annexure DD-63**'.
263. When expanding the BCPP to new specialty areas, HH proposes to include clinical targets in MPPAs that are negotiated and agreed with relevant medical specialists practising in that area and that constitute high value care for that procedure.

Clinical Guidelines

264. The current BCPP MPPAs include requirements for medical specialists to follow clinical guidelines for the purpose of nib administering and paying claims (see clause 10.3).
265. In my experience, clinical guidelines are a standard feature of medical specialist practice (see for instance, the clinical guidelines I have referred to in paragraph XYZ above). In general, clinical guidelines are intended to promote best practice care, they are not intended to substitute clinical independence.



266. The purpose of this requirement in the existing MPPAs is to ensure that, if for the purposes of rehabilitation after joint replacement surgery, the customer is eligible for MBS-funded chronic disease management program or hospital substitution program, providers comply with any clinical guidelines of those programs.
- (a) A hospital substitution program allows patients to receive medical services in their home rather than being admitted to hospital and avoid in-patient costs associated with hospital treatment. The determination of which patients are eligible and discharged home is based on the clinicians judgment and augmented with standardised clinical assessment tools such as the Risk Assessment and Prediction Tool (**RAPT**) which predicts the type (if any) of rehabilitation required by a patient post major joint replacement.
- (b) A chronic disease management program (**CDMP**) is aimed at managing patients with chronic disease who require ongoing care from a multidisciplinary team and who are diagnosed with one or more chronic condition. The CDMP program does not stipulate any form of clinical pathway but rather requires that care plans be in place, the patient be aware of and have agreed to these and that scheduled follow up with the surgeon are held.
267. If medical specialists do not comply with the clinical guidelines of those programs, nib cannot pay benefits in respect of the services.
268. At present there are no specific clinical guidelines that surgeons participating in the BCPP are required to follow.
269. nib has required surgeons to use a RAPT form in the decision process for what post-operative care is appropriate for the patient. This form allocates a score to a patient based on a number of factors including their age group, gender, average walking distance, level of community support and carer availability. For example, a score below a 6 will warrant extended inpatient rehabilitation whereas a score above a 9 will indicate the patient may be discharged directly home. A copy of this form is at '**Annexure DD-64**'
270. The outcome of this assessment is directional, and it remains the surgeon's responsibility to refer the patient to the appropriate care they deem is required post-operatively. This may take the form of in-patient rehabilitation, rehabilitation in the home or the patient managing their standard post-operative care through assigned exercises from the surgeon independent of any support.



271. The Authorisation Applicants do not propose to apply guidelines for the treatment of patients which are formulated by any organisation other than a recognised specialist body representing that area of medical specialisation.
272. The Authorisation Applicants are willing to guarantee that no contract negotiated with, or offered to, individual medical specialists will require them to have regard to any clinical or treatment guidelines formulated by any organisation other than a recognised specialist body representing that area of medical specialisation or that otherwise in the clinician's reasonable opinion, have the likely effect of interfering with the clinician's reasonable independent assessment of the ideal treatment of each patient.

Benchmarking

273. As set out in paragraph 193 above, the Authorisation Applicants propose to use data collected from Participants with HH's data analytics to perform benchmarking.
274. In my experience, benchmarking of providers is a standard and effective approach commonly used in health care to improve outcomes. It is recognised as a core aspect of quality improvement to identify macro trends and understand areas of concern or improvement in health.
275. The collection, reporting and benchmarking of data on patient outcomes is not uncommon in the health care industry, as I described in paragraph 142 above.
276. The Authorisation Applicants do not intend to use benchmarking in the treatment of individual patients. Rather, the use of benchmarking enables PHIs to assess and investigate providers that appear to have systematic negative outcomes with patients, as I described in paragraph 151 above. Benchmarking these kinds of outcomes is, in my opinion, clearly in the best interests of patients.

Patient confidentiality

277. I describe the provisions in place to ensure informed consent and confidentiality of customer data in the HH Buying Group in paragraph 164 above. In my experience, the policies adopted by HH provide reflect a best practice approach to privacy and data governance.
278. Pursuant to the terms of the policies listed in paragraph 163:



- (a) patient information can only be shared between HH and the provider with the patient's express consent; and
 - (b) patients cannot be contacted by HH without their consent.
279. Under the MPPA, providers are obliged to obtain informed consent from the patient for the disclosure of data: see cl 19.4 of the MPPA.
280. The Authorisation Applicants presently have in place a 'Mental Health Hospital Support Program' for patients who have recently had a hospital readmission.
- (a) Using deidentified data, HH uses data algorithms to construct a list of deidentified patients who have recently had a hospital readmission for mental health.
 - (b) HH supplies the list to nib who reidentify the patient and contact them to invite them to participate in the program.
 - (c) If the patient expressly consents to participating in the program, their contact information is supplied to HH and a registered nurse with specialist training in mental health employed by HH then contacts the patient to initiate the program.

Incentivising hospital discharges and at-home rehabilitation

281. It is accepted clinical practice for surgeons post-surgery to determine, in collaboration with their patients, whether rehabilitation is required and whether it should occur in an inpatient setting. Where a decision is made for the patient to be referred to RITH, the rehabilitation continues to fall within the scope of the acute surgical admission and does not constitute a new episode of care that a separate MBS item number must be billed for. In those circumstances, the patient undertaking RITH will remain under the direct clinical supervision of the admitting surgeon and has access to the surgeon, allied health staff and nib health facilitators when and as required. The application of these services as part of the acute surgical admission is evidenced in the claims data for orthopaedic joint replacement surgeries.
282. As noted in paragraphs 266, where rehabilitation forms part of the acute surgical admission, PHIs will fund these at home rehabilitation services either as part of the chronic disease management or hospital substitution program.
283. Hospitals do not have a financial incentive to refer patients to third parties to receive at-home rehabilitation or to provide this service themselves as they are generally paid by health insurers per day that a patient is admitted at the hospital. Hospitals have a



significant financial interest to refer patients to inpatient rehabilitation as a substantial proportion of benefits paid for an episode of inpatient care can be attributed to inpatient rehabilitation.

Confidentiality of the MPPA

284. The MPPA requires that the medical specialist regard its terms as confidential and not disclose the contents of the MPPA or information acquired by a party as a result of the MPPA other than in specific circumstances. This is intended to prevent disclosure of the terms of the MPPA to nib's competitors. It is not intended prevent a specialist from disclosing the existence of the MPPA to patients.

PART G: 10 year authorisation period

285. The Authorisation Applicants applied for a 10 year authorisation period on the basis that this would enable the Authorisation Applicants to fully realise the public benefits of the Proposed Conduct.

286. Most MPPAs and HPPAs have a three year term and, in some instances, have a term of up to five years. Although benefits will be realised throughout the contracting cycle, allowing for authorisation a period encompassing at least two contract cycles would allow medical practitioners adapt their care to improve outcomes and/or efficiency.

287. Broadening the BCPP to expand geographically and include different treatments will also require a significant investment of time. HH will be required to undertake planning, analysis and negotiations with potentially hundreds of medical specialists. I estimate that this process could take up to five years to complete and achieve sufficient scale. The current program and scale for 20% of joint replacements has taken over 2 years to achieve.

288. A period of 10 years also promotes greater certainty for Participants to invest in the HH Buying Group, particularly for smaller PHIs switching from an existing buying group.

289. Ultimately, the public benefits of the Proposed Conduct will continue to build over time. In my view, in light of the above considerations, a period of 10 years would be the most desirable and would maximise public benefits in the short and longer term.

PART H: Conduct with and without authorisation

With authorisation



290. If the authorisation is granted HH would have the option of offering all of its services to smaller PHIs and other healthcare payers on a collective basis and the BCPP to Major PHIs.
291. In my view:
- (a) some members of existing buying groups would likely join the HH Buying Group and acquire some or all of the services offered by HH;
 - (b) one or more Major PHIs would likely join the HH Buying Group and acquire the BCPP services offered by HH;
292. In relation to medical specialist contracting:
- (a) medical specialists will negotiate collectively with the HH Buying Group;
 - (b) MPPAs with medical specialists will include both price and non-price terms of the kind currently included in the MPPAs for the BCPP;
 - (c) medical specialists will have the option of:
 - (i) entering into MPPAs with Participants;
 - (ii) participating in the BCPP;
 - (iii) participating in HH's or the Participants' medical gap schemes;
 - (iv) charging customers a gap fee determined at their discretion.

Without authorisation

293. If authorisation is not granted, HH intends to:
- (a) continue to provide the services it currently provides to nib;
 - (b) not engage in collective bargaining on behalf of other PHIs;
 - (c) will not provide the proposed services to individual PHIs other than in relation to the BCPP and general treatment networks;
 - (d) in relation to the BCPP, will offer to negotiate BCPP contracts for individual Major PHIs on a one on one basis, but will not be able to collectively bargain for those services, or share data and analytics across participating Major PHIs. HH is very unlikely to offer the BCPP to the smaller PHIs because the existing buying groups



already provide medical contracting services such as the medical gap scheme arrangement and are likely to be prevented under the terms of their agreement with the existing buying group from engaging other providers.

294. If authorisation is not granted, it is likely that:

- (a) Major PHIs would continue to undertake contracting services internally;
- (b) existing buying groups would continue to act on behalf of other PHIs.

295. In relation to medical specialist contracting:

- (a) medical specialists would negotiate separately with HH, Major PHIs and existing buying groups;
- (b) HH and Major PHIs will continue to engage in value based contracting, where MPPAs with medical specialists will include both price and non-price terms such as clinical targets and guidelines;
- (c) medical specialists will have the option of:
 - (i) entering into MPPAs with PHIs;
 - (ii) participating in the BCPP;
 - (iii) participating in HH's and or other PHIs medical gap schemes;
 - (iv) charging customers a gap fee determined at their discretion;

296. HH will not offer hospital contracting services to other PHIs. HH does not consider it economically viable to negotiate HPPAs on behalf of individual PHIs without leveraging nib's existing negotiated rates and HPPAs. HH would need to establish a national hospital network for each small PHI which would involve large transactional costs to negotiate with hospital groups or individual hospital to enter into the HPPAs. This would require HH to agree to, and manage, a separate suite of HPPAs for each of the small PHIs.

297. HH may offer to establish general treatment networks on behalf of individual PHIs (other than Major PHIs who administer their own general treatment networks) and an independent standard set of rates and terms to each insurer in relation to their arrangements with extras providers. These general treatment network services are not currently offered by the AHSA or ARHG. The establishment of a general treatment



network may be more viable economically than a hospital network as the rates and terms are not negotiated with the extras providers. However, there are still substantial costs involved as it would require engagement with the extras providers to register them with the general treatment network and with the ongoing management of the network. HH has not assessed whether this offering would be financially viable.

Affirmed by the deponent
at Newcastle
in New South Wales
on
Before me: 13 June 2022

)
)
)
)
)



Signature of deponent

AR

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

This affidavit and the exhibits thereto were signed and initialled electronically and the deponent took the oath or affirmation before me via an audio-visual link pursuant to sections 18A, 25, 26 and 27(1A) of the Oaths and Affirmations Act 2018.

COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-4

This is the Annexure marked "DD-4" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.



STATISTICS

Quarterly private health insurance statistics

December 2021 (released 2 March 2022)

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Forthcoming issues

This publication will be released according to the timetable published on the APRA website.

Revisions

This publication will include revisions to previously published statistics if better source data becomes available or if compilation errors are uncovered.

APRA regularly analyses past revisions to identify potential improvements to the source data and statistical compilation techniques, in order to minimise the frequency and scale of any future revisions.

Rounding

Details on tables may not add up to totals due to rounding of figures.

Enquiries

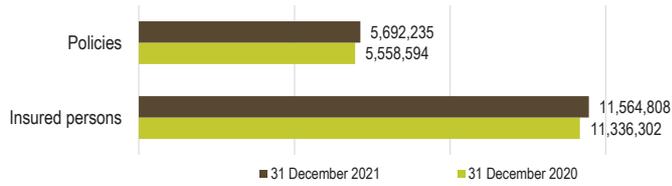
For more information about the statistics in this publication:

DataAnalytics@apra.gov.au

Manager, External Data and Reporting
Australian Prudential Regulation Authority
GPO Box 9836
Sydney NSW 2001

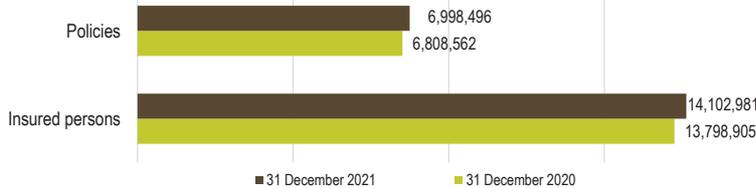
Key metrics

Hospital treatment membership



44.9% of population at 31 December 2021
 ↑ **0.2%** percentage points from 30 Sep 2021
 ↑ **58,459** insured persons over the quarter

General treatment membership



54.7% of population at 31 December 2021
 ↑ **0.3%** percentage points from 30 Sep 2021
 ↑ **79,088** insured persons over the quarter

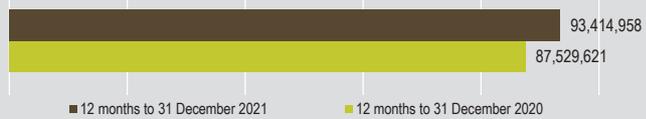
Hospital treatment episodes

↑ **9.3%** over the 12 months to December 2021
 ↓ **-6.5%** compared to the September 2021 quarter

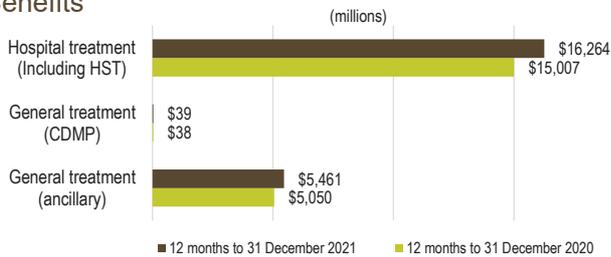


General treatment services (ancillary)

↑ **6.7%** over the 12 months to December 2021
 ↑ **30.6%** compared to the September 2021 quarter



Benefits



↑ **8.4%** over the 12 months to December 2021
 ↑ **0.2%** compared to the December 2020 quarter

↑ **8.1%** over the 12 months to December 2021
 ↑ **1.8%** compared to the December 2020 quarter

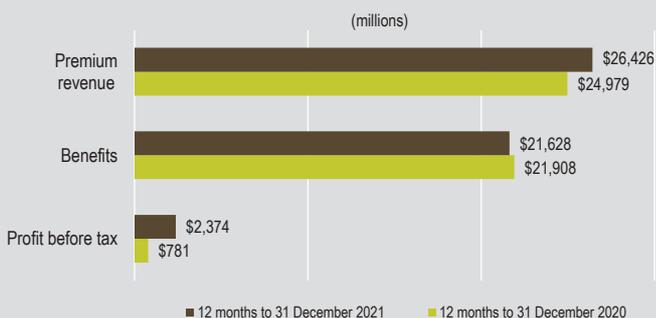
Out-of-pocket per episode/service

↓ **-1.6%** over the 12 months to December 2021

↑ **3.4%** over the 12 months to December 2021



Financial



↑ **5.8%** over the 12 months to December 2021

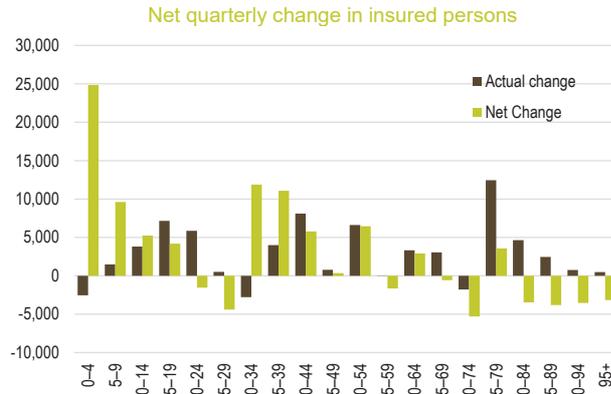
↓ **-1.3%** over the 12 months to December 2021

↑ **204.0%** over the 12 months to December 2021

Hospital Treatment

At 31 December 2021, 11,564,808 people, or 44.9% of the population, were covered by hospital treatment cover. There was a slight increase compared to September 2021. There was an increase in coverage 58,459 insured people in the December 2021 compared to September 2021. Family policies increased by 6,917 and single policies by 16,717 during the quarter.

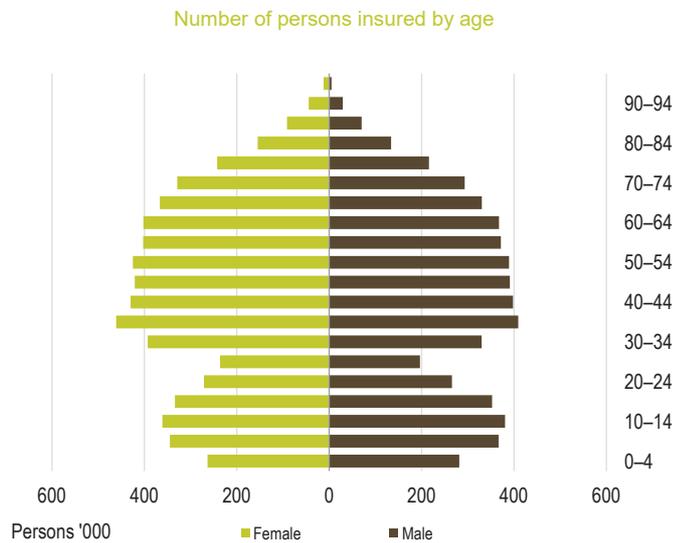
The largest increase in coverage during the quarter was 12,451 for people aged between 75 and 79. The largest net increase (taking into account movement between age groups) was for the 0-4 with an increase of 24,834 people.



Lifetime health cover

The majority of adults with hospital cover (89.2%) have a certified age of entry of 30, with no penalty loading.

At the end of the 31 December 2021 quarter, there were 904,428 people with a certified age of entry of more than 30 and subject to a Lifetime Health Cover loading; a net increasing in people paying a penalty over the preceding 12 months of 29,121. There was a net increase in people with a certified age of entry of 30 (with no penalty) over the year of 152,543. Over the year, 126,172 people had their loading removed after paying a loading for ten years.



State/Territory	Insured persons (%)	Non insured persons (%)	Total Insured (Male/Female)	Single policies (%)	Family policies (%)
Aust.	44.9%	55.1%	5,580,098 / 5,984,710	48.7%	51.3%
NSW	46.1%	53.9%	1,831,738 / 1,955,510	48.6%	51.4%
VIC	41.7%	58.3%	1,328,599 / 1,438,251	50.8%	49.2%
QLD	41.0%	59.0%	1,032,285 / 1,118,217	46.9%	53.1%
SA	45.1%	54.9%	382,572 / 417,336	49.1%	50.9%
WA	55.3%	44.7%	731,601 / 756,892	47.0%	53.0%
TAS	42.9%	57.1%	109,787 / 122,484	49.2%	50.8%
ACT	55.8%	44.2%	115,838 / 126,155	49.0%	51.0%
NT	39.6%	60.4%	47,677 / 49,864	48.5%	51.5%

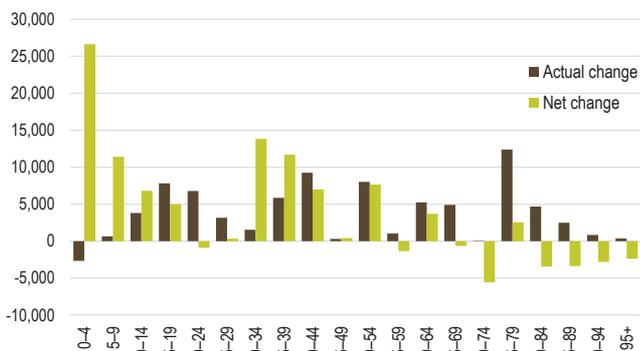
General Treatment

At 31 December 2021, 14,102,981 people or 54.7% of the population had some form of general treatment cover. There was an increase of 79,088 people when compared to the September quarter. There was an increase of General Treatment policies of 44,294 for December 2021 which was mainly driven by Single Policies which increased by 26,999. For the 12 months to 30 December 2021, the number of insured persons with general treatment cover has increased by 304,076.

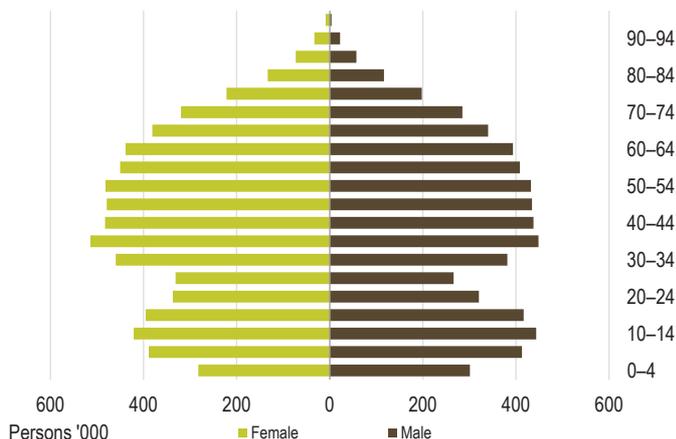
The general treatment (ancillary) by age charts and data in this report show data for those people that have general treatment policies covering ancillary services, regardless of other treatment included in the product. This excludes those general treatment policies that do not cover ancillary treatment.

There was an increase of 76,564 people with general treatment (ancillary) coverage in the December 2021. The largest net increase in coverage, after accounting for movements across age groups, was 26,647 for people in the 0 to 4 age group.

Net quarterly change in insured persons (ancillary)



Number of persons insured by age (ancillary)



General treatment tables (ancillary)

State/Territory	Insured persons (%)	Not insured persons (%)	Total Insured (Male/Female)	Total Insured (Male/Female)	Single policies (%)	Family policies (%)
Aust.	54.7%	45.3%	6,119,285 / 6,633,179	6,119,285 / 6,633,179	49.9%	50.1%
NSW	56.9%	43.1%	2,045,409 / 2,193,110	2,045,409 / 2,193,110	49.3%	50.7%
VIC	49.2%	50.8%	1,326,553 / 1,446,210	1,326,553 / 1,446,210	51.9%	48.1%
QLD	47.9%	52.1%	1,090,340 / 1,205,013	1,090,340 / 1,205,013	48.8%	51.2%
SA	60.1%	39.9%	472,697 / 522,087	472,697 / 522,087	50.3%	49.7%
WA	70.8%	29.2%	891,504 / 942,737	891,504 / 942,737	49.0%	51.0%
TAS	50.9%	49.1%	118,729 / 134,482	118,729 / 134,482	51.0%	49.0%
ACT	68.7%	31.3%	124,604 / 136,940	124,604 / 136,940	50.1%	49.9%
NT	44.4%	55.6%	49,448 / 52,599	49,448 / 52,599	49.7%	50.3%

Benefits Paid

Hospital treatment

Benefits per episode/service

	December 2021	Change from September 2021
Hospital Treatment		
Acute	\$2,430	1.2%
Medical	\$65	0.1%
Prostheses	\$684	3.5%
Cardiac	\$3,779	-1.4%
Hip	\$1,708	0.7%
Knee	\$1,738	0.0%
Total benefits and growth rate		
Hospital	\$3,995,900,214	-5.2%
General	\$1,505,703,716	32.0%

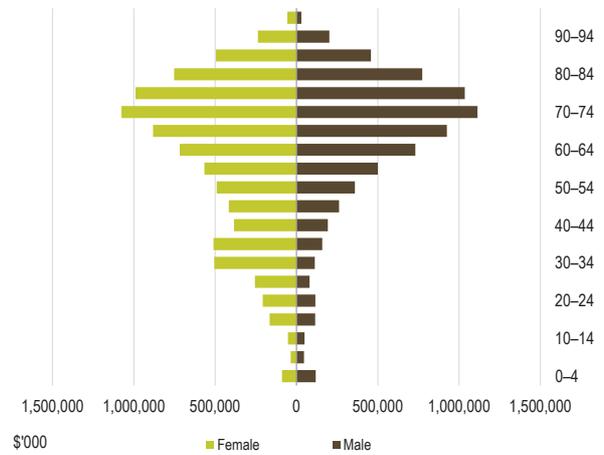
During the December 2021 quarter, insurers paid \$3,996 million in hospital treatment benefits, which was 5.2% lower compared to the September 2021 quarter. Hospital treatment benefits were comprised of:

- ◇ \$2,825 million for hospital services such as accommodation and nursing
- ◇ \$606 million for medical services
- ◇ \$564 million for prostheses items.

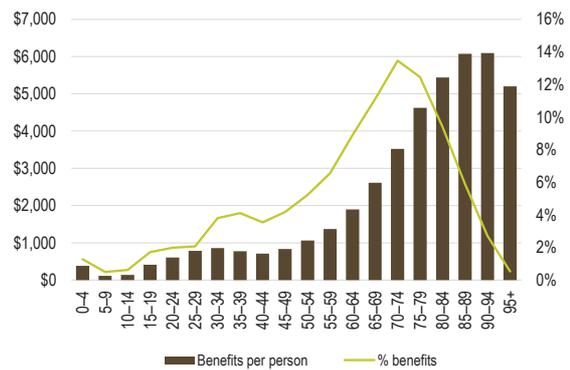
The age group for which most hospital benefits are paid is between 60 and 84 (top chart). Total benefits by age group is affected by the average benefits paid per person (displayed in the second chart) and the number of people in each age group.

Average hospital benefits per person increased from \$1,323.76 for the year ending December 2020 to \$1,406.33 for the year ending December 2021. The largest amount of benefits per person was spent on hospital accommodation and nursing, followed by medical and prostheses benefits.

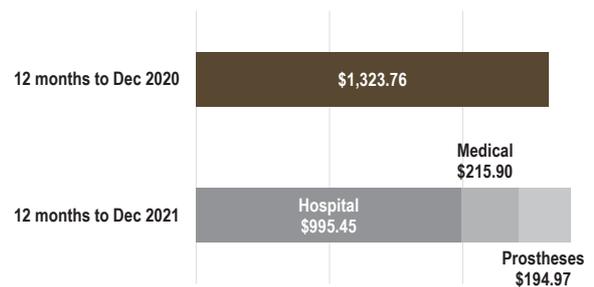
Hospital treatment benefits paid by age 12 months to 31 December 2021



Hospital treatment benefits per person covered and percentage of benefits paid by age cohort



Hospital treatment benefits per person



General treatment

Benefits per service

	December 2021	Change from September 2021
Dental	\$64	-4.7%
Chiropractic	\$32	-2.2%
Physiotherapy	\$38	-1.4%
Optical	\$77	1.9%

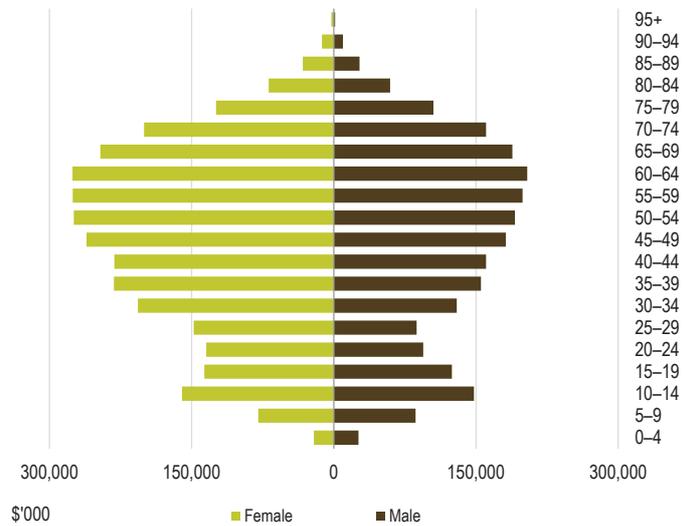
During the December 2021 quarter, insurers paid \$1,496 million in general treatment (ancillary) benefits. This was an increase of 32.3% compared to the September 2021 quarter. Ancillary benefits for the December 2021 quarter included the major categories of:

- ◇ Dental \$793.7 million
- ◇ Optical \$309.6 million
- ◇ Physiotherapy \$101.4 million
- ◇ Chiropractic \$66.7 million.

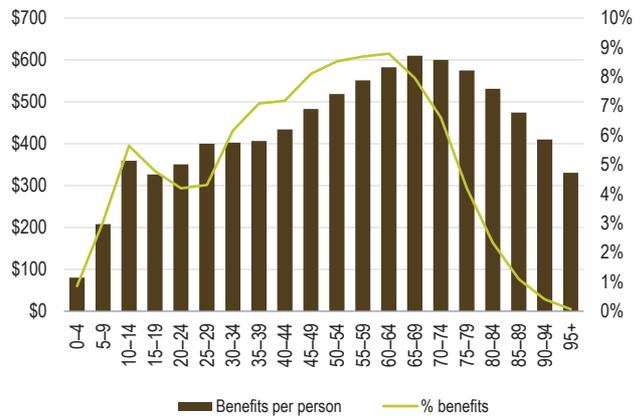
There is a marked difference between the distribution of benefits over age groups between hospital benefits and ancillary benefits. The major difference is the higher claiming rate in older age groups for hospital benefits while benefits per person for ancillary benefits are more evenly spread over the age groups.

General treatment (ancillary) benefits per person during the year to December 2020 were \$404.6 increasing to \$428.3 for the year to December 2021. The largest component of ancillary benefits is dental, for which \$229.7 was paid per insured.

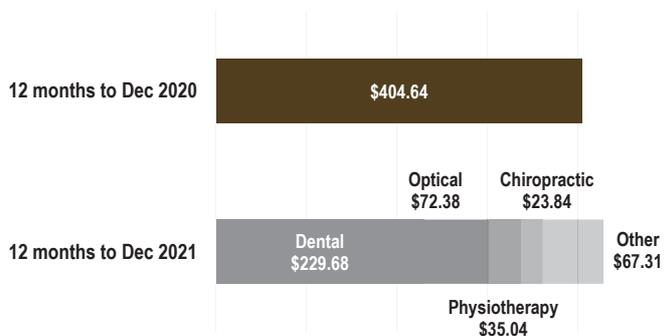
General treatment benefits paid by age 12 months to 31 December 2021 (ancillary)



General treatment benefits per person covered and percentage of benefits paid by age cohort (ancillary)



General treatment benefits per person (ancillary)



Medical benefits

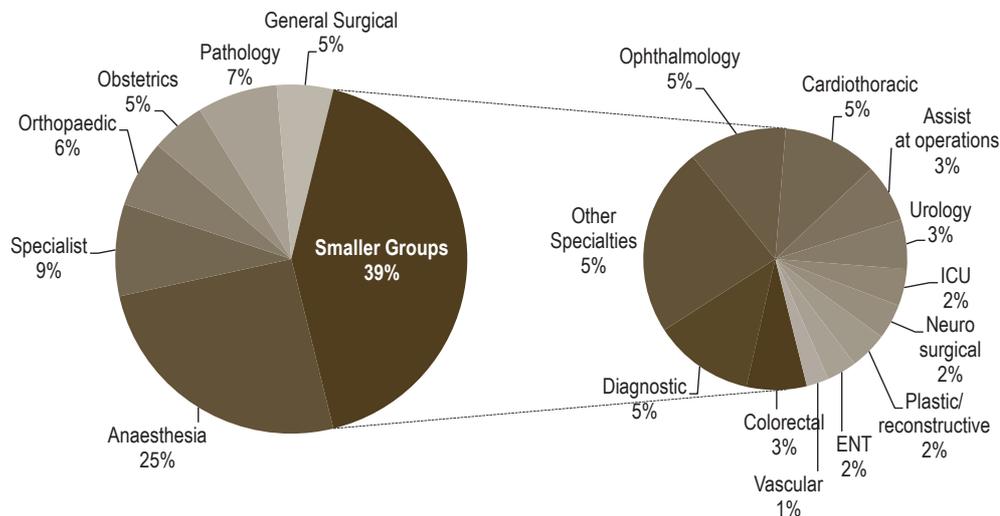
Total benefits for medical services decreased 6.9% during the December quarter 2021.

The change in medical benefits paid per service was calculated over a range of medical services and does not mean medical services overall decreased or increased in cost. The average benefits paid reflects the type of medical services utilised during the quarter as well as the volume of services. The medical service for which the greatest amount of benefits was paid was anaesthetics, comprising 25.4% of all medical benefits and totalling \$154.2 million.

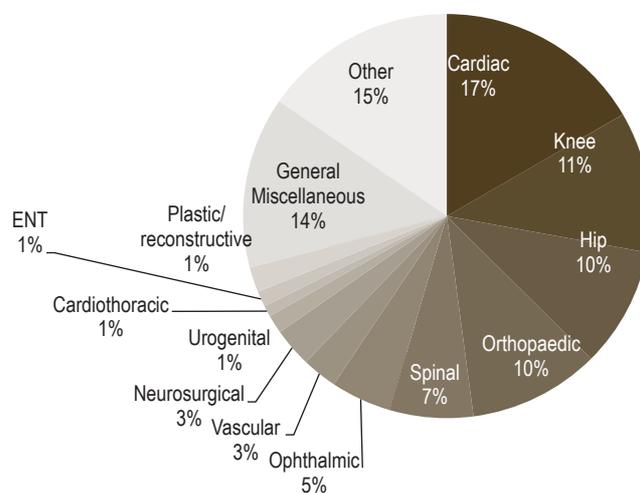
Prostheses benefits

Total benefits paid for prostheses decreased by 2.5% in December 2021 compared to September 2021. Similar to medical services, the change in benefits paid for prostheses was calculated over a range of prosthetics (see chart) and does not mean prostheses overall changed in cost. The change in benefits paid may reflect a change in the type of prosthetics utilised, or a change in the overall utilisation of prosthetics. The prosthetic group for which the greatest amount of benefits were paid was cardiac, comprising 16.6% of all prosthetic benefits and totalling \$93.7 million.

Medical benefits by Speciality group



Benefits paid for prostheses



Service utilisation

Episodes/Services by type

	December 2021	Change from September 2021
Hospital Episodes	1,162,836	-6.5%
Hospital Days	2,852,225	-8.0%
Medical Services	9,349,427	-7.1%
Prostheses Items	825,574	-5.8%
Specialist Orthopaedic	138,854	-10.5%
Ophthalmic	95,031	-9.1%
Spinal	52,734	-6.7%
General Treatment	25,448,237	30.6%
Dental	12,486,933	35.0%
Chiropractic	2,111,601	-7.4%
Physiotherapy	2,668,824	-3.9%
Optical	3,995,474	107.0%

Hospital utilisation is distributed over four categories of hospital—public, private, day only facilities and hospital-substitute. During the December 2021 quarter, hospital episodes were distributed as follows:

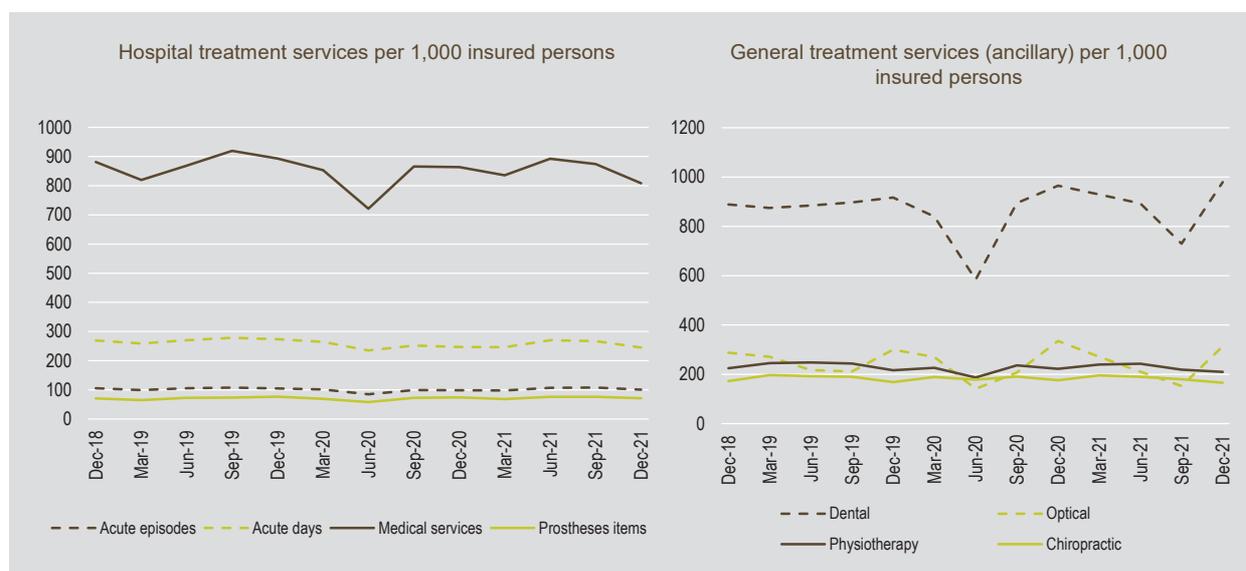
- ◇ public hospitals 163,201 episodes
- ◇ private hospitals 778,605 episodes
- ◇ day hospital facilities 167,428 episodes
- ◇ hospital substitute 53,602 episodes.

For the December 2021 quarter, hospital utilisation (measured in episodes) decreased by 6.5% which was mainly driven by private hospitals.

During the December 2021 quarter, insurers paid benefits for 2.85 million days in hospital, arising from 1.16 million hospital episodes of care.

	Quarter change	Year change
◇ public hospitals	↓ -10.4%	↓ -0.8%
◇ private hospitals	↓ -5.6%	↑ 9.9%
◇ day hospital facilities	↓ -2.0%	↑ 13.5%
◇ hospital-substitute	↓ -18.4%	↑ 25.2%

Day-only episodes in the four categories of hospital totalled 813,760, with a 5.4% change compared to September 2021.



Out-of-pocket payments

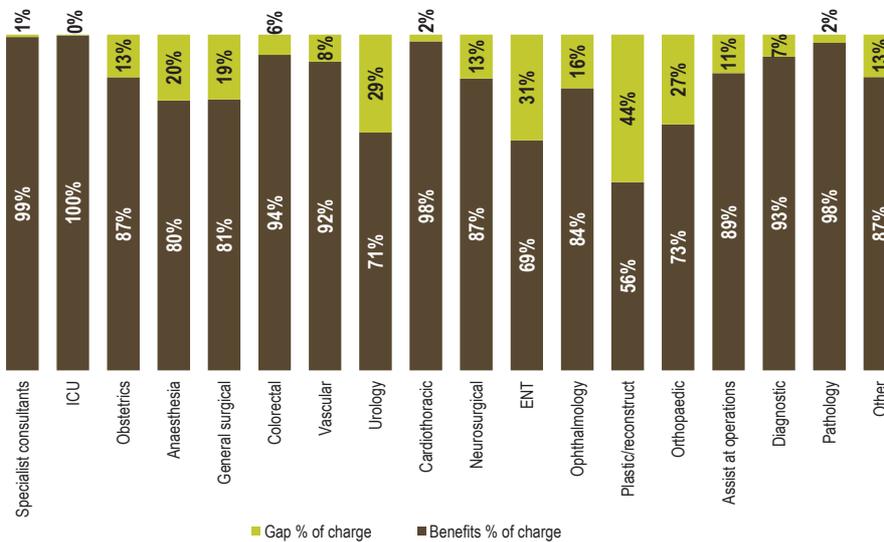
Average out-of-pocket per episode/service

	December 2021	Change from Sep 21	Change from Dec 20
Hospital treatment	\$333.35	-1.7%	-1.6%
Hospital-substitute treatment	\$5.32	9.4%	-30.9%
General treatment ancillary	\$53.39	-4.7%	3.4%
Medical gap where gap was paid	\$219.87	6.5%	18.6%

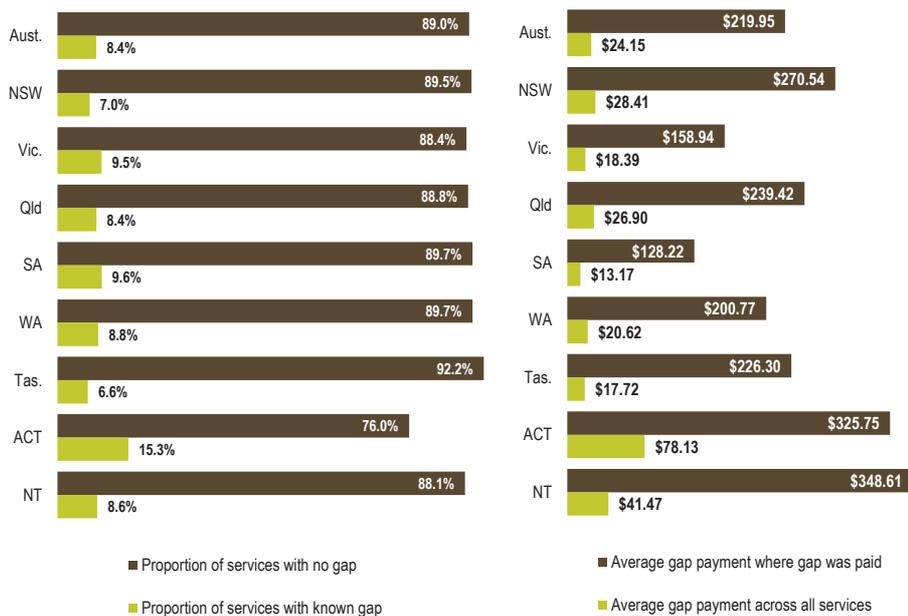
The out-of-pocket payments for hospital episodes decreased by 1.6% compared to the same quarter for the previous year. Out-of-pocket payments for medical services were \$220 where an out-of-pocket payment was payable. The amount of gap for medical services varies depending on the specialty group. The specialty group with the largest out-of-pocket payment was plastic/reconstructive with an average gap of \$538. Gap incurred for the various medical services is displayed in the first chart. Medical gap also varies by state and territory and these differences are shown in the bottom chart.

The average out-of-pocket (gap) payment for a hospital episode was \$333 in the December 2021 quarter. This included out-of-pocket payments for medical services, in addition to any excess or co-payment amounts relating to hospital accommodation.

Medical benefits and out-of-pocket by specialty group



Proportion of services and average out-of-pocket payments



Financial information

Financial Performance

All Figures \$'000	12 months to December 2021	12 months to December 2020
Revenue		
HIB premium revenue	26,425,916	24,978,723
Net investment income	448,640	270,163
Net HRB revenue	-134,646	45,769
Net other operational revenue	100,717	73,762
Total revenue	26,840,627	25,368,417
Benefits		
Fund benefits	21,628,430	21,908,384
State ambulance levies	251,218	241,018
Total fund benefits	21,879,648	22,149,402
Expenses		
HIB expenses	2,086,590	1,943,696
HIB claims handling	428,009	416,307
Non-operating expenses	72,012	78,078
Total expenses	2,586,612	2,438,081
Profit of the industry		
Profit/(loss) before tax	2,374,367	780,934
Taxation expense	534,506	222,142
Profit/(loss) after tax	1,839,861	558,793
Margins		
Gross margin	17.20%	11.33%
HIB expenses	9.52%	9.45%
Net margin	7.69%	1.88%

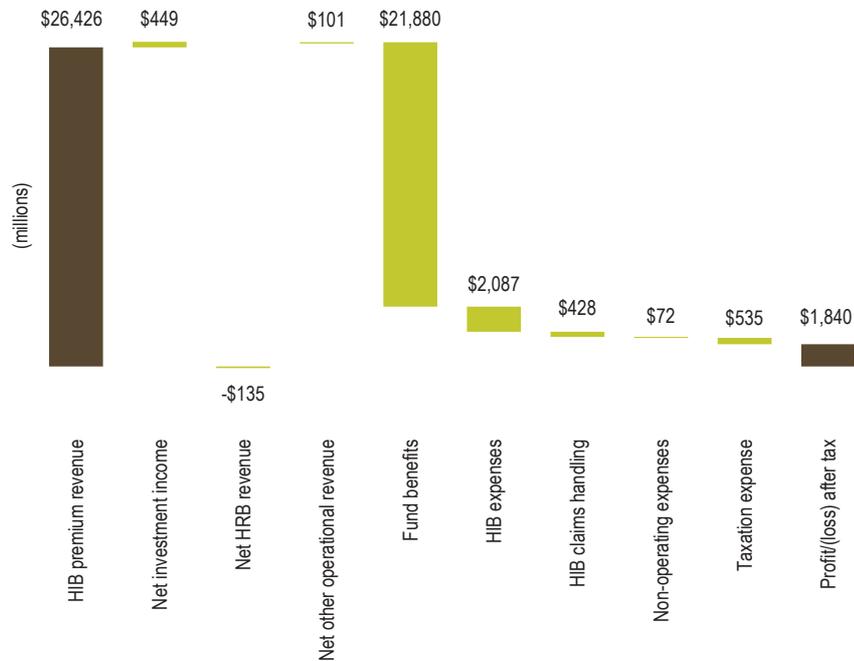
Health Insurance Business (HIB) premium revenue was up 5.8% for the year to December 2021, while total fund benefits decreased by 1.2%. Gross margin increased from 11.3% to 17.2%.

Net investment income increased from \$270 million in the year ending December 2020 to \$449 million in the year ending December 2021.

HIB expenses as a percentage of revenue increased from 9.4% to 9.5% and net margin increased from 1.9% to 7.7%.

Net profit after tax increased from \$559 million for the year ending December 2020 to \$1,840 million for the year ending December 2021.

Health Benefits Fund Profit After Tax Breakdown for 12 months to December 2021



Prudential Position

All figures \$'000	December 2021	September 2021	December 2020
Assets			
Cash	1,955,831	1,696,728	1,504,851
Investments			
Equities	2,435,662	2,352,120	1,815,630
Interest bearing assets	9,026,400	9,332,299	9,017,024
Property	797,292	779,386	732,845
Subsidiary and associated entities	287,904	239,607	288,230
Loans	199,663	177,980	33,250
Receivables	46,160	45,003	52,287
Intangibles DAC and FITBS	1,161,019	1,158,252	1,269,242
Pre-paid expenses	88,145	77,740	86,492
Other*	1,939,858	1,914,205	1,902,190
Total assets	17,937,935	17,773,319	16,702,040
Liabilities			
Unearned premium liabilities	2,787,269	3,036,843	2,660,824
Unpresented & outstanding claims	2,266,736	2,444,787	2,114,143
Other fund liabilities	1,552,846	1,351,882	1,926,609
of which: Other insurance liabilities	1,421,731	1,210,786	1,786,304
Interest bearing liabilities	5,004	6,746	4,897
Payables, provisions & other liabilities	1,367,803	1,244,286	1,133,607
Total liabilities	7,979,658	8,084,545	7,840,080
Total assets minus total liabilities	9,958,277	9,688,773	8,861,960

The industry held total assets of \$17.9 billion as at 31 December 2021.

Total assets have increased by \$1,236 million in the last 12 months.

Total liabilities reported by the industry have increased by \$140 million over the year.

Total net assets increased from \$8.9 billion in December 2020 to \$10.0 billion in December 2021.

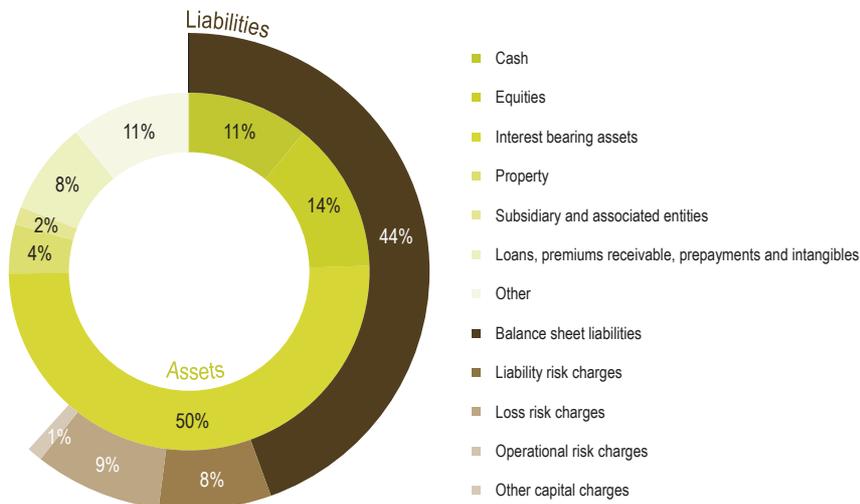
Capital Adequacy Requirement

All figures \$'000	December 2021	September 2021	December 2020
Total Liabilities	7,979,658	8,084,545	7,840,080
Liability risk charges	1,356,049	1,277,370	593,627
Loss risk charges	1,537,852	1,529,505	1,417,521
Operational risk charges	183,452	183,017	176,650
Other capital charges	17,592	17,365	77,156
Less subordinated debt	4,893	4,831	4,654
Total Capital Adequacy Requirement*	11,069,710	11,086,971	10,100,381

* includes health insurance equipment and other assets

Does not include Capital Management Policy target levels (refer to glossary)

Health Benefits Fund Assets vs Liabilities as at December 2021



Notes on statistics

Source of data

On 1 July 2015, supervisory responsibilities were transferred from the Private Health Insurance Administration Council (PHIAC) to APRA under the *Private Health Insurance (Prudential Supervision) Act 2015*.

This publication is compiled primarily from regulatory returns submitted to APRA under the *Financial Sector (Collection of Data) Act 2001* by authorised Private Health Insurance companies.

Prior to 1 July 2015, PHIAC collected data from Private Health Insurers.

The population figures used to calculate coverage are derived from:

Australian Bureau of Statistics, Australian Demographic Statistics, ABS cat no. 3101.0, ABS, Canberra.

The June 2019 quarterly release of *Australian Demographic Statistics* contains the most recent estimates of the resident populations (ERP) of Australia and the states and territories based on the results of the 2019 Census of Population and Housing held on 9 August 2016. For more information refer to the publication at the ABS website.

Net change by five year age group is the actual change adjusted for the number of people moving into the cohort and out of the cohort due to ageing. The calculation makes the simplifying assumption that the number of people are evenly distributed over each year within the five year age group.

Lifetime Health Cover is a financial loading (LHC loading) that can be payable in addition to the premium for your private health insurance hospital cover (hospital cover). LHC loadings apply only to hospital cover. The loading is 2% above the base rate for each year over the age of 30 in which the policy holder did not have private health insurance hospital cover. After ten years of paying the loading the loading is removed.

Starting from 1 April 2007, general treatment policies replaced ancillary policies. General treatment policies cover treatment similar to that previously known as ancillary (eg. dental) but can also cover hospital-substitute treatment and Chronic Disease Management Programs.

Related Publications

Quarterly publications

A number of related quarterly publications are available from:

<https://www.apra.gov.au/publications>

These include:

[Quarterly Statistics](#)

The Quarterly Statistics are principal release of statistics with summaries for the key financial and membership statistics of the Private Health Insurance industry.

[Membership Statistics](#)

A publication which details by State the number of insured persons for hospital treatment and general treatment and the proportion of the population these persons represent. The tables are shown on both a quarterly and an annual basis and include hospital treatment by age cohort.

[Medical Gap Information](#)

A publication on in-hospital medical services. The proportion of services for which there was no gap or known gap and the average gap payment are shown for each state.

[Private Health Insurance Membership and Benefits \(formerly PHIAC A\)](#)

A publication detailing by State, the membership and benefits paid by private health insurers for the period. These State reports are available both in PDF format and Excel.

[Prostheses Report](#)

A report providing data on prosthetic benefits paid by private health insurers by major prosthetic category

[Medical Services Report](#)

A report providing data on services, benefits paid and gap payments by MBS Specialty Block Groupings for medical services paid by private health insurers.

[Statistical Trends - Quarterly Statistical trends in membership and benefits paid](#)

These are two separate publications detailing trends since September 1997 in the number of insured persons and benefits paid for hospital and general treatment.

Annual publications

APRA will continue to produce an Annual Report on the Operations of the Private Health Insurance Industry. This report contains an industry overview and tables of statistics by individual fund. Current and historical versions are available at:

<https://www.apra.gov.au/publications/operations-private-health-insurers-annual-report>



APRA

COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-5

This is the Annexure marked "DD-5" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

The Commonwealth Minister for Health, or delegate, has declared the hospital, consistent with section 221 of the Private Health Insurance Act 2007		Name of facility (consistent with State licence where relevant)		Provider Number (Administered by Services Australia)		Street Address		Suburb		Postcode		Second-tier Eligible (Yes/No)		Second-tier Expiry Date		Second-tier Category - To facilitate calculation of secondary adult benefits by Insurers, the Department has categorised all private hospitals into the following categories:		Criteria (This column is not complete and is still being populated)		The Commonwealth Minister for Health, or delegate, has declared the facility to be a non-used facility, consistent with Section 3(2) of the Health Insurance Act 1973. (This column is not complete and is still being populated)	
QLD	PRIVATE	BUDERIM PRIVATE HOSPITAL	0055240X	12 ELIAS WILSON DRIVE	BUDERIM	4536	YES	11/20/2024	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	PHI 43/19, 83/21											
NSW	PUBLIC	BUNDELAH COMMUNITY HOSPITAL	00146540	RICHMOND ROAD	BUNDELAH	2423	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 52/19											
NSW	PUBLIC	BULLI HOSPITAL	0020850H	29 HOSPITAL ROAD	BULLI	2516	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 19/20, 25/20											
WA	PRIVATE	BUNBURY DAY HOSPITAL	0077130X	140 SPENCER ST	BUNBURY	6240	YES	10/24/2022	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	PHI 03/19											
WA	PUBLIC	BUNBURY HOSPITAL	0071208X	ONE ROBERTSON DRIVE & BULLOCK HIGHWAY	BUNBURY	6240	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 03/19											
QLD	PUBLIC	BUNDABERG HOSPITAL	0055101X	271-275 GOUDONING STREET	BUNDABERG	4670	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 06/19, 43/19, 51/20											
QLD	PRIVATE	BUNDABERG PRIVATE DAY HOSPITAL	0057304X	51 COMMERCIAL STREET	KENNINGTON	4670	YES	3/5/2023	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.												
NSW	PUBLIC	BUNDABERG EXTENDED CARE CENTRE	0031104X	1231 PLYMOUTH STREET	BUNDABERG	3863	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.												
NSW	PRIVATE	BUNDABERG HOSPITAL	0080101P	26 COMMERCIAL STREET	BUNDABERG	2817	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.												
NSW	PRIVATE	BUNDOOD ENDOSCOPY CENTRE	0057194X	292 BUNDOOD ROAD	BUNDOOD	2114	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.												
NSW	PUBLIC	BUSELTON HOSPITAL	0070105P	MILL ROAD	BUSELTON	6290	NO		C - private hospitals that do not fall into categories (A), (B) or (G), with up to and including 50 licensed beds.	PHI 13/20											
NSW	PUBLIC	BUSELTON HOSPITAL	0070105P	MILL ROAD	BUSELTON	6290	NO		E - private hospitals that do not fall into categories (A), (B) or (G), with up to and including 50 licensed beds.	PHI 03/20, 06/21											
NSW	PUBLIC	CAROLINEVILLE HOSPITAL	0051534X	261 CAROLINEVILLE ROAD	CAROLINEVILLE	4510	NO		F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	PHI 03/20, 46/20, 50/21, 63/21											
NSW	PUBLIC	CAROLINEVILLE HOSPITAL	0051534X	261 CAROLINEVILLE ROAD	CAROLINEVILLE	4510	NO		F - private hospitals that do not fall into categories (A), (B) or (G), with up to and including 50 licensed beds.	PHI 03/20, 46/20, 50/21											
NSW	PRIVATE	CAPODOLCERE PRIVATE HOSPITAL	0055590X	MCKEAN STREET	CAPODOLCERE	4510	YES	6/9/2022	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	PHI 13/20											
VIC	PRIVATE	CARRING BRIGHTON	0056204H	243 NEW STREET	BRIGHTON	3186	YES	9/15/2024	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	PHI 03/20, 06/21											
VIC	PRIVATE	CARRING MALVERN	0055790X	181-183 MATTHEW ROAD (MAIN CAMPUS) & 181-183 LYON ROAD (LUTHERWICK 2302 ELECTRONIC CAMPUS)	MALVERN	3144	YES	9/15/2024	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	PHI 03/20, 46/20, 50/21, 63/21											
VIC	PRIVATE	CARRING PHARMAN	0055790X	586 HIGH STREET	PHARMAN EAST	3181	YES	9/15/2024	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	PHI 03/20, 46/20, 50/21											
QLD	PUBLIC	CARRS BASE HOSPITAL	0050207P	125 THE ESCALADE	CARRS	4870	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 27/19											
QLD	PRIVATE	CARRS DAY SURGERY	0087524H	156-160 CRIMTON STREET	CARRS	4870	YES	12/13/2022	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	PHI 03/20											
QLD	PRIVATE	CARRS PRIVATE HOSPITAL	0055120P	1 UPWARD STREET	CARRS	4870	YES	12/13/2022	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	PHI 13/20											
QLD	PUBLIC	CALOUNDRA HOSPITAL	0031004X	WEST TERRACE	CALOUNDRA	4551	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 31/20											
NSW	PRIVATE	CALVARY - IRENA VALLEY HOSPITAL	0086101P	49 AUGUSTA ROAD	IRENA VALLEY	7008	YES	2/28/2025	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	PHI 29/19, 11/22											
NSW	PRIVATE	CALVARY - ST JOHN'S HOSPITAL	0086101P	50 COSGROVE ROAD	SOUTH HOBART	7004	YES	2/28/2025	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	PHI 29/19, 11/22											
NSW	PRIVATE	CALVARY - ST LUKE'S HOSPITAL	0086204X	24 LITTLETON STREET	LAUNCESTON	7240	YES	1/20/2025	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	PHI 29/19, 11/22											
NSW	PRIVATE	CALVARY - ST VINCENT'S HOSPITAL	0086204X	5 FREDERICK STREET	LAUNCESTON	7240	YES	1/20/2025	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	PHI 29/19, 11/22											
NSW	PRIVATE	CALVARY ADELAIDE HOSPITAL	0065300T & 0065307H	120 ANGAS STREET	ADELAIDE	5000	YES	2/28/2025	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	PHI 03/20, 02/22											
ACT	PRIVATE	CALVARY BRUCE PRIVATE HOSPITAL	0015000H	38 & 30 MARY POTTER CIRCUIT	BRUCE	2617	YES	9/9/2024	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	PHI 03/20, 02/22											
NSW	PRIVATE	CALVARY CENTRA DISTRICTS HOSPITAL	0065101P	25-37 JARVIS ROAD	ELIZABETH VALE	5112	YES	3/1/2025	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	PHI 29/19, 63/20, 16/22											
NSW	PUBLIC	CALVARY HEALTH CARE BETHLEHEM	0031480T	153 CONDO PARADE WEST	PARADE	3155	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 03/19, 51/21, 80/21											
NSW	PUBLIC	CALVARY HEALTH CARE SYDNEY LTD	0011210X	51-110 TUCKY POINT ROAD	WOSAHAM	2217	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 03/19, 51/21, 80/21											
ACT	PRIVATE	CALVARY JOHN JAMES HOSPITAL	0093101P	173 STRICKLAND CRESCENT	GEARON	2600	YES	4/8/2025	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	PHI 29/19, 08/22											
NSW	PUBLIC	CALVARY MATELE NEWCASTLE	0011210X	201 EDITH STREET	WARRATAH	2248	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 06/19											
NSW	PRIVATE	CALVARY NORTH ADELAIDE HOSPITAL	0056901P	89 STRANGWAYS TERRACE	NORTH ADELAIDE	5006	YES	2/28/2025	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	PHI 29/19, 07/22											
ACT	PUBLIC	CALVARY PUBLIC HOSPITAL ACT	0000004X	MAYTON DRIVE	BRUCE	2617	NO		G - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	PHI 03/19, 76/20, 16/22											
NSW	PRIVATE	CALVARY RIVERINA HOSPITAL	0018604X	HARDY AVENUE	WAGGA WAGGA	2650	YES	12/11/2024	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	PHI 03/19, 76/20, 16/22											
NSW	PRIVATE	CALVARY RIVERINA SURGICENTRE	0088181T	349, 331, 333 EDWARD STREET	WAGGA WAGGA	2650	YES	12/11/2024	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	PHI 03/19, 76/20, 16/22											
NSW	PRIVATE	CAMBERWELL DAY SURGERY	0055501X	27 BENMARK HILL ROAD	HAMPTON EAST	3163	YES	4/1/2023	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 13/20, 21/21											
NSW	PRIVATE	CAMBERWELL DAY SURGERY	0079450X	178 CAMBERWELL STREET	MEARBLEY	6014	YES	9/1/2023	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 46/19											
NSW	PUBLIC	CAMDEN HOSPITAL	0030101P	563 MURRUMBidge ROAD	CAMDEN	2570	NO		G - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	PHI 46/19											
NSW	PUBLIC	CAMDEN HOSPITAL	0030101P	79 REGENT STREET	CAMDEN	2570	NO		G - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	PHI 46/19											
NSW	PUBLIC	CAMPBELLTOWN HOSPITAL	0041204X	100 BURNETT STREET	CAMPBELLTOWN	2541	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 46/19											
NSW	PRIVATE	CAMPBELLTOWN PRIVATE HOSPITAL	0017306X	44 PARKSIDE CRESCENT	CAMPBELLTOWN	2540	YES	1/12/2025	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	PHI 03/19, 5/19, 80/21											
NSW	PRIVATE	CAMPSE DAY SURGERY	0027306X	56 CAMPSE STREET	CAMPSE	2184	YES	2/18/2025	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 03/19, 5/19, 80/21											
ACT	PRIVATE	CAMBERA WAGBANG GROUP	0097030X	173 STRICKLAND CRESCENT	BEAVER	2600	YES	10/29/2024	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 21/19, 5/19, 20/20, 46/21											
ACT	PRIVATE	CAMBERA MICROSURGERY	0097050X	4 WILSON STREET	PHILIP	2606	YES	10/27/2024	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 21/19, 5/19, 20/20, 46/21											
ACT	PRIVATE	CAMBERA PRIVATE HOSPITAL	0005101H	EQUINOX BUSINESS PARK, BUILDING 2 LEVEL 2/1, 79 KENT STREET	BEAVER	2600	YES	5/26/2024	G - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	PHI 07/19, 27/21, 42/21											
ACT	PRIVATE	CAMBERA REGION NEUROLOGY AND PAIN CENTRE	0092930P	SUITE 2-4 CORNING CHAMBERS, 36-38 CORNING STREET	PHILIP	2606	YES	7/24/2023	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 07/19, 80/21											
ACT	PRIVATE	CAMBERA SURGICENTRE	0088181X	SUITE 2, 3 CALA HOUSE TORRENS, 11 TORRENS STREET	BRANDON	2612	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 07/19, 80/21											
ACT	PRIVATE	CANNINGTON DAY SURV CLINIC	0072244X	13-15 LERIA STREET	CANNINGTON	4107	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 13/21											
QLD	PRIVATE	CAOUSA PRIVATE HOSPITAL	0055400X	169 SUFFRIN MALE ROOFS ROAD	OXLEY	4075	YES	7/19/2024	D - private hospitals that do not fall into categories (A), (B) or (G), with more than 50 licensed beds are up to and including 100 licensed beds	PHI 13/21											
NSW	PUBLIC	CANONINDRA SOUTHIES REGIONAL HOSPITAL	0010801T	BROWNNS AVENUE	CANONINDRA	2804	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.												

The Commonwealth Minister for Health, or delegate, has declared the hospital, consistent with section 221 of the Private Health Insurance Act 2007	Name of Facility (consistent with State licence where relevant)	Provider Number (Administered by Services Australia)	Street Address	Suburb	Postcode	Second-tier Eligible (Yes/No)	Second-tier Expiry Date	Second Category - To facilitate calculation of secondary adult benefits by Insurers, the Department has categorised all eligible hospitals into the following categories:	Criteria (This column is not complete and is still being populated)
PRIVATE	HARVEY CLINIC QUEENSLAND PRIVATE	009523K	38 FRASER ROAD	OTYPIE	4570	YES	1/8/2023	A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (d)	PHI 30/21, 44/21
PUBLIC	HALLS CREEK HOSPITAL	002704BZ	70 ROBERTA AVENUE	HALLS CREEK	6270	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 44/20, 24/23
PRIVATE	HAMILTON DAY SURGERY CENTRE	007230M	74 BURNER PARADE	HAMILTON SOUTH	3803	YES	7/6/2023	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 7/2/21
PRIVATE	HAMILTON HOUSE DAY SURGERY	006750VM	670 GOODWOOD ROAD	CUMBERLAND PARK	5041	YES	12/29/2023	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 41/19, 63/19, 89/19
PRIVATE	HAMPION DAY HOSPITAL	004423D	338 SOUTH ROAD	HAMPION EAST	3188	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 30/19, 50/20, 07/22
PRIVATE	HAMPION PARK WOMEN'S HEALTH CLINIC	004390H1	2-4 WARRARA DRIVE	HAMPION PARK	8976	YES	2/19/2025	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 46/21, 80/21
PRIVATE	HARLEY DAY SURGERY	006710JH	64 PALMER PLACE	NORTH ADELAIDE	5006	YES	7/11/2023	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 49/21
PUBLIC	HARVEY DISTRICT HOSPITAL	002705B6	45 HARVEY STREET	HARVEY	6220	NO		F - private hospitals that do not fall into categories (a) to (g), with the exception of those that provide psychiatric care, including treatment of addictions, and emergency unit or a specialised cardiac care unit or an intensive care unit	PHI 28/19, 89/21
PUBLIC	HAWKER MEDICAL HOSPITAL	0060252A	45 HAWKER STREET	HAWKER	5414	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into categories (a) to (g), with the exception of those that provide psychiatric care, including treatment of addictions, and emergency unit or a specialised cardiac care unit or an intensive care unit	PHI 44/20
PRIVATE	HAWKESBURY DISTRICT HEALTH SERVICE	0017140B	1 DAY STREET	WINDSOR	2796	YES	8/12/2025	A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into categories (a) to (g), with the exception of those that provide psychiatric care, including treatment of addictions, and emergency unit or a specialised cardiac care unit or an intensive care unit	PHI 44/20
PUBLIC	HAY DISTRICT HOSPITAL	001133JA	511 WURRYA STREET	HAY	3711	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into categories (a) to (g), with the exception of those that provide psychiatric care, including treatment of addictions, and emergency unit or a specialised cardiac care unit or an intensive care unit	PHI 44/20
PUBLIC	HAY DISTRICT HOSPITAL	002591B1	577 WINDSOR HIGHWAY	HAY	3717	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into categories (a) to (g), with the exception of those that provide psychiatric care, including treatment of addictions, and emergency unit or a specialised cardiac care unit or an intensive care unit	PHI 28/20
PRIVATE	HEALTH CARE MARINA CENTRE	007943LX	187 CAMBERGIE STREET	MEARLEBY	6014	YES	12/29/2023	A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into categories (a) to (g), with the exception of those that provide psychiatric care, including treatment of addictions, and emergency unit or a specialised cardiac care unit or an intensive care unit	PHI 44/20
PRIVATE	HEALTHWOODS ENDOSCOPY CENTRE	0027110T	51 COMPER STREET	GRANVILLE	2142	YES	4/12/2023	A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into categories (a) to (g), with the exception of those that provide psychiatric care, including treatment of addictions, and emergency unit or a specialised cardiac care unit or an intensive care unit	PHI 44/20
PUBLIC	HEDDIGATE HEALTH	0030510W	39 HOSPITAL STREET	HEDDIGATE	3553	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 44/20
PUBLIC	HEDDIGATE HEALTH	002704B8	2-4 GOODWOOD ROAD	HEDDIGATE	4782	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 44/20
PRIVATE	HEDDIGATE HEALTH	009925VM	171-175 HORTON ROAD	HEDDIGATE	3681	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 44/20
PUBLIC	HEILBERG ENDOSCOPY AND DAY SURGERY CENTRE	001238K	21 HEILBERG STREET	HEILBERG HEIGHTS	4808	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 7/19
PUBLIC	HEILBERG ENDOSCOPY AND DAY SURGERY CENTRE	0051440B	21 HEILBERG STREET	HEILBERG HEIGHTS	4808	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 44/20
PUBLIC	HEILBERG ENDOSCOPY AND DAY SURGERY CENTRE	0051440B	21 HEILBERG STREET	HEILBERG HEIGHTS	4808	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 44/20
PRIVATE	HELVY DAY SURGICAL HOSPITAL	0056490L	CNR O'CONNOR STREET & ROAT HARBOUR DRIVE	PALUA	4635	YES	7/9/2024	C - private hospitals that do not fall into categories (a) to (g), with up to and including 50 licensed beds	PHI 41/21
PUBLIC	HESSIE REGIONAL HEALTH SERVICE	0030100L	8 GOBRIK STREET	WINCHelsea	3241	NO		C - private hospitals that do not fall into categories (a) to (g), with up to and including 50 licensed beds	PHI 46/21, 56/21
PUBLIC	HIVFIELD HOSPITAL INC	0015198H	18 TYSON ROAD	HIVFIELD	3848	NO		D - private hospitals that do not fall into categories (a) to (g), with more than 100 licensed beds and up to and including 100 licensed beds	PHI 40/21
PUBLIC	HIVFIELD HOSPITAL INC	0030260T	21 BRACKEN STREET	HIVFIELD	3804	NO		D - private hospitals that do not fall into categories (a) to (g), with more than 100 licensed beds and up to and including 100 licensed beds	PHI 40/21
PRIVATE	HILBERT - ROCKHAMPTON PRIVATE HOSPITAL	0055750W	4 TALFORD STREET	ROCKHAMPTON	4700	YES	6/19/2024	D - private hospitals that do not fall into categories (a) to (g), with more than 100 licensed beds and up to and including 100 licensed beds	PHI 40/21
PRIVATE	HILLS PRIVATE HOSPITAL	0017320V	489 WINDSOR ROAD	BAULSHAM HILLS	2113	YES	1/8/2024	D - private hospitals that do not fall into categories (a) to (g), with more than 100 licensed beds and up to and including 100 licensed beds	PHI 40/20
PUBLIC	HILLSTON DISTRICT HOSPITAL	0011460W	506 CURRIS STREET	HILLSTON	2675	NO		D - private hospitals that do not fall into categories (a) to (g), with more than 100 licensed beds and up to and including 100 licensed beds	PHI 44/20
PRIVATE	HINDLEIGH PRIVATE HOSPITAL	003358SA	18 WYVERN AVENUE	CHATSWOOD	2067	YES	6/5/2023	D - private hospitals that do not fall into categories (a) to (g), with more than 100 licensed beds and up to and including 100 licensed beds	PHI 30/20
PRIVATE	HOBART DAY SURGERY	0099271K	10 WARRFORD STREET	HOBART	7004	YES	10/4/2024	D - private hospitals that do not fall into categories (a) to (g), with more than 100 licensed beds and up to and including 100 licensed beds	PHI 30/19, 7/21
PRIVATE	HOBART EYE SURGEONS	0085266J	162 ARCADE STREET	HOBART	7000	NO		D - private hospitals that do not fall into categories (a) to (g), with more than 100 licensed beds and up to and including 100 licensed beds	PHI 48/22
PRIVATE	HOBART PRIVATE HOSPITAL	0085110A	CNR COLLINS & ARGYLE STREET	HOBART	7001	YES	12/1/2024	D - private hospitals that do not fall into categories (a) to (g), with more than 100 licensed beds and up to and including 100 licensed beds	PHI 42/20, 16/21
PRIVATE	HOBART SPECIALIST DAY HOSPITAL	0081970V	80 WINDSOR STREET	HOBART	7000	YES	4/22/2023	D - private hospitals that do not fall into categories (a) to (g), with more than 100 licensed beds and up to and including 100 licensed beds	PHI 42/19, 46/19, 07/22
PUBLIC	HOBENOCK DISTRICT HOSPITAL	0011505T	22 ROWLEY STREET	HOBENOCK	7544	NO		D - private hospitals that do not fall into categories (a) to (g), with more than 100 licensed beds and up to and including 100 licensed beds	PHI 40/20, 21/23
PRIVATE	HOLLYWOOD PRIVATE HOSPITAL	0075396K	HOLMESH AVENUE	HEGLANDS	4609	YES	10/31/2024	D - private hospitals that do not fall into categories (a) to (g), with more than 100 licensed beds and up to and including 100 licensed beds	PHI 49/21
PRIVATE	HOLMAGLEN PRIVATE HOSPITAL	0043630A	480 SOUTH ROAD	HOLMAGLEN	3189	YES	6/25/2024	D - private hospitals that do not fall into categories (a) to (g), with more than 100 licensed beds and up to and including 100 licensed beds	PHI 40/20, 30/20
PRIVATE	HOLBROOK PRIVATE HOSPITAL	0015280K	23-25 CHEYBOND ROAD	GULDFORD	2161	YES	1/7/2024	D - private hospitals that do not fall into categories (a) to (g), with more than 100 licensed beds and up to and including 100 licensed beds	PHI 42/19, 30/20, 72/21
PUBLIC	HOLME HILL HOSPITAL	0020505T	1818 HILL STREET	HOLME HILL	4806	NO		D - private hospitals that do not fall into categories (a) to (g), with more than 100 licensed beds and up to and including 100 licensed beds	PHI 42/20
PRIVATE	HOMERUS INFUSION CENTRE	0067909F	6 WATSON AVENUE	ROSE PARK	5067	NO		D - private hospitals that do not fall into categories (a) to (g), with more than 100 licensed beds and up to and including 100 licensed beds	PHI 42/20
PRIVATE	HONEYBUCKLE DAY HOSPITAL	0027580K	UNIT 2, 13 HONEYBUCKLE DRIVE	NEWCASTLE	3300	YES	1/1/2024	D - private hospitals that do not fall into categories (a) to (g), with more than 100 licensed beds and up to and including 100 licensed beds	PHI 04/19, 21/19, 61/20, 18/22
PRIVATE	HOPWELL HOSPICE	0059505T	11 DUNNICK CLOSE	ALMUNDEL	4214	YES	0/21/2022	D - private hospitals that do not fall into categories (a) to (g), with more than 100 licensed beds and up to and including 100 licensed beds	PHI 60/19
PUBLIC	HOPKINS KILTING-GAL HOSPITAL	0031010T	36-72 PALMISTON ROAD	HOPKINS	2077	NO		D - private hospitals that do not fall into categories (a) to (g), with more than 100 licensed beds and up to and including 100 licensed beds	PHI 42/20
PRIVATE	HOPKINS KILTING-GAL HOSPITAL	0059506B	24 HOPKINS DRIVE	HOPKINS	4811	NO		D - private hospitals that do not fall into categories (a) to (g), with more than 100 licensed beds and up to and including 100 licensed beds	PHI 42/20, 68/20
PUBLIC	HOPKINS KILTING-GAL HOSPITAL	0064508H	30 CUMYRN TERRACE	CHERRIDGE	4612	NO		D - private hospitals that do not fall into categories (a) to (g), with more than 100 licensed beds and up to and including 100 licensed beds	PHI 43/19, 49/21
PUBLIC	HOPKINS KILTING-GAL HOSPITAL	0021808F	2-28 EDITH STREET	WARRAZOH	2288	NO		D - private hospitals that do not fall into categories (a) to (g), with more than 100 licensed beds and up to and including 100 licensed beds	PHI 42/20
PRIVATE	HUNTER NEW ENGLAND REGIONAL HEALTH SERVICE	0016490K	20 MAWSON STREET	HIGHTLAND	2307	YES	8/26/2024	D - private hospitals that do not fall into categories (a) to (g), with more than 100 licensed beds and up to and including 100 licensed beds	PHI 43/19, 49/21
PRIVATE	HUNTERS HILL PRIVATE HOSPITAL	0015560V	9 MOUNT STREET	HUNTERS HILL	2110	YES	1/10/2023	D - private hospitals that do not fall into categories (a) to (g), with more than 100 licensed beds and up to and including 100 licensed beds	PHI 42/20
PUBLIC	HUNTER REGIONAL CARE	0085230T	2728 HUNTER HIGHWAY	FRANCIN	7113	NO		D - private hospitals that do not fall into categories (a) to (g), with more than 100 licensed beds and up to and including 100 licensed beds	PHI 7/19, 30/20, 72/21
PRIVATE	HURSTVILLE PRIVATE HOSPITAL	0015970X	97 GLOUCESTER ROAD	HURSTVILLE	2220	YES	9/30/2024	D - private hospitals that do not fall into categories (a) to (g), with more than 100 licensed beds and up to and including 100 licensed beds	PHI 42/20
PRIVATE	HYPERBARIC HEALTH WOUND CENTRE BERWICK	0043630A	3 GIBB STREET	BERWICK	3866	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 42/20
PRIVATE	HYPERBARIC HEALTH WOUND CENTRE BUNDABERG	0043630A	10000000 DRIVE	BUNDABERG	3865	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 42/20
PRIVATE	ICOM CANCER CENTRE AVALON	0007150D	SUITE 10, FIRST FLOOR, TENNYSON CENTRE, 520 SOUTH ROAD	KURRALTA PARK	5017	YES	6/21/2022	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 42/19, 04/20, 21/21
PRIVATE	ICOM CANCER CENTRE CAMBERA	0092580A	UNIVERSITY OF CAMBERA MEDICAL CENTRE CORNER BRIDOLA & ALAMONDRA STREETS	BRUCE	2627	YES	2/2/2023	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 17/19, 21/19, 29/19, 28/20
PRIVATE	ICOM CANCER CENTRE CHERRIBUNDI	0050880U	CHERRIBUNDI MEDICAL CENTRE, 380-386 O'NEILL ROAD	CHERRIBUNDI	4612	YES	1/21/2025	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 43/19, 47/19, 49/21, 80/21
PRIVATE	ICOM CANCER CENTRE GELLONG	0013705W	1 EPWORTH PLACE	WALTON PONDS	9216	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 01/20
PRIVATE	ICOM CANCER CENTRE HOBART	0087906A	80 WINDSOR STREET	HOBART	7000	YES	2/16/2025	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 29/19, 80/22
PRIVATE	ICOM CANCER CENTRE MACKAY	0095710W	148 SAWS ROAD	MACKAY	4740	YES	12/1/2025	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 29/20, 80/22
PRIVATE	ICOM CANCER CENTRE MIDLAND	0077210W	6 CENTENNIAL PLACE	MIDLAND	6016	YES	12/16/2023	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 43/19, 08/20, 40/21

The Commonwealth Minister for Health, or delegate, has declared the hospital, consistent with section 221 of the Private Health Insurance Act 2007	Name of Facility (consistent with State licence where relevant)	Provider Number (as determined by Services Australia)	Street Address	Suburb	Postcode	Second-tier Eligible (Yes/No)	Second-tier Expiry Date	Second-tier Category - To facilitate calculation of secondary adult benefits to Insurers, the Department has categorised all eligible hospitals into the following categories:	Criteria (This column is not complete and is still being populated)	The Commonwealth Minister for Health, or delegate, has declared the facility to be a non-used facility, consistent with Section 3(2) of the Health Insurance Act 1973. (This column is not complete and is still being populated)
PRIVATE	HEALTHCARE MIDLAND DIAGNOSTIC CLINIC	0077260	11 THE AVENUE	MIDLAND	6666	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.		
PRIVATE	NEPHROLOGY NEWCASTLE DIAGNOSTIC CLINIC	0077380	SUITE 402, LEVEL 4, 670 HUNTER STREET	NEWCASTLE	2300	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.		
PRIVATE	NEURONIC HOSPITAL	0011000	4112 MERRINGAM AVENUE SOUTH	WARRACONGA	2476	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.		
PRIVATE	NEW AGE DENTAL	0044100	SUITE 5 TO 7, LEVEL 2/20 SCIOLOM DRIVE	BUNDOORA	3003	YES	30/03/2023	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 7/1/19, 05/19, 02/20	
PRIVATE	NEW NORTON DENTAL	0082260	3 RICHMOND STREET	NEW NORTON	7100	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 14/1/19, 05/20, 04/21	
PRIVATE	NEWCASTLE ENDOSCOPY CENTRE	0027466	SUITE 15, 20-22 SMITH STREET	CHARLESTOWN	2281	YES	14/6/2024	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 06/19, 02/22	
PRIVATE	NEWCASTLE EYE HOSPITAL	08740317	182 CHRISTO ROAD	WARRAH	2798	YES	12/7/2025	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	PHI 02/20, 16/22	
PRIVATE	NEWCASTLE PRIVATE HOSPITAL	0017900	14 LOCKOUT ROAD	NEW LAMBTON HEIGHTS	2305	YES	12/19/2024	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	PHI 12/19, 29/19, 02/20, 10/22	
PUBLIC	NEWMAN HOSPITAL	0071101	54 MANDARINA DRIVE	NEWMAN	6773	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 12/19, 29/19, 02/20, 10/22	
PUBLIC	NGALA FAMILY SERVICES	0075406	9 GEORGE STREET	KENNINGTON	6351	YES	32/7/2024	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.		
PUBLIC	NINNIER MULTI PURPOSE SERVICE	0011000	36 CULLEN STREET	NINNIER	2480	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.		
PUBLIC	NORDELING HEALTH SERVICE	0006000	ALEXANDER KELLY DRIVE	NORDELING CENTRE	5108	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.		
PRIVATE	NOBLE PARK ENDOSCOPY CENTRE	0893418	1204 HEATHCOTE ROAD	NOBLE PARK	3174	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 12/19, 14/21	
PRIVATE	NODON HOSPITAL	0055300	111 OODKOP STREET	NODONVILLE	4566	YES	3/26/2024	D - private hospitals that do not fall into categories (A), (B) or (G), with more than 50 licensed beds and up to and including 100 licensed beds.	PHI 76/20	
PRIVATE	NODON SURGICAL AND ENDOSCOPY CENTRE	0871108	21 MARY STREET	NODONVILLE	4566	YES	14/7/2024	D - private hospitals that do not fall into categories (A), (B) or (G), with more than 50 licensed beds and up to and including 100 licensed beds.	PHI 12/19, 14/21	
PUBLIC	NORCUMBER HOSPITAL	0062400	107 BOB BROWN STREET	NORCUMBER	6800	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.		
PUBLIC	NORCUMBER HOSPITAL	0062400	107 BOB BROWN STREET	NORCUMBER	6800	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.		
PUBLIC	NORCUMBER HOSPITAL	0062400	107 BOB BROWN STREET	NORCUMBER	6800	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.		
PRIVATE	NORTH ADELAIDE DAY SURGERY CENTRE	0872749	174 WARD STREET	NORTH ADELAIDE	5006	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 06/20, 09/21	
PRIVATE	NORTH EASTERN COMMUNITY HOSPITAL	00057706	980 LOWER NORTH EAST ROAD	CAMPBELLTOWN	5074	NO		G - private hospitals that do not fall into categories (A), (B) or (G), with more than 50 licensed beds and up to and including 100 licensed beds.	PHI 02/20, 16/22	
PRIVATE	NORTH EASTERN REHABILITATION CENTRE	0005006	134-144 FORD STREET	IVANHOE	3079	YES	12/22/2024	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 02/20, 16/22	
PUBLIC	NORTH EASTERN SOLDIER MEMORIAL HOSPITAL	0005108	CAMPTON STREET	SCOTTSDALE	7200	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 14/21, 26/22	
PRIVATE	NORTH LAKES DAY HOSPITAL	0071806	7 ENBRACOUR BOULEVARD	NORTH LAKES	4509	YES	5/6/2025	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 04/20	
PRIVATE	NORTH MELBOURNE REGIONAL CARE CENTRE	0004880	LEVEL 1, 185 - 187 BOUNDARY ROAD	NORTH MELBOURNE	3051	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 03/20	
PUBLIC	NORTH MELBOURNE HOSPITAL	0072094	THOMAS STREET	THREE SPRINGS	6519	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 03/20	
PRIVATE	NORTH QUEENSLAND DAY SURGICAL CENTRE	0899214	119 WING ROAD	PHALGO	4812	YES	5/4/2023	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 06/20	
PRIVATE	NORTH SHORE PRIVATE HOSPITAL	0072001	WESTBOURNE STREET	ST LEONARDS	2065	YES	0/15/2023	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 03/20, 3/21	
PRIVATE	NORTH SHORE SPECIALIST DAY HOSPITAL	0072204	LEVEL 3, 176 PACIFIC HIGHWAY	GREENWICH	2005	YES	7/9/2024	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 03/21	
PRIVATE	NORTH TAS DAY HOSPITAL	0885200	28-32 CANNING STREET	LAUNCESTON	7250	YES	8/8/2024	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 04/20	
PRIVATE	NORTH WEST PRIVATE HOSPITAL (OLD)	0058004	127 LOCKTON STREET	EVERTON PARK	4053	YES	9/23/2020	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 04/20	
PUBLIC	NORTH WEST PRIVATE HOSPITAL (TAS)	0880001	21 BRICKFORD ROAD	BIRNIE	7320	YES	9/18/2025	D - private hospitals that do not fall into categories (A), (B) or (G), with more than 50 licensed beds and up to and including 100 licensed beds.	PHI 02/20, 26/22	
PUBLIC	NORTH WEST REGIONAL HOSPITAL	0080400	23 BRICKFORD ROAD	BIRNIE	7320	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 02/20, 26/22	
PUBLIC	NORTHAM HOSPITAL	0071806	ROBINSON STREET	NORTHAM	6462	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.		
PUBLIC	NORTHAMPTON HOSPITAL	0079660	151 PINE STREET	NORTHAMPTON	6515	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.		
PUBLIC	NORTHERN HEALTH WARRAGATA	0031001	25-27 GREEN STREET	WARRAGATA	3877	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.		
PRIVATE	NORTHERN BEACHES HOSPITAL	0172909	105 FRENCH FOREST ROAD	FRENCH FOREST	2086	YES	7/11/2020	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	PHI 09/20, 12/19, 13/20	
PRIVATE	NORTHERN CANCER INSTITUTE - FRENCH FOREST	0072600	SUITE 3, LEVEL 1, BUILDING 4, 49 FRENCH FOREST	FRENCH FOREST	2086	YES	12/16/2024	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 04/20, 06/21	
PRIVATE	NORTHERN ENDOSCOPY CENTRE	0844414	127 PROBY ROAD	SALISBURY SOUTH	5106	YES	14/8/2022	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 04/20	
PRIVATE	NORTH PARK PRIVATE HOSPITAL	0086300	CNR KLENTY & GREENHILLS ROAD	BUNDOORA	3003	YES	3/8/2024	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	PHI 04/20, 14/21	
PRIVATE	NORTHWEST DAY HOSPITAL	0844217	213 MARRINGONG ROAD	ASCOT VALE	3032	YES	12/29/2023	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 01/21, 06/21	
PRIVATE	NORWEST DAY HOSPITAL	0027308	SUITE 102, 9 NORRIBB DRIVE	BELLA VISTA	2113	YES	3/29/2024	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 11/21	
PRIVATE	NORWEST PRIVATE HOSPITAL	0018707	14 NORRIBB DRIVE, NORWEST BUSINESS PARK	BELLA VISTA	2113	YES	9/7/2024	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	PHI 08/20, 16/22	
PRIVATE	NORWOOD DAY SURGERY	00673807	42 NELSON STREET	STEPNEY	5069	YES	12/14/2022	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 06/19, 06/19, 13/20	
PRIVATE	NOTTING HILL CITY HEALTH DAY HOSPITAL	0044701	39-37 DULORIN STREET	NOTTING HILL	5168	YES	4/27/2020	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 02/21, 06/21	
PRIVATE	NORRICK PRIVATE HOSPITAL	00169704	WEEWOOD PLACE	NORRICK	2641	YES	6/16/2024	D - private hospitals that do not fall into categories (A), (B) or (G), with more than 50 licensed beds and up to and including 100 licensed beds.	PHI 03/21	
PRIVATE	NORRICK PRIVATE HOSPITAL	0066000	21 VANDERLIN DRIVE	WANGGIGI	810	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 03/21	
PUBLIC	NORRIBB DISTRICT HEALTH SERVICE	0008304	2 KATAMARIE ROAD	NORRIBB	3836	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.		
PUBLIC	NYNGAM MULTI PURPOSE SERVICE	0011000	HOSPITAL ROAD	NYNGAM	2815	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.		
PUBLIC	ONARNEY HOSPITAL	0005006	5 BEALE STREET	ONARNEY	4401	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.		
PUBLIC	ONARNEY HOSPITAL	0005006	5 BEALE STREET	ONARNEY	4401	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.		
PUBLIC	ONARNEY HOSPITAL	0005006	5 BEALE STREET	ONARNEY	4401	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.		
PUBLIC	ONARNEY HOSPITAL	0005006	5 BEALE STREET	ONARNEY	4401	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.		
PUBLIC	ONARNEY HOSPITAL	0005006	5 BEALE STREET	ONARNEY	4401	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.		
PRIVATE	ONARNEY HEALTH SERVICE	0070501	SECOND AVENUE	ONARNEY	6710	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 17/19	
PRIVATE	ORAL SURGERY DAY CENTRE	0899400	SUITE 10, 16-18 MALVERN AVENUE	CHATEWOOD	2007	YES	2/4/2025	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 13/20, 07/22	
PRIVATE	ORANGE EYE CENTRE	0671514	309-277 GORDON PLACE	ORANGE	2800	NO		G - private hospitals that do not fall into categories (A), (B) or (G), with more than 50 licensed beds and up to and including 100 licensed beds.	PHI 04/20, 04/21	
PRIVATE	ORANGE HEALTH SERVICE	0011000	2307 FOREST ROAD	ORANGE	2800	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	PHI 03/20	
PRIVATE	ORANGE SURGERY CENTRE	0027101	LEVEL 3 & 4, 1521 FOREST ROAD	ORANGE	2800	YES	2/26/2023	C - private hospitals that do not fall into categories (A), (B) or (G), with more than 50 licensed beds.	PHI 26/19, 15/20	
PUBLIC	ORANGE REGIONAL HEALTH	0010600	104 BOUNDARY ROAD	ORANGE	2808	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.		

State	The Commonwealth Minister for Health, or delegate, has declared the hospital, consistent with section 221 of the Private Health Insurance Act 2007	Name of facility (consistent with State licence where relevant)	Provider Number (Administered by Services Australia)	Street Address	Suburb	Postcode	Second-tier Eligible (Yes/No)	Second-tier Expiry Date	Second-tier Category - To facilitate calculation of secondary adult benefits by Insurers, the Department has categorised all declared hospitals into the following categories:	Criteria (This column is not comprehensive and is not being populated)	The Commonwealth Minister for Health, or delegate, has declared the facility to be a non-used facility, consistent with Section 3(2) of the Health Insurance Act 1973. (This column is not complete and is still being populated)
QLD	PRIVATE	3400R STREET DAY SURGERY	005740P	3400R STREET	SOUTHPORT	4215	YES	12/29/2024	G- private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 43/19, 51/20, 81/21	
QLD	PRIVATE	SINGLETON FOUNDATION THEATRE	002740P	SPINNEY THE HOSPITAL, LEVEL 3 CLINICAL BUILDING, 8 MACQUARIE	WYNDHAM	2000	YES	9/7/2024	G- private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 46/19, 51/20, 49/21	
NSW	PUBLIC	SINGLETON DISTRICT HOSPITAL	001207X	107 DO DANGAR ROAD	SINGLETON	2310	NO				
NSW	PUBLIC	SIR CHARLES GARDNER HOSPITAL	000799D	HOSPITAL AVENUE	MELBOURNE	3108	NO				
VIC	PRIVATE	SIR JOHN MORGAN PRIVATE HOSPITAL	008793A	151 FLOON, 219-229 CLAYTON ROAD	CLAYTON	3168	YES	11/29/2023	G- private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 32/19, 01/20, 76/20	
VIC	PRIVATE	SIR MARY CAMERON DAY SURGERY	018692K	19 CLEVELAND ROAD	ARMWOOD	3147	YES	9/16/2024	G- private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 44/20, 55/21	
VIC	PRIVATE	SIR MARY HENRIE INSTITUTE	018409B	LEVEL 1, 80 DRUMMOND STREET	CARTON	3093	YES	2/12/2024	G- private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 43/19, 17/20, 88/19, 18/22	
VIC	PRIVATE	SLEEPHEAD HEALTHCARE	007720W	78 FABRICATION STREET	LEWING	6149	YES	7/5/2023	G- private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 48/20	
NSW	PUBLIC	SMILTON DISTRICT HOSPITAL	006243D	24 BRITTONS ROAD	SMILTON	1330	NO				
NSW	PUBLIC	SMYTHVILLE HOSPITAL	006243D	24 BRITTONS ROAD	SMYTHVILLE	1330	NO				
ACT	PRIVATE	SOLE VIVA SURGERY	009701W	7 PHIPPS CLOSE	PEANIN	2600	YES	10/29/2023	C- private hospitals that do not fall into categories (A) (B) or (G), with up to and including 50 licensed beds	PHI 43/19, 60/20	
NSW	PRIVATE	SOMERSET PRIVATE HOSPITAL	001766A	LEVEL 1, 38 SOMERSET STREET	WINDWOOD	2747	YES	4/29/2023	C- private hospitals that do not fall into categories (A) (B) or (G), with up to and including 50 licensed beds	PHI 51/21, 83/21	
NSW	PRIVATE	SOUTH BANK DAY HOSPITAL	005741P	140 WELLSBORO STREET	SOUTH BRISBANE	4101	YES	11/1/2022	G- private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 46/19, 83/21	
NSW	PRIVATE	SOUTH COAST INFESIVE DISEASES CENTRE	005723H	86 SHAMROCK ROAD	BUNIBALL	4217	NO				
NSW	PUBLIC	SOUTH COAST DISTRICT HOSPITAL	002035P	24-32 DOY ROAD	WOLLONGONG	2501	NO				
NSW	PUBLIC	SOUTH COAST PRIVATE	001746D	112 BURELL STREET	WOLLONGONG	2501	YES	12/31/2024	A- private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (A)	PHI 32/19, 81/21	
NSW	PUBLIC	SOUTH EAST REGIONAL HOSPITAL	010527K	1 VIRGINIA DRIVE	BEGA	2550	NO				
NSW	PRIVATE	SOUTH EASTERN PRIVATE HOSPITAL	009280K	ONE PRINCES HIGHWAY & HEATHERTON ROAD	NOBLE PARK	3174	YES	1/28/2025	A- private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (A)	PHI 32/19, 81/21	
NSW	PUBLIC	SOUTH OXFORD HOSPITAL	003120N	87 STATION ROAD	POSTER	3900	NO				
NSW	PRIVATE	SOUTH PACIFIC PRIVATE HOSPITAL	010190K	24 BRIGHAM STREET	CURL COIL	2096	YES	10/16/2023	A- private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (A)	PHI 46/19, 16/22	
NSW	PRIVATE	SOUTH PERTH HOSPITAL	002746B	76 SOUTH TERRACE	SOUTH PERTH	6151	YES	9/22/2024	D- private hospitals that do not fall into categories (A), (B) or (G), with more than 50 licensed beds and up to and including 100 licensed beds	PHI 43/19, 51/20, 49/21	
NSW	PUBLIC	SOUTH WEST HEALTHCARE - CAMBERDOWN	003128K	9 ROBINSON STREET	CAMBERDOWN	3200	NO				
NSW	PRIVATE	SOUTH WEST HEALTHCARE - WARRIMUNDOO CAMPUS	003128K	1077 STREET	WARRIMUNDOO	2280	NO				
NSW	PRIVATE	SOUTH WESTERN ENDOSCOPY CENTRE	008921H	26-28 BIGGE STREET	LIVERPOOL	2170	NO				
NSW	PRIVATE	SOUTH WARRA DAY SURGERY	004425W	LEVEL 11, 9 WARRA ST	SOUTH WARRA	3441	NO				
NSW	PRIVATE	SOUTHERN CROSS DAY SURGERY	007523A	38 MEADOWVALE AVENUE	SOUTH PERTH	6151	YES	2/11/2025	G- private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 43/19, 08/22, 11/22	
NSW	PRIVATE	SOUTHERN CROSS HOSPITAL	007023D	500 GARDIE ROAD, GREAT EASTERN HIGHWAY	SOUTHERN CROSS	6456	NO				
NSW	PRIVATE	SOUTHERN ENDOSCOPY CENTRE	006720T	271 BRIGHTON ROAD	SOMERTON PARK	5144	YES	1/9/2022	G- private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 42/19	
NSW	PRIVATE	SOUTHERN EYE CENTRE, DAY SURGERY & LASER CLINIC	005661J	44 CHAMBERNE ROAD	HAMMONTON	1509	YES	9/14/2023	G- private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 46/19	
NSW	PRIVATE	SOUTHERN HIGHLANDS PRIVATE HOSPITAL	002743E	81-85 BOWRAL STREET	BOWRAL	2576	YES	5/21/2024	D- private hospitals that do not fall into categories (A), (B) or (G), with more than 50 licensed beds and up to and including 100 licensed beds	PHI 43/19, 21/21	
NSW	PRIVATE	SOUTHERN MEDICAL DAY CARE CENTRE	003626X	410 CROWNS STREET	WOLLONGONG	2500	YES	6/7/2023	G- private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 31/20	
NSW	PRIVATE	SOUTHERN SUBURBS DAY PROCEDURE CENTRE	002684H	47 REGENT STREET	ROSBARON	2217	NO				
NSW	PUBLIC	SOUTHERN COAST FEMINILIA HEALTH SERVICES	002629K	23 WATERLOO BAY ROAD	WORTHERTON	1576	NO				
NSW	PRIVATE	SOUTHPORT DAY HOSPITAL	009770L	58A MARINE PARADE	SOUTHPORT	4215	YES	4/29/2026	G- private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 32/19, 20/21, 23/22	
NSW	PRIVATE	SOUTHSIDE CANCER CARE CENTRE	007270A	LEVEL 3, 131-133 THE KINGSWAY	MIRANDA	2228	NO				
NSW	PRIVATE	SOUTHSIDE ENDOSCOPY CENTRE	009941T	56 BRYANT'S ROAD	OGGINCHULEE	4129	NO				
QLD	PRIVATE	SOUTHSHORE PROCEDURAL CENTRE	007249K	SUITE 33, LEVEL 2, 248 MACQUILLON STREET	SUNNYBANK	4109	YES	11/2/2022	G- private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 17/21, 21/21	
QLD	PRIVATE	SOUTHSHORE PROCEDURAL CENTRE	007249K	SUITE 33, LEVEL 2, 248 MACQUILLON STREET	SUNNYBANK	4109	YES	11/2/2022	G- private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 17/21, 21/21	
NSW	PRIVATE	SPEARWOOD HEMODIALYSIS UNIT	007520H	2-6 LANGSTON STREET	SPEARWOOD	6183	NO				
NSW	PRIVATE	SPECIALIST CARE AUSTRALIA LAUNCESTON	008705B	129 WELLINGTON STREET	LAUNCESTON	7250	YES	2/11/2023	G- private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 12/19, 19/20	
NSW	PRIVATE	SPECIALIST CARE AUSTRALIA LIVERSTONE	008259K	584 QUEEN ST	LIVERSTONE	7315	YES	4/7/2023	G- private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 31/20, 19/20	
NSW	PRIVATE	SPECIALIST SURGERY CENTRE DOCKLANDS	004370A	TRANNY 2, 22 RAKAWA WAY	DOCKLANDS	3008	YES	1/24/2025	G- private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 43/19, 89/21	
NSW	PRIVATE	SPECIALIST SURGERY CENTRE BEEGLING	004849B	200 WALDIP STREET	BEEGLING	3320	YES	2/16/2025	G- private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 43/19, 89/21	
QLD	PRIVATE	SPENGLER PRIVATE HOSPITAL	005590A	24 SPENGLER AVENUE	SOUTHPORT	4215	YES	1/19/2025	G- private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 29/19, 55/19, 90/20, 18/22	
NSW	PRIVATE	SPORTSMED HOSPITAL	006588A	21 RAYNHAM ROAD	STONEY	5069	YES	8/29/2024	D- private hospitals that do not fall into categories (A), (B) or (G), with more than 50 licensed beds and up to and including 100 licensed beds	PHI 39/19, 51/20, 49/21	
QLD	PRIVATE	SPRING HILL SPECIALIST DAY HOSPITAL	005661J	157 AND 157A LLOYD, ST ANDREW'S PLACE, NORTH STREET	SPRING HILL	4000	YES	11/25/2024	G- private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 43/19, 52/19, 81/21, 87/21	
QLD	PRIVATE	SPRING HILL SPECIALIST DAY HOSPITAL	005661J	21 WOODBINE STREET	SPRINGBROOK	4222	NO				
NSW	PRIVATE	SPRINGBROOK HOSPITAL	004943L	29 BALMORAL AVENUE	SPRINGBROOK	3171	NO				
NSW	PUBLIC	SPRINGBROOK HOSPITAL	002725P	170 BRITTONS ROAD	SPRINGBROOK	2277	NO				
NSW	PRIVATE	ST ALBANS ENDOSCOPY CENTRE	004524M	208 503 STATION ROAD	ST ALBANS	3641	YES	12/4/2025	G- private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 42/19, 02/22, 10/22	
NSW	PRIVATE	ST ANDREW'S HOSPITAL INC	008511B	300 SOUTH TERRACE & 321 SOUTH TERRACE	AREVADE	5000	YES	9/23/2025	F- private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds and up to and including 100 licensed beds, in an accident and emergency unit or a specialised cardiac care unit or an intensive care unit	PHI 43/19, 69/19, 55/21, 28/22	
QLD	PRIVATE	ST ANDREW'S SPINICH PRIVATE HOSPITAL	005200L	ONE KIDDERICK AND PING STREET	SPINICH	4505	YES	9/25/2023	F- private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (for combination of an accident and emergency unit or a specialised cardiac care unit or an intensive care unit)	PHI 21/19, 39/19, 28/19, 18/22	
QLD	PRIVATE	ST ANDREW'S TOONDOOMBA HOSPITAL	005523H	280 NORTH STREET	TOONDOOMBA	4510	YES	9/16/2023	F- private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (for combination of an accident and emergency unit or a specialised cardiac care unit or an intensive care unit)	PHI 42/19, 54/20	
QLD	PRIVATE	ST ANDREW'S WAR MINERAL HOSPITAL	005523A	617 WICKHAM TERRACE	BRISBANE	4000	YES	11/25/2024	F- private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (for combination of an accident and emergency unit or a specialised cardiac care unit or an intensive care unit)	PHI 43/19, 63/19, 89/21	
NSW	PUBLIC	ST GEORGE HOSPITAL	000424L	55 GRAY STREET	COCKAMBI	2217	NO				
QLD	PUBLIC	ST GEORGE HOSPITAL (QLD)	009516P	VICTORIA STREET	ST GEORGE	4467	NO				

The Commonwealth Minister for Health or delegate has declared the hospital, consistent with section 221 of the Private Health Insurance Act 2007	Name of facility (consistent with State licence where relevant)	Provider Number (Administered by Services Australia)	Street Address	Suburb	Postcode	Second-tier Eligible (Yes/No)	Second-tier Expiry Date	Second-tier Category - To facilitate calculation of secondary adult benefits in future, the Department has categorised all declared private hospitals into the following categories:	Criteria (This column is not complete and is still being populated)	The Commonwealth Minister for Health or delegate has declared the facility to be a non-used facility, consistent with Section 3(2) of the Health Insurance Act 1973. (This column is not complete and is still being populated)
NSW	ST GEORGE PRIVATE HOSPITAL	007900X	1 SOUTH STREET	GOUGHAN	2217	YES	9/6/2024	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	Phi 43/20, 18/21	
VIC	ST GEORGE HEALTH SERVICE	003113P	281 COTTAM ROAD	NEW ST HELENS	3101	NO				
TAS	ST HELEN'S PRIVATE HOSPITAL	008510A	188 MACQUARIE STREET	HOBART	7000	YES	12/2/2024	A - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	Phi 43/20, 8/20, 16/22	
VIC	ST JOHN OF GOD BALLARAT HOSPITAL	003580K	101 DRUMMOND STREET NORTH	BALLARAT	3350	YES	12/15/2024	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	Phi 29/19, 55/21	
VIC	ST JOHN OF GOD BENDIGO HOSPITAL	006930X	133-145 LILY STREET	BENDIGO	3500	YES	9/25/2025	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	Phi 65/20, 08/20, 39/21	
VIC	ST JOHN OF GOD BERNICKE DAY ONCOLOGY CENTRE	084070Y	LEVEL 1, 15 KANGAROO DRIVE	BERNICK	3806	YES	7/8/2023	A - private hospitals that provide psychiatric care, including treatment of mental illness, for at least 50% of the episodes of hospital treatment.	Phi 08/20, 10/20	
VIC	ST JOHN OF GOD BERRICK HOSPITAL	003590P	79 KANGAROO DRIVE AND 3 GIBB STREET	BERWICK	3806	YES	7/8/2023	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	Phi 02/20, 70/20	
WA	ST JOHN OF GOD BUNBURY HOSPITAL	007520T	606 ROBERTSON DRIVE & RUSSELL HIGHWAY	BUNBURY	6230	YES	7/20/2023	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	Phi 08/20, 10/20	
NSW	ST JOHN OF GOD BURWOOD HOSPITAL	0010920	13-21 GRANHAM STREET	BURWOOD	2114	YES	8/5/2023	A - private hospitals that provide psychiatric care, including treatment of mental illness, for at least 50% of the episodes of hospital treatment.	Phi 46/20	
VIC	ST JOHN OF GOD FRAMINGTON REHABILITATION HOSPITAL	006810A	255-265 CAMBOURNE ROAD	FRAMINGTON	3189	YES	2/9/2025	B - private hospitals that provide rehabilitation care for at least 50% of the episodes of hospital treatment, and do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	Phi 26/19, 02/22	
VIC	ST JOHN OF GOD GEELONG HOSPITAL	003140A	80-84 MYERS STREET	GEELONG	3220	YES	1/2/2025	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	Phi 46/19, 84/20, 13/21	
WA	ST JOHN OF GOD GERALDTON HOSPITAL	007520L	12 HERMITAGE STREET	GERALDTON	6150	YES	9/20/2023	D - private hospitals that do not fall into categories (A), (B) or (G), with more than 50 licensed beds and up to and including 100 licensed beds.	Phi 12/20	
WA	ST JOHN OF GOD MIDLAND PUBLIC & PRIVATE HOSPITAL	007520W	1 CLAYTON STREET	MIDLAND	6056	YES	7/1/2023	D - private hospitals that do not fall into categories (A), (B) or (G), with more than 50 licensed beds and up to and including 100 licensed beds.	Phi 25/20	
WA	ST JOHN OF GOD MOUNT LAWLEY HOSPITAL	007510H	THURLEIGH ROAD	MOUNT LAWLEY	6050	YES	3/24/2023	E - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, without an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	Phi 52/19	
WA	ST JOHN OF GOD MURDOCH HOSPITAL	007540L	100 MURDOCH DRIVE	MURDOCH	6150	YES	11/7/2022	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	Phi 52/19	
VIC	ST JOHN OF GOD PINKLOGG CLINIC	006560B	1480 HEATHCOTE ROAD	DUNDEONG	3175	YES	3/2/2024	A - private hospitals that provide psychiatric care, including treatment of mental illness, for at least 50% of the episodes of hospital treatment.	Phi 26/19, 14/21	
NSW	ST JOHN OF GOD RICHMOND HOSPITAL	006680H	177 BRIDE VALE ROAD	NORTH RICHMOND	2714	YES	8/5/2023	A - private hospitals that provide psychiatric care, including treatment of mental illness, for at least 50% of the episodes of hospital treatment.	Phi 39/20, 46/20	
VIC	ST JOHN OF GOD WARRNAMBOOL HOSPITAL	003330H	136 BOTANIC ROAD	WARRNAMBOOL	3280	YES	12/24/2024	D - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	Phi 40/21	
WA	ST JOHN OF GOD WIRIBILI DAY SURGERY	007190H	190 CAMBRIDGE STREET	WIRIBILI	6014	YES	11/17/2022	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	Phi 17/19	
NSW	ST ELDA DAY HOSPITAL	004310U	1 NIMBARBY ROAD	ELWOOD	2144	NO				
NSW	ST LUKE'S HOSPITAL	001700L	18 ROSLYN STREET	POTTS POINT	2011	YES	12/16/2024	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours.	Phi 12/19, 74/21	
SA	ST MARGARET'S REHABILITATION CENTRE	006000E	65 MILITARY ROAD	SEACROFT	5019	NO				
QLD	ST STEPHEN'S HOSPITAL HERVEY BAY	007230A	1 MEDICAL PLACE	GRANVILLE	4655	YES	11/26/2024	D - private hospitals that do not fall into categories (A), (B) or (G), with more than 50 licensed beds and up to and including 100 licensed beds.	Phi 43/20, 84/21	
NSW	ST VINCENT'S HOSPITAL (DARLINGHURST)	001400V	320 VICTORIA STREET	DARLINGHURST	2010	NO				
NSW	ST VINCENT'S HOSPITAL (MELBOURNE)	001440W	41 VICTORIA PARADE	FITZROY	3065	NO				
NSW	ST VINCENT'S PRIVATE COMMUNITY HOSPITAL (GRIFFITH)	007250H	41-45 ANKWOOD AVENUE	GRIFFITH	3800	YES	6/29/2024	C - private hospitals that do not fall into categories (A), (B) or (G), with up to and including 50 licensed beds.	Phi 27/20, 39/21, 49/21	
NSW	ST VINCENT'S PRIVATE DAY SURGERY (USMORE)	088491B	77 UPALBA STREET	USMORE	2480	YES	1/2/2025	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	Phi 43/19, 52/19, 84/20, 21/22	
NSW	ST VINCENT'S PRIVATE HOSPITAL (USMORE)	001650U	405 VICTORIA STREET	DARLINGHURST	2010	YES	1/7/2023	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, without an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	Phi 08/20	
NSW	ST VINCENT'S PRIVATE HOSPITAL (USMORE)	001700H	BALLEYS STREET	USMORE	2480	YES	1/2/2025	D - private hospitals that do not fall into categories (A), (B) or (G), with more than 50 licensed beds and up to and including 100 licensed beds.	Phi 43/19, 52/19, 84/20, 21/22	
QLD	ST VINCENT'S PRIVATE HOSPITAL BRISBANE	005570Y	411 MAIN STREET	KANGAROO POINT	4169	YES	7/6/2022	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, without an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	Phi 29/19, 43/19	
VIC	ST VINCENT'S PRIVATE HOSPITAL EAST MELBOURNE	003500A	159 GRY STREET	EAST MELBOURNE	3002	YES	12/13/2022	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, without an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	Phi 43/19, 55/19	
VIC	ST VINCENT'S PRIVATE HOSPITAL FITZROY	003640T	59-61 VICTORIA PARADE	FITZROY	3005	YES	12/13/2022	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, without an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	Phi 43/19	
VIC	ST VINCENT'S PRIVATE HOSPITAL KEW	003670W	5 STUBBS AVENUE	KEW	3101	YES	12/13/2022	D - private hospitals that do not fall into categories (A), (B) or (G), with more than 50 licensed beds and up to and including 100 licensed beds.	Phi 43/19	
QLD	ST VINCENT'S PRIVATE HOSPITAL NORTHQUEEN	006000B	627 FODE ROAD	CHEMUNDE	4032	YES	12/25/2024	F - private hospitals that do not fall into categories (A), (B) or (G), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialised cardiac care unit or an intensive care unit.	Phi 12/19, 43/19, 11/22	

The Commonwealth Minister for Health, or delegate, has declared the facility to be a non-acute facility, consistent with Section 21 of the Private Health Insurance Act 2007	Name of Facility (consistent with State licence where relevant)	Provider Number (Administered by Services Australia)	Street Address	Suburb	Postcode	Second-tier Eligible (Yes/No)	Second-tier Expiry Date	Second-ter Category - To facilitate calculation of secondary adult benefits by Insurers, the Department has categorised all identified private hospitals into the following categories:	Criteria (This column is not comprehensive and is still being populated)	The Commonwealth Minister for Health, or delegate, has declared the facility to be a non-acute facility, consistent with Section 21 of the Private Health Insurance Act 2007. (This column is not complete and is still being populated)
OLD	ST VINCENT'S PRIVATE HOSPITAL, TOOWOOMBA	0055460F	22-36 SCOTT STREET	TOOWOOMBA	4300	YES	1/10/2022	F - private hospitals that do not fall into categories (A), (B) or (C), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialist cardiac care unit or an intensive care unit	PHI 41/20, 20/20, 14/22	
PRIVATE	ST VINCENT'S PRIVATE HOSPITAL, WERRIBEE	0059800F	240 HOPPERS LANE	WERRIBEE	3010	YES	12/10/2022	F - private hospitals that do not fall into categories (A), (B) or (C), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialist cardiac care unit or an intensive care unit	PHI 41/20	
PRIVATE	STANTHOPE HOSPITAL	0051200L	8 MCGREGOR TERRACE	STANTHOPE	4300	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 39/19, 20/21	
PUBLIC	STANWELL REGIONAL HEALTH	0031100L	27-29 STANWELL STREET	STANWELL	3800	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 41/20	
PRIVATE	STEELE STREET CLINIC	0087000K	146 STEELE STREET	REYSCOMP	7110	YES	4/4/2024	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 39/19, 20/21	
PRIVATE	STIRLING BAY SURGERY CLINIC	0077230F	1 PARKIN COURT	STIRLING	4621	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 41/20	
PRIVATE	STIRLING HOSPITAL, INC	0058340K	26 MILAN TERRACE	STIRLING	3132	YES	9/6/2023	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 41/20	
PRIVATE	STIRLINGTON BAY SURGERY	0049390K	LEVEL 1, 153 WATTLEBEE ROAD	MALVERN	3144	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 41/20	
PUBLIC	STIRLINGTON DISTRICT HEALTH SERVICES	0065250K	24 CHIEFS PLACE	STIRLINGTON	3225	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 41/20	
PRIVATE	STARFIELD PRIVATE HOSPITAL	0015070W	3 EVERON ROAD	STARFIELD	2115	YES	9/28/2024	F - private hospitals that do not fall into categories (A), (B) or (C), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialist cardiac care unit or an intensive care unit	PHI 41/20	
PRIVATE	STREAK BAY HOSPITAL	0065250L	1 LINDGREN DRIVE	STREAK BAY	5400	NO		C - private hospitals that do not fall into categories (A), (B) or (C), with up to and including 50 licensed beds	PHI 23/20, 76/21	
PRIVATE	STRALGO PRIVATE HOSPITAL	0095660F	SUITE 9, 3 SANDS ROAD	STRALGO	4608	YES	23/09/2024	C - private hospitals that do not fall into categories (A), (B) or (C), with up to and including 50 licensed beds	PHI 23/20, 76/21	
PUBLIC	SUNBURY DAY HOSPITAL	0040200L	24 HANCOCK STREET	SUNBURY	3429	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 03/20, 06/20, 11/21	
PRIVATE	SUNBURY DAY SURGERY	0075200L	24 SANDS WISE	DOONALUP	6027	YES	2/18/2024	F - private hospitals that do not fall into categories (A), (B) or (C), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialist cardiac care unit or an intensive care unit	PHI 06/21, 26/22	
PRIVATE	SUNNYBANK PRIVATE HOSPITAL	0057200A	245 MCCULLOUGH STREET	SUNNYBANK	4109	YES	2/4/2025	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 32/20, 59/19, 35/21	
PRIVATE	SUNSHINE COAST DAY SURGERY	0067000A	ONE MEMORIAL & SECOND AVENUES	MAROOCHYDORE	4518	YES	7/6/2024	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 30/19, 59/19, 21/21, 26/22	
PRIVATE	SUNSHINE COAST HAEMATOLOGY AND ONCOLOGY CLINIC	0094970K	8 LIONS KING STREET	SUNSHINE	4506	YES	4/23/2025	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 30/19, 59/19, 21/21, 26/22	
PUBLIC	SUNSHINE COAST UNIVERSITY PRIVATE HOSPITAL	0051800W	1 DOHERTY STREET	BIRITHA	4575	NO		F - private hospitals that do not fall into categories (A), (B) or (C), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialist cardiac care unit or an intensive care unit	PHI 30/20	
PRIVATE	SUNSHINE COAST UNIVERSITY PRIVATE HOSPITAL	0065110K	1 DOHERTY STREET	BIRITHA	4575	YES	1/27/2023	F - private hospitals that do not fall into categories (A), (B) or (C), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialist cardiac care unit or an intensive care unit	PHI 30/20	
PRIVATE	SUNSHINE DIAGNOSIS CLINIC	0044130K	LEVEL 1, 147-149 EURONG ROAD	SUNSHINE	4621	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 23/20, 66/20, 09/21	
PUBLIC	SUNSHINE HOSPITAL	0031700T	178 EURONG ROAD	ST ALBANS	3021	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 23/20, 66/20, 09/21	
PRIVATE	SUNSHINE PRIVATE DAY SURGERY	0043300W	810 EURONG ROAD	ST ALBANS	3021	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 23/20, 66/20, 09/21	
PUBLIC	SUPAT HOSPITAL	0051210K	107-123 JAMES STREET	SUPAT	4417	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 23/20, 66/20, 09/21	
PRIVATE	SURGERY, TREATMENT AND REHABILITATION SERVICE (STARSS)	0051800W	298 EURONG ROAD	STIRLING	4629	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 23/20, 66/20, 09/21	
PRIVATE	SURR HILLS DAY HOSPITAL	0027000L	573 CROWNS STREET	SURR HILLS	2010	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 23/20, 66/20, 09/21	
PRIVATE	SUTHERLAND HEART CLINIC	0037300L	LEVEL 2, THE SUTHERLAND HOSPITAL, THE KINGSWAY	CARINGBACH	2229	NO		C - private hospitals that do not fall into categories (A), (B) or (C), with up to and including 50 licensed beds	PHI 23/20, 66/20, 09/21	
PRIVATE	SWAN DISTRICTS HOSPITAL	0070950W	EVELINE ROAD	MIDDLE SWAN	6206	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 23/20, 66/20, 09/21	
PUBLIC	SWAN HILL DISTRICT HEALTH (SWAN HILL)	0031100T	48 SPURRY STREET	SWAN HILL	3585	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 23/20, 66/20, 09/21	
PRIVATE	SWENHAM DAY SURGERY	0044200H	166 MELTON HWY	SWENHAM	3017	YES	11/24/2024	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 32/20, 83/21	
PRIVATE	STONEY ADVENTIST HOSPITAL	0015060K	105 FOX VALLEY ROAD	WAHROONGA	2076	YES	10/13/2024	F - private hospitals that do not fall into categories (A), (B) or (C), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialist cardiac care unit or an intensive care unit	PHI 27/20, 72/21	
PUBLIC	STONEY CHILDREN'S HOSPITAL	0012670T	HIGH STREET	MANAWICK	2021	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 62/20	
PRIVATE	STONEY CLINIC FOR GASTROINTESTINAL DISEASES	0057300L	LEVEL 10, 1 NEWLAND STREET	BOND JUNCTION	2022	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 71/20	
PRIVATE	STONEY DAY HOSPITAL	0027300L	LEVEL 1, PARK HOUSE, 187 MACQUARIE STREET	STONEY	2080	YES	3/9/2023	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 71/20	
PRIVATE	STONEY DAY SURGERY	0027000T	213-219 DARLINGHURST ROAD	DARLINGHURST	2010	YES	7/11/2025	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 73/21, 22/22	
PRIVATE	STONEY DAY SURGERY, PRINCE ALBERT	0066210H	PRINCE MEDICAL CENTRE SUITE 104, 100 CARILTON AVENUE	HEATONTON	2042	YES	1/11/2025	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 43/20, 64/20, 01/22	
PUBLIC	STONEY HOSPITAL AND SURGERY CENTRE HOSPITAL	0020500T	1 MACQUARIE STREET	STONEY	2080	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 43/20, 76/21	
PRIVATE	STONEY OCUPLASTIC SURGERY	0027200L	LEVEL 7, 229 MACQUARIE STREET	STONEY	2080	YES	11/8/2024	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 29/19, 70/20, 22/22	
PRIVATE	STONEY RETINA CLINIC & DAY SURGERY	0027140F	LEVEL 13, 187 MACQUARIE STREET	STONEY	2080	YES	2/7/2024	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 43/20, 76/21	
PRIVATE	STONEY SOUTHWEST PRIVATE HOSPITAL	0019100H	39-40 BIGGS STREET	LIVERPOOL	2170	YES	10/27/2024	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 43/20, 76/21	
PRIVATE	STONEY SPECIALIST DAY HOSPITAL	0069331F	SUITE 501, 7 HELP STREET	CHATEWOOD	2087	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 43/20, 76/21	
PRIVATE	STONEY SURGICAL CENTRE	0027400T	LEVEL 1, 165-168 BELMORHE ROAD	MANAWICK	2021	YES	2/7/2025	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 68/20, 55/21	
PUBLIC	STONEY SURGICAL CENTRE	0060200K	PRINCES HIGHWAY	MANAWICK	2021	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 68/20, 55/21	
PUBLIC	TALLENBERRIG HEALTH SERVICE	0031110L	25 BARRETT STREET	TALLENBERRIG	3700	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 47/21, 72/21	
PRIVATE	TAMARA PRIVATE HOSPITAL	0016200W	2-6 O'BRIEN STREET	TAMARORA	2840	YES	9/24/2024	D - private hospitals that do not fall into categories (A), (B) or (C), with more than 50 licensed beds and up to and including 100 licensed beds	PHI 4/20, 80/21	
PUBLIC	TANAWORTH RURAL REFERRAL HOSPITAL	0012200T	31 LEAN STREET	TANAWORTH	2340	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 43/20, 76/21	
PUBLIC	TARA HOSPITAL	0051230L	15 BILDA STREET	TARA	4421	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 43/20, 76/21	
PUBLIC	TARONGA HOSPITAL	0051240F	MULLER STREET	TARONGA	4400	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 25/20	
PRIVATE	TASMAN HEALTH CARE DAY INFUSION UNIT	0057800H	SUITE 2 & 8, LEVEL 3, 113 NERANG STREET	SOUTHPORT	4215	YES	6/4/2023	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 25/20	
PUBLIC	TASMAN MULTI-SURGE CENTRE	0082800W	MAIN ROAD	NURBERA	2484	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 07/20	
PRIVATE	TEMPLESTOWE DAY SURGERY	0044300K	108-122 OPTIMA STREET	TEMPERICK	2866	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 07/21, 72/21	
PRIVATE	TEMPLESTOWE HOSPITAL	0044300K	2/11 JAMES STREET	TEMPLESTOWE	3106	YES	12/8/2022	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 43/20, 64/20, 55/21, 81/21	
PUBLIC	TERANG & HORTON HEALTH SERVICE	0009200K	41 SCAROD STREET	TERANG CREEK	860	NO		G - private hospitals that do not fall into categories (A), (B) or (C), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialist cardiac care unit or an intensive care unit	PHI 43/20, 64/20, 55/21, 81/21	
PUBLIC	THE ALBERT HOSPITAL MULTISPECIALIST HEALTH SERVICE	0009200K	13 JUSTIN AVENUE	TERANG CREEK	3294	NO		G - private hospitals that do not fall into categories (A), (B) or (C), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialist cardiac care unit or an intensive care unit	PHI 43/20, 64/20, 55/21, 81/21	
PUBLIC	THE ALBERT HOSPITAL	0009200K	25 COMMERCIAL ROAD	PARABURRI	3504	NO		G - private hospitals that do not fall into categories (A), (B) or (C), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialist cardiac care unit or an intensive care unit	PHI 43/20, 64/20, 55/21, 81/21	
PRIVATE	THE AVENUE PRIVATE HOSPITAL	0064400K	46 THE AVENUE	WINDSOR	3181	YES	12/7/2022	F - private hospitals that do not fall into categories (A), (B) or (C), with more than 100 licensed beds, without an accident and emergency unit or a specialist cardiac care unit or an intensive care unit	PHI 33/20	
PRIVATE	THE BAYS HOSPITAL	0035400F	WALLE STREET (BAYS CAMPS) & 90 THE BAYS STREET (HOSPITAL)	MORNINGTON	3911	YES	9/20/2024	F - private hospitals that do not fall into categories (A), (B) or (C), with more than 100 licensed beds, with either (or any combination of) an accident and emergency unit or a specialist cardiac care unit or an intensive care unit	PHI 43/20, 64/20, 55/21, 81/21	
PRIVATE	THE BORDER CANCER HOSPITAL	0017540L	200-238 BORELLA ROAD	ALBURY	2640	YES	10/29/2024	C - private hospitals that do not fall into categories (A), (B) or (C), with up to and including 50 licensed beds	PHI 32/20, 73/21	

The Commonwealth Minister for Health, or delegate, has declared the hospital, consistent with Section 221 of the Private Health Insurance Act 2007	State	Name of Facility (consistent with State licence where relevant)	Provider Number (Administered by Services Australia)	Street Address	Suburb	Postcode	Second-tier Eligible (Yes/No)	Second-tier Expiry Date	Second-tier Category - To facilitate calculation of secondary adult benefits by Insurers, the Department has categorised all eligible hospitals into the following categories:	Criteria (This column is not complete and is still being populated)	The Commonwealth Minister for Health, or delegate, has declared the facility to be a non-used facility, consistent with Section 3(2) of the Health Insurance Act 1997. (This column is not complete and is still being populated)
PRIVATE	SA	THE BURNISH WAR MEMORIAL HOSPITAL	005505H	120 KENSINGTON ROAD	TOORAK GARDENS	5005	YES	30/02/2022	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 32/79	
PUBLIC	ACT	THE CAMBERA HOSPITAL	000030R	77 TAMBA DRIVE	GARBAH	2605	NO	31/12/2024	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 43/29, 70/20, 84/22	
PRIVATE	NSW	THE CARIBBE CLINIC (AUSTRALIA)	006900R	1 MCGILLARAN STREET	NORTH SYDNEY	2060	YES	31/12/2024	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 43/29, 70/20, 84/22	
PUBLIC	NSW	THE CHILDREN'S HOSPITAL AT WESTMEAD	001200T	178 WATKINSON ROAD	WESTMEAD	2145	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 77/58	
PRIVATE	NSW	THE BIODIVINE HEALTH CENTRE	006500Y	90 DAVID STREET	DUNEDIN	3175	NO		G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 30/19, 27/21	
PRIVATE	NSW	THE DOUBLE BAY DAY SURGERY	008293Y	20 MANNING ROAD	DOUBLE BAY	2038	YES	9/5/2024	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 32/79, 76/21	
PRIVATE	NSW	THE EYE HOSPITAL	008423J	285 CHARLES STREET	BARRINGTON	7250	YES	31/12/2024	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 32/79, 76/21	
PUBLIC	NSW	THE GEORGINA HOSPITAL	001200K	130 ZWISLOCKI DRIVE	WOLLONGONG	2516	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (a)	PHI 27/20	
PRIVATE	NSW	THE GEORGINA CLINIC	003690K	98 TOWNSEND ROAD	ST ALBANS PARK	3219	YES	9/9/2023	A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (a)	PHI 29/70	
PRIVATE	NSW	THE GLEN ENDOSCOPY CENTRE	004350H	502 SPRINGVALE ROAD	GLEN WAVERLEY	3130	YES	2/13/2023	A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (a)	PHI 43/19, 21/19, 54/70	
PRIVATE	NSW	THE HOBART CLINIC	003700A	6-8 TOWNSEND ROAD	ST ALBANS PARK	3219	YES	9/24/2023	A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (a)	PHI 27/20, 87/21	
PRIVATE	NSW	THE HILLS CLINIC	001740X	3 MCCASLAND PLACE	KEELVILLE	2195	YES	2/12/2025	A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (a)	PHI 43/19, 51/20	
PRIVATE	TAS	THE HOBART CLINIC	008130K	31 CHIPMANS ROAD	ROBEY	7019	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (a)	PHI 43/19	
PUBLIC	VIC	THE KILMORE AND DISTRICT HOSPITAL	002550H	107 ELLEN STREET	KILMORE	3744	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (a)	PHI 43/19, 51/20	
PRIVATE	VIC	THE MELBOURNE CLINIC	003690K	130 CHURCH STREET	RICHMOND	3121	YES	12/7/2024	A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (a)	PHI 27/20, 87/21	
PRIVATE	VIC	THE MELBOURNE EASTERN PRIVATE HOSPITAL	003670A	157 SCHUBERT ROAD	ROCKONA	3145	YES	9/7/2022	A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (a)	PHI 43/19	
PUBLIC	VIC	THE MORNINGSIDE CENTRE	003120W	608 STANLEY & SEPARATION STREET	MORNINGSIDE	3811	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (a)	PHI 43/19	
PUBLIC	VIC	THE NORTHERN HOSPITAL	001200W	125 COOPER STREET	GEORGINA	3076	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (a)	PHI 43/19	
PUBLIC	VIC	THE PARK CENTRE FOR MENTAL HEALTH	001200A	50N ELLIOTT DRIVE & WORSTON PARK ROAD	WACOL	4076	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (a)	PHI 43/19, 51/20	
PRIVATE	WA	THE PARK PRIVATE HOSPITAL	007510W	14 AVANA STREET	MOUNT LAWLEY	6050	YES	8/7/2023	C - private hospitals that do not fall into categories (a), (b) or (c), with 50% or more of hospital treatment, and do not fall into categories (a) or (b)	PHI 43/19, 51/20	
PUBLIC	WA	THE PRINCE CHARLES HOSPITAL	005140P	827 RODE ROAD	CHESTERMERE	6042	NO		C - private hospitals that do not fall into categories (a), (b) or (c), with 50% or more of hospital treatment, and do not fall into categories (a) or (b)	PHI 43/19, 51/20	
PUBLIC	WA	THE QUEEN ELIZABETH CENTRE	003090N	53 THOMAS STREET	NORSE PARK	3174	NO		C - private hospitals that do not fall into categories (a), (b) or (c), with 50% or more of hospital treatment, and do not fall into categories (a) or (b)	PHI 43/19, 51/20	
PUBLIC	WA	THE ROYAL NORTH WESTERN HOSPITAL	003090N	1000 WASHINGTON STREET	PERTH	6000	NO		C - private hospitals that do not fall into categories (a), (b) or (c), with 50% or more of hospital treatment, and do not fall into categories (a) or (b)	PHI 43/19, 51/20	
PUBLIC	WA	THE ROYAL NORTH WESTERN HOSPITAL	003090N	1000 WASHINGTON STREET	PERTH	6000	NO		C - private hospitals that do not fall into categories (a), (b) or (c), with 50% or more of hospital treatment, and do not fall into categories (a) or (b)	PHI 43/19, 51/20	
PUBLIC	WA	THE ROYAL NORTH WESTERN HOSPITAL	003090N	1000 WASHINGTON STREET	PERTH	6000	NO		C - private hospitals that do not fall into categories (a), (b) or (c), with 50% or more of hospital treatment, and do not fall into categories (a) or (b)	PHI 43/19, 51/20	
PUBLIC	WA	THE ROYAL NORTH WESTERN HOSPITAL	003090N	1000 WASHINGTON STREET	PERTH	6000	NO		C - private hospitals that do not fall into categories (a), (b) or (c), with 50% or more of hospital treatment, and do not fall into categories (a) or (b)	PHI 43/19, 51/20	
PUBLIC	WA	THE ROYAL NORTH WESTERN HOSPITAL	003090N	1000 WASHINGTON STREET	PERTH	6000	NO		C - private hospitals that do not fall into categories (a), (b) or (c), with 50% or more of hospital treatment, and do not fall into categories (a) or (b)	PHI 43/19, 51/20	
PRIVATE	NSW	THE SAN LUIS SURGERY	001200A	24 NORTHCOAST ROAD	WILSONS	2077	YES	10/12/2024	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 29/70, 72/21	
PRIVATE	NSW	THE SKIN HOSPITAL	008380A	7 ASHLEY LANE	WESTMEAD	2145	YES	12/2/2023	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 17/20	
PRIVATE	NSW	THE SKIN HOSPITAL (BARRINGBOURNE)	002380P	121 CROWN STREET	BARRINGBOURNE	2030	YES	3/9/2023	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 36/19, 51/20	
PRIVATE	NSW	THE SOUTHERLAND PRIVATE HOSPITAL	006180P	21 SPINDLEWAVE AVENUE	SOUTHPORT	4215	YES	1/12/2025	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 76/20, 22/22	
PUBLIC	NSW	THE SUTHERLAND HOSPITAL	001200W	420 KINGSWAY	CARRINGDAH	2279	NO		G - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (a)	PHI 30/70	
PRIVATE	NSW	THE STONEY CLINIC	001630T	22-24 MURRAY STREET	BRONTE	2024	YES	8/22/2023	G - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (a)	PHI 44/20, 35/21	
PRIVATE	NSW	THE SPYKE PRIVATE HOSPITAL	001570K	63 VICTORIA STREET	ASHFIELD	1511	NO		G - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (a)	PHI 30/70, 87/21	
PRIVATE	SA	THE TERNYSON CENTRE DAY HOSPITAL	006710L	TEANACY 1B, LEVEL 1, 320 SOUTH ROAD	KURRALTA PARK	5007	YES	12/14/2024	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 48/20, 03/21, 26/22	
PRIVATE	QLD	THE TOOWOOMBA CLINIC	006510T	18 PECKY STREET	SOUTH TOOWOOMBA	4300	YES	6/29/2025	G - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (a)	PHI 32/70, 22/22	
PUBLIC	VIC	THE TRENDS HOSPITAL	002590L	14 PERMELL STREET	TRENDS HEADS	3485	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (a)	PHI 43/19, 87/21	
PRIVATE	VIC	THE VICTORIA CLINIC	003150W	324 MALVERN ROAD	PHARHAN	3181	YES	4/28/2025	A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (a)	PHI 43/19, 87/21	
PRIVATE	VIC	THE VICTORIAN REHABILITATION CENTRE	003640B	499 SPRINGVALE ROAD	GLEN WAVERLEY	3142	YES	3/8/2024	A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (a)	PHI 80/21	
PRIVATE	QLD	THE WESTY HOSPITAL	005590L	451 CORONATION DRIVE	AUCHINCLOSSER	4066	YES	2/28/2025	A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (a)	PHI 43/19, 87/21	
PUBLIC	QLD	THE WOODBINE HOSPITAL	005120W	85 THE RIVERBANK	THEODORE	4719	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (a)	PHI 43/19, 87/21	
PUBLIC	QLD	THOMAS EMILING HOSPITAL	002120P	YARRA BEND ROAD	YARRIBLUE	3078	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (a)	PHI 43/19, 87/21	
PUBLIC	QLD	THURSDAY ISLAND HOSPITAL	005120W	59 THURSDAY PARADE	THURSDAY ISLAND	4675	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (a)	PHI 43/19, 87/21	
PUBLIC	QLD	THE TULLOCH HOSPITAL	001200A	21 HOSPITAL ROAD	TULLOCH	3268	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (a)	PHI 43/19, 87/21	
NSW	NSW	TUNGHA MULTIPURPOSE SERVICE	001200A	UNIVERSITY ROAD	TUNGHA	2369	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (a)	PHI 43/19, 87/21	
PUBLIC	NSW	TOOWOOMBA HOSPITAL	003120W	ADAMS STREET	TOOWOOMBA	2714	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (a)	PHI 43/19, 87/21	
PUBLIC	NSW	TOOWOOMBA HOSPITAL	003120W	ADAMS STREET	TOOWOOMBA	2714	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (a)	PHI 43/19, 87/21	
PUBLIC	NSW	TOOWOOMBA HOSPITAL	003120W	ADAMS STREET	TOOWOOMBA	2714	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into category (a)	PHI 43/19, 87/21	
PRIVATE	NSW	TOOWOOMBA PRIVATE DAY HOSPITAL	005760H	28 GOSSGS STREET	TOOWOOMBA	4300	YES	4/29/2023	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 43/19, 87/21	
PRIVATE	NSW	TOOWOOMBA SURGICENTRE	005070H	18 SCOTT STREET	TOOWOOMBA	4300	YES	30/29/2024	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 43/19, 87/21	
PRIVATE	NSW	TOOWOOMBA SURGICENTRE	005070H	18 SCOTT STREET	TOOWOOMBA	4300	YES	30/29/2024	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 43/19, 87/21	
PRIVATE	NSW	TOOWOOMBA SURGICENTRE	005070H	18 SCOTT STREET	TOOWOOMBA	4300	YES	30/29/2024	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 43/19, 87/21	
PRIVATE	NSW	TOOWOOMBA SURGICENTRE	005070H	18 SCOTT STREET	TOOWOOMBA	4300	YES	30/29/2024	G - private hospitals that provide episodes of hospital treatment only for periods of not more than 24 hours	PHI 43/19, 87/21	
PRIVATE	NSW	TOWNSVILLE PRIVATE HOSPITAL	001200L	5ARY STREET	TOWNSVILLE	2873	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into categories (a) or (b)	PHI 69/19	
PRIVATE	NSW	TOWNSVILLE PRIVATE HOSPITAL	001200L	5ARY STREET	TOWNSVILLE	2873	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into categories (a) or (b)	PHI 32/70, 21/21	
PRIVATE	NSW	TOWNSVILLE PRIVATE HOSPITAL	001200L	5ARY STREET	TOWNSVILLE	2873	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into categories (a) or (b)	PHI 32/70, 21/21	
PRIVATE	NSW	TOWNSVILLE PRIVATE HOSPITAL	001200L	5ARY STREET	TOWNSVILLE	2873	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into categories (a) or (b)	PHI 32/70, 21/21	
PRIVATE	NSW	TOWNSVILLE PRIVATE HOSPITAL	001200L	5ARY STREET	TOWNSVILLE	2873	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into categories (a) or (b)	PHI 32/70, 21/21	
PRIVATE	NSW	TOWNSVILLE PRIVATE HOSPITAL	001200L	5ARY STREET	TOWNSVILLE	2873	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into categories (a) or (b)	PHI 32/70, 21/21	
PRIVATE	NSW	TOWNSVILLE PRIVATE HOSPITAL	001200L	5ARY STREET	TOWNSVILLE	2873	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into categories (a) or (b)	PHI 32/70, 21/21	
PRIVATE	NSW	TOWNSVILLE PRIVATE HOSPITAL	001200L	5ARY STREET	TOWNSVILLE	2873	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into categories (a) or (b)	PHI 32/70, 21/21	
PRIVATE	NSW	TOWNSVILLE PRIVATE HOSPITAL	001200L	5ARY STREET	TOWNSVILLE	2873	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into categories (a) or (b)	PHI 32/70, 21/21	
PRIVATE	NSW	TOWNSVILLE PRIVATE HOSPITAL	001200L	5ARY STREET	TOWNSVILLE	2873	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into categories (a) or (b)	PHI 32/70, 21/21	
PRIVATE	NSW	TOWNSVILLE PRIVATE HOSPITAL	001200L	5ARY STREET	TOWNSVILLE	2873	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into categories (a) or (b)	PHI 32/70, 21/21	
PRIVATE	NSW	TOWNSVILLE PRIVATE HOSPITAL	001200L	5ARY STREET	TOWNSVILLE	2873	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into categories (a) or (b)	PHI 32/70, 21/21	
PRIVATE	NSW	TOWNSVILLE PRIVATE HOSPITAL	001200L	5ARY STREET	TOWNSVILLE	2873	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into categories (a) or (b)	PHI 32/70, 21/21	
PRIVATE	NSW	TOWNSVILLE PRIVATE HOSPITAL	001200L	5ARY STREET	TOWNSVILLE	2873	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into categories (a) or (b)	PHI 32/70, 21/21	
PRIVATE	NSW	TOWNSVILLE PRIVATE HOSPITAL	001200L	5ARY STREET	TOWNSVILLE	2873	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into categories (a) or (b)	PHI 32/70, 21/21	
PRIVATE	NSW	TOWNSVILLE PRIVATE HOSPITAL	001200L	5ARY STREET	TOWNSVILLE	2873	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into categories (a) or (b)	PHI 32/70, 21/21	
PRIVATE	NSW	TOWNSVILLE PRIVATE HOSPITAL	001200L	5ARY STREET	TOWNSVILLE	2873	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into categories (a) or (b)	PHI 32/70, 21/21	
PRIVATE	NSW	TOWNSVILLE PRIVATE HOSPITAL	001200L	5ARY STREET	TOWNSVILLE	2873	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into categories (a) or (b)	PHI 32/70, 21/21	
PRIVATE	NSW	TOWNSVILLE PRIVATE HOSPITAL	001200L	5ARY STREET	TOWNSVILLE	2873	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into categories (a) or (b)	PHI 32/70, 21/21	
PRIVATE	NSW	TOWNSVILLE PRIVATE HOSPITAL	001200L	5ARY STREET	TOWNSVILLE	2873	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into categories (a) or (b)	PHI 32/70, 21/21	
PRIVATE	NSW	TOWNSVILLE PRIVATE HOSPITAL	001200L	5ARY STREET	TOWNSVILLE	2873	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into categories (a) or (b)	PHI 32/70, 21/21	
PRIVATE	NSW	TOWNSVILLE PRIVATE HOSPITAL	001200L	5ARY STREET	TOWNSVILLE	2873	NO		A - private hospitals that provide psychiatric care, including treatment of addictions, for at least 50% of the episodes of hospital treatment, and do not fall into categories (a) or (b)	PHI 32/70, 21/21	
PRIVATE	NSW	TOWNSVILLE PRIVATE HOSPITAL	001200L								

COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-6

This is the Annexure marked "DD-6" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit

Account Name: Parent Account: Account Name	Values	Sum of Total Licensed Bed	Sum of Total Licensed Bed2
Ramsay Healthcare Investments Pty Limited		8407	26.18%
Healthscope Operations Pty Ltd		4932	15.36%
		3647	11.36%
St John of God Health Care Inc		3043	9.48%
Epworth Foundation		1790	5.57%
Aurora Healthcare Australia Pty Ltd		1307	4.07%
Health Care Surgical Group Pty Ltd		1216	3.79%
St Vincent's Private Hospitals Ltd		1158	3.61%
Little Company of Mary Health Care Limited		1093	3.40%
UnitingCare Health		1075	3.35%
Mater Misericordiae Ltd		1069	3.33%
Cabrini Australia Limited		705	2.20%
Adventist HealthCare Limited		528	1.64%
Cura Day Hospitals (Operations) Pty Ltd		305	0.95%
Independent Private Hospitals of Australia Pty Limited [IPHOA]		294	0.92%
Macquarie Health Corporation Limited		252	0.78%
Nexus Day Hospitals Pty Ltd		250	0.78%
Fresenius Medical Care Australia Pty Ltd		154	0.48%
The Trustees of the Roman Catholic Church for the Diocese of Lismore (St Vincent's Hospital)		90	0.28%
Virus Health Limited		89	0.28%
B. Braun Avitum Australia Pty Ltd		76	0.24%
Wesley Community Services Limited		68	0.21%
Vision Eye Institute Limited		62	0.19%
Metropolitan and Royal Rehab - Dummy parent - see notes		61	0.19%
MBHealthcare Pty Ltd [Montserrat]		56	0.17%
The Bayside Asset Trust		56	0.17%
GenesisCare - Dummy Parent - see parent notes		34	0.11%
Eastern & Sutherland Heart Clinic - Dummy Parent		29	0.09%
SMS Healthcare - Dummy Parent		26	0.08%
The Park Private & Walcott Street Surgical - Dummy Parent		24	0.07%
Presmed Australia Pty Limited		23	0.07%
Northern & Southern Endoscopy - Dummy Parent See Notes		20	0.06%
Hyperbaric Health Pty. Ltd.		19	0.06%
Healius Limited		16	0.05%
Endoscopy Services Pty Ltd		14	0.04%
Day Procedures Australia - Dummy Parent - see parent notes		14	0.04%
ACURIO HEALTH PTY LTD		14	0.04%
Northwest Day Hospital and Westpoint Endoscopy Day Hospital - Dummy Parent		14	0.04%
Dr Scope & Coburg Endoscopy - Dummy Parent		13	0.04%
Lady Bjelke-Petersen Community Hospital & South Bank Day Hospital - Dummy Parent		13	0.04%
Integrated Clinical Oncology Network Pty Ltd		11	0.03%
Skin & Cancer Foundation Australia		10	0.03%
Genea Limited		10	0.03%
Health Frontiers Pty Ltd		8	0.02%
Brisbane Endoscopy Services & Southside Endoscopy Centre - Dummy Parent		8	0.02%
GastroMedicine & Endoscopy - dummy parent		6	0.02%
Monash IVF - Dummy Parent - see notes		3	0.01%
Marie Stopes International		3	0.01%
Cosmos Clinics- dummy parent - see notes			0.00%
Hader Clinics - Dummy Parent - see notes			0.00%
The Trustee for WELLINGTON DAY HOSPITAL TRUST [Specialist Care Australia]			0.00%
Melbourne Endoscopy Group Pty. Ltd.		0	0.00%
Grand Total		32115	100.00%

COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-7

This is the Annexure marked "DD-7" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

Orthopaedic surgery

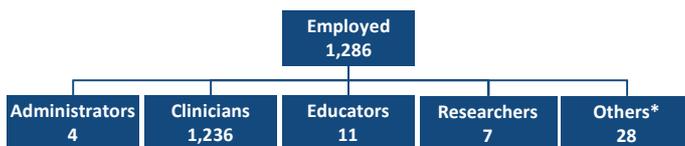


2016 Factsheet

Orthopaedic surgery involves the care of the musculoskeletal system. Orthopaedic surgeons diagnose, care and treat disorders of the bones, joints, muscles, ligaments, tendons, nerves and skin. A minimum of five years full-time advanced training through the Royal Australasian College of Surgeons is required to specialise in this area.

Workforce

In 2016, there were 1,286 orthopaedic surgeons employed in Australia, of whom 76.2% worked in the private sector. Over 96% of orthopaedic surgeons who completed the 2016 National Health Workforce Survey indicated they were clinicians.



* Includes roles reported by survey respondents that did not fit predefined survey categories.

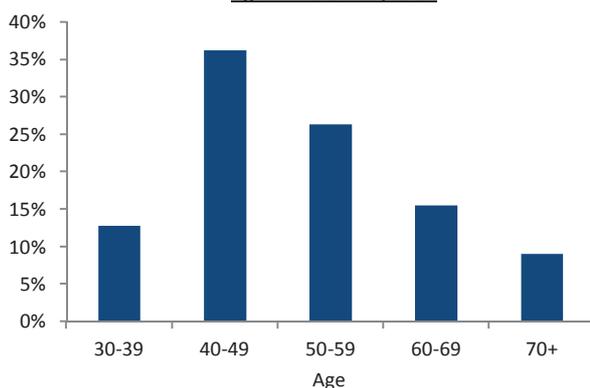
Demographics of clinicians

Males represented 96.9% of clinicians in 2016 and had an average age of 52.0 years. Females represented 3.1% of clinicians and were on average 5.9 years younger than male clinicians.

Category	% of clinicians	Average age	Average hours per week
Male	96.9%	52.0	47.2
Female	3.1%	46.1	46.8
Clinician total	100.0%	51.8	47.2

Over 36% of clinicians were aged 40-49 years and over 26% were aged 50-59 years.

Ages of clinicians, 2016



Distribution of clinicians

In 2016, the majority (83.7%) of clinicians were located in a major city or a location considered as MMM1 under the Modified Monash Model classification system.

Location of clinicians by remoteness, Modified Monash Model (MMM*)							
MMM category	1	2	3	4	5	6	7
%	83.7	8.8	6.8	-	0.4	0.2	0.1

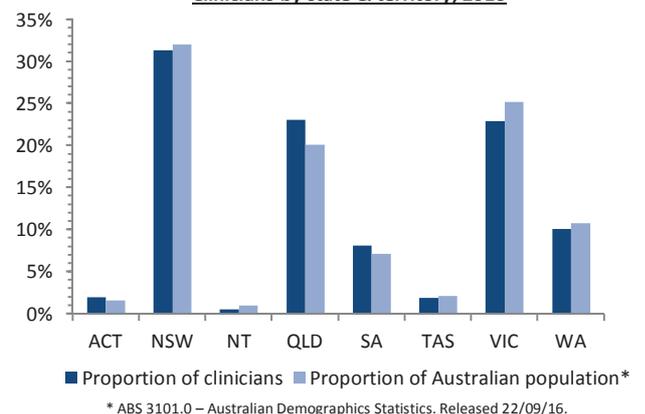
* Further information on the Modified Monash Model is available at doctorconnect.gov.au

Quick facts of clinician workforce



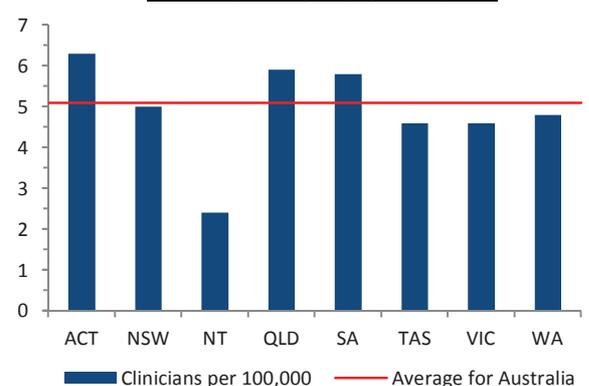
The largest number of clinicians was in New South Wales with 31.3% clinicians indicating their principle place of practice was in this state.

Clinicians by state & territory, 2016



There was an average of 5.1 clinicians per 100,000 population across Australia in 2016. The Australian Capital Territory had the highest ratio of clinicians with 6.3 per 100,000 population, followed by Queensland and South Australia with 5.9 and 5.8 per 100,000 population respectively.

Clinicians per 100,000 population, 2016



New fellows

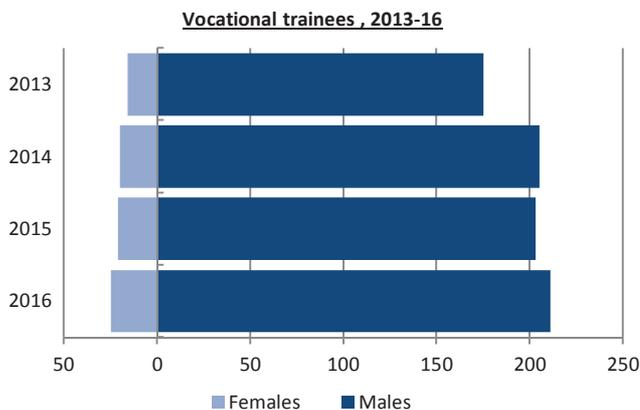
The number of orthopaedic surgery new fellows fluctuated between 2013 and 2015. During this period the number of female new fellows remained static.

Number of new fellows, 2013-15			
	2013	2014	2015
Males	47	28	44
Females	3	3	3
Total	50	31	47

Vocational training

Between 2013 and 2016, the number of female trainees increased by 56.3% and males increased by 20.6%.

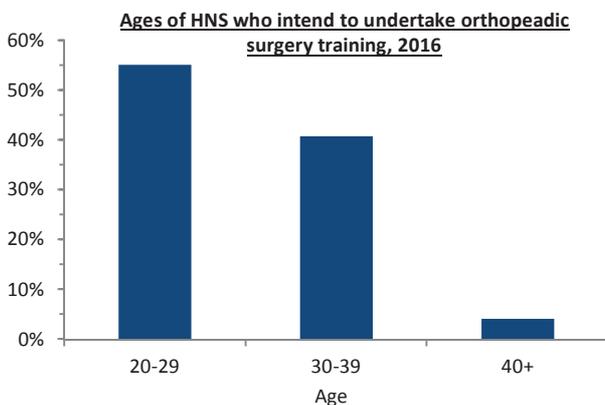
Trainee numbers, 2013-16			
Year	Females	Males	Total
2013	16	175	191
2014	20	205	225
2015	21	203	224
2016	25	211	236
Change 2013-16 (%)	56.3%	20.6%	23.6%



Vocational intentions

In 2016, there were 363 Hospital Non-Specialists (HNS*) who indicated their intention to undertake vocational training in orthopaedic surgery.

* A HNS is a medical practitioner employed in a salaried position mainly in a hospital. They do not hold a specialist qualification and are not training to obtain one. They include career medical officers, hospital medical officers, interns, principal house officers, resident medical officers and registrars.



Workforce dynamics indicator*

The workforce dynamics indicator highlights areas of concern in the future. The indicators measured and their current status is highlighted in the table below.

Note: The workforce dynamics indicators are for workforce assessment purposes only and are not intended to guide future training numbers.

* Further information on the workforce dynamics Indicator is available at health.gov.au



Indicator	Description	Status
Ageing of workforce	Workforces with higher average ages are more susceptible to higher exit rates due to retirements.	Yellow circle
Replacement rate	This measure indicates whether trainee numbers are sufficient to replace the numbers leaving the workforce.	Green circle
Duration of training program	This measure indicates how long it takes to train a replacement workforce.	Yellow circle

References

- 1) National Health Workforce Dataset (NHWDS): Medical Practitioners 2016.
- 2) Australian Medical Association (AMA) Career Pathways Guide.
- 3) Medical Education and Training Report 1st edition (Unpublished).
- 4) ABS 3101.0 – Australian Demographics Statistics. Released 22/09/16.
- 5) National Medical Training Advisory Network (NMTAN) – Prevocational Doctor Factsheet Methodology Paper.

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Psychiatry

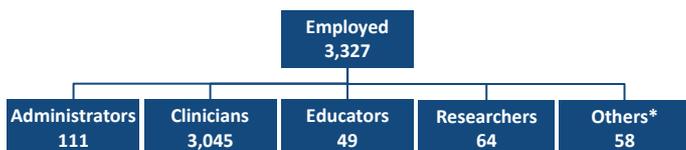
2016 Factsheet



Psychiatrists specialise in the diagnosis, treatment and prevention of mental illness and emotional problems. They are trained to recognise and treat the effects of emotional disturbances on the body, as well as the effects of physical conditions on the mind. A minimum of five years full-time advanced training through the Royal Australian and New Zealand College of Psychiatrists is required to specialise in this area.

Workforce

In 2016, there were 3,327 psychiatrists employed in Australia, of whom 49.7% worked in the private sector. The majority (91.5%) of psychiatrists who completed the 2016 National Health Workforce Survey indicated they were clinicians.



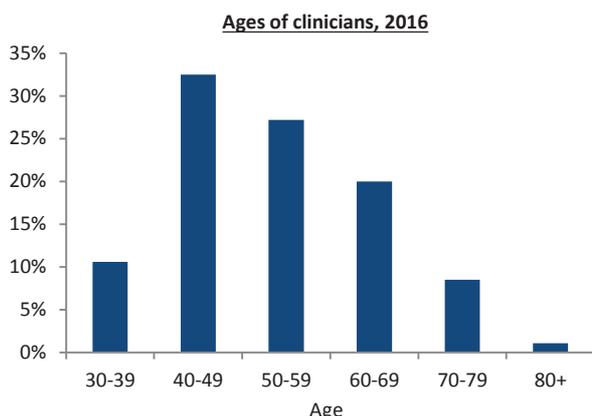
* Includes roles reported by survey respondents that did not fit predefined survey categories.

Demographics of clinicians

Males represented 61.3% of clinicians in 2016 and had an average age of 54.5 years. Females represented 38.7% of clinicians and were on average 3.4 years younger than male clinicians.

Category	% of clinicians	Average age	Average hours per week
Male	61.3%	54.5	40.6
Female	38.7%	51.1	34.2
Clinician total	100.0%	53.1	38.1

Over 32% of clinicians were aged 40-49 years and over 27% were aged 50-59 years.



Distribution of clinicians

Most clinicians (87.5%) were located in a major city or a location considered as MMM1 under the Modified Monash Model classification system in 2016.

Location of clinicians by remoteness, Modified Monash Model (MMM*)							
MMM category	1	2	3	4	5	6	7
%	87.5	6.6	4.1	0.6	0.4	0.5	0.3

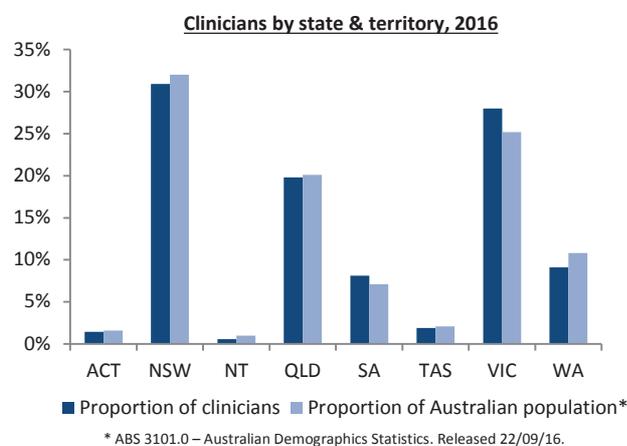
* Further information on the Modified Monash Model is available at doctorconnect.gov.au

The proportion of clinicians for South Australia and Victoria were higher than the population proportions for these states.

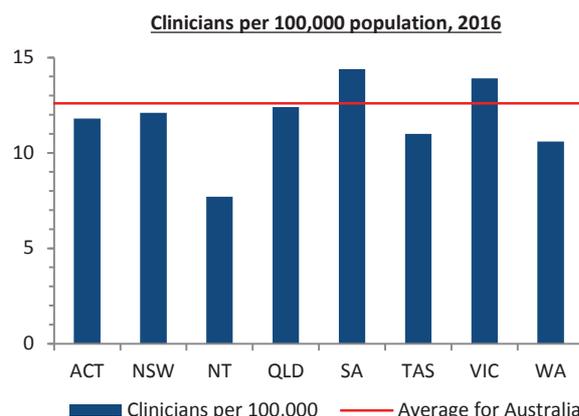
Quick facts of clinician workforce



Over 30% of clinicians reported their principal place of practice was in New South Wales.



New South Wales had the highest number of clinicians for 2016, however South Australia and Victoria were the only states with more clinicians than the national average of 12.6 clinicians per 100,000 population.

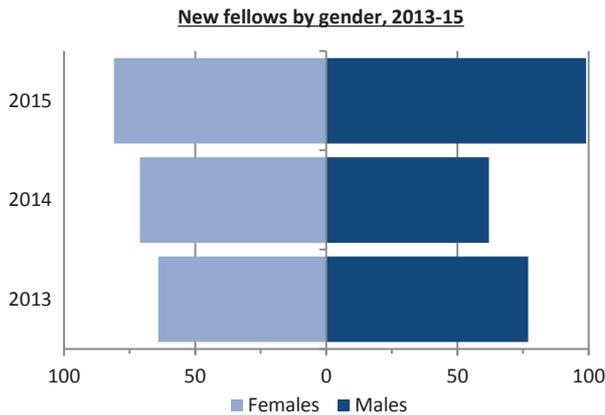


New fellows

The number of new fellows from the Royal Australian and New Zealand College of Psychiatrists increased 27.7% from 2013 to 2015. In 2015, 41.1% of new fellows obtained their specialist qualification outside of Australia.

Number of new fellows, 2013-15			
	2013	2014	2015
Trained in Australia	85	92	106
Overseas trained	56	41	74
Total	141	133	180

In 2015, 45% of new fellows were female.



Vocational training

The number of trainees increased every year between 2013 and 2016. During this period the number of male trainees increased by 44.4% and female trainees increased by 2.8%.

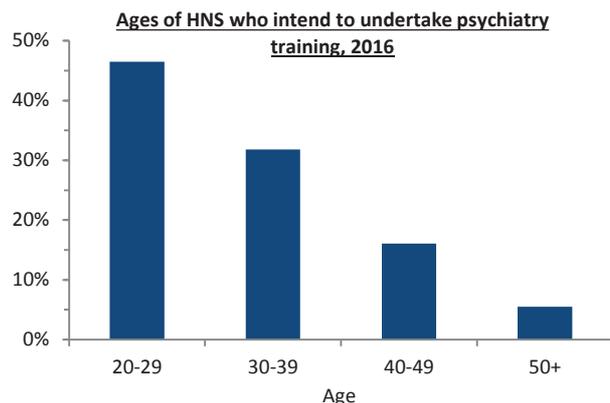
Trainee numbers, 2013-16			
Year	Females	Males	Total
2013	684	567	1,251
2014	699	587	1,286
2015	716	686	1,402
2016	703	819	1,522
Change 2013-16 (%)	2.8%	44.4%	21.7%



Vocational intentions

In 2016, there were 217 Hospital Non-Specialists (HNS*) who indicated their intention to undertake vocational training in psychiatry. Over 46% were aged 20-29 years.

* A HNS is a medical practitioner employed in a salaried position mainly in a hospital. They do not hold a specialist qualification and are not training to obtain one. They include career medical officers, hospital medical officers, interns, principal house officers, resident medical officers and registrars.



Workforce projections

The demand for psychiatrists will exceed supply. There is a projected shortage of 74 full-time equivalent (FTE) psychiatrists in 2025 and a shortfall of 124 FTE in 2030.

Supply and demand forecasts were calculated based on figures from the Australia's Future Health Workforce dataset.

Workforce dynamics indicator*

The workforce dynamics indicator highlights areas of concern in the future. The indicators measured and their current status is highlighted in the table below.

Note: The workforce dynamics indicators are for workforce assessment purposes only and are not intended to guide future training numbers.

* Further information on the workforce dynamics Indicator is available at health.gov.au



Indicator	Description	Status
Ageing of workforce	Workforces with higher average ages are more susceptible to higher exit rates due to retirements.	
Replacement rate	This measure indicates whether trainee numbers are sufficient to replace the numbers leaving the workforce.	
Reliance on Overseas Trained Specialists (OTS)	Workforces with high proportions of OTS are of concern because they depend on a supply stream affected by immigration policies that change.	
Duration of training program	This measure indicates how long it takes to train a replacement workforce. Indicator considers basic and advanced training components.	

References

- 1) National Health Workforce Dataset (NHWDs): Medical Practitioners 2016.
- 2) Australian Medical Association (AMA) Career Pathways Guide.
- 3) Medical Education and Training Report 1st edition (Unpublished).
- 4) ABS 3101.0 – Australian Demographics Statistics. Released 22/09/16.
- 5) Australia's Future Health Workforce – Psychiatry 2017.
- 6) National Medical Training Advisory Network (NMTAN) – Prevocational Doctor Factsheet Methodology Paper.

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Rehabilitation medicine

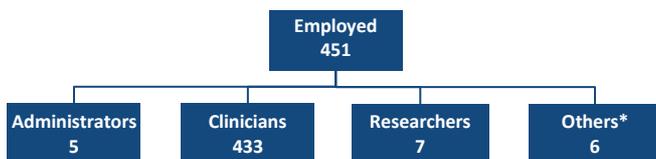
2016 Factsheet



Rehabilitation medicine involves the diagnosis, assessment and management of a disability due to illness or injury. Rehabilitation physicians work with people with a disability to help them achieve and maintain an optimal quality of life. A minimum of four years full-time advanced training through the Royal Australasian College of Physicians, Australasian Faculty of Rehabilitation Medicine, is required to specialise in this area.

Workforce

There were 451 rehabilitation medicine specialists employed in Australia in 2016, of which 37.7% worked in the private sector. The majority (96.0%) of specialists in this field who completed the 2016 National Health Workforce Survey indicated they were clinicians.



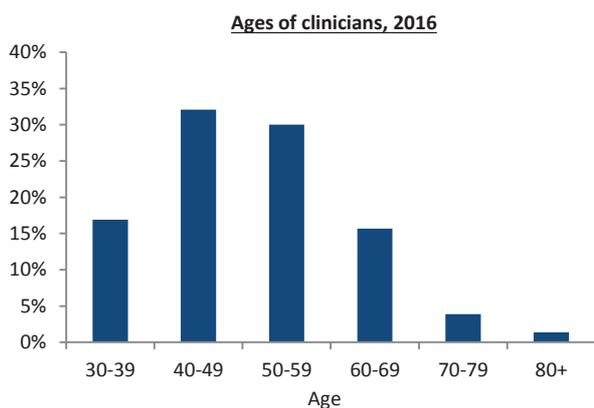
* Includes roles reported by survey respondents that did not fit predefined survey categories.

Demographics of clinicians

Males represented 53.6% of clinicians in 2016 and had an average age of 53.3 years. Females represented 46.4% of clinicians and were on average 6.0 years younger than male clinicians.

Category	% of clinicians	Average age	Average hours per week
Male	53.6%	53.3	37.0
Female	46.4%	47.3	33.1
Clinician total	100.0%	50.5	35.2

Over 32% of clinicians were aged 40-49 years and 30% were aged 50-59 years.



Distribution of clinicians

In 2016, the majority (86.1%) of clinicians were located in a major city or a location considered as MMM1 under the Modified Monash Model classification system.

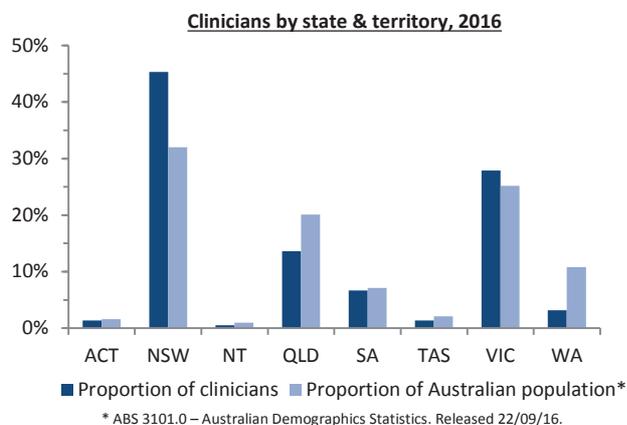
Location of clinicians by remoteness, Modified Monash Model (MMM*)							
MMM category	1	2	3	4	5	6	7
%	86.1	6.3	7.2	0.2	0.2	-	-

* Further information on the Modified Monash Model is available at doctorconnect.gov.au

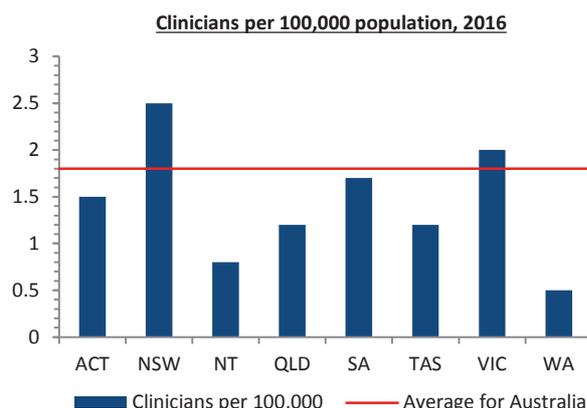
Quick facts of clinician workforce



The largest number of clinicians was in New South Wales with 45.3% of clinicians indicating their principle place of practice was in this state.



New South Wales had the highest ratio of clinicians in 2016 with 2.5 per 100,000 population. Victoria was the only other jurisdiction with more clinicians than the national average of 1.8 per 100,000 population.



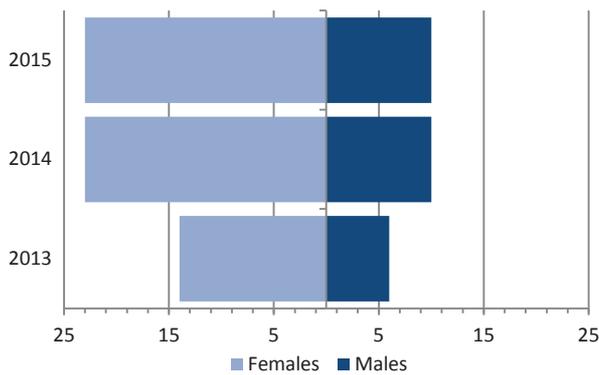
New fellows

The number of rehabilitation medicine new fellows in 2015(33) was 65.0% higher than the number in 2013(20). Over the same period, the number of overseas trained new fellows who obtained their specialist qualification outside of Australia decreased by 50.0%.

	Number of new fellows, 2013-15		
	2013	2014	2015
Trained in Australia	18	30	32
Overseas trained	2	3	1
Total	20	33	33

In 2015, 69.7% of new fellows were female.

New fellows by gender, 2013-15



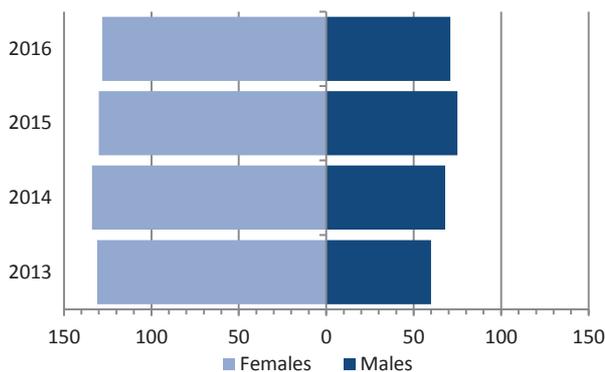
Vocational training

Female trainees outnumbered male trainees in every year between 2013 and 2016. During this period, the total number of trainees increased by 4.2%.

Trainee numbers, 2013-16

Year	Females	Males	Total
2013	131	60	191
2014	134	68	202
2015	130	75	205
2016	128	71	199
Change 2013-16 (%)	-2.3%	18.3%	4.2%

Vocational trainees, 2013-16

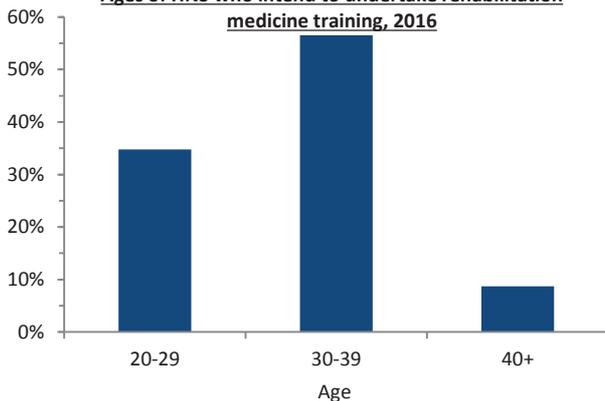


Vocational intentions

In 2016, there were 23 Hospital Non-Specialists (HNS*) who indicated their intention to undertake vocational training in rehabilitation medicine.

* A HNS is a medical practitioner employed in a salaried position mainly in a hospital. They do not hold a specialist qualification and are not training to obtain one. They include career medical officers, hospital medical officers, interns, principal house officers, resident medical officers and registrars.

Ages of HNS who intend to undertake rehabilitation medicine training, 2016



Workforce dynamics indicator*

The workforce dynamics indicator highlights areas of concern in the future. The indicators measured and their current status is highlighted in the table below.

Note: The workforce dynamics indicators are for workforce assessment purposes only and are not intended to guide future training numbers.

* Further information on the workforce dynamics Indicator is available at health.gov.au



Indicator	Description	Status
Ageing of workforce	Workforces with higher average ages are more susceptible to higher exit rates due to retirements.	Orange
Replacement rate	This measure indicates whether trainee numbers are sufficient to replace the numbers leaving the workforce.	Green
Reliance on Overseas Trained Specialists (OTS)	Workforces with high proportions of OTS are of concern because they depend on a supply stream affected by immigration policies that change.	Green
Duration of training program	This measure indicates how long it takes to train a replacement workforce.	Yellow

References

- 1) National Health Workforce Dataset (NHWDS): Medical Practitioners 2016.
- 2) Australian Medical Association (AMA) Career Pathways Guide.
- 3) Medical Education and Training Report 1st edition (Unpublished).
- 4) ABS 3101.0 – Australian Demographics Statistics. Released 22/09/16.
- 5) National Medical Training Advisory Network (NMTAN) – Prevocational Doctor Factsheet Methodology Paper.

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COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-8

This is the Annexure marked "DD-8" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

Private health insurer market shares

Insurer	Party that undertakes contracting services	National Market Share Hospital Policies June 2021
Medibank Private Limited	Medibank	26.1%
Bupa Australia Pty Ltd	Bupa	24.2%
The Hospitals Contribution Fund of Australia Limited	HCF	12.6%
nib Health Fund Ltd	nib	9.7%
HBF Health Limited (WA)	HBF	6.0%
HBF Health Limited (All other states)	AHSA	0.8%
Teachers Federation Health Limited	AHSA	2.8%
Australian Unity Health Limited	AHSA	2.8%
Defence Health Limited	AHSA	2.2%
GMHBA Limited	AHSA	2.2%
CBHS Health Fund Limited	AHSA	1.7%
Westfund Limited	AHSA	0.8%
Latrobe Health Services Limited	ARHG	0.8%
Health Partners Limited	AHSA	0.7%
Health Insurance Fund of Australia Limited	AHSA	0.7%
TUH Health Fund	AHSA	0.6%
St Lukes Health	ARHG	0.6%
CUA Health Pty Ltd	AHSA	0.6%
Queensland Country Health Fund Ltd	AHSA	0.5%
Peoplecare Health Limited	AHSA	0.5%
Doctors' Health Fund Pty Ltd	AHSA	0.5%
Police Health Limited	AHSA	0.4%
health.com.au Pty Limited	AHSA	0.4%
Railway & Transport Health Fund Limited	AHSA	0.4%
Navy Health Ltd	AHSA	0.4%
MO Health Pty Ltd	AHSA	0.3%
Mildura District Hospital Fund Limited	ARHG	0.2%
Phoenix Health Fund Limited	AHSA	0.2%
National Health Benefits Fund Australia Pty Ltd	AHSA	0.1%
Nurses & Midwives Health Pty Ltd	AHSA	0.1%
Health Care Insurance Limited	AHSA	0.1%
ACA Health Benefits Fund Limited	AHSA	0.1%
Transport Health Pty Ltd	AHSA	0.1%
Hunter Health Insurance	ARHG	0.0%
Reserve Bank Health Society Limited	AHSA	0.0%
CBHS Corporate Health Pty Ltd	AHSA	0.0%

Sourced from *Operations of Private Health Insurers Annual Report 2020-2021*, published by APRA on 27 October 2021.

Health insurance payer market

Private hospital funder	\$ millions	Share
Private health insurers	11,683	67.7%
Individuals	2,246	13.0%
State and local government	1,051	6.1%
DVA	741	4.3%
Workers' compensation insurers	400	2.3%
Transport accident insurers	256	1.5%
Other Federal government	120	0.7%
Unknown	751	4.4%
	17,248	100.0%

COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-9

This is the Annexure marked "DD-9" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

Register of private health insurers

The institutions listed below are regulated by APRA in accordance with the [Private Health Insurance \(Prudential Supervision\) Act 2015](#).

Updated 5 January 2022

ACA Health Benefits Fund Limited

Restricted
Membership
Insurer

Registered Name	ACA Health Benefits Fund Limited
-----------------	----------------------------------

**Restricted
Membership
Insurer**

Restriction Where the Company is registered as a restricted access insurer under the Private Health Insurance Legislation, the following persons comprise the Restricted Access Group to whom the Company's complying health insurance products are, or will be, made available:

(a) a person who is, or was, an employee of:

(i) an incorporated entity that is affiliated with the Church in Australia;

(ii) Avondale College Foundation;

(iii) Karalundi Aboriginal Education Centre;

(iv) Currawah Aboriginal Education Centre;

(v) Mirriwinni Gardens Aboriginal Centre;

(vi) Sydney Adventist Hospital Foundation; or

(vii) a supportive independent ministry recognized for this purpose by the South Pacific Division;

(b) a person who is, or was, a literature evangelist, while distributing for Home Health Education Service;

(c) a person who is, or was, a Local Church Officer (as voted by the local church);

(d) a person who, by the operation of the Private Health Insurance Legislation and the Private Health Insurance (Registration) Rules, is taken to belong to the Restricted Access Group.

For full restriction criteria, refer to the Private Health Insurance (Registration) Rules on www.comlaw.gov.au.

Address 148 Fox Valley Rd (Locked Bag 2014) Wahroonga, NSW 2076

**Restricted
Membership
Insurer**

States in which insurer operates ACT, NSW, QLD, SA, TAS, VIC, WA, NT

Telephone 1300 368 390
From Overseas +61 2 9847 3390

Email info@acahealth.com.au

Web Site <http://www.acahealth.com.au>

AIA Health Insurance Pty Ltd

Open Membership Insurer

Registered Name AIA Health Insurance Pty Ltd

Address Level 6, 509 St Kilda Road, Melbourne VIC 3004

States in which insurer operates ACT, NSW, NT, QLD, SA, TAS, VIC, WA

Telephone 1300 300 338

Email

Web Site

Australian Unity Health Limited

Open Membership Insurer

Registered Name Australian Unity Health Limited

Address 271 Spring Street Melbourne, VIC 3000

Open Membership Insurer

States in which insurer operates ACT, NSW, QLD, SA, TAS, VIC, WA, NT

Telephone 13 29 39
From Overseas +61 3 8682 7000

Email customerservice@australianunity.com.au

Web Site <http://www.australianunity.com.au/health-insurance/>

BUPA HI Pty Ltd

Open Membership Insurer

Registered Name BUPA HI Pty Ltd

Address Level 16, 33 Exhibition Street Melbourne, VIC 3000

States in which insurer operates ACT, NSW, QLD, SA, TAS, VIC, WA, NT

Telephone 134135
From Overseas +61 3 9487 6400

Email healtheng@bupa.com.au

Web Site <http://www.bupa.com.au>

CBHS Corporate Health Pty Ltd

Open Membership Insurer

Registered Name CBHS Corporate Health Pty Ltd

Address Level 5, 79 George Street Parramatta, NSW 2150

States in which insurer operates ACT, NSW, QLD, SA, TAS, VIC, WA, NT

Open Membership Insurer

Telephone 1300 586 462

Email help@cbhscorp.com.au

Web Site <http://www.cbhscorporatehealth.com.au>

CBHS Health Fund Limited

Restricted Membership Insurer

Registered Name CBHS Health Fund Limited

Restriction 1. A person who is, or was, an employee of the Commonwealth Bank Group and their family members.

2. A person who is, or was:

(a) an employee of a contractor to any of the Commonwealth Bank Group and who is, or was, involved in supplying goods or services to the Commonwealth Bank Group and their family members; or

(b) an employee of a franchisee of a subsidiary company within the Commonwealth Bank Group and their family members.

'Commonwealth Bank Group' means:

(a) the Commonwealth Bank of Australia;

(b) current subsidiaries (within the meaning of the Corporations Act 2001 (Cth)) of the Commonwealth Bank of Australia;

(c) each former subsidiary (within the meaning of the Corporations Act 2001) of the Commonwealth Bank of Australia; and

(d) Gateway Bank Ltd.

For full restriction criteria, refer to the Private Health Insurance (Registration) Rules on www.comlaw.gov.au.

Address Level 5, 79 George Street Parramatta, NSW 2150

States in which insurer operates ACT, NSW, QLD, SA, TAS, VIC, WA, NT

Telephone 1300 654 123
From Overseas +61 2 9843 7666

Email help@cbhs.com.au

Web Site <http://www.cbhs.com.au>

Cessnock District Health Benefits Fund Limited

Open Membership Insurer

Registered Name Cessnock District Health Benefits Fund Limited

Address 151-153 Vincent Street Cessnock, NSW 2325

States in which insurer operates ACT, NSW, QLD, SA, TAS, VIC, WA, NT

Telephone 02 4990 1385
From Overseas +61 2 4990 1385

Email enquiries@cdhbf.com.au

Web Site <http://www.cdhbf.com.au>

CUA Health Pty Ltd

Open Membership Insurer

Registered Name CUA Health Pty Ltd

Address Level 23, 145-147 Ann Street Brisbane, QLD 4000

States in which insurer operates ACT, NSW, QLD, SA, TAS, VIC, WA, NT

Open Membership Insurer

Telephone 1300 499 260
From Overseas +61 7 3295 9400

Email cuahealth@cua.com.au

Web Site <http://www.cuahealth.com.au>

Defence Health Limited

Restricted Membership Insurer

Registered Name Defence Health Limited

Restriction A person who is, or was:

1. a member of an arm of the Defence Force as referred to in the *Defence Act 1903*(Cth); or
2. an employee of the Department of Defence or an entity which has a reporting obligation to, or is within the portfolio responsibility of, the Minister for Defence or a Minister Assisting such Minister or a Parliamentary Secretary to either Minister (such Department and entities collectively called "the Bodies"); or
3. an employee of:
 1. a contractor to any of the Bodies; or
 2. a prescribed agency (as referred to in the *Financial Management and Accountability Act 1997* (Cth)) or a Commonwealth authority or Commonwealth company (as referred to in the *Commonwealth Authorities and Companies Act 1997* (Cth)) or other entity, which agency, authority, company or entity supplies goods or services to any of the Bodies; and who is, or was, involved in supplying goods or services to any of the Bodies.

For full restriction criteria, refer to the Private Health Insurance (Registration) Rules on www.comlaw.gov.au.

Address Level 4, 380 St Kilda Road Melbourne, Victoria 3004

Restricted
Membership
Insurer

States in which
insurer
operates ACT, NSW, QLD, SA, TAS, VIC, WA, NT

Telephone 1800 335 425
From Overseas +61 3 8679 1000

Email info@defencehealth.com.au

Web Site <http://www.defencehealth.com.au>

Doctors' Health Fund Pty Ltd, The

Restricted
Membership
Insurer

Registered
Name Doctors' Health Fund Pty Ltd, The

**Restricted
Membership
Insurer**

Restriction A person who is, or was, a medical practitioner as defined in section 3 (1) of the Health Insurance Act 1973 (Commonwealth) ('Medical Practitioner').

A person who is, or was at any time:

1. in one of the following categories of health practitioner', as listed in the Health Practitioner Regulation National Law Act 2009 (Qld) (whether or not registered or practising in Queensland or any other Australian State or Territory):
 1. medical;
 2. medical radiation;
 3. optometry;
 4. dental;
 5. occupational therapy;
 6. physiotherapy; and
 7. Psychology
 8. 'Health Practitioner'
2. an employee of the Medical Practitioner or a Health Practitioner or an officer or employee of an incorporated practice of a Medical Practitioner or a Health Practitioner;
3. a person studying to become a Health Practitioner as listed above in item 13.2(a) at an Australian university medical school or other educational institution;
4. an overseas trained doctor enrolled through the Australian Medical Council (the 'AMC') to sit for the examinations of that Council or of one of the specialist colleges affiliated with the AMC;
5. an officer or employee of the federal, or a state, Australian Medical Association;
6. an officer or employee of an associated or subsidiary organisation of the federal or a state, Australian Medical Association;
7. an officer or employee of any federal or state association of registered medical practitioners or health practitioners; or
8. an officer or employee (including contractors) of Avant Insurance Limited (ABN 82 003 707 471) or Avant Law Pty Limited (ACN 136 429 153).

For full restriction criteria, refer to the Private Health Insurance (Registration) Rules on www.comlaw.gov.au.

Address Level 6, 201 Sussex Street, Sydney NSW 2000

Restricted
Membership
Insurer

States in which insurer operates ACT, NSW, QLD, SA, TAS, VIC, WA, NT

Telephone 1800 226 126

Email info@doctorshealthfund.com.au

Web Site <http://www.doctorshealthfund.com.au>

GMHBA Limited

Open Membership Insurer

Registered Name GMHBA Limited

Address Level 1, Suite 9 10 Moorabool Street Geelong, VIC 3220

States in which insurer operates ACT, NSW, QLD, SA, TAS, VIC, WA, NT

Telephone 1300 446 422

Email service@gmhba.com.au

Web Site <http://www.gmhba.com.au>

HBF Health Limited

Open Membership Insurer

Registered Name HBF Health Limited

Open Membership Insurer

Address	570 Wellington Street Perth, WA 6000
States in which insurer operates	ACT, NSW, QLD, SA, TAS, VIC, WA, NT
Telephone	133 423 From Overseas +61 8 9265 6111
Email	memberservices@hbf.com.au
Web Site	http://www.hbf.com.au

Health Care Insurance Ltd

Open Membership Insurer

Registered Name	Health Care Insurance Ltd
Address	25 Cattley Street Burnie, TAS 7320
States in which insurer operates	ACT, NSW, QLD, SA, TAS, VIC, WA, NT
Telephone	1800 804 950
Email	enquiries@hcilt.com.au
Web Site	http://www.hcilt.com.au

Health Insurance Fund of Australia Limited

Open Membership Insurer

Registered Name	Health Insurance Fund of Australia Limited
Address	100 Stirling Street Perth, WA 6000
States in which insurer operates	ACT, NSW, QLD, SA, TAS, VIC, WA, NT
Telephone	1300 134 060 From Overseas +61 8 9227 4200

Open Membership Insurer

Email info@hif.com.au

Web Site <http://www.hif.com.au>

Health Partners Limited

Open Membership Insurer

Registered Name Health Partners Limited

Address Level 3, 101 Pirie St Adelaide, SA 5000

States in which insurer operates ACT, NSW, QLD, SA, TAS, VIC, WA, NT

Telephone 1300 113 113

Email ask@healthpartners.com.au

Web Site <http://www.healthpartners.com.au>

health.com.au Pty Ltd

Open Membership Insurer

Registered Name health.com.au Pty Ltd

Address Riverview Commercial Centre 10/71 Victoria Crescent
Abbotsford, VIC 3067

States in which insurer operates ACT, NSW, QLD, SA, TAS, VIC, WA, NT

Telephone 1300 199 802

Email customers@health.com.au

Web Site <http://www.health.com.au>

Hospitals Contribution Fund of Australia Ltd, The

Open Membership Insurer

Registered Name Hospitals Contribution Fund of Australia Ltd, The

Address 403 George St Sydney, NSW 2000

States in which insurer operates ACT, NSW, QLD, SA, TAS, VIC, WA, NT

Telephone 13 13 34
From Overseas +61 2 9290 0444

Email service@hcf.com.au

Web Site <http://www.hcf.com.au>

Latrobe Health Services Limited

Open Membership Insurer

Registered Name Latrobe Health Services Limited

Address 32 McDonald Street Morwell, VIC, 3840

States in which insurer operates ACT, NSW, QLD, SA, TAS, VIC, WA, NT

Telephone 1300 362 144

Email info@lhs.com.au

Web Site <http://www.latrobehealth.com.au>

Medibank Private Limited

Open Membership Insurer

Registered Name Medibank Private Limited

Open Membership Insurer

Address	Level 6, 720 Bourke Street Docklands, VIC 3008
States in which insurer operates	ACT, NSW, QLD, SA, TAS, VIC, WA, NT
Telephone	134 190 From Overseas +61 3 8622 5780
Email	ask_us@medibank.com.au
Web Site	http://www.medibank.com.au

Mildura District Hospital Fund Ltd

Open Membership Insurer

Registered Name	Mildura District Hospital Fund Ltd
Address	79 Deakin Avenue Mildura, VIC 3500
States in which insurer operates	ACT, NSW, QLD, SA, TAS, VIC, WA, NT
Telephone	03 5023 0269 From Overseas +61 3 5023 0269
Email	mdhf@mdhf.com.au
Web Site	http://www.mdhf.com.au/

National Health Benefits Australia Pty Ltd

Open Membership Insurer

Registered Name	National Health Benefits Australia Pty Ltd
Address	Level 6, 10 Herb Elliot Avenue Sydney Olympic Park, NSW 2127
States in which insurer operates	ACT, NSW, QLD, SA, TAS, VIC, WA, NT

Open Membership Insurer

Telephone

1800 148 626

From Overseas +61 2 4224 4384

Email

info@onemedifund.com.au

Web Site

<http://www.onemedifund.com.au>

Navy Health Ltd

Restricted
Membership
Insurer

Registered Name Navy Health Ltd

**Restricted
Membership
Insurer**

Restriction A person who is, or was, employed full time:

1. in the RAN, ARA or RAAF; or
2. as a civilian employee/civilian contractor with the Department of Defence, Nava Shore Establishment, other Defence establishment, or Australian Public Service employees assigned to, or directly engaged in providing services to, the Department of Defence or the Australian Defence Forces.

A person who is, or was, an active member of the RANR, ARAR or RAAFR.

A person who is, or was, a member of the Cadets (RAN, ARA and RAAF).

'ARA' means Australian Regular Army;

'ARAR' means Reserve Forces of the Australian Regular Army;

'RAAF' means Royal Australian Air Force;

'RAAFR' means Reserve Forces of the RAAF;

'RAN' means Royal Australian Navy;

'RANR' means Reserve Forces of the RAN.

For full restriction criteria, refer to the Private Health Insurance (Registration) Rules on www.comlaw.gov.au.

Address 601 Canterbury Road, Surrey Hills, VIC, 3127

States in which insurer operates ACT, NSW, QLD, SA, TAS, VIC, WA, NT

Telephone 1300 306 289

Email query@navyhealth.com.au

Web Site <http://www.navyhealth.com.au>

NIB Health Funds Ltd

Open Membership Insurer

Registered Name	NIB Health Funds Ltd
Address	Level 5, 22 Honeysuckle Drive Newcastle NSW 2300
States in which insurer operates	ACT, NSW, QLD, SA, TAS, VIC, WA, NT
Telephone	13 16 42 From Overseas +61 2 4921 2527
Email	nib@nib.com.au
Web Site	http://www.nib.com.au

Peoplecare Health Limited

Open Membership Insurer

Registered Name	Peoplecare Health Limited
Address	Cnr Young & Victoria Streets Wollongong, NSW 2500
States in which insurer operates	ACT, NSW, QLD, SA, TAS, VIC, WA, NT
Telephone	1800 808 690 From Overseas +61 2 4224 4333
Email	info@peoplecare.com.au
Web Site	http://www.peoplecare.com.au

Phoenix Health Fund Limited

Open Membership Insurer

Open Membership Insurer

Registered Name	Phoenix Health Fund Limited
Address	Suite 1, 4 Honeysuckle Drive Newcastle, NSW 2300
States in which insurer operates	ACT, NSW, QLD, SA, TAS, VIC, WA, NT
Telephone	1800 028 817 From Overseas +61 2 4935 5741
Email	enquiries@phoenixhealthfund.com.au
Web Site	http://www.phoenixhealthfund.com.au

Police Health Limited

Restricted Membership Insurer

Registered Name Police Health Limited

- Restriction
1. A person who was already insured with the Insurer immediately before 12 October 2007.
 2. A person who is, or was, employed in relation to the provision of emergency services.
 3. A person who is, or becomes, an officer or employee (including a contractor of the Insurer).
 4. A partner or dependent child of a person described under Fund Rules C2 2.1(1), C2 2.1(2) or C2 2.1(3).
 5. A former partner or adult child of a person described under Fund Rules C2 2.1(1), C2 2.1(2) or C2 2.1(3).
 6. A sibling, grandchild or parent of a person described under Fund Rules C2 2.1(1), C2 2.1(2) or C2 2.1(3).
 7. A partner or a dependent child of a person who is the adult child of a person who is described under Fund Rules C2 2.1(1), C2 2.1(2) or C2 2.1(3).
 8. A partner or dependent child of a person who is the sibling or grandchild of a person described under Fund Rules C2 2.1(1), C2 2.1(2) or C2 2.1(3).

For full restriction criteria, refer to the Private Health Insurance (Registration) Rules on www.comlaw.gov.au.

**Restricted
Membership
Insurer**

Address 320 King William Street Adelaide, SA 5000

**States in which
insurer
operates** ACT, NSW, QLD, SA, TAS, VIC, WA, NT

Telephone 1800 603 603
From Overseas +61 8 8112 7000

Email enquiries@policehealth.com.au

Web Site <http://www.policehealth.com.au>

Queensland Country Health Fund Ltd

Open Membership Insurer

Registered Name Queensland Country Health Fund Ltd

Address 333 Ross River Road Aitkenvale, QLD 4814

States in which insurer operates ACT, NSW, QLD, SA, TAS, VIC, WA, NT

Telephone 1800 813 415
From Overseas +61 7 4750 3200

Email info@gchfund.com.au

Web Site <http://qldcountryhealth.com.au>

Queensland Teachers' Union Health Fund Limited

**Restricted
Membership
Insurer**

Restricted
Membership
Insurer

Registered Name Queensland Teachers' Union Health Fund Limited

**Restricted
Membership
Insurer**

Restriction

1. Any person who is, or was, a member of an employee organisation (a Union):
 - (a) registered or recognised under the Fair Work (Registered Organisations) Act 2009 (Cth), including under Schedules 1 or 2 of that Act; or
 - (b) registered as an organisation, being an association of employees under Chapter 12 of the Industrial Relations Act 1999 (Qld); or (c) registered in another state or territory under similar legislation.

2. A person (other than a teacher) who is, or was at the time, a member of any union and who is, or was, employed by:
 - (a) a school or any other educational institution; or
 - (b) a university or any other tertiary or further education or training institution;

that is, or was at the time, registered or otherwise licensed or approved under any Commonwealth or State legislation.

3. A person who is, or was, an employee of Queensland Teachers' Union of Employees or Queensland Independent Education Union of Employees and who is, or was at the time, a member of any union.

4. Any person who would qualify under items 2 or 3, where no union coverage exists, or existed at the time, for that person.

For full restriction criteria, refer to the Private Health Insurance (Registration) Rules on www.comlaw.gov.au.

Restricted
Membership
Insurer

Address 438 Pauls Terrace Fortitude Valley Brisbane, QLD 4006

States in which insurer operates ACT, NSW, QLD, SA, TAS, VIC, WA, NT

Telephone 1300 360 701
+61 7 3259 5821

Email enquiries@tuh.com.au

Web Site <http://tuh.com.au/>

Railway & Transport Health Fund Ltd

Restricted
Membership
Insurer

Registered Name Railway & Transport Health Fund Ltd

Restriction A person who is, or was, an employee of:

1. Government or privately operated land, sea or air transport companies or associated Government entities charged with administering the industry;
2. Government or privately operated energy generation and delivery entities; or
3. a contract company, where those employees or former employees were employed to provide services under a contract to an organisation described in (a), (b), or below (or successors of those organisations).

A person who is, or was, a member of the Railways Credit Union Limited (or a successor to that organisation).

For full restriction criteria, refer to the Private Health Insurance (Registration) Rules on www.comlaw.gov.au.

**Restricted
Membership
Insurer**

Address 1 Buckingham Street Surry Hills, NSW 2010

States in which insurer operates ACT, NSW, QLD, SA, TAS, VIC, WA, NT

Telephone 1300 304 321

Email help@rthealthfund.com.au

Web Site <http://www.rthealthfund.com.au>

Reserve Bank Health Society Ltd

**Restricted
Membership
Insurer**

Registered Name Reserve Bank Health Society Ltd

Restriction A person who is, or was, an employee of the Reserve Bank of Australia or Note Printing Australia Limited.

For full restriction criteria, refer to the Private Health Insurance (Registration) Rules on www.comlaw.gov.au.

Address 2-12 Young Street Wollongong, NSW 2500

States in which insurer operates ACT, NSW, QLD, SA, TAS, VIC, WA, NT

Telephone 1800 027 299
From Overseas +61 2 4224 4393

Email info@myrbhs.com.au

Web Site <http://www.myrbhs.com.au>

St Luke's Medical & Hospital Benefits Association

Open Membership Insurer

Registered Name	St Luke's Medical & Hospital Benefits Association
Address	17 The Quadrant Mall Launceston, TAS 7250
States in which insurer operates	ACT, NSW, QLD, SA, TAS, VIC, WA, NT
Telephone	1300 65 1988 From Overseas +61 3 6331 9255
Email	general@stlukes.com.au
Web Site	http://www.stlukes.com.au

Teachers Federation Health Ltd

Restricted Membership Insurer

Registered Name Teachers Federation Health Ltd

Restriction (a). TH is a restricted access insurer, as defined in the PHIPS Act. The persons set out in Rules C2(b) and C2(c) are deemed to be included in TH's restricted access group and are eligible to apply for a policy.

(b). The following persons are Principal Insured:

- (i). A person who is, or was, a financial member of the following:
 - A. Australian Education Union New South Wales Teachers Federation (NSWTF) Branch;
 - B. Australian Education Union or its state or territory branches and unions affiliated to that union;
 - C. Independent Education Union of Australia (IEU) or its state or territory branches and unions affiliated to that union;

Restricted
Membership
Insurer

D. Institute of Senior Education Administrators NSW;
E. National Tertiary Education Union;
F. State School Teachers Union (SSTUWA), or successor organisations.

(ii). A person who is, or was, employed as school administration staff and who is, or was at the time, covered by their appropriate union where one exists.

(iii). A person who is, or was, employed as support staff by a state or territory Department of Education (or like organisation), a state or territory Board of Studies, Teaching and Educational Standards (or like organisation), or successor organisations, and who is, or was at the time, a member of the appropriate union, where one exists.

(iv). A person who is, or was, a permanent employee of the following:
A. Australian Education Union New South Wales Teachers Federation (NSWTF) Branch; or
B. Teachers Mutual Bank Limited; or
C. Federation Law; or
D. Aware Super Pty Ltd; or
E. An organisation listed in (b) (i) above and who is, or was at the time a member of their appropriate union, where one exists or existed.

(v). A person who is, or was, a student undergoing training who is, or was at the time, a full member of a union listed above in Rule (b) (i).

(vi). A person who:
A. Is, or was, employed as support staff in a public school or college; or
B. Is, or was at the time, employed by a state or territory Department of Education (or like organisation) or in TAFE, or successor organisations; and
C. Is, or was at the time, a member of their appropriate union, where one exists or existed.

Restricted
Membership
Insurer

(vii). A person who was insured with TH immediately before 12 October 2007.

(viii). A person who is, or becomes, an officer or employee of, or a contractor to, Teachers Federation Health Ltd and who is, at the time at which they seek to become insured by Teachers Federation Health Ltd, a financial member of a union, where one exists of which they are eligible to be a member.

(ix). A person who is, or was, any of the following:

- A. A registered nurse;
- B. An enrolled nurse;
- C. A registered midwife;
- D. A nurse practitioner;
- E. A nurse in mental health services;
- F. A psychiatric nurse;
- G. An assistant in nursing or an assistant in midwifery;
- H. A nursing student undergoing training or student nurse or trainee

enrolled nurse in Victoria or Tasmania;

I. Employees, however described or titled, employed to provide or assist in the provision of nursing care or nursing services or both;

and who is, or was, a financial member of the Australian Nursing & Midwifery Federation or a state or territory branch or relevant state union of same (see 1. - 8. following) or a union affiliated to that union, including any successor organisations:

1. NSW Nurses and Midwives' Association;
2. Australian Nursing & Midwifery Federation (Victorian Branch);
3. Queensland Nurses & Midwives Union;
4. Australian Nursing and Midwifery Federation (SA Branch);
5. Australian Nursing Federation (WA Branch);
6. Australian Nursing & Midwifery Federation (ACT Branch);
7. Australian Nursing & Midwifery Federation (Tasmanian Branch); and
8. Australian Nursing & Midwifery Federation (NT Branch).

**Restricted
Membership
Insurer**

(x). A person who is, or was, an officer of or employed in any of the organisations set out in 1.- 8. above.

(c). The following persons may also be Insured Members:

- (i). A partner or Dependent Child of a Principal Insured;
- (ii). A partner or Dependent Child of a Dependent Non-Student of a Principal Insured;
- (iii). A former partner or Dependent Non-Student of a Principal Insured;
- (iv). A parent, grandchild or sibling of a Principal Insured;
- (v). A partner or a Dependent Child of a sibling or grandchild of a Principal Insured, whether that relationship arises by virtue of blood, marriage or other legal affinity;
- (vi). A person who is related to a Principal Insured in the manner contemplated in paragraph 7 (f), (g),

- (h) or (i) of the Private Health Insurance (Registration) Rules as amended from time to time; and

- (vii). A person who otherwise qualifies under the Private Health Insurance (Registration) Rules as amended from time to time.

(d). TH is prohibited from issuing a complying health insurance product to a person who does not belong to the restricted access group set out in Rule C2(b) and C2(c) .

Address Level 4, 260 Elizabeth Street Sydney, NSW 2000

States in which insurer operates ACT, NSW, QLD, SA, TAS, VIC, WA, NT

Telephone 1300 728 188 In Australia
From overseas +61 2 8346 2111

Restricted
Membership
Insurer

Email info@teachershealth.com.au

Web Site <http://www.TeachersHealth.com.au/>

Transport Health Pty Ltd

Open Membership Insurer

Registered Name Transport Health Pty Ltd

Address 1-9 Buckingham Street Surry Hills, NSW 2010

States in which insurer operates ACT, NSW, QLD, SA, TAS, VIC, WA, NT

Telephone 1300 806 808

Email enquiries@transporthealth.com.au

Web Site <http://www.transporthealth.com.au>

Westfund Limited

Open Membership Insurer

Registered Name Westfund Limited

Address 59 Read Avenue Lithgow, NSW 2790

States in which insurer operates ACT, NSW, QLD, SA, TAS, VIC, WA, NT

Telephone 1300 937 838

Email enquiries@westfund.com.au

Web Site <http://www.westfund.com.au>

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COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-10

This is the Annexure marked "DD-10" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

Contracting Group	NSW (including ACT)	NT	QLD	SA	TAS	VIC	WA	National
Medibank	22.60%	40.90%	30.70%	19.40%	26.90%	31.10%	21.40%	26.10%
Bupa	22.90%	36.20%	31.40%	47.80%	32.70%	23.10%	10.90%	25.10%
HCF	20.10%	5.90%	8.00%	8.90%	4.80%	7.50%	4.70%	11.70%
nib	15.20%	3.20%	6.80%	4.10%	3.00%	8.50%	3.90%	9.50%
HBF	0.80%	1.70%	0.70%	0.50%	0.70%	1.10%	49.70%	6.90%
AHSA	17.20%	11.60%	21.50%	18.40%	31.30%	27.00%	5.30%	19.20%
ARHG	1.20%	0.30%	0.90%	0.70%	0.60%	1.70%	3.90%	1.60%

COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

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Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-11

This is the Annexure marked "DD-11" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

Switching private health insurance funds? Here's what you need to know

We answer the biggest questions you have about switching



20 February 2020



4 minute read

When it comes to your health insurance, things with your current fund might not be working out the way you thought they would.

At nib, we're focused on giving our members the best value for money, so if you're not getting the service you were hoping for, it may be time to consider switching. But, before you call your current health fund to say 'it's not you, it's me', read up on some of the biggest questions you might have when it comes to transferring your health insurance.

Related: [A guide to saving money on your health insurance cover](#)

I want to transfer to nib, how do I do it?

Private health insurance should be easy, right? So we've made choosing the right cover and getting a quote as simple as possible. You can [get a quote online](#) in minutes and, once you're ready to sign up, you can sit back knowing that we'll contact your previous fund on your behalf.

What is a transfer certificate?

Under the Private Health Insurance Act, when you switch to nib your previous fund is required to send us a transfer certificate within 14 days. The transfer certificate outlines details of your previous cover, including any waiting periods you've served, the type of cover you had and your claims history. You can start claiming on services that you're eligible for as soon as we receive this certificate.

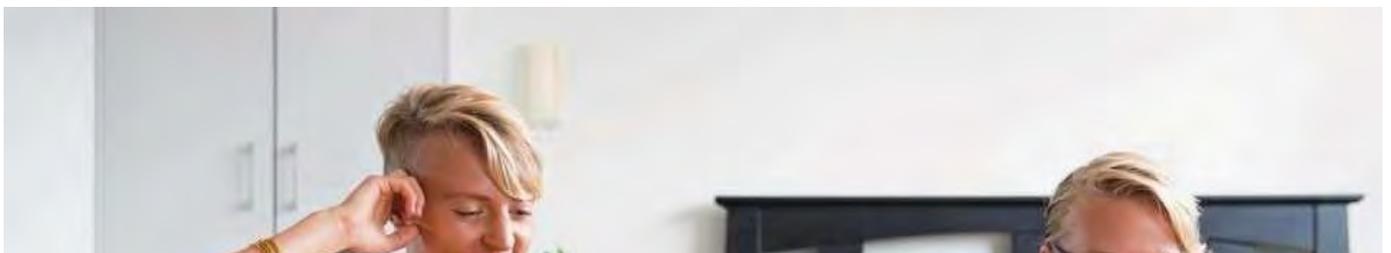
If I transfer to nib from another fund, do I have to re-serve waiting periods?

If you're transferring to a policy that has an equivalent or lower level of benefits, you won't have to re-serve any waiting periods on the services covered with your previous fund. We'll also recognise partially served waiting periods - so even if you've only served three months of a 12 month waiting period, we'll make sure that the three months still count when you transfer to us.

For more information, check out our article [What's a waiting period and why do we have them?](#)

What happens to my annual limits if I transfer?

The benefits you have claimed with your previous fund this year will be deducted from your new nib policy. We work by calendar year at nib, so if you've got an annual limit of \$1,000 for major dental treatment and you've already claimed \$400 this calendar year, you'll still have \$600 remaining.





How does my excess work?

Already made a hospital claim this calendar year with your previous fund? Don't worry; if you've switched to a policy that has the same level of excess (or a lower excess) and you're readmitted to hospital this year, you won't have to pay your excess again with nib.

If you've transferred to a policy with a lower level of excess, your new excess amount will kick in two months following your transfer to nib.

The exception to this is if you're admitted to hospital for a **pre-existing condition** within your first 12 months with nib after switching, then your previous higher excess will be applicable.

At nib, we offer our members a range of options when it comes to their excess. As an nib member, you can choose between a \$500 and \$750 excess for singles, and \$1,000 and \$1,500 for couples or families. This means you have the ability to opt for a higher level of excess in return for a lower premium.

To find out more about nib's excess options, head to our article **Excess changes: How to reduce the cost of your premium**.

If I transfer, will it affect my Lifetime Health Cover (LHC)?

If you're transferring your Hospital Cover to nib you can rest assured that your **Lifetime Health Cover loading** won't be affected so long as you haven't taken a break that will exceed your **'absent days'** between transferring health covers.

If you've got LHC loading, we will recognise the years you've had private Hospital cover for. This means we will know when you have hit the magic 10 year mark to remove your loading and reduce your premiums.

I've paid my cover in advance with my old fund, will I lose this?

If you've paid your private health premiums in advance and decide to transfer your policy to nib, your old health fund should refund you the excess money you've paid.

What should I do about my direct debit payments with my other fund?

The best thing to do is to cancel any direct debit arrangements you have previously made with your financial institution and then leave the rest to us! nib will contact your previous health fund to advise them that you have decided to switch and to request your transfer certificate.

If you set up automatic direct debit payments from your bank, building society or credit union cheque or savings account, you might be eligible for a discount of up to 4% on your nib premium.*

Keen to learn about more ways you can save? Check out our article: [**A guide to saving money on your health insurance.**](#)

How can I claim with nib?

We believe that claiming your benefits with nib should be simple. When you need to make a claim, you can submit it using the [**nib app**](#) or via [**Online Services**](#).

Related: [**How to claim on the nib app**](#)

Are you serious about your health? At nib, we can tailor your cover to include the things that are important to you and it only takes a few minutes to [**get a quote**](#).

*Discount not available on Ambulance Only cover.

Articles you might also like

The benefits of private health insurance

Concierge services and discounts - just to name a few

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We acknowledge Aboriginal and Torres Strait Islander peoples as the Traditional Custodians of the lands where we live, learn and work. [View our Reconciliation Action Plan](#)

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[Code of Conduct](#)

COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-12

This is the Annexure marked "DD-12" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

Hospital treatment product tiers

The following table provides a summary of which hospital tiers cover each clinical category. For detailed information, such as the Medicare Benefit Schedule (MBS) item numbers included in each category, please see [Clinical categories](#).

Clinical Category	Basic	Bronze	Silver	Gold
Rehabilitation	Y (R)	Y (R)	Y (R)	Y
Hospital psychiatric services	Y (R)	Y (R)	Y (R)	Y
Palliative care	Y (R)	Y (R)	Y (R)	Y
Brain and nervous system	O (R)	Y	Y	Y
Eye (not cataracts)	O (R)	Y	Y	Y
Ear, nose and throat	O (R)	Y	Y	Y
Tonsils, adenoids and grommets	O (R)	Y	Y	Y
Bone, joint and muscle	O (R)	Y	Y	Y
Joint reconstructions	O (R)	Y	Y	Y
Kidney and bladder	O (R)	Y	Y	Y
Male reproductive system	O (R)	Y	Y	Y
Digestive system	O (R)	Y	Y	Y
Hernia and appendix	O (R)	Y	Y	Y
Gastrointestinal endoscopy	O (R)	Y	Y	Y
Gynaecology	O (R)	Y	Y	Y
Miscarriage and termination of pregnancy	O (R)	Y	Y	Y
Chemotherapy, radiotherapy and immunotherapy for cancer	O (R)	Y	Y	Y
Pain management	O (R)	Y	Y	Y
Skin	O (R)	Y	Y	Y
Breast surgery (medically necessary)	O (R)	Y	Y	Y
Diabetes management (excluding insulin pumps)	O (R)	Y	Y	Y
Heart and vascular system	O (R)	O	Y	Y
Lung and chest	O (R)	O	Y	Y
Blood	O (R)	O	Y	Y
Back, neck and spine	O (R)	O	Y	Y
Plastic and reconstructive surgery (medically necessary)	O (R)	O	Y	Y
Dental surgery	O (R)	O	Y	Y
Podiatric surgery (provided by a registered podiatric surgeon)	O (R)	O	Y	Y
Implantation of hearing devices	O (R)	O	Y	Y
Cataracts	O (R)	O	O	Y
Joint replacements	O (R)	O	O	Y
Dialysis for chronic kidney failure	O (R)	O	O	Y
Pregnancy and birth	O (R)	O	O	Y
Assisted reproductive services	O (R)	O	O	Y
Weight loss surgery	O (R)	O	O	Y
Insulin pumps	O (R)	O	O	Y
Pain management with device	O (R)	O	O	Y
Sleep studies	O (R)	O	O	Y
Y	Indicates the clinical category is a minimum requirement of the product tier.			
(R)	Restricted cover permitted: insurers are allowed to offer cover for this clinical category on a restricted basis. A restricted benefit means you are partially covered for hospital costs as a private patient in a public hospital. You may incur significant expenses in a private room or private hospital so you should check with your insurer and hospital for details.			

O Optional for the insurer to include: insurers may choose to offer these as additional clinical categories.

COMMONWEALTH OF AUSTRALIA

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Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-13

This is the Annexure marked "DD-13" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

Product Name	Hospital Tier	Fund	Excess	State	Weekly Market Rate
AAMI Health Insurance Basic Hospital Plus \$500 Excess	BasicPlus	AAMI Health Insurance	500	NSW	19.17
AAMI Health Insurance Bronze Hospital \$500 Excess	BronzePlus	AAMI Health Insurance	500	NSW	21.91
AAMI Health Insurance Bronze Hospital Plus \$500 Excess	BronzePlus	AAMI Health Insurance	500	NSW	22.62
AAMI Health Insurance Gold Hospital \$500 Excess	Gold	AAMI Health Insurance	500	NSW	48.76
AAMI Health Insurance Silver Advantage Hospital Plus \$500 Exc	SilverPlus	AAMI Health Insurance	500	NSW	37.96
AAMI Health Insurance Silver Everyday Hospital Plus \$500 Exce	SilverPlus	AAMI Health Insurance	500	NSW	28.65
Advanced Hospital (Silver Plus)	SilverPlus	Australian Unity	500	NSW	43.63
Apia Bronze Hospital Plus \$500 Excess	BronzePlus	Apia Health Insurance	500	NSW	21.91
Apia Silver Hospital \$500 Excess	Silver	Apia Health Insurance	500	NSW	28.03
Apia Silver Hospital Plus \$500 Excess	SilverPlus	Apia Health Insurance	500	NSW	36.97
Apia Silver Premium Hospital Plus \$500 Excess	SilverPlus	Apia Health Insurance	500	NSW	39.87
Basic Accident Only Hospital \$500 Excess	BasicPlus	Bupa	500	NSW	18.74
Basic Essential Hospital Plus \$500 Excess	BasicPlus	nib	500	NSW	19.17
Basic Hospital Plus \$500/\$1000 Excess	BasicPlus	HBF	500	NSW	19.35
Basic Hospital Plus Elevate \$500/\$1000 Excess	BasicPlus	HBF	500	NSW	21.61
Basic Plus Starter Hospital \$500 Excess	BasicPlus	Bupa	500	NSW	19.54
Bronze Hospital Plus \$500 Excess	BronzePlus	nib	500	NSW	21.91
Bronze Hospital Plus \$500/\$1000 Excess	BronzePlus	HBF	500	NSW	22.86
Bronze Plus Simple Hospital \$500 Excess	BronzePlus	Bupa	500	NSW	21.59
Classic Hospital (Silver Plus)	SilverPlus	Australian Unity	500	NSW	39.16
classic silver plus	SilverPlus	ahm	500	NSW	27.01
core bronze plus	BronzePlus	ahm	500	NSW	24.74
deluxe silver plus	SilverPlus	ahm	500	NSW	36.88
GMF Complete Gold Hospital \$500/\$1000 Excess	Gold	HBF	500	NSW	44.07
GMHBA Gold Ultimate Hospital \$500	Gold	GMHBA	500	NSW	42.11
GMHBA Silver Core Hospital \$500	Silver	GMHBA	500	NSW	26.93
GMHBA Silver Plus Classic Hospital \$500	SilverPlus	GMHBA	500	NSW	36.79
GMHBA Silver Plus Premium Hospital \$500	SilverPlus	GMHBA	500	NSW	35.04
Gold Complete Hospital \$500 Excess	Gold	Bupa	500	NSW	45.32
Gold Hospital \$500/\$1000 Excess	Gold	HBF	500	NSW	45.20
HCF HOSPITAL BRONZE PLUS \$500 EXCESS	BronzePlus	HCF	500	NSW	21.51
HCF HOSPITAL PREMIUM GOLD \$500 EXCESS	Gold	HCF	500	NSW	51.61

HCF HOSPITAL SILVER PLUS \$500 EXCESS	SilverPlus	HCF	500	NSW	39.65
HCF HOSPITAL STANDARD SILVER PLUS	SilverPlus	HCF	500	NSW	26.74
ING Basic Plus Hospital \$500 Excess	BasicPlus	ING Health Insurance	500	NSW	20.07
ING Bronze Plus Hospital \$500 Excess	BronzePlus	ING Health Insurance	500	NSW	22.82
ING Silver Hospital \$500 Excess	Silver	ING Health Insurance	500	NSW	29.20
ING Silver Plus Hospital \$500 Excess	SilverPlus	ING Health Insurance	500	NSW	39.54
Intermediate Hospital (Silver Plus)	SilverPlus	Australian Unity	500	NSW	31.11
lite bronze plus	BronzePlus	ahm	500	NSW	22.27
Medibank Basic Accident and Ambulance	Basic	Medibank	500	NSW	18.69
Medibank Bronze Everyday	Bronze	Medibank	500	NSW	20.46
Medibank Bronze Plus Assured	BronzePlus	Medibank	500	NSW	23.01
Medibank Bronze Plus Progress	BronzePlus	Medibank	500	NSW	20.66
Medibank Gold Advanced	Gold	Medibank	500	NSW	43.38
Medibank Gold Complete Hospital	Gold	Medibank	500	NSW	40.66
Medibank Silver Everyday	Silver	Medibank	500	NSW	28.49
Medibank Silver Plus Advanced	SilverPlus	Medibank	500	NSW	40.31
Medibank Silver Plus Assured	SilverPlus	Medibank	500	NSW	28.76
Medibank Silver Plus Security	SilverPlus	Medibank	500	NSW	37.95
Mid Hospital \$500 Excess - Silver Plus	SilverPlus	Bupa	500	NSW	26.03
Priceline Basic Accident Hospital \$500 Excess	Basic	Priceline Health Insurance	500	NSW	20.37
Priceline Bronze Hospital \$500 Excess	Bronze	Priceline Health Insurance	500	NSW	23.81
Priceline Gold Hospital \$500 Excess	Gold	Priceline Health Insurance	500	NSW	48.99
Priceline Silver Hospital \$500 Excess	Silver	Priceline Health Insurance	500	NSW	30.12
Qantas Basic Hospital \$500 Excess	BasicPlus	Qantas Insurance	500	NSW	19.17
Qantas Bronze Hospital Plus \$500 Excess	BronzePlus	Qantas Insurance	500	NSW	21.91
Qantas Gold Hospital \$500 Excess	Gold	Qantas Insurance	500	NSW	44.68
Qantas Silver Hospital \$500 Excess	SilverPlus	Qantas Insurance	500	NSW	27.35
Qantas Silver Plus Advanced Hospital \$500 Excess	SilverPlus	Qantas Insurance	500	NSW	36.89
Silver Advantage Hospital Plus \$500 Excess	SilverPlus	nib	500	NSW	37.96
Silver Hospital	Silver	nib	500	NSW	28.03
Silver Hospital \$500/\$1000 Excess	SilverPlus	HBF	500	NSW	30.83
Silver Hospital Plus \$500/\$1000 Excess	SilverPlus	HBF	500	NSW	40.37
Silver Plus Advanced Hospital \$500 Excess	SilverPlus	Bupa	500	NSW	37.53

Silver Plus Essential Hospital \$500 Excess	SilverPlus	Bupa	500	NSW	26.46
Silver Plus Intermediate Hospital \$500 Excess	SilverPlus	Bupa	500	NSW	26.03
Simple Hospital (Basic Plus)	BasicPlus	Australian Unity	500	NSW	19.78
Standard Hospital (Bronze Plus)	BronzePlus	Australian Unity	500	NSW	24.54
starter basic	Basic	ahm	500	NSW	17.91
starter bronze	Bronze	ahm	500	NSW	21.32
starter silver	Silver	ahm	500	NSW	26.69
Suncorp Health Insurance Basic Hospital Plus \$500 Excess	BasicPlus	Suncorp Health Insurance	500	NSW	19.17
Suncorp Health Insurance Bronze Hospital \$500 Excess	BronzePlus	Suncorp Health Insurance	500	NSW	21.91
Suncorp Health Insurance Bronze Hospital Plus \$500 Excess	BronzePlus	Suncorp Health Insurance	500	NSW	22.62
Suncorp Health Insurance Gold Hospital \$500 Excess	Gold	Suncorp Health Insurance	500	NSW	48.76
Suncorp Health Insurance Silver Advantage Hospital Plus \$500 | SilverPlus	SilverPlus	Suncorp Health Insurance	500	NSW	37.96
Suncorp Health Insurance Silver Everyday Hospital Plus \$500 E: SilverPlus	SilverPlus	Suncorp Health Insurance	500	NSW	28.65
top hospital gold	Gold	ahm	500	NSW	44.98
Ultimate Hospital (Gold)	Gold	Australian Unity	500	NSW	50.81

COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-14

This is the Annexure marked "DD-14" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.



2020 Private Health Insurance Premium Application Form

Guidance

Section 66-10 of the *Private Health Insurance Act 2007* provides that

*(1) A private health insurer that proposes to change the premiums charged under a *complying health insurance product must apply to the Minister for approval of the change:*

- a) in the approved form; and*
- b) at least 60 days before the day on which the insurer proposes the change to take effect.*

A **written report** and three templates (**Template A, Template B and Template C**) is the approved form (referred to as the premium application form) - if completed in accordance with the direction in this document. Covering letters to the premium application form will also be considered part of the premium application form.

The premium application form will be assessed by the Department of Health (Health) and the Australian Prudential Regulation Authority (APRA).

Health's intention is to provide the Minister a package of information that comprises:

- For each private health insurer:
 - **Template C**; and
 - Additional supplementary comments prepared by Health/APRA.
- For the industry:
 - An aggregated **Template C**; and
 - Additional pages with supplementary comments from Health/APRA.

In submitting the premium application form, please note:

- all information should be provided as instructed in this document
- data should be cross checked with information provided to APRA, notably HRF601 and HRF602
- pages should be numbered in the written report
- the premium application form should not be submitted in PDF format
- only information that is relevant to the health insurance business is required
- **Template A** (Product Information) should be completed for all products currently available and all new products expected to commence on 1 April 2020.

Health/APRA will contact insurers to discuss applications that do not comply with the guidelines and requirements set out in this document.



Applications submitted via SecureDoc

Applications should be submitted via SecureDoc, a cloud-based APRA owned file transfer system by **3pm Tuesday, 12 November 2019**.

Please direct queries regarding the premium application form to phi@health.gov.au.

Confidentiality and publication

The completed form will be treated as “protected information” as defined by the *Private Health Insurance Act 2007*.

The Department’s intention is to publish on its website:

- **For each private health insurer:**
 - Each insurer’s average premium price change.

- **For the industry:**
 - The industry average premium price change.
 - Only highly aggregated or non-identifiable information will be made public, such as average premium changes in jurisdictions or by insured groups.



Written Report Guidance

Applications for premium changes **should** include the below information.

As a guide – an application which is consistent with the insurer’s pricing philosophy and capital management plan is expected to be no more than:

- 20 pages addressing the questions below; and an additional
- 10 pages for an Actuarial Opinion.

Reference	Question	Guidance
1	Insurer name	Provide the name of the insurer as registered with APRA as at the premium application date.
2	Date(s) of premium change effect	Provide the date(s) on which the premium change(s) are to take effect. It is preferable for insurers to implement a date of effect of 1 April.
3	Consistency with Pricing Philosophy	<p>Outline the extent to which this year’s premium application is consistent with the insurer’s pricing philosophy over the forecast period. This should include commentary on the expected level of performance in 2020, 2021 and 2022 and forecast premium changes in 2021 and 2022.</p> <p>The commentary should discuss the extent to which the application is consistent with all of the pricing philosophy including:</p> <ul style="list-style-type: none">- Overall target gross or net margin- Targets for individual products or product groups- Hospital and general treatment products- Product hierarchies. <p>Commentary should specifically discuss products currently operating, or forecast to operate, outside of the pricing philosophy and the insurer’s strategy for each of these products.</p>
4	Consistency with Capital Management Plan	Outline the extent to which this year’s premium application is consistent with the insurer’s capital management plan. This should include reference to the insurer’s forecast capital and the forecast target capital range as stated in template B.
5	Key financial risks over the forecast period	<p>Outline the key risks to the financial performance position of the fund over the forecast period. This should be a brief high level description of the main financial risks to the fund over the next two and a half years. The risk areas covered are not intended to duplicate the risk register or risk management framework. Rather it should provide a concise description of the key areas of uncertainty in the projections.</p> <p>Some examples may include:</p> <ul style="list-style-type: none">- A change in the profile of policyholders, either through material new joiners or lapses- New products- Product changes- Volatile experience or large changes in benefit payments, making assumption setting difficult- Changes in strategy- Changes in the health or competitive environment. <p>It is suggested that insurers be specific and comment on the risks that are applicable to the insurer’s risk profile in this year’s premium application.</p>



6	Management of key risks identified	<p>Outline how the insurer is managing the risks and uncertainties outlined above. Insurers should <u>briefly</u> discuss the insurer's approach to these risks. The discussion should be sufficient to get a high-level understanding of the approach, actions taken and where further detail can be found.</p> <p>This section is not designed to replicate the insurer's existing documents such as the insurer's risk register and risk management framework.</p>
7	Reasons identified for the changes in benefit payments or drawing rates	<p>Outline changes in benefit payments or drawing rates that have resulted in the requested premium change. The commentary should reference recent experience, risk factors and insurer action, to demonstrate how the forecast benefit change was determined.</p> <p>Insurers should also comment on experience that is materially different to industry, the reasons for the differences and justify the premium change.</p> <p>Insurers are asked to be mindful that the reasons for premium changes are not always well understood by the public. This is especially the case for the relationship between premium changes, CPI and AWE. Clarity in this section could assist in communicating these messages and ensure that the reasons for premium changes are clear to the Minister for Health and the Department so adequate public messaging can be provided.</p>
8	Initiatives to address affordability concerns	<p>Outline the initiatives the insurer is taking to support the affordability of premiums, including by reducing benefit inflation or improving the value proposition of private health insurance.</p>
9	Other matters considered relevant	<p>This section provides an opportunity for the insurer to comment on any other matter considered relevant. This may include matters that influenced the premium change or matters which the insurer considers the Minister may find useful in considering his assessment.</p> <p>Examples of such matters could include:</p> <ul style="list-style-type: none">- The insurer's competitive position- Premiums being materially different than competitors- The insurer's strategy- Broader health programs and initiatives to enhance affordability- Extent of downgrades or lapses- Health related business (such as Overseas Student Health Cover)- Recent performance.
10	Consistency with Act and Rules	<p>Provide a declaration that the premium changes are consistent with the <i>Private Health Insurance Act 2007</i> and <i>Private Health Insurance (Prudential Supervision) Act 2015</i>, and the associated Rules, as at 12 November 2019.</p>



11	Actuarial experience analysis	<p>Provide an experience analysis comparing actual performance to the forecasts submitted during last year's premium round.</p> <p>The commentary should include:</p> <ul style="list-style-type: none">- The extent of the differences- The reasons for the differences, if known- The impact these differences had on this year's forecasts. <p>This can include experience up to June or September. Specifically, it can include the experience analysis completed in the recent Financial Condition Report (FCR), provided the forecasts assessed in the FCR were those submitted in last year's premium application.</p> <p>If experience up to June is used, this section should include a statement whether any material deviations from expected experience have arisen in the September quarter.</p> <p>The Appointed Actuary should also comment on how the assumptions compare to recent actual experience and the reasons for material difference.</p> <p>The experience analysis should be signed by the Appointed Actuary.</p>
12	Actuarial risks	<p>Provide an opinion from the Appointed Actuary on whether there are any other material risks impacting the insurer in addition to those provided under item 5 of this premium application.</p>
13	Actuarial opinion	<p>Provide commentary from the Appointed Actuary on the extent to which duration effects have been incorporated into the forecasts.</p> <p>Provide commentary from the Appointed Actuary on the extent to which changes in the demographic profile have been incorporated into the forecasts.</p> <p>Provide an opinion from the Appointed Actuary regarding whether the financial forecasts and assumptions are reasonable central estimates.</p> <p>Provide a comment on the suitability of the conversion factor values provided by the insurer in Template C, for the intended use.</p>
14	Contact person	<p>Provide the contact details of a primary contact person, and an alternative contact person. This should include:</p> <ul style="list-style-type: none">- name- position title- landline telephone number- mobile phone number- e-mail address.



Template A (Product Information)

Please note the following guidance in completing **Template A**.

- All current products and proposed new products commencing prior to 2 April 2020, regardless of whether a change in premium is being sought, should be reported.
- All products should reflect the name, excesses, and premiums as they will appear in the PHIS and Fund Rules from 1 April 2020.
- Ambulance Only policies should be included where they are complying health insurance products, and included in HRF601.
- Information should be provided for all products, even if some products have the same price (i.e. information should be provided for couple policies even if they are priced the same as family policies).
- Do not include Overseas Visitors Health Cover products or Overseas Student Health Cover products.
- Do not create new categories as a substitute for drop down list options – select only options in the drop-down menu.
- Template A “number of policies” and “insured people” should be consistent with HRF601 for the September 2019 quarter.
- The age-based discount conversion factor at Column **P** of Template A is only relevant to products where the aged-based discount will be applied.
 - If the discount does not apply to the product, the factor will be 100 per cent.
 - If 100 people are on a product, and 10 people are eligible for a 2 per cent aged-based discount, the difference in monthly income when the discount is applied is 0.2 per cent, therefore, the aged-based discount conversion factor is 99.8 per cent.
- Products listed in all templates should be identified with a unique ‘Product Code’ identifier. This should be the PHIS ID.
- If an insurer plans to terminate products from 1 April 2020, the 2020 new product price should be left blank.
- For further assistance in completing template A, direct all queries to phi@health.gov.au, using “2020 Premium Round” in the subject line.



Template A guidance

Field	Data Entry Guidelines	Example
STATE	Select from the drop down list the State or Territory in which the product is available. This should be consistent with the risk equalisation jurisdiction for APRA reporting. Each State/Territory should be recorded separately (i.e. if the same product is available in multiple states do not record in the same row as NSW/ACT/VIC but in individual rows).	Drop down list: NSW ACT NT QLD SA TAS VIC WA
PRODUCT CODE PHIS ID	Enter in full the unique product identification code for the product, exactly as generated in the PHIS by privatehealth.gov.au (i.e. do not truncate by omitting insurer identifier component of code). This includes products that are closed, or have zero policies/people.	
PRODUCT NAME as at 1 April 2020	Enter the product name. If the name is duplicated across products, do not leave any rows blank, but instead enter the identical name for each product. This should be consistent with the information recorded in the PHIS for the product.	Gold Hospital Cover
PRODUCT STATUS as at 1 April 2020	Select from the drop down list whether the product is: <ul style="list-style-type: none"> • <u>Open</u> and is a <u>New Product</u> to the market. • <u>Open</u> already <u>Existing</u> product. • <u>Closed</u> – <u>Closing</u>, if the insurer plans to close the product anytime between 1 April 2019 to 31 Mar 2020. • <u>Closed</u> prior to 1 April 2019 – <u>Existing</u>. • <u>Terminating</u>, if planning to terminate the product prior to 1 April 2020 with customers being migrated to alternative products. 	Drop down list: Open – New Product Open – Existing Closed – Closing Closed – Existing Terminating
PRODUCT TYPE	Select from the drop down list the product type. Do not use values that are not in the drop down list.	Drop down list: Hospital = Hospital treatment only General = General treatment only Combined = Combined Hospital and General Treatment General Ambulance = AmbulanceOnly
HOSPITAL CATEGORY as at 1 April 2020	Select from the drop down list the hospital category. This should be consistent with the information recorded in the PHIS for the product with that particular unique product identification code. Leave blank for general products. <i>Note: All products categorised from Basic to Silver Plus are considered exclusionary.</i>	Drop down list: Gold Silver Plus Silver Bronze Plus Bronze Basic Plus Basic



Field	Data Entry Guidelines	Example
INSURED GROUP	<p>Select from the drop down list the insured group for the product. Do not use values that are not in the drop down list</p> <p>Enter information for each product subgroup separately even if different insured groups have the same price (e.g. include couples information in a separate row from families information even if they have the same prices).</p>	<p>Drop down list: ChildrenOnly Couple ExtendedFamily ExtendedSingleParentFamily Family Single SingleParentFamily 3+Adults</p>
ANNUAL EXCESS as at 1 April 2020	<p>Enter the amount of the excess for the product as at 1 April 2020. This is the maximum annual excess for the policy (i.e. \$500 should be entered if the excess is \$250 per admission per person but limited to a maximum of \$500 per year). This should be consistent with the information recorded in the PHIS for the product with that particular unique product identification code.</p>	\$500
ANNUAL CO-PAYMENT as at 1 April 2020 (Yes/No)	<p>Select from the drop down list whether the product has co-payments or not, as at 1 April 2020. This should be consistent with the information recorded in the PHIS for the product with that particular unique product identification code.</p>	<p>Drop down list: Yes No</p>
RESTRICTIONS as at 1 April 2019 (Yes/No)	<p>Select from the drop down list whether the product has restrictions or not, as at 1 April 2020. This should be consistent with the information recorded in the PHIS for the product with that particular unique product identification code.</p>	<p>Drop down list: Yes No</p>
2019 MONTHLY PREMIUM (\$) for products existing on 30 September 2019 (Leave blank for new products commencing on 1 April 2020)	<p>Enter the current price per month for the product. This price should reflect the full price and <u>exclude</u> the rebate, LHC loadings, and discounts.</p> <p>For new products commencing on 1 April 2020, please leave blank.</p>	\$100.07
2020 MONTHLY PREMIUM (\$) as at 1 April 2020 - for all products (new and existing)	<p>Enter the proposed new price per month for the product as at 1 April 2020, including for new products. This price should reflect the full price and <u>exclude</u> the rebate, LHC loadings, and discounts.</p> <p>For products terminating by 1 April 2020, please leave blank.</p>	\$101.67
TOTAL NUMBER OF PEOPLE COVERED BY THIS PRODUCT as at 30 September 2019	<p>Enter the total number of <u>people</u> covered by the policies comprising the insured group for the particular product as at 30 September 2019 (e.g. number of people covered by couples policies for the product). <u>Do not record SEUs.</u></p> <p>Please leave blank for new products commencing on 1 April 2020.</p>	2,000



Field	Data Entry Guidelines	Example
TOTAL NUMBER OF POLICIES COVERED BY THIS PRODUCT as at 30 September 2019	Enter the total number of <u>policies</u> comprising the insured group for the particular product as at 30 September 2019 (e.g. number of couples policies for the product). <u>Do not record SEUs.</u> Please leave blank for new products commencing on 1 April 2020.	1,000
AVERAGE AGE-BASED DISCOUNT CONVERSION FACTOR	The average aged-based discount conversion factor applied to all policies on this product. 100% should be applied to products that do not have age-based discounts or for all new products.	99.8 per cent
2019 MONTHLY INCOME FROM PRODUCT	This is an automated field that calculates the 2019 monthly income from all policies on the product based on 2019 monthly premium in column L multiplied by the total number of policies covered by this product as at 30 September 2019 in column O. Because there will be zero policies in column O for a proposed new product, this field will be zero for all new products.	
2020 PREMIUM INCREASE (\$)	This is an automated field that calculates the dollar value of the premium change between the 2020 monthly premium price in column M and the 2019 premium price in column L. For new products this field will be automatically flagged as a 'new' product. For terminating products this field will be automatically flagged a "terminating".	
2020 PREMIUM INCREASE (%)	This is an automated field that calculates the percentage change of the premium change between the 2020 monthly premium price in column M and the 2019 premium price in column L. For new products this field will be automatically flagged as a 'new' product. For terminating products this field will be automatically flagged a "terminating".	
2020 MONTHLY INCOME FROM PRODUCT	This is an automated field that calculates the 2020 monthly income for all policies on the product based on the 2020 monthly premium in column M multiplied by the total number of policies covered by this product as at 30 September 2019 in column O. Because there will be zero policies in column O for a proposed new product, this field will be zero for all new products.	



Template B (Financial Forecasts)

Please note the following guidance in completing **Template B**.

- Information requested in dollars should be entered as thousands of dollars (\$'000).
- Forecasts are required for the period October 2019 to March 2022.
- Figures under the Balance sheet and Capital Adequacy Standard for September 2019 should align with the September 2019 HRF602 returns.
- Hospital SEUs at September 2019 should reconcile with the HRF601 and HRF602.
- Expected dividend payments should be entered as a positive value and capital injections expected to be received as a negative value under 'dividend payments'.
- Capital Target Range should be expressed as total assets. This is the amount of assets required to be consistent with the targets outlined in the Capital Management Plan. Capital target range upper and lower bounds should both be entered. Where only a single target exists, this is to be repeated.



Template C (Snapshot)

Please note the following guidance in completing Template C:

- Insurers are only required to complete the white cells. Grey cells will auto-populate.
- Rate Protection Conversion Factor (%) will convert Excluding Rate Protection (%) into Including Rate Protection (%).
- Proposed changes to benefits, should include an estimated cost or saving as a percentage of total contribution income.
 - Savings should be stated as a negative amount as a percentage of Total Contribution Income.

Avoiding data issues and resubmissions

Each year a number of insurers are asked to resubmit applications due to incorrectly completing the approved form or for data issues. To avoid these in the coming round, insurers are asked to be particularly vigilant of data issues that have historically resulted in insurers being asked to resubmit.

To ensure each application does not contain data issues it is requested insurers check the following before submitting:

- No additional columns or rows are inserted into **Template B**.
- The excel spreadsheet does not contain links to other files.
- The capital target range is expressed as total assets, not net assets (capital).
- Cells surrounding the template are blank. Cells outside of the requested fields do not have checking or verification calculations.
- Changes to benefits in **Template C** that result in savings are expressed as a negative.
- Cells requesting a number have a number inserted and not text. Similarly that cells with a number have not been formatted to 'text'.
- Cells in **Template B** without a value have a '0' inserted and are not left blank.
- If an insurer has a single capital target rather than a range, this figure is entered into both the lower and upper bound.
- The formula cells have not been edited by the insurer.
- Data entered by the insurer should be values and not include calculations.
- Expected dividend payments should be entered as a positive value and capital injections expected to be received as a negative value under 'dividend payments'.

COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-14A

This is the Annexure marked "DD-14A" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

Politics Federal [Healthcare](#)

This was published 2 years ago

Health funds hit back after minister rejects 3.5 per cent premium hike

By **Dana McCauley**

November 25, 2019 – 12.00am

Insurers are appealing to federal Health Minister Greg Hunt to fast-track reforms aimed at lowering costs, as he comes under pressure to force funds to cap premium rises.

Private Healthcare Australia chief executive Rachel David said the industry was battling rising costs that were squeezing profit margins - with some funds in "negative territory" - making the minister's request for a 3 per cent rise "incredibly challenging".



Health Minister Greg Hunt is determined to keep a lid on health insurance premium rises. AAP

The medical devices industry, which is at war with insurers over their push for a crackdown on sales tactics that drive up overall costs, heaped political pressure on Mr Hunt by commissioning polling to back its demand that he use his powers to force a lower premium rise.

Results of a YouGov poll of 1000 people suggested three-quarters of Australians want the minister to "force private health insurers to use some of their \$1 billion in profits to keep premium increases under 3 per cent next year".

Mr Hunt has written to insurers demanding they resubmit applications for 2020, after being hit with requests for increases understood to be an average 3.5 per cent - more than double the rate of inflation and higher than this year's 3.25 per cent hike.

Dr David said for-profit health funds were battling rising costs, with ageing members putting in more claims, hospital costs increasing and suppliers of medical devices using sales tactics to drive up expenditure.

She said the trend was "not sustainable" and government intervention was needed.

Health funds made an average net profit margin of 4.2 per cent in the three months to September - 19 per cent lower than the same period a year earlier, when the average net margin was 5.2 per cent - the latest data from the Australian Prudential Regulation Authority shows.

Mr Hunt said the government was "on the side of the consumer" and was working hard to deliver the lowest private health insurance premium changes in 19 years.

"Private health insurance is an essential and valuable part of the health system, and our government is committed to improving value and affordability," he said.

Health regulations require the minister to approve insurers' proposed premium increases unless satisfied they are "contrary to the public interest".

Dr David said funds were not making "big profits", with lower margins than other categories of insurance due to the fact they paid out 80 per cent of premium revenue in claims.

Mr Hunt said the government had implemented "the most comprehensive reforms to private health insurance in over a decade" with changes including new gold, silver and bronze policies, and discounts for young people, introduced this year, making it "simpler and more affordable".

He is consulting on further changes to help lower insurer costs, including a review of how medical device manufacturers market and sell products [such as surgical glues, sponges and prostheses in private hospitals](#), after insurers blamed their sales tactics for a failure to deliver \$250 million in promised savings despite a 2017 agreement to lower prices.

Medical Technology Association of Australia chief executive Ian Burgess disputed this, saying Medibank, Bupa and NIB "have not paid once extra cent for medical devices in the past two premium years".

The minister is also considering including allowing health funds to pay for medical services to be delivered outside of hospitals at a lower cost.

Dr David said these changes were not expected to be delivered in time to affect health funds' costs for 2020, saying insurers had to base their premium increases on projections based on costs.

"We need that decision to be made now. The only thing we can factor in are the current levels of expenditure."

COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-15

This is the Annexure marked "DD-15" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

Private Health Insurance Code of Conduct

December 2021: Version 5



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Introduction

What is the Private Health Insurance Code of Conduct?

Any reference to “we” or “our” is a reference to the signatory health funds to the Code.

The Private Health Insurance Code of Conduct (**the Code**) has been developed by [Private Healthcare Australia \(PHA\)](#) and the [Members Health Fund Alliance \(MHFA\)](#) as the bodies which represent private health funds, in consultation with private health funds themselves.

Private health insurance is an important and cost-effective way to protect you and your family against unexpected health issues, giving you more control over your health care, choice of services, choice of doctor and where you receive elective surgery. Private hospitals usually have shorter wait times for planned elective surgery than public hospitals.

As an industry, private health insurance funds are committed to helping you choose the best private health insurance for your needs.

The Code explains how this will be achieved and is a commitment by individual health funds to provide you with a standard of customer service, accountability and transparency. It only applies to health funds that are signatories to the Code and does not apply to the industry generally or its peak bodies, Private Healthcare Australia and the Members Health Fund Alliance.

At the end of this document, you will find a list of key terms and their definitions, which will assist you in reading and understanding the Code.

The Code sets out the information that your health fund will provide to you regarding its policies; the complaints handling process and what happens if your health fund needs to change your policy.

Under the Code health funds commit to:

- Helping you better understand the role of private health insurance in Australia’s healthcare system;
- Helping you understand the coverage provided in your policy;
- Assisting you to navigate the healthcare system and to use your private health insurance to claim for healthcare;

- Only offering you insurance based on your own personal needs;
- Providing you with clear, concise and relevant information about policies and benefits;
- Ensuring health fund employees are trained to clearly explain your health insurance options and to provide you with the information you need to make an informed choice about your private health insurance policy;
- Recording the advice given to you and maintaining those records;
- Resolving any complaints you might have with your health fund in a timely, efficient and transparent manner;
- Maintaining a fully-documented dispute resolution process for resolving any dispute between you and your health fund; and
- Working with the [Federal Government’s Private Health Insurance Ombudsman](#) to understand the sorts of complaints that are made against private health insurers and to use this information to improve our policies and procedures.

Commitment to compliance with key legislative and regulatory requirements

Private health insurance funds are required to comply with relevant legislation, including:

- *Private Health Insurance Act 2007*;
- *Private Health Insurance (Transitional Provisions and Consequential Amendments) Act 2007*;
- *Competition and Consumer Act 2010*;
- *Private Health Insurance (Prudential Supervision) Act 2015*;
- *Private Health Insurance (Prudential Supervision) (Consequential Amendments and Transitional Provisions) Act 2015*;
- *The Privacy Act 1988*;

- *Corporations Act 2001;*
- *Private Health Insurance (Complaints Levy) Act 1995;*
- *Private Health Insurance (Risk Equalisation Levy) Act 2003;*
- *Private Health Insurance Supervisory Levy Imposition Act 2015;*
- *Private Health Insurance (Collapsed Insurer Levy) Act 2003;*
- *Private Health Insurance (National Joint Replacement; Register Levy) Act 2009;*
- *Private Health Insurance (Prostheses Application and Listing Fees) Act 2007;*
- *Private Health Insurance (Health Insurance Business) Rules 2018;*
- *Financial Planning Association of Australia Code of Professional Practice;*
- *Unclaimed Money Act 1995;*
- *The Spam Act 2003 (Cth);*
- *Do Not Call Register Act 2006 (Cth);*
- *Private Health Insurance (Benefit Requirements) Rules 2011;*
- *Private Health Insurance (Complying Product) Rules 2015.*

Consumer Information

Health funds aim to make all their communication with you clear and easy to read, to help you understand what your health insurance policy covers and how to make the best use of it.

Health funds will also provide information to you in plain language.

Helping you choose the right private health insurance policy

Health funds are committed to ensuring you have access to comprehensive, up-to-date information so you can navigate the health system and make informed choices when purchasing or switching between private health insurance policies.

This includes ensuring that you have access to the following information:

- How the Australian health system works, including the healthcare options available through the public system (Medicare);
- How private health insurance works and the benefits it offers compared to the public system;
- Factors you should consider when choosing a private health insurance policy based on circumstances such as age, family situation and health needs; and
- The different health funds and policy options available to choose from.

Health funds will either provide you with the information listed above or provide internet links so you can access the relevant information.

On the health fund's website, you will have access to the comprehensive, independent information set out on the Department of Health and Commonwealth Ombudsman websites, as well as any relevant internet links. These sites contain detailed explanations of how the Australian healthcare system and private health insurance operate. A health fund's website will also outline how you can find and compare different private health insurance policies.

When you are choosing a private health insurance policy, health funds will make sure all of its sales material accurately reflects the cover offered.

When you join a health fund

Health funds will ensure that, prior to joining, you will be provided with information about your entitlement to benefits, including any waiting periods and pre-existing conditions, exclusions, restrictions, co-payments and/or excesses.

Upon confirmation of your acceptance into the health fund's policy, you will be provided with further information regarding the specific entitlements and exclusions relevant to your policy.

If you are an existing customer, you will be provided with advance notice of any changes that are made to your policy benefits.

Some funds may undertake a periodic review of your cover and suggest alternative policy options that might better suit you as your circumstances change over time. You should contact your health fund if you think your circumstances will change to discuss the options available to you.

If you want to transfer to another private health fund, your new private health fund will be provided with a Transfer Certificate that will help you change funds.

Your previous health fund will provide this within 14 days after you have told your fund that you want to transfer and your new fund has made the request.

Policy documentation

Policy documentation is the information regarding what is covered by your policy and what is excluded, as well as any restrictions on what you can claim for and limits on how much you can claim.

Health funds will:

(a) express all consumer information as clearly and simply as possible, using plain language and readily accessible formats

(b) ensure that our Policy documentation and product sales material accurately reflects the cover offered, and—as appropriate to a particular document's intended purpose—contains accurate information about:

(1) waiting periods and pre-existing conditions;

(2) what sorts of procedures and treatments are excluded from your policy and what that could mean for you;

(3) the restriction on benefits in your policy and what this could mean for you;

(4) co-payments and/or excesses;

(5) annual limits;

(6) an explanation of pre-existing conditions;

(7) how to find details of hospitals which the health fund have treatment agreements with;

(8) 'no gap' or 'known' gap doctors;

(9) how to find out if an extras or general treatment provider is either a preferred provider or is recognised by the health fund;

(10) how to find out about the health fund's privacy policy;

(11) how to access the health fund's complaints handling procedures;

(12) information about the existence of this Code, including the Code logo;

(13) advice that the documentation should be read carefully and retained; and

(14) where to find any additional rules or product disclosure statements.

Cooling off period

You can cancel your policy and receive a full refund of any premiums you have paid within 30 days of your policy starting, as long as you haven't yet made a claim.

Additional information from your health fund

At your request, your health fund will provide you with details of your entitlement to benefits.

You will also be provided with specific information on any changes to your policy. This information should be provided in a timely manner and will be in a clear and consumer friendly format.

Changes to Policies

From time to time, changes might need to be made to your policy.

These changes may be general membership updates to your policy or may extend to either hospital or general treatment (extras) cover benefits.

General principle in relation to detrimental changes to policies and benefits

Health funds adopt the approach that any detrimental change (that is not significant) requires a minimum of 30 days' notice.

General changes to hospital or general treatment (extras) policies

General changes to a hospital or general treatment policy include:

- A change of policy name; or
- A change to payment frequency or method.

These changes require a minimum of 30 days' notice to members.

A detrimental general change to hospital or general treatment (extras) policy include:

- Where a change to a payment frequency or method results in a payment frequency or method no longer being available, the health fund will provide a minimum of 60 days' written notice.
- Where closing a product has a significant detrimental effect to a policy holder, or group of policy holders (For example, when policy holders are required to move to an alternative product) the health fund will provide a minimum of 60 days' written notice.

Changes to hospital policy benefits

A detrimental change to hospital policy benefits includes:

- The removal of a clinical category;
- An increase to a policy holder's excess or co-payment; or

- A change in which an excess or co-payment may apply.

These changes require a minimum 60 days' notice to members.

Where the above changes to hospital benefits occur, health funds will:

- Not apply the changes to pre-booked hospital admissions prior to the notification date; and
- Put in place transitional measures for patients already in a course of treatment for a reasonable time period, for example, up to 6 months.

Changes to general treatment (extras) policy benefits

A detrimental change to general treatment (extras) benefits includes:

- The reduction of a limit;
- A change to entitlement under such limit;
- Removal of a service or modality covered under a general treatment (extras) policy.

These changes require a minimum 60 days' written notice to members.

Where the above changes to general treatment (extras) benefits occur, health funds will:

- Provide a transitional period for policy holders undertaking a course of treatment, for example, orthodontic or endodontic services, for up to 6 months.

Where a health fund provides benefits such as an accumulative roll over, a transitional period for unused benefits in the previous year may be provided for up to 6 months.

Dispute Resolution

Your health fund believes it is important to comply with a rigorous and credible standard of complaints handling.

It is also important the standard is independent of the private health insurance sector and adheres to global best practice in dispute resolution.

To that end, your health fund will:

- Comply with the global benchmark in complaints handling, as set out in the *International Standard, ISO10002:2018 Quality Management – Customer Satisfaction – Guidelines for Complaints Handling in Organizations* and/or the *Australian Standard AS/NZS 10002:2014 Guidelines for Complaint Management in Organizations*.
- Make information on the complaints-handling process available, including:
 - How complaints can be made;
 - Information that should be provided when making a complaint;
 - The process for handling complaints;
 - Time periods associated with various stages in the process;

- How your privacy and personal information is handled in accordance with the health fund's Privacy Policy;
- Advice on how to engage with the Commonwealth Ombudsman's complaint handling service if you are not satisfied with the outcome of the health fund's dispute resolution process; and
- How you can obtain information on the status of your complaint.

While health funds do everything possible to resolve a dispute, in some cases it is not always possible to reach a resolution.

If you and your health fund are unable to resolve the dispute you have the option of taking your complaint to the [Commonwealth Ombudsman](#).

To improve the effectiveness of the complaints handling process and to see what improvements can be made, health funds will periodically review their complaints handling process.

Intermediaries

As an industry, health funds are committed to helping you choose the best private health insurance for your needs.

Organisations other than your health fund may advise you about private health insurance or sell you private health insurance on a health fund's behalf. These organisations are known as intermediaries and can include insurance brokers, consultants and comparison websites.

There are many different types of arrangements health funds may enter into with intermediaries to provide services or act on their behalf in dealing with consumers. On occasions, health funds might also pay the intermediaries a fee or a commission when they sell insurance policies. Disclosure obligations require intermediaries to disclose if they have commission or referral arrangements. This means that intermediaries must take reasonable steps to make consumers aware of any commission or referral arrangements where the business receives a financial incentive from another supplier. Intermediaries do not need to disclose the nature or value of the financial incentive.

Some intermediaries have obligations under their own industry self-regulatory code of conduct titled the [Private Health Insurance Intermediaries Code of Conduct](#). Health funds will abide by the obligations under this Code in relation to intermediaries if the intermediary is a signatory to the Code.

If the intermediary is not a signatory of the Private Health Insurance Intermediaries Code of Conduct, it is the health fund's responsibility to demonstrate that the intermediary is meeting the compliance requirements equivalent to the Private Health Insurance Intermediaries Code of Conduct.

What is required of health funds who work with intermediaries

Health funds will ensure that all arrangements with any intermediary clearly and unambiguously set out the obligations of each party and are able to be verified, if required, by an audit.

Health funds require the intermediary and its employees to do the following:

- Discharge their responsibilities and duties competently, with integrity and honesty, in compliance with the law and to exercise reasonable care and skill;
- Make clear disclosures to all consumers who deal with

the intermediary advising if the intermediary is paid any fees, commissions or other benefits for health insurance services;

- Make clear disclosures to all consumers who deal with the intermediary in relation to health insurance business, as well as the nature of their relationship with the health insurance business;
- Not provide advice, make representations or otherwise act outside the areas of activity or private health insurance products authorised under any agreement, arrangement or understanding;
- Have the necessary skills to represent a health fund and its products; and
- Have an effective alternative dispute resolution procedure for resolving a dispute between a consumer and the intermediary.

If an intermediary is required or authorised under an agreement to provide information about private health insurance products to consumers, health funds will ensure that the agreement requires the intermediary to:

- Only provide to the consumer copies of product sales material and policy documentation that comply with the requirements of this Code;
- Explain the consumer's options clearly, using plain language and provide the information a consumer requires to make an informed choice regarding their private health insurance purchase; and
- Keep appropriate records of advice given to consumers.

Intermediaries are also required to:

- Maintain confidentiality regarding any confidential information in relation to consumers or health fund's business and comply with relevant privacy laws;
- Maintain records required by law and comply with legal requirements for production of, access to, or copying of such records, and provide such information as may be legally required by any regulatory or other authority;
- Comply with the provisions of the *Private Health Insurance Act 2007*, the *Competition and Consumer Act 2010*, and any other relevant laws; and
- Comply with any applicable industry code where relevant.

Training

Health funds will require intermediaries (including call centre workers) to possess the necessary skills appropriate to the private health insurance products they are promoting or selling and the activities they are undertaking. This will ensure that call centre employees can provide appropriate advice taking into account a consumer's individual circumstances.

To achieve this, health funds must provide appropriate ongoing and documented training to intermediaries.

Code Compliance

To ensure the Code is adhered to by participating health funds and is as effective as possible, Private Healthcare Australia has established a Code of Conduct Compliance Committee (**the Committee**), comprising independent consumer and industry representatives.

The Committee has the responsibility to ensure the Code is fully complied with by health funds and does this by:

- Admitting health funds to participate in the audit process;
- Monitoring and enforcing compliance by participants by conducting audits, as well as requiring the health funds to conduct full self-audits and triennial audits;
- Receiving complaints about any alleged breach of the Code;
- Imposing sanctions for breaches of the Code; and
- Publicising an annual report on compliance and operation of the Code.

Monitoring compliance

Health funds are required to submit an annual self-audit of their compliance to the Code, to the Code's independent auditors using the form prescribed by the Committee.

At other times, the Committee can also verify a health fund's ongoing compliance with the Code through full-compliance audits and spot audits of the health fund either in full or in part. These audits are undertaken by independent auditors.

Annual report

The Committee will publish an annual report on the operation of the Code, including a summary of compliance. This report will be published on the websites of PHA and the MHFA.

Complaints handling

The Committee will accept complaints about alleged breaches of the Code from other health funds or relevant bodies. It will respond to complainants within 21 business days, provided all necessary information is available to the Committee and any required investigation has been completed. It will keep complainants informed of the progress of the response to the complaint, any decision and

information on how a response can be reviewed.

As part of its annual reporting process, the Committee will from time to time receive and analyse data on consumer complaints from the Office of the Commonwealth Ombudsman to identify any systematic issues and areas where the Code can be improved.

Non-compliance with the Code

The Committee may investigate suspected or alleged breaches of the Code and make findings in relation to the suspected or alleged non-compliance. Such investigations will involve consultation with the health fund, which is required to cooperate with the Committee and provide information about the subject of the investigation.

Any findings will be provided in writing to the health fund, which must take all reasonable steps to ensure that procedures are established to prevent any breach identified by the Committee from reoccurring.

If the Committee has determined that a health fund has not cooperated with the Committee, has not materially complied with the Code or has not put in place procedures to prevent the reoccurrence of the breach, it may apply sanctions.

Sanctions imposed by the Committee

The Committee imposes and reviews sanctions in accordance with a defined/documented procedure.

The Committee may give notice to the health fund in accordance with a documented procedure, stating that it proposes to impose sanctions on the health fund for non-compliance with the Code according to documented policy.

Sanctions can be applied if the health fund:

- Refuses or fails to cooperate with a request of the Committee in response to an alleged or suspected breach of the Code.
- Fails or refuses to comply with any recommendation by the Committee.
- Fails to adopt or comply with amendments to the Code within the timeframe required, and without an extension of time being granted by the Committee.

- Fails to implement procedures to prevent a reoccurrence of breaches identified by the Committee.

Failure to comply

If a health fund fails to comply with a sanction, the Committee may do one or more of the following:

- Take action to enforce compliance with the Code or sanction.
- Disqualify and immediately ban the health fund from using the Code of Conduct tick logo.
- Name the health fund in the annual Code of Conduct report as having not complied with the Code and/or having not complied with a sanction.
- Report the breach on the PHA and Members Health Fund Alliance websites.
- Request that the health fund report the breach on their own website.
- Request that any issued sanctions be published on the non-compliant health fund's website.
- In cases where the Committee considers the breach of the Code may constitute a breach of any regulatory or legislative obligation, report the health fund to the appropriate government agency.
- Request the health fund publish corrective advertising within one month of the request.

Definitions

Agreement Private Hospitals – These are hospitals, including day hospitals, where a health fund has negotiated agreed charges for treatment within those hospitals. In most cases, where the treatment is included under the customer’s cover, the only out-of-pocket expenses will be those applied to a level of cover, for example, excesses and co-payments. All agreement hospitals are obliged to provide an estimated out-of-pocket cost, if any, prior to admission.

- *Public Hospitals* – Public hospitals do not negotiate agreed charges with private health funds, rather, they have their charges set by State Governments. In most cases, a health fund will pay the set public hospital charges, less any excess or co-payment applied to a level of cover.

Annual Limit – A maximum benefit payable for a particular service, or group of services with a 12-month period. Annual limits can be calculated based on a calendar year, or financial year, or for every 12-month period from the anniversary of the membership commencement date.

Benefit

- *General Treatment benefit (also known as extras or ancillary)* – A benefit refund where the service is provided by a registered provider with the health fund, not covered by Medicare, or in some circumstances is not covered within a hospital agreement. Some examples of services commonly covered under general treatment are dental, physiotherapy, optical and ambulance (depending on the level of cover).
- *Default benefit* – The minimum amount of money that a health fund is permitted to pay to a hospital for inpatient treatment under your policy.
- *Hospital Cover benefit* – This is the benefit that a health fund pays to a hospital for a policy holder under the membership. It is paid according to the level of cover and includes hospital services like bed accommodation, theatre charges, medical treatment and in most cases extends to ambulance cover.

Clinical Categories (also known as product tiers) – What is, and is not, covered in the Gold, Silver, Bronze and Basic Hospital Tiers is based on clinical categories. Each standard clinical category—for example, ‘bone, joint and muscle’ category or ‘heart and vascular system’ category—sets out the hospital treatments that must be covered by your private health insurer. If a policy covers a certain clinical category, then it must cover everything listed in it—not only some things. Further information on clinical categories

is available at: https://www.privatehealth.gov.au/health_insurance/howitworks/clinical_categories.htm

Commonwealth Ombudsman – The Commonwealth Ombudsman protects the interests of private health insurance consumers.

More information can be found here:

<https://www.ombudsman.gov.au/How-we-can-help/private-health-insurance>

Community Rating – Private health insurance is community rated. Community rating means that every person is entitled to buy the same health insurance products or renew the same products for the same price as any other person (except where State-based pricing, Lifetime Health Cover loading or aged based discount applies). A health fund cannot charge one person more – or refuse to cover them – based on what health conditions they have or how often they have claimed on their health insurance in the past.

There are some exemptions to this, for example, where a person has a Lifetime Health Cover penalty, or a person has an aged-based discount applied to their premium.

Consumer – A person who has purchased or is considering the purchase of a private health insurance policy.

Course of Treatment – A plan made up of several cycles of treatment. This can include visits rather than medication. I.e. an agreed documented plan between a consumer and a provider for more than one treatment.

Co-payment (also known as a daily excess or overnight excess, referred to as excess in this document)

- *Hospital co-payment* – Is an agreed, upfront contribution amount under the level of cover that a policy holder agrees to, in exchange for a lower premium. This may be an agreed reduced daily contribution or an agreed upfront larger monetary amount, or both. For example, \$50 per night for 5 nights, or the first \$250 co-payment on an overnight stay, or both excess and co-payment combined. Usually, the higher the excess and/or additional co-payment, the lower the premium.
- *General Treatment co-payment (also known as extras or ancillary)* – Some general treatment products require a policy holder to pay a contribution amount before benefits are claimable. This is commonly known as a co-payment and is more likely when purchasing items such as CPAP machines (breathing apparatus) or weight loss memberships, for example, a benefit of \$300 after a co-

payment of the first \$50 by the policy holder. A general treatment co-payment is less likely on services such as dental, physiotherapy and optical. Policy holders are advised to always check with their health fund prior to any claim for services.

Detrimental Changes – These are changes made to a level of cover by the health fund or may be imposed across all health funds on an industry basis outside of a health fund’s reasonable control.

Health funds adopt the approach that any detrimental change, that is not significant, requires a minimum of 30 days’ notice. Where the rule is imposed outside of the health fund’s control, there is flexibility to deal with special or unusual circumstances on a case-by-case basis.

Where a health fund removes or reduces benefits that are deemed a significant detrimental change, the fund must provide the policy holders on that cover with a minimum of 60 days’ notice and in some cases provide additional flexibility to those directly affected. For example, a reduction or removal in benefit for a clinical category where a patient is undertaking a course of treatment.

Dispute – This is where a policy holder and health fund disagree with the outcome of services such as payment of benefits, premiums, a change in benefits or information provided and/or any other matter. Policy holders should obtain a copy of the health fund’s dispute resolution policy and submit a complaint to the health fund following that process.

Where a policy holder believes the outcome is unsatisfactory following all actions taken with the health fund, they can escalate the complaint to the Commonwealth Ombudsman, who acts as an independent adjudicator through their own dispute resolution service.

Excess (also known as **co-payment** in this document) – An agreed upfront contribution amount, under the level of cover that a policy holder agrees to, in exchange for a lower premium. An excess may apply to a day hospital procedure or overnight stay in hospital, usually with a maximum per person, or overall policy limit.

Gap Payment (also known as out-of-pocket expenses or gap cover) – In most cases, referred to as the amount a policy holder has to pay above the Medicare and health fund benefit for medical treatment while in hospital.

This may also extend to additional hospital services like; prostheses items or pharmacy services where the charge is above the agreed fund benefit. In all gap cover charges, the doctor, hospital or service provider is obliged to provide the policy holder with informed financial consent, prior to treatment.

Hospital Cover – A product that provides services and benefits for inpatient medical treatment in a hospital setting. There are four tiers of hospital cover: Gold, Silver, Bronze and Basic.

Informed Financial Consent – An agreement between health funds and their contracted service providers that all patients will be provided with informed financial consent and a quote for out-of-pocket costs, prior to the agreement for services.

Further information on informed financial consent and consumer rights as a patient is available at: <https://www.ombudsman.gov.au/publications/brochures-and-fact-sheets/factsheets/all-fact-sheets/phio/informed-financial-consent>

Intermediary (also known as insurance brokers, consultants or comparator websites) – A third- party organisation or business that offers advice or compares health insurance products on behalf of a health fund. In most cases these organisations may be paid a fee or commission.

Lifetime Health Cover (also known as LHC) – A government initiative for private hospital insurance introduced on 1 July 2000, to encourage participants to take out and maintain private health insurance before their 31st birthday.

A person who delays taking out a hospital policy will pay a 2% loading on top of their premium for each year they are aged over 30, to a maximum loading of 70%. This loading is removed after 10 years’ continuous hospital cover.

The Lifetime Health Cover loading does not apply to general treatment cover.

Policy Documentation (also known as health fund brochure, product disclosure statement or Private Health Information Statements (PHIS)) – This documentation provides a full description of all the terms and conditions, benefits, restrictions and/or exclusions under the cover. This documentation is part of the legal requirement that forms part of your insurance contract.

A health fund is also required to provide its policy holders with an annual PHIS. To provide consumers with a simple comparison tool, all private health insurers are required to provide details of their products online at: <https://www.privatehealth.gov.au/>.

Pre-Existing Condition – A pre-existing condition is an ailment, illness or condition, the signs or symptoms of which, in the opinion of a medical practitioner appointed by the health insurer, existed at any time during the six months prior to taking out hospital cover or upgrading to a higher level of cover.

Health insurers are able to impose a maximum 12 month waiting period for hospital treatment for ailments, illnesses or conditions that are considered to be pre-existing.

For hospital psychiatric services, rehabilitation and palliative care, the maximum waiting period is two months, even if the condition is pre-existing. If you are going to hospital during your waiting period, it is important to check with your health insurer prior to the admission as to whether you will be covered or if the condition will be deemed pre-existing.

Private Health Insurance – There are generally three categories of private health insurance policies: hospital, general treatment and combined policies.

Hospital cover provides benefits for hospital and medical services when you are admitted to hospital.

General treatment/extras cover primarily provides benefits for services such as dental, physiotherapy, optical and some therapies.

Combined policies are combined hospital and general treatment covers that allow consumers to “mix and match” their insurance. However, some health funds only provide set packaged products. Most health funds provide some coverage for ambulance services, while

others offer an additional ambulance policy.

Private Healthcare Australia Limited (PHA) – A body that represents Australia’s private health insurance industry for the benefit of its members.

Transfer Certificate (also known as a clearance certificate) – This document is generated when a person ceases cover with a health fund. It provides level of cover information and Lifetime Health Cover entitlements and ensures that this information is considered when transferring or rejoining private health insurance and where applicable, waiting periods are exempt.

Waiting Periods – How long you will need to be a member before you are eligible for benefits.

The Government has set maximum waiting periods for benefits for hospital services, but insurers can set their own waiting periods for general treatment benefits. The PHIS lists waiting periods in months for standard services.



COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-16

This is the Annexure marked "DD-16" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

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Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

Termination and Transition Guidelines for Hospitals and Insurers

Introduction

The Termination and Transition Guidelines for Hospitals and Insurers (the guidelines) have been developed in consultation with the private health industry to support consumer protection and minimise undue disruption and risk to the industry when contractual agreements between health insurers and hospitals are terminated.

The guidelines were developed by the Office of the Commonwealth Ombudsman (the Office), in its capacity as the Private Health Insurance Ombudsman. Public consultation on the guidelines was conducted in December 2019, with submissions provided by a range of parties in the private health insurance industry.

They are intended to support the resolution of disputes. They are not legally enforceable but act as a guide for best practice. They operate externally to any existing agreement or arrangement in place between the parties.

Background

Contract cessation and contractual disputes between insurers and hospitals have the potential to adversely affect consumers' benefits under their health insurance. The Office has a role in ensuring the interests of consumers are protected in these circumstances. The guidelines are intended to provide guidance on appropriate transitional arrangements and communication with members and patients in the event of a contract cessation or dispute. The Office's expectation is that insurers and hospitals will abide by the guidelines and work in good faith to minimise impact of these disputes on consumers.

The decision to terminate a contractual agreement is a significant decision for any hospital or health insurer. The financial impact of such a change on the hospital can be considerable, depending on the extent to which those insurer's members contribute to hospital utilisation and income. Equally, the impact on an insurer can also be significant, depending on the location of and services provided by the hospital, and the potential financial impact of members transferring to other insurers.

Regardless of the financial impact, such changes can be disruptive and confusing to patients, doctors, and the staff of health insurers and hospitals. As with any significant change, disruption and adverse effects can be minimised by effective transition planning and change management.

In addition to considering the financial and management implications for the hospital and health insurer, transition planning and change management should focus on avoiding undue disruption and disadvantage to patients, doctors and staff of health insurers and hospitals. This is important in maintaining a positive, professional working relationship with all healthcare providers and insurers, and not diminishing the public perception of the value of private health arrangements.

Insurers and hospitals should also ensure that any public statements made by them, or on their behalf, are factual and neutral in tone, and not likely to cause confusion and concern to members and patients. Communications that are intended to put the case for one party and denigrate the other can have a negative impact on consumer perceptions of the industry and make it more difficult for the parties to resolve the dispute. Both parties need to bear in mind that in the longer term, they are likely to be in contract again and it is in their interests to take a longer-term view of the dispute.

Notice of termination

The terms of the agreement should specify the required minimum notice period for advising of a decision to terminate the agreement. Most agreements will require 30 days as the minimum notice period.

However, a longer period of notice is preferable in some cases, to ensure that affected members receive adequate notice of the change. A minimum notice period of at least 50 days is likely to be necessary where members of the particular insurer make up a significant proportion of the hospital's admissions or where the hospital provides a significant proportion of services to the insurer's membership.

The Ombudsman recommends a 50 day notice period as the minimum period of notice consistent with adequate transition planning and change management.

When a hospital is giving notice of termination: the notice of termination should be in writing to the insurer's provider relations contact (or as specified in the Agreement) and copied to the insurer's Chief Executive Officer (CEO). The notice should clearly indicate the proposed date of cessation of the agreement arrangements.

When an insurer is giving notice of termination: the notice should be in writing to the hospital CEO/and or group CEO (or as specified in the Agreement) and copied to the hospital's payer relations contact and should clearly indicate the proposed date of cessation of the agreement arrangements.

The notice of termination should also include the name and contact details of the staff member responsible for settling and dealing with transition and out-of-contract arrangements, and request a contact name and details from the other party for these purposes and indicate a willingness to commence discussions on these issues immediately.

Transitional arrangements

On cessation of an agreement, at the end of the period of notice or disengagement, health insurers and hospitals may agree to appropriate transitional arrangements to apply to patients in a range of circumstances. The following transitional arrangements should apply as a minimum when there is no existing arrangement in place:

- **Treatment commenced:** For patients admitted prior to the effective date of the agreement termination but discharged on or after termination, the terms and conditions of the terminated agreement should apply. The hospital should accept these rates as payment in full (subject to any applicable excess/deductibles).
- **Pre-bookings (non-pregnancy and birth):** For patients with a booking received by the hospital prior to the date of agreement termination, including bookings notified by the doctor or where the patient has completed the necessary forms, but where

admission occurs within six months (or any longer period agreed between the insurer and the hospital) of the date of termination of the agreement, the terms and conditions of the terminated agreement should apply. The hospital should accept these rates as payment in full (subject to any applicable excess/deductibles).

- **Pregnancy and birth pre-bookings:** For pre-booked pregnancy and birth patients with a booking received by the hospital prior to the date of agreement termination, including bookings notified by the doctor, the terms and conditions of the terminated contract should apply. The hospital should accept these rates as payment in full (subject to any applicable excess/deductibles).
- **Course of treatment:** For all patients undertaking a course of treatment (e.g. chemotherapy, dialysis, psychiatric, rehabilitation¹), the terms and conditions of the terminated agreement should apply. The hospital should accept these rates as payment in full (subject to any applicable excess/deductibles). The terms and conditions of the terminated agreement should continue for the duration of the course of treatment or a continuous period of up to 6 months (or any longer period agreed between the insurer and hospital) from the termination of the agreement, whichever occurs first. Insurers and hospitals should be flexible with this timeframe if the patient's particular circumstances make it difficult for them to access alternative services within this timeframe.
- **Emergency admissions:** For emergency admissions, the terms and conditions of the terminated agreement should apply for a continuous period of at least 3 months, or any longer period agreed between the insurer and the hospital (subject to any applicable excess/deductibles).

The definition of emergency admission should be agreed between the fund and the hospital and such agreement or, in the absence of agreement, will include any of the following:

- At risk of serious morbidity or mortality and requiring urgent assessment and resuscitation.
- Suffering from suspected acute organ or system failure.
- Suffering from an illness or injury where the viability of function of a body part or organ is acutely threatened.
- Suffering from a drug overdose, toxic substance or toxin effect.
- Experiencing severe psychiatric disturbance whereby the health of the patient or other people is at immediate risk.
- Suffering from severe pain where the viability or function of a body part or organ is suspected to be acutely threatened.
- Suffering acute significant haemorrhaging and requiring urgent assessment and treatment.
- Patient requires immediate admission to avoid imminent morbidity or mortality and where a transfer to another facility is impractical.

¹ 'Course of treatment' is not limited to the examples listed above.

Communications with members/patients

Where there is dispute over a contractual matter, insurers and hospitals should ensure that any public statements made by them or on their behalf are fair and reasonable and do not include any information or comment that could create adverse publicity or negative perceptions of the other party to the dispute.

Information and comment which should be avoided includes:

- comparison of benefits or prices offered with those applying under agreements with other parties
- imputing motives to the other party
- commenting on the financial position or ownership structure of the other party
- denigrating the quality of services or facilities provided by the other party
- suggesting that consumers do not use the services of the other party.

It is preferable that both parties use the same wording in their communications to avoid any confusion. The Office can give guidance and advice on any proposed wording of communications to members and patients or public statements, if requested to do so, by either party to an agreement termination.

The timing of communications to members and patients should be a matter for discussion between the parties, to minimise confusion to members and patients and ensure they have full information about the issue.

Where there is no existing arrangement regarding the timing of communication of termination to members and patients, the Ombudsman recommends 50 days' notice for significant changes to hospital benefits and 30 days' notice for other changes to hospital benefits.

Health insurer communications

The primary obligation for communication with members rests with the health insurer.

The Ombudsman recommends that the communication should include advice on transitional arrangements.

This communication may include advice on:

- which hospitals have agreements with the health insurer
- which hospitals will no longer have agreements with the insurer
- the potential for out-of-pocket expenses for treatment at a non-contracted hospital, and
- how to help avoid out-of-pocket expenses.

The communications should not advocate that the member seek treatment in a particular hospital or class of hospitals (e.g. contracted hospitals only).

The insurer should provide individual written advice to the following categories of members:

- where possible to do so, patients currently in-hospital or booked for treatment, including those booked for pregnancy and birth and those with on-going arrangements (e.g. chemotherapy)

- regular patients of the hospital (those patients whose records show they have used the hospital in the past two years), and
- members whose records show they live in the catchment area for the hospital.

The insurer should also communicate more broadly with members who may be affected by press announcement or regular newsletter. The method and extent of communication will depend on the size and location of the hospital and utilisation patterns.

Insurers may choose to communicate with members who are covered by the transitional arrangements, once they receive this information from the hospital, in order to re-assure them that they will be covered for their admission.

Hospital communications

Hospitals may also choose to communicate with current, former or potential patients and referring doctors.

The Ombudsman recommends that the communication should include advice on transitional arrangements.

These communications may include advice on:

- which insurers have agreements with the hospital
- which insurers no longer have agreements with the hospital
- the potential for out-of-pocket expenses for treatment of members of a non-contracted insurer, and
- how to avoid out of pocket expenses.

The communications should not advocate that the member transfer to a particular health insurer or class of insurers (e.g. those with which the hospital has a current agreement).

Hospitals should provide insurers with a list of patients that fall within the scope of the transitional arrangements as soon as practicable but no later than 14 days after the date of termination.

The insurer will confirm that the list matches their own records and both parties will address any discrepancies within 10 business days from the receipt of the list by the insurer.

Discussions between insurers and hospitals about out-of-contract arrangements for patients not covered by transitional arrangements

Insurers and hospitals will communicate directly with each other to confirm arrangements to apply from the date the agreement is terminated, as soon as practicable after the notice of termination is provided.

The Ombudsman expects these matters to be discussed, to some extent, prior to the notice of termination but also expects there to be additional discussion after the notice of termination in order to finalise and confirm:

- the rates of benefit that will be paid by the insurer in the out-of-contract situation²
- the billing arrangements to apply, both in respect of patients covered by the transitional arrangements and bookings made post-termination
- arrangements and contacts for dealing with any cases of special circumstance that may arise but are not covered by the general transition arrangements, and
- approaches to communicating with patients, members and doctors.

Billing Arrangements

Payment or billing arrangements should not be used as a mechanism for pressuring the insurer or hospital.

Arrangements that require full upfront payment, in all cases, should be avoided because they unduly disadvantage or inconvenience many patients.

A hospital may, however, choose to request upfront payment for any portion of the hospital's charge that is not covered by health insurer benefits, provided that informed financial consent for any out-of-pocket costs is obtained from the patient.

Health insurers should pay valid claims paid via ECLIPSE within 60 days or as per the relevant contractual agreement.

Regardless of the billing arrangements adopted in the out-of-contract situation, the Ombudsman's view is hospitals retain an obligation to provide for patient-informed financial consent, prior to admission, where practicable.

At a minimum this should include advice of the likely hospital charges and advice that the (prospective) patient should confirm benefits with their insurer, prior to admission, if possible. The hospital should provide as much assistance as possible to enable members to understand what their out of pocket expenses will be.

² These will vary depending on the approach of the insurer and factors such as whether or not the hospital is eligible for second tier benefits. In some cases the insurer may be prepared to maintain old contract rates or higher for some treatments)

COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-17

This is the Annexure marked "DD-17" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

Register for nib MediGap and/or GU Health Medical Gap Networks

Honeysuckle Health acts as nib's agent in relation to nib MediGap and GU Health's Medical Gap network. After your registration has been confirmed, you will be able to submit No Gap MediGap claims to nib, and Known Gap claims to GU Health.

Note that the rate schedules for nib MediGap and GU Health Medical Gap network are different:

[nib MediGap Terms and Conditions](#)

[nib MediGap Rate Schedule](#)

[GU Health Medical Gap Terms and Conditions](#)

[GU Health Medical Gap Rate Schedule](#)

- I would like to register for nib MediGap
- I would like to register for GU Health Medical Gap
- I would like to register for both

Provider details

Provider name, specialty and location(s) will be published on participating health fund and partner provider directories.

Title	First Name	Middle Name (optional)	Last Name
<input type="text" value="Please select an option"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Must match Medicare Registration

Preferred First Name (optional)

AHPRA Number

AHPRA Medical Specialty

Provider bank details

Please add the Medicare provider number(s) you would like to register and bank details

Please do not register Hospital provider numbers.

Provider Details 1			
Provider Number	BSB	Account Number	Account Name
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

[Add Additional Provider Numbers](#)

Only add additional provider numbers for this provider

Where do patients visit this provider?

If there are no consulting rooms please include the Suburb, Postcode and State from the AHPRA Principal Place of Practice. This information will be published in accordance with the Terms and Conditions.

If the provider works in multiple locations you may list each location.

Location 1

Address Line 1 (optional)

Address Line 2 (optional)

Suburb

State

Postcode

Phone (optional)

Email (optional)

Website (optional)

Add Another Location

How can Honeysuckle Health, nib or GU Health contact you?

Honeysuckle Health will use this information to contact you for network related updates.

nib and GU Health funds may use this information to contact you about claims related enquiries.

Title

First Name

Last Name

Job Role

Postal Address Line 1

This will not be published

Postal Address Line 2 (optional)

Suburb

State

Postcode

Phone

This will not be published

Email

This will not be published

Authorisation

- Please acknowledge that you are the provider listed above or have authorisation from that provider to submit this form.
- Please acknowledge that you have read and accept the nib MediGap and/or the GU Health Medical Gap network [Terms & Conditions](#)

Submit Your Request

Some mandatory fields are not complete or have errors.

COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-18

This is the Annexure marked "DD-18" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

nib MediGap Terms and Conditions

Important information for practitioners about participation in nib's medical no-gap scheme
1 March 2022

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Section 1: About MediGap and the MediGap Schedule of Benefits

MediGap is a network comprised of registered medical specialists who may elect to charge the MediGap fees when treating nib Members. MediGap and the MediGap Schedule of Benefits are designed to remove the Gap for your patients. MediGap is a No-Gap Scheme.

Honeysuckle Health acts as nib's agent in managing nib's MediGap network on nib's behalf.

Once registered for MediGap, participation is voluntary and on a case-by-case basis. For each service you provide to a nib Member, you may elect whether to charge for your services through MediGap. For more detail on how to submit claims when choosing to do so through MediGap, or if you elect not to, please refer to Section 5: Claiming Requirements.

MediGap is a no-gap scheme. When billing through the Scheme you cannot charge the Member a Gap. If your charge equals the relevant fee on the MediGap Schedule of Benefits, we will pay the invoice in full and the Member will have no Gap.

If you decide to charge above the MediGap Schedule of Benefit, nib's MediGap Benefits will not be payable and the maximum nib will pay in this circumstance is 25 per cent of the MBS Fee.

If you elect to charge for a service through MediGap, you acknowledge and agree that the Member will not be charged any additional booking, administration, technology or facility fees, Known Gaps or any other such fees related to that Treatment. The MediGap Benefits are identified and described by the corresponding Commonwealth Medicare Benefits Schedule (MBS) item number in the MediGap Schedule of Benefits available at nib.com.au/providers/medigap

The MediGap Network Schedule of Benefits shows the maximum amount nib will pay you under MediGap. The MediGap Benefit for a service is the total amount payable to you for that service (which includes 100% of the MBS payable for the service) and the MediGap Benefit will be the full and final payment for your Claim.

We acknowledge the right of medical practitioners to exercise clinical independence at all times in relation to the provision of medical services. We will not interfere in the clinical relationship between medical practitioners and their patients.

Section 2: How these Terms and Conditions apply

These Terms and Conditions apply to nib MediGap. By applying for registration with MediGap and each time you submit a MediGap claim, you acknowledge that you have read and agree to comply with these Terms and Conditions. It may be necessary from time to time for us to:

- change these Terms and Conditions; or
- change the MediGap Benefits or, add or remove any MBS item in the MediGap Schedule of Benefits,

by providing notice on nib.com.au/providers/medigap and if applicable, writing to nib members who have claimed under their insurance policies for any of the affected procedures in the previous 2 years where that procedure was part of an ongoing course of treatment.

Your use of MediGap after any amendments to the Terms and Conditions constitutes your agreement to comply with the amended Terms and Conditions. Accordingly, you should regularly review the MediGap website to inform yourself of any changes to the Terms and Conditions. Further details of such changes will be made for available for nib members at nib.com.au/health-information/going-to-hospital/nib-medigap

Any changes made to these Terms and Conditions or the MediGap Schedule of Benefits will not affect any Claims already submitted by you on, or prior to, the date of the change.

Exclusivity of the GapSure network (Anaesthetics)

Please note that you are not permitted to be registered with both MediGap and the GapSure Anaesthetics network simultaneously. It is a condition of your participation in GapSure that you will be deregistered from MediGap, and Honeysuckle Health will coordinate this on your behalf at time of registration. You may reregister with MediGap if you choose to resign from GapSure.

Cover for nib members

In addition to nib branded products; nib underwrites branded Products including, but not limited to APIA Health Insurance, Qantas Insurance, Suncorp, AAMI, ING Health, Priceline Health Insurance and United Healthcare Global for Medicare eligible residence in Australia.

These Terms and Conditions apply to nib Members, including Members that hold these branded Products and partners we may work with in the future. A full list of nib's partnerships and more information is available at nib.com.au/providers/medigap

The MediGap Schedule of Benefits for nib patients also applies for these Members.

Section 3: Practitioner eligibility for MediGap

To apply for registration in MediGap, please complete the registration form which can be found at <https://register.honeysucklehealth.com.au/for-providers/medical-network-registration/>

Your registration will be backdated for three months from the date the application is received by Honeysuckle Health, meaning services provided to eligible Members during that three-month period can be charged under MediGap. Any requests to backdate registrations beyond three months will need to be submitted in writing, and may be accepted at nib's discretion.

At the time of your registration and at all times during your participation in MediGap, you must meet the following requirements:

- be registered with Medicare Australia for the specialty being claimed;
- hold medical indemnity insurance with a recognised indemnity provider with a minimum sum insured of \$20 million;
- not allow another person to perform services using your provider number;
- bill nib directly when charging a service through MediGap; and
- otherwise comply with these Terms and Conditions.

You are not eligible to participate in MediGap if:

- you are treating a Public Patient at a Public Hospital; or
- you are a salaried practitioner at a Public Hospital and are treating Private Patients covered by the registered participating health fund at a Public Hospital; or
- you are a pathologist; or
- you are, or become, unregistered or have your registration suspended under the laws of the relevant state or territory within Australia, in which case you must immediately notify nib; or
- we suspended or cancelled your registration with MediGap under Section 10: Suspension and Cancellation.

Section 4: Patient eligibility for MediGap

A Member may be eligible for MediGap Benefits if at the time of receiving a service from you, the Member:

- receives treatment from you that has an MBS item number specified in the MediGap Schedule of Benefits. MediGap does not apply to consultations before or after treatment or In-Patient pathology;
- is eligible for Benefits for the Treatment under a Hospital Product to which MediGap applies;
- is not in arrears with their Premiums;
- is not subject to a Waiting Period in respect of the service;
- is eligible to receive Medicare Benefits; and
- is not entitled to Compensation.

We recommend practitioners confirm a Member's eligibility prior to the service by contacting nib on 1300 853 530 or any other nominated contact channels.

If a Member is ineligible for MediGap Benefits, it will be necessary for you to issue an invoice so they can claim their benefit entitlements from Medicare and nib (if applicable). The maximum that nib may be able to pay in this circumstance is 25 per cent of the MBS Fee.

Section 5: Claiming requirements

Claims can be submitted electronically using the Medicare Eclipse system, even when you choose not to participate in MediGap, or manually to nib via post or email. Please include your official invoice and an accompanying batch header when submitting manually. It will be necessary to include the following details as part of your MediGap claim:

- Member's policy/Membership number;
- Member's name, address and date of birth;
- Member's current Medicare card number, including the patient reference number; and
- the MBS item numbers, associated charges and the date of service for inpatient treatment provided.

When participating in MediGap, or not, on a case-by-case basis it is important to note electronic claims do need to be submitted to reflect the choice you have made.

When participating, and therefore **not** charging the Member a Gap, selecting **Agreements (AG) or Scheme Claims (SC)** is required.

For the cases you have decided to charge above the MediGap rate, passing on an out-of-pocket expense to the member, one of three selections can be made: **Patient Claims (PC), Billing Agent (MB) or Two Way (TW)**.

More detail on Simplified Billing and Eclipse can be found on the **Services Australia website**. Additionally, it may be necessary for your practice to contact your system administrator as there could be variations in your practice management software.

From time to time, it may be necessary for us to request information in addition to the above to assist in establishing details of an admission or treatment provided, or to reconcile our records. More information about how to claim is available at **nib.com.au/providers/medigap**

Claim rejections

There may be times where nib will be unable to pay claims for MediGap Benefits. MediGap Benefit claims may be rejected, at the time of claims submission or after review, for reasons including, but not limited to:

- if you or the Member do not meet the requirements in Sections 3 and 4; or
- if insufficient or incorrect details are provided on the official invoice or batch header; or
- if the fee charged by you exceeds the MediGap Benefit payable for that service (in which case the Member will need to be advised by you – see Section 9); or
- where your fees are equal to or below the MBS fee; or
- where the Claim is sent directly to Medicare or to the Member instead of to nib; or
- Where the MBS claimed does not meet the MBS description or explanatory notes; or
- where a Claim is lodged with nib more than two years after the date of service; or
- for any service where the Member is an Outpatient; or
- any service where the Member is classified as a Public Patient; or
- Where the claim is detected to be the result of non-compliance with these Terms and Conditions or where nib determines the billing practice to be inappropriate or incorrect.

Nib will return rejected claims to you and may ask for the invoice to be:

- amended where appropriate and re-submitted;
- sent to the Member to be claimed through Medicare and nib (if applicable); or
- sent to the Member noting that the item shown on the account is not claimable through Medicare or nib.

Section 6: Payments of MediGap Benefits

If you provide a service specified in the MediGap Schedule of Benefits to a Member and:

- you meet the eligibility requirements in Section 3;
- the Member meets the eligibility requirements in Section 4;
- your claim meets the requirements of Section 5; and
- we have received Medicare Benefits for that service,

nib will pay you the MediGap Benefit for the treatment into your bank account within 10 business days of receipt of the Medicare Benefit from Medicare.

You can nominate or change your bank account with nib by completing the nib MediGap Network registration form available at <https://register.honeysucklehealth.com.au/for-providers/medical-network-registration/>. Please ensure that your bank account details are kept up to date with nib.

Incorrect payments

Should you, Honeysuckle Health, Medicare or nib become aware that a Claim has been incorrectly paid or overpaid, Honeysuckle Health and nib reserve the right to obtain a refund of any money paid to you in error. If this should occur, you agree to:

- refund any amount paid incorrectly to you within 14 business days from the date you are given notice that a refund is required; and
- reissue an amended invoice as soon as practical after becoming aware of, or receiving notice of, the error.

If at any time you fail to refund any amount due as a result of the overpayment of a MediGap Benefit made in error, the amount owing is a debt owed by you to nib. nib may consider recovering the amount by offsetting future MediGap Benefit payments.

Section 7: Auditing

We may require your assistance to enable the verification of amounts paid by nib as MediGap Benefits in accordance with these Terms and Conditions.

Should nib or Honeysuckle Health reasonably suspect a breach of these Terms and Conditions or inappropriate billing practices nib or Honeysuckle Health may contact you to understand our information in greater detail. Often, this first point of contact and investigation is enough to resolve our enquiries. However, if we require further clarification, it may be necessary for you to provide us with access to, or copies of, additional Records, as required, during the course of a more detailed audit.

Section 8: Collection and Publication of Provider Information

We acknowledge that you have a right to choose whether or not to Claim through MediGap on a discretionary, case-by-case basis. Nib will make that clear to Members on its websites and via other standard communication channels

Collection of your information

When you register for MediGap, you consent to Honeysuckle Health and nib collecting your information for the benefit of Members, consumers, referring doctors and the promotion of MediGap, including but not limited to the following information (**Practitioner Information**):

- your name;
- your provider number;
- your practice name and address;
- your practice phone number;
- the email address for your practice;
- if you do not have consulting rooms, any contact details you have supplied to nib as being suitable for nib Members (eg Principal Place of Practice, contact phone number or email);
- your specialty;
- information about how often you make a Claim through MediGap or charge the Medicare Benefits Schedule Fee for Members including your Participation Rate;
- average Gap charges (if any) for procedures performed by you during a certain period;
- number of services provided to Members over a certain period;
- your surgical partners (for example, anaesthetist) over a certain period; and
- the name of the Hospitals in which you have provided services to Members over a certain period.

Contact information will be obtained from you (or from an authorised representative).

nib collects Practitioner Information from a variety of sources including from Honeysuckle Health, directly from you, and indirectly from our claims data.

You consent to Honeysuckle Health and nib sharing Practitioner Information with one another for the purpose of administering and managing the MediGap network.

How we use Practitioner Information

At nib we think it's important to help our Members make informed choices about their healthcare. nib may disclose or publish, by any means, Practitioner Information (as described above) to third parties, such as Members, consumers or referring doctors, including general practitioners or other specialists for the purpose of administering MediGap and to help Members and consumers find a practitioner who suits their needs, including who is more likely to participate in MediGap.

Practitioner Information may be published in any nib approved media or materials, including on websites controlled by nib or third parties, and via other nib communication channels. This includes publication via online healthcare provider directories. It is a requirement of your participation in MediGap that you consent to the publication of your Practitioner Information as described in this clause 8. By registering and continuing to participate in MediGap, you provide your consent.

Section 9: Informed Financial Consent

If you elect not to Claim through MediGap for a service, then, we request that, wherever practicable, you provide the Member with Informed Financial Consent outlining the Gap they will pay and obtain their acknowledgement of that Gap. This information is to be provided before the Treatment or services are provided where possible or otherwise as soon as practicable after.

As set out in Section 1, you may not charge any booking, technology or facility fees, or any other such fees related to that treatment.

Disclosure of Financial Interests

You agree to disclose to your patients any financial interest that you have in the products or services recommended by you to the patient

Government Approved Prosthetic Devices

You must obtain Informed Financial Consent from Members when using surgically implanted prosthetic devices which will result in the Member having an out-of-pocket expense. Members should also be advised if there are suitable alternate devices which could be fully covered.

More information about prostheses arrangements is available at [health.gov.au](https://www.health.gov.au)

Section 10: Modern Slavery

nib providers are expected to respect universally recognised principles on human rights and labour rights. To this end, we expect you to

- comply with the nib Supplier Code of Conduct (available at [nib.com.au](https://www.nib.com.au)), which sets out the commitments, and principles we expect of all our supply chain partners to ensure they comply with internationally recognised principles on human rights, labour rights, the environment and anti-corruption;
- not engage in any conduct which may contravene modern slavery laws in Australia; and
- undertake to implement due diligence procedures to ensure that **there is no, or there is no risk of the following types of modern slavery in your supply chains:** exploitation of a worker, human trafficking, slavery, servitude, forced labour, debt bondage or deceptive recruiting for labour or services, or similar types of conduct.

We ask that you promptly provide nib with any information or documentation upon request that nib reasonably requests to:

- enable nib to comply with its obligations under Australian modern slavery laws; and
- evidence your compliance with the nib Supplier Code of Conduct and your obligations with respect to modern slavery as set out in this clause.

Section 11: Suspension and Cancellation

We may suspend or cancel your registration with MediGap in the following circumstances:

- where we have reasonable grounds for suspecting fraud or non-compliance with these Terms and Conditions during the conduct of an audit; or
- you have committed a material breach of these Terms and Conditions, or after repeated instances of non-compliance with these Terms and Conditions, where we have notified you in writing of your non-compliance; or
- we determine, acting reasonably, that suspension is required to protect our interests or reputation; or
- you owe nib money under these Terms and Conditions and despite being notified of the debt, you have refused to pay within 14 business days; or
- you are, or become, unregistered or have your registration suspended under the laws of the relevant state or territory within Australia, in which case you must immediately notify nib; or
- you no longer carry medical indemnity insurance with a recognised indemnity provider in which case you must immediately notify nib.
- you have conditions placed on your registration that, while not preventing you from practising, we view as not being in line with members' expectations; or
- Honeysuckle Health identifies you have not submitted a Network claim with the Participating Funds for a period greater than 2 years.

Honeysuckle Health will notify you of any suspension with a minimum of 14 business days' prior written notice setting out the reasons for suspension or cancellation, except where nib reasonably determines that suspension or cancellation is urgently required to protect Members or nib's interests, in which case nib may suspend you with immediate effect.

nib may, at its discretion, allow a practitioner whose registration has been cancelled to reregister for and participate in MediGap. You may also reregister at any time if you previously voluntarily resigned from MediGap, we deregistered as a result of joining the GapSure Anaesthetic network or were deregistered as a result of inactivity.

If you do deregister, or we suspend or cancel your registration with MediGap, nib will pay its 25 per cent portion of the MBS Fee for services unless Medicare has suspended or cancelled your registration with Medicare. In this instance, nib will not pay the 25 per cent portion of the MBS Fee.

To reregister visit [Honeysuckle Health website](#) or contact Honeysuckle Health's Provider Support Team by phone: 1800 411 633 (Mon – Fri: 9am – 5pm AEST/AEDT) or email providers@honeysucklehealth.com.au.

Section 12: Privacy notice

Both Honeysuckle Health and nib are committed to complying with their obligations under Privacy law, which regulates how personal information should be collected, used and disclosed and stored

The Australian Privacy Principles require Honeysuckle Health and nib to use nib Members' personal information only for the purpose for which it is collected, or for a permitted purpose, which includes a secondary purpose that is related (or directly related in the case of health information) to the primary purpose. Nib assessing and paying benefits under a Member's Policy is a permitted purpose.

When you, as a medical practitioner, apply for registration with MediGap and when you request to update your contact details, Honeysuckle Health will collect from you or from your authorised representative your name, address and contact details (including your phone number and email address) and your Medicare provider number.



Honeysuckle Health and nib will use your personal information for the purpose of registering you in MediGap, for assessing and processing Claims and making payments, and for the purpose of helping Members and consumers find a practitioner who suits their needs, including who is more likely to participate in MediGap.

We will disclose or publish your Practitioner Information, as outlined in Section 8.

Please refer to nib's Privacy Policy at nib.com.au and Honeysuckle Health's Privacy Policy at honeysucklehealth.com.au for information on:

- how you may access and seek correction of your personal information held by nib and Honeysuckle Health;
- how you may report a breach of the Australian Privacy Principles; and
- how nib and Honeysuckle Health will deal with such a complaint.

Section 13: Contact, Feedback and Complaints

For enquires related to your agreement and registration please contact Honeysuckle Health's Provider Support Team

Phone: **1800 411 633** (Mon – Fri: 9am – 5pm AEST/AEDT)

Email: providers@honeysucklehealth.com.au

For enquiries related to claims (including remittance advice), please contact nib's Provider Relations Team

Phone: **1300 853 530** (Mon – Fri: 9am – 5pm AEST/AEDT)

Email: providers@nib.com.au

nib and Honeysuckle Health understand the importance of providing excellent service and we appreciate that feedback can help us improve.

Honeysuckle Health and nib will make every possible effort to resolve claims and complaints to your satisfaction.

In the event that you are not satisfied with the outcome you can contact the Commonwealth Ombudsman:

Phone: **1300 362 072**

Mail: GPO Box 442
Canberra ACT 2601

Or submit a form online at ombudsman.gov.au

For more information about the Commonwealth Ombudsman visit privatehealth.gov.au

Section 14: Glossary of important terms

“Admission” means being admitted by a medical practitioner to a Hospital to receive Hospital Treatment as a Private Patient. Treatment in the emergency room of a Hospital is not an admission.

“Admitted Patient” means a person who is formally admitted to a Hospital for the purposes of Hospital Treatment.

“Benefit” means an amount of money payable from the Fund to or on behalf of a Member under their Policy.

“Claim” means a claim for the payment of MediGap Benefits which complies with these Terms and Conditions.

“Code of Conduct” means the nib Supplier Code of Conduct, a copy of which is available at the following link: <https://www.nib.com.au/docs/supplier-code-of-conduct-nov19>

“Compensation” means an entitlement or a potential entitlement to receive compensation or damages or any other indemnification in respect of any Condition (e.g. including an entitlement to workers compensation, compulsory third party insurance, travel insurance, sports insurance, common law damages, government and agencies programs).

“Condition” includes any illness, injury, ailment, disease or disorder for which Treatment is sought.

“Eligible Practitioner” means a practitioner who meets the eligibility requirements set out in these Terms and Conditions.

“Fund” means the health benefits fund established by us under the Private Health Insurance Act.

“Fund Rules” mean the fund rules established by us that relate to the day-to-day operation of the Fund.

“Gap” means the difference between the amount the Provider charges the Member for a specific MBS item and the amount they are able to claim through Medicare and/or nib for that item.

“GapSure” means the “Honeysuckle Health Anaesthetics Network” .

“Government approved prosthetic device” means a surgically implanted item like an artificial knee or hip joint listed on the Government’s prostheses schedule.

“Honeysuckle Health” means Honeysuckle Health Pty Limited (ABN 55 637 339 694).

“Hospital” has the meaning given under the Private Health Insurance Act.

“Hospital Product” means a Product which includes Benefits for fees and charges for:

- a) some or all Hospital Treatment; and
- b) some or all associated professional services rendered to a patient receiving Hospital Treatment, and includes combined hospital and extras products.

“Hospital Treatment” means the provision of goods and services that:

- a) is intended to manage a Condition; and
- b) is provided to a Patient:
 - i) by a person who is authorised by a hospital to provide the treatment; or
 - ii) under the management or control of such a person; and
- c) either:
 - i) is provided at a Hospital; or
 - ii) is provided, or arranged with the direct involvement of a Hospital.

“Informed Financial Consent” is where a Patient is told in writing about, and consents to, the cost of Hospital Treatment before being provided with that treatment. The Patient should be informed of the cost of Hospital Treatment before they are admitted to Hospital to enable Informed Financial Consent to be given.

“Inpatient” has the same meaning to ‘Admitted Patient’.

“MBS” – see Medicare Benefits Schedule.

“Medicare Benefit” means the benefit payable by Medicare for a particular service as set out in the Medicare Benefits Schedule.

“Medicare Benefits Schedule” means the schedule set by the Commonwealth Government for the purpose of paying Medicare Benefits.

“Medicare Benefits Schedule Fee” or **“MBS Fee”** means the amount set under the Medicare Benefits Schedule.

“MediGap” is our scheme set out in these Terms and Conditions where a practitioner accepts the MediGap Benefit as full payment for services provided to the Member and is not permitted to charge Members any additional charges or out-of-pocket expenses.

“MediGap Benefit” means the fee set out in the MediGap Schedule of Benefits for each MBS item.

“MediGap Schedule of Benefits” means the Benefits that nib will pay under these Terms and Conditions. The MediGap Schedule of Benefits is available at nib.com.au/providers/medigap

“Member” means any Policyholder and any insured person covered under a Policy (including adults and dependent children).

“Modern Slavery” means the exploitation of a worker, human trafficking, slavery, servitude, forced labour, debt bondage or deceptive recruiting for labour or services, or similar types of conduct.

“Modern Slavery Laws” means any law which prohibits Modern Slavery and which is applicable or otherwise in force in the jurisdiction in which nib or the Supplier is registered or conducts business or in which activities relevant to the Agreement are to be performed, or which imposes Modern Slavery reporting obligations on one or both of the parties to this Agreement.

“nib” means nib health funds limited (ACN 000 124 381).

“Official Provider Receipt” meaning accounts and/or receipts on your letterhead or showing your official stamp, and showing the following information:

- a) your name, provider number and address;
- b) the Member’s full name and address;
- c) the date of service;
- d) the description of the service;
- e) the amount(s) charged; and
- f) any other information that we may reasonably request.

“Out-Of-Pocket Expenses” means those charges and fees not covered by us under a Policy. For example, we will not pay for medical fees above the MBS Fee (where doctors don’t participate in MediGap), any Hospital excess, or some personal and take home items like toiletries, newspapers and long distance and mobile phone calls provided in Hospital. These are billed to Members by practitioners and Hospitals. Members are advised to ask the Hospital and their Provider what their potential out-of-pocket expenses might be (see also Informed Financial Consent).

“Outpatient” means Patients that don’t require admission or an overnight stay in a Hospital.

“Participation Rate” means the percentage of times, over 12 months, you participated in MediGap or charged only the Medicare Benefits Schedule Fee for a service to a Member.

“Policy” means a policy for a Complying Health Insurance Product issued by nib.

“Policyholder” means the person who was named in an application for a Policy where that application was accepted by us and the Policy was issued.

“Premium” means an amount of money a Policyholder is required to pay to us in respect of a specified period of cover for a Policy issued under a Product.

“Principal Place of Practice” means the principal place of practice as defined by AHPRA being the location declared by the practitioner as the address at which they mostly practise their profession.

If the location of the principal place of practice is in Australia, the following information is displayed on the **registers of practitioners**: Suburb, State and Postcode.

“Privacy law” means the Privacy Act 1988 (Cth), the Australian Privacy Principles, and state and territory privacy and health records laws, as applicable.

“Private Health Insurance Act” means the Private Health Insurance Act 2007 (Cth), Private Health Insurance (Prudential Supervision) Act 2015 (Cth) and includes any regulations and rules made pursuant to those Acts.

“Private Hospital” means a privately run Hospital.

“Private Patient” means a Member electing to claim under their Policy for Treatment in a Public Hospital or a Private Hospital.

“Product” means a defined group of Benefits which are payable to a Member under their chosen level of health cover in accordance with the Fund Rules, for approved expenses incurred by a Member and in respect of which Premiums are payable.

“Professional Attention” means:

- a) medical or surgical treatment by or under the supervision of a medical practitioner; or
- b) obstetric treatment by or under the supervision of a medical practitioner or a registered nurse with obstetric qualifications; or
- c) dental treatment by or under the supervision of a dental practitioner.

“Psychiatric treatment” means treatment of a mental illness or addictions at a psychiatric facility. This may include treatment for mood disorders, eating disorders, drug and alcohol detoxification and addiction therapy.

“Public Hospital” means a Hospital owned and operated by the State or Federal Governments.

“Public Patient” means a Patient who has elected to be admitted as a ‘public’ patient in a Public Hospital which means that all benefits are claimable through Medicare only and are not claimed under the Member’s Policy.

“Records” includes financial records, books of account, medical records and other documents and information which may be stored electronically or manually.

“Self-Insured Patient” or **“Uninsured”** means a Member has opted to take full financial responsibility for a Claim and all associated costs.



“Treatment” means:

- a) in respect of Hospital Products: Hospital Treatment, Professional Attention and any other item in respect of which Benefits are payable to a Member under their Policy; and
- b) in respect of General Products: services and items for General Treatment for which Benefits are payable to a Member under their Policy.

“You” and **“Your”** means the person named in the application to participate in MediGap.

“Waiting Period” means a period of time during which a Policyholder must continuously hold a Policy for a particular Product before a Member under that Policy has an entitlement to receive a Benefit under that Product for particular goods or services.

“We, us and our” means nib and/or Honeysuckle Health as the case may be.

COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-19

This is the Annexure marked "DD-19" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

[Home](#) [Parliamentary Business](#) [Committees](#) [Senate Committees](#) [Senate Standing Committees on Community Affairs](#) [Completed inquiries and reports](#) [Completed Inquiries 1996–99](#) CHAPTER 3 – CONTRACTS: MEDICAL AND HOSPITAL PURCHASER–PROVIDER AGREEMENTS

CHAPTER 3 - CONTRACTS: MEDICAL AND HOSPITAL PURCHASER-PROVIDER AGREEMENTS

THE REVIEW OF THE HEALTH LEGISLATION (PRIVATE HEALTH INSURANCE REFORM) AMENDMENT ACT 1995

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CHAPTER 3 – CONTRACTS: MEDICAL AND HOSPITAL PURCHASER–PROVIDER AGREEMENTS

3.1 This chapter addresses issues relating to the implementation and operation of the contractual arrangements provided for in the Reform Act between doctors, private hospitals and health funds. Contracts are fundamental to achieving the stated objectives of the Reform Act which, as noted in Chapter 2, have generally not been achieved. The chapter discusses areas of concern raised in relation to the contracting arrangements and suggests areas where the legislation can be improved so that its aims with respect to contracts can be achieved. The chapter also discusses the issue of 'gap' insurance and the impact of the Reform Act on the public hospital system.

Medical provider agreements

3.2 The Reform Act establishes two types of medical agreements. One form of agreement is with funds and is termed a Medical Purchaser–Provider Agreement (MPPA). The second form of agreement is with hospitals and is termed a Practitioner Agreement (PA).

3.3 MPPAs are contracts entered into between health funds and medical practitioners which allow the fund to pay medical benefits in excess of the Medicare Benefits Schedule (MBS) fees for that practitioner's services. The agreement must include the fees that will be charged. Such agreements may eliminate out-of-pocket costs for patients or allow the patient to meet a predetermined amount (or co-payment). The amendment is the key element enabling funds to offer 100 per cent insurance for in-hospital medical expenses and hence improved value for money. Where no MPPA exists, the fund is restricted to paying medical benefits up to a maximum of the amount between the Medicare rebate and the MBS fee.

3.4 MPPAs entered into between funds and doctors are subject to a number of requirements. The principal requirements are that:

- funds agree to accept an assignment of the 75 per cent Medicare benefit from the Health Insurance Commission;
- any predetermined co-payment to be met by eligible contributors must be identified in the MPPA;
- apart from any such co-payment, doctors must accept the fund's payment in full satisfaction for medical services rendered in accordance with the MPPA during the episode of patient hospital care; and
- wherever possible, doctors are required to inform patients of any amount that they may reasonably expect to pay before any professional services are rendered. [\[1\]](#)

3.5 The Reform Act also provides for hospitals and doctors to enter into Practitioner Agreements (PAs), and for hospitals to receive payment under Hospital Purchaser-Provider Agreements (HPPAs) for medical services provided by those doctors. Both PAs and MPPAs involve identical consumer protection measures, such as requiring the doctor to inform patients in advance of likely medical charges. They both permit simplification of the medical benefits process by allowing the fund (for the MPPA) or the hospital (for the PA) to collate the separate medical bills and collect the Medicare benefits. [\[2\]](#)

3.6 Few medical agreements have been signed to date. The Australian Medical Association (AMA) claimed that there were between 'zero and 100', with the Australian Doctors' Fund (ADF) stating that 'to our knowledge no doctors have signed contracts'. [\[3\]](#) The Department of Health and Family Services (DHFS) stated that it was 'unaware of any MPPAs' and knew of only one Practitioner Agreement. [\[4\]](#) Medibank Private, however, informed the Committee that the fund has a small number of medical agreements 'less than 100'. These contracts cover a num

specialties and were not restricted to any particular geographical areas `we have at least some agreements in all States. We also have one instance where all of the doctors in a particular hospital have signed agreements'. [5]

Views on contracts

3.7 Groups representing the medical profession were opposed to contracts between doctors and health funds. [6] The AMA in its submission argued that MPPAs `invite the introduction of US-style managed care concepts into the Australian health system and should be removed [from the Act]'. [7] The Council of Procedural Specialists (COPS) argued that contracting provided for in the Reform Act `was and is and will always be unacceptable to doctors and in conflict with their fundamental ethical principles. Clinicians must be contracted to their patients and not to third parties'. [8]

3.8 The health insurance industry generally indicated its support of the current contractual arrangements. [9] One fund Medical Benefits Fund of Australia (MBF) indicated, however, that the current system of contracts with doctors is flawed as it `discourages the voluntary cooperation of the medical profession, because it is a system of forced co-operation of gaining de-facto control of the private health sector'. [10]

3.9 Some medical groups, such as the ADF and the Australian Association of Surgeons (AAS) indicated a fundamental objection to contracting as set out in the Reform Act. The ADF stated that no amendments to the contracting aspects of the legislation would be acceptable to the ADF `it is a moral issue. It is immoral for any third party to come between a doctor and patient'. [11] The AAS also argued that `the requirement for there to be a contract between the doctor and the health fund...should be removed'. [12]

3.10 The AMA indicated, however, that some compromise on the issue of contracts may be possible. The Committee questioned the AMA as to their position regarding allowing doctors to negotiate contracts as a group. Dr Woollard, Federal President of the AMA noted that:

I think that is a possibility If there is a range of options available, even if sections for medical provider agreements in the Act were repealed, it does not stop doctors entering into arrangements with funds. If there were some support from the government for doctors to negotiate in groups, I think it is much more like

those things would move ahead because the doctors would feel that they were equal partners, in a sense, in that negotiating field where there were groups of doctors on the one hand and funds on the other. [13]

3.11 The Council of Procedural Specialists (COPS) also indicated that while the Council is opposed to 'specific contracting and always will be', loose agreements and arrangements could be considered. [14]

3.12 Several peak medical groups have campaigned against the introduction of contracts with the aim of dissuading doctors from entering into these agreements. The AMA and AAS have advised their members not to sign contracts. [15] The ADF stated that while it does not give advice to its members not to enter into contracts, it has pointed out 'some areas of considerable concern and difficulty' with the proposed contractual arrangements. [16] One group, the Association for the Advancement of Private Health (AAPH), was formed in 1995 in response to the proposed changes to private health insurance and has argued for the repeal of the legislation. [17]

3.13 As noted above, the aim of MPPAs was to eliminate patients' out-of-pocket expenses or allow the patient to meet a predetermined amount. To the extent that few MPPAs have been negotiated and the funds have therefore been unable to offer 100 per cent insurance for in-hospital medical expenses, many witnesses suggested that the aim of the legislation in respect of MPPAs has not been met. [18] The Reform Act has, however, been given little chance to achieve its aims given the reluctance of members of the medical profession to sign contracts. The Australian Health Insurance Association (AHIA) also argued that while products offering 'no gaps' insurance are not available, the absence of such products does not mean that the legislation has failed 'particularly as we are dealing with voluntary agreements in a market environment'. The Association also noted that a number of AHIA-affiliated funds are actively pursuing agreements with specialists, with varying degrees of success. [19]

Conclusion

3.14 The Committee acknowledges the concerns expressed by the medical profession in relation to negotiating contracts with third parties that obligations imposed by such contractual relationships could seriously compromise the professional independence of doctors or could adversely affect judgements at patient care. The Committee has difficulty in properly assessing these concerns in the absence of any significant number of contracts or conclusive evidence that

concerns are warranted. The Committee recognises that the Reform Act provides an opportunity to address a major consumer concern relating to out-of-pocket in-hospital medical expenses, but has not provided practical mechanisms for meeting this goal.

3.15 The Committee believes that the medical profession should co-operate in negotiating contracts, but with the introduction of measures that address the concerns of the profession in relation to their freedom to contract; their freedom to treat patients according to their clinical needs; the right of the profession to collectively negotiate contracts with funds and private hospitals, subject to the authorisation provisions of the Trade Practices Act; and the need to guarantee the public scrutiny of contracts. The Committee accordingly addresses these issues in the following sections of the chapter.

Recommendation 2:

The Committee recommends that the provisions relating to the implementation of medical purchaser-provider agreements under the *Health Legislation (Private Health Insurance Reform) Amendment Act 1995* proceed, subject to the recognition of the right of the medical profession to treat patients according to their clinical needs, the right of the profession to collectively negotiate contracts, subject to authorisation by the ACCC, and the right to public scrutiny of contracts as provided for in later recommendations.

Contracts areas of concern

3.16 A number of objections to the contractual arrangements proposed in the Reform Act have been raised by groups representing the medical profession and others. These include issues related to managed care, the abrogation of accepted clinical freedoms and the doctor-patient relationship. Other issues related to the need to collectively negotiate with funds and the need for public scrutiny of contracts were also raised.

Managed Care

3.17 A major objection by the medical profession to the introduction of contracts has been the prospect that such a system of contracts would lead to what is referred to as a 'US-style managed care' system in this country. [20] Managed care has been described as an arrangement whereby an organisation assumes responsibility for all necessary health care for an individual in exchange for a fixed payment. Initially, managed care programs in the USA involved development of clear protocols for what symptoms should be present before a patient within a program was admitted to hospital. Protocols have now been developed for out-of-hospital treatment, including what drugs should be used to treat certain conditions and when allied staff or specialist counsellors should be involved in care. [21]

3.18 Managed care is a generic term covering a wide range of financing systems. One form of managed care in the USA involves companies which tender to medical insurance companies to provide medical care for those enrolled. These companies may also tender directly to large employers or directly to governments (for Medicare and Medicaid). The company then negotiates with hospitals, doctors and other services to create a network of individual providers. At the other extreme, a managed care company may be a Health Maintenance Organisation (HMO) with its own hospitals and staff that provide medical care for enrollees. [22]

3.19 The literature on managed care points to some advantages of these type of arrangements. One study noted that the protocols developed by many US managed care organisations are evidence-based and ensure that patients receive state-of-the-art, scientifically validated treatment and, conversely, that out-of-date, ineffective treatments are not imposed on patients. Adherence to protocols and rigorous screening of the need for hospital care can lead to significant cost savings managed care plans in the USA are generally cheaper than fee-for-service plans. [23] Managed care also has the advantage of offering 'one-stop shopping' with a team of doctors from diverse fields working together on a patient's medical condition. [24]

3.20 Studies have also pointed to deficiencies of the system including 'underservicing' of patients if doctors have a financial incentive through their contracts in not providing all the necessary care for patients, for example, if contracts encourage limitations on hospitalisation or referral of patients. A further weakness occurs if the managed care protocols are not state-of-the-art, that is, are designed to minimise costs rather than achieve the best health care outcomes. [25]

3.21 Studies in the USA that have compared the quality of health care under managed care vis-a-vis the traditional fee-for-service systems have found that the quality of care is similar under both systems. A 1994 review of 16 studies generally found better or equal results for HMOs one form of managed care in the USA

patients suffering from a wide range of diseases, including congestive heart failure, colorectal cancer and diabetes. [26] Consumer-satisfaction surveys showed that HMO patients, when compared with patients treated under fee-for-service arrangements, are less likely to be satisfied with the care they receive but are satisfied with the costs of that care. The surveys indicated that consumers are willing to trade some quality in service for lower costs. Critics of managed care argue, however, that the published studies tend to be based on the best forms of managed care (principally HMOs) composed of salaried, dedicated staff whereas the fastest growing type of managed care in the USA today is represented by looser networks of doctors under contract for fixed or discounted fees. Critics argue that these networks are more likely to be influenced by financial incentives to compromise the quality of care. [27]

3.22 The AMA argued that their main objection to US-style managed care was that 'the doctor treating the patient loses control over the clinical decision-making process...They [the doctors] have to seek prior approval on some occasions for treatments they wish to offer to the patients from the funds; the funds then decide whether that is appropriate care. They are observed in terms of the expense of the care and they are delisted from the funds if their care is more expensive than the average or the mean that is acceptable to the funds'. [28] COPS expressed similar concerns noting that 'we do not wish to place ourselves in the same position as surgeons in America where the way they treat patients is now largely dictated by the funds that their patients belong to'. [29]

3.23 AHIA argued, in contrast, that the legislation did not represent an attempt by the funds to introduce US-style managed care in Australia. AHIA stated that the funds 'do not, and do not want, to manage health care. Doctors manage care, and should continue to do so'. [30] AHIA argued that the term 'managed care' covers a wide range of financing systems and has been designed to meet the peculiarities of the US health system which do not pertain in Australia. [31] For example, the undersupply in the USA of general practitioners has led to a system of self referral by citizens to specialists, whereas in Australia, general practitioners have traditionally performed this role. [32]

Conclusion

3.24 The Committee acknowledges the concerns expressed by the medical profession on the possible implications, as it perceives them, that US-style managed care arrangements may have in the Australian context. The Committee believes, however, that because there are major differences between the health systems of the United States and Australia, these differences would make the introduction of

style managed care arrangements in this country unlikely. The Committee further considers that as few contracts have been concluded to date, it is difficult to assess the potential effects that a system of contracts or protocols would have in Australia. The Committee believes that the medical profession has largely based its opposition to contracts on inferences drawn from the managed care arrangements operating in the United States which may not be applicable to Australian circumstances.

3.25 The Committee would wish to avoid the worst features of the US situation and is strongly of the view that this should be avoided. The Committee is opposed to any system of health care that compromises the quality of patient care. However, it accepts that there is a common interest, shared by practitioners, hospitals and health funds, to ensure that patient care is both of the highest clinical quality while remaining as cost effective as possible. Providers especially doctors have to acknowledge that whoever pays the medical bills (Medicare or the funds) is entitled to seek accountability, efficiency and value for money.

Abrogation of clinical freedoms

3.26 A concern flowing from the misgivings raised in relation to 'managed care' was that contracts would result in the abrogation of accepted clinical freedoms to treat patients according to their clinical needs. [33] The Australian Association of Surgeons (AAS) stated that the legislation 'would undermine safe, orderly and ethical private, in-hospital, care'. [34] The Council of Procedural Specialists (COPS) argued that there are 'plenty of examples from the United States where a whole range of restrictions are placed on doctors as to what services they can provide for their patients and how long the patients can be kept in hospital'. [35] However, when the Committee questioned COPS whether they had evidence that funds in Australia have sought to exercise control over clinical and hospital care decisions, Dr Sheldon, Chairman of COPS, replied that 'I do not think we have any specific example where this has happened'. [36]

3.27 The Committee also questioned witnesses as to whether the actual conditions in proposed contracts sought to direct doctors in the clinical management of their patients. Dr Sheldon responded that 'I do not think it has ever been stated in that blatant fashion. Those are the concerns we have and that is what many of us would regard as inferences in the proposals'. [37] The Australian Doctors' Fund (ADF) stated that the power to direct doctors derives from 'the individual contract, in conjunction with the power of the most powerful bureaucracy in this country the ACCC which says that you must accept or deny these particular terms and conditions as an individual, because you are not allowed to discuss it with your colleagues or to negotiate as a group'. [38]

3.28 The health insurance industry argued that the operation of the legislation would not result in the abrogation of accepted clinical freedoms. AHIA stated that 'the clinical needs of a patient must be determined by their medical practitioner, in consultation with the patient AHIA would oppose any system which interfered with patients being treated according to their clinical needs'. [39] AHIA further stated that the Association was 'not aware of any contract which imposes interference or in any way imposes upon clinician's judgements'. [40] Another submission noted that the doctor agreements prepared by Medibank Private and the National Mutual Health Insurance (NMHI) give undertakings to refrain from interfering in the treatment of patients. [41] The Health Insurance Restricted Membership Association of Australia (HIRMAA) indicated that its agreements contained a similar undertaking. [42]

3.29 The proposed contracts sighted by the Committee did not contain any provisions that interfered or attempted to interfere in a doctor's right to treat patients according to their clinical needs. For example, the proposed NMHI medical agreements contain a clause which states that:

NMHI acknowledges that it is for the Medical Provider to exercise his own clinical judgement at all times in relation to the provision of Services to Eligible NMHI Members. NMHI further acknowledges that it will not interfere in the autonomous relationship between the Medical Provider and patients who are Eligible NMHI Members. [43]

3.30 AHIA proposed that, to allay the concerns of the medical profession regarding clinical freedoms, a provision be included in the National Health Act which rendered a contract null and void if a fund used it to 'direct a medical practitioner in the treatment of a patient'. [44]

Conclusion

3.31 The Committee believes that the concerns of the medical profession in relation to any possible impact of the Reform Act in respect of a doctor's freedom to treat patients need to be addressed appropriately. The Committee, therefore, considers that any contracts offered by funds should contain an unambiguous undertaking to refrain from interfering in the clinical treatment of patients so that the profession may be assured that the doctor-patient relationship is respected at all times and the funds will refrain from interfering or attempting to influence a doctor's treatment of a patient.

Recommendation 3:

The Committee recommends that contracts entered into between medical practitioners and health funds or hospitals at all times clearly uphold the professional duty of practitioners to treat patients according to their clinical needs.

Doctor–patient relationship

3.32 Some groups argued that the notion of contracts between doctors and health funds interferes in the traditional doctor–patient relationship. [45] ADF stated that a system of direct contractual relations between doctors and funds ‘obliterates or limits the independence of the doctor and creates a conflict of interest, which ultimately, will not serve the best interests of patients. It destroys or substantially interferes with the traditional doctor/patient relationship’. [46] ADF argues that a doctors' professional independence and the direct relationship between the doctor and the patient would be compromised by a system of contracts. [47]

3.33 Medibank Private told the Committee that the fund had received no complaints from doctors with whom they had contracted MPPAs regarding the doctor–patient relationship. [48]

3.34 The Committee believes that an effective doctor–patient relationship is one in which the doctor's primary obligation is to the welfare of the patient. It is therefore essential that the professional independence of doctors should be preserved. The Committee believes that this independence will not necessarily be threatened by contracts entered into between doctors and funds, provided that the agreements respect the primacy of the doctor–patient relationship, and refrain from interfering in, or attempting to influence, a doctor's treatment or care of a patient. The Committee considers that as few contracts have been concluded to date, a proper assessment of whether contracts pose a threat to the right of doctors to treat consumers according to their clinical needs cannot be made at this stage of the inquiry.

Negotiations with health funds

3.35 Some evidence to the Committee suggested doctors should be permitted to negotiate in groups when negotiating contracts with funds. The AMA argued that was necessary because the provision of medical care, particularly in hospitals,

involves teams of doctors and requires by its very nature coordination and discussion among doctors about a whole range of factors. [49] AHIA also acknowledged that the current requirement to establish separate contracts with individual doctors is cumbersome for all parties. AHIA suggested that the funds should be allowed to contract with an 'aggregate billing authority' which would be an individual, group of individuals or organisation involved in the direct provision of medical services which accepts responsibility for the aggregation of medical bills in the services provided by the individual, group or organisation, but not so as to limit competition. [50]

3.36 Several groups representing the medical profession including the AMA and ADF highlighted the disparity in the bargaining position of the medical profession in their negotiating position vis-a-vis the funds over contracts. [51] Under the Trade Practices Act 1974 neither the AMA or other associations are permitted to negotiate on behalf of their members with the various health funds or private hospitals unless the joint negotiation position is authorised by the Australian Competition and Consumer Commission (ACCC). Without authorisation, health professionals who jointly negotiate with health funds or hospitals are likely to be in breach of section 45A of the Trade Practices Act which prohibits agreements that have the purpose or effect of fixing, controlling or maintaining prices. [52]

3.37 The ACCC noted in its submission 'that individual negotiation with hospitals or health funds over fee arrangements is the only way that will guarantee no breach of the [Trade Practices] Act'. [53] The ACCC stated that agreements with other doctors to collectively negotiate with hospitals or health funds are likely to fix fees and breach the Trade Practices Act. The appointment of a negotiator to act on behalf of doctors does not remove that risk. If doctors are bound by the fee scales negotiated by the negotiator this is, in effect, the same as a collective negotiation. Even if doctors use a collectively appointed negotiator but decide individually whether to supply services at the negotiated price there remains a risk of breaching the Trade Practices Act. In the latter case, it may be argued that the negotiator has set a benchmark level around which the individual's fee scales will be established. [54]

3.38 The AMA noted that the Trade Practices Act places 'severe restrictions' on the behaviour of medical practitioners with the only arrangement the ACCC endorses as not breaching the Trade Practices Act is one where individual doctors negotiate with health funds. [55] The AMA noted that 'no regard is paid to the severe imbalance in this arrangement. There is an enormous concentration of financial power vested in the handful of funds that dominate the industry'. [56]

3.39 In most States, two or three health funds dominate the market leading to charges of oligopolistic domination of the market. In 1994–95, there were 49 funds operating in Australia of which four funds controlled 91 per cent of the NSW market (with MBF controlling 30 per cent); three funds controlled 85 per cent of the Victorian market (Medibank Private with 37 per cent); two funds controlled 91 per cent of the Queensland market (MBF with 62 per cent); two funds controlled 74 per cent of the combined South Australian and Northern territory markets (Mutual Community with 60 per cent); two funds controlled 94 per cent of the Western Australian market (Hospital Benefits Fund (HBF) with 79 per cent); and two funds controlled 79 per cent of the Tasmanian market (MBF with 57 per cent). [\[57\]](#)

Authorisation

3.40 As noted above, joint negotiation between funds and groups representing the medical profession must be authorised by the ACCC. The authorisation provisions in the Trade Practices Act give the ACCC the power to grant immunity from legal proceedings for conduct that might otherwise breach the restrictive trade provisions of the Trade Practices Act. For authorisation to be granted, the applicant must satisfy the ACCC that the conduct in question will result in a benefit to the public that outweighs any anticompetitive effect. The benefits must be public, not private benefits. [\[58\]](#)

3.41 The AMA raised some concerns with the authorisation powers of the ACCC. The Association claimed that the authorisation powers are 'untested' in the health area, are characterised by long delays and are 'expensive and uncertain'. [\[59\]](#)

3.42 The Committee questioned the ACCC concerning aspects of the authorisation process. Mr O'Brien of the ACCC stated that 'you cannot assume that doctors, if they did apply for joint negotiation, would get an authorisation. There is that unsureness of it But any authorisation, if you are asking on a time scale, would take three months or so to look at and do correctly'. [\[60\]](#) A lodgement fee of \$7 500 is payable for authorisation applications. The ACCC stated that it had received no applications to date for joint authorisations. [\[61\]](#)

3.43 The ACCC noted that the authorisation power had 'not been tested enough to know whether or not it works. There is a presumption perhaps that it is just too difficult'. [\[62\]](#) The ACCC further noted that the process has been in place for many years and has worked effectively across other sectors:

It is flexible enough to deal with the issues. If there are genuine reasons supporting joint negotiations, and the public benefit arguments can be mounted and sustained, then the Commission, in all the circumstances, will grant authorisation. [63]

3.44 The Committee believes that criticism of the approach of the ACCC especially in relation to anti-competitive agreements (s.45 of the Trade Practices Act) by some organisations representing the medical profession is unfounded as the Commission is merely interpreting the Trade Practices Act as it stands at present. [64]

Conclusion

3.45 The Committee considers that those doctors who choose to enter into contracts and who wish to conduct joint negotiations with health funds or private hospitals seek authorisation under the Trade Practices Act. The Committee believes that the authorisation provisions under the Act provide an appropriate mechanism for conducting joint negotiations. The Committee believes that the AMA or other associations should be able to negotiate jointly with the funds and private hospitals to counter the oligopolistic market position of the funds and, consequently, the unequal bargaining position they have vis-a-vis individual doctors when negotiating contracts. The Committee believes that it is essential, and in the interests of all parties, to ensure that a level playing field be established in this negotiating environment. These principles conversely apply where some funds find themselves confronted with a dominance of some specialties, where limited numbers of specialists may create a reverse oligopoly.

Recommendation 4:

The Committee recommends that groups of doctors or organisations representing the medical profession negotiate medical agreements with health funds or private hospitals by seeking authorisation for joint negotiations as provided for under the *Trade Practices Act 1974*.

Public scrutiny of contracts

3.46 Concerns were raised by the AAS and the Complaints Commissioner over lack of provision for public scrutiny of contracts between doctors and the funds. AAS argued that consumers should have public access to contracts, including

applicable fee schedules. [65] The Association argued that access to contracts was essential to ensure that contracts did not contain provisions that compromised the provision of appropriate care. The AAS suggested that the contracts be available for inspection at agreed locations throughout the country. [66] The Complaints Commissioner argued that consumers should have access to both MPPAs and HPPAs, with the costings deleted, particularly as these agreements are negotiated on behalf of fund members. [67]

3.47 AHIA conceded that consumers are entitled to information in relation to any restrictions in contracts which might be alleged to impact on the quality of their health care delivery. [68] AHIA, however, argued that contracts should be entitled to commercial confidentiality insofar as price is concerned, as it would be inappropriate, for example, for competitors to discover the price arrangements entered into between consenting parties. The Association suggested that the legislation be amended to provide that a patient be permitted to view a contract between their doctor and their health fund should the patient so request. [69]

Purchaser–Provider Panel

3.48 The Complaints Commissioner suggested that the Purchaser–Provider Panel should have a monitoring and oversight role in relation to contracts. [70] While the Reform Act provides for the establishment of the Panel to monitor the legislative provisions relating to purchaser–provider agreements, no action has been taken to date to establish the Panel. The Panel is to operate to 30 June 1997 by which date it will be disbanded. Members of the Panel are appointed by the Minister and are to comprise the Complaints Commissioner as Chair and representatives of the medical profession, public and private hospitals and consumers. [71]

3.49 The Complaints Commissioner suggested that the Panel be established and that the sunset clause be deleted. This would allow the Panel to monitor agreements, including the renegotiation of agreements when they expire; and gauge the effects of agreements on consumers. [72] The Complaints Commissioner also argued that the National Health Act be amended so that the Chair of the Purchaser Provider Panel be provided with copies of any purchaser–provider agreements. It was also suggested that copies of agreements could be provided to the other Panel members if the parties to the contracts agreed.

Conclusion

3.50 The Committee believes that the Purchaser–Provider Panel should be established as provided for in the Reform Act and that it should have access to purchaser–provider agreements to enhance its role in monitoring the legislative provisions relating to contracts and provide a consumer focus to the oversight of contracts.

Recommendation 5:

The Committee recommends that the *National Health Act 1953* be amended to provide for the public scrutiny of purchaser–provider agreements by consumers, except for those parts of contracts dealing with the price arrangements entered into between the parties.

Recommendation 6:

The Committee recommends that the Purchaser–Provider Panel be convened and that the sunset clause which limits the life of the Panel to 30 June 1997 be deleted.

Recommendation 7:

The Committee recommends that the Purchaser–Provider Panel be provided with access to purchaser–provider agreements as part of its monitoring role relating to contractual arrangements entered into between the relevant parties.

Hospital provider agreements

3.51 The Reform Act amends the National Health Act to provide for a specific form of contract between private hospitals and health insurance funds called a Hospital Purchaser–Provider Agreement (HPPA). [\[73\]](#) It allows funds to enter contracts with hospitals which specify the level of accommodation provided and the amounts to be charged. Hospitals must render a single account for each episode of hospital

treatment and must inform patients covered under the agreement of the amount of their out-of-pocket expenses. Under the HPPAs hospitals must also provide the funds with the information specified in the Hospital Casemix Protocol (HCP). [74]

3.52 The main elements of HPPAs are:

- the hospital or day hospital must accept the HPPA price in full payment covering the episode of care for eligible contributors, apart from any co-payment which must be specified in an HPPA;
- the HPPA price must specify the level of accommodation and provide for the hospital or day hospital facility to render a single bill covering all hospital and related services; and
- the hospital or day hospital must inform eligible contributors of any amount they will be required to pay from their own pocket in relation to hospital treatment. [75]

3.53 DHFS advised that as at 26 June 1996 there were 7 459 HPPAs between funds and hospitals (of which 912 were for day hospital facilities), an average of 20 HPPAs per private hospital and 7 HPPAs per day hospital facility. [76] The Australian Private Hospitals Association (APHA), the peak organisation representing two-thirds of all private hospitals, indicated that all APHA members have contracted with health funds, with larger hospitals having 40 to 50 contracts in place at any one time. [77]

Views on contracts

3.54 Organisations representing private hospitals were not generally opposed to the concept of contracting with health funds (contracting arrangements already existed in some States), although many argued that the negotiation processes needed to be improved and the perceived market imbalance vis-a-vis the funds needed to be addressed. [78]

3.55 APHA noted in its submission that 'our members generally support the concept of negotiating prices, quality standards and other relevant aspects of hospital care with health funds. In fact, contracts between private hospitals and health funds have operated in Victoria and South Australia for many years. Our major concern, however, is that the current practice does not involve genuine negotiation on the part of many insurance funds'. [79] The Australian Catholic Health Care Association (ACHCA) stated that the notion of contracting 'has some benefits' if out-of-pocket expenses can be reduced and the overall price of premiums can be lessened. Health Care of Australia (HCoA), the largest private hospital operator in Austr

stated that 'we do not have any objection to contracting. It suits us to contract because we can have certainty for our hospitals as well; we know the rules to work to'. [81] Ramsay Health Care, the second largest private hospital group in the country, noted that the private hospital industry is generally supportive of the 'concept of contracting'. [82]

3.56 The stated aims in the legislation with respect to requiring contracts between funds and hospitals were to generate competition between health funds and hospitals, resulting in improved efficiency leading to better value-for-money, quality and access for patients; to link hospital funding to appropriate quality assurance and accreditation procedures; and to reduce restrictions on products offered, thereby allowing funds to operate according to market demand for different products. [83]

3.57 Views expressed to the Committee differed as to whether these aims have been achieved. Groups representing the private hospital industry generally argued the aims have not been met. For example, APHA and ACHCA argued that the goal of improving the value of health insurance has not been achieved. [84] ACHCA pointed to the continued out-of-pocket expenses borne by patients and the cost to consumers of obtaining private health insurance. [85]

3.58 The health insurance industry generally considered that the legislation has achieved its aims, or at least has the potential to achieve them. AHIA argued that the legislation:

Represents a micro-reform of the health care sector by offering consumers the opportunity for wider choices in health care packages. It also provides a framework through which the privately insured patient can obtain the benefits of private sector health care while avoiding unpleasant financial surprises. It provides a framework for a more competitive market in the provision of health services. [86]

3.59 Medibank Private, commenting on the aims of the legislation in relation to HPPAs, argued that the legislation encourages funds and hospitals to enter into agreements with the aim of generating increasing competition 'industry competition should improve efficiency, leading to better value-for-money, quality and access for patients'. [87] MBF, however, argued that the aim of generating competition between health funds and hospitals was based on 'flawed logic'. MBF stated that there has always been competition between health funds, limited only by the regulations imposed by the Commonwealth 'competition in pricing and packages is subject to conditions of registration which preclude true marketplace competition if the regulations are enforced'. [88] MBF noted that the conditions of registration require that any package offered to one group of people must be available to all other people at the same price for people in the same area. Regarding the issue of value-for-

money, MBF argued that some health insurance packages do provide better value for money, but these have largely been restricted to the corporate sector and not the wider community. [89]

Contracts issues

3.60 A number of issues relating to the contractual arrangements were raised by organisations representing private hospitals. These included the effect of the market imbalance on the negotiation process, the effect of default benefits and aspects of the negotiation process.

Market imbalance

3.61 Concerns about the market dominance by a few large funds, referred to earlier in this Chapter by the medical profession, were also raised by representatives of the private hospitals similarly concerned about the market dominance of funds vis-à-vis private hospitals. ACHCA noted that:

Clearly the larger the health fund the more potent its commercial negotiating capacity. However, when a health fund has a majority of the local market, hospitals are placed in an increasingly difficult situation. [90]

3.62 APHA also noted that funds are in a strong negotiating position with one fund controlling at least 40 per cent of the market in each State except in the case of NSW. In contrast, private hospital groups control a much smaller market share with no one group controlling more than 20 per cent of the market, except in NSW and WA. APHA noted that three-quarters of private hospitals have less than 100 beds and therefore are unable individually to benefit from any market-share based negotiating influence. [91]

3.63 The Private Hospitals Association of Victoria (PHAV) noted in its submission that the Victorian experience of contract negotiations over an 8-year period demonstrated the effect of the unequal market power between health funds and private hospitals:

Private hospitals in Victoria found that they could not compete in this 'negotiation' framework. The market power of individual hospitals was not enough to enable true negotiations to occur. Funds had a greater modelling capacity and access to information across state boundaries. Funds tended to ignore hospital cost increases when negotiating benefit reviews. [92]

3.64 The health insurance industry rejected the view that private hospitals are disadvantaged by virtue of market 'dominance' by funds in particular States. [93] AHIA pointed to the considerable market power of hospitals that operate in certain geographic locations and in certain market niches. [94] MBF also argued that it should be recognised that while some health funds have a degree of market power, some private hospitals also have a degree of market power. [95]

3.65 The Committee asked witnesses regarding any possible 'collusion' between the funds as regards the terms and conditions offered in contracts as a consequence of their market power. Dr Adler, a member of APHA, responded that 'while on some aspects [of contracts] there has been great diversity, on other aspects there have been some interesting coincidences. Of the four major parties in New South Wales MBF, HCF, Medibank Private and the Alliance in my contracts, with regard to day only accommodation, which exists in four different bands, all four have identical rates in every band'. [96] HIRMAA sought to clarify the situation regarding funds offering the same rates 'there is a price which is available and has been suggested for public hospitals, and we all offer the same price. We would be stupid to offer anything higher. We would also be stupid to offer anything lower because we know the hospitals are not going to accept it'. [97]

3.66 Some concerns were raised during the inquiry with regard to the possibility of funds 'refusing' contracts with particular hospitals because of their market dominance. ACHCA claimed that a fund's refusal to contract can lead to the active 'defunding' of hospitals and the forced closure of some services. [98] However, in questioning by the Committee, the Association could not provide an instance where a health fund had refused to contract with a hospital. [99] AHIA also indicated that member funds had not engaged in the practice. [100] Mr Murray, General Manager of Medibank Private, indicated that the fund does not discriminate against certain hospitals:

As a matter of policy, we seek to sign agreements with all hospitals so that we can give the widest possible access to our members. There are occasions where the price that we think is appropriate is not accepted by the hospital and we have not been able to reach agreement. But we do not go out with a list of hospitals with whom we will sign agreements and a list of hospitals with whom we will not sign agreements. [101]

Effect of default benefits

3.67 APHA raised the issue of the effect that the level of default benefits have in 'pressuring' hospitals to contract with funds. A default benefit is payable by the fund if a patient receives care in a hospital with which a patient's fund does not have a contract.

3.68 APHA argued that as the average default benefit is only approximately 45 per cent of the actual care costs 'there is a very powerful incentive for hospitals to successfully negotiate a contract. It is virtually impossible under the current environment to continue operating unless you have contracted with funds that have a wide-ranging coverage of the health insured population in the geographic catchment area of a hospital'. [102] AHIA argued, however, that if the default is set too low for some hospitals to survive on it is of no benefit to the hospitals in question. If, on the other hand, the default is set high enough for uncontracted hospitals to survive, there is no incentive for a hospital to enter into an agreement with a health fund. [103]

3.69 The Committee was advised that DHFS has prepared a discussion paper examining issues related to the use of case payments for default benefits which will shortly be released for industry and public discussion. [104]

Recommendation 8:

The Committee recommends that in the interests of continuing certainty in the contracting process, and recognising that contributors should not be totally disadvantaged, if in an emergency they are treated in a non-contracted hospital, an appropriate default benefit should continue in place after 1 July 1997.

Negotiation process

3.70 The Committee received a range of views on aspects of the negotiation process. APHA reported several problems with the process. The Association stated that as a result of the power imbalance between the funds and private hospitals many funds do not 'genuinely negotiate HPPAs', with 'negotiations' often involving the fund setting a price prior to discussions and refusing to consider a contract at any other price. [105]

3.71 ACHCA noted that member hospitals reported 'varied satisfaction with the progress of negotiated agreements. Some hospitals report that funds have merely formalised existing arrangements. Others, albeit few, maintain that negotiations have been relatively smooth'. [106] HCoA indicated, however, that the group had no major difficulties in negotiating contracts 'to date the negotiations have been undertaken quite professionally and with mutual agreement'. [107]

Country/smaller hospitals

3.72 Some evidence suggested that smaller and/or country hospitals had problems negotiating with the funds. APHA claimed that in the case of smaller hospitals (up to 50 beds) many funds do not negotiate in person at all, rather they routinely make 'offers' in writing, without visiting the private hospitals to assess the scope or quality of services provided. [108] However, MBF argued that their fund 'would certainly not simply offer terms to a hospital and say 'There it is' We have had, in a number of cases, quite protracted negotiations until we reach agreement. That would apply to country hospitals as much as to urban hospitals.' [109]

3.73 ACHCA noted that the difficulty for country private hospitals is that many operate in a quasi fashion between the public and private sectors because doctors use them for different purposes 'so there are peculiar issues that need to be addressed in the negotiations and a lot of the times it does come down to the capacity of individuals around that table'. [110] Evidence from HCoA noted that due to the complexity of the negotiating environment 'smaller operators without the information resources and computer systems would find it very difficult'. [111]

3.74 APHA suggested that data on hospital closures suggests that smaller hospitals are 'having greater difficulties negotiating appropriate contracts with health insurance funds than the larger hospitals'. [112] AHIA, while not addressing the issue of smaller hospital closures specifically, suggested, however, that there are many reasons for hospital closures including poor management, sale of a facility to another organisation etc. AHIA pointed out that while 13 private hospitals have closed nationally since 1 July 1995 over the same period 12 new private hospitals have opened, resulting in an increase of 80 beds in the private hospital sector. [113]

3.75 The Committee inquired as to whether there is any differentiation in the benefits offered by funds to smaller hospitals as opposed to larger ones. Medibank Private stated that differential benefits were based 'more on our assessment of their patient mix rather than their size' therefore an acute surgical hospital would have a higher offer than a hospital with predominantly medical patients. [114] HCoA

told the Committee that the differentiation in the benefits offered 'is mainly done on the basis of issues such as clinical infrastructure and the types of services that are provided within those facilities'. [\[115\]](#)

Conclusion

3.76 The Committee notes the concerns expressed in evidence concerning the difficulties that many country and/or smaller hospitals may have in negotiating contracts with funds. The Committee considers that the contracting arrangements could be improved if smaller hospital groupings were able to collectively negotiate contracts with the funds (see Recommendation 9).

Administrative costs

3.77 Evidence from organisations representing private hospitals indicated that there are increased administrative costs for private hospitals since the introduction of HPPAs. [\[116\]](#) These relate to the direct costs of undertaking negotiations, information systems costs in administering the agreed contracts and staff costs associated with explaining the implications of HPPAs to patients.

3.78 APHA stated that, typically, negotiation of contracts involves 60 per cent of a senior executive's time (or equivalent spread amongst multiple senior executives) in each private hospital. The Association argued that while this involves a reasonably small absolute cost for larger hospitals, for smaller hospitals the actual cost may be a 'significant burden'. [\[117\]](#) APHA also claimed that training of staff to use new information systems and to understand the variety of payment systems has added approximately \$1000 per annum per employee to each hospital's training costs. In addition, due to the number and complexity of health fund products and the time required to explain these arrangements to consumers, additional administrative staff have been required in some hospitals. [\[118\]](#)

3.79 The Committee considers that the administrative costs involved in the negotiation process, especially for smaller hospitals, could be rationalised by permitting hospital groupings to collectively negotiate contracts with health funds (see Recommendation 9).

Renegotiation of hospital contracts

3.80 APHA and PHAV argued that hospital experience in the renegotiation of existing contracts has also been unsatisfactory. [\[119\]](#) APHA claimed that some funds have unreasonably delayed concluding contract negotiations. These funds have the

extended the existing contract until the delayed negotiations are complete, often months later. [\[120\]](#)

3.81 In addition, APHA argued that many funds enter renegotiation discussions with a predetermined view on the size of any increased benefits. For example, funds tend to be unwilling to consider the impact of significant cost increases, such as wage rises, that have taken place since the previous contract was negotiated. Other funds have a predetermined idea of the total benefits to be paid based on the previous year's case profile `this approach is likely to be inappropriate where a hospital's service profile is changing due to specialisation or broadening the range of services offered'. [\[121\]](#) APHA argued that some private hospitals, especially smaller and independent hospitals, have been offered renegotiated contracts which pay substantially lower benefits compared to those previously paid by the fund. [\[122\]](#)

Collective negotiations with health funds

3.82 APHA argued that to achieve a more equitable basis for negotiations between hospitals and health funds, independent hospitals and small hospital groups should be permitted to collectively negotiate contracts with the health funds. [\[123\]](#) AHIA, however, was opposed to this proposal arguing that it would lead to the creation of `cartels'. [\[124\]](#) The Association argued that the existing trade practices legislation provides sufficient flexibility for hospitals to negotiate without the need for special exemptions. [\[125\]](#)

3.83 The ACCC in its submission to the Committee stated that under the Trade Practices Act, private hospital negotiations with health funds for the provision of hospital services need to be completed on an individual basis to ensure no breach of the Trade Practices Act. Hospitals that compete with each other, or are in a position to compete with each other, cannot collectively negotiate on price with health funds (nor can they appoint a negotiator) without risking breaching s. 45A of the Trade Practices Act the price fixing provisions of the Trade Practices Act. [\[126\]](#)

3.84 The ACCC advised the Committee, however, that not all joint negotiations on prices and rates would breach s.45 of the Trade Practices Act. Private hospitals that do not compete with each other, either in a geographic sense or in a product market sense, are able to negotiate jointly, provided that such conduct does not substantially lessen competition. Secondly, it is not a breach of s.45 for all hospitals owned by one legal entity, for example an order of the Catholic Church, to negotiate jointly with the health funds. [\[127\]](#)

3.85 Currently, the ACCC may authorise collective negotiation by hospitals, in circumstances where the applicants are able to demonstrate public benefit which outweighs any reduction in competition. The Commission advised the Committee that it has examined one joint negotiation proposal involving major private hospitals in a particular metropolitan area. The ACCC noted that:

The Commission formed the tentative view that in this particular instance the effect on competition would be significant. The public benefits to outweigh this detriment to competition focused nearly entirely on the countervailing power argument. That is, the other side to the bargaining equation had a lot of power and the hospitals did not. While this can be claimed as a public benefit the Commission's preliminary view was that it did not feel that this countervailing power argument was likely to produce sufficient benefits to outweigh the impact on competition. However, this would not necessarily be the position in all cases involving a joint negotiation proposal. [128]

3.86 APHA has argued that the public benefit argument necessary for authorisation for joint negotiation 'is difficult to demonstrate to the satisfaction of the ACCC'. [129] APHA further stated that the authorisation process inadequately addresses the hospital/insurer power imbalance and is an expensive (costing some \$7 500 per application) and lengthy process (taking a minimum of four months). [130]

3.87 APHA suggested, that to overcome the difficulties associated with the authorisation process, legislation should permit the establishment of hospital alliances for the purposes of negotiating HPPAs. The Association proposed that the National Health Act be amended to allow private hospitals to form negotiation alliances which comprise no more than 30 per cent of the privately owned private beds in a State or 30 per cent of day procedure centres working in any one speciality. APHA argued that the proposed upper limit (of 30 per cent of beds in a State) would not create a 'new power imbalance' as both new hospital alliances and existing hospital groups would have less market power than the funds. [131]

3.88 In additional information provided to the Committee APHA stated that hospital alliances would result in each alliance representing a significant proportion of fund members. An alliance which represented 30 per cent of the private beds in a State would provide services for about 20 per cent of each fund's members (the remaining 10 per cent attend public hospitals as private patients). Thus the fund would be required to enter 'meaningful negotiations with the alliance to avoid disenfranchising 20 per cent of its members'. [132]

3.89 AHIA raised some concerns with the APHA proposal. AHIA argued that some small independent operators may be disadvantaged as some 90 per cent of privately owned beds in a State could be tied up in three negotiating groups 'if I had a group that had 30 per cent of the market I would be in a stronger competitive position than my competitor who has 10 per cent or less of the market'. [133] AHIA also argued that the increased market power of private hospital alliances may lead to situations where groups containing both high quality and 'poorer quality' hospitals may demand contract conditions on a 'take it or leave it' basis. [134]

Conclusion

3.90 The Committee is satisfied that on the evidence there is a market dominance of the funds vis-à-vis private hospitals. This dominance creates a potentially unfair negotiating advantage for the funds. The Committee is of the view that a level playing field needs to be established to achieve a more equitable basis for contract negotiations. The Committee therefore considers that private hospitals should be encouraged to collectively negotiate contracts with health funds but that this should be pursued under the authorisation provisions of the Trade Practices Act.

Recommendation 9:

The Committee recommends that private hospitals negotiate hospital agreements with health funds by seeking authorisation for joint negotiations as provided for under the *Trade Practices Act 1974*.

Gap insurance

3.91 The gap between health insurance coverage and what a doctor actually charges (out-of-pocket expenses) has been identified as a major reason why many people perceive a 'lack of value for money' in health insurance cover. [135] The Commonwealth Government sets the amount which can be covered by insurance for a particular procedure through the MBS. For procedures conducted in hospital on persons with private health insurance, Medicare will rebate 75 per cent of the schedule fee and the health insurance fund will make up the remaining 25 per cent. If a doctor opts to charge above the schedule fee, the patient bears this cost it is these 'out-of-pocket' costs that have caused concern to those with private h

insurance. This problem is addressed in the legislation which provides, through MPPAs, for funds to offer 100 per cent insurance cover for in-hospital medical expenses. [\[136\]](#)

3.92 The level of out-of-pocket costs for patients can be substantial. AHIA stated that the 'average' co-payment for a patient treated by a specialist and anaesthetist is approximately \$130. In 1995, one AHIA-affiliated fund reported more than 850 co-payments to surgeons exceeding \$1000. On the basis of this data, AHIA estimated that one claimant in 90 would face an uninsurable co-payment of more than \$1000. [\[137\]](#)

3.93 The problem of medical 'gaps' is complicated by the fact that the real value of MBS fees has been eroded over time and, as the gap between that fee and the charges made by the doctors widens, the out-of-pocket costs have increased. The AMA argued that the problem with the MBS list is that it does not reflect 'current relativities or legitimate variations in the medical market across Australia'. [\[138\]](#) The AMA argued that a factor in any solution must be the earliest possible production of an up-to-date fees schedule with a reasonable and agreed basis for indexation. The Association argued for the Relative Value Study (RVS) to be concluded on an accelerated timetable and for discussions to be held with the Government on future indexation. The AMA suggested that if this were to be achieved such a schedule would equalise gaps across the schedule. [\[139\]](#)

3.94 A number of submissions addressed the question of alternative approaches that could be made to achieve the aim of nil or known out-of-pocket costs for patients and reasonable stability in the cost of private health insurance.

3.95 AHIA, while favouring the current arrangements, outlined an approach that involved allowing funds to pay medical benefits above the MBS, up to an amount determined by the fund. Payment of benefits above the schedule would be conditional on the fee not exceeding the published fund benefit or the practitioner entering into an agreement with the fund in relation to a higher fee which, if it involved a co-payment, would be known to the contributor prior to consent to treatment. [\[140\]](#)

3.96 Sinclair Wornell and Associates (SWA) argued that unless there was some form of agreement between health funds and doctors, average doctors' fees would increase in line with an increase in the MBS fee, leaving most patients with similar out-of-pocket expenses. Premiums would also rise without a benefit to patients. [\[141\]](#) Medibank Private also noted that open-ended gap insurance, while giving funds the opportunity to offer products that covered all charges, would be a expensive product'. [\[142\]](#)

3.97 The Committee believes that any form of gap insurance needs to be limited in the sense that funds should not be expected to provide coverage for whatever sum a doctor may care to charge. AHIA argued that 'open-ended gap insurance where we simply tie benefits to whatever the doctor charges is a recipe for galloping inflation! I would be amazed if the profession was able to exercise any form of price restraint if benefits simply chased the charge'. [143] The Committee believes that doctors should exercise some restraint in the fees they charge, in return for the guaranteed freedom of clinical action.

3.98 AHIA commented further that for health insurance to meet reasonable charges above the MBS, there is a need to ensure that funds can establish predictable premiums; the premiums are affordable for consumers; and consumers can be guaranteed that, in return for a higher premium, they can access providers 'on the basis of a predictable risk exposure rather than a potentially open ended financial liability'. [144]

Conclusion

3.99 The Committee believes that the Reform Act, through the implementation of MPPAs, provides one approach to address the issue of eliminating out-of-pocket costs. The Committee also considers that the Commonwealth Government should consider other approaches to address the issue of medical gaps.

Recommendation 10:

The Committee recommends that the Commonwealth Government take available options to conclude the Relative Value Study of the MBS on an accelerated timetable.

Impact on public hospitals

3.100 Several submissions from State Governments raised issues relating to the likely impact of the Reform Act on public hospitals. [145] The Reform Act provides that public hospitals may enter into HPPAs with health funds from 1 July 1996. In order to encourage the development of HPPAs, the basic table benefits were abolished from that date and replaced by a default benefit. This benefit is to be paid by funds to hospitals with whom they have not negotiated HPPAs, and as such operate similar to that of the basic table benefit. [146]

Negotiating contracts

3.101 Several submissions from State governments argued that the health insurance reforms provide little incentive for health funds to enter into MPPAs with public hospitals. [147] The Victorian Minister for Health stated that some Victorian health insurance funds have indicated to public hospitals in that State that they 'do not want to enter purchaser provider agreements that would lead to serious competition between public and private hospitals'. [148]

3.102 The reasons for the lack of negotiation of agreements are due to a number of factors, but principally relate to the lack of incentives that the public sector can offer to privately insured patients. In particular, the Medicare arrangements do not allow for preferential access to be given to private patients in public hospitals. Furthermore, in those areas where services are not available in the private sector, for example, country areas and some specialities, insurers are under no pressure to enter into contracts with public hospitals since the legislation limits their costs to the minimum default benefit. [149]

3.103 Commenting on the lack of incentives for funds to negotiate with public hospitals, the Western Australian Minister for Health, stated that:

It is questionable whether the funds have much incentive to negotiate reasonable fees. It is in the funds interest to keep the benefits which apply to private patients in public hospitals as low as possible and let the respective State Government incur the odium of charging fees which are not fully recoverable from the patient's health fund. Also, the funds are aware that where public hospitals charge fees in excess of the fund benefit, there is incentive for the patient to elect to be treated as a public patient and hence make no claim on their private health insurance.

[150]

3.104 Several submissions also noted that some health funds indicated that a precondition for negotiating HPPAs with public hospitals would be preferred access for fund contributors to public hospitals. As noted above, the Medicare Agreement, however, requires that admission to public hospitals is based solely on clinical need, and that the health status of a patient is irrelevant. [151] The Tasmanian Minister for Community and Health Services suggested that in order to make HPPAs more attractive the Medicare Principles would need to be relaxed so as to allow preferred access to be provided. [152] AHIA also indicated that the funds see little, if any, benefit in negotiating contracts with public hospitals 'unless they can provide guarantees of access and/or accommodation'. [153]

Equivalence

3.105 Several submissions to the inquiry suggested that the policy of 'equivalence' under the new health insurance arrangements needs to be clarified by the Commonwealth Government. Under the new contracting arrangements, public hospitals are able to negotiate with funds on the same basis as private hospitals. This allows for 'equivalence' between private hospital charges and benefit payments for the treatment of private patients. To offset the potential problem of increasing health insurance premiums as public hospitals move to full cost recovery pricing for private patients, it is proposed that the Commonwealth Government 'clawback' any extra revenue from the States and return the revenue to the funds. [\[154\]](#)

3.106 State Governments indicated a number of difficulties with these arrangements. The Tasmanian Minister for Community and Health Services argued that the circumstances where clawback may apply are 'unclear' and need to be clarified. [\[155\]](#) The Victorian Minister for Health argued that there should be no clawback unless there is 'clear evidence' that increased public hospital fees have caused a substantial increase in health insurance premiums. [\[156\]](#) Evidence from State governments also indicated that any increase in State revenue from the treatment of private patients in public hospitals could also effect the distribution of financial grants from the Commonwealth to the States. [\[157\]](#)

Other issues

3.107 A number of other issues were raised by the States in submissions to the inquiry. One issue canvassed was the perceived discrimination by funds against co-located hospitals with funds currently unwilling to pay benefits, such as theatre fees when co-located private hospitals lease operating theatre time in public hospitals. [\[158\]](#)

3.108 Another issue raised was the effect of the current Medicare and health insurance arrangements which, it was argued, encourage funds to direct their members to public hospitals for high cost treatments and where the patients' stay in hospital is likely to be longer. The Western Australian Minister for Health argued that this results in public hospitals 'having to carry a higher proportion of high cost care than do the private hospitals'. [\[159\]](#)

3.109 The Victorian Minister for Health also noted a problem concerning the lack of recognition in the Reform Act for 'service innovation' in the health area. The Minister noted that the Victorian Government's Hospital in the Home (HITH) pilot program has had to be restricted to public patients because the focus of the NHA on defining a hospital as a premises at a particular address has prevented funds paying benefits for private patients under this program. [\[160\]](#) The Minister stated that the definit

`hospital' and a `hospital service' in the NHA need to be reviewed `to ensure that hospitals and health insurance organisations can keep up with services innovations that will lead to lower costs of services and better outcomes for patients'. [\[161\]](#)

Conclusion

3.110 The evidence from State Governments raised a number of important issues in relation to the impact of the Reform Act on the public hospital sector, and highlighted a number of problems associated with the new contracting arrangements between public hospitals and the funds. The Committee believes that, while the full impact of the new arrangements may not be known for some time, as the major changes relating to public hospitals only commenced on 1 July 1996, the possible effects of these changes and any unintended consequences need to be addressed by the Commonwealth Government, in consultation with State and Territory Governments.

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FOOTNOTES

[\[1\]](#) DSHS, HBF Circular No.410, PH Circular No.222, 30 June 1995, p.15.

[\[2\]](#) Submission No.25, p.28 (APHA).

[\[3\]](#) *Transcript of Evidence*, p.9 (AMA); *Transcript of Evidence*, p.47 (ADF).

[\[4\]](#) Submission No.45, p.2 (DHFS).

[\[5\]](#) *Transcript of Evidence*, p.217 (Medibank Private).

[\[6\]](#) See Submission No.27, p.1 (AMA); Submission No.24, p.6 (NASOG); Submission No.38, p.3 (RACR); Submission No.42, pp.2–5 (ADA SA Branch).

[\[7\]](#) Submission No.27, p.1 (AMA).

[\[8\]](#) Submission No.23, p.1 (COPS). See also Submission No.8, p.1 (AAS).

[\[9\]](#) Submission No.2, p.31 (AHIA).

[\[10\]](#) Submission No.11, p.17 (MBF).

[\[11\]](#) *Transcript of Evidence*, p.54 (ADF).

[12] *Transcript of Evidence*, p.40 (AAS).

[13] *Transcript of Evidence*, p.19 (AMA).

[14] *Transcript of Evidence*, p.28 (COPS).

[15] *Transcript of Evidence*, p.9 (AMA); *Transcript of Evidence*, p.45 (AAS).

[16] *Transcript of Evidence*, p.48 (ADF).

[17] Submission No.22, pp.3–13 (AAPH).

[18] *Transcript of Evidence*, pp.229–30 (DHFS); *Transcript of Evidence*, p.3 (AMA).

[19] Submission No.2, p.30 (AHIA).

[20] See Submission No.47, pp.2–11 (Neurosurgical Society of Australasia); (Submission No.42, p.8 (ADA SA Branch); (Submission No.13, p.2 (Australian Society of Otolaryngology Head and Neck Surgery); Submission No.14, p.2 (ASA).

[21] S. Duckett, 'The New Market in Health Care: Prospects for Managed Care in Australia', *Australian Health Review*, vol 19(2), 1996, p.10.

[22] S. Rosenman, 'What is Managed Care?', *Healthcover*, vol.6(2), April/May 1996, pp.31–32.

[23] Duckett, *op.cit.*, p.10.

[24] 'Managed Care', *Congressional Quarterly Researcher*, vol.6(14), April 1996 p.319. See also Rosenman, *op.cit.*, p.33.

[25] Duckett, *op.cit.*, pp.11–12.

[26] The studies based their conclusions on clinical results such as how many patients died or how far a patient's cancer had advanced before it was discovered. HMOs are organisations that provide health care in return for set monthly payments. Most HMOs provide care through a network of doctors and hospitals that their members must use in order to be covered. There are several different forms of managed care plans. Another example is Preferred Provider Organisations under these plans, networks of doctors and hospitals provide care at a lower cost than through traditional insurance. The choice is usually wider than under HMOs. See CQ Researcher, *op.cit.*, pp.317–20. See also Rosenman, *op.cit.*, p.33.

[27] CQ Researcher, *op.cit.*, p.317.

- [28] *Transcript of Evidence*, pp.7–8 (AMA). See also supplementary information, AMA, 2 August 1996, pp.3–4.
- [29] *Transcript of Evidence*, p.24 (COPS). See also Submission No.22, pp.8–9 (AAPH). See also Appendix 7 of the submission.
- [30] Submission No.2, p.4 (AHIA).
- [31] Submission No.2, p.3 (AHIA). See also supplementary information, AHIA, 16 August 1996, p.12.
- [32] Submission No.2, pp.3–4 (AHIA).
- [33] *Transcript of Evidence*, pp.24, 26 (COPS).
- [34] Submission No.8, p.1 (AAS). See also supplementary information, AAS, 15 August 1996, pp.2–6.
- [35] *Transcript of Evidence*, p.26 (COPS).
- [36] *Transcript of Evidence*, p.28 (COPS).
- [37] *Transcript of Evidence*, p.26 (COPS).
- [38] *Transcript of Evidence*, p.55 (ADF).
- [39] Submission No.2, p.32 (AHIA). See also supplementary information, AHIA, 16 August 1996, p.13.
- [40] Submission No.2, p.32 (AHIA).
- [41] Submission No.19, p.29 (SWA).
- [42] *Transcript of Evidence*, pp.172–73 (HIRMAA).
- [43] *NMHI Purchaser–Provider Agreement* in Submission No.2 (AHIA), Appendix C, p.3. See also Submission No.19, p.29 (SWA).
- [44] Submission No.2, p.32 (AHIA).
- [45] See Submission No.47, pp.5–7 (Neurosurgical Society of Australasia).
- [46] Submission No.44, p.6 (ADF).
- [47] Submission No.44, p.4 (ADF). See also Submission No.22, pp.3–9 (AAPH).
- [48] *Transcript of Evidence*, p.217 (Medibank Private).

- [49] Submission No.27, p.7 (AMA).
- [50] Submission No.2, p.31 (AHIA).
- [51] Submission No.27, pp.4–5 (AMA); Submission No.44, pp.12–13 (ADF).
- [52] Submission No.28, p.10 (ACCC).
- [53] ACCC, *Guide to the Trade Practices Act for the Health Sector*, November 1995, p.13 in Submission No.28 (ACCC).
- [54] *Guide to the Trade Practices Act*, p.13 in Submission No.28 (ACCC).
- [55] Submission No.27, p.4 (AMA).
- [56] Submission No.27, p.5 (AMA).
- [57] Submission No.27 (AMA), Appendix 1, p.5. See also PHIAC *Annual Report 1994–95*, pp.76–81.
- [58] Submission No.28, p.12 (ACCC).
- [59] Submission No.27, p.5 (AMA).
- [60] *Transcript of Evidence*, p.200 (ACCC).
- [61] *Transcript of Evidence*, p.200 (ACCC).
- [62] *Transcript of Evidence*, p.201 (ACCC).
- [63] *Transcript of Evidence*, p.201 (ACCC).
- [64] Submission No.44, p.13 (ADF); Submission No.22, pp.9–10 (AAPH).
- [65] Submission No.8, pp.1–4 (AAS).
- [66] Submission No.8, p.3 (AAS).
- [67] Supplementary information, PHICC, 13 August 1996 p.13.
- [68] Submission No.2, p.33 (AHIA).
- [69] Submission No.2, p.33 (AHIA).
- [70] Submission No.32,p.11 (PHICC).
- [71] Submission No.45, p.3 (DHFS).

- [72] Submission No.32, pp.11–12 (PHICC). See also Chapter 4.
- [73] See Chapter 2.
- [74] Supplementary information, DHFS, 8 August 1996.
- [75] DSHS, HBF Circular No.410, PH Circular No. 222, 30 June 1995, pp.12–13.
- [76] Supplementary information, DHFS, 8 August 1996.
- [77] *Transcript of Evidence*, p.61 (APHA).
- [78] Submission No.25, pp.4–12 (APHA); Submission No.29, pp.8–11 (ACHCA); Submission No.17, pp.2–9 (PHAV).
- [79] Submission No.25, p.4 (APHA).
- [80] Supplementary information, ACHCA, 16 August 1996, p.5.
- [81] *Transcript of Evidence*, p.108 (HCoA).
- [82] Submission No.30, p.1 (Ramsay Health Care).
- [83] Health Legislation (Private Health Insurance Reform) Amendment Bill 1994, Minister's Second Reading Speech, Senate *Hansard*, 28 February 1995, p.1069.
- [84] Submission No.25, p.3 (APHA); Submission No.29, p.4 (ACHCA).
- [85] Submission No.29, p.4 (ACHCA).
- [86] Submission No.2, p.3 (AHIA).
- [87] Submission No.51, p.13 (Medibank Private).
- [88] Submission No.11, p.12 (MBF).
- [89] Submission No.11, p.12 (MBF).
- [90] Submission No.29, p.11 (ACHCA).
- [91] Submission No.25, pp.6–7 (APHA).
- [92] Submission No.17, p.5 (PHAV).
- [93] Submission No.2, pp.16–18 (AHIA). See also supplementary information, AHIA, 16 August 1996, p.11.
- [94] *Transcript of Evidence*, p.141 (AHIA).

- [95] Submission No.11, p.15 (MBF).
- [96] *Transcript of Evidence*, p.72 (APHA).
- [97] *Transcript of Evidence*, p.172 (HIRMAA).
- [98] Submission No.29, p.8 (ACHCA).
- [99] *Transcript of Evidence*, p.136 (ACHCA).
- [100] *Transcript of Evidence*, p.156 (AHIA). See also *Transcript of Evidence*, p.178 (HIRMAA).
- [101] *Transcript of Evidence*, p.218 (Medibank Private).
- [102] *Transcript of Evidence*, p.61 (APHA).
- [103] Submission No.2, p.28 (AHIA).
- [104] *Transcript of Evidence*, p.235 (DHFS).
- [105] Submission No.25, p.7 (APHA).
- [106] Submission No.29, p.8 (ACHCA).
- [107] *Transcript of Evidence*, p.106 (HCoA).
- [108] Submission No.25, p.7 (APHA).
- [109] *Transcript of Evidence*, p.80 (MBF).
- [110] *Transcript of Evidence*, p.132 (ACHCA).
- [111] *Transcript of Evidence*, p.106 (HCoA).
- [112] In terms of size, 85 per cent of closed private hospitals had 50 beds or less; the remaining 15 per cent had between 51 and 100 beds. See supplementary information, APHA, 9 August 1996, p.2.
- [113] Supplementary information, AHIA, 31 July 1996, p.1.
- [114] *Transcript of Evidence*, p.218 (Medibank Private).
- [115] *Transcript of Evidence*, p.106 (HCoA).
- [116] Submission No.25, pp.14–18 (APHA); *Transcript of Evidence*, pp.69–71
Transcript of Evidence, p.110 (HCoA).

- [117] Submission No.25, p.15 (APHA).
- [118] Submission No.25, p.18 (APHA).
- [119] Submission No.25, p.9 (APHA); Submission No.17, pp.9–10 (PHAV).
- [120] Submission No.25, p.9 (APHA).
- [121] Submission No.25, p.9 (APHA).
- [122] Submission No.25 p.10 (APHA).
- [123] Submission No.25, p.11 (APHA).
- [124] Submission No.2, p.16 (AHIA).
- [125] Submission No.2, p.18 (AHIA).
- [126] Submission No.28, p.10 (ACCC).
- [127] *Transcript of Evidence*, p.194 (ACCC).
- [128] *Transcript of Evidence*, pp.194–5 (ACCC).
- [129] Submission No.25, p.11 (APHA).
- [130] Submission No.25, p.11 (APHA).
- [131] Submission No.25, p.12 (APHA).
- [132] Supplementary information, APHA, 9 August 1996, p.1.
- [133] *Transcript of Evidence*, p.167 (AHIA).
- [134] *Transcript of Evidence*, p.167 (AHIA).
- [135] *Transcript of Evidence*, p.182 (CHF).
- [136] Department of the Parliamentary Library, *Medicare, Private Health Insurance and Proposals for Change*, March 1994, p.18.
- [137] Submission No.2, p.7 (AHIA).
- [138] Submission No.27, p.8 (AMA).
- [139] The RVS of the MBS is being undertaken by the DHFS, in cooperation with AMA, because of concerns about whether the existing fee relativities across the Schedule are fair and reasonable, and perceptions that there are anomalies be

specialities. It is anticipated that the RVS will result in greater confidence in fee relativities in the Schedule. See DSHS, *Annual Report 1994–95*, AGPS, Canberra, 1995, p.71.

[140] Submission No.2, pp.34–35 (AHIA).

[141] Submission No.19, pp.30–31 (SWA).

[142] *Transcript of Evidence*, p.222 (Medibank Private). See also Submission No.51, p.19 (Medibank Private).

[143] *Transcript of Evidence*, p.164 (AHIA).

[144] Submission No.2, p.9 (AHIA).

[145] See, for example, Submission No.56, pp.2–5 (Victorian Minister for Health); Submission No.52, pp.1–4 (WA Minister for Health).

[146] The default benefit is to be determined by the Commonwealth Minister for Health, but is initially to be equated to the basic table benefit level. See DSHS, HBF Circular No.410, PH Circular No.222, 30 June 1995, p.12; Submission No.49, p.1 (Tasmanian Minister for Community and Health Services).

[147] Submission No.56, p.2 (Victorian Minister for Health); Submission No.48, p.1 (SA Minister for Health); Submission No.52, p.4 (WA Minister for Health).

[148] Submission No.56, p.2 (Victorian Minister for Health).

[149] Submission No.48, p.1 (SA Minister for Health).

[150] Submission No.52, p.4 (WA Minister for Health).

[151] Submission No.49, p.2 (Tasmanian Minister for Community and Health Services); Submission No.56, p.3 (Victorian Minister for Health). See also Submission No.2, p.28 (AHIA).

[152] Submission No.49, p.2 (Tasmanian Minister for Community and Health Services).

[153] Submission No.2, p.28 (AHIA).

[154] Submission No.56, pp.2–3 (Victorian Minister for Health); Submission No.43, pp.2–3 (Queensland Department of Health).

[155] Submission No.49, p.3 (Tasmanian Minister for Community and Health Services). See also Submission No.43, p.3 (Queensland Department of Health).

[\[156\]](#) Submission No.56 p.3 (Victorian Minister for Health).

[\[157\]](#) Submission No.43, p.3 (Queensland Department of Health); Submission No.49, p.3 (Tasmanian Minister for Community and Health Services).

[\[158\]](#) Submission No.56, p.5 (Victorian Minister for Health).

[\[159\]](#) Submission No.52, p.3 (WA Minister for Health).

[\[160\]](#) The HITH program provides acute care services for patients in their own homes. See Submission No.56, p.6 (Victorian Minister for Health).

[\[161\]](#) Submission No.56, p.6 (Victorian Minister for Health).

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COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-20

This is the Annexure marked "DD-20" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

Percentage of services with no gap or where known gap payment made - this table includes both the percentage of no gap services and what is called 'known gap' services. Known gap schemes are an arrangement where the insurer pays an additional benefit on the understanding that the provider advises the patient of costs upfront.

These tables consider all the insurer's policies. The information in the tables is not indicative of any individual policy offered by the insurer but is an average across the insurer's total membership.

Table 4A: Medical services with no gap

Fund Name (Abbreviated)	% of Services with no gap								
	ACT	NSW	VIC	QLD	SA	WA	TAS	NT	Australia
Open membership insurers									
AIA Health	70.7%	83.0%	85.8%	89.2%	90.1%	79.7%	91.6%	78.9%	85.5%
Australian Unity	81.9%	91.9%	92.2%	92.1%	92.0%	88.9%	93.2%	86.2%	92.0%
BUFA	83.8%	91.8%	93.2%	94.1%	93.5%	90.0%	94.7%	92.0%	92.9%
CBHS Corporate	27.9%	86.2%	83.8%	86.3%	89.1%	81.9%	84.8%	na	84.8%
CDH	63.6%	86.2%	71.7%	62.4%	74.1%	44.4%	65.2%	na	83.8%
CUA Health	72.9%	91.6%	90.4%	94.3%	90.2%	89.1%	91.0%	86.4%	93.3%
GMHBA	58.7%	81.0%	88.1%	83.1%	85.1%	85.4%	74.6%	87.2%	86.5%
HBF	83.6%	87.4%	85.6%	90.8%	89.7%	92.7%	94.6%	87.4%	92.2%
HCF	77.5%	90.0%	87.9%	88.0%	87.7%	84.2%	92.1%	90.1%	88.8%
HCI	92.9%	88.8%	91.2%	92.0%	87.8%	95.1%	92.4%	0.0%	91.7%
Health.com.au	71.6%	86.9%	85.7%	88.4%	82.9%	84.9%	80.4%	85.0%	86.4%
Health Partners	83.3%	90.4%	89.5%	92.2%	92.1%	81.8%	92.4%	94.7%	91.9%
HIF	68.0%	88.9%	88.8%	89.8%	88.9%	88.8%	91.5%	95.3%	88.9%
Latrobe	64.7%	80.7%	79.1%	83.4%	87.3%	69.6%	73.9%	67.3%	79.4%
MDHF	64.8%	84.1%	80.9%	80.4%	80.4%	60.3%	83.3%	100.0%	81.2%
Medibank	76.5%	87.0%	87.0%	85.7%	84.7%	72.7%	90.7%	86.2%	85.5%
NIB	68.6%	93.2%	91.4%	88.8%	94.4%	89.9%	95.0%	81.4%	91.9%
Onemedifund	67.7%	89.7%	89.7%	94.3%	91.2%	88.5%	93.0%	na	90.4%
Peoplecare	79.9%	92.2%	90.8%	91.8%	93.3%	88.0%	88.9%	94.8%	91.6%
Phoenix	75.9%	94.0%	90.2%	92.2%	93.8%	88.5%	89.9%	96.7%	92.7%
QCH	94.2%	93.5%	88.4%	90.5%	96.1%	87.9%	98.5%	90.0%	90.6%
St Lukes	68.4%	80.2%	85.2%	75.9%	83.2%	68.5%	90.2%	100.0%	88.9%
Transport Health	60.9%	88.7%	89.5%	88.4%	89.6%	83.7%	83.3%	na	89.4%
Westfund	80.5%	93.1%	87.0%	89.8%	90.3%	86.6%	90.7%	86.8%	91.3%

COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-21

This is the Annexure marked "DD-21" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

MBS Items	MBS Schedule		MedGap No Gap		MPL		BUPD		HCF		AFMS		GUH	
	Schedule Rate	% of MBS	Known Gap Schedule Rate	Var. to nib (NG)	If Derived % of MBS	No Gap Schedule Rate	Var. to nib (NG)	If Derived % of MBS	Known Gap Schedule Rate	Var. to nib (NG)	If Derived % of MBS	Known Gap Schedule Rate	Var. to nib (NG)	If Derived % of MBS
3	\$17.90	0.00	\$17.90	\$0.00	126.00%	\$17.90	\$0.00	126.00%	\$17.90	\$0.00	120.00%	\$17.90	\$0.00	119.30%
4	DERIVED	129.697	DERIVED	\$0.00	126.00%	DERIVED	\$0.00	126.00%	DERIVED	\$0.00	120.00%	DERIVED	\$0.00	119.30%
23	\$39.10	\$0.00	\$39.10	\$0.00	126.00%	\$39.10	\$0.00	126.00%	\$39.10	\$0.00	120.00%	\$39.10	\$0.00	119.30%
24	DERIVED	129.697	DERIVED	\$0.00	126.00%	DERIVED	\$0.00	126.00%	DERIVED	\$0.00	120.00%	DERIVED	\$0.00	119.30%
36	\$75.75	\$0.00	\$75.75	\$0.00	126.00%	\$75.75	\$0.00	126.00%	\$75.75	\$0.00	120.00%	\$75.75	\$0.00	119.30%
37	DERIVED	129.697	DERIVED	\$0.00	126.00%	DERIVED	\$0.00	126.00%	DERIVED	\$0.00	120.00%	DERIVED	\$0.00	119.30%
44	\$111.50	\$0.00	\$111.50	\$0.00	126.00%	\$111.50	\$0.00	126.00%	\$111.50	\$0.00	120.00%	\$111.50	\$0.00	119.30%
47	DERIVED	129.697	DERIVED	\$0.00	126.00%	DERIVED	\$0.00	126.00%	DERIVED	\$0.00	120.00%	DERIVED	\$0.00	119.30%
52	\$11.00	\$0.00	\$11.00	\$0.00	126.00%	\$11.00	\$0.00	126.00%	\$11.00	\$0.00	120.00%	\$11.00	\$0.00	119.30%
53	\$21.00	\$0.00	\$21.00	\$0.00	126.00%	\$21.00	\$0.00	126.00%	\$21.00	\$0.00	120.00%	\$21.00	\$0.00	119.30%
54	\$38.00	\$0.00	\$38.00	\$0.00	126.00%	\$38.00	\$0.00	126.00%	\$38.00	\$0.00	120.00%	\$38.00	\$0.00	119.30%
57	\$61.00	\$0.00	\$61.00	\$0.00	126.00%	\$61.00	\$0.00	126.00%	\$61.00	\$0.00	120.00%	\$61.00	\$0.00	119.30%
58	DERIVED	129.697	DERIVED	\$0.00	126.00%	DERIVED	\$0.00	126.00%	DERIVED	\$0.00	120.00%	DERIVED	\$0.00	119.30%
59	DERIVED	129.697	DERIVED	\$0.00	126.00%	DERIVED	\$0.00	126.00%	DERIVED	\$0.00	120.00%	DERIVED	\$0.00	119.30%
60	DERIVED	129.697	DERIVED	\$0.00	126.00%	DERIVED	\$0.00	126.00%	DERIVED	\$0.00	120.00%	DERIVED	\$0.00	119.30%
65	DERIVED	129.697	DERIVED	\$0.00	126.00%	DERIVED	\$0.00	126.00%	DERIVED	\$0.00	120.00%	DERIVED	\$0.00	119.30%
104	\$90.35	\$8.35	\$106.60	-\$10.10	0.00%	\$106.60	-\$10.10	0.00%	\$106.60	-\$10.10	0.00%	\$106.60	-\$10.10	0.00%
105	\$45.40	\$6.90	\$52.30	-\$6.90	0.00%	\$52.30	-\$6.90	0.00%	\$52.30	-\$6.90	0.00%	\$52.30	-\$6.90	0.00%
106	\$74.95	\$9.00	\$83.95	-\$9.00	0.00%	\$83.95	-\$9.00	0.00%	\$83.95	-\$9.00	0.00%	\$83.95	-\$9.00	0.00%
107	\$132.60	-\$26.65	\$105.95	\$26.65	0.00%	\$105.95	\$26.65	0.00%	\$105.95	\$26.65	0.00%	\$105.95	\$26.65	0.00%
108	\$83.95	-\$16.85	\$67.10	\$16.85	0.00%	\$67.10	\$16.85	0.00%	\$67.10	\$16.85	0.00%	\$67.10	\$16.85	0.00%
109	\$208.65	\$20.87	\$229.52	-\$20.87	0.00%	\$229.52	-\$20.87	0.00%	\$229.52	-\$20.87	0.00%	\$229.52	-\$20.87	0.00%
110	\$159.35	\$16.33%	\$175.68	-\$16.33%	0.00%	\$175.68	-\$16.33%	0.00%	\$175.68	-\$16.33%	0.00%	\$175.68	-\$16.33%	0.00%
111	\$45.40	\$5.85	\$51.25	-\$5.85	0.00%	\$51.25	-\$5.85	0.00%	\$51.25	-\$5.85	0.00%	\$51.25	-\$5.85	0.00%
116	\$79.75	\$10.40	\$90.15	-\$10.40	0.00%	\$90.15	-\$10.40	0.00%	\$90.15	-\$10.40	0.00%	\$90.15	-\$10.40	0.00%
117	\$79.75	\$10.40	\$90.15	-\$10.40	0.00%	\$90.15	-\$10.40	0.00%	\$90.15	-\$10.40	0.00%	\$90.15	-\$10.40	0.00%
119	\$45.40	\$5.85	\$51.25	-\$5.85	0.00%	\$51.25	-\$5.85	0.00%	\$51.25	-\$5.85	0.00%	\$51.25	-\$5.85	0.00%
120	\$45.40	\$5.85	\$51.25	-\$5.85	0.00%	\$51.25	-\$5.85	0.00%	\$51.25	-\$5.85	0.00%	\$51.25	-\$5.85	0.00%
122	\$193.35	\$0.00	\$193.35	\$0.00	100.00%	\$193.35	\$0.00	100.00%	\$193.35	\$0.00	100.00%	\$193.35	\$0.00	100.00%
128	\$116.95	\$0.00	\$116.95	\$0.00	100.00%	\$116.95	\$0.00	100.00%	\$116.95	\$0.00	100.00%	\$116.95	\$0.00	100.00%
131	\$84.25	\$0.00	\$84.25	\$0.00	100.00%	\$84.25	\$0.00	100.00%	\$84.25	\$0.00	100.00%	\$84.25	\$0.00	100.00%
132	\$324.90	\$16.58%	\$341.48	-\$16.58%	0.00%	\$341.48	-\$16.58%	0.00%	\$341.48	-\$16.58%	0.00%	\$341.48	-\$16.58%	0.00%
133	\$139.55	\$18.75	\$158.30	-\$18.75	0.00%	\$158.30	-\$18.75	0.00%	\$158.30	-\$18.75	0.00%	\$158.30	-\$18.75	0.00%
135	\$278.75	\$24.45	\$303.20	-\$24.45	0.00%	\$303.20	-\$24.45	0.00%	\$303.20	-\$24.45	0.00%	\$303.20	-\$24.45	0.00%
137	\$278.75	\$24.45	\$303.20	-\$24.45	0.00%	\$303.20	-\$24.45	0.00%	\$303.20	-\$24.45	0.00%	\$303.20	-\$24.45	0.00%
139	\$139.55	-\$23.15	\$116.40	\$23.15	0.00%	\$116.40	\$23.15	0.00%	\$116.40	\$23.15	0.00%	\$116.40	\$23.15	0.00%
141	\$478.05	\$64.05	\$542.10	-\$64.05	0.00%	\$542.10	-\$64.05	0.00%	\$542.10	-\$64.05	0.00%	\$542.10	-\$64.05	0.00%
143	\$298.85	\$39.00	\$337.85	-\$39.00	0.00%	\$337.85	-\$39.00	0.00%	\$337.85	-\$39.00	0.00%	\$337.85	-\$39.00	0.00%
145	\$79.75	\$5.85	\$85.60	-\$5.85	0.00%	\$85.60	-\$5.85	0.00%	\$85.60	-\$5.85	0.00%	\$85.60	-\$5.85	0.00%
147	\$362.35	\$0.00	\$362.35	\$0.00	100.00%	\$362.35	\$0.00	100.00%	\$362.35	\$0.00	100.00%	\$362.35	\$0.00	100.00%
160	\$230.50	\$27.25	\$257.75	-\$27.25	0.00%	\$257.75	-\$27.25	0.00%	\$257.75	-\$27.25	0.00%	\$257.75	-\$27.25	0.00%
161	\$394.15	\$44.35	\$438.50	-\$44.35	0.00%	\$438.50	-\$44.35	0.00%	\$438.50	-\$44.35	0.00%	\$438.50	-\$44.35	0.00%
162	\$37.55	\$8.15	\$45.70	-\$8.15	0.00%	\$45.70	-\$8.15	0.00%	\$45.70	-\$8.15	0.00%	\$45.70	-\$8.15	0.00%
163	\$691.50	\$87.00	\$778.50	-\$87.00	0.00%	\$778.50	-\$87.00	0.00%	\$778.50	-\$87.00	0.00%	\$778.50	-\$87.00	0.00%
164	\$172.35	\$0.00	\$172.35	\$0.00	100.00%	\$172.35	\$0.00	100.00%	\$172.35	\$0.00	100.00%	\$172.35	\$0.00	100.00%
170	\$126.30	\$13.85	\$140.15	-\$13.85	0.00%	\$140.15	-\$13.85	0.00%	\$140.15	-\$13.85	0.00%	\$140.15	-\$13.85	0.00%
171	\$126.30	\$13.85	\$140.15	-\$13.85	0.00%	\$140.15	-\$13.85	0.00%	\$140.15	-\$13.85	0.00%	\$140.15	-\$13.85	0.00%
172	\$156.80	\$19.60	\$176.40	-\$19.60	0.00%	\$176.40	-\$19.60	0.00%	\$176.40	-\$19.60	0.00%	\$176.40	-\$19.60	0.00%
173	\$21.65	\$2.70	\$24.35	-\$2.70	0.00%	\$24.35	-\$2.70	0.00%	\$24.35	-\$2.70	0.00%	\$24.35	-\$2.70	0.00%
177	\$60.60	\$0.00	\$60.60	\$0.00	100.00%	\$60.60	\$0.00	100.00%	\$60.60	\$0.00	100.00%	\$60.60	\$0.00	100.00%
179	\$14.30	\$0.00	\$14.30	\$0.00	100.00%	\$14.30	\$0.00	100.00%	\$14.30	\$0.00	100.00%	\$14.30	\$0.00	100.00%
181	DERIVED	129.697	DERIVED	\$0.00	126.00%	DERIVED	\$0.00	126.00%	DERIVED	\$0.00	120.00%	DERIVED	\$0.00	120.20%
185	\$31.30	\$0.00	\$31.30	\$0.00	126.00%	\$31.30	\$0.00	126.00%	\$31.30	\$0.00	120.00%	\$31.30	\$0.00	120.20%
187	DERIVED	129.697	DERIVED	\$0.00	126.00%	DERIVED	\$0.00	126.00%	DERIVED	\$0.00	120.00%	DERIVED	\$0.00	120.20%
189	\$60.60	\$0.00	\$60.60	\$0.00	126.00%	\$60.60	\$0.00	126.00%	\$60.60	\$0.00	120.00%	\$60.60	\$0.00	120.20%
191	DERIVED	129.697	DERIVED	\$0.00	126.00%	DERIVED	\$0.00	126.00%	DERIVED	\$0.00	120.00%	DERIVED	\$0.00	120.20%
193	\$38.55	\$0.00	\$38.55	\$0.00	126.00%	\$38.55	\$0.00	126.00%	\$38.55	\$0.00	120.00%	\$38.55	\$0.00	120.20%
195	DERIVED	129.697	DERIVED	\$0.00	126.00%	DERIVED	\$0.00	126.00%	DERIVED	\$0.00	120.00%	DERIVED	\$0.00	120.20%
197	\$74.60	\$10.85	\$85.45	-\$10.85	0.00%	\$85.45	-\$10.85	0.00%	\$85.45	-\$10.85	0.00%	\$85.45	-\$10.85	0.00%
199	\$109.85	\$8.20	\$118.05	-\$8.20	0.00%	\$118.05	-\$8.20	0.00%	\$118.05	-\$8.20	0.00%	\$118.05	-\$8.20	0.00%
203	\$89.20	\$0.00	\$89.20	\$0.00	126.00%	\$89.20	\$0.00	126.00%	\$89.20	\$0.00	120.00%	\$89.20	\$0.00	120.20%
206	DERIVED	129.697	DERIVED	\$0.00	126.00%	DERIVED	\$0.00	126.00%	DERIVED	\$0.00	120.00%	DERIVED	\$0.00	120.20%
214	\$184.40	\$0.00	\$184.40	\$0.00	126.00%	\$184.40	\$0.00	126.00%	\$184.40	\$0.00	120.00%	\$184.40	\$0.00	120.20%
215	\$307.30	\$0.00	\$307.30	\$0.00	126.00%	\$307.30	\$0.00	126.00%	\$307.30	\$0.00	120.00%	\$307.30	\$0.00	120.20%
218	\$430.05	\$57.75	\$487.80	-\$57.75	0.00%	\$487.80	-\$57.75	0.00%	\$487.80	-\$57.75	0.00%	\$487.80	-\$57.75	0.00%
219	\$533.20	\$0.00	\$533.20	\$0.00	126.00%	\$533.20	\$0.00	126.00%	\$533.20	\$0.00	120.00%	\$533.20	\$0.00	120.20%
220	\$64.65	\$0.00	\$64.65	\$0.00	126.00%	\$64.65	\$0.00	126.00%	\$64.65	\$0.00	120.00%	\$64.65	\$0.00	120.20%
221	\$97.90	\$11.50	\$109.40	-\$11.50	0.00%	\$109.40	-\$11.50	0.00%	\$109.40	-\$11.50	0.00%	\$109.40	-\$11.50	0.00%
222	\$103.10	\$13.85	\$116.95	-\$13.85	0.00%	\$116.95	-\$13.85	0.00%	\$116.95	-\$13.85	0.00%	\$116.95	-\$13.85	0.00%
223	\$125.45	\$0.00	\$125.45	\$0.00	126.00%	\$125.45	\$0.00	126.00%	\$125.45	\$0.00	120.00%	\$125.45	\$0.00	120.20%
224	\$49.40	\$6.45	\$55.85	-\$6.45	0.00%	\$55.85	-\$6.45	0.00%	\$55.85	-\$6.45	0.00%	\$55.85	-\$6.45	0.00%
225	\$114.80	\$0.00	\$114.80	\$0.00	126.00%	\$114.80	\$0.00	126.00%	\$114.80	\$0.00	120.00%	\$114.80	\$0.00	120.20%
226	\$158.40	\$205.45	\$363.85	-\$205.45	0.00%	\$363.85	-\$205.45	0.00%	\$363.85	-\$205.45	0.00%	\$363.85	-\$205.45	0.00%
227	\$233.75	\$0.00	\$233.75	\$0.00	126.00%	\$233.75	\$0.00	126.00%	\$233.75	\$0.00	120.00%	\$233.75	\$0.00	120.20%
228	\$176.70	\$0.00	\$176.70	\$0.00	126.00%	\$176.70	\$0.00	126.00%	\$176.70	\$0.00	120.00%	\$176.70	\$0.00	120.20%

410	\$20.65	0	\$20.65	\$0.00	\$20.65	\$0.00	\$20.65	\$0.00	\$20.65	\$0.00	\$20.65	\$0.00	\$20.65	0	\$0.00
411	\$45.15	0	\$45.15	\$0.00	\$45.15	\$0.00	\$45.15	\$0.00	\$45.15	\$0.00	\$45.15	\$0.00	\$45.15	0	\$0.00
412	\$87.35	0	\$87.35	\$0.00	\$87.35	\$0.00	\$87.35	\$0.00	\$87.35	\$0.00	\$87.35	\$0.00	\$87.35	0	\$0.00
413	\$128.60	0	\$128.60	\$0.00	\$128.60	\$0.00	\$128.60	\$0.00	\$128.60	\$0.00	\$128.60	\$0.00	\$128.60	0	\$0.00
414	DERIVED	0	DERIVED	100.00%	DERIVED	100.00%	DERIVED	100.00%	DERIVED	100.00%	DERIVED	100.00%	DERIVED	126.7	\$0.00
415	DERIVED	0	DERIVED	100.00%	DERIVED	100.00%	DERIVED	100.00%	DERIVED	100.00%	DERIVED	100.00%	DERIVED	126.7	\$0.00
416	DERIVED	0	DERIVED	100.00%	DERIVED	100.00%	DERIVED	100.00%	DERIVED	100.00%	DERIVED	100.00%	DERIVED	126.7	\$0.00
417	DERIVED	0	DERIVED	100.00%	DERIVED	126.7	\$0.00								
585	\$135.10	0	\$135.10	\$0.00	\$135.10	\$0.00	\$135.10	\$0.00	\$135.10	\$0.00	\$135.10	\$0.00	\$135.10	0	\$7.50
588	\$48.65	0	\$48.65	\$0.00	\$48.65	\$0.00	\$48.65	\$0.00	\$48.65	\$0.00	\$48.65	\$0.00	\$48.65	0	\$7.50
591	\$93.65	0	\$93.65	\$0.00	\$93.65	\$0.00	\$93.65	\$0.00	\$93.65	\$0.00	\$93.65	\$0.00	\$93.65	0	\$13.25
594	\$43.65	0	\$43.65	\$0.00	\$43.65	\$0.00	\$43.65	\$0.00	\$43.65	\$0.00	\$43.65	\$0.00	\$43.65	0	\$6.25
599	\$159.20	120.60%	\$192.00	\$4.85	\$187.85	\$0.00	\$187.85	\$0.00	\$187.85	\$0.00	\$187.85	\$0.00	\$187.85	0	\$20.90
600	\$127.25	107.38%	\$136.65	\$35.20	\$149.95	\$0.00	\$149.95	\$0.00	\$149.95	\$0.00	\$149.95	\$0.00	\$149.95	0	\$5.35
699	\$75.75	0	\$75.75	\$0.00	\$75.75	\$0.00	\$75.75	\$0.00	\$75.75	\$0.00	\$75.75	\$0.00	\$75.75	0	\$0.00
701	\$61.75	0	\$61.75	\$0.00	\$61.75	\$0.00	\$61.75	\$0.00	\$61.75	\$0.00	\$61.75	\$0.00	\$61.75	0	\$8.25
703	\$143.50	0	\$143.50	\$0.00	\$143.50	\$0.00	\$143.50	\$0.00	\$143.50	\$0.00	\$143.50	\$0.00	\$143.50	0	\$19.20
705	\$198.00	0	\$198.00	\$0.00	\$198.00	\$0.00	\$198.00	\$0.00	\$198.00	\$0.00	\$198.00	\$0.00	\$198.00	0	\$26.80
707	\$279.70	0	\$279.70	\$0.00	\$279.70	\$0.00	\$279.70	\$0.00	\$279.70	\$0.00	\$279.70	\$0.00	\$279.70	0	\$37.50
715	\$220.85	0	\$220.85	\$0.00	\$220.85	\$0.00	\$220.85	\$0.00	\$220.85	\$0.00	\$220.85	\$0.00	\$220.85	0	\$0.00
721	\$150.10	115.80%	\$173.80	\$18.60	\$150.10	\$0.00	\$150.10	\$0.00	\$150.10	\$0.00	\$150.10	\$0.00	\$150.10	0	\$1.40
723	\$118.25	115.82%	\$137.75	\$14.70	\$118.25	\$0.00	\$118.25	\$0.00	\$118.25	\$0.00	\$118.25	\$0.00	\$118.25	0	\$1.05
729	\$73.25	115.77%	\$84.80	\$8.95	\$73.25	\$0.00	\$73.25	\$0.00	\$73.25	\$0.00	\$73.25	\$0.00	\$73.25	0	\$3.80
731	\$73.25	115.77%	\$84.80	\$8.95	\$73.25	\$0.00	\$73.25	\$0.00	\$73.25	\$0.00	\$73.25	\$0.00	\$73.25	0	\$3.80
732	\$74.95	115.81%	\$86.80	\$9.45	\$74.95	\$0.00	\$74.95	\$0.00	\$74.95	\$0.00	\$74.95	\$0.00	\$74.95	0	\$0.20
733	\$24.10	0	\$24.10	\$0.00	\$24.10	\$0.00	\$24.10	\$0.00	\$24.10	\$0.00	\$24.10	\$0.00	\$24.10	0	\$0.00
735	\$73.55	116.19%	\$85.45	\$8.75	\$73.55	\$0.00	\$73.55	\$0.00	\$73.55	\$0.00	\$73.55	\$0.00	\$73.55	0	\$32.65
737	\$40.80	116.19%	\$47.40	\$5.50	\$40.80	\$0.00	\$40.80	\$0.00	\$40.80	\$0.00	\$40.80	\$0.00	\$40.80	0	\$2.80
739	\$126.85	116.19%	\$146.25	\$14.90	\$126.85	\$0.00	\$126.85	\$0.00	\$126.85	\$0.00	\$126.85	\$0.00	\$126.85	0	\$28.95
741	\$69.90	116.16%	\$81.20	\$6.90	\$69.90	\$0.00	\$69.90	\$0.00	\$69.90	\$0.00	\$69.90	\$0.00	\$69.90	0	\$11.30
743	\$209.80	116.18%	\$243.75	\$25.40	\$209.80	\$0.00	\$209.80	\$0.00	\$209.80	\$0.00	\$209.80	\$0.00	\$209.80	0	\$28.95
745	\$98.05	116.15%	\$113.15	\$9.45	\$98.05	\$0.00	\$98.05	\$0.00	\$98.05	\$0.00	\$98.05	\$0.00	\$98.05	0	\$8.00
747	\$54.05	116.15%	\$62.80	\$9.20	\$54.05	\$0.00	\$54.05	\$0.00	\$54.05	\$0.00	\$54.05	\$0.00	\$54.05	0	\$2.10
750	\$92.60	116.19%	\$107.60	\$10.95	\$92.60	\$0.00	\$92.60	\$0.00	\$92.60	\$0.00	\$92.60	\$0.00	\$92.60	0	\$26.30
758	\$179.10	116.16%	\$197.80	\$18.95	\$179.10	\$0.00	\$179.10	\$0.00	\$179.10	\$0.00	\$179.10	\$0.00	\$179.10	0	\$1.80
761	DERIVED	0	DERIVED	100.00%	DERIVED	0	\$0.00								
763	DERIVED	0	DERIVED	100.00%	DERIVED	0	\$0.00								
766	DERIVED	0	DERIVED	100.00%	DERIVED	0	\$0.00								
769	DERIVED	0	DERIVED	100.00%	DERIVED	0	\$0.00								
772	DERIVED	0	DERIVED	100.00%	DERIVED	0	\$0.00								
776	DERIVED	0	DERIVED	100.00%	DERIVED	0	\$0.00								
788	DERIVED	0	DERIVED	100.00%	DERIVED	0	\$0.00								
789	DERIVED	0	DERIVED	100.00%	DERIVED	100.00%	DERIVED	100.00%	DERIVED	100.00%	DERIVED	100.00%	DERIVED	0	\$0.00
792	\$63.75	0	\$63.75	\$0.00	\$63.75	\$0.00	\$63.75	\$0.00	\$63.75	\$0.00	\$63.75	\$0.00	\$63.75	0	\$0.00
820	\$146.90	116.14%	\$170.60	\$18.95	\$146.90	\$0.00	\$146.90	\$0.00	\$146.90	\$0.00	\$146.90	\$0.00	\$146.90	0	\$7.25
822	\$20.45	116.16%	\$23.60	\$3.60	\$20.45	\$0.00	\$20.45	\$0.00	\$20.45	\$0.00	\$20.45	\$0.00	\$20.45	0	\$0.00
823	\$93.70	116.16%	\$108.50	\$14.80	\$93.70	\$0.00	\$93.70	\$0.00	\$93.70	\$0.00	\$93.70	\$0.00	\$93.70	0	\$11.55
825	\$135.35	116.16%	\$156.15	\$20.80	\$135.35	\$0.00	\$135.35	\$0.00	\$135.35	\$0.00	\$135.35	\$0.00	\$135.35	0	\$14.55
826	\$168.25	116.16%	\$193.70	\$25.45	\$168.25	\$0.00	\$168.25	\$0.00	\$168.25	\$0.00	\$168.25	\$0.00	\$168.25	0	\$17.20
828	\$231.05	116.16%	\$267.35	\$36.30	\$231.05	\$0.00	\$231.05	\$0.00	\$231.05	\$0.00	\$231.05	\$0.00	\$231.05	0	\$25.25
830	\$171.60	116.14%	\$198.45	\$26.80	\$171.60	\$0.00	\$171.60	\$0.00	\$171.60	\$0.00	\$171.60	\$0.00	\$171.60	0	\$18.25
832	\$209.45	116.16%	\$242.80	\$33.35	\$209.45	\$0.00	\$209.45	\$0.00	\$209.45	\$0.00	\$209.45	\$0.00	\$209.45	0	\$21.30
834	\$106.50	116.16%	\$123.80	\$17.30	\$106.50	\$0.00	\$106.50	\$0.00	\$106.50	\$0.00	\$106.50	\$0.00	\$106.50	0	\$26.30
835	\$168.25	116.16%	\$193.70	\$25.45	\$168.25	\$0.00	\$168.25	\$0.00	\$168.25	\$0.00	\$168.25	\$0.00	\$168.25	0	\$26.30
837	\$27.20	116.16%	\$31.60	\$4.40	\$27.20	\$0.00	\$27.20	\$0.00	\$27.20	\$0.00	\$27.20	\$0.00	\$27.20	0	\$1.90
838	\$231.05	116.16%	\$267.35	\$36.30	\$231.05	\$0.00	\$231.05	\$0.00	\$231.05	\$0.00	\$231.05	\$0.00	\$231.05	0	\$25.25
855	\$146.90	116.14%	\$170.60	\$18.95	\$146.90	\$0.00	\$146.90	\$0.00	\$146.90	\$0.00	\$146.90	\$0.00	\$146.90	0	\$7.25
857	\$20.45	116.16%	\$23.60	\$3.60	\$20.45	\$0.00	\$20.45	\$0.00	\$20.45	\$0.00	\$20.45	\$0.00	\$20.45	0	\$0.00
858	\$93.70	116.16%	\$108.50	\$14.80	\$93.70	\$0.00	\$93.70	\$0.00	\$93.70	\$0.00	\$93.70	\$0.00	\$93.70	0	\$11.55
861	\$146.90	116.14%	\$170.60	\$18.95	\$146.90	\$0.00	\$146.90	\$0.00	\$146.90	\$0.00	\$146.90	\$0.00	\$146.90	0	\$7.25
864	\$209.45	116.16%	\$242.80	\$33.35	\$209.45	\$0.00	\$209.45	\$0.00	\$209.45	\$0.00	\$209.45	\$0.00	\$209.45	0	\$21.30
866	\$93.70	116.16%	\$108.50	\$14.80	\$93.70	\$0.00	\$93.70	\$0.00	\$93.70	\$0.00	\$93.70	\$0.00	\$93.70	0	\$11.55
871	\$38.80	116.12%	\$45.15	\$6.35	\$38.80	\$0.00	\$38.80	\$0.00	\$38.80	\$0.00	\$38.80	\$0.00	\$38.80	0	\$4.25
872	\$39.50	116.09%	\$45.85	\$6.35	\$39.50	\$0.00	\$39.50	\$0.00	\$39.50	\$0.00	\$39.50	\$0.00	\$39.50	0	\$4.25
880	\$51.40	116.09%	\$59.65	\$8.20	\$51.40	\$0.00	\$51.40	\$0.00	\$51.40	\$0.00	\$51.40	\$0.00	\$51.40	0	\$2.65
884	\$36.75	0	\$36.75	\$0.00	\$36.75	\$0.00	\$36.75	\$0.00	\$36.75	\$0.00	\$36.75	\$0.00	\$36.75	0	\$0.00
886	\$71.25	0	\$71.25	\$0.00	\$71.25	\$0.00	\$71.25	\$0.00	\$71.25	\$0.00	\$71.25	\$0.00	\$71.25	0	\$0.00
888	\$104.90	0	\$104.90	\$0.00	\$104.90	\$0.00	\$104.90	\$0.00	\$104.90	\$0.00	\$104.90	\$0.00	\$104.90	0	\$0.00
900	\$161.10	0	\$161.10	\$0.00	\$161.10	\$0.00	\$161.10	\$0.00	\$161.10	\$0.00	\$161.10	\$0.00	\$161.10	0	\$0.00
903	\$110.30	0	\$110.30	\$0.00	\$110.30	\$0.00	\$110.30	\$0.00	\$110.30	\$0.00	\$110.30	\$0.00	\$110.30	0	\$0.00
941	\$90.80	0	\$90.80	\$0.00	\$90.80	\$0.00	\$90.80	\$0.00	\$90.80	\$0.00	\$90.80	\$0.00	\$90.80	0	\$0.00
942	\$130.00	0	\$130.00	\$0.00	\$130.00	\$0.00	\$130.00	\$0.00	\$130.00	\$0.00	\$130.00	\$0.00	\$130.00	0	\$0.00
2121	\$45.95	0	\$45.95	\$0.00	\$45.95	\$0.00	\$45.95	\$0.00	\$45.95	\$0.00	\$45.95	\$0.00	\$45.95	0	\$0.00
2150	\$89.05	0	\$89.05	\$0.00	\$89.05	\$0.00	\$89.05	\$0.00	\$89.05	\$0.00	\$89.05	\$0.00	\$89.05	0	\$0.00
2196	\$131.10	0	\$131.10	\$0.00	\$131.10	\$0.00	\$131.10	\$0.00	\$131.10	\$0.00	\$131.10	\$0.00	\$131.10	0	\$0.00
2497	\$17.60	0	\$17.60	\$0.00	\$17.60	\$0.00	\$17.60	\$0.00	\$17.60	\$0.00	\$17.60	\$0.00	\$17.60	0	\$0.00
2501	\$38.55	0	\$38.55	\$0.00	\$38.55	\$0.00	\$38.55	\$0.00	\$38.55	\$0.00	\$38.55	\$0.00	\$38.55	0	\$0.00
2503	DERIVED	0	DERIVED	100.00%	DERIVED	100.00%	DERIVED	100.00%	DERIVED	100.00%	DERIVED	100.00%	DERIVED	125.3	\$0.00
2504	\$74.60	0	\$74.60	\$0.00	\$74.60	\$0.00	\$74.60	\$0.00	\$74.60	\$0.00	\$74.60	\$0.00	\$74.60	0	\$0.00
2506	DERIVED	0	DERIVED	100.00%	DERIVED	100.00%	DERIVED	100.00%	DERIVED	100.00%	DERIVED	100.00%	DERIVED	125.3	\$0.00
2507	\$109.85	0	\$109.85	\$0.00	\$109.85	\$0.00	\$109.85	\$0.00	\$109.85	\$0.00					

13815	\$143.85	121.67%	\$146.20	\$2.35	\$144.80	0.00%	\$0.95	\$150.70	0.00%	\$6.85	\$146.65	0.00%	\$2.80	\$150.20	0.00%	\$6.35	\$151.50	0	\$7.65	\$151.55	128.15%	\$7.70
13816	\$143.90	121.66%	\$146.30	\$2.40	\$144.90	0.00%	\$1.00	\$150.80	0.00%	\$6.90	\$146.70	0.00%	\$2.80	\$150.25	0.00%	\$6.35	\$151.50	0	\$7.65	\$151.55	128.15%	\$7.70
13817	\$144.00	121.65%	\$146.40	\$2.45	\$145.00	0.00%	\$1.05	\$150.90	0.00%	\$6.95	\$146.80	0.00%	\$2.85	\$150.30	0.00%	\$6.40	\$151.55	0	\$7.70	\$151.60	128.15%	\$7.75
13818	\$144.10	121.64%	\$146.50	\$2.50	\$145.10	0.00%	\$1.10	\$151.00	0.00%	\$7.00	\$146.90	0.00%	\$2.90	\$150.35	0.00%	\$6.45	\$151.60	0	\$7.75	\$151.65	128.15%	\$7.80
13819	\$144.20	121.63%	\$146.60	\$2.55	\$145.20	0.00%	\$1.15	\$151.10	0.00%	\$7.05	\$147.00	0.00%	\$2.95	\$150.40	0.00%	\$6.50	\$151.65	0	\$7.80	\$151.70	128.15%	\$7.85
13820	\$144.30	121.62%	\$146.70	\$2.60	\$145.30	0.00%	\$1.20	\$151.20	0.00%	\$7.10	\$147.10	0.00%	\$3.00	\$150.45	0.00%	\$6.55	\$151.70	0	\$7.85	\$151.75	128.15%	\$7.90
13821	\$144.40	121.61%	\$146.80	\$2.65	\$145.40	0.00%	\$1.25	\$151.30	0.00%	\$7.15	\$147.20	0.00%	\$3.05	\$150.50	0.00%	\$6.60	\$151.75	0	\$7.90	\$151.80	128.15%	\$7.95
13822	\$144.50	121.60%	\$146.90	\$2.70	\$145.50	0.00%	\$1.30	\$151.40	0.00%	\$7.20	\$147.30	0.00%	\$3.10	\$150.55	0.00%	\$6.65	\$151.80	0	\$7.95	\$151.85	128.15%	\$8.00
13823	\$144.60	121.59%	\$147.00	\$2.75	\$145.60	0.00%	\$1.35	\$151.50	0.00%	\$7.25	\$147.40	0.00%	\$3.15	\$150.60	0.00%	\$6.70	\$151.85	0	\$8.00	\$151.90	128.15%	\$8.05
13824	\$144.70	121.58%	\$147.10	\$2.80	\$145.70	0.00%	\$1.40	\$151.60	0.00%	\$7.30	\$147.50	0.00%	\$3.20	\$150.65	0.00%	\$6.75	\$151.90	0	\$8.05	\$151.95	128.15%	\$8.10
13825	\$144.80	121.57%	\$147.20	\$2.85	\$145.80	0.00%	\$1.45	\$151.70	0.00%	\$7.35	\$147.60	0.00%	\$3.25	\$150.70	0.00%	\$6.80	\$151.95	0	\$8.10	\$152.00	128.15%	\$8.15
13826	\$144.90	121.56%	\$147.30	\$2.90	\$145.90	0.00%	\$1.50	\$151.80	0.00%	\$7.40	\$147.70	0.00%	\$3.30	\$150.75	0.00%	\$6.85	\$152.00	0	\$8.15	\$152.05	128.15%	\$8.20
13827	\$145.00	121.55%	\$147.40	\$2.95	\$146.00	0.00%	\$1.55	\$151.90	0.00%	\$7.45	\$147.80	0.00%	\$3.35	\$150.80	0.00%	\$6.90	\$152.05	0	\$8.20	\$152.10	128.15%	\$8.25
13828	\$145.10	121.54%	\$147.50	\$3.00	\$146.10	0.00%	\$1.60	\$152.00	0.00%	\$7.50	\$147.90	0.00%	\$3.40	\$150.85	0.00%	\$6.95	\$152.10	0	\$8.25	\$152.15	128.15%	\$8.30
13829	\$145.20	121.53%	\$147.60	\$3.05	\$146.20	0.00%	\$1.65	\$152.10	0.00%	\$7.55	\$148.00	0.00%	\$3.45	\$150.90	0.00%	\$7.00	\$152.15	0	\$8.30	\$152.20	128.15%	\$8.35
13830	\$145.30	121.52%	\$147.70	\$3.10	\$146.30	0.00%	\$1.70	\$152.20	0.00%	\$7.60	\$148.10	0.00%	\$3.50	\$150.95	0.00%	\$7.05	\$152.20	0	\$8.35	\$152.25	128.15%	\$8.40
13831	\$145.40	121.51%	\$147.80	\$3.15	\$146.40	0.00%	\$1.75	\$152.30	0.00%	\$7.65	\$148.20	0.00%	\$3.55	\$151.00	0.00%	\$7.10	\$152.25	0	\$8.40	\$152.30	128.15%	\$8.45
13832	\$145.50	121.50%	\$147.90	\$3.20	\$146.50	0.00%	\$1.80	\$152.40	0.00%	\$7.70	\$148.30	0.00%	\$3.60	\$151.05	0.00%	\$7.15	\$152.30	0	\$8.45	\$152.35	128.15%	\$8.50
13833	\$145.60	121.49%	\$148.00	\$3.25	\$146.60	0.00%	\$1.85	\$152.50	0.00%	\$7.75	\$148.40	0.00%	\$3.65	\$151.10	0.00%	\$7.20	\$152.35	0	\$8.50	\$152.40	128.15%	\$8.55
13834	\$145.70	121.48%	\$148.10	\$3.30	\$146.70	0.00%	\$1.90	\$152.60	0.00%	\$7.80	\$148.50	0.00%	\$3.70	\$151.15	0.00%	\$7.25	\$152.40	0	\$8.55	\$152.45	128.15%	\$8.60
13835	\$145.80	121.47%	\$148.20	\$3.35	\$146.80	0.00%	\$1.95	\$152.70	0.00%	\$7.85	\$148.60	0.00%	\$3.75	\$151.20	0.00%	\$7.30	\$152.45	0	\$8.60	\$152.50	128.15%	\$8.65
13836	\$145.90	121.46%	\$148.30	\$3.40	\$146.90	0.00%	\$2.00	\$152.80	0.00%	\$7.90	\$148.70	0.00%	\$3.80	\$151.25	0.00%	\$7.35	\$152.50	0	\$8.65	\$152.55	128.15%	\$8.70
13837	\$146.00	121.45%	\$148.40	\$3.45	\$147.00	0.00%	\$2.05	\$152.90	0.00%	\$7.95	\$148.80	0.00%	\$3.85	\$151.30	0.00%	\$7.40	\$152.55	0	\$8.70	\$152.60	128.15%	\$8.75
13838	\$146.10	121.44%	\$148.50	\$3.50	\$147.10	0.00%	\$2.10	\$153.00	0.00%	\$8.00	\$148.90	0.00%	\$3.90	\$151.35	0.00%	\$7.45	\$152.60	0	\$8.75	\$152.65	128.15%	\$8.80
13839	\$146.20	121.43%	\$148.60	\$3.55	\$147.20	0.00%	\$2.15	\$153.10	0.00%	\$8.05	\$149.00	0.00%	\$3.95	\$151.40	0.00%	\$7.50	\$152.65	0	\$8.80	\$152.70	128.15%	\$8.85
13840	\$146.30	121.42%	\$148.70	\$3.60	\$147.30	0.00%	\$2.20	\$153.20	0.00%	\$8.10	\$149.10	0.00%	\$4.00	\$151.45	0.00%	\$7.55	\$152.70	0	\$8.85	\$152.75	128.15%	\$8.90
13841	\$146.40	121.41%	\$148.80	\$3.65	\$147.40	0.00%	\$2.25	\$153.30	0.00%	\$8.15	\$149.20	0.00%	\$4.05	\$151.50	0.00%	\$7.60	\$152.75	0	\$8.90	\$152.80	128.15%	\$8.95
13842	\$146.50	121.40%	\$148.90	\$3.70	\$147.50	0.00%	\$2.30	\$153.40	0.00%	\$8.20	\$149.30	0.00%	\$4.10	\$151.55	0.00%	\$7.65	\$152.80	0	\$8.95	\$152.85	128.15%	\$9.00
13843	\$146.60	121.39%	\$149.00	\$3.75	\$147.60	0.00%	\$2.35	\$153.50	0.00%	\$8.25	\$149.40	0.00%	\$4.15	\$151.60	0.00%	\$7.70	\$152.85	0	\$9.00	\$152.90	128.15%	\$9.05
13844	\$146.70	121.38%	\$149.10	\$3.80	\$147.70	0.00%	\$2.40	\$153.60	0.00%	\$8.30	\$149.50	0.00%	\$4.20	\$151.65	0.00%	\$7.75	\$152.90	0	\$9.05	\$152.95	128.15%	\$9.10
13845	\$146.80	121.37%	\$149.20	\$3.85	\$147.80	0.00%	\$2.45	\$153.70	0.00%	\$8.35	\$149.60	0.00%	\$4.25	\$151.70	0.00%	\$7.80	\$152.95	0	\$9.10	\$153.00	128.15%	\$9.15
13846	\$146.90	121.36%	\$149.30	\$3.90	\$147.90	0.00%	\$2.50	\$153.80	0.00%	\$8.40	\$149.70	0.00%	\$4.30	\$151.75	0.00%	\$7.85	\$153.00	0	\$9.15	\$153.05	128.15%	\$9.20
13847	\$147.00	121.35%	\$149.40	\$3.95	\$148.00	0.00%	\$2.55	\$153.90	0.00%	\$8.45	\$149.80	0.00%	\$4.35	\$151.80	0.00%	\$7.90	\$153.05	0	\$9.20	\$153.10	128.15%	\$9.25
13848	\$147.10	121.34%	\$149.50	\$4.00	\$148.10	0.00%	\$2.60	\$154.00	0.00%	\$8.50	\$149.90	0.00%	\$4.40	\$151.85	0.00%	\$7.95	\$153.10	0	\$9.25	\$153.15	128.15%	\$9.30
13849	\$147.20	121.33%	\$149.60	\$4.05	\$148.20	0.00%	\$2.65	\$154.10	0.00%	\$8.55	\$150.00	0.00%	\$4.45	\$151.90	0.00%	\$8.00	\$153.15	0	\$9.30	\$153.20	128.15%	\$9.35
13850	\$147.30	121.32%	\$149.70	\$4.10	\$148.30	0.00%	\$2.70	\$154.20	0.00%	\$8.60	\$150.10	0.00%	\$4.50	\$151.95	0.00%	\$8.05	\$153.20	0	\$9.35	\$153.25	128.15%	\$9.40
13851	\$147.40	121.31%	\$149.80	\$4.15	\$148.40	0.00%	\$2.75	\$154.30	0.00%	\$8.65	\$150.20	0.00%	\$4.55	\$152.00	0.00%	\$8.10	\$153.25	0	\$9.40	\$153.30	128.15%	\$9.45
13852	\$147.50	121.30%	\$149.90	\$4.20	\$148.50	0.00%	\$2.80	\$154.40	0.00%	\$8.70	\$150.30	0.00%	\$4.60	\$152.05	0.00%	\$8.15	\$153.30	0	\$9.45	\$153.35	128.15%	\$9.50
13853	\$147.60	121.29%	\$150.00	\$4.25	\$148.60	0.00%	\$2.85	\$154.50	0.00%	\$8.75	\$150.40	0.00%	\$4.65	\$152.10	0.00%	\$8.20	\$153.35	0	\$9.50	\$153.40	128.15%	\$9.55
13854	\$147.70	121.28%	\$150.10	\$4.30	\$148.70	0.00%	\$2.90	\$154.60	0.00%	\$8.80	\$150.50	0.00%	\$4.70	\$152.15	0.00%	\$8.25	\$153.40	0	\$9.55	\$153.45	128.15%	\$9.60
13855	\$147.80	121.27%	\$150.20	\$4.35	\$148.80	0.00%	\$2.95	\$154.70	0.00%	\$8.85	\$150.60	0.00%	\$4.75	\$152.20	0.00%	\$8.30	\$153.45	0	\$9.60	\$153.50	128.15%	\$9.65
13856	\$147.90	121.26%	\$150.30	\$4.40	\$148.90	0.00%	\$3.00	\$154.80	0.00%	\$8.90	\$150.70	0.00%	\$4.80	\$152.25	0.00%	\$8.35	\$153.50	0	\$9.65	\$153.55	128.15%	\$9.70
13857	\$148.00	121.25%	\$150.40	\$4.45	\$149.00	0.00%	\$3.05	\$154.90	0.00%	\$8.95	\$150.80	0.00%	\$4.85	\$152.30	0.00%	\$8.40	\$153.55	0	\$9.70	\$153.60	128.15%	\$9.75
13858	\$148.10	121.24%	\$150.50	\$4.50	\$149.10	0.00%	\$3.10	\$155.00	0.00%	\$9.00	\$150.90	0.00%	\$4.90	\$152.35	0.00%	\$8.45	\$153.60	0	\$9.75	\$153.65	128.15%	\$9.80
13859	\$148.20	121.23%	\$150.60	\$4.55	\$149.20	0.00%	\$3.15	\$155.10	0.00%	\$9.05	\$151.00	0.00%	\$4.95	\$152.40	0.00%	\$8.50	\$153.65	0	\$9.80	\$153.70	128.15%	\$9.85
13860	\$148.30	121.22%	\$150.70	\$4.60	\$149.30	0.00%	\$3.20	\$155.20	0.00%	\$9.10	\$151.10	0.00%	\$5.00	\$152.45	0.00%	\$8.55	\$153.70	0	\$9.85	\$153.75	128.15%	\$9.90
13861	\$148.40	121.21%	\$150.80	\$4.65	\$149.40	0.00%	\$3.25	\$155.30	0.00%	\$9.15	\$151.20	0.00%	\$5.05	\$152.50	0.00%	\$8.60	\$153.75	0	\$9.90	\$153.80	128.15%	\$9.95
13862	\$148.50	121.20%	\$150.90	\$4.70	\$149.50	0.00%	\$3.30	\$155.40	0.00%	\$9.20	\$151.30	0.00%	\$5.10	\$152.55	0.00%	\$8.65	\$153.80	0	\$9.95	\$153.85	128.15%	\$10.00
13863	\$148.60	121.19%	\$151.00	\$4.75	\$149.60	0.00%	\$3.35	\$155.50	0.00%	\$9.25	\$151.40	0.00%	\$5.15	\$152.60	0.00%	\$8.70	\$153.85	0	\$10.00	\$153.90	128.15%	\$10.05
13864	\$148.70	121.18%	\$151.10	\$4.80	\$149.70	0.00%	\$3.40	\$155.60	0.00%	\$9.30	\$151.50	0.00%	\$5.20	\$152.65	0.00%	\$8.75	\$153.90	0	\$10.05	\$153.95	128.15%	\$10.10
13865	\$148.80	121.17%	\$151.20	\$4.85	\$149.80	0.00%	\$3.45	\$155.70	0.00%	\$9.35	\$151.60	0.00%	\$5.25	\$152.70	0.00%	\$8.80	\$153.95	0	\$10.10	\$154.00	128.15%	\$10.15
13866	\$148.90	121.16%	\$151.30	\$4.90	\$149.90	0.00%	\$3.50	\$155.80	0.00%	\$9.40	\$151.70	0.00%	\$5.30	\$152.75	0.00%	\$8.85	\$154.00	0	\$10.15	\$154.05	128.15%	\$10.20
13867	\$149.00	121.15%	\$151.40	\$4.95	\$150.00	0.00%	\$3.55	\$155.90	0.00%	\$9.45	\$151.80	0.00%	\$5.35	\$152.80	0.00%	\$8.90	\$154.05	0	\$10.20	\$154.10	128.15%	\$10.25
13868	\$149.10	121.14%	\$151.50	\$5.00	\$150.10	0.00%	\$3.60	\$156.00	0.00%	\$9.50	\$151.90	0.00%	\$5.40	\$152.8								

18270	592.20	\$142.15	154.16%	\$145.30	\$3.15	\$144.10	0.00%	\$1.05	\$148.00	0.00%	\$5.85	\$141.05	0.00%	\$149.35	0.00%	\$7.20	\$146.40	0	\$4.25	\$146.40	158.80%	\$4.25
18271	565.05	\$100.35	155.78%	\$102.45	\$1.10	\$99.50	0.00%	\$1.85	\$104.35	0.00%	\$3.00	\$98.55	0.00%	\$105.40	0.00%	\$4.05	\$103.30	\$146.40	\$1.95	\$103.35	158.90%	\$1.95
18272	\$129.90	\$200.25	154.77%	\$204.55	\$4.30	\$198.95	0.00%	\$1.30	\$208.65	0.00%	\$8.40	\$198.75	0.00%	\$210.45	0.00%	\$10.20	\$207.00	\$146.40	\$5.85	\$206.15	158.70%	\$5.85
18273	\$92.20	\$142.15	154.16%	\$145.30	\$3.15	\$141.10	0.00%	\$1.05	\$148.00	0.00%	\$5.85	\$141.05	0.00%	\$149.35	0.00%	\$7.20	\$146.40	\$146.40	\$4.25	\$146.40	158.80%	\$4.25
18280	\$104.90	\$163.45	155.81%	\$168.60	\$5.15	\$166.40	0.00%	\$3.45	\$176.25	0.00%	\$6.25	\$166.50	0.00%	\$181.65	0.00%	\$8.05	\$176.10	\$166.40	\$3.70	\$166.90	158.70%	\$3.70
18284	\$153.60	\$246.75	154.15%	\$254.90	\$11.15	\$235.25	0.00%	\$1.90	\$267.75	0.00%	\$10.00	\$235.00	0.00%	\$288.85	0.00%	\$16.10	\$267.20	\$166.90	\$7.45	\$267.20	159.10%	\$7.45
18286	\$153.60	\$246.75	154.15%	\$254.90	\$11.15	\$235.25	0.00%	\$1.90	\$267.75	0.00%	\$10.00	\$235.00	0.00%	\$288.85	0.00%	\$16.10	\$267.20	\$166.90	\$7.45	\$267.20	159.00%	\$7.45
18288	\$299.30	\$404.85	155.80%	\$429.25	\$24.40	\$398.25	0.00%	\$3.15	\$447.85	0.00%	\$24.40	\$398.25	0.00%	\$474.55	0.00%	\$36.30	\$447.20	\$244.20	\$4.90	\$447.20	159.00%	\$4.90
18290	\$259.85	\$340.85	155.81%	\$369.80	\$19.95	\$340.35	0.00%	\$2.45	\$392.80	0.00%	\$19.95	\$340.35	0.00%	\$412.90	0.00%	\$32.55	\$392.80	\$244.20	\$8.05	\$412.90	158.90%	\$8.05
18292	\$183.15	\$242.40	155.17%	\$254.90	\$12.50	\$242.70	0.00%	\$1.30	\$267.70	0.00%	\$8.70	\$242.70	0.00%	\$296.75	0.00%	\$14.05	\$296.70	\$244.20	\$7.20	\$296.70	158.90%	\$7.20
18294	\$183.15	\$242.40	155.17%	\$254.90	\$12.50	\$242.70	0.00%	\$1.30	\$267.70	0.00%	\$8.70	\$242.70	0.00%	\$296.75	0.00%	\$14.05	\$296.70	\$244.20	\$7.20	\$296.70	158.85%	\$7.20
18296	\$61.75	\$96.20	155.80%	\$102.45	\$3.25	\$95.75	0.00%	\$0.50	\$107.95	0.00%	\$4.15	\$95.75	0.00%	\$119.10	0.00%	\$5.75	\$119.10	\$109.10	\$12.90	\$109.10	176.70%	\$12.90
18298	\$183.15	\$242.40	155.17%	\$254.90	\$12.50	\$242.70	0.00%	\$1.30	\$267.70	0.00%	\$8.70	\$242.70	0.00%	\$296.75	0.00%	\$14.05	\$296.70	\$244.20	\$7.20	\$296.70	158.95%	\$7.20
18350	\$129.90	\$200.25	154.14%	\$204.55	\$4.30	\$198.95	0.00%	\$1.30	\$208.65	0.00%	\$8.40	\$198.75	0.00%	\$210.45	0.00%	\$10.20	\$207.00	\$207.00	\$7.65	\$208.00	160.10%	\$7.65
18351	\$259.85	\$340.85	155.81%	\$369.80	\$19.95	\$340.35	0.00%	\$2.45	\$392.80	0.00%	\$19.95	\$340.35	0.00%	\$412.90	0.00%	\$32.55	\$392.80	\$207.00	\$7.65	\$412.90	160.10%	\$7.65
18353	\$259.85	\$340.85	155.81%	\$369.80	\$19.95	\$340.35	0.00%	\$2.45	\$392.80	0.00%	\$19.95	\$340.35	0.00%	\$412.90	0.00%	\$32.55	\$392.80	\$207.00	\$7.65	\$412.90	159.95%	\$7.65
18354	\$200.25	\$267.75	154.13%	\$288.50	\$8.75	\$267.75	0.00%	\$1.75	\$316.25	0.00%	\$10.50	\$267.75	0.00%	\$332.25	0.00%	\$24.50	\$316.20	\$415.60	\$15.10	\$332.20	160.10%	\$15.10
18360	\$129.90	\$200.25	154.14%	\$204.55	\$4.30	\$198.95	0.00%	\$1.30	\$208.65	0.00%	\$8.40	\$198.75	0.00%	\$210.45	0.00%	\$10.20	\$207.00	\$207.00	\$7.65	\$208.00	160.10%	\$7.65
18361	\$129.90	\$200.25	154.14%	\$204.55	\$4.30	\$198.95	0.00%	\$1.30	\$208.65	0.00%	\$8.40	\$198.75	0.00%	\$210.45	0.00%	\$10.20	\$207.00	\$207.00	\$7.65	\$208.00	160.10%	\$7.65
18362	\$256.70	\$336.65	154.13%	\$369.80	\$19.95	\$336.65	0.00%	\$2.15	\$391.85	0.00%	\$19.95	\$336.65	0.00%	\$411.85	0.00%	\$31.90	\$391.80	\$410.70	\$15.05	\$411.80	160.00%	\$15.05
18365	\$129.90	\$200.25	154.14%	\$204.55	\$4.30	\$198.95	0.00%	\$1.30	\$208.65	0.00%	\$8.40	\$198.75	0.00%	\$210.45	0.00%	\$10.20	\$207.00	\$207.00	\$7.65	\$208.00	160.00%	\$7.65
18366	\$162.75	\$216.75	154.12%	\$231.50	\$6.75	\$216.75	0.00%	\$1.75	\$254.25	0.00%	\$13.25	\$216.75	0.00%	\$278.00	0.00%	\$16.25	\$254.20	\$260.00	\$9.15	\$278.00	159.80%	\$9.15
18368	\$277.85	\$367.85	154.12%	\$402.75	\$24.90	\$367.85	0.00%	\$3.05	\$437.85	0.00%	\$24.90	\$367.85	0.00%	\$462.85	0.00%	\$35.00	\$437.80	\$444.50	\$16.25	\$462.80	160.00%	\$16.25
18369	\$46.85	\$72.15	154.04%	\$77.75	\$5.60	\$72.15	0.00%	\$0.45	\$82.75	0.00%	\$5.60	\$72.15	0.00%	\$97.75	0.00%	\$25.60	\$97.70	\$74.70	\$2.55	\$97.70	159.55%	\$2.55
18370	\$46.85	\$72.15	154.04%	\$77.75	\$5.60	\$72.15	0.00%	\$0.45	\$82.75	0.00%	\$5.60	\$72.15	0.00%	\$97.75	0.00%	\$25.60	\$97.70	\$74.70	\$2.55	\$97.70	160.10%	\$2.55
18372	\$129.90	\$200.25	154.14%	\$204.55	\$4.30	\$198.95	0.00%	\$1.30	\$208.65	0.00%	\$8.40	\$198.75	0.00%	\$210.45	0.00%	\$10.20	\$207.00	\$207.00	\$7.65	\$208.00	160.10%	\$7.65
18374	\$129.90	\$200.25	154.14%	\$204.55	\$4.30	\$198.95	0.00%	\$1.30	\$208.65	0.00%	\$8.40	\$198.75	0.00%	\$210.45	0.00%	\$10.20	\$207.00	\$207.00	\$7.65	\$208.00	160.10%	\$7.65
18375	\$239.20	\$316.65	154.12%	\$351.65	\$15.00	\$316.65	0.00%	\$3.00	\$371.65	0.00%	\$15.00	\$316.65	0.00%	\$396.65	0.00%	\$18.00	\$371.60	\$382.50	\$13.85	\$396.65	159.95%	\$13.85
18377	\$129.90	\$200.25	154.14%	\$204.55	\$4.30	\$198.95	0.00%	\$1.30	\$208.65	0.00%	\$8.40	\$198.75	0.00%	\$210.45	0.00%	\$10.20	\$207.00	\$207.00	\$7.65	\$208.00	160.05%	\$7.65
18379	\$239.20	\$316.65	154.12%	\$351.65	\$15.00	\$316.65	0.00%	\$3.00	\$371.65	0.00%	\$15.00	\$316.65	0.00%	\$396.65	0.00%	\$18.00	\$371.60	\$382.50	\$13.85	\$396.65	159.95%	\$13.85
18380	\$129.90	\$200.25	154.14%	\$204.55	\$4.30	\$198.95	0.00%	\$1.30	\$208.65	0.00%	\$8.40	\$198.75	0.00%	\$210.45	0.00%	\$10.20	\$207.00	\$207.00	\$7.65	\$208.00	160.05%	\$7.65
18381	\$129.90	\$200.25	154.14%	\$204.55	\$4.30	\$198.95	0.00%	\$1.30	\$208.65	0.00%	\$8.40	\$198.75	0.00%	\$210.45	0.00%	\$10.20	\$207.00	\$207.00	\$7.65	\$208.00	160.05%	\$7.65
18382	\$256.70	\$336.65	154.13%	\$369.80	\$19.95	\$336.65	0.00%	\$2.15	\$391.85	0.00%	\$19.95	\$336.65	0.00%	\$411.85	0.00%	\$31.90	\$391.80	\$410.70	\$15.05	\$411.80	176.60%	\$15.05
18385	\$129.90	\$200.25	154.14%	\$204.55	\$4.30	\$198.95	0.00%	\$1.30	\$208.65	0.00%	\$8.40	\$198.75	0.00%	\$210.45	0.00%	\$10.20	\$207.00	\$207.00	\$7.65	\$208.00	176.60%	\$7.65
18386	\$162.75	\$216.75	154.12%	\$231.50	\$6.75	\$216.75	0.00%	\$1.75	\$254.25	0.00%	\$13.25	\$216.75	0.00%	\$278.00	0.00%	\$16.25	\$254.20	\$260.00	\$9.15	\$278.00	176.60%	\$9.15
18387	\$277.85	\$367.85	154.12%	\$402.75	\$24.90	\$367.85	0.00%	\$3.05	\$437.85	0.00%	\$24.90	\$367.85	0.00%	\$462.85	0.00%	\$35.00	\$437.80	\$444.50	\$16.25	\$462.80	176.60%	\$16.25
18389	\$46.85	\$72.15	154.04%	\$77.75	\$5.60	\$72.15	0.00%	\$0.45	\$82.75	0.00%	\$5.60	\$72.15	0.00%	\$97.75	0.00%	\$25.60	\$97.70	\$74.70	\$2.55	\$97.70	176.60%	\$2.55
18390	\$46.85	\$72.15	154.04%	\$77.75	\$5.60	\$72.15	0.00%	\$0.45	\$82.75	0.00%	\$5.60	\$72.15	0.00%	\$97.75	0.00%	\$25.60	\$97.70	\$74.70	\$2.55	\$97.70	176.60%	\$2.55
18392	\$129.90	\$200.25	154.14%	\$204.55	\$4.30	\$198.95	0.00%	\$1.30	\$208.65	0.00%	\$8.40	\$198.75	0.00%	\$210.45	0.00%	\$10.20	\$207.00	\$207.00	\$7.65	\$208.00	176.60%	\$7.65
18393	\$129.90	\$200.25	154.14%	\$204.55	\$4.30	\$198.95	0.00%	\$1.30	\$208.65	0.00%	\$8.40	\$198.75	0.00%	\$210.45	0.00%	\$10.20	\$207.00	\$207.00	\$7.65	\$208.00	176.60%	\$7.65
18394	\$183.15	\$242.40	155.17%	\$254.90	\$12.50	\$242.70	0.00%	\$1.30	\$267.70	0.00%	\$8.70	\$242.70	0.00%	\$296.75	0.00%	\$14.05	\$296.70	\$181.50	\$11.40	\$296.70	176.60%	\$11.40
18395	\$183.15	\$242.40	155.17%	\$254.90	\$12.50	\$242.70	0.00%	\$1.30	\$267.70	0.00%	\$8.70	\$242.70	0.00%	\$296.75	0.00%	\$14.05	\$296.70	\$181.50	\$11.40	\$296.70	176.60%	\$11.40
18396	\$183.15	\$242.40	155.17%	\$254.90	\$12.50	\$242.70	0.00%	\$1.30	\$267.70	0.00%	\$8.70	\$242.70	0.00%	\$296.75	0.00%	\$14.05	\$296.70	\$181.50	\$11.40	\$296.70	176.60%	\$11.40
18397	\$61.75	\$96.20	155.80%	\$102.45	\$3.25	\$95.75	0.00%	\$0.50	\$107.95	0.00%	\$4.15	\$95.75	0.00%	\$119.10	0.00%	\$5.75	\$119.10	\$181.50	\$11.40	\$119.10	176.70%	\$11.40
18398	\$61.75	\$96.20	155.80%	\$102.45	\$3.25	\$95.75	0.00%	\$0.50	\$107.95	0.00%	\$4.15	\$95.75	0.00%	\$119.10	0.00%	\$5.75	\$119.10	\$181.50	\$11.40	\$119.10	176.70%	\$11.40
18399	\$129.90	\$200.25	154.14%	\$204.55	\$4.30	\$198.95	0.00%	\$1.30	\$208.65	0.00%	\$8.40	\$198.75	0.00%	\$210.45	0.00%	\$10.20	\$207.00	\$207.00	\$7.65	\$208.00	176.60%	\$7.65
18400	\$129.90	\$200.25	154.14%	\$204.55	\$4.30	\$198.95	0.00%	\$1.30	\$208.65	0.00%	\$8.40	\$198.75	0.00%	\$210.45	0.00%	\$10.20	\$207.00	\$207.00	\$7.65	\$208.00	176.60%	\$7.65
18401	\$259.85	\$340.85	155.81%	\$369.80	\$19.95	\$340.35	0.00%	\$2.45	\$392.80	0.00%	\$19.95	\$340.35	0.00%	\$412.90	0.00%	\$32.55	\$392.80	\$435.60	\$6.85	\$412.90	176.60%	\$6.85
18402	\$259.85	\$340.85	155.81%	\$369.80	\$19.95	\$340.35	0.00%	\$2.45	\$392.80	0.00%	\$19.95	\$340.35	0.00%	\$412.90	0.00%	\$32.55	\$392.80	\$435.60	\$6.85	\$412.90	176.60%	\$6.85
18403	\$104.90	\$163.45	155.81%	\$168.60	\$5.15	\$166.40	0.00%	\$3.45	\$176.25	0.00%	\$6.25	\$166.50	0.00%	\$181.65	0.00%	\$8.05	\$176.10	\$181.50	\$11.40	\$181.50	176.60%	\$11.40
18404	\$104.90	\$163.45	155.81%	\$168.60	\$5.15	\$166.40	0.00%	\$3.45	\$176.25	0.00%	\$6.25	\$166.50	0.00%	\$181.65	0.00%	\$8.05	\$176.10	\$181.50	\$11.40	\$181.50	176.60%	\$11.40
18405	\$82.40	\$117.40	155.13%	\$124.90	\$4.50	\$117.40	0.00%	\$0.70	\$131.90	0.00%	\$4.50	\$117.40	0.00%	\$147.40	0.00%	\$30.00	\$147.40	\$145.20	\$9.15	\$147.40		

2390	5885.80	\$1,462.80	165.14%	\$1,462.90	\$0.10	\$1,463.35	0.00%	\$44.10	\$1,461.55	0.00%	\$1,505.85	0.00%	\$43.05	\$1,560.90	0	\$98.10	\$1,564.50	176.60%	\$101.70
2391	5906.40	\$1,496.90	165.15%	\$1,496.95	\$0.05	\$1,497.40	0.00%	\$45.00	\$1,495.55	0.00%	\$1,540.90	0.00%	\$44.00	\$1,597.20	0	\$100.30	\$1,600.90	176.60%	\$104.00
2392	5927.00	\$1,530.90	165.15%	\$1,530.95	\$0.05	\$1,531.40	0.00%	\$46.00	\$1,529.55	0.00%	\$1,575.90	0.00%	\$44.95	\$1,637.50	0	\$100.55	\$1,637.25	176.60%	\$106.30
2393	5947.60	\$1,564.95	165.15%	\$1,564.95	\$0.00	\$1,565.40	0.00%	\$47.00	\$1,563.55	0.00%	\$1,610.90	0.00%	\$44.85	\$1,669.80	0	\$104.85	\$1,673.05	176.60%	\$108.70
2394	5968.20	\$1,599.00	165.15%	\$1,599.00	\$0.00	\$1,600.00	0.00%	\$48.00	\$1,597.55	0.00%	\$1,654.95	0.00%	\$45.95	\$1,706.10	0	\$107.10	\$1,710.05	176.60%	\$111.00
2395	5988.80	\$1,633.00	165.15%	\$1,633.00	\$0.00	\$1,634.00	0.00%	\$49.00	\$1,631.55	0.00%	\$1,680.95	0.00%	\$46.95	\$1,746.40	0	\$109.40	\$1,750.35	176.60%	\$113.40
2396	6009.40	\$1,667.00	165.15%	\$1,667.05	\$0.05	\$1,668.00	0.00%	\$50.00	\$1,665.50	0.00%	\$1,716.00	0.00%	\$47.95	\$1,787.70	0	\$111.70	\$1,782.80	176.60%	\$115.80
2397	6030.00	\$1,701.05	165.15%	\$1,701.05	\$0.00	\$1,702.00	0.00%	\$51.15	\$1,699.50	0.00%	\$1,751.00	0.00%	\$48.95	\$1,815.30	0	\$113.95	\$1,819.20	176.60%	\$118.15
2398	6050.60	\$1,735.20	165.15%	\$1,735.20	\$0.00	\$1,736.20	0.00%	\$52.15	\$1,733.50	0.00%	\$1,786.00	0.00%	\$49.95	\$1,851.30	0	\$116.25	\$1,855.55	176.60%	\$120.50
2399	6071.20	\$1,769.10	165.15%	\$1,769.10	\$0.00	\$1,770.20	0.00%	\$53.20	\$1,767.50	0.00%	\$1,821.00	0.00%	\$50.95	\$1,887.60	0	\$118.80	\$1,891.95	176.60%	\$122.85
2400	6091.80	\$1,803.10	165.15%	\$1,803.10	\$0.00	\$1,804.20	0.00%	\$54.25	\$1,801.45	0.00%	\$1,856.05	0.00%	\$51.95	\$1,923.35	0	\$120.80	\$1,928.35	176.60%	\$125.25
2401	6112.40	\$1,837.15	165.15%	\$1,837.15	\$0.00	\$1,838.20	0.00%	\$55.25	\$1,835.45	0.00%	\$1,891.00	0.00%	\$52.95	\$1,964.70	0	\$123.05	\$1,969.70	176.60%	\$127.55
2402	6133.00	\$1,871.15	165.15%	\$1,871.15	\$0.00	\$1,872.20	0.00%	\$56.25	\$1,869.45	0.00%	\$1,926.00	0.00%	\$53.95	\$1,996.50	0	\$125.35	\$2,001.10	176.60%	\$129.95
2403	6153.60	\$1,905.15	165.15%	\$1,905.20	\$0.05	\$1,906.20	0.00%	\$57.30	\$1,903.45	0.00%	\$1,971.00	0.00%	\$54.95	\$2,032.80	0	\$127.65	\$2,037.85	176.60%	\$132.35
2404	6174.20	\$1,939.20	165.15%	\$1,939.20	\$0.00	\$1,940.20	0.00%	\$58.30	\$1,937.45	0.00%	\$1,996.50	0.00%	\$55.95	\$2,069.10	0	\$132.20	\$2,073.55	176.60%	\$134.65
2405	6194.80	\$1,973.25	165.15%	\$1,973.25	\$0.00	\$1,974.25	0.00%	\$59.35	\$1,971.40	0.00%	\$2,021.35	0.00%	\$56.95	\$2,105.40	0	\$134.45	\$2,109.65	176.60%	\$136.95
2406	6215.40	\$2,007.25	165.15%	\$2,007.25	\$0.00	\$2,008.25	0.00%	\$60.40	\$2,005.55	0.00%	\$2,046.20	0.00%	\$57.95	\$2,141.70	0	\$136.75	\$2,145.95	176.60%	\$139.25
2407	6236.00	\$2,041.25	165.15%	\$2,041.25	\$0.00	\$2,042.25	0.00%	\$61.45	\$2,039.40	0.00%	\$2,071.00	0.00%	\$58.95	\$2,178.00	0	\$139.05	\$2,182.20	176.60%	\$141.55
2408	6256.60	\$2,075.25	165.15%	\$2,075.25	\$0.00	\$2,076.25	0.00%	\$62.50	\$2,073.40	0.00%	\$2,095.85	0.00%	\$59.95	\$2,214.30	0	\$141.35	\$2,218.50	176.60%	\$143.85
2409	6277.20	\$2,109.30	165.15%	\$2,109.30	\$0.00	\$2,110.30	0.00%	\$63.55	\$2,107.45	0.00%	\$2,120.60	0.00%	\$60.95	\$2,250.60	0	\$143.60	\$2,254.80	176.60%	\$146.15
2410	6297.80	\$2,143.35	165.15%	\$2,143.35	\$0.00	\$2,144.35	0.00%	\$64.55	\$2,141.35	0.00%	\$2,145.25	0.00%	\$61.95	\$2,286.90	0	\$145.85	\$2,291.10	176.60%	\$148.45
2411	6318.40	\$2,177.35	165.15%	\$2,177.35	\$0.00	\$2,178.35	0.00%	\$65.55	\$2,175.35	0.00%	\$2,170.00	0.00%	\$62.95	\$2,323.20	0	\$148.10	\$2,327.35	176.60%	\$150.75
2412	6339.00	\$2,211.35	165.15%	\$2,211.35	\$0.00	\$2,212.35	0.00%	\$66.55	\$2,209.35	0.00%	\$2,194.65	0.00%	\$63.95	\$2,359.50	0	\$150.35	\$2,363.65	176.60%	\$153.05
2413	6359.60	\$2,245.40	165.15%	\$2,245.40	\$0.00	\$2,246.40	0.00%	\$67.55	\$2,243.35	0.00%	\$2,219.00	0.00%	\$64.95	\$2,395.80	0	\$152.60	\$2,399.95	176.60%	\$155.35
2414	6380.20	\$2,279.45	165.15%	\$2,279.45	\$0.00	\$2,280.45	0.00%	\$68.55	\$2,277.45	0.00%	\$2,243.35	0.00%	\$65.95	\$2,432.10	0	\$154.85	\$2,436.20	176.60%	\$157.65
2415	6400.80	\$2,313.45	165.15%	\$2,313.45	\$0.00	\$2,314.45	0.00%	\$69.55	\$2,311.45	0.00%	\$2,267.65	0.00%	\$66.95	\$2,468.40	0	\$157.10	\$2,472.50	176.60%	\$159.95
2416	6421.40	\$2,347.45	165.15%	\$2,347.45	\$0.00	\$2,348.45	0.00%	\$70.55	\$2,345.40	0.00%	\$2,291.65	0.00%	\$67.95	\$2,504.70	0	\$159.35	\$2,508.95	176.60%	\$162.25
2417	6442.00	\$2,381.45	165.15%	\$2,381.45	\$0.00	\$2,382.45	0.00%	\$71.55	\$2,379.35	0.00%	\$2,315.65	0.00%	\$68.95	\$2,541.00	0	\$161.60	\$2,545.20	176.60%	\$164.55
2418	6462.60	\$2,415.45	165.15%	\$2,415.45	\$0.00	\$2,416.45	0.00%	\$72.55	\$2,413.35	0.00%	\$2,339.65	0.00%	\$69.95	\$2,577.30	0	\$163.85	\$2,581.50	176.60%	\$166.85
2419	6483.20	\$2,449.50	165.15%	\$2,449.50	\$0.00	\$2,450.50	0.00%	\$73.55	\$2,447.30	0.00%	\$2,363.65	0.00%	\$70.95	\$2,613.60	0	\$166.10	\$2,617.85	176.60%	\$169.15
2420	6503.80	\$2,483.55	165.15%	\$2,483.55	\$0.00	\$2,484.55	0.00%	\$74.55	\$2,481.25	0.00%	\$2,387.65	0.00%	\$71.95	\$2,649.90	0	\$168.35	\$2,654.15	176.60%	\$171.45
2421	6524.40	\$2,517.55	165.15%	\$2,517.55	\$0.00	\$2,518.55	0.00%	\$75.55	\$2,515.25	0.00%	\$2,411.65	0.00%	\$72.95	\$2,686.20	0	\$170.60	\$2,690.45	176.60%	\$173.75
2422	6545.00	\$2,551.55	165.15%	\$2,551.55	\$0.00	\$2,552.55	0.00%	\$76.55	\$2,549.25	0.00%	\$2,435.65	0.00%	\$73.95	\$2,722.50	0	\$172.85	\$2,726.80	176.60%	\$176.05
2423	6565.60	\$2,585.60	165.15%	\$2,585.60	\$0.00	\$2,586.60	0.00%	\$77.55	\$2,583.25	0.00%	\$2,459.65	0.00%	\$74.95	\$2,758.80	0	\$175.10	\$2,763.10	176.60%	\$178.35
2424	6586.20	\$2,619.60	165.15%	\$2,619.60	\$0.00	\$2,620.60	0.00%	\$78.55	\$2,617.25	0.00%	\$2,483.65	0.00%	\$75.95	\$2,795.10	0	\$177.35	\$2,799.40	176.60%	\$180.65
2425	6606.80	\$2,653.65	165.15%	\$2,653.65	\$0.00	\$2,654.65	0.00%	\$79.55	\$2,651.25	0.00%	\$2,507.65	0.00%	\$76.95	\$2,831.40	0	\$179.60	\$2,835.70	176.60%	\$182.95
2426	6627.40	\$2,687.65	165.15%	\$2,687.65	\$0.00	\$2,688.65	0.00%	\$80.55	\$2,685.20	0.00%	\$2,531.65	0.00%	\$77.95	\$2,867.70	0	\$181.85	\$2,872.00	176.60%	\$185.25
2427	6648.00	\$2,721.65	165.15%	\$2,721.65	\$0.00	\$2,722.65	0.00%	\$81.55	\$2,719.20	0.00%	\$2,555.65	0.00%	\$78.95	\$2,904.00	0	\$184.10	\$2,908.30	176.60%	\$187.55
2428	6668.60	\$2,755.70	165.15%	\$2,755.70	\$0.00	\$2,756.70	0.00%	\$82.55	\$2,753.20	0.00%	\$2,579.65	0.00%	\$79.95	\$2,940.30	0	\$186.35	\$2,944.60	176.60%	\$189.85
2429	6689.20	\$2,789.70	165.15%	\$2,789.70	\$0.00	\$2,790.70	0.00%	\$83.55	\$2,787.20	0.00%	\$2,603.65	0.00%	\$80.95	\$2,976.60	0	\$188.60	\$2,980.90	176.60%	\$192.15
2430	6709.80	\$2,823.75	165.15%	\$2,823.75	\$0.00	\$2,824.75	0.00%	\$84.55	\$2,821.15	0.00%	\$2,627.65	0.00%	\$81.95	\$3,012.90	0	\$190.85	\$3,017.20	176.60%	\$194.45
2431	6730.40	\$2,857.75	165.15%	\$2,857.75	\$0.00	\$2,858.75	0.00%	\$85.55	\$2,855.15	0.00%	\$2,651.65	0.00%	\$82.95	\$3,049.20	0	\$193.10	\$3,053.50	176.60%	\$196.75
2432	6751.00	\$2,891.80	165.15%	\$2,891.80	\$0.00	\$2,892.80	0.00%	\$86.55	\$2,889.15	0.00%	\$2,675.65	0.00%	\$83.95	\$3,085.50	0	\$195.35	\$3,089.80	176.60%	\$199.05
2433	6771.60	\$2,925.80	165.15%	\$2,925.80	\$0.00	\$2,926.80	0.00%	\$87.55	\$2,923.15	0.00%	\$2,700.00	0.00%	\$84.95	\$3,121.80	0	\$197.60	\$3,126.10	176.60%	\$201.35
2434	6792.20	\$2,959.85	165.15%	\$2,959.85	\$0.00	\$2,960.85	0.00%	\$88.55	\$2,957.15	0.00%	\$2,724.00	0.00%	\$85.95	\$3,158.10	0	\$199.85	\$3,162.40	176.60%	\$203.65
2435	6812.80	\$2,993.85	165.15%	\$2,993.85	\$0.00	\$2,994.85	0.00%	\$89.55	\$2,991.10	0.00%	\$2,748.00	0.00%	\$86.95	\$3,194.40	0	\$202.10	\$3,198.70	176.60%	\$205.95
2436	6833.40	\$3,027.85	165.15%	\$3,027.85	\$0.00	\$3,028.85	0.00%	\$90.55	\$3,025.10	0.00%	\$2,772.00	0.00%	\$87.95	\$3,230.70	0	\$204.35	\$3,235.00	176.60%	\$208.25
2437	6854.00	\$3,061.85	165.15%	\$3,061.85	\$0.00	\$3,062.85	0.00%	\$91.55	\$3,059.10	0.00%	\$2,796.00	0.00%	\$88.95	\$3,267.00	0	\$206.60	\$3,271.30	176.60%	\$210.55
2438	6874.60	\$3,095.90	165.15%	\$3,095.90	\$0.00	\$3,096.90	0.00%	\$92.55	\$3,093.10	0.00%	\$2,820.00	0.00%	\$89.95	\$3,303.30	0	\$208.85	\$3,307.60	176.60%	\$212.85
2439	6895.20	\$3,129.90	165.15%	\$3,129.90	\$0.00	\$3,130.90	0.00%	\$93.55	\$3,137.10	0.00%	\$2,844.00	0.00%	\$90.95	\$3,339.60	0	\$211.10	\$3,343.90	176.60%	\$215.15
2440	6915.80	\$3,163.95	165.15%	\$3,163.95	\$0.00	\$3,164.95	0.00%	\$94.55	\$3,161.15	0.00%	\$2,868.00	0.00%	\$91.95	\$3,375.90	0	\$213.35	\$3,380.20	176.60%	\$217.45
2441	6936.40	\$3,197.95	165.15%	\$3,197.95	\$0.00	\$3,198.95	0.00%	\$95.55	\$3,195.15	0.00%	\$2,892.00	0.00%	\$92.95	\$3,412.20	0	\$215.60	\$3,416.50	176.60%	\$219.75
2442	6957.00	\$3,232.00	165.15%	\$3,232.00	\$0.00	\$3,233.00	0.00%	\$96.55	\$3,229.15	0.00%	\$2,916.00	0.00%	\$93.95	\$3,448.50	0	\$217.85	\$3,452.80	176.60%	\$222.05
2443	6977.60	\$3,266.00	165.15%	\$3,266.00	\$0.00	\$3,267.00	0.00%	\$97.55	\$3,263.05	0.00%	\$2,940.00	0.00%	\$94.95	\$3,484.80	0	\$220.10	\$3,489.10	176.60%	\$224.35
2444	6998.20	\$3,300.05	165.15%	\$3,300.05	\$0.00	\$3,301.05	0.00%	\$98.55	\$3,297.00	0.00%	\$2,964.00	0.00%	\$95.95	\$3,521.10	0	\$222.35	\$3,525.40	176.60%	\$226.65
2445	7018.80	\$3,334.05	165.15%	\$3,334.05	\$0.00	\$3,335.05	0												

24120	\$2,554.40	165.15%	\$4,218.60	0.00%	\$50.25	\$4,345.45	\$4,214.75	\$3.85	\$4,342.50	0.00%	\$123.90	\$4,501.20	0	\$282.60	\$4,511.60	176.60%	\$293.00
24121	\$4,252.60	165.15%	\$4,252.60	0.00%	\$50.75	\$4,380.60	\$4,288.75	\$3.85	\$4,377.50	0.00%	\$124.90	\$4,537.50	0	\$284.90	\$4,547.95	176.60%	\$293.35
24122	\$4,286.65	165.15%	\$4,337.75	0.00%	\$51.10	\$4,410.60	\$4,317.75	\$3.90	\$4,410.60	0.00%	\$125.85	\$4,573.80	0	\$287.15	\$4,584.35	176.60%	\$293.70
24123	\$4,320.65	165.15%	\$4,372.15	0.00%	\$51.50	\$4,450.60	\$4,356.75	\$3.90	\$4,447.50	0.00%	\$126.90	\$4,610.10	0	\$289.45	\$4,620.75	176.60%	\$300.10
24124	\$4,354.70	165.15%	\$4,405.55	0.00%	\$51.85	\$4,485.65	\$4,371.75	\$3.90	\$4,482.50	0.00%	\$127.85	\$4,646.40	0	\$291.75	\$4,657.10	176.60%	\$300.40
24125	\$4,388.75	165.15%	\$4,441.05	0.00%	\$52.35	\$4,525.75	\$4,417.00	\$4.00	\$4,517.60	0.00%	\$128.90	\$4,682.70	0	\$294.00	\$4,693.90	176.60%	\$300.80
24126	\$4,422.75	165.15%	\$4,476.45	0.00%	\$52.75	\$4,560.75	\$4,452.70	\$4.00	\$4,552.60	0.00%	\$129.90	\$4,719.00	0	\$296.30	\$4,729.90	176.60%	\$300.20
24127	\$4,456.75	165.15%	\$4,509.85	0.00%	\$53.10	\$4,590.80	\$4,487.70	\$4.00	\$4,587.60	0.00%	\$130.85	\$4,755.30	0	\$298.55	\$4,766.25	176.60%	\$300.50
24128	\$4,490.75	165.15%	\$4,545.40	0.00%	\$53.50	\$4,625.85	\$4,522.70	\$4.00	\$4,609.60	0.00%	\$131.90	\$4,791.60	0	\$300.85	\$4,802.65	176.60%	\$311.90
24129	\$4,524.80	165.15%	\$4,578.70	0.00%	\$53.90	\$4,660.85	\$4,556.65	\$4.00	\$4,642.60	0.00%	\$132.90	\$4,827.90	0	\$303.10	\$4,839.05	176.60%	\$316.60
24130	\$4,558.85	165.15%	\$4,613.15	0.00%	\$54.30	\$4,695.95	\$4,592.65	\$4.00	\$4,675.60	0.00%	\$133.90	\$4,864.20	0	\$305.40	\$4,875.40	176.60%	\$321.35
24131	\$4,592.80	165.15%	\$4,647.60	0.00%	\$54.70	\$4,731.00	\$4,628.65	\$4.00	\$4,711.60	0.00%	\$134.90	\$4,900.50	0	\$307.70	\$4,911.80	176.60%	\$326.05
24132	\$4,626.85	165.15%	\$4,682.00	0.00%	\$55.15	\$4,766.00	\$4,665.65	\$4.00	\$4,750.60	0.00%	\$135.90	\$4,936.80	0	\$309.95	\$4,948.20	176.60%	\$330.75
24133	\$4,660.85	165.15%	\$4,716.40	0.00%	\$55.55	\$4,801.05	\$4,700.65	\$4.00	\$4,789.75	0.00%	\$136.90	\$4,973.10	0	\$312.25	\$4,984.55	176.60%	\$326.05
24134	\$4,694.90	165.15%	\$4,750.90	0.00%	\$56.00	\$4,836.15	\$4,740.65	\$4.00	\$4,829.75	0.00%	\$137.85	\$5,009.40	0	\$314.50	\$5,020.95	176.60%	\$326.05
24135	\$4,728.95	165.15%	\$4,785.30	0.00%	\$56.40	\$4,871.20	\$4,774.60	\$4.00	\$4,863.80	0.00%	\$138.90	\$5,045.70	0	\$316.80	\$5,057.35	176.60%	\$328.45
24136	\$4,762.95	165.15%	\$4,819.70	0.00%	\$56.75	\$4,906.20	\$4,788.60	\$4.35	\$4,902.80	0.00%	\$139.85	\$5,082.00	0	\$319.05	\$5,093.70	176.60%	\$330.75
25000	\$20.60	165.15%	\$34.40	0.00%	\$2.10	\$35.00	\$34.00	\$1.00	\$35.00	0.00%	\$2.10	\$36.30	0	\$6.40	\$36.40	176.70%	\$6.85
25001	\$41.20	159.93%	\$68.05	0.00%	\$2.90	\$70.00	\$68.00	\$4.10	\$68.00	0.00%	\$2.10	\$72.60	0	\$3.70	\$72.75	176.60%	\$65.85
25002	\$98.85	159.97%	\$102.05	0.00%	\$4.40	\$105.10	\$103.25	\$6.25	\$103.05	0.00%	\$6.20	\$108.90	0	\$10.05	\$109.15	176.60%	\$130.30
25003	\$32.90	159.80%	\$34.40	0.00%	\$1.50	\$35.00	\$34.00	\$2.10	\$35.00	0.00%	\$2.10	\$36.30	0	\$3.40	\$36.40	176.70%	\$6.85
25004	\$20.60	165.07%	\$68.05	0.00%	\$2.10	\$35.00	\$34.00	\$1.00	\$35.00	0.00%	\$2.10	\$36.30	0	\$6.40	\$36.40	176.60%	\$6.85
25005	DERIVED	170.297	DERIVED	170.297	170.26%	\$70.00	DERIVED	DERIVED	170.00%	170.00%	0	DERIVED	176.60%	DERIVED	176.60%	176.60%	0
25006	DERIVED	170.297	DERIVED	170.297	100.00%	\$0.00	DERIVED	DERIVED	170.00%	170.00%	0	DERIVED	176.60%	DERIVED	176.60%	176.60%	0
25007	DERIVED	170.297	DERIVED	170.297	100.00%	\$177.10	DERIVED	DERIVED	170.00%	170.00%	0	DERIVED	176.60%	DERIVED	176.60%	176.60%	0
25008	DERIVED	170.297	DERIVED	170.297	143.27%	\$0.00	DERIVED	DERIVED	142.00%	142.00%	0	DERIVED	176.60%	DERIVED	176.60%	176.60%	0
30001	DERIVED	138.684	DERIVED	138.684	143.27%	\$0.00	DERIVED	DERIVED	138.00%	138.00%	0	DERIVED	140.80%	DERIVED	140.80%	140.80%	0
30002	\$37.80	134.71%	\$51.80	0.00%	\$3.85	\$54.95	\$54.05	\$1.40	\$50.65	0.00%	\$0.25	\$49.10	0	\$1.80	\$49.10	129.90%	\$1.80
30003	\$66.40	134.62%	\$68.95	0.00%	\$5.25	\$70.40	\$66.80	\$6.80	\$66.80	0.00%	\$3.60	\$66.60	0	\$1.45	\$66.60	137.60%	\$1.45
30004	\$48.40	134.69%	\$109.65	0.00%	\$3.80	\$70.40	\$8.30	\$109.20	\$8.30	0.00%	\$3.60	\$106.30	0	\$2.65	\$106.30	138.15%	\$2.65
30005	\$161.70	134.70%	\$230.40	0.00%	\$12.60	\$235.25	\$17.45	\$232.15	\$17.45	0.00%	\$11.80	\$222.50	0	\$4.70	\$222.55	137.65%	\$4.75
30006	\$483.45	134.71%	\$483.45	0.00%	\$36.60	\$483.60	\$36.60	\$483.15	\$36.60	0.00%	\$48.15	\$467.30	0	\$10.30	\$467.30	137.75%	\$10.30
30007	\$890.15	134.72%	\$944.50	0.00%	\$51.35	\$961.30	\$71.15	\$911.85	\$71.15	0.00%	\$48.10	\$910.10	0	\$19.95	\$910.10	137.75%	\$19.95
30008	\$427.00	134.71%	\$464.65	0.00%	\$21.50	\$483.65	\$31.65	\$481.65	\$31.65	0.00%	\$24.75	\$480.20	0	\$23.20	\$480.20	141.55%	\$23.20
30009	\$74.45	134.71%	\$77.40	0.00%	\$5.85	\$79.00	\$5.85	\$78.20	\$5.85	0.00%	\$1.85	\$77.20	0	\$2.05	\$77.20	138.35%	\$2.05
30010	\$126.15	134.70%	\$133.40	0.00%	\$10.05	\$138.20	\$10.05	\$137.25	\$10.05	0.00%	\$6.85	\$128.50	0	\$2.35	\$128.50	137.30%	\$2.35
30011	\$115.55	134.69%	\$117.50	0.00%	\$9.25	\$128.80	\$9.25	\$128.80	\$9.25	0.00%	\$6.30	\$118.00	0	\$2.45	\$118.05	137.60%	\$2.50
30012	\$167.55	134.68%	\$174.30	0.00%	\$13.15	\$168.85	\$13.15	\$168.85	\$13.15	0.00%	\$8.95	\$168.70	0	\$3.90	\$168.70	137.60%	\$3.90
30013	\$128.15	134.70%	\$133.40	0.00%	\$15.00	\$136.20	\$15.00	\$136.20	\$15.00	0.00%	\$6.85	\$129.00	0	\$2.85	\$129.00	137.75%	\$2.85
30014	\$275.15	134.70%	\$275.15	0.00%	\$20.75	\$276.50	\$20.75	\$276.50	\$20.75	0.00%	\$14.05	\$266.30	0	\$6.15	\$266.30	137.90%	\$6.15
30015	\$275.15	134.72%	\$275.15	0.00%	\$15.00	\$280.90	\$15.00	\$280.90	\$15.00	0.00%	\$8.95	\$168.70	0	\$3.90	\$168.70	137.90%	\$3.90
30016	\$44.5	134.72%	\$44.5	0.00%	\$15.00	\$280.90	\$15.00	\$280.90	\$15.00	0.00%	\$6.35	\$266.30	0	\$6.15	\$266.30	137.90%	\$6.15
30017	\$361.85	134.71%	\$361.85	0.00%	\$20.60	\$384.45	\$20.60	\$384.45	\$20.60	0.00%	\$19.30	\$363.90	0	\$7.95	\$363.90	137.75%	\$7.95
30018	\$105.35	134.69%	\$105.35	0.00%	\$8.30	\$108.70	\$8.30	\$108.70	\$8.30	0.00%	\$5.60	\$122.10	0	\$18.45	\$122.15	158.75%	\$18.50
30019	\$202.30	134.70%	\$202.30	0.00%	\$16.35	\$207.20	\$16.35	\$207.20	\$16.35	0.00%	\$5.00	\$205.30	0	\$3.00	\$205.30	136.70%	\$3.05
30020	\$39.80	134.68%	\$39.80	0.00%	\$11.75	\$215.55	\$11.75	\$215.55	\$11.75	0.00%	\$11.00	\$203.80	0	\$0.90	\$203.80	138.25%	\$0.95
30021	\$86.50	134.67%	\$86.50	0.00%	\$5.60	\$91.50	\$5.60	\$91.50	\$5.60	0.00%	\$3.80	\$87.70	0	\$3.85	\$87.70	141.00%	\$3.85
30022	\$163.90	134.67%	\$163.90	0.00%	\$4.85	\$165.85	\$4.85	\$165.85	\$4.85	0.00%	\$3.80	\$161.50	0	\$2.85	\$161.50	137.20%	\$2.85
30023	\$131.15	134.65%	\$131.15	0.00%	\$27.35	\$131.15	\$27.35	\$131.15	\$27.35	0.00%	\$20.95	\$134.90	0	\$6.50	\$134.90	136.90%	\$6.50
30024	\$74.45	134.65%	\$74.45	0.00%	\$4.25	\$79.00	\$4.25	\$79.00	\$4.25	0.00%	\$1.75	\$74.90	0	\$1.75	\$74.90	137.80%	\$1.75
30025	\$213.50	134.65%	\$213.50	0.00%	\$12.10	\$213.50	\$12.10	\$213.50	\$12.10	0.00%	\$11.35	\$213.70	0	\$2.85	\$213.60	139.95%	\$2.85
30026	\$69.40	134.70%	\$69.40	0.00%	\$3.90	\$73.35	\$3.90	\$73.35	\$3.90	0.00%	\$1.65	\$69.40	0	\$1.45	\$69.40	137.50%	\$1.45
30027	\$153.95	134.69%	\$153.95	0.00%	\$8.95	\$166.30	\$8.95	\$166.30	\$8.95	0.00%	\$6.35	\$157.50	0	\$3.35	\$157.50	137.80%	\$3.35
30028	\$82.45	134.71%	\$82.45	0.00%	\$4.75	\$89.00	\$4.75	\$89.00	\$4.75	0.00%	\$1.35	\$84.00	0	\$1.35	\$84.00	137.25%	\$1.35
30029	\$114.20	134.71%	\$114.20	0.00%	\$4.40	\$94.50	\$4.40	\$94.50	\$4.40	0.00%	\$2.25	\$90.20	0	\$0.90	\$90.20	137.25%	\$0.90
30030	\$183.05	134.70%	\$183.05	0.00%	\$10.40	\$194.55	\$10.40	\$194.55	\$10.40	0.00%	\$9.80	\$184.40	0	\$4.25	\$184.40	137.85%	\$4.25
30031	\$254.50	134.70%	\$254.50	0.00%	\$13.85	\$259.65	\$13.85	\$259.65	\$13.85	0.00%	\$13.00	\$245.90	0	\$5.45	\$245.90	137.75%	\$5.45
30032	\$280.80	134.71%	\$280.80	0.00%	\$15.30	\$286.70	\$15.30	\$286.70	\$15.30	0.00%	\$14.40	\$270.20	0	\$4.70	\$270.20	137.10%	\$4.70
30033	\$138.20	134.68%	\$138.20	0.00%	\$11.00	\$139.50	\$11.00	\$139.50	\$11.00	0.00%	\$6.85	\$142.70	0	\$6.55	\$142.70	141.15%	\$6.55
30034	\$229.25	134.70%	\$229.25	0.00%	\$14.45	\$229.25	\$14.45	\$229.25	\$14.45	0.00%	\$6.85	\$229.00	0	\$2.85	\$229.00	137.75%	\$2.85
30035	\$272.65	134.70%	\$272.65	0.00%	\$20.60	\$278.35	\$20.60	\$278.35	\$20.60	0.00%	\$19.95	\$263.50	0	\$5.75	\$263.50	137.70%	\$5.75
30036	\$181.05	134.68%	\$181.05	0.00%	\$10.30	\$191.25	\$10.30	\$191.25	\$10.30	0.00%	\$9.70	\$181.90	0	\$4.00	\$181.90	137.75%	\$4.05
30037	\$235.10	134.71%	\$235.10	0.00%	\$14.25	\$249.65	\$14.25	\$249.65	\$14.25	0.00%	\$12.50	\$241.60	0	\$10.35	\$241.60	140.75%	\$10.35
30038	\$236.15	134.70%	\$236.15	0.00%	\$17.90	\$236.15	\$17.90	\$236.15	\$17.90	0.00%	\$16.70	\$233.30	0	\$5.05	\$233.30	136.90%	\$5.05
30039	\$672.65	134.72%	\$672.65	0.00%	\$56.80	\$688.60	\$56.80	\$688.60	\$56.80	0.00%	\$34.45	\$652.00	0	\$10.75	\$652.00	137.70%	\$10.75
30040	\$674.45	134.70%	\$674.45	0.00%	\$59.95	\$688.60	\$59.95	\$688.60	\$59.95	0.00%	\$34.45	\$648.40	0	\$10.75	\$648.40	137.00%	\$10.75
30041	\$102.65	134.72%															

30192	\$41.15	\$55.40	134.68%	\$56.50	\$1.10	\$58.60	0.00%	\$4.40	\$56.80	\$3.05	\$56.80	0	\$1.40	\$56.80	138.05%	\$1.40
30196	\$131.35	\$179.85	134.72%	\$179.85	\$2.90	\$187.20	0.00%	\$14.15	\$181.25	\$3.05	\$181.25	0	\$3.85	\$181.25	138.05%	\$3.85
30202	\$50.30	\$67.75	134.70%	\$67.75	\$1.15	\$71.60	0.00%	\$5.35	\$69.10	\$0.00%	\$69.10	0	\$1.35	\$69.10	137.50%	\$1.40
30207	\$46.40	\$62.50	134.67%	\$62.50	\$1.05	\$66.15	0.00%	\$5.00	\$64.05	\$0.00%	\$64.05	0	\$1.70	\$64.20	138.35%	\$1.70
30210	\$169.55	\$232.35	134.69%	\$232.35	\$4.00	\$241.60	0.00%	\$18.30	\$234.00	\$0.00%	\$234.00	0	\$5.45	\$233.80	137.90%	\$5.45
30216	\$28.45	\$38.30	134.57%	\$38.30	\$0.45	\$40.55	0.00%	\$3.10	\$39.25	\$0.00%	\$39.25	0	\$1.20	\$39.50	138.85%	\$1.20
30219	\$28.45	\$38.30	0	\$38.30	\$0.45	\$40.55	0.00%	\$3.10	\$39.25	\$0.00%	\$39.25	0	\$1.20	\$39.50	138.85%	\$1.20
30223	\$169.55	\$232.35	134.69%	\$232.35	\$4.00	\$241.60	0.00%	\$18.30	\$234.00	\$0.00%	\$234.00	0	\$5.45	\$233.80	137.90%	\$5.45
30224	\$241.20	\$338.30	134.71%	\$338.30	\$6.60	\$352.30	0.00%	\$26.70	\$341.15	\$0.00%	\$341.15	0	\$3.65	\$342.00	136.85%	\$3.65
30225	\$375.20	\$516.30	134.70%	\$516.30	\$6.30	\$539.90	0.00%	\$30.05	\$538.40	\$0.00%	\$538.40	0	\$5.20	\$538.25	136.85%	\$5.25
30226	\$155.85	\$209.95	134.70%	\$209.95	\$3.55	\$222.05	0.00%	\$16.75	\$215.05	\$0.00%	\$215.05	0	\$4.75	\$214.70	137.75%	\$4.75
30229	\$284.00	\$382.60	134.71%	\$382.60	\$6.40	\$400.60	0.00%	\$26.50	\$391.90	\$0.00%	\$391.90	0	\$8.40	\$390.00	137.70%	\$8.40
30232	\$284.00	\$382.60	134.71%	\$382.60	\$6.40	\$400.60	0.00%	\$26.50	\$391.90	\$0.00%	\$391.90	0	\$8.40	\$390.00	137.70%	\$8.40
30233	\$307.70	\$414.50	134.71%	\$414.50	\$8.55	\$431.35	0.00%	\$33.15	\$424.65	\$0.00%	\$424.65	0	\$7.05	\$423.50	137.75%	\$7.05
30238	\$155.85	\$209.95	134.70%	\$209.95	\$3.55	\$222.05	0.00%	\$16.75	\$215.05	\$0.00%	\$215.05	0	\$4.75	\$214.70	137.75%	\$4.75
30241	\$370.80	\$499.50	134.71%	\$499.50	\$8.40	\$528.35	0.00%	\$39.95	\$511.70	\$0.00%	\$511.70	0	\$11.20	\$510.75	137.75%	\$11.25
30244	\$370.80	\$499.50	134.71%	\$499.50	\$8.40	\$528.35	0.00%	\$39.95	\$511.70	\$0.00%	\$511.70	0	\$11.20	\$510.75	137.75%	\$11.25
30246	\$717.75	\$966.95	134.72%	\$966.95	\$15.90	\$1022.80	0.00%	\$77.35	\$999.50	\$0.00%	\$999.50	0	\$21.55	\$998.50	137.70%	\$21.55
30247	\$769.30	\$1,053.45	134.72%	\$1,053.45	\$17.05	\$1,096.20	0.00%	\$82.85	\$1,061.65	\$0.00%	\$1,061.65	0	\$23.20	\$1,059.60	137.75%	\$23.25
30250	\$1,301.75	\$1,753.70	134.72%	\$1,753.70	\$28.95	\$1,849.45	0.00%	\$140.35	\$1,796.40	\$0.00%	\$1,796.40	0	\$39.00	\$1,792.75	137.70%	\$39.05
30251	\$1,999.65	\$2,693.95	134.72%	\$2,693.95	\$44.45	\$2,849.45	0.00%	\$215.45	\$2,759.50	\$0.00%	\$2,759.50	0	\$60.05	\$2,754.00	137.75%	\$60.15
30253	\$87.85	\$116.95	134.72%	\$116.95	\$1.90	\$123.65	0.00%	\$9.30	\$119.65	\$0.00%	\$119.65	0	\$3.05	\$119.60	138.25%	\$3.05
30255	\$115.65	\$156.15	134.72%	\$156.15	\$2.75	\$164.65	0.00%	\$12.45	\$159.80	\$0.00%	\$159.80	0	\$3.70	\$159.70	137.75%	\$3.75
30256	\$463.50	\$624.40	134.71%	\$624.40	\$10.35	\$646.35	0.00%	\$49.95	\$639.65	\$0.00%	\$639.65	0	\$15.60	\$640.00	138.10%	\$15.60
30259	\$206.60	\$278.30	134.70%	\$278.30	\$4.65	\$294.35	0.00%	\$22.20	\$283.50	\$0.00%	\$283.50	0	\$5.20	\$283.50	137.20%	\$5.20
30262	\$51.20	\$68.45	134.71%	\$68.45	\$1.10	\$72.40	0.00%	\$5.65	\$70.45	\$0.00%	\$70.45	0	\$1.75	\$70.45	137.60%	\$1.75
30266	\$155.85	\$209.95	134.70%	\$209.95	\$3.55	\$222.05	0.00%	\$16.75	\$215.05	\$0.00%	\$215.05	0	\$4.75	\$214.70	137.75%	\$4.75
30269	\$155.85	\$209.95	134.70%	\$209.95	\$3.55	\$222.05	0.00%	\$16.75	\$215.05	\$0.00%	\$215.05	0	\$4.75	\$214.70	137.75%	\$4.75
30272	\$307.70	\$414.50	134.71%	\$414.50	\$8.55	\$431.35	0.00%	\$33.15	\$424.65	\$0.00%	\$424.65	0	\$7.05	\$423.50	137.75%	\$7.05
30275	\$1,834.15	\$2,470.95	134.72%	\$2,470.95	\$41.10	\$2,612.10	0.00%	\$196.15	\$2,531.15	\$0.00%	\$2,531.15	0	\$55.45	\$2,526.40	137.75%	\$55.45
30278	\$48.40	\$65.15	134.62%	\$65.15	\$1.15	\$68.95	0.00%	\$5.25	\$66.80	\$0.00%	\$66.80	0	\$1.45	\$66.60	137.60%	\$1.45
30281	\$124.30	\$167.40	134.70%	\$167.40	\$2.75	\$171.10	0.00%	\$13.35	\$171.55	\$0.00%	\$171.55	0	\$3.75	\$171.20	137.75%	\$3.75
30283	\$213.00	\$286.95	134.70%	\$286.95	\$4.95	\$303.50	0.00%	\$22.95	\$293.95	\$0.00%	\$293.95	0	\$6.60	\$293.50	137.80%	\$6.60
30286	\$418.95	\$557.65	134.71%	\$557.65	\$9.40	\$589.85	0.00%	\$44.60	\$571.25	\$0.00%	\$571.25	0	\$12.55	\$570.20	137.75%	\$12.55
30287	\$538.20	\$725.00	134.71%	\$725.00	\$12.10	\$766.85	0.00%	\$57.95	\$757.25	\$0.00%	\$757.25	0	\$32.80	\$757.80	140.80%	\$32.80
30289	\$526.60	\$704.00	134.71%	\$704.00	\$11.70	\$744.70	0.00%	\$56.35	\$721.20	\$0.00%	\$721.20	0	\$15.70	\$719.70	137.70%	\$15.70
30293	\$463.50	\$624.40	134.71%	\$624.40	\$10.35	\$646.35	0.00%	\$49.95	\$639.65	\$0.00%	\$639.65	0	\$13.80	\$638.20	137.70%	\$13.80
30294	\$1,834.15	\$2,470.95	134.72%	\$2,470.95	\$41.10	\$2,612.10	0.00%	\$196.15	\$2,531.15	\$0.00%	\$2,531.15	0	\$55.45	\$2,526.40	137.75%	\$55.45
30296	\$1,065.20	\$1,435.05	134.72%	\$1,435.05	\$23.80	\$1,517.90	0.00%	\$114.80	\$1,470.00	\$0.00%	\$1,470.00	0	\$30.35	\$1,465.40	142.5%	\$30.40
30297	\$669.25	\$898.55	134.72%	\$898.55	\$14.65	\$946.15	0.00%	\$71.45	\$915.30	\$0.00%	\$915.30	0	\$22.05	\$915.00	140.0%	\$22.05
30300	\$750.90	\$1,072.25	134.72%	\$1,072.25	\$17.80	\$1,134.15	0.00%	\$85.75	\$1,098.35	\$0.00%	\$1,098.35	0	\$28.55	\$1,093.60	141.0%	\$28.60
30302	\$366.65	\$488.70	134.72%	\$488.70	\$7.65	\$514.85	0.00%	\$37.25	\$497.65	\$0.00%	\$497.65	0	\$10.35	\$497.60	140.0%	\$10.35
30303	\$636.65	\$857.70	134.72%	\$857.70	\$14.30	\$896.25	0.00%	\$68.55	\$878.60	\$0.00%	\$878.60	0	\$20.90	\$880.00	141.0%	\$20.95
30306	\$831.00	\$1,119.50	134.72%	\$1,119.50	\$18.50	\$1,184.15	0.00%	\$89.55	\$1,146.80	\$0.00%	\$1,146.80	0	\$27.30	\$1,143.00	142.0%	\$27.35
30310	\$831.00	\$1,119.50	134.72%	\$1,119.50	\$18.50	\$1,184.15	0.00%	\$89.55	\$1,146.80	\$0.00%	\$1,146.80	0	\$27.30	\$1,143.00	142.0%	\$27.35
30311	\$672.65	\$897.35	134.72%	\$897.35	\$14.70	\$949.20	0.00%	\$86.49	\$909.75	\$0.00%	\$909.75	0	\$24.09	\$906.60	141.5%	\$24.10
30314	\$715.90	\$951.15	134.72%	\$951.15	\$16.60	\$987.10	0.00%	\$95.70	\$966.75	\$0.00%	\$966.75	0	\$24.05	\$965.20	141.0%	\$24.05
30315	\$1,185.10	\$1,597.90	134.72%	\$1,597.90	\$26.40	\$1,680.15	0.00%	\$127.60	\$1,636.90	\$0.00%	\$1,636.90	0	\$36.90	\$1,627.30	147.45%	\$36.95
30317	\$1,430.10	\$1,913.30	134.72%	\$1,913.30	\$31.80	\$2,023.75	0.00%	\$153.05	\$1,969.90	\$0.00%	\$1,969.90	0	\$43.60	\$1,955.90	147.45%	\$43.65
30318	\$1,185.10	\$1,597.90	134.72%	\$1,597.90	\$26.40	\$1,680.15	0.00%	\$127.60	\$1,636.90	\$0.00%	\$1,636.90	0	\$36.90	\$1,627.30	147.45%	\$36.95
30320	\$1,430.10	\$1,913.30	134.72%	\$1,913.30	\$31.80	\$2,023.75	0.00%	\$153.05	\$1,969.90	\$0.00%	\$1,969.90	0	\$43.60	\$1,955.90	137.70%	\$43.65
30323	\$1,430.20	\$1,913.30	134.72%	\$1,913.30	\$31.80	\$2,023.75	0.00%	\$153.05	\$1,969.90	\$0.00%	\$1,969.90	0	\$43.60	\$1,955.90	137.70%	\$43.65
30324	\$1,430.20	\$1,913.30	134.72%	\$1,913.30	\$31.80	\$2,023.75	0.00%	\$153.05	\$1,969.90	\$0.00%	\$1,969.90	0	\$43.60	\$1,955.90	137.70%	\$43.65
30326	\$463.50	\$624.40	134.71%	\$624.40	\$10.35	\$646.35	0.00%	\$49.95	\$639.65	\$0.00%	\$639.65	0	\$13.80	\$640.00	140.0%	\$13.80
30329	\$256.95	\$338.70	134.71%	\$338.70	\$5.65	\$362.35	0.00%	\$23.90	\$348.85	\$0.00%	\$348.85	0	\$9.55	\$351.70	140.80%	\$9.55
30332	\$471.85	\$636.65	134.71%	\$636.65	\$10.75	\$674.15	0.00%	\$60.70	\$654.60	\$0.00%	\$654.60	0	\$18.45	\$651.60	137.70%	\$18.45
30334	\$366.65	\$488.70	134.71%	\$488.70	\$7.65	\$514.85	0.00%	\$37.25	\$497.65	\$0.00%	\$497.65	0	\$10.35	\$497.60	136.0%	\$10.35
30335	\$90.95	\$122.75	134.65%	\$122.75	\$1.45	\$130.65	0.00%	\$8.55	\$124.40	\$0.00%	\$124.40	0	\$1.85	\$124.30	137.75%	\$1.85
30336	\$1,082.40	\$1,466.60	135.68%	\$1,466.60	\$23.80	\$1,517.90	0.00%	\$114.80	\$1,470.00	\$0.00%	\$1,470.00	0	\$30.35	\$1,465.40	142.5%	\$30.40
30382	\$1,359.25	\$1,841.50	135.42%	\$1,841.50	\$30.80	\$1,937.80	0.00%	\$137.05	\$1,893.90	\$0.00%	\$1,893.90	0	\$37.00	\$1,879.20	137.75%	\$37.05
30384	\$1,462.00	\$1,964.85	135.42%	\$1,964.85	\$30.80	\$2,023.75	0.00%	\$137.05	\$1,935.50	\$0.00%	\$1,935.50	0	\$37.00	\$1,920.00	137.70%	\$37.05
30385	\$86.75	\$114.45	135.42%	\$114.45	\$1.80	\$122.05	0.00%	\$9.05	\$116.30	\$0.00%	\$116.30	0	\$1.50	\$115.90	137.0%	\$1.50
30387	\$284.00	\$382.60	135.42%	\$382.60	\$6.40	\$400.60	0.00%	\$26.50	\$391.90	\$0.00%	\$391.90	0	\$8.40	\$390.00	137.0%	\$8.40
30388	\$1,082.40	\$1,466.60	135.42%	\$1,466.60	\$23.80	\$1,517.90	0.00%	\$114.80	\$1,470.00	\$0.00%	\$1,470.00	0	\$30.35	\$1,465.40	142.5%	\$30.40
30390	\$288.85	\$390.90	135.42%	\$390.90	\$5.60	\$415.80	0.00%	\$31.90	\$403.60	\$0.00%	\$403.60	0	\$10.35	\$403.60	137.5%	\$10.35
30392	\$701.75	\$943.40	135.42%	\$943.40	\$16.20	\$1,000.10	0.00%	\$70.70	\$968.35	\$0.00%	\$968.35	0	\$23.60	\$968.35	137.5%	\$23.60
30397	\$241.75	\$327.35	135.41%	\$327.35	\$4.50	\$344.50	0.00%	\$33.15	\$343.50	\$0.00%	\$343.50	0	\$10.35	\$342.70	137.75%	\$10.35
30399	\$332.90	\$449.25	135.41%	\$449.25	\$7.35	\$474.85	0.00%	\$43.85	\$474.25	\$0.00%	\$474.25	0	\$15.95	\$474.80	137.60%	\$15.95
30400	\$658.10	\$891.20	135.42%	\$891.20	\$14.20	\$949.80	0.00%	\$86.30	\$906.20	\$0.00%	\$906.20	0	\$23.60	\$906		

30419	\$850.20	\$1,151.25	135.41%	\$1,164.50	\$12,108.00	0.00%	\$59.55	\$1,173.30	0.00%	\$22.05	\$1,207.30	0.00%	\$56.05	\$1,170.90	137.70%	\$1,170.90	137.70%	\$19.65
30421	\$2,813.35	\$2,813.35	135.42%	\$2,813.35	\$2,958.65	0.00%	\$45.30	\$2,866.95	0.00%	\$53.15	\$2,950.05	0.00%	\$46.75	\$2,861.00	137.70%	\$2,861.00	137.70%	\$47.80
30422	\$700.70	\$91.60	135.42%	\$962.25	\$1,004.35	0.00%	\$70.80	\$969.75	0.00%	\$18.10	\$997.85	0.00%	\$13.60	\$967.90	137.75%	\$967.90	137.75%	\$16.30
30423	\$1,359.85	\$2,189.50	135.42%	\$1,862.30	\$1,937.80	0.00%	\$137.05	\$1,973.60	0.00%	\$35.10	\$2,066.45	0.00%	\$89.50	\$1,873.20	137.75%	\$1,873.20	137.75%	\$31.70
30424	\$1,624.25	\$2,191.50	135.42%	\$2,224.60	\$2,314.50	0.00%	\$163.65	\$2,241.45	0.00%	\$45.10	\$2,306.45	0.00%	\$106.90	\$2,237.00	137.75%	\$2,237.00	137.75%	\$37.45
30425	\$1,717.40	\$2,353.15	135.42%	\$2,474.65	\$2,574.65	0.00%	\$173.60	\$2,537.95	0.00%	\$44.80	\$2,467.45	0.00%	\$114.30	\$2,392.80	137.70%	\$2,392.80	137.70%	\$39.75
30430	\$1,417.60	\$2,337.65	135.42%	\$2,442.80	\$2,542.80	0.00%	\$241.65	\$2,532.10	0.00%	\$62.35	\$2,432.70	0.00%	\$159.05	\$2,329.10	137.70%	\$2,329.10	137.70%	\$55.45
30431	\$642.40	\$734.50	135.42%	\$746.70	\$772.90	0.00%	\$54.65	\$748.50	0.00%	\$14.00	\$770.20	0.00%	\$35.70	\$746.70	137.70%	\$746.70	137.70%	\$12.20
30433	\$755.45	\$1,022.95	135.41%	\$1,034.65	\$1,076.55	0.00%	\$107.65	\$1,042.50	0.00%	\$19.55	\$1,072.75	0.00%	\$49.80	\$1,040.50	137.65%	\$1,040.50	137.65%	\$17.55
30439	\$193.10	\$261.45	135.40%	\$264.60	\$278.50	0.00%	\$194.45	\$266.50	0.00%	\$5.05	\$272.45	0.00%	\$32.60	\$264.50	137.00%	\$264.50	137.00%	\$11.10
30440	\$547.70	\$1,020.00	135.40%	\$749.95	\$780.50	0.00%	\$38.80	\$795.80	0.00%	\$55.20	\$809.50	0.00%	\$126.70	\$754.45	137.50%	\$754.45	137.50%	\$12.75
30441	\$148.10	\$192.00	135.40%	\$194.10	\$203.30	0.00%	\$113.70	\$195.70	0.00%	\$3.70	\$201.35	0.00%	\$9.35	\$196.70	137.80%	\$196.70	137.80%	\$4.85
30442	\$668.45	\$2,614.50	135.40%	\$2,646.60	\$2,725.15	0.00%	\$194.45	\$2,666.50	0.00%	\$15.55	\$2,700.00	0.00%	\$126.30	\$2,666.30	137.90%	\$2,666.30	137.90%	\$48.80
30443	\$685.85	\$905.20	135.42%	\$915.35	\$955.00	0.00%	\$69.85	\$922.45	0.00%	\$15.85	\$949.00	0.00%	\$142.75	\$922.60	148.50%	\$922.60	148.50%	\$87.50
30445	\$686.45	\$1,039.00	1.2	\$1,122.45	\$1,229.50	0.00%	\$216.45	\$1,194.85	0.00%	\$15.85	\$1,229.50	0.00%	\$140.00	\$1,274.80	147.25%	\$1,274.80	147.25%	\$235.80
30448	\$1,012.35	\$1,370.90	135.42%	\$1,386.50	\$1,442.95	0.00%	\$102.00	\$1,397.05	0.00%	\$29.15	\$1,437.55	0.00%	\$66.65	\$1,435.10	141.75%	\$1,435.10	141.75%	\$64.20
30449	\$1,125.20	\$1,524.40	135.42%	\$1,541.65	\$1,604.10	0.00%	\$179.70	\$1,637.85	0.00%	\$26.05	\$1,598.50	0.00%	\$74.10	\$1,550.10	137.70%	\$1,550.10	137.70%	\$26.80
30450	\$545.65	\$738.90	135.42%	\$769.55	\$799.55	0.00%	\$47.00	\$753.00	0.00%	\$14.10	\$774.80	0.00%	\$35.90	\$751.20	137.65%	\$751.20	137.65%	\$12.30
30451	\$98.75	\$377.70	135.41%	\$381.50	\$430.90	0.00%	\$30.65	\$384.40	0.00%	\$7.20	\$395.55	0.00%	\$18.35	\$383.60	137.75%	\$383.60	137.75%	\$6.50
30452	\$392.80	\$531.90	135.41%	\$538.00	\$559.70	0.00%	\$53.80	\$542.05	0.00%	\$9.55	\$557.80	0.00%	\$25.90	\$541.20	137.80%	\$541.20	137.80%	\$9.35
30454	\$1,371.65	\$1,664.00	1.2	\$1,878.40	\$2,026.50	0.00%	\$304.40	\$1,892.90	0.00%	\$246.90	\$1,947.75	0.00%	\$301.75	\$1,889.20	137.75%	\$1,889.20	137.75%	\$243.20
30455	\$1,371.65	\$1,664.00	1.2	\$1,878.55	\$2,026.50	0.00%	\$304.40	\$1,892.90	0.00%	\$246.90	\$1,947.75	0.00%	\$301.75	\$1,889.20	137.75%	\$1,889.20	137.75%	\$243.20
30457	\$1,435.35	\$1,943.75	135.42%	\$1,965.80	\$2,046.35	0.00%	\$144.65	\$1,980.90	0.00%	\$29.05	\$2,038.20	0.00%	\$32.95	\$1,976.70	137.70%	\$1,976.70	137.70%	\$33.00
30458	\$1,055.10	\$1,428.80	135.42%	\$1,445.00	\$1,503.50	0.00%	\$106.35	\$1,466.05	0.00%	\$27.25	\$1,498.25	0.00%	\$69.45	\$1,453.20	137.75%	\$1,453.20	137.75%	\$24.40
30460	\$1,215.35	\$1,628.85	135.42%	\$1,650.75	\$1,728.85	0.00%	\$153.75	\$1,681.00	0.00%	\$40.40	\$1,724.40	0.00%	\$59.05	\$1,635.80	137.70%	\$1,635.80	137.70%	\$24.40
30461	\$1,538.30	\$2,087.45	135.42%	\$2,106.85	\$2,190.80	0.00%	\$188.80	\$2,122.85	0.00%	\$49.70	\$2,184.40	0.00%	\$101.25	\$2,118.80	137.75%	\$2,118.80	137.75%	\$35.65
30463	\$1,888.75	\$2,557.75	135.42%	\$2,586.45	\$2,689.90	0.00%	\$188.80	\$2,606.45	0.00%	\$58.45	\$2,682.05	0.00%	\$124.30	\$2,601.30	137.75%	\$2,601.30	137.75%	\$43.65
30464	\$2,866.50	\$3,069.30	135.42%	\$3,103.90	\$3,227.85	0.00%	\$226.50	\$3,127.75	0.00%	\$58.45	\$3,218.45	0.00%	\$149.15	\$3,121.30	137.70%	\$3,121.30	137.70%	\$52.10
30469	\$1,790.65	\$2,424.90	135.42%	\$2,452.25	\$2,590.15	0.00%	\$178.95	\$2,471.10	0.00%	\$46.20	\$2,542.70	0.00%	\$117.80	\$2,466.00	137.70%	\$2,466.00	137.70%	\$41.20
30472	\$1,866.90	\$2,464.30	1.2	\$2,489.30	\$2,677.75	0.00%	\$307.80	\$2,493.90	0.00%	\$249.60	\$1,969.40	0.00%	\$395.10	\$1,912.50	137.90%	\$1,912.50	137.90%	\$248.20
30473	\$1,866.90	\$2,464.30	1.2	\$2,489.30	\$2,677.75	0.00%	\$307.80	\$2,493.90	0.00%	\$249.60	\$1,969.40	0.00%	\$395.10	\$1,912.50	137.90%	\$1,912.50	137.90%	\$248.20
30475	\$363.10	\$490.25	118.31%	\$492.45	\$525.45	0.00%	\$252.45	\$491.45	0.00%	\$23.40	\$524.65	0.00%	\$10.35	\$248.40	124.00%	\$248.40	124.00%	\$10.45
30476	\$363.10	\$490.25	118.31%	\$492.45	\$525.45	0.00%	\$252.45	\$491.45	0.00%	\$23.40	\$524.65	0.00%	\$10.35	\$248.40	124.00%	\$248.40	124.00%	\$10.45
30478	\$295.55	\$402.30	118.30%	\$407.35	\$434.15	0.00%	\$278.00	\$407.35	0.00%	\$25.40	\$434.15	0.00%	\$36.30	\$413.15	118.30%	\$413.15	118.30%	\$17.10
30479	\$496.35	\$668.05	118.30%	\$678.35	\$703.85	0.00%	\$496.35	\$678.35	0.00%	\$62.85	\$703.85	0.00%	\$77.70	\$613.60	123.85%	\$613.60	123.85%	\$27.55
30481	\$371.45	\$499.45	118.31%	\$509.65	\$529.30	0.00%	\$100.95	\$498.80	0.00%	\$47.15	\$549.75	0.00%	\$58.30	\$460.30	123.90%	\$460.30	123.90%	\$20.85
30482	\$264.10	\$352.50	118.32%	\$361.65	\$376.30	0.00%	\$71.70	\$346.95	0.00%	\$33.45	\$353.90	0.00%	\$41.90	\$327.40	123.95%	\$327.40	123.95%	\$14.90
30483	\$184.25	\$248.50	118.32%	\$252.40	\$264.15	0.00%	\$51.65	\$241.35	0.00%	\$24.35	\$264.90	0.00%	\$28.90	\$240.70	123.95%	\$240.70	123.95%	\$13.62
30484	\$376.70	\$499.20	118.31%	\$520.05	\$544.00	0.00%	\$103.15	\$497.85	0.00%	\$48.20	\$508.80	0.00%	\$69.60	\$470.40	123.90%	\$470.40	123.90%	\$22.20
30485	\$586.15	\$780.50	118.32%	\$802.55	\$835.25	0.00%	\$586.15	\$802.55	0.00%	\$74.30	\$835.45	0.00%	\$91.90	\$726.30	123.90%	\$726.30	123.90%	\$32.75
30488	\$647.70	\$868.00	118.32%	\$880.55	\$913.40	0.00%	\$647.70	\$880.55	0.00%	\$74.30	\$913.40	0.00%	\$85.90	\$754.45	137.5%	\$754.45	137.5%	\$106.45
30491	\$577.85	\$791.30	118.32%	\$799.20	\$823.45	0.00%	\$577.85	\$799.20	0.00%	\$69.50	\$823.45	0.00%	\$85.90	\$764.40	137.5%	\$764.40	137.5%	\$106.45
30492	\$816.20	\$1,127.30	118.32%	\$1,127.30	\$1,167.30	0.00%	\$816.20	\$1,127.30	0.00%	\$103.85	\$1,097.75	0.00%	\$124.85	\$1,155.70	124.00%	\$1,155.70	124.00%	\$32.10
30494	\$437.55	\$599.20	118.31%	\$599.20	\$630.20	0.00%	\$437.55	\$599.20	0.00%	\$55.55	\$630.20	0.00%	\$67.60	\$560.60	137.70%	\$560.60	137.70%	\$84.95
30495	\$816.20	\$1,127.30	118.32%	\$1,127.30	\$1,167.30	0.00%	\$816.20	\$1,127.30	0.00%	\$103.85	\$1,097.75	0.00%	\$124.85	\$1,155.70	124.00%	\$1,155.70	124.00%	\$32.10
30496	\$736.90	\$999.60	135.16%	\$1,044.40	\$1,066.35	0.00%	\$736.90	\$999.60	0.00%	\$99.10	\$1,066.35	0.00%	\$50.10	\$1,029.20	137.70%	\$1,029.20	137.70%	\$18.60
30515	\$959.55	\$1,266.15	135.16%	\$1,314.00	\$1,367.20	0.00%	\$959.55	\$1,314.00	0.00%	\$27.35	\$1,367.20	0.00%	\$65.60	\$1,231.50	137.70%	\$1,231.50	137.70%	\$24.55
30517	\$959.55	\$1,266.15	135.16%	\$1,314.00	\$1,367.20	0.00%	\$959.55	\$1,314.00	0.00%	\$27.35	\$1,367.20	0.00%	\$65.60	\$1,231.50	137.70%	\$1,231.50	137.70%	\$24.55
30518	\$1,027.50	\$1,388.75	135.16%	\$1,407.15	\$1,484.20	0.00%	\$1,027.50	\$1,407.15	0.00%	\$47.15	\$1,484.20	0.00%	\$70.30	\$1,415.60	137.75%	\$1,415.60	137.75%	\$28.85
30520	\$884.00	\$972.40	1.1	\$972.40	\$1,255.35	0.00%	\$309.35	\$1,219.90	0.00%	\$249.30	\$1,255.35	0.00%	\$383.90	\$1,244.80	140.80%	\$1,244.80	140.80%	\$73.40
30521	\$1,593.40	\$2,032.00	135.16%	\$2,032.00	\$2,068.85	0.00%	\$1,593.40	\$2,032.00	0.00%	\$63.70	\$2,068.85	0.00%	\$103.85	\$2,070.60	137.75%	\$2,070.60	137.75%	\$38.60
30526	\$1,359.85	\$1,837.95	135.16%	\$1,837.95	\$1,873.75	0.00%	\$1,359.85	\$1,837.95	0.00%	\$40.15	\$1,873.75	0.00%	\$53.35	\$1,837.30	137.75%	\$1,837.30	137.75%	\$34.25
30529	\$1,359.85	\$1,837.95	135.16%	\$1,837.95	\$1,873.75	0.00%	\$1,359.85	\$1,837.95	0.00%	\$40.15	\$1,873.75	0.00%	\$53.35	\$1,837.30	137.75%	\$1,837.30	137.75%	\$34.25
30532	\$1,114.40	\$1,466.30	133.16%	\$1,466.30	\$1,535.10	0.00%	\$1,114.40	\$1,466.30	0.00%	\$84.30	\$1,535.10	0.00%	\$20.90	\$1,430.60	137.70%	\$1,430.60	137.70%	\$24.90
30533	\$936.90	\$1,266.20	133.16%	\$1,266.20	\$1,358.00	0.00%	\$936.90	\$1,266.20	0.00%	\$84.30	\$1,358.00	0.00%	\$20.90	\$1,266.20	137.70%	\$1,266.20	137.70%	\$24.90
30539	\$884.00	\$1,194.80	133.16%	\$1,194.80	\$1,270.60	0.00%	\$884.00	\$1,194.80	0.00%	\$113.20	\$1,270.60	0.00%	\$60.50	\$1,157.60	137.75%	\$1,157.60	137.75%	\$22.80
30560	\$984.05	\$1,327.35	133.16%	\$1,327.35	\$1,395.10	0.00%	\$984.05	\$1,327.35	0.00%	\$131.35	\$1,395.10	0.00%	\$67.15	\$1,352.60	137.75%	\$1,352.60	137.75%	\$25.25
30562	\$610.05	\$836.70	133.16%	\$836.70	\$877.85	0.00%	\$610.05	\$836.70	0.00%	\$64.00	\$877.85	0.00%	\$42.35	\$847.80	136.95%	\$8		

30626	\$708.40	\$974.45	135.16%	\$970.20	\$12.75	\$1,009.40	0.00%	\$51.95	\$1,030.65	0.00%	\$73.20	\$743.80	0.00%	-\$213.65	\$765.05	0.00%	-\$132.40	\$997.40	0	\$39.95	\$997.45	140.80%	\$400.00
30627	\$297.55	\$407.50	135.15%	\$407.50	\$5.35	\$424.05	0.00%	\$21.90	\$433.95	0.00%	\$30.80	\$311.45	0.00%	-\$89.70	\$321.35	0.00%	-\$80.80	\$519.00	0	\$16.85	\$519.00	140.80%	\$168.50
30628	\$37.05	\$37.05	135.15%	\$50.75	\$52.75	\$52.75	0.00%	\$2.70	\$53.85	0.00%	\$3.80	\$51.15	0.00%	\$1.10	\$52.60	0.00%	\$2.55	\$50.90	0	\$0.85	\$50.90	137.40%	\$26.10
30629	\$743.10	\$743.10	135.16%	\$743.10	\$182.40	\$772.85	0.00%	\$39.75	\$789.10	0.00%	\$56.00	\$680.25	0.00%	\$15.40	\$770.20	0.00%	\$27.05	\$788.10	0	\$390.15	\$788.10	139.80%	\$29.10
30630	\$492.95	\$492.95	135.16%	\$492.95	\$432.85	\$535.85	0.00%	\$18.00	\$553.85	0.00%	\$25.35	\$339.80	0.00%	\$6.85	\$549.70	0.00%	\$16.85	\$440.90	0	\$108.05	\$440.90	179.15%	\$108.05
30631	\$426.25	\$426.25	135.14%	\$426.25	\$432.60	\$432.60	0.00%	\$22.30	\$441.70	0.00%	\$31.40	\$418.95	0.00%	\$8.65	\$441.70	0.00%	\$20.80	\$637.60	0	\$227.30	\$637.60	210.00%	\$227.30
30632	\$303.60	\$303.60	135.14%	\$303.60	\$327.85	\$327.85	0.00%	\$17.85	\$352.95	0.00%	\$25.10	\$254.75	0.00%	\$7.10	\$326.20	0.00%	\$5.85	\$341.65	0	\$113.75	\$341.65	140.80%	\$113.75
30633	\$303.60	\$303.60	135.14%	\$303.60	\$327.85	\$327.85	0.00%	\$17.85	\$352.95	0.00%	\$25.10	\$254.75	0.00%	\$7.10	\$326.20	0.00%	\$5.85	\$341.65	0	\$113.75	\$341.65	140.80%	\$113.75
30634	\$804.90	\$804.90	135.16%	\$804.90	\$1,087.90	\$1,087.90	0.00%	\$59.00	\$1,171.00	0.00%	\$83.10	\$845.15	0.00%	-\$242.75	\$863.30	0.00%	-\$218.60	\$1,133.20	0	\$45.30	\$1,133.20	140.80%	\$45.30
30635	\$1,087.90	\$1,087.90	135.16%	\$1,087.90	\$1,446.90	\$1,446.90	0.00%	\$69.85	\$1,385.20	0.00%	\$98.40	\$845.15	0.00%	-\$242.75	\$863.30	0.00%	-\$218.60	\$1,133.20	0	\$45.30	\$1,133.20	140.80%	\$45.30
30636	\$995.05	\$995.05	135.16%	\$995.05	\$1,303.85	\$1,303.85	0.00%	\$69.85	\$1,385.20	0.00%	\$98.40	\$845.15	0.00%	-\$242.75	\$863.30	0.00%	-\$218.60	\$1,133.20	0	\$45.30	\$1,133.20	140.80%	\$45.30
30637	\$424.00	\$424.00	135.15%	\$424.00	\$573.05	\$573.05	0.00%	\$31.15	\$616.90	0.00%	\$43.85	\$585.10	0.00%	\$27.05	\$602.10	0.00%	\$29.05	\$1,195.70	0	\$137.65	\$1,195.70	167.60%	\$137.65
30638	\$788.90	\$788.90	135.16%	\$788.90	\$1,139.35	\$1,139.35	0.00%	\$51.75	\$1,206.15	0.00%	\$96.70	\$845.15	0.00%	\$27.05	\$1,206.15	0.00%	\$53.95	\$1,195.70	0	\$137.65	\$1,195.70	167.60%	\$137.65
30639	\$705.15	\$705.15	135.16%	\$705.15	\$965.75	\$965.75	0.00%	\$51.75	\$1,026.15	0.00%	\$96.70	\$740.40	0.00%	-\$212.70	\$761.55	0.00%	-\$31.55	\$992.90	0	\$133.40	\$992.90	140.80%	\$133.40
30640	\$542.40	\$542.40	135.16%	\$542.40	\$743.10	\$743.10	0.00%	\$31.85	\$778.10	0.00%	\$48.10	\$740.40	0.00%	-\$151.40	\$761.55	0.00%	-\$31.55	\$992.90	0	\$133.40	\$992.90	140.80%	\$133.40
30641	\$62.40	\$62.40	135.16%	\$62.40	\$92.50	\$92.50	0.00%	\$44.20	\$87.45	0.00%	\$62.25	\$63.50	0.00%	-\$181.70	\$650.60	0.00%	-\$163.60	\$848.10	0	\$33.90	\$848.10	140.80%	\$33.90
30642	\$660.40	\$660.40	135.16%	\$660.40	\$884.20	\$884.20	0.00%	\$44.20	\$87.45	0.00%	\$62.25	\$63.50	0.00%	-\$181.70	\$650.60	0.00%	-\$163.60	\$848.10	0	\$33.90	\$848.10	140.80%	\$33.90
30643	\$483.35	\$483.35	135.16%	\$483.35	\$663.30	\$663.30	0.00%	\$31.10	\$699.90	0.00%	\$45.60	\$667.00	0.00%	\$13.70	\$686.35	0.00%	\$33.05	\$954.60	0	\$101.30	\$954.60	197.50%	\$101.30
30644	\$195.25	\$195.25	135.14%	\$195.25	\$263.85	\$263.85	0.00%	\$14.40	\$284.10	0.00%	\$20.25	\$205.00	0.00%	-\$58.85	\$210.85	0.00%	-\$53.00	\$274.90	0	\$11.05	\$274.90	140.80%	\$11.05
30645	\$42.40	\$42.40	135.14%	\$42.40	\$62.40	\$62.40	0.00%	\$25.50	\$77.25	0.00%	\$41.75	\$569.50	0.00%	-\$165.00	\$585.80	0.00%	-\$148.70	\$742.80	0	\$8.30	\$742.80	136.95%	\$8.30
30646	\$48.40	\$48.40	135.14%	\$48.40	\$66.30	\$66.30	0.00%	\$35.50	\$70.40	0.00%	\$5.00	\$66.80	0.00%	\$1.40	\$68.75	0.00%	\$3.35	\$67.60	0	\$2.20	\$67.60	136.95%	\$2.20
30647	\$1,354.20	\$1,354.20	135.14%	\$1,354.20	\$1,847.35	\$1,847.35	0.00%	\$58.10	\$1,375.90	0.00%	\$86.65	\$1,313.85	0.00%	\$2.40	\$1,351.90	0.00%	\$62.65	\$1,303.90	0	\$14.65	\$1,303.90	137.75%	\$14.65
30648	\$952.05	\$952.05	135.14%	\$952.05	\$1,289.25	\$1,289.25	0.00%	\$89.20	\$1,196.65	0.00%	\$129.85	\$1,298.5	0.00%	\$35.00	\$1,192.50	0.00%	\$89.20	\$1,856.60	0	\$20.80	\$1,856.60	139.95%	\$20.80
30649	\$147.70	\$147.70	135.14%	\$147.70	\$202.35	\$202.35	0.00%	\$10.85	\$214.85	0.00%	\$15.25	\$202.85	0.00%	\$4.25	\$209.75	0.00%	\$10.15	\$206.55	0	\$6.90	\$206.55	139.95%	\$6.95
30650	\$150.20	\$150.20	135.14%	\$150.20	\$205.65	\$205.65	0.00%	\$11.05	\$218.55	0.00%	\$15.55	\$207.30	0.00%	\$4.30	\$213.30	0.00%	\$10.30	\$206.70	0	\$3.70	\$206.70	137.60%	\$3.70
30651	\$493.35	\$493.35	135.07%	\$493.35	\$67.60	\$67.60	0.00%	\$36.65	\$71.75	0.00%	\$5.10	\$68.10	0.00%	\$1.45	\$70.10	0.00%	\$3.45	\$68.00	0	\$1.35	\$68.00	137.80%	\$1.35
30652	\$643.50	\$643.50	135.16%	\$643.50	\$863.75	\$863.75	0.00%	\$34.00	\$674.35	0.00%	\$47.90	\$639.65	0.00%	\$13.20	\$658.15	0.00%	\$31.70	\$638.20	0	\$17.15	\$638.20	137.70%	\$17.15
30653	\$394.40	\$394.40	135.15%	\$394.40	\$553.05	\$553.05	0.00%	\$28.95	\$573.80	0.00%	\$40.75	\$544.25	0.00%	\$11.70	\$560.05	0.00%	\$27.00	\$540.20	0	\$2.60	\$540.20	137.70%	\$2.60
30654	\$1,127.40	\$1,127.40	135.15%	\$1,127.40	\$1,447.75	\$1,447.75	0.00%	\$7.35	\$1,454.75	0.00%	\$10.35	\$138.30	0.00%	\$2.90	\$142.30	0.00%	\$6.90	\$138.00	0	\$2.60	\$138.00	147.50%	\$2.60
30655	\$1,645.45	\$1,645.45	135.16%	\$1,645.45	\$2,167.35	\$2,167.35	0.00%	\$88.30	\$1,770.25	0.00%	\$124.80	\$1,680.00	0.00%	\$34.55	\$1,728.70	0.00%	\$83.25	\$1,717.20	0	\$71.75	\$1,717.20	141.05%	\$71.75
30656	\$1,498.20	\$1,498.20	135.16%	\$1,498.20	\$2,049.95	\$2,049.95	0.00%	\$89.30	\$1,771.25	0.00%	\$125.80	\$1,680.00	0.00%	\$34.55	\$1,728.70	0.00%	\$83.25	\$1,717.20	0	\$71.75	\$1,717.20	141.05%	\$71.75
30657	\$1,498.20	\$1,498.20	135.16%	\$1,498.20	\$2,049.95	\$2,049.95	0.00%	\$89.30	\$1,771.25	0.00%	\$125.80	\$1,680.00	0.00%	\$34.55	\$1,728.70	0.00%	\$83.25	\$1,717.20	0	\$71.75	\$1,717.20	141.05%	\$71.75
30658	\$498.35	\$498.35	135.16%	\$498.35	\$678.35	\$678.35	0.00%	\$36.35	\$720.70	0.00%	\$51.20	\$683.60	0.00%	\$42.50	\$720.70	0.00%	\$33.90	\$698.70	0	\$29.20	\$698.70	141.05%	\$29.25
30659	\$537.60	\$537.60	135.16%	\$537.60	\$720.70	\$720.70	0.00%	\$39.15	\$541.30	0.00%	\$39.15	\$524.00	0.00%	\$18.00	\$539.15	0.00%	\$25.95	\$535.30	0	\$22.10	\$535.30	141.05%	\$22.10
30660	\$586.15	\$586.15	135.16%	\$586.15	\$802.55	\$802.55	0.00%	\$43.05	\$852.30	0.00%	\$60.60	\$808.90	0.00%	\$16.70	\$833.25	0.00%	\$25.95	\$826.60	0	\$22.10	\$826.60	141.05%	\$22.10
30661	\$792.20	\$792.20	135.16%	\$792.20	\$980.75	\$980.75	0.00%	\$43.05	\$852.30	0.00%	\$60.60	\$808.90	0.00%	\$16.70	\$833.25	0.00%	\$25.95	\$826.60	0	\$22.10	\$826.60	141.05%	\$22.10
30662	\$586.15	\$586.15	135.16%	\$586.15	\$802.55	\$802.55	0.00%	\$43.05	\$852.30	0.00%	\$60.60	\$808.90	0.00%	\$16.70	\$833.25	0.00%	\$25.95	\$826.60	0	\$22.10	\$826.60	141.05%	\$22.10
30663	\$463.50	\$463.50	135.16%	\$463.50	\$626.45	\$626.45	0.00%	\$28.95	\$673.90	0.00%	\$47.45	\$639.65	0.00%	\$17.40	\$658.15	0.00%	\$31.70	\$661.10	0	\$34.65	\$661.10	142.65%	\$34.65
30664	\$553.15	\$553.15	135.14%	\$553.15	\$744.00	\$744.00	0.00%	\$160.85	\$729.05	0.00%	\$175.90	\$698.95	0.00%	\$140.80	\$714.05	0.00%	\$160.90	\$688.90	0	\$135.75	\$688.90	142.65%	\$135.75
30665	\$42.40	\$42.40	135.14%	\$42.40	\$62.40	\$62.40	0.00%	\$33.55	\$74.30	0.00%	\$49.80	\$748.50	0.00%	\$14.40	\$770.20	0.00%	\$35.70	\$742.80	0	\$8.30	\$742.80	136.95%	\$8.30
30666	\$68.50	\$68.50	135.14%	\$68.50	\$92.50	\$92.50	0.00%	\$27.05	\$77.60	0.00%	\$86.75	\$748.50	0.00%	\$59.65	\$770.20	0.00%	\$81.35	\$742.80	0	\$53.95	\$742.80	137.65%	\$53.95
30667	\$1,307.80	\$1,307.80	135.14%	\$1,307.80	\$1,735.40	\$1,735.40	0.00%	\$27.05	\$1,382.35	0.00%	\$43.35	\$752.05	0.00%	\$14.10	\$779.85	0.00%	\$35.90	\$779.50	0	\$36.95	\$779.50	145.85%	\$36.95
30668	\$657.25	\$657.25	135.16%	\$657.25	\$863.75	\$863.75	0.00%	\$45.60	\$1,456.35	0.00%	\$95.05	\$1,389.90	0.00%	\$28.60	\$1,430.10	0.00%	\$63.55	\$1,483.10	0	\$18.10	\$1,483.10	137.35%	\$18.10
30669	\$1,021.05	\$1,021.05	135.16%	\$1,021.05	\$1,338.15	\$1,338.15	0.00%	\$48.75	\$1,092.45	0.00%	\$71.40	\$1,042.90	0.00%	\$21.45	\$1,072.75	0.00%	\$51.70	\$1,040.50	0	\$19.45	\$1,040.50	137.75%	\$19.45
30670	\$2,900.35	\$2,900.35	135.16%	\$2,900.35	\$3,847.70	\$3,847.70	0.00%	\$32.85	\$5,997.35	0.00%	\$406.90	\$5,707.80	0.00%	\$60.95	\$5,873.35	0.00%	\$52.90	\$5,666.90	0	\$106.55	\$5,666.90	137.75%	\$106.70
30671	\$1,416.85	\$1,416.85	135.16%	\$1,416.85	\$1,899.75	\$1,899.75	0.00%	\$146.75	\$3,111.35	0.00%	\$211.10	\$2,961.30	0.00%	\$60.95	\$3,047.05	0.00%	\$146.80	\$2,995.20	0	\$54.95	\$2,995.20	137.70%	\$54.95
30672	\$1,715.20	\$1,715.20	135.16%	\$1,715.20	\$2,283.35	\$2,283.35	0.00%	\$100.05	\$3,333.50	0.00%	\$168.30	\$2,700.90	0.00%	\$45.70	\$3,286.30	0.00%	\$110.10	\$3,216.40	0	\$41.90	\$3,216.40	137.70%	\$41.90
30673	\$1,796.65	\$1,796.65	135.16%	\$1,796.65	\$2,403.35	\$2,403.35	0.00%	\$115.45	\$3,589.40	0.00%	\$169.15	\$2,471.10	0.00%	\$50.85	\$3,543.70	0.00%	\$122.45	\$2,466.10	0	\$45.85	\$2,466.10	137.70%	\$45.85
30674	\$1,796.65	\$1,796.65	135.16%	\$1,796.65	\$2,403.35	\$2,403.35	0.00%	\$115.45	\$3,589.40	0.00													

31250	\$383.90	\$518.85	135.15%	\$525.70	\$6.85	\$547.10	0.00%	\$28.25	\$558.60	0.00%	\$10.95	\$54.15	0.00%	\$26.30	\$528.50	0	\$9.65	\$528.50	137.65%	\$9.65	
31340	DERIVED	\$300.00	143.27%	\$0.00	0.00%	\$0.00	0.00%	\$0.00	\$0.00	0.00%	\$0.00	0.00%	0.00%	\$0.00	\$0.00	141.2	0	\$9.65	DERIVED	137.65%	\$9.65
31345	\$219.50	\$312.75	0.00%	\$312.75	\$3.80	\$312.75	0.00%	\$22.65	\$300.90	0.00%	\$6.25	\$31.70	0.00%	\$15.05	\$351.40	0	\$54.75	\$351.40	160.80%	\$54.75	
31346	\$296.65	\$300.45	0.00%	\$300.45	\$8.15	\$300.45	0.00%	\$46.60	\$62.25	0.00%	\$16.25	\$64.30	0.00%	\$30.90	\$309.80	0	\$40.60	\$309.80	141.15%	\$40.60	
31350	\$450.90	\$642.50	0.00%	\$642.50	\$13.15	\$642.50	0.00%	\$54.50	\$1,081.65	0.00%	\$21.10	\$1,055.70	0.00%	\$50.85	\$650.00	0	\$53.45	\$650.00	144.15%	\$53.45	
31355	\$743.45	\$1,004.85	0.00%	\$1,004.85	\$4.15	\$1,004.85	0.00%	\$328.15	\$335.05	0.00%	\$6.55	\$317.80	0.00%	\$105.85	\$1,058.30	0	\$10.65	\$1,058.30	139.75%	\$10.65	
31357	\$114.10	\$315.40	0.00%	\$315.40	\$2.05	\$315.40	0.00%	\$11.80	\$160.60	0.00%	\$3.25	\$162.00	0.00%	\$7.80	\$321.90	0	\$5.30	\$321.90	139.80%	\$5.30	
31358	\$281.85	\$380.90	0.00%	\$380.90	\$4.50	\$380.90	0.00%	\$48.45	\$410.00	0.00%	\$8.05	\$400.25	0.00%	\$19.35	\$394.00	0	\$13.10	\$394.00	139.80%	\$13.10	
31359	\$343.55	\$464.30	0.00%	\$464.30	\$6.20	\$464.30	0.00%	\$276.85	\$474.10	0.00%	\$9.80	\$487.85	0.00%	\$24.50	\$480.30	0	\$16.00	\$480.30	139.85%	\$16.00	
31361	\$194.30	\$262.60	0.00%	\$262.60	\$3.50	\$262.60	0.00%	\$198.55	\$241.30	0.00%	\$5.55	\$247.90	0.00%	\$8.90	\$271.55	0	\$8.90	\$271.55	139.75%	\$8.90	
31362	\$139.35	\$348.05	0.00%	\$348.05	\$4.55	\$348.05	0.00%	\$239.45	\$192.30	0.00%	\$3.95	\$197.90	0.00%	\$6.45	\$194.80	0	\$6.45	\$194.80	139.80%	\$6.45	
31363	\$174.85	\$343.50	0.00%	\$343.50	\$3.15	\$343.50	0.00%	\$229.35	\$263.00	0.00%	\$7.25	\$260.90	0.00%	\$17.40	\$355.40	0	\$11.90	\$355.40	139.85%	\$11.90	
31364	\$321.25	\$422.55	0.00%	\$422.55	\$1.80	\$422.55	0.00%	\$170.95	\$323.70	0.00%	\$4.85	\$323.85	0.00%	\$11.30	\$230.20	0	\$7.65	\$230.20	139.75%	\$7.65	
31365	\$99.35	\$134.25	0.00%	\$134.25	\$1.00	\$134.25	0.00%	\$10.25	\$239.60	0.00%	\$2.85	\$241.30	0.00%	\$10.35	\$138.90	0	\$4.65	\$138.90	139.80%	\$4.65	
31367	\$222.25	\$300.35	0.00%	\$300.35	\$4.05	\$300.35	0.00%	\$229.95	\$323.30	0.00%	\$6.35	\$315.60	0.00%	\$15.25	\$310.75	0	\$10.35	\$310.75	139.80%	\$10.35	
31368	\$130.60	\$176.50	0.00%	\$176.50	\$2.35	\$176.50	0.00%	\$136.65	\$304.40	0.00%	\$3.75	\$318.45	0.00%	\$8.95	\$182.60	0	\$6.10	\$182.60	139.80%	\$6.10	
31369	\$255.90	\$348.85	0.00%	\$348.85	\$4.60	\$348.85	0.00%	\$264.00	\$364.60	0.00%	\$3.35	\$363.40	0.00%	\$17.55	\$357.65	0	\$11.75	\$357.65	139.75%	\$11.75	
31370	\$149.40	\$502.00	0.00%	\$502.00	\$6.70	\$502.00	0.00%	\$212.90	\$529.30	0.00%	\$10.60	\$521.15	0.00%	\$25.40	\$208.90	0	\$6.95	\$208.90	139.80%	\$6.95	
31371	\$321.45	\$434.10	0.00%	\$434.10	\$5.80	\$434.10	0.00%	\$338.40	\$443.25	0.00%	\$9.15	\$456.10	0.00%	\$25.00	\$449.10	0	\$15.00	\$449.10	139.80%	\$15.00	
31372	\$371.25	\$501.75	0.00%	\$501.75	\$6.70	\$501.75	0.00%	\$457.65	\$493.90	0.00%	\$33.15	\$443.25	0.00%	\$25.40	\$518.95	0	\$17.15	\$518.95	139.80%	\$17.15	
31373	\$293.30	\$396.40	0.00%	\$396.40	\$5.30	\$396.40	0.00%	\$298.35	\$404.75	0.00%	\$8.35	\$416.50	0.00%	\$20.10	\$410.00	0	\$13.60	\$410.00	139.80%	\$13.60	
31374	\$293.30	\$426.55	0.00%	\$426.55	\$5.75	\$426.55	0.00%	\$449.80	\$482.30	0.00%	\$9.05	\$448.20	0.00%	\$21.65	\$441.30	0	\$14.75	\$441.30	139.85%	\$14.75	
31375	\$315.65	\$494.45	0.00%	\$494.45	\$6.60	\$494.45	0.00%	\$521.25	\$501.05	0.00%	\$6.80	\$519.50	0.00%	\$25.05	\$511.50	0	\$17.05	\$511.50	139.85%	\$17.05	
31376	\$365.85	\$497.15	0.00%	\$497.15	\$4.95	\$497.15	0.00%	\$372.10	\$423.80	0.00%	\$7.75	\$385.75	0.00%	\$18.60	\$374.10	0	\$6.95	\$374.10	137.70%	\$6.95	
31400	\$271.65	\$423.80	0.00%	\$423.80	\$5.50	\$423.80	0.00%	\$446.30	\$495.10	0.00%	\$28.05	\$437.90	0.00%	\$18.60	\$432.00	0	\$8.20	\$432.00	137.80%	\$8.20	
31401	\$513.55	\$706.15	0.00%	\$706.15	\$9.40	\$706.15	0.00%	\$743.65	\$759.30	0.00%	\$53.15	\$724.05	0.00%	\$35.80	\$719.60	0	\$13.45	\$719.60	137.70%	\$13.45	
31402	\$1,623.40	\$2,194.20	0.00%	\$2,194.20	\$29.00	\$2,194.20	0.00%	\$2,103.55	\$2,369.25	0.00%	\$165.05	\$2,240.30	0.00%	\$111.05	\$2,235.70	0	\$41.50	\$2,235.70	137.70%	\$41.50	
31409	\$1,999.65	\$2,702.75	0.00%	\$2,702.75	\$35.65	\$2,702.75	0.00%	\$2,846.10	\$2,966.05	0.00%	\$203.30	\$2,769.50	0.00%	\$136.75	\$2,754.00	0	\$51.25	\$2,754.00	137.75%	\$51.25	
31412	\$418.05	\$565.05	0.00%	\$565.05	\$7.45	\$565.05	0.00%	\$495.70	\$609.20	0.00%	\$43.15	\$576.90	0.00%	\$28.60	\$561.70	0	\$45.65	\$561.70	146.10%	\$45.65	
31413	\$836.00	\$1,129.95	0.00%	\$1,129.95	\$15.00	\$1,129.95	0.00%	\$1,190.55	\$1,215.60	0.00%	\$85.65	\$1,133.70	0.00%	\$57.15	\$1,151.50	0	\$21.55	\$1,151.50	137.75%	\$21.55	
31414	\$1,302.85	\$1,760.95	0.00%	\$1,760.95	\$23.30	\$1,760.95	0.00%	\$1,834.35	\$1,893.40	0.00%	\$132.45	\$1,737.95	0.00%	\$89.10	\$1,794.20	0	\$33.25	\$1,794.20	137.70%	\$33.25	
31432	\$1,393.45	\$1,883.40	0.00%	\$1,883.40	\$24.90	\$1,883.40	0.00%	\$1,983.30	\$2,025.10	0.00%	\$141.70	\$1,922.95	0.00%	\$95.30	\$1,919.10	0	\$35.70	\$1,919.10	137.75%	\$35.70	
31435	\$1,024.20	\$1,384.30	0.00%	\$1,384.30	\$18.35	\$1,384.30	0.00%	\$1,457.70	\$1,488.40	0.00%	\$104.10	\$1,413.40	0.00%	\$70.05	\$1,410.60	0	\$26.30	\$1,410.60	137.75%	\$26.30	
31438	\$1,623.40	\$2,194.20	0.00%	\$2,194.20	\$29.00	\$2,194.20	0.00%	\$2,103.55	\$2,362.00	0.00%	\$167.80	\$2,240.30	0.00%	\$111.05	\$2,235.70	0	\$41.50	\$2,235.70	137.70%	\$41.50	
31454	\$586.15	\$792.40	0.00%	\$792.40	\$10.35	\$792.40	0.00%	\$835.25	\$885.80	0.00%	\$60.60	\$808.90	0.00%	\$40.15	\$808.10	0	\$15.90	\$808.10	137.85%	\$15.90	
31456	\$255.55	\$346.35	0.00%	\$346.35	\$4.60	\$346.35	0.00%	\$264.15	\$321.80	0.00%	\$26.45	\$325.65	0.00%	\$17.55	\$352.40	0	\$7.05	\$352.40	137.90%	\$7.05	
31458	\$306.60	\$414.35	0.00%	\$414.35	\$5.70	\$414.35	0.00%	\$386.90	\$438.90	0.00%	\$31.70	\$435.35	0.00%	\$25.40	\$422.60	0	\$8.25	\$422.60	137.85%	\$8.25	
31460	\$731.45	\$502.00	0.00%	\$502.00	\$6.65	\$502.00	0.00%	\$438.90	\$470.05	0.00%	\$40.05	\$470.05	0.00%	\$25.40	\$462.60	0	\$10.10	\$462.60	137.85%	\$10.10	
31462	\$542.40	\$723.10	0.00%	\$723.10	\$9.70	\$723.10	0.00%	\$748.50	\$789.15	0.00%	\$36.00	\$748.50	0.00%	\$25.40	\$752.10	0	\$10.10	\$752.10	137.85%	\$10.10	
31466	\$1,359.90	\$1,838.05	0.00%	\$1,838.05	\$24.15	\$1,838.05	0.00%	\$1,916.95	\$1,976.30	0.00%	\$138.25	\$1,876.65	0.00%	\$93.00	\$1,874.80	0	\$36.75	\$1,874.80	137.85%	\$36.75	
31468	\$1,494.05	\$2,019.35	0.00%	\$2,019.35	\$26.70	\$2,019.35	0.00%	\$2,116.65	\$2,161.00	0.00%	\$151.90	\$2,061.80	0.00%	\$102.20	\$2,067.90	0	\$40.65	\$2,067.90	137.85%	\$40.65	
31472	\$1,399.80	\$1,891.95	0.00%	\$1,891.95	\$24.90	\$1,891.95	0.00%	\$1,945.70	\$1,990.45	0.00%	\$88.60	\$1,931.70	0.00%	\$58.75	\$1,930.40	0	\$38.45	\$1,930.40	137.90%	\$38.45	
31500	\$270.55	\$365.65	0.00%	\$365.65	\$32.35	\$365.65	0.00%	\$395.40	\$403.50	0.00%	\$27.95	\$384.20	0.00%	\$18.55	\$372.40	0	\$6.75	\$372.40	137.65%	\$6.75	
31503	\$369.80	\$487.60	0.00%	\$487.60	\$5.35	\$487.60	0.00%	\$497.35	\$503.50	0.00%	\$10.30	\$512.35	0.00%	\$24.75	\$497.00	0	\$9.40	\$497.00	137.75%	\$9.40	
31506	\$408.90	\$554.65	0.00%	\$554.65	\$5.05	\$554.65	0.00%	\$569.95	\$581.15	0.00%	\$16.55	\$569.15	0.00%	\$27.85	\$559.30	0	\$10.75	\$559.30	137.75%	\$10.75	
31509	\$369.80	\$487.60	0.00%	\$487.60	\$5.35	\$487.60	0.00%	\$497.35	\$503.50	0.00%	\$10.30	\$512.35	0.00%	\$24.75	\$497.00	0	\$9.40	\$497.00	137.75%	\$9.40	
31511	\$756.50	\$994.35	0.00%	\$994.35	\$8.85	\$994.35	0.00%	\$888.35	\$934.35	0.00%	\$46.00	\$934.35	0.00%	\$34.75	\$931.75	0	\$17.35	\$931.75	137.75%	\$17.35	
31516	\$403.85	\$553.40	0.00%	\$553.40	\$6.60	\$553.40	0.00%	\$571.85	\$576.80	0.00%	\$5.95	\$584.65	0.00%	\$31.05	\$575.40	0	\$12.00	\$575.40	137.75%	\$12.00	
31518	\$1,359.90	\$1,838.05	0.00%	\$1,838.05	\$24.15	\$1,838.05	0.00%	\$1,916.95	\$1,976.30	0.00%	\$138.25	\$1,876.65	0.00%	\$93.00	\$1,874.80	0	\$36.75	\$1,874.80	137.85%	\$36.75	
31519	\$765.90	\$1,033.20	0.00%	\$1,033.20	\$11.10	\$1,033.20	0.00%	\$1,111.35	\$1,134.45	0.00%	\$79.15	\$1,088.95	0.00%	\$52.40	\$1,078.10	0	\$24.90	\$1,078.10	140.75%	\$24.90	
31524	\$1,082.40	\$1,482.95	0.00%	\$1,482.95	\$15.70	\$1,482.95	0.00%	\$1,564.50	\$1,596.75	0.00%	\$133.80	\$1,493.70	0.00%	\$74.05	\$1,491.00	0	\$28.65	\$1,491.00	137.75%	\$28.65	
31525	\$941.05	\$1,251.05	0.00%	\$1,251.05	\$78.25	\$1,251.05	0.00%	\$1,329.30	\$1,344.15	0.00%	\$70.20	\$1,244.90	0.00%	\$31.05	\$1,270.25	0	\$31.00	\$1,270.25	140.80%	\$31.00	
31530	\$918.85	\$1,237.75	0.00%	\$1,237.75	\$89.95	\$1,237.75	0.00%	\$1,327.70	\$1,341.45	0.00%	\$84.65	\$1,244.90	0.00%	\$37.05	\$1,270.25	0	\$31.00	\$1,270.25	140.80%	\$31.00	
31533	\$145.50	\$203.50	0.00%	\$203.50	\$21.15	\$203.50	0.00%	\$182.70	\$208.80	0.00%	\$14.90	\$198.65	0.00%	\$24.40	\$198.10	0	\$28.65	\$198.10	140.75%	\$28.65	
31536	\$197.10	\$266.35	0.00%	\$266.35	\$35.00	\$266.35	0.00%	\$280.80	\$286.80	0.00%	\$14.90	\$286.80	0.00%	\$24.40	\$273.50	0	\$17.05	\$273.50	139.90%	\$17.05	
31548	\$208.10	\$281.25	0.00%	\$281.25	\$30.05	\$281.25	0.00%	\$296.30	\$302.50	0.00%	\$20.35	\$272.00	0.00%	\$24.40	\$273.50	0	\$17.05	\$273.50	139.90%	\$17.05	
31551	\$42																				

32012	\$1,568.45	\$2,029.75	129.41%	\$2,148.75	0.00%	\$19,000.00	\$2,227.15	0.00%	\$19,000.00	\$2,086.05	0.00%	\$56.30	\$2,148.80	0.00%	\$119.05	\$2,048.10	0.00%	\$18.35	\$2,048.10	130.60%	\$18.35	\$2,048.10	130.60%	\$18.35
32013	\$2,494.50	\$2,639.85	129.41%	\$2,640.80	0.00%	\$146.30	\$2,737.15	0.00%	\$146.30	\$2,573.70	0.00%	\$69.70	\$2,640.80	0.00%	\$146.30	\$2,573.70	0.00%	\$22.90	\$2,573.70	130.60%	\$22.90	\$2,573.70	130.60%	\$22.90
32014	\$1,634.55	\$2,115.25	129.41%	\$2,239.30	0.00%	\$124.05	\$2,331.00	0.00%	\$124.05	\$2,173.95	0.00%	\$58.70	\$2,239.30	0.00%	\$124.05	\$2,173.95	0.00%	\$19.25	\$2,173.95	130.60%	\$19.25	\$2,173.95	130.60%	\$19.25
32021	\$886.15	\$798.50	129.40%	\$803.00	0.00%	\$44.50	\$830.50	0.00%	\$44.50	\$779.60	0.00%	\$20.80	\$803.00	0.00%	\$44.50	\$779.60	0.00%	\$6.80	\$779.60	130.60%	\$6.80	\$779.60	130.60%	\$6.80
32022	\$747.75	\$747.75	129.40%	\$791.65	0.00%	\$49.50	\$823.50	0.00%	\$49.50	\$768.55	0.00%	\$20.80	\$791.65	0.00%	\$49.50	\$768.55	0.00%	\$15.85	\$768.55	132.15%	\$15.85	\$768.55	132.15%	\$15.85
32024	\$1,419.90	\$1,837.50	129.41%	\$1,945.25	0.00%	\$107.75	\$2,016.25	0.00%	\$107.75	\$1,888.45	0.00%	\$68.20	\$1,945.25	0.00%	\$107.75	\$1,888.45	0.00%	\$26.90	\$1,888.45	152.75%	\$26.90	\$1,888.45	152.75%	\$26.90
32025	\$1,899.25	\$2,457.80	129.41%	\$2,601.95	0.00%	\$143.20	\$2,661.95	0.00%	\$143.20	\$2,526.00	0.00%	\$68.20	\$2,601.95	0.00%	\$143.20	\$2,526.00	0.00%	\$26.90	\$2,526.00	130.85%	\$26.90	\$2,526.00	130.85%	\$26.90
32026	\$2,045.30	\$2,646.80	129.41%	\$2,801.05	0.00%	\$154.25	\$2,901.05	0.00%	\$154.25	\$2,770.25	0.00%	\$78.45	\$2,801.05	0.00%	\$154.25	\$2,770.25	0.00%	\$29.10	\$2,770.25	130.85%	\$29.10	\$2,770.25	130.85%	\$29.10
32028	\$2,195.75	\$2,862.60	129.41%	\$3,001.15	0.00%	\$166.30	\$3,111.95	0.00%	\$166.30	\$2,974.75	0.00%	\$78.45	\$3,001.15	0.00%	\$166.30	\$2,974.75	0.00%	\$29.10	\$2,974.75	130.60%	\$29.10	\$2,974.75	130.60%	\$29.10
32029	\$1,368.70	\$1,567.10	129.40%	\$1,438.25	0.00%	\$60.40	\$1,500.00	0.00%	\$60.40	\$1,458.85	0.00%	\$55.20	\$1,438.25	0.00%	\$60.40	\$1,458.85	0.00%	\$5.00	\$1,458.85	130.55%	\$5.00	\$1,458.85	130.55%	\$5.00
32030	\$1,073.10	\$1,388.70	129.41%	\$1,470.10	0.00%	\$80.90	\$1,553.75	0.00%	\$80.90	\$1,472.20	0.00%	\$38.50	\$1,470.10	0.00%	\$80.90	\$1,472.20	0.00%	\$15.60	\$1,472.20	151.10%	\$15.60	\$1,472.20	151.10%	\$15.60
32033	\$1,568.45	\$2,029.75	129.41%	\$2,148.75	0.00%	\$118.30	\$2,227.15	0.00%	\$118.30	\$2,086.05	0.00%	\$69.70	\$2,148.75	0.00%	\$118.30	\$2,086.05	0.00%	\$26.90	\$2,086.05	133.80%	\$26.90	\$2,086.05	133.80%	\$26.90
32036	\$1,989.30	\$2,574.35	129.41%	\$2,724.30	0.00%	\$149.95	\$2,824.75	0.00%	\$149.95	\$2,645.75	0.00%	\$71.40	\$2,724.30	0.00%	\$149.95	\$2,645.75	0.00%	\$23.65	\$2,645.75	130.60%	\$23.65	\$2,645.75	130.60%	\$23.65
32039	\$1,597.25	\$2,067.00	129.41%	\$2,188.20	0.00%	\$120.50	\$2,268.05	0.00%	\$120.50	\$2,135.35	0.00%	\$47.30	\$2,188.20	0.00%	\$120.50	\$2,135.35	0.00%	\$19.20	\$2,135.35	130.60%	\$19.20	\$2,135.35	130.60%	\$19.20
32042	\$1,345.55	\$1,741.30	129.41%	\$1,843.40	0.00%	\$101.45	\$1,910.65	0.00%	\$101.45	\$1,757.50	0.00%	\$47.30	\$1,843.40	0.00%	\$101.45	\$1,757.50	0.00%	\$16.20	\$1,757.50	130.60%	\$16.20	\$1,757.50	130.60%	\$16.20
32045	\$503.60	\$561.65	129.40%	\$615.65	0.00%	\$68.90	\$689.90	0.00%	\$68.90	\$634.00	0.00%	\$53.40	\$615.65	0.00%	\$68.90	\$634.00	0.00%	\$6.15	\$634.00	130.60%	\$6.15	\$634.00	130.60%	\$6.15
32046	\$778.20	\$1,007.05	129.41%	\$1,066.10	0.00%	\$58.70	\$1,125.05	0.00%	\$58.70	\$1,035.00	0.00%	\$47.30	\$1,066.10	0.00%	\$58.70	\$1,035.00	0.00%	\$9.25	\$1,035.00	130.60%	\$9.25	\$1,035.00	130.60%	\$9.25
32047	\$906.65	\$1,173.30	129.41%	\$1,242.10	0.00%	\$68.30	\$1,270.40	0.00%	\$68.30	\$1,183.90	0.00%	\$47.30	\$1,242.10	0.00%	\$68.30	\$1,183.90	0.00%	\$10.60	\$1,183.90	130.60%	\$10.60	\$1,183.90	130.60%	\$10.60
32051	\$2,410.45	\$3,119.35	129.41%	\$3,241.30	0.00%	\$181.80	\$3,423.10	0.00%	\$181.80	\$3,205.90	0.00%	\$86.55	\$3,119.35	0.00%	\$181.80	\$3,205.90	0.00%	\$28.65	\$3,205.90	130.60%	\$28.65	\$3,205.90	130.60%	\$28.65
32054	\$2,212.35	\$2,863.00	129.41%	\$3,029.70	0.00%	\$166.70	\$3,150.90	0.00%	\$166.70	\$2,942.45	0.00%	\$78.50	\$3,029.70	0.00%	\$166.70	\$2,942.45	0.00%	\$26.10	\$2,942.45	130.60%	\$26.10	\$2,942.45	130.60%	\$26.10
32057	\$86.15	\$78.50	129.40%	\$80.20	0.00%	\$44.05	\$83.30	0.00%	\$44.05	\$77.60	0.00%	\$21.10	\$80.20	0.00%	\$44.05	\$77.60	0.00%	\$6.80	\$77.60	130.60%	\$6.80	\$77.60	130.60%	\$6.80
32063	\$2,410.45	\$3,119.35	129.41%	\$3,241.30	0.00%	\$181.80	\$3,423.10	0.00%	\$181.80	\$3,205.90	0.00%	\$86.55	\$3,119.35	0.00%	\$181.80	\$3,205.90	0.00%	\$28.65	\$3,205.90	130.60%	\$28.65	\$3,205.90	130.60%	\$28.65
32064	\$2,212.35	\$2,863.00	129.41%	\$3,029.70	0.00%	\$166.70	\$3,150.90	0.00%	\$166.70	\$2,942.45	0.00%	\$78.50	\$3,029.70	0.00%	\$166.70	\$2,942.45	0.00%	\$26.10	\$2,942.45	130.60%	\$26.10	\$2,942.45	130.60%	\$26.10
32065	\$86.15	\$78.50	129.40%	\$80.20	0.00%	\$44.05	\$83.30	0.00%	\$44.05	\$77.60	0.00%	\$21.10	\$80.20	0.00%	\$44.05	\$77.60	0.00%	\$6.80	\$77.60	130.60%	\$6.80	\$77.60	130.60%	\$6.80
32069	\$1,783.05	\$2,307.45	129.41%	\$2,442.75	0.00%	\$134.40	\$2,511.90	0.00%	\$134.40	\$2,344.45	0.00%	\$62.40	\$2,442.75	0.00%	\$134.40	\$2,344.45	0.00%	\$21.15	\$2,344.45	130.60%	\$21.15	\$2,344.45	130.60%	\$21.15
32072	\$49.80	\$64.45	129.38%	\$68.20	0.00%	\$16.20	\$70.65	0.00%	\$16.20	\$66.25	0.00%	\$11.80	\$68.20	0.00%	\$16.20	\$66.25	0.00%	\$0.55	\$66.25	130.50%	\$0.55	\$66.25	130.50%	\$0.55
32075	\$78.10	\$101.05	129.39%	\$106.95	0.00%	\$24.50	\$110.85	0.00%	\$24.50	\$103.85	0.00%	\$16.20	\$106.95	0.00%	\$24.50	\$103.85	0.00%	\$0.75	\$103.85	130.35%	\$0.75	\$103.85	130.35%	\$0.75
32084	\$115.90	\$149.95	129.39%	\$158.75	0.00%	\$35.50	\$164.50	0.00%	\$35.50	\$154.15	0.00%	\$24.40	\$158.75	0.00%	\$35.50	\$154.15	0.00%	\$1.15	\$154.15	130.50%	\$1.15	\$154.15	130.50%	\$1.15
32087	\$211.00	\$276.60	129.39%	\$291.80	0.00%	\$65.55	\$329.80	0.00%	\$65.55	\$283.30	0.00%	\$40.20	\$291.80	0.00%	\$65.55	\$283.30	0.00%	\$2.40	\$283.30	130.50%	\$2.40	\$283.30	130.50%	\$2.40
32094	\$574.20	\$743.05	129.41%	\$786.65	0.00%	\$170.05	\$833.35	0.00%	\$170.05	\$763.90	0.00%	\$90.20	\$786.65	0.00%	\$170.05	\$763.90	0.00%	\$7.15	\$763.90	130.60%	\$7.15	\$763.90	130.60%	\$7.15
32095	\$133.00	\$172.10	129.40%	\$182.20	0.00%	\$40.15	\$188.85	0.00%	\$40.15	\$176.10	0.00%	\$28.65	\$182.20	0.00%	\$40.15	\$176.10	0.00%	\$1.60	\$176.10	130.60%	\$1.60	\$176.10	130.60%	\$1.60
32096	\$267.35	\$346.75	129.40%	\$366.10	0.00%	\$86.55	\$379.60	0.00%	\$86.55	\$335.60	0.00%	\$49.20	\$366.10	0.00%	\$86.55	\$335.60	0.00%	\$3.05	\$335.60	130.55%	\$3.05	\$335.60	130.55%	\$3.05
32099	\$476.75	\$648.70	129.40%	\$675.00	0.00%	\$147.00	\$744.80	0.00%	\$147.00	\$663.20	0.00%	\$84.20	\$675.00	0.00%	\$147.00	\$663.20	0.00%	\$4.20	\$663.20	130.60%	\$4.20	\$663.20	130.60%	\$4.20
32102	\$894.55	\$1,193.85	129.40%	\$1,260.90	0.00%	\$261.15	\$1,382.85	0.00%	\$261.15	\$1,233.35	0.00%	\$152.30	\$1,193.85	0.00%	\$261.15	\$1,233.35	0.00%	\$27.75	\$1,233.35	132.15%	\$27.75	\$1,233.35	132.15%	\$27.75
32103	\$89.55	\$110.93	129.41%	\$110.85	0.00%	\$24.50	\$114.40	0.00%	\$24.50	\$108.70	0.00%	\$16.20	\$110.85	0.00%	\$24.50	\$108.70	0.00%	\$1.25	\$108.70	130.55%	\$1.25	\$108.70	130.55%	\$1.25
32104	\$1,040.20	\$1,346.10	129.41%	\$1,424.50	0.00%	\$78.40	\$1,503.00	0.00%	\$78.40	\$1,424.50	0.00%	\$53.40	\$1,424.50	0.00%	\$78.40	\$1,424.50	0.00%	\$6.15	\$1,424.50	132.15%	\$6.15	\$1,424.50	132.15%	\$6.15
32105	\$503.60	\$651.65	129.40%	\$689.90	0.00%	\$68.90	\$689.90	0.00%	\$68.90	\$634.00	0.00%	\$53.40	\$689.90	0.00%	\$68.90	\$634.00	0.00%	\$6.15	\$634.00	130.60%	\$6.15	\$634.00	130.60%	\$6.15
32106	\$1,410.20	\$1,837.50	129.41%	\$1,945.25	0.00%	\$118.30	\$2,016.25	0.00%	\$118.30	\$1,888.45	0.00%	\$69.70	\$1,945.25	0.00%	\$118.30	\$1,888.45	0.00%	\$28.65	\$1,888.45	132.10%	\$28.65	\$1,888.45	132.10%	\$28.65
32108	\$1,040.20	\$1,346.10	129.41%	\$1,424.50	0.00%	\$78.40	\$1,503.00	0.00%	\$78.40	\$1,424.50	0.00%	\$53.40	\$1,424.50	0.00%	\$78.40	\$1,424.50	0.00%	\$6.15	\$1,424.50	130.60%	\$6.15	\$1,424.50	130.60%	\$6.15
32111	\$699.40	\$894.55	129.41%	\$904.20	0.00%	\$100.35	\$904.20	0.00%	\$100.35	\$838.30	0.00%	\$65.90	\$904.20	0.00%	\$100.35	\$838.30	0.00%	\$10.35	\$838.30	146.10%	\$10.35	\$838.30	146.10%	\$10.35
32112	\$803.55	\$1,039.85	129.41%	\$1,109.85	0.00%	\$110.15	\$1,200.85	0.00%	\$110.15	\$1,088.70	0.00%	\$65.90	\$1,109.85	0.00%	\$110.15	\$1,088.70	0.00%	\$13.75	\$1,088.70	130.60%	\$13.75	\$1,088.70	130.60%	\$13.75
32114	\$181.50	\$234.90	129.41%	\$248.65	0.00%	\$61.10	\$257.70	0.00%	\$61.10	\$248.65	0.00%	\$40.20	\$248.65	0.00%	\$61.10	\$248.65	0.00%	\$2.50	\$248.65	130.80%	\$2.50	\$248.65	130.80%	\$2.50
32115	\$132.05	\$170.85	129.38%	\$180.90	0.00%	\$46.65	\$190.90	0.00%	\$46.65	\$176.65	0.00%	\$28.65	\$180.90	0.00%	\$46.65	\$176.65	0.00%	\$1.65	\$176.65	130.65%	\$1.65	\$176.65	130.65%	\$1.65
32117	\$1,040.20	\$1,346.10	129.41%	\$1,424.50	0.00%	\$78.40	\$1,503.00	0.00%	\$78.40	\$1,424.50	0.00%	\$53.40	\$1,424.50	0.00%	\$78.40	\$1,424.50	0.00%	\$6.15	\$1,424.50	130.60%	\$6.15	\$1,424.50	130.60%	\$6.15
32121	\$267.35	\$346.75	129.40%	\$366.10	0.00%	\$86.55	\$379.60	0.00%	\$86.55	\$335.60	0.00%	\$49.20	\$366.10	0.00%	\$86.55	\$335.60	0.00%	\$3.05	\$335.60	130.55%	\$3.05	\$335.60	130.55%	\$3.05
32123	\$46.75	\$61.65	129.40%	\$64.70	0.00%	\$16.20	\$70.65	0.00%	\$16.20	\$66.25	0.00%													

38307	1844.6	\$2,487.65	1.3486	\$2,711.55	\$2,527.10	0.00%	\$394.65	\$2,619.30	0.00%	\$1,316.65	\$2,582.45	0.00%	\$94.80	\$2,600.90	0.00%	\$113.25	\$2,463.80	0	-\$23.85	\$2,463.80	133.55%	\$2,463.80	133.55%	\$2,463.80	133.55%	-\$23.85
38308	2122.25	\$2,862.05	1.3486	\$3,119.70	\$2,907.65	0.00%	\$400.00	\$2,813.55	0.00%	\$1,515.50	\$2,971.15	0.00%	\$109.10	\$2,600.90	0.00%	\$130.30	\$2,925.50	0	\$63.45	\$2,925.50	127.85%	\$2,925.50	127.85%	\$2,925.50	127.85%	\$63.45
38309	\$1,250.70	\$1,686.70	1.3486	\$1,823.60	\$1,707.00	0.00%	\$80.30	\$1,613.55	0.00%	\$1,303.30	\$1,369.85	0.00%	\$64.30	\$1,792.35	0.00%	\$76.80	\$1,616.10	0	-\$70.60	\$1,616.10	137.85%	\$1,616.10	137.85%	\$1,616.10	137.85%	-\$70.60
38310	2399.9	\$3,526.50	1.3486	\$3,527.85	\$3,527.85	0.00%	\$1,135.35	\$3,407.80	0.00%	\$1,713.30	\$3,589.85	0.00%	\$194.30	\$2,600.90	0.00%	\$147.35	\$3,387.10	0	\$230.85	\$3,387.10	141.15%	\$3,387.10	141.15%	\$3,387.10	141.15%	\$230.85
38311	1844.6	\$2,487.65	1.3486	\$2,711.55	\$2,527.10	0.00%	\$394.65	\$2,619.30	0.00%	\$1,316.65	\$2,582.45	0.00%	\$94.80	\$2,600.90	0.00%	\$113.25	\$2,463.80	0	-\$23.85	\$2,463.80	133.55%	\$2,463.80	133.55%	\$2,463.80	133.55%	-\$23.85
38312	2399.9	\$3,526.50	1.3486	\$3,527.85	\$3,527.85	0.00%	\$1,135.35	\$3,407.80	0.00%	\$1,713.30	\$3,589.85	0.00%	\$194.30	\$2,600.90	0.00%	\$147.35	\$3,387.10	0	\$230.85	\$3,387.10	141.15%	\$3,387.10	141.15%	\$3,387.10	141.15%	\$230.85
38313	3831.1	\$5,262.05	1.3486	\$5,527.85	\$5,197.45	0.00%	\$1,540.00	\$5,047.80	0.00%	\$2,120.00	\$5,399.85	0.00%	\$249.80	\$3,600.90	0.00%	\$247.35	\$5,387.10	0	\$1,710.55	\$5,387.10	156.85%	\$5,387.10	156.85%	\$5,387.10	156.85%	\$1,710.55
38314	2399.9	\$3,526.50	1.3486	\$3,527.85	\$3,527.85	0.00%	\$1,135.35	\$3,407.80	0.00%	\$1,713.30	\$3,589.85	0.00%	\$194.30	\$2,600.90	0.00%	\$147.35	\$3,387.10	0	\$230.85	\$3,387.10	141.15%	\$3,387.10	141.15%	\$3,387.10	141.15%	\$230.85
38315	3831.1	\$5,262.05	1.3486	\$5,527.85	\$5,197.45	0.00%	\$1,540.00	\$5,047.80	0.00%	\$2,120.00	\$5,399.85	0.00%	\$249.80	\$3,600.90	0.00%	\$247.35	\$5,387.10	0	\$1,710.55	\$5,387.10	156.85%	\$5,387.10	156.85%	\$5,387.10	156.85%	\$1,710.55
38316	1648.95	\$2,223.75	1.3486	\$2,423.95	\$2,259.05	0.00%	\$344.70	\$2,164.45	0.00%	\$1,493.10	\$2,308.55	0.00%	\$107.35	\$2,600.90	0.00%	\$128.25	\$2,487.60	0	\$456.15	\$2,487.60	156.70%	\$2,487.60	156.70%	\$2,487.60	156.70%	\$456.15
38317	2088.8	\$2,816.95	1.3486	\$3,078.75	\$2,942.00	0.00%	\$366.90	\$2,575.10	0.00%	\$1,681.00	\$3,033.05	0.00%	\$184.80	\$2,600.90	0.00%	\$141.25	\$3,033.05	0	\$361.85	\$3,033.05	150.85%	\$3,033.05	150.85%	\$3,033.05	150.85%	\$361.85
38318	2646.45	\$3,191.40	1.3486	\$3,478.70	\$3,259.05	0.00%	\$447.00	\$2,812.05	0.00%	\$1,717.70	\$3,310.05	0.00%	\$107.35	\$2,600.90	0.00%	\$128.25	\$3,273.10	0	\$560.35	\$3,273.10	156.70%	\$3,273.10	156.70%	\$3,273.10	156.70%	\$560.35
38319	2646.45	\$3,191.40	1.3486	\$3,478.70	\$3,259.05	0.00%	\$447.00	\$2,812.05	0.00%	\$1,717.70	\$3,310.05	0.00%	\$107.35	\$2,600.90	0.00%	\$128.25	\$3,273.10	0	\$560.35	\$3,273.10	156.70%	\$3,273.10	156.70%	\$3,273.10	156.70%	\$560.35
38320	2088.8	\$2,816.95	1.3486	\$3,078.75	\$2,942.00	0.00%	\$366.90	\$2,575.10	0.00%	\$1,681.00	\$3,033.05	0.00%	\$184.80	\$2,600.90	0.00%	\$141.25	\$3,033.05	0	\$361.85	\$3,033.05	150.85%	\$3,033.05	150.85%	\$3,033.05	150.85%	\$361.85
38321	3832.2	\$5,262.05	1.3486	\$5,527.85	\$5,197.45	0.00%	\$1,540.00	\$5,047.80	0.00%	\$2,120.00	\$5,399.85	0.00%	\$249.80	\$3,600.90	0.00%	\$247.35	\$5,387.10	0	\$1,710.55	\$5,387.10	156.85%	\$5,387.10	156.85%	\$5,387.10	156.85%	\$1,710.55
38322	3832.2	\$5,262.05	1.3486	\$5,527.85	\$5,197.45	0.00%	\$1,540.00	\$5,047.80	0.00%	\$2,120.00	\$5,399.85	0.00%	\$249.80	\$3,600.90	0.00%	\$247.35	\$5,387.10	0	\$1,710.55	\$5,387.10	156.85%	\$5,387.10	156.85%	\$5,387.10	156.85%	\$1,710.55
38323	2366.45	\$3,191.40	1.3486	\$3,478.70	\$3,259.05	0.00%	\$447.00	\$2,812.05	0.00%	\$1,717.70	\$3,310.05	0.00%	\$107.35	\$2,600.90	0.00%	\$128.25	\$3,273.10	0	\$560.35	\$3,273.10	156.70%	\$3,273.10	156.70%	\$3,273.10	156.70%	\$560.35
38324	2366.45	\$3,191.40	1.3486	\$3,478.70	\$3,259.05	0.00%	\$447.00	\$2,812.05	0.00%	\$1,717.70	\$3,310.05	0.00%	\$107.35	\$2,600.90	0.00%	\$128.25	\$3,273.10	0	\$560.35	\$3,273.10	156.70%	\$3,273.10	156.70%	\$3,273.10	156.70%	\$560.35
38325	3835.9	\$5,664.50	1.3485%	\$6,038.70	\$5,788.60	0.00%	\$378.60	\$5,410.05	0.00%	\$2,021.00	\$6,024.05	0.00%	\$249.80	\$3,600.90	0.00%	\$247.35	\$6,024.05	0	\$373.50	\$6,024.05	139.25%	\$6,024.05	139.25%	\$6,024.05	139.25%	\$373.50
38353	3835.9	\$5,664.50	1.3485%	\$6,038.70	\$5,788.60	0.00%	\$378.60	\$5,410.05	0.00%	\$2,021.00	\$6,024.05	0.00%	\$249.80	\$3,600.90	0.00%	\$247.35	\$6,024.05	0	\$373.50	\$6,024.05	139.25%	\$6,024.05	139.25%	\$6,024.05	139.25%	\$373.50
38356	2984.25	\$4,024.56	1.3486	\$4,294.25	\$4,150.70	0.00%	\$113.86	\$3,986.90	0.00%	\$3,031.31	\$3,700.50	0.00%	\$324.80	\$2,600.90	0.00%	\$174.86	\$3,890.30	0	-\$134.26	\$3,890.30	130.25%	\$3,890.30	130.25%	\$3,890.30	130.25%	-\$134.26
38359	3835.9	\$5,664.50	1.3485%	\$6,038.70	\$5,788.60	0.00%	\$378.60	\$5,410.05	0.00%	\$2,021.00	\$6,024.05	0.00%	\$249.80	\$3,600.90	0.00%	\$247.35	\$6,024.05	0	\$373.50	\$6,024.05	139.25%	\$6,024.05	139.25%	\$6,024.05	139.25%	\$373.50
38362	\$4,900.50	\$6,625.80	1.3486	\$7,179.85	\$6,773.30	0.00%	\$462.55	\$6,310.80	0.00%	\$5,308.25	\$6,870.55	0.00%	\$562.30	\$2,600.90	0.00%	\$420.70	\$6,870.55	0	\$1,069.85	\$6,870.55	147.30%	\$6,870.55	147.30%	\$6,870.55	147.30%	\$1,069.85
38365	\$2,626.80	\$3,733.85	1.4047%	\$4,187.60	\$3,779.85	0.00%	\$406.75	\$3,373.10	0.00%	\$3,882.00	\$4,187.60	0.00%	\$304.60	\$2,600.90	0.00%	\$241.60	\$4,187.60	0	\$506.00	\$4,187.60	166.15%	\$4,187.60	166.15%	\$4,187.60	166.15%	\$506.00
38368	\$1,274.20	\$1,779.85	1.4047%	\$2,072.25	\$1,857.60	0.00%	\$214.65	\$1,642.95	0.00%	\$1,333.15	\$1,857.60	0.00%	\$214.65	\$2,600.90	0.00%	\$162.95	\$1,857.60	0	\$214.65	\$1,857.60	147.40%	\$1,857.60	147.40%	\$1,857.60	147.40%	\$214.65
38415	586.15	\$792.25	1.3516%	\$903.00	\$835.25	0.00%	\$67.75	\$766.50	0.00%	\$766.50	\$835.25	0.00%	\$68.75	\$2,600.90	0.00%	\$68.75	\$835.25	0	\$68.75	\$835.25	141.00%	\$835.25	141.00%	\$835.25	141.00%	\$68.75
38416	586.15	\$792.25	1.3516%	\$903.00	\$835.25	0.00%	\$67.75	\$766.50	0.00%	\$766.50	\$835.25	0.00%	\$68.75	\$2,600.90	0.00%	\$68.75	\$835.25	0	\$68.75	\$835.25	141.00%	\$835.25	141.00%	\$835.25	141.00%	\$68.75
38417	\$997.25	\$1,348.70	1.3524%	\$1,480.15	\$1,478.00	0.00%	\$11.15	\$1,466.85	0.00%	\$2,040.00	\$2,040.00	0.00%	\$73.15	\$2,600.90	0.00%	\$73.15	\$1,478.00	0	\$11.15	\$1,478.00	147.45%	\$1,478.00	147.45%	\$1,478.00	147.45%	\$11.15
38418	\$997.25	\$1,348.70	1.3524%	\$1,480.15	\$1,478.00	0.00%	\$11.15	\$1,466.85	0.00%	\$2,040.00	\$2,040.00	0.00%	\$73.15	\$2,600.90	0.00%	\$73.15	\$1,478.00	0	\$11.15	\$1,478.00	147.45%	\$1,478.00	147.45%	\$1,478.00	147.45%	\$11.15
38419	\$1,885.25	\$2,790.00	1.5000%	\$3,391.35	\$2,988.90	0.00%	\$402.45	\$2,586.45	0.00%	\$2,988.90	\$3,391.35	0.00%	\$402.45	\$2,600.90	0.00%	\$391.35	\$2,988.90	0	\$402.45	\$2,988.90	152.40%	\$2,988.90	152.40%	\$2,988.90	152.40%	\$402.45
38420	\$2,446.00	\$3,666.90	1.5000%	\$4,599.15	\$3,988.90	0.00%	\$610.25	\$3,378.65	0.00%	\$3,988.90	\$4,599.15	0.00%	\$610.25	\$2,600.90	0.00%	\$577.95	\$3,988.90	0	\$610.25	\$3,988.90	152.40%	\$3,988.90	152.40%	\$3,988.90	152.40%	\$610.25
38421	\$1,594.05	\$2,155.80	1.5000%	\$2,865.85	\$2,362.80	0.00%	\$503.05	\$2,155.80	0.00%	\$2,362.80	\$2,865.85	0.00%	\$503.05	\$2,600.90	0.00%	\$459.85	\$2,362.80	0	\$503.05	\$2,362.80	147.40%	\$2,362.80	147.40%	\$2,362.80	147.40%	\$503.05
38422	\$382.65	\$573.95	1.5000%	\$642.25	\$568.40	0.00%	\$83.85	\$534.55	0.00%	\$1,480.15	\$1,480.15	0.00%	\$73.15	\$2,600.90	0.00%	\$73.15	\$568.40	0	\$83.85	\$568.40	147.45%	\$568.40	147.45%	\$568.40	147.45%	\$83.85
38423	\$997.25	\$1,348.70	1.3524%	\$1,480.15	\$1,478.00	0.00%	\$11.15	\$1,466.85	0.00%	\$2,040.00	\$2,040.00	0.00%	\$73.15	\$2,600.90	0.00%	\$73.15	\$1,478.00	0	\$11.15	\$1,478.00	147.45%	\$1,478.00	147.45%	\$1,478.00	147.45%	\$11.15
38424	\$997.25	\$1,348.70	1.3524%	\$1,480.15	\$1,478.00	0.00%	\$11.15	\$1,466.85	0.00%	\$2,040.00	\$2,040.00	0.00%	\$73.15	\$2,600.90	0.00%	\$73.15	\$1,478.00	0	\$11.15	\$1,478.00	147.45%	\$1,478.00	147.45%	\$1,478.00	147.45%	\$11.15
38425	\$628.75	\$903.15	1.5000%	\$1,066.70	\$950.00	0.00%	\$116.70	\$833.30	0.00%	\$1,480.15	\$1,480.15	0.00%	\$73.15	\$2,600.90	0.00%	\$73.15	\$950.00	0	\$116.70	\$950.00	147.40%	\$950.00	147.40%	\$950.00	147.40%	\$116.70
38426	\$471.70	\$707.55	1.5000%	\$842.75	\$750.00	0.00%	\$92.75	\$657.25	0.00%	\$1,480.15	\$1,480.15	0.00%	\$73.15	\$2,600.90	0.00%	\$73.15	\$750.00	0	\$92.75	\$750.00	171.95%	\$750.00	171.95%	\$750.00	171.95%	\$92.75
38427	\$1,231.40	\$1,665.35	1.3524%	\$1,827.60	\$1,665.35	0.00%	\$162.25	\$1,503.10	0.00%	\$1,827.60	\$1,827.60	0.00%	\$162.25	\$2,600.90	0.00%	\$162.25	\$1,665.35	0	\$162.25	\$1,665.35	147.45%	\$1,665.35	147.45%	\$1,665.35	147.45%	\$162.25
38428	256.5	\$394.75	1.5	\$441.40	\$412.60	0.00%	\$28.80	\$383.80	0.00%	\$441.40	\$441.40	0.00%	\$28.80	\$2,600.90	0.00%	\$28.80	\$412.60	0	\$28.80	\$412.60	171.95%	\$412.60	171.95%	\$412.60	171.95%	\$28.80
38430	\$634.60	\$888.15	1.3523%	\$994.90	\$849.80	0.00%	\$145.10	\$704.70	0.00%	\$1,480.15	\$1,480.15	0.00%	\$73.15	\$2,600.90	0.00%	\$73.15	\$849.80	0	\$145.10	\$849.80	147.45%	\$849.80	147.45%	\$849.80	147.45%	\$145.10
38436	\$259.85	\$385.10	1.3524%	\$450.00	\$385.10	0.0																				

38517	3055.85	\$4,292.55	1.4047	\$4,553.20	0.00%	\$260.65	\$4,553.20	\$352.30	\$4,461.55	0.00%	\$169.00	\$4,614.35	0.00%	\$321.80	\$5,065.60	0	\$773.05	\$5,066.00	165.80%	\$773.45
38518	\$2,984.25	\$4,192.25	140.48%	\$4,452.85	0.00%	\$236.80	\$4,452.85	\$4,357.00	\$4,357.00	0.00%	\$164.75	\$4,506.20	0.00%	\$754.65	\$4,946.90	0	\$754.65	\$4,946.90	165.74%	\$754.75
38519	1100	\$1,545.15	1.4047	\$1,639.00	0.00%	\$93.85	\$1,639.00	\$1,266.85	\$1,266.85	0.00%	\$126.85	\$1,561.00	0.00%	\$583.45	\$2,184.60	0	\$583.45	\$2,184.60	198.60%	\$639.45
38520	\$2,337.50	\$3,483.50	140.47%	\$3,469.35	0.00%	\$185.85	\$3,469.35	\$2,847.75	\$2,847.75	0.00%	\$129.25	\$3,429.65	0.00%	\$806.40	\$4,236.05	0	\$806.40	\$4,236.05	165.80%	\$591.60
38521	\$2,942.90	\$4,133.90	140.47%	\$4,040.00	0.00%	\$239.90	\$4,040.00	\$3,588.35	\$3,588.35	0.00%	\$162.75	\$4,443.80	0.00%	\$309.90	\$4,804.40	0	\$309.90	\$4,804.40	165.80%	\$744.80
38522	4236.45	\$5,950.95	1.4047	\$5,693.60	0.00%	\$742.65	\$5,693.60	\$4,889.40	\$4,889.40	0.00%	\$234.25	\$5,397.05	0.00%	\$702.40	\$6,099.45	0	\$1,072.45	\$7,023.40	165.80%	\$1,072.45
38523	3374	\$4,739.45	140.47%	\$4,707.25	0.00%	\$562.85	\$4,707.25	\$4,329.25	\$4,329.25	0.00%	\$488.00	\$5,097.25	0.00%	\$353.30	\$5,593.20	0	\$817.40	\$6,410.60	165.80%	\$817.40
38524	\$3,230.50	\$4,537.90	140.47%	\$4,794.55	0.00%	\$332.20	\$4,794.55	\$4,409.00	\$4,409.00	0.00%	\$215.45	\$5,880.40	0.00%	\$410.10	\$6,455.90	0	\$817.40	\$6,455.90	165.74%	\$817.40
38525	5083.7	\$7,141.05	1.4047	\$7,574.70	0.00%	\$433.65	\$7,574.70	\$6,866.15	\$6,866.15	0.00%	\$742.20	\$7,676.40	0.00%	\$1,287.05	\$8,428.10	0	\$1,287.05	\$8,428.10	165.80%	\$1,287.05
38526	\$1,938.45	\$3,103.90	140.47%	\$3,279.60	0.00%	\$164.35	\$3,279.60	\$2,892.40	\$2,892.40	0.00%	\$227.65	\$3,326.55	0.00%	\$523.25	\$3,613.80	0	\$523.25	\$3,613.80	165.75%	\$523.25
38527	\$2,067.60	\$2,939.15	140.47%	\$2,865.85	0.00%	\$164.35	\$2,865.85	\$2,378.50	\$2,378.50	0.00%	\$187.15	\$2,927.05	0.00%	\$403.55	\$3,242.70	0	\$403.55	\$3,242.70	165.80%	\$403.55
38528	\$1,594.05	\$2,239.15	140.47%	\$2,365.85	0.00%	\$126.70	\$2,365.85	\$1,776.50	\$1,776.50	0.00%	\$167.85	\$2,407.00	0.00%	\$453.30	\$2,642.70	0	\$453.30	\$2,642.70	165.80%	\$453.30
38529	\$609.55	\$1,400.85	140.47%	\$1,480.15	0.00%	\$79.30	\$1,480.15	\$1,067.50	\$1,067.50	0.00%	\$106.75	\$1,505.85	0.00%	\$105.00	\$1,653.30	0	\$126.60	\$1,653.30	165.80%	\$126.60
38530	\$498.55	\$700.30	140.47%	\$746.15	0.00%	\$49.80	\$746.15	\$608.25	\$608.25	0.00%	\$77.90	\$752.80	0.00%	\$52.50	\$826.90	0	\$126.60	\$826.90	165.85%	\$126.60
38531	\$588.90	\$785.10	140.47%	\$836.60	0.00%	\$44.50	\$836.60	\$686.25	\$686.25	0.00%	\$81.60	\$843.95	0.00%	\$58.85	\$926.80	0	\$141.70	\$926.80	165.85%	\$141.70
38532	\$1,594.05	\$2,239.15	140.47%	\$2,365.85	0.00%	\$126.70	\$2,365.85	\$1,870.00	\$1,870.00	0.00%	\$230.95	\$2,407.00	0.00%	\$58.85	\$2,642.70	0	\$503.55	\$2,642.70	165.80%	\$503.55
38533	\$1,938.45	\$2,939.15	140.47%	\$2,865.85	0.00%	\$164.35	\$2,865.85	\$2,333.15	\$2,333.15	0.00%	\$233.15	\$3,000.30	0.00%	\$209.25	\$3,294.10	0	\$503.55	\$3,294.10	165.80%	\$503.55
38534	\$2,067.60	\$2,939.15	140.47%	\$1,177.40	0.00%	\$1,187.20	\$1,177.40	\$96.65	\$1,188.95	0.00%	\$43.85	\$1,197.80	0.00%	\$83.50	\$1,314.70	0	\$200.40	\$1,314.70	165.75%	\$200.40
38535	\$891.35	\$1,252.10	140.47%	\$1,323.00	0.00%	\$70.90	\$1,323.00	\$1,089.95	\$1,089.95	0.00%	\$49.25	\$1,345.95	0.00%	\$93.50	\$1,477.80	0	\$525.70	\$1,477.80	165.80%	\$525.70
38536	\$676.70	\$978.60	140.46%	\$1,033.95	0.00%	\$55.35	\$1,033.95	\$85.20	\$84.40	0.00%	\$31.60	\$1,052.00	0.00%	\$73.40	\$1,155.00	0	\$176.40	\$1,155.00	165.80%	\$176.40
38537	\$577.00	\$810.50	140.47%	\$866.20	0.00%	\$45.75	\$866.20	\$720.20	\$720.20	0.00%	\$84.20	\$871.25	0.00%	\$60.75	\$956.45	0	\$145.90	\$956.45	165.75%	\$145.90
38538	\$1,567.65	\$2,202.10	140.47%	\$2,326.65	0.00%	\$124.55	\$2,326.65	\$1,806.95	\$2,288.75	0.00%	\$288.75	\$2,367.15	0.00%	\$165.05	\$2,599.00	0	\$396.90	\$2,599.00	165.80%	\$396.90
38539	\$2,090.50	\$2,936.55	140.47%	\$3,102.55	0.00%	\$166.00	\$3,102.55	\$2,409.95	\$2,409.95	0.00%	\$55.15	\$3,156.65	0.00%	\$220.10	\$3,465.75	0	\$529.15	\$3,465.75	165.80%	\$529.15
38540	\$997.25	\$1,400.85	140.47%	\$1,480.15	0.00%	\$79.30	\$1,480.15	\$1,183.95	\$1,183.95	0.00%	\$290.35	\$2,999.70	0.00%	\$69.35	\$1,470.20	0	\$69.35	\$1,470.20	147.45%	\$69.35
38541	\$1,986.55	\$2,790.55	140.47%	\$2,948.40	0.00%	\$157.90	\$2,948.40	\$1,835.50	\$2,906.50	0.00%	\$296.50	\$3,264.50	0.00%	\$525.45	\$3,793.20	0	\$502.70	\$3,793.20	165.75%	\$502.70
38542	\$2,235.95	\$3,140.85	140.47%	\$3,318.50	0.00%	\$177.65	\$3,318.50	\$2,666.00	\$2,666.00	0.00%	\$123.65	\$3,376.30	0.00%	\$565.85	\$3,706.70	0	\$565.85	\$3,706.70	165.80%	\$565.85
38543	\$2,235.95	\$3,140.85	140.47%	\$3,318.50	0.00%	\$177.65	\$3,318.50	\$2,454.45	\$2,454.45	0.00%	\$123.65	\$3,376.30	0.00%	\$529.45	\$3,467.80	0	\$529.45	\$3,467.80	165.80%	\$529.45
38544	\$2,091.80	\$2,938.35	140.47%	\$3,102.15	0.00%	\$166.05	\$3,102.15	\$2,91.20	\$3,622.55	0.00%	\$261.25	\$3,746.60	0.00%	\$562.95	\$4,113.30	0	\$562.95	\$4,113.30	165.80%	\$562.95
38545	\$2,481.20	\$3,485.35	140.47%	\$3,682.65	0.00%	\$197.30	\$3,682.65	\$1,829.00	\$2,272.40	0.00%	\$66.05	\$3,491.25	0.00%	\$238.45	\$3,754.40	0	\$281.15	\$3,754.40	165.80%	\$281.15
38546	\$1,160.15	\$1,560.15	140.47%	\$1,648.40	0.00%	\$88.25	\$1,648.40	\$1,318.00	\$1,621.55	0.00%	\$111.55	\$1,677.10	0.00%	\$211.50	\$1,841.30	0	\$208.35	\$1,841.30	165.80%	\$208.35
38547	\$2,091.80	\$2,938.35	140.47%	\$2,865.85	0.00%	\$164.35	\$2,865.85	\$2,333.15	\$2,932.90	0.00%	\$233.15	\$3,033.35	0.00%	\$109.65	\$3,143.30	0	\$479.70	\$3,143.30	165.80%	\$479.70
38548	\$1,938.45	\$2,939.15	140.47%	\$2,865.85	0.00%	\$164.35	\$2,865.85	\$2,829.90	\$2,829.90	0.00%	\$123.65	\$3,376.30	0.00%	\$235.40	\$3,706.20	0	\$566.05	\$3,706.20	165.80%	\$566.05
38549	\$2,067.60	\$2,939.15	140.47%	\$3,318.50	0.00%	\$177.65	\$3,318.50	\$2,666.00	\$2,666.00	0.00%	\$123.65	\$3,376.30	0.00%	\$249.20	\$3,943.20	0	\$449.25	\$3,943.20	165.80%	\$449.25
38550	\$1,775.45	\$3,140.85	140.47%	\$3,333.05	0.00%	\$141.10	\$3,333.05	\$2,699.95	\$2,699.95	0.00%	\$98.20	\$3,260.95	0.00%	\$489.25	\$3,723.20	0	\$389.35	\$3,723.20	165.80%	\$389.35
38551	\$2,245.70	\$3,140.85	140.47%	\$3,333.05	0.00%	\$141.10	\$3,333.05	\$1,829.00	\$2,272.40	0.00%	\$66.05	\$3,491.25	0.00%	\$238.45	\$3,754.40	0	\$573.40	\$3,754.40	165.80%	\$573.40
38552	\$2,245.70	\$3,140.85	140.47%	\$3,333.05	0.00%	\$141.10	\$3,333.05	\$1,800.00	\$2,272.40	0.00%	\$66.05	\$3,491.25	0.00%	\$238.45	\$3,754.40	0	\$573.40	\$3,754.40	165.80%	\$573.40
38553	\$2,245.70	\$3,140.85	140.47%	\$3,333.05	0.00%	\$141.10	\$3,333.05	\$1,800.00	\$2,272.40	0.00%	\$66.05	\$3,491.25	0.00%	\$238.45	\$3,754.40	0	\$573.40	\$3,754.40	165.80%	\$573.40
38554	\$2,245.70	\$3,140.85	140.47%	\$3,333.05	0.00%	\$141.10	\$3,333.05	\$1,800.00	\$2,272.40	0.00%	\$66.05	\$3,491.25	0.00%	\$238.45	\$3,754.40	0	\$573.40	\$3,754.40	165.80%	\$573.40
38555	\$2,245.70	\$3,140.85	140.47%	\$3,333.05	0.00%	\$141.10	\$3,333.05	\$1,800.00	\$2,272.40	0.00%	\$66.05	\$3,491.25	0.00%	\$238.45	\$3,754.40	0	\$573.40	\$3,754.40	165.80%	\$573.40
38556	\$2,245.70	\$3,140.85	140.47%	\$3,333.05	0.00%	\$141.10	\$3,333.05	\$1,800.00	\$2,272.40	0.00%	\$66.05	\$3,491.25	0.00%	\$238.45	\$3,754.40	0	\$573.40	\$3,754.40	165.80%	\$573.40
38557	\$2,245.70	\$3,140.85	140.47%	\$3,333.05	0.00%	\$141.10	\$3,333.05	\$1,800.00	\$2,272.40	0.00%	\$66.05	\$3,491.25	0.00%	\$238.45	\$3,754.40	0	\$573.40	\$3,754.40	165.80%	\$573.40
38558	\$2,245.70	\$3,140.85	140.47%	\$3,333.05	0.00%	\$141.10	\$3,333.05	\$1,800.00	\$2,272.40	0.00%	\$66.05	\$3,491.25	0.00%	\$238.45	\$3,754.40	0	\$573.40	\$3,754.40	165.80%	\$573.40
38559	\$2,245.70	\$3,140.85	140.47%	\$3,333.05	0.00%	\$141.10	\$3,333.05	\$1,800.00	\$2,272.40	0.00%	\$66.05	\$3,491.25	0.00%	\$238.45	\$3,754.40	0	\$573.40	\$3,754.40	165.80%	\$573.40
38560	\$2,245.70	\$3,140.85	140.47%	\$3,333.05	0.00%	\$141.10	\$3,333.05	\$1,800.00	\$2,272.40	0.00%	\$66.05	\$3,491.25	0.00%	\$238.45	\$3,754.40	0	\$573.40	\$3,754.40	165.80%	\$573.40
38561	\$2,245.70	\$3,140.85	140.47%	\$3,333.05	0.00%	\$141.10	\$3,333.05	\$1,800.00	\$2,272.40	0.00%	\$66.05	\$3,491.25	0.00%	\$238.45	\$3,754.40	0	\$573.40	\$3,754.40	165.80%	\$573.40
38562	\$2,245.70	\$3,140.85	140.47%	\$3,333.05	0.00%	\$141.10	\$3,333.05	\$1,800.00	\$2,272.40	0.00%	\$66.05	\$3,491.25	0.00%	\$238.45	\$3,754.40	0	\$573.40	\$3,754.40	165.80%	\$573.40
38563	\$2,245.70	\$3,140.85	140.47%	\$3,333.05	0.00%	\$141.10	\$3,333.05	\$1,800.00	\$2,272.40	0.00%	\$66.05	\$3,491.25	0.00%	\$238.45	\$3,754.40	0	\$573.40	\$3,754.40	165.80%	\$573.40
38564	\$2,245.70	\$3,140.85	140.47%	\$3,333.05	0.00%	\$141.10	\$3,333.05	\$1,800.00	\$2,272.40	0.00%	\$66.05	\$3,491.25	0.00%	\$238.45	\$3,754.40	0	\$573.40	\$3,754.40	165.80%	\$573.40
38565	\$2,245.70	\$3,140.85	140.47%	\$3,333.05	0.00%	\$141.10	\$3,333.05	\$1,800.00	\$2,272.40	0.00%	\$66.05	\$3,491.25	0.00%	\$238.45	\$3,754.40	0	\$573.40	\$3,754.40	165.80%	\$573.40
38566	\$2,245.70	\$3,140.85	140.47%	\$3,333.05	0.00%	\$141.10	\$3,333.05	\$1,800.00	\$2,272.40	0.00%	\$66.05	\$3,491.25	0.00%	\$238.45	\$3,754.40	0	\$573.40	\$3,754.40	165.80%	\$573.40
38567	\$2,245.70	\$3,140.85	140.47%	\$3,333.05	0.00%	\$141.10	\$3,333.05	\$1,800.00	\$2,272.40	0.00%	\$66.05	\$3,491.25	0.00%	\$238.45	\$3,754.40	0	\$573.40	\$3,754.40	165.80%	\$573.40
38568	\$2,245.70	\$3,140.85	140.47%	\$3,333.05	0.00%	\$141.10	\$3,333.05	\$1,800.00	\$2,272.40	0.00%</										

39133	\$21.45	\$15.88%	\$242.80	\$-8.65	\$265.60	0.00%	\$14.00	\$272.10	0.00%	\$20.65	\$277.90	0	\$26.45	\$277.90	167.50%	\$26.45
39134	\$514.40	\$514.40	\$514.60	\$-18.65	\$567.35	0.00%	\$30.10	\$585.05	0.00%	\$47.80	\$594.00	\$594.00	\$43.95	\$594.00	167.60%	\$567.35
39135	\$521.25	\$521.25	\$521.80	\$-8.65	\$565.60	0.00%	\$14.15	\$573.85	0.00%	\$22.40	\$580.00	\$580.00	\$29.05	\$580.00	169.15%	\$29.05
39136	\$251.45	\$251.45	\$252.60	\$-8.65	\$265.60	0.00%	\$14.00	\$272.10	0.00%	\$20.65	\$277.90	\$277.90	\$26.45	\$277.90	167.50%	\$26.45
39137	\$950.50	\$950.50	\$962.90	\$-32.40	\$1,008.45	0.00%	\$53.45	\$1,039.90	0.00%	\$82.90	\$1,065.00	\$1,065.00	\$110.00	\$1,065.00	169.10%	\$1,065.00
39138	\$1,063.40	\$1,063.40	\$1,026.10	\$-37.30	\$1,103.00	0.00%	\$59.60	\$1,168.10	0.00%	\$78.00	\$1,185.80	\$1,185.80	\$112.40	\$1,185.80	169.05%	\$1,185.80
39139	\$1,427.85	\$1,427.85	\$1,637.60	\$-209.75	\$1,610.05	0.00%	\$173.20	\$1,544.45	0.00%	\$156.00	\$1,698.60	\$1,698.60	\$270.75	\$1,698.60	180.35%	\$270.75
39140	\$461.95	\$461.95	\$445.95	\$-16.00	\$487.80	0.00%	\$25.85	\$503.00	0.00%	\$41.05	\$510.80	\$510.80	\$48.85	\$510.80	167.60%	\$488.85
39141	\$557.45	\$557.45	\$538.15	\$-19.30	\$588.65	0.00%	\$31.20	\$607.00	0.00%	\$49.55	\$629.00	\$629.00	\$54.85	\$629.00	170.80%	\$548.85
39142	\$709.85	\$709.85	\$709.85	\$-25.45	\$735.30	0.00%	\$48.45	\$783.75	0.00%	\$65.40	\$773.00	\$773.00	\$77.80	\$773.00	167.65%	\$778.00
39143	\$1,036.70	\$1,036.70	\$1,036.70	\$-37.00	\$1,073.70	0.00%	\$59.80	\$1,162.70	0.00%	\$77.90	\$1,180.30	\$1,180.30	\$112.60	\$1,180.30	167.60%	\$112.60
39144	\$39.55	\$39.55	\$39.55	\$-39.55	\$1,127.90	0.00%	\$72.15	\$1,415.75	0.00%	\$115.60	\$1,437.50	\$1,437.50	\$137.35	\$1,437.50	167.65%	\$137.35
39145	\$1,260.60	\$1,260.60	\$1,087.90	\$-172.70	\$1,260.60	0.00%	\$63.10	\$1,227.25	0.00%	\$100.25	\$1,246.10	\$1,246.10	\$119.10	\$1,246.10	167.60%	\$119.10
39146	\$606.85	\$606.85	\$1,568.70	\$-961.85	\$663.90	0.00%	\$55.85	\$680.10	0.00%	\$84.75	\$698.80	\$698.80	\$70.05	\$698.80	167.60%	\$663.90
39147	\$1,568.70	\$1,568.70	\$1,568.70	\$-56.50	\$1,615.20	0.00%	\$144.50	\$1,759.70	0.00%	\$189.90	\$1,796.60	\$1,796.60	\$176.00	\$1,796.60	167.60%	\$1,741.40
39148	\$973.95	\$973.95	\$973.95	\$-34.95	\$1,008.45	0.00%	\$89.70	\$1,098.15	0.00%	\$140.45	\$1,115.00	\$1,115.00	\$106.55	\$1,115.00	167.65%	\$106.55
39149	\$712.95	\$712.95	\$712.95	\$-22.35	\$735.30	0.00%	\$56.45	\$783.75	0.00%	\$84.75	\$794.95	\$794.95	\$77.80	\$794.95	161.30%	\$788.00
39150	\$421.35	\$421.35	\$421.35	\$-25.80	\$447.15	0.00%	\$41.80	\$488.95	0.00%	\$59.30	\$495.95	\$495.95	\$59.35	\$495.95	172.20%	\$59.35
39151	\$789.20	\$789.20	\$789.20	\$-46.05	\$835.25	0.00%	\$24.45	\$875.45	0.00%	\$38.85	\$868.80	\$868.80	\$46.05	\$868.80	167.60%	\$835.25
39152	\$461.05	\$461.05	\$461.05	\$-15.30	\$476.35	0.00%	\$24.45	\$495.45	0.00%	\$38.85	\$482.70	\$482.70	\$46.05	\$482.70	167.60%	\$461.05
39153	\$25.95	\$25.95	\$25.95	\$-25.95	\$789.20	0.00%	\$14.40	\$808.45	0.00%	\$21.40	\$826.00	\$826.00	\$9.30	\$826.00	153.50%	\$9.30
39154	\$22.65	\$22.65	\$22.65	\$-16.95	\$39.60	0.00%	\$31.20	\$607.00	0.00%	\$49.55	\$629.00	\$629.00	\$54.85	\$629.00	160.05%	\$54.85
39155	\$45.90	\$45.90	\$45.90	\$-15.30	\$60.20	0.00%	\$24.20	\$472.30	0.00%	\$35.70	\$460.90	\$460.90	\$24.30	\$460.90	160.05%	\$24.30
39156	\$725.85	\$725.85	\$725.85	\$-70.85	\$796.70	0.00%	\$31.20	\$808.45	0.00%	\$49.55	\$826.00	\$826.00	\$66.20	\$826.00	167.60%	\$66.20
39157	\$483.80	\$483.80	\$483.80	\$-47.20	\$531.00	0.00%	\$55.85	\$586.85	0.00%	\$83.35	\$595.00	\$595.00	\$66.20	\$595.00	160.05%	\$66.20
39158	\$725.85	\$725.85	\$725.85	\$-70.85	\$796.70	0.00%	\$31.20	\$808.45	0.00%	\$49.55	\$826.00	\$826.00	\$66.20	\$826.00	160.05%	\$66.20
39159	\$483.80	\$483.80	\$483.80	\$-47.20	\$531.00	0.00%	\$55.85	\$586.85	0.00%	\$83.35	\$595.00	\$595.00	\$66.20	\$595.00	160.05%	\$66.20
39160	\$952.10	\$952.10	\$952.10	\$-92.10	\$1,044.20	0.00%	\$121.15	\$906.80	0.00%	\$175.25	\$907.00	\$907.00	\$47.25	\$907.00	160.05%	\$47.25
39161	\$483.80	\$483.80	\$483.80	\$-47.20	\$531.00	0.00%	\$55.85	\$586.85	0.00%	\$83.35	\$595.00	\$595.00	\$66.20	\$595.00	160.05%	\$66.20
39162	\$52.25	\$52.25	\$1,454.30	\$-1,402.05	\$1,506.55	0.00%	\$134.00	\$1,640.55	0.00%	\$188.90	\$1,665.45	\$1,665.45	\$158.85	\$1,665.45	160.05%	\$158.85
39163	\$274.40	\$274.40	\$274.40	\$-86.00	\$360.40	0.00%	\$158.45	\$518.85	0.00%	\$260.40	\$294.40	\$294.40	\$165.00	\$294.40	160.45%	\$165.00
39164	\$1,460.75	\$1,460.75	\$1,460.75	\$-140.75	\$1,601.50	0.00%	\$84.35	\$1,685.85	0.00%	\$225.15	\$1,665.45	\$1,665.45	\$158.85	\$1,665.45	167.60%	\$158.85
39165	\$706.35	\$706.35	\$706.35	\$-61.25	\$767.60	0.00%	\$99.00	\$866.60	0.00%	\$157.25	\$1,954.00	\$1,954.00	\$186.45	\$1,954.00	167.60%	\$186.45
39166	\$5.25	\$5.25	\$5.25	\$-5.25	\$189.15	0.00%	\$268.35	\$5,294.60	0.00%	\$3,183.20	\$3,391.10	\$3,391.10	\$474.30	\$3,391.10	170.45%	\$474.30
39167	\$2,042.20	\$2,042.20	\$2,042.20	\$-163.15	\$2,205.35	0.00%	\$371.65	\$2,577.00	0.00%	\$506.35	\$2,467.50	\$2,467.50	\$751.70	\$2,467.50	168.80%	\$751.70
39168	\$2,154.40	\$2,154.40	\$2,154.40	\$-163.15	\$2,317.55	0.00%	\$390.65	\$2,708.20	0.00%	\$527.80	\$2,595.70	\$2,595.70	\$609.10	\$2,595.70	168.80%	\$609.10
39169	\$2,657.75	\$2,657.75	\$2,657.75	\$-211.80	\$2,869.55	0.00%	\$489.35	\$3,350.90	0.00%	\$670.40	\$2,978.20	\$2,978.20	\$790.25	\$2,978.20	168.80%	\$790.25
39170	\$843.60	\$843.60	\$843.60	\$-67.20	\$910.80	0.00%	\$89.30	\$999.10	0.00%	\$148.45	\$970.40	\$970.40	\$96.20	\$970.40	168.55%	\$962.20
39171	\$1,180.15	\$1,180.15	\$1,180.15	\$-118.05	\$1,298.20	0.00%	\$177.60	\$1,475.80	0.00%	\$258.20	\$1,267.50	\$1,267.50	\$209.25	\$1,267.50	168.60%	\$209.25
39172	\$4.40	\$4.40	\$4.40	\$-4.40	\$242.40	0.00%	\$279.95	\$2,483.30	0.00%	\$263.35	\$2,345.80	\$2,345.80	\$481.20	\$2,345.80	172.10%	\$481.20
39173	\$10.15	\$10.15	\$10.15	\$-10.15	\$616.65	0.00%	\$340.10	\$4,094.45	0.00%	\$2,111.55	\$4,035.40	\$4,035.40	\$503.15	\$4,035.40	172.25%	\$503.15
39174	\$7.55	\$7.55	\$7.55	\$-7.55	\$450.00	0.00%	\$515.75	\$4,316.70	0.00%	\$263.20	\$4,226.45	\$4,226.45	\$547.10	\$4,226.45	169.65%	\$547.10
39175	\$-3.35	\$-3.35	\$2,485.15	\$-2,488.50	\$2,778.70	0.00%	\$313.95	\$2,784.80	0.00%	\$395.30	\$2,681.60	\$2,681.60	\$441.60	\$2,681.60	167.60%	\$441.60
39176	\$1,693.50	\$1,693.50	\$1,693.50	\$-169.35	\$1,862.85	0.00%	\$245.45	\$2,108.30	0.00%	\$320.85	\$1,979.30	\$1,979.30	\$268.50	\$1,979.30	167.60%	\$268.50
39177	\$526.65	\$526.65	\$526.65	\$-52.66	\$579.31	0.00%	\$483.60	\$9,453.35	0.00%	\$714.15	\$9,139.20	\$9,139.20	\$965.20	\$9,139.20	168.55%	\$965.20
39178	\$15.65	\$15.65	\$8,673.45	\$-8,657.80	\$9,272.85	0.00%	\$483.60	\$9,453.35	0.00%	\$714.15	\$9,139.20	\$9,139.20	\$965.20	\$9,139.20	168.55%	\$965.20
39179	\$8,673.45	\$8,673.45	\$8,673.45	\$-867.35	\$9,540.80	0.00%	\$771.85	\$9,453.35	0.00%	\$1,002.40	\$9,704.40	\$9,704.40	\$1,053.45	\$9,704.40	168.55%	\$1,053.45
39180	\$8,673.45	\$8,673.45	\$8,673.45	\$-867.35	\$9,540.80	0.00%	\$771.85	\$9,453.35	0.00%	\$1,002.40	\$9,704.40	\$9,704.40	\$1,053.45	\$9,704.40	168.55%	\$1,053.45
39181	\$1,901.35	\$1,901.35	\$1,901.35	\$-190.13	\$2,091.48	0.00%	\$163.65	\$2,255.13	0.00%	\$238.80	\$2,116.30	\$2,116.30	\$304.45	\$2,116.30	169.30%	\$304.45
39182	\$1,533.45	\$1,533.45	\$1,533.45	\$-153.34	\$1,686.79	0.00%	\$137.45	\$1,824.24	0.00%	\$217.10	\$1,707.10	\$1,707.10	\$229.55	\$1,707.10	169.30%	\$229.55
39183	\$3,939.40	\$3,939.40	\$3,939.40	\$-393.94	\$4,333.34	0.00%	\$354.40	\$4,687.74	0.00%	\$525.25	\$4,643.30	\$4,643.30	\$594.55	\$4,643.30	171.90%	\$594.55
39184	\$1,514.20	\$1,514.20	\$1,514.20	\$-151.42	\$1,665.62	0.00%	\$144.15	\$1,810.00	0.00%	\$217.10	\$1,692.90	\$1,692.90	\$229.55	\$1,692.90	169.30%	\$229.55
39185	\$2,727.45	\$2,727.45	\$2,727.45	\$-272.74	\$3,000.19	0.00%	\$266.80	\$3,267.00	0.00%	\$402.75	\$2,964.25	\$2,964.25	\$393.05	\$2,964.25	168.65%	\$393.05
39186	\$823.40	\$823.40	\$823.40	\$-82.34	\$905.74	0.00%	\$44.45	\$950.19	0.00%	\$68.90	\$919.40	\$919.40	\$93.95	\$919.40	167.60%	\$939.05
39187	\$1,780.20	\$1,780.20	\$1,780.20	\$-178.02	\$1,958.22	0.00%	\$166.80	\$2,125.02	0.00%	\$247.25	\$2,077.75	\$2,077.75	\$276.50	\$2,077.75	172.40%	\$276.50
39188	\$1,666.90	\$1,666.90	\$1,666.90	\$-166.69	\$1,833.59	0.00%	\$142.45	\$2,076.04	0.00%	\$206.65	\$1,969.39	\$1,969.39	\$264.45	\$1,969.39	167.50%	\$264.45
39189	\$3,976.70	\$3,976.70	\$3,976.70	\$-397.67	\$4,374.37	0.00%	\$386.65	\$4,761.02	0.00%	\$673.85	\$4,387.15	\$4,387.15	\$508.00	\$4,387.15	172.70%	\$508.00
39190	\$2,863.60	\$2,863.60	\$2,863.60	\$-286.36	\$3,150.00	0.00%	\$268.05	\$3,418.05	0.00%	\$536.10	\$3,281.90	\$3,281.90	\$393.95	\$3,281.90	172.70%	\$393.95
39191	\$3,693.55	\$3,693.55	\$3,693.55	\$-369.35	\$4,062.90	0.00%	\$335.35	\$4,398.25	0.00%	\$670.40	\$4,227.80	\$4,227.80	\$523.95	\$4,227.80	172.70%	\$523.95
39192	\$1,306.55	\$1,306.55	\$1,306.55	\$-130.65	\$1,437.20	0.00%	\$83.35	\$1,520.55	0.00%	\$123.10	\$1,603.40	\$1,603.40	\$158.85	\$1,603.40	167.60%	\$158.85
39193	\$993.70	\$993.70	\$993.70	\$-99.37	\$1,093.07	0.00%	\$83.35	\$1,176.45	0.00%	\$123.10	\$1,299.55	\$1,299.55	\$136.85	\$1,299.55	167.60%	\$136.85
39194	\$3,373.55	\$3,373.55	\$3,373.55	\$-337.35	\$3,710.90	0.00%	\$269.55	\$4,080.40	0.00%	\$423.85	\$4,128.20	\$4,128.20	\$504.65	\$4,128.20	169.35%	\$504.65
39195	\$534.40	\$534.40	\$534.40	\$-53.44	\$587.84	0.00%	\$39.75	\$627.59	0.00%	\$61.85	\$599.10	\$599.10	\$61.85	\$599.10	169.35%	\$61.85
39196	\$1,656.90	\$1,656.90	\$1,656.90	\$-165.69	\$1,822.59	0.00%	\$142.45	\$2,076.04	0.00%	\$206.65	\$1,969.39</					

40852	\$534.40	\$537.25	151.60%	\$518.60	\$567.35	0.00%	\$30.10	\$585.05	0.00%	\$47.80	\$567.05	0.00%	\$29.80	\$581.20	0.00%	\$43.95	\$598.40	0	\$61.15	\$598.40	168.85%	\$61.15
40854	\$830.30	\$805.30	151.60%	\$805.30	\$876.85	0.00%	\$46.55	\$904.20	0.00%	\$73.90	\$876.30	0.00%	\$46.20	\$898.25	0.00%	\$67.95	\$924.50	0	\$94.20	\$924.50	168.80%	\$94.20
40856	\$246.80	\$402.95	151.60%	\$390.90	\$425.50	0.00%	\$22.55	\$435.75	0.00%	\$35.80	\$425.30	0.00%	\$22.30	\$435.50	0.00%	\$32.95	\$448.90	0	\$45.95	\$448.90	168.80%	\$45.95
40858	\$830.30	\$805.30	151.61%	\$805.30	\$876.85	0.00%	\$46.55	\$904.20	0.00%	\$73.90	\$876.30	0.00%	\$46.20	\$898.25	0.00%	\$67.95	\$924.50	0	\$94.20	\$924.50	168.80%	\$94.20
40860	\$2,104.65	\$2,104.65	151.61%	\$3,095.00	\$3,369.50	0.00%	\$1,786.65	\$3,474.70	0.00%	\$3,369.50	\$3,369.50	0.00%	\$1,786.65	\$3,474.70	0.00%	\$2,680.85	\$3,552.40	0	\$3,552.40	\$3,552.40	168.80%	\$3,552.40
40862	\$1,979.40	\$2,999.25	151.60%	\$2,999.25	\$3,160.00	0.00%	\$167.75	\$3,225.85	0.00%	\$2,999.25	\$3,160.00	0.00%	\$167.75	\$3,225.85	0.00%	\$2,540.50	\$3,333.30	0	\$3,333.30	\$3,333.30	168.80%	\$3,333.30
40864	\$626.10	\$949.15	151.60%	\$949.15	\$1,002.35	0.00%	\$53.20	\$1,033.65	0.00%	\$1,002.35	\$1,033.65	0.00%	\$53.20	\$1,033.65	0.00%	\$77.65	\$1,058.40	0	\$1,058.40	\$1,058.40	169.05%	\$1,058.40
41001	\$193.10	\$139.30	149.97%	\$139.30	\$147.75	0.00%	\$10.45	\$147.75	0.00%	\$139.30	\$147.75	0.00%	\$10.45	\$147.75	0.00%	\$119.05	\$147.70	0	\$147.70	\$147.70	171.15%	\$147.70
41003	\$248.45	\$372.65	149.99%	\$372.65	\$404.25	0.00%	\$31.60	\$415.40	0.00%	\$372.65	\$404.25	0.00%	\$31.60	\$415.40	0.00%	\$332.30	\$427.30	0	\$427.30	\$427.30	172.00%	\$427.30
41006	\$148.85	\$234.75	149.99%	\$234.75	\$275.85	0.00%	\$40.10	\$285.95	0.00%	\$234.75	\$275.85	0.00%	\$40.10	\$285.95	0.00%	\$250.25	\$277.70	0	\$277.70	\$277.70	172.00%	\$277.70
41009	\$169.65	\$249.40	149.99%	\$249.40	\$291.15	0.00%	\$41.75	\$298.45	0.00%	\$249.40	\$291.15	0.00%	\$41.75	\$298.45	0.00%	\$228.85	\$291.50	0	\$291.50	\$291.50	172.00%	\$291.50
41011	\$149.95	\$224.30	149.99%	\$224.30	\$271.10	0.00%	\$46.80	\$277.90	0.00%	\$224.30	\$271.10	0.00%	\$46.80	\$277.90	0.00%	\$208.50	\$277.70	0	\$277.70	\$277.70	172.00%	\$277.70
41013	\$169.65	\$249.40	149.99%	\$249.40	\$291.15	0.00%	\$41.75	\$298.45	0.00%	\$249.40	\$291.15	0.00%	\$41.75	\$298.45	0.00%	\$228.85	\$291.50	0	\$291.50	\$291.50	172.00%	\$291.50
41015	\$149.95	\$224.30	149.99%	\$224.30	\$271.10	0.00%	\$46.80	\$277.90	0.00%	\$224.30	\$271.10	0.00%	\$46.80	\$277.90	0.00%	\$208.50	\$277.70	0	\$277.70	\$277.70	172.00%	\$277.70
41018	\$149.95	\$224.30	149.99%	\$224.30	\$271.10	0.00%	\$46.80	\$277.90	0.00%	\$224.30	\$271.10	0.00%	\$46.80	\$277.90	0.00%	\$208.50	\$277.70	0	\$277.70	\$277.70	172.00%	\$277.70
41021	\$1,028.90	\$1,543.35	150.00%	\$1,543.35	\$1,666.80	0.00%	\$123.45	\$1,718.20	0.00%	\$1,666.80	\$1,718.20	0.00%	\$123.45	\$1,718.20	0.00%	\$1,718.20	\$1,769.10	0	\$1,769.10	\$1,769.10	171.95%	\$225.75
41024	\$297.25	\$445.90	150.00%	\$445.90	\$511.35	0.00%	\$65.45	\$497.25	0.00%	\$445.90	\$511.35	0.00%	\$65.45	\$497.25	0.00%	\$408.00	\$511.10	0	\$511.10	\$511.10	171.95%	\$65.20
41027	\$611.40	\$971.70	150.00%	\$971.70	\$1,124.65	0.00%	\$153.25	\$1,067.75	0.00%	\$971.70	\$1,124.65	0.00%	\$153.25	\$1,067.75	0.00%	\$965.15	\$965.15	0	\$48.00	\$965.15	171.95%	\$48.05
41030	\$1,494.15	\$2,171.65	150.00%	\$2,171.65	\$2,689.15	0.00%	\$497.50	\$2,689.15	0.00%	\$2,171.65	\$2,689.15	0.00%	\$497.50	\$2,689.15	0.00%	\$2,689.15	\$2,725.25	0	\$2,725.25	\$2,725.25	171.95%	\$784.05
41033	\$1,190.65	\$1,786.00	150.00%	\$1,786.00	\$2,162.40	0.00%	\$367.35	\$2,162.40	0.00%	\$1,786.00	\$2,162.40	0.00%	\$367.35	\$2,162.40	0.00%	\$2,162.40	\$2,207.30	0	\$2,207.30	\$2,207.30	171.95%	\$261.30
41036	\$1,333.65	\$2,000.00	150.00%	\$2,000.00	\$2,430.85	0.00%	\$497.20	\$2,430.85	0.00%	\$2,000.00	\$2,430.85	0.00%	\$497.20	\$2,430.85	0.00%	\$2,430.85	\$2,492.50	0	\$2,492.50	\$2,492.50	171.95%	\$268.65
41039	\$1,134.05	\$1,701.05	150.00%	\$1,701.05	\$2,181.95	0.00%	\$447.90	\$2,181.95	0.00%	\$1,701.05	\$2,181.95	0.00%	\$447.90	\$2,181.95	0.00%	\$2,181.95	\$1,949.70	0	\$1,949.70	\$1,949.70	171.90%	\$248.65
41042	\$1,242.65	\$1,864.00	150.00%	\$1,864.00	\$2,345.80	0.00%	\$483.15	\$2,345.80	0.00%	\$1,864.00	\$2,345.80	0.00%	\$483.15	\$2,345.80	0.00%	\$2,345.80	\$2,136.70	0	\$2,136.70	\$2,136.70	171.95%	\$272.75
41045	\$542.40	\$813.60	150.00%	\$813.60	\$966.50	0.00%	\$153.90	\$966.50	0.00%	\$542.40	\$966.50	0.00%	\$153.90	\$966.50	0.00%	\$92.20	\$932.60	0	\$119.00	\$932.60	171.95%	\$119.00
41048	\$719.75	\$1,079.65	150.00%	\$1,079.65	\$1,350.00	0.00%	\$330.25	\$1,350.00	0.00%	\$719.75	\$1,350.00	0.00%	\$330.25	\$1,350.00	0.00%	\$1,350.00	\$1,237.80	0	\$1,237.80	\$1,237.80	171.95%	\$158.20
41051	\$1,657.65	\$2,486.50	150.00%	\$2,486.50	\$3,068.15	0.00%	\$610.50	\$3,068.15	0.00%	\$2,486.50	\$3,068.15	0.00%	\$610.50	\$3,068.15	0.00%	\$3,068.15	\$2,850.00	0	\$2,850.00	\$2,850.00	171.95%	\$363.50
41054	\$1,953.30	\$2,929.50	150.00%	\$2,929.50	\$3,620.40	0.00%	\$667.10	\$3,620.40	0.00%	\$2,929.50	\$3,620.40	0.00%	\$667.10	\$3,620.40	0.00%	\$3,620.40	\$3,357.80	0	\$3,357.80	\$3,357.80	171.95%	\$428.30
41057	\$1,134.05	\$1,701.05	150.00%	\$1,701.05	\$2,181.95	0.00%	\$447.90	\$2,181.95	0.00%	\$1,701.05	\$2,181.95	0.00%	\$447.90	\$2,181.95	0.00%	\$2,181.95	\$1,949.70	0	\$1,949.70	\$1,949.70	171.90%	\$248.65
41060	\$1,242.65	\$1,864.00	150.00%	\$1,864.00	\$2,345.80	0.00%	\$483.15	\$2,345.80	0.00%	\$1,864.00	\$2,345.80	0.00%	\$483.15	\$2,345.80	0.00%	\$2,345.80	\$2,136.70	0	\$2,136.70	\$2,136.70	171.95%	\$272.75
41063	\$1,538.30	\$2,307.45	150.00%	\$2,307.45	\$2,857.80	0.00%	\$519.35	\$2,857.80	0.00%	\$1,538.30	\$2,857.80	0.00%	\$519.35	\$2,857.80	0.00%	\$2,857.80	\$2,644.90	0	\$2,644.90	\$2,644.90	171.95%	\$337.45
41064	\$1,538.30	\$2,307.45	150.00%	\$2,307.45	\$2,857.80	0.00%	\$519.35	\$2,857.80	0.00%	\$1,538.30	\$2,857.80	0.00%	\$519.35	\$2,857.80	0.00%	\$2,857.80	\$2,644.90	0	\$2,644.90	\$2,644.90	171.95%	\$337.45
41066	\$1,538.30	\$2,307.45	150.00%	\$2,307.45	\$2,857.80	0.00%	\$519.35	\$2,857.80	0.00%	\$1,538.30	\$2,857.80	0.00%	\$519.35	\$2,857.80	0.00%	\$2,857.80	\$2,644.90	0	\$2,644.90	\$2,644.90	171.95%	\$337.45
41069	\$1,538.30	\$2,307.45	150.00%	\$2,307.45	\$2,857.80	0.00%	\$519.35	\$2,857.80	0.00%	\$1,538.30	\$2,857.80	0.00%	\$519.35	\$2,857.80	0.00%	\$2,857.80	\$2,644.90	0	\$2,644.90	\$2,644.90	171.95%	\$337.45
41072	\$1,075.10	\$1,612.65	150.00%	\$1,612.65	\$2,000.00	0.00%	\$327.90	\$2,000.00	0.00%	\$1,075.10	\$2,000.00	0.00%	\$327.90	\$2,000.00	0.00%	\$2,000.00	\$1,949.70	0	\$1,949.70	\$1,949.70	171.90%	\$248.65
41075	\$2,543.35	\$3,801.50	150.00%	\$3,801.50	\$4,698.00	0.00%	\$896.65	\$4,698.00	0.00%	\$2,543.35	\$4,698.00	0.00%	\$896.65	\$4,698.00	0.00%	\$4,698.00	\$4,684.70	0	\$4,684.70	\$4,684.70	171.95%	\$388.80
41078	\$2,000.55	\$3,072.60	150.00%	\$3,072.60	\$3,867.45	0.00%	\$866.90	\$3,867.45	0.00%	\$2,000.55	\$3,867.45	0.00%	\$866.90	\$3,867.45	0.00%	\$3,867.45	\$3,698.50	0	\$3,698.50	\$3,698.50	171.95%	\$397.65
41080	\$1,242.65	\$1,864.00	150.00%	\$1,864.00	\$2,345.80	0.00%	\$483.15	\$2,345.80	0.00%	\$1,242.65	\$2,345.80	0.00%	\$483.15	\$2,345.80	0.00%	\$2,345.80	\$2,136.70	0	\$2,136.70	\$2,136.70	171.95%	\$272.75
41083	\$1,619.55	\$2,429.30	150.00%	\$2,429.30	\$2,987.80	0.00%	\$568.25	\$2,987.80	0.00%	\$1,619.55	\$2,987.80	0.00%	\$568.25	\$2,987.80	0.00%	\$2,987.80	\$2,784.20	0	\$2,784.20	\$2,784.20	171.95%	\$354.90
41086	\$1,810.00	\$2,715.00	150.00%	\$2,715.00	\$3,361.90	0.00%	\$551.90	\$3,361.90	0.00%	\$1,810.00	\$3,361.90	0.00%	\$551.90	\$3,361.90	0.00%	\$3,361.90	\$3,112.20	0	\$3,112.20	\$3,112.20	171.95%	\$397.20
41089	\$1,810.00	\$2,715.00	150.00%	\$2,715.00	\$3,361.90	0.00%	\$551.90	\$3,361.90	0.00%	\$1,810.00	\$3,361.90	0.00%	\$551.90	\$3,361.90	0.00%	\$3,361.90	\$3,112.20	0	\$3,112.20	\$3,112.20	171.95%	\$397.20
41092	\$54.30	\$82.15	149.98%	\$82.15	\$99.95	0.00%	\$17.80	\$99.95	0.00%	\$54.30	\$99.95	0.00%	\$17.80	\$99.95	0.00%	\$89.15	\$93.90	0	\$93.90	\$93.90	172.40%	\$17.45
41094	\$1,314.05	\$1,984.50	150.00%	\$1,984.50	\$2,481.85	0.00%	\$467.80	\$2,481.85	0.00%	\$1,314.05	\$2,481.85	0.00%	\$467.80	\$2,481.85	0.00%	\$2,481.85	\$2,383.50	0	\$2,383.50	\$2,383.50	171.95%	\$344.40
41097	\$729.70	\$1,084.55	150.00%	\$1,084.55	\$1,365.85	0.00%	\$336.15	\$1,365.85	0.00%	\$729.70	\$1,365.85	0.00%	\$336.15	\$1,365.85	0.00%	\$1,365.85	\$1,264.70	0	\$1,264.70	\$1,264.70	171.95%	\$272.75
41101	\$1,134.05	\$1,701.05	150.00%	\$1,701.05	\$2,181.95	0.00%	\$447.90	\$2,181.95	0.00%	\$1,134.05	\$2,181.95	0.00%	\$447.90	\$2,181.95	0.00%	\$2,181.95	\$1,949.70	0	\$1,949.70	\$1,949.70	171.90%	\$248.65
41104	\$1,134.05	\$1,701.05	150.00%	\$1,701.05	\$2,181.95	0.00%	\$447.90	\$2,181.95	0.00%	\$1,134.05	\$2,181.95	0.00%	\$447.90	\$2,181.95	0.00%	\$2,181.95	\$1,949.70	0	\$1,949.70	\$1,949.70	171.90%	\$248.65
41107	\$1,972.00	\$2,993.00	150.00%	\$2,993.00	\$3,693.00	0.00%	\$721.00	\$3,693.00	0.00%	\$1,972.00	\$3,693.00	0.00%	\$721.00	\$3,693.00	0.00%	\$3,693.00	\$3,380.50	0	\$3,380.50	\$3,380.50	171.95%	\$423.50
41108	\$1,683.00	\$2,529.50	150.00%	\$2,529.50	\$3,134.80	0.00%	\$451.80	\$3,134.80	0.00%	\$1,683.00	\$3,134.80	0.00%	\$451.80	\$3,134.80	0.00%	\$3,134.80	\$2,984.70	0	\$2,984.70	\$2,984.70	171.95%	\$368.35
41109	\$857.95	\$1,286.95	150.00%	\$1,286.95	\$1,603.75	0.00%	\$345.80	\$1,603.75	0.00%	\$857.95	\$1,603.75	0.00%	\$345.80	\$1,603.75	0.00%	\$1,603.75	\$1,4					

41710	\$54.40	\$813.60	150.00%	\$866.50	\$52.90	\$878.65	0.00%	\$921.15	\$857.00	0.00%	\$43.40	\$905.80	\$92.20	\$932.60	0	\$119.00	\$932.60	171.95%	\$119.00
41711	\$631.10	\$496.65	150.00%	\$1,008.35	\$61.70	\$1,024.80	0.00%	\$1,072.80	\$997.15	0.00%	\$50.50	\$1,053.95	\$107.30	\$1,085.10	0	\$138.45	\$1,085.10	171.95%	\$138.45
41712	\$307.70	\$461.50	149.99%	\$491.50	\$60.00	\$500.00	0.00%	\$527.80	\$486.15	0.00%	\$24.65	\$503.95	\$107.30	\$485.10	0	\$138.45	\$485.10	171.95%	\$138.45
41713	\$122.35	\$183.50	149.98%	\$195.50	\$12.00	\$198.60	0.00%	\$208.85	\$204.85	0.00%	\$48.90	\$204.30	\$20.80	\$210.40	0	\$26.90	\$210.40	171.95%	\$26.90
41714	\$611.40	\$971.10	150.00%	\$993.80	\$97.10	\$1,021.30	0.00%	\$1,064.00	\$966.00	0.00%	\$48.90	\$1,021.05	\$103.95	\$1,051.30	0	\$134.20	\$1,051.30	171.95%	\$134.20
41715	\$466.75	\$700.45	150.00%	\$758.40	\$45.65	\$788.40	0.00%	\$799.45	\$747.45	0.00%	\$17.30	\$779.45	\$79.30	\$802.40	0	\$102.25	\$802.40	171.95%	\$102.25
41716	\$933.65	\$1,400.15	150.00%	\$1,491.70	\$51.25	\$1,517.40	0.00%	\$1,589.95	\$1,475.15	0.00%	\$74.70	\$1,559.20	\$168.75	\$1,605.10	0	\$204.65	\$1,605.10	171.95%	\$204.65
41717	\$591.70	\$887.55	150.00%	\$945.25	\$75.70	\$961.50	0.00%	\$1,017.75	\$934.90	0.00%	\$64.70	\$988.15	\$100.60	\$1,020.65	0	\$129.65	\$1,020.65	171.95%	\$129.65
41718	\$808.60	\$1,212.90	150.00%	\$1,292.00	\$79.10	\$1,314.30	0.00%	\$1,377.75	\$1,277.60	0.00%	\$64.70	\$1,350.35	\$137.45	\$1,390.60	0	\$177.70	\$1,390.60	171.95%	\$177.70
41719	\$1,055.10	\$1,582.65	149.99%	\$1,685.85	\$103.20	\$1,709.25	0.00%	\$1,793.35	\$1,667.05	0.00%	\$84.40	\$1,762.00	\$179.35	\$1,841.20	0	\$231.55	\$1,841.20	193.15%	\$231.55
41720	\$502.85	\$754.20	149.99%	\$803.35	\$49.15	\$816.55	0.00%	\$859.95	\$794.50	0.00%	\$40.30	\$839.75	\$85.50	\$871.30	0	\$117.00	\$871.30	193.15%	\$117.00
41721	\$351.15	\$526.70	149.96%	\$561.00	\$59.35	\$599.35	0.00%	\$634.45	\$554.80	0.00%	\$28.10	\$634.45	\$59.70	\$663.75	0	\$77.00	\$663.75	171.95%	\$77.00
41722	\$808.60	\$1,212.90	150.00%	\$1,292.00	\$79.10	\$1,314.30	0.00%	\$1,377.75	\$1,277.60	0.00%	\$64.70	\$1,350.35	\$137.45	\$1,390.60	0	\$177.70	\$1,390.60	171.95%	\$177.70
41723	\$631.10	\$496.65	150.00%	\$1,008.35	\$61.70	\$1,024.80	0.00%	\$1,072.80	\$997.15	0.00%	\$50.50	\$1,053.95	\$107.30	\$1,085.10	0	\$138.45	\$1,085.10	171.95%	\$138.45
41724	\$930.70	\$461.50	149.99%	\$491.50	\$60.00	\$500.00	0.00%	\$527.80	\$486.15	0.00%	\$24.65	\$503.95	\$107.30	\$485.10	0	\$138.45	\$485.10	171.95%	\$138.45
41725	\$487.50	\$724.20	149.95%	\$771.45	\$48.45	\$789.40	0.00%	\$824.15	\$766.45	0.00%	\$31.85	\$808.85	\$82.50	\$836.60	0	\$110.00	\$836.60	172.75%	\$110.00
41726	\$127.80	\$203.95	150.00%	\$230.95	\$12.30	\$246.30	0.00%	\$259.75	\$223.65	0.00%	\$32.00	\$235.15	\$43.50	\$261.45	0	\$9.75	\$261.45	175.65%	\$9.75
41727	\$766.90	\$1,150.35	150.00%	\$1,225.25	\$74.90	\$1,246.30	0.00%	\$1,309.95	\$1,211.70	0.00%	\$61.35	\$1,280.70	\$130.35	\$1,318.70	0	\$168.35	\$1,318.70	171.95%	\$168.35
41728	\$729.70	\$1,094.55	150.00%	\$1,165.85	\$71.30	\$1,184.20	0.00%	\$1,246.65	\$1,152.95	0.00%	\$58.40	\$1,218.60	\$124.05	\$1,254.80	0	\$160.25	\$1,254.80	171.95%	\$160.25
41729	\$611.40	\$971.10	150.00%	\$993.80	\$97.10	\$1,021.30	0.00%	\$1,064.00	\$966.00	0.00%	\$48.90	\$1,021.05	\$103.95	\$1,051.30	0	\$134.20	\$1,051.30	171.95%	\$134.20
41730	\$608.65	\$974.05	150.00%	\$974.05	\$59.60	\$987.60	0.00%	\$1,036.60	\$963.25	0.00%	\$48.90	\$1,018.10	\$103.65	\$1,048.30	0	\$133.85	\$1,048.30	171.95%	\$133.85
41731	\$729.70	\$1,094.55	150.00%	\$1,165.85	\$71.30	\$1,184.20	0.00%	\$1,246.65	\$1,152.95	0.00%	\$58.40	\$1,218.60	\$124.05	\$1,254.80	0	\$160.25	\$1,254.80	171.95%	\$160.25
41732	\$990.70	\$1,486.05	150.00%	\$1,582.80	\$103.20	\$1,607.20	0.00%	\$1,699.95	\$1,569.65	0.00%	\$79.25	\$1,652.45	\$168.40	\$1,702.90	0	\$216.85	\$1,702.90	171.95%	\$216.85
41733	\$1,229.00	\$1,843.50	150.00%	\$1,963.70	\$120.20	\$1,992.25	0.00%	\$2,089.95	\$1,941.80	0.00%	\$98.30	\$2,052.45	\$208.95	\$2,113.30	0	\$269.80	\$2,113.30	171.95%	\$269.80
41734	\$766.90	\$1,150.35	150.00%	\$1,225.25	\$74.90	\$1,246.30	0.00%	\$1,309.95	\$1,211.70	0.00%	\$61.35	\$1,280.70	\$130.35	\$1,318.70	0	\$168.35	\$1,318.70	171.95%	\$168.35
41735	\$591.70	\$887.55	150.00%	\$945.25	\$75.70	\$961.50	0.00%	\$1,017.75	\$934.90	0.00%	\$64.70	\$988.15	\$100.60	\$1,020.65	0	\$129.65	\$1,020.65	171.95%	\$129.65
41736	\$808.60	\$1,212.90	150.00%	\$1,292.00	\$79.10	\$1,314.30	0.00%	\$1,377.75	\$1,277.60	0.00%	\$64.70	\$1,350.35	\$137.45	\$1,390.60	0	\$177.70	\$1,390.60	171.95%	\$177.70
41737	\$502.85	\$754.20	149.99%	\$803.35	\$49.15	\$816.55	0.00%	\$859.95	\$794.50	0.00%	\$40.30	\$839.75	\$85.50	\$871.30	0	\$117.00	\$871.30	193.15%	\$117.00
41738	\$351.15	\$526.70	149.96%	\$561.00	\$59.35	\$599.35	0.00%	\$634.45	\$554.80	0.00%	\$28.10	\$634.45	\$59.70	\$663.75	0	\$77.00	\$663.75	171.95%	\$77.00
41739	\$808.60	\$1,212.90	150.00%	\$1,292.00	\$79.10	\$1,314.30	0.00%	\$1,377.75	\$1,277.60	0.00%	\$64.70	\$1,350.35	\$137.45	\$1,390.60	0	\$177.70	\$1,390.60	171.95%	\$177.70
41740	\$631.10	\$496.65	150.00%	\$1,008.35	\$61.70	\$1,024.80	0.00%	\$1,072.80	\$997.15	0.00%	\$50.50	\$1,053.95	\$107.30	\$1,085.10	0	\$138.45	\$1,085.10	171.95%	\$138.45
41741	\$930.70	\$461.50	149.99%	\$491.50	\$60.00	\$500.00	0.00%	\$527.80	\$486.15	0.00%	\$24.65	\$503.95	\$107.30	\$485.10	0	\$138.45	\$485.10	171.95%	\$138.45
41742	\$487.50	\$724.20	149.95%	\$771.45	\$48.45	\$789.40	0.00%	\$824.15	\$766.45	0.00%	\$31.85	\$808.85	\$82.50	\$836.60	0	\$110.00	\$836.60	172.75%	\$110.00
41743	\$127.80	\$203.95	150.00%	\$230.95	\$12.30	\$246.30	0.00%	\$259.75	\$223.65	0.00%	\$32.00	\$235.15	\$43.50	\$261.45	0	\$9.75	\$261.45	175.65%	\$9.75
41744	\$766.90	\$1,150.35	150.00%	\$1,225.25	\$74.90	\$1,246.30	0.00%	\$1,309.95	\$1,211.70	0.00%	\$61.35	\$1,280.70	\$130.35	\$1,318.70	0	\$168.35	\$1,318.70	171.95%	\$168.35
41745	\$729.70	\$1,094.55	150.00%	\$1,165.85	\$71.30	\$1,184.20	0.00%	\$1,246.65	\$1,152.95	0.00%	\$58.40	\$1,218.60	\$124.05	\$1,254.80	0	\$160.25	\$1,254.80	171.95%	\$160.25
41746	\$611.40	\$971.10	150.00%	\$993.80	\$97.10	\$1,021.30	0.00%	\$1,064.00	\$966.00	0.00%	\$48.90	\$1,021.05	\$103.95	\$1,051.30	0	\$134.20	\$1,051.30	171.95%	\$134.20
41747	\$608.65	\$974.05	150.00%	\$974.05	\$59.60	\$987.60	0.00%	\$1,036.60	\$963.25	0.00%	\$48.90	\$1,018.10	\$103.65	\$1,048.30	0	\$133.85	\$1,048.30	171.95%	\$133.85
41748	\$729.70	\$1,094.55	150.00%	\$1,165.85	\$71.30	\$1,184.20	0.00%	\$1,246.65	\$1,152.95	0.00%	\$58.40	\$1,218.60	\$124.05	\$1,254.80	0	\$160.25	\$1,254.80	171.95%	\$160.25
41749	\$990.70	\$1,486.05	150.00%	\$1,582.80	\$103.20	\$1,607.20	0.00%	\$1,699.95	\$1,569.65	0.00%	\$79.25	\$1,652.45	\$168.40	\$1,702.90	0	\$216.85	\$1,702.90	171.95%	\$216.85
41750	\$1,229.00	\$1,843.50	150.00%	\$1,963.70	\$120.20	\$1,992.25	0.00%	\$2,089.95	\$1,941.80	0.00%	\$98.30	\$2,052.45	\$208.95	\$2,113.30	0	\$269.80	\$2,113.30	171.95%	\$269.80
41751	\$766.90	\$1,150.35	150.00%	\$1,225.25	\$74.90	\$1,246.30	0.00%	\$1,309.95	\$1,211.70	0.00%	\$61.35	\$1,280.70	\$130.35	\$1,318.70	0	\$168.35	\$1,318.70	171.95%	\$168.35
41752	\$591.70	\$887.55	150.00%	\$945.25	\$75.70	\$961.50	0.00%	\$1,017.75	\$934.90	0.00%	\$64.70	\$988.15	\$100.60	\$1,020.65	0	\$129.65	\$1,020.65	171.95%	\$129.65
41753	\$808.60	\$1,212.90	150.00%	\$1,292.00	\$79.10	\$1,314.30	0.00%	\$1,377.75	\$1,277.60	0.00%	\$64.70	\$1,350.35	\$137.45	\$1,390.60	0	\$177.70	\$1,390.60	171.95%	\$177.70
41754	\$502.85	\$754.20	149.99%	\$803.35	\$49.15	\$816.55	0.00%	\$859.95	\$794.50	0.00%	\$40.30	\$839.75	\$85.50	\$871.30	0	\$117.00	\$871.30	193.15%	\$117.00
41755	\$351.15	\$526.70	149.96%	\$561.00	\$59.35	\$599.35	0.00%	\$634.45	\$554.80	0.00%	\$28.10	\$634.45	\$59.70	\$663.75	0	\$77.00	\$663.75	171.95%	\$77.00
41756	\$808.60	\$1,212.90	150.00%	\$1,292.00	\$79.10	\$1,314.30	0.00%	\$1,377.75	\$1,277.60	0.00%	\$64.70	\$1,350.35	\$137.45	\$1,390.60	0	\$177.70	\$1,390.60	171.95%	\$177.70
41757	\$631.10	\$496.65	150.00%	\$1,008.35	\$61.70	\$1,024.80	0.00%	\$1,072.80	\$997.15	0.00%	\$50.50	\$1,053.95	\$107.30	\$1,085.10	0	\$138.45	\$1,085.10	171.95%	\$138.45
41758	\$930.70	\$461.50	149.99%	\$491.50	\$60.00	\$500.00	0.00%	\$527.80	\$486.15	0.00%	\$24.65	\$503.95	\$107.30	\$485.10	0	\$138.45	\$485.10	171.95%	\$138.45
41759	\$487.50	\$724.20	149.95%	\$771.45	\$48.45	\$789.40	0.00%	\$824.15	\$766.45	0.00%	\$31.85	\$808.85	\$82.50	\$836.60	0	\$110.00	\$836.60	172.75%	\$110.00
41760	\$127.80	\$203.95	150.00%	\$230.95	\$12.30	\$246.30	0.00%	\$259.75	\$223.65	0.00%	\$32.00	\$235.15	\$43.50	\$261.45	0	\$9.75	\$261.45	175.65%	\$9.75
41761	\$766.90	\$1,150.35	150.00%	\$1,225.25	\$74.90	\$1,246.30	0.00%	\$1,309.95	\$1,211.70	0.00%	\$61.35	\$1,280.70	\$130.35	\$1,318.70	0	\$168.35	\$1,318.70	171.95%	\$168.35
41762	\$729.70	\$1,094.55	150.00%	\$1,165.85	\$71.30	\$1,184.20	0.00%	\$1,246.65	\$1,152.95	0.00%	\$58.40	\$1,218.60	\$124.05	\$1,254.80	0	\$160.25	\$1,254.80	171.95%	\$160.25
41763	\$611.40	\$971.10	150.00%	\$993.80	\$97.10	\$1,021.30	0.00%	\$1,064.00	\$966.00	0.00%	\$48.90	\$1,021.05	\$103.95	\$1,051.30	0	\$134.20	\$1,051.30	171.95%	\$134.20
41764	\$608.65	\$974.05	150.00%	\$974.05	\$59.60	\$987.60	0.00%	\$1,036.60	\$963.25	0.00%	\$48.90	\$1,018.10	\$103.65	\$1,048.30	0	\$133.85	\$1,048.30	171.95%	\$133.85
41765	\$729.70	\$1,094.55	150.00%	\$1,165.85	\$71.30	\$1,184.20	0.00%	\$1,246.65	\$1,152.95	0.00%	\$58.40	\$1,218.60	\$124.05	\$1,254.80	0				

4248	\$790.15	\$1,185.20	150.00%	\$1,155.10	-\$30.10	\$1,211.85	0.00%	\$50.35	\$1,161.50	0.00%	-\$23.70	\$1,274.75	0.00%	\$39.55	\$1,256.10	\$70.90	158.95%	\$1,044.90	158.95%
4251	\$967.35	\$986.05	150.00%	\$967.35	-\$18.70	\$1,008.00	0.00%	\$41.65	\$966.30	0.00%	-\$19.75	\$1,018.90	0.00%	\$32.85	\$1,256.10	\$70.90	158.95%	\$1,044.90	158.95%
4254	\$766.90	\$1,150.35	150.00%	\$1,120.95	-\$29.40	\$1,076.10	0.00%	\$48.75	\$1,127.35	0.00%	-\$13.70	\$1,188.70	0.00%	\$38.35	\$1,256.10	\$70.90	158.95%	\$1,044.90	158.95%
4257	\$1,607.95	\$1,607.95	150.00%	\$1,607.95	-\$41.05	\$1,643.70	0.00%	\$1,643.70	\$1,643.70	0.00%	-\$12.00	\$1,661.50	0.00%	\$33.55	\$1,256.10	\$70.90	158.95%	\$1,044.90	158.95%
4263	\$540.00	\$810.00	150.00%	\$789.25	-\$20.75	\$827.95	0.00%	\$34.10	\$793.80	0.00%	-\$16.20	\$837.00	0.00%	\$27.00	\$1,256.10	\$70.90	158.95%	\$1,044.90	158.95%
4269	\$1,607.95	\$1,607.95	150.00%	\$1,607.95	-\$41.05	\$1,643.70	0.00%	\$1,643.70	\$1,643.70	0.00%	-\$12.00	\$1,661.50	0.00%	\$33.55	\$1,256.10	\$70.90	158.95%	\$1,044.90	158.95%
4272	\$1,127.15	\$1,683.20	149.98%	\$1,187.65	-\$54.55	\$1,242.70	0.00%	\$187.50	\$1,179.55	0.00%	-\$33.65	\$1,189.35	0.00%	\$6.15	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4273	\$394.95	\$394.95	149.98%	\$394.95	-\$9.00	\$385.60	0.00%	\$14.70	\$347.90	0.00%	-\$14.70	\$362.60	0.00%	\$11.85	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4274	\$602.85	\$754.20	149.99%	\$711.00	-\$18.90	\$729.90	0.00%	\$131.85	\$739.20	0.00%	-\$15.00	\$754.20	0.00%	\$25.20	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4275	\$366.05	\$429.00	150.00%	\$429.00	-\$33.35	\$462.30	0.00%	\$51.00	\$410.65	0.00%	-\$29.50	\$439.60	0.00%	\$4.35	\$1,256.10	\$70.90	178.35%	\$1,044.90	178.35%
4276	\$400.85	\$461.50	149.99%	\$449.90	-\$41.55	\$488.20	0.00%	\$191.45	\$462.30	0.00%	-\$29.20	\$491.60	0.00%	\$4.35	\$1,256.10	\$70.90	159.75%	\$1,044.90	159.75%
4281	\$288.00	\$413.95	149.98%	\$420.80	-\$41.15	\$461.95	0.00%	\$94.00	\$423.35	0.00%	-\$38.60	\$461.95	0.00%	\$14.45	\$1,256.10	\$70.90	159.90%	\$1,044.90	159.90%
4287	\$541.10	\$811.15	150.00%	\$792.25	-\$19.50	\$811.75	0.00%	\$32.50	\$792.25	0.00%	-\$16.00	\$811.75	0.00%	\$2.70	\$1,256.10	\$70.90	158.40%	\$1,044.90	158.40%
4288	\$541.10	\$811.15	150.00%	\$792.25	-\$19.50	\$811.75	0.00%	\$32.50	\$792.25	0.00%	-\$16.00	\$811.75	0.00%	\$2.70	\$1,256.10	\$70.90	158.40%	\$1,044.90	158.40%
4290	\$935.05	\$528.10	150.00%	\$528.10	-\$13.65	\$541.75	0.00%	\$539.75	\$517.50	0.00%	-\$22.20	\$545.70	0.00%	\$2.70	\$1,256.10	\$70.90	158.40%	\$1,044.90	158.40%
4293	\$212.85	\$319.25	150.00%	\$311.00	-\$8.25	\$326.10	0.00%	\$131.20	\$312.90	0.00%	-\$10.60	\$329.90	0.00%	\$17.60	\$1,256.10	\$70.90	188.45%	\$1,044.90	188.45%
4296	\$524.30	\$786.45	150.00%	\$766.70	-\$19.75	\$786.95	0.00%	\$33.20	\$770.70	0.00%	-\$16.35	\$792.90	0.00%	\$26.20	\$1,256.10	\$70.90	159.15%	\$1,044.90	159.15%
4299	\$657.35	\$986.05	150.00%	\$961.05	-\$25.00	\$1,008.00	0.00%	\$41.65	\$966.30	0.00%	-\$19.75	\$1,018.90	0.00%	\$38.35	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4265	\$685.35	\$986.05	150.00%	\$961.05	-\$25.00	\$1,008.00	0.00%	\$41.65	\$966.30	0.00%	-\$19.75	\$1,018.90	0.00%	\$38.35	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4260	\$472.45	\$727.45	149.99%	\$708.80	-\$18.65	\$727.45	0.00%	\$743.75	\$712.95	0.00%	-\$14.50	\$751.75	0.00%	\$24.30	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4261	\$312.95	\$469.40	149.97%	\$457.50	-\$11.90	\$469.50	0.00%	\$194.45	\$460.05	0.00%	-\$9.35	\$480.05	0.00%	\$15.65	\$1,256.10	\$70.90	161.25%	\$1,044.90	161.25%
4262	\$100.15	\$150.20	150.00%	\$146.25	-\$3.95	\$150.20	0.00%	\$59.90	\$147.20	0.00%	-\$3.00	\$155.25	0.00%	\$5.05	\$1,256.10	\$70.90	159.20%	\$1,044.90	159.20%
4264	\$150.20	\$225.25	149.98%	\$219.65	-\$5.60	\$229.95	0.00%	\$92.00	\$220.80	0.00%	-\$4.45	\$232.80	0.00%	\$7.55	\$1,256.10	\$70.90	158.90%	\$1,044.90	158.90%
4261	\$50.25	\$75.40	150.00%	\$73.65	-\$1.75	\$76.70	0.00%	\$28.20	\$73.85	0.00%	-\$1.55	\$77.90	0.00%	\$2.50	\$1,256.10	\$70.90	159.20%	\$1,044.90	159.20%
4265	\$75.15	\$112.75	150.00%	\$109.75	-\$5.45	\$114.80	0.00%	\$41.00	\$110.45	0.00%	-\$2.30	\$116.50	0.00%	\$3.75	\$1,256.10	\$70.90	159.15%	\$1,044.90	159.15%
4267	\$142.50	\$213.70	149.98%	\$208.25	-\$3.00	\$214.80	0.00%	\$87.50	\$209.50	0.00%	-\$4.20	\$220.90	0.00%	\$7.20	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4262	\$54.80	\$82.20	150.00%	\$80.30	-\$5.45	\$83.75	0.00%	\$33.15	\$80.55	0.00%	-\$1.65	\$84.95	0.00%	\$4.35	\$1,256.10	\$70.90	159.50%	\$1,044.90	159.50%
4262	\$86.05	\$129.05	150.00%	\$125.70	-\$3.35	\$131.60	0.00%	\$51.00	\$126.50	0.00%	-\$2.55	\$133.40	0.00%	\$4.35	\$1,256.10	\$70.90	158.75%	\$1,044.90	158.75%
4263	\$1,091.70	\$1,772.80	150.00%	\$1,663.80	-\$107.90	\$1,872.50	0.00%	\$243.65	\$1,069.85	0.00%	-\$21.85	\$1,128.10	0.00%	\$36.40	\$1,256.10	\$70.90	202.05%	\$1,044.90	202.05%
4262	\$1,772.80	\$1,772.80	150.00%	\$1,772.80	-\$45.15	\$1,818.05	0.00%	\$1,818.05	\$1,725.40	0.00%	-\$92.55	\$1,818.05	0.00%	\$88.65	\$1,256.10	\$70.90	158.95%	\$1,044.90	158.95%
4263	\$1,772.80	\$1,772.80	150.00%	\$1,772.80	-\$45.15	\$1,818.05	0.00%	\$1,818.05	\$1,725.40	0.00%	-\$92.55	\$1,818.05	0.00%	\$88.65	\$1,256.10	\$70.90	158.95%	\$1,044.90	158.95%
4269	\$884.15	\$1,326.20	150.00%	\$1,292.25	-\$33.95	\$1,355.80	0.00%	\$56.10	\$1,299.70	0.00%	-\$26.50	\$1,370.45	0.00%	\$44.25	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4282	\$121.15	\$183.20	149.98%	\$178.65	-\$41.55	\$187.00	0.00%	\$74.50	\$179.55	0.00%	-\$36.55	\$189.35	0.00%	\$6.15	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4283	\$312.95	\$469.40	149.99%	\$457.50	-\$11.90	\$469.50	0.00%	\$194.45	\$460.05	0.00%	-\$9.35	\$480.05	0.00%	\$15.65	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4283	\$312.95	\$469.40	149.99%	\$457.50	-\$11.90	\$469.50	0.00%	\$194.45	\$460.05	0.00%	-\$9.35	\$480.05	0.00%	\$15.65	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4283	\$312.95	\$469.40	149.99%	\$457.50	-\$11.90	\$469.50	0.00%	\$194.45	\$460.05	0.00%	-\$9.35	\$480.05	0.00%	\$15.65	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4283	\$312.95	\$469.40	149.99%	\$457.50	-\$11.90	\$469.50	0.00%	\$194.45	\$460.05	0.00%	-\$9.35	\$480.05	0.00%	\$15.65	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4283	\$312.95	\$469.40	149.99%	\$457.50	-\$11.90	\$469.50	0.00%	\$194.45	\$460.05	0.00%	-\$9.35	\$480.05	0.00%	\$15.65	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4283	\$312.95	\$469.40	149.99%	\$457.50	-\$11.90	\$469.50	0.00%	\$194.45	\$460.05	0.00%	-\$9.35	\$480.05	0.00%	\$15.65	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4283	\$312.95	\$469.40	149.99%	\$457.50	-\$11.90	\$469.50	0.00%	\$194.45	\$460.05	0.00%	-\$9.35	\$480.05	0.00%	\$15.65	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4283	\$312.95	\$469.40	149.99%	\$457.50	-\$11.90	\$469.50	0.00%	\$194.45	\$460.05	0.00%	-\$9.35	\$480.05	0.00%	\$15.65	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4283	\$312.95	\$469.40	149.99%	\$457.50	-\$11.90	\$469.50	0.00%	\$194.45	\$460.05	0.00%	-\$9.35	\$480.05	0.00%	\$15.65	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4283	\$312.95	\$469.40	149.99%	\$457.50	-\$11.90	\$469.50	0.00%	\$194.45	\$460.05	0.00%	-\$9.35	\$480.05	0.00%	\$15.65	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4283	\$312.95	\$469.40	149.99%	\$457.50	-\$11.90	\$469.50	0.00%	\$194.45	\$460.05	0.00%	-\$9.35	\$480.05	0.00%	\$15.65	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4283	\$312.95	\$469.40	149.99%	\$457.50	-\$11.90	\$469.50	0.00%	\$194.45	\$460.05	0.00%	-\$9.35	\$480.05	0.00%	\$15.65	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4283	\$312.95	\$469.40	149.99%	\$457.50	-\$11.90	\$469.50	0.00%	\$194.45	\$460.05	0.00%	-\$9.35	\$480.05	0.00%	\$15.65	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4283	\$312.95	\$469.40	149.99%	\$457.50	-\$11.90	\$469.50	0.00%	\$194.45	\$460.05	0.00%	-\$9.35	\$480.05	0.00%	\$15.65	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4283	\$312.95	\$469.40	149.99%	\$457.50	-\$11.90	\$469.50	0.00%	\$194.45	\$460.05	0.00%	-\$9.35	\$480.05	0.00%	\$15.65	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4283	\$312.95	\$469.40	149.99%	\$457.50	-\$11.90	\$469.50	0.00%	\$194.45	\$460.05	0.00%	-\$9.35	\$480.05	0.00%	\$15.65	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4283	\$312.95	\$469.40	149.99%	\$457.50	-\$11.90	\$469.50	0.00%	\$194.45	\$460.05	0.00%	-\$9.35	\$480.05	0.00%	\$15.65	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4283	\$312.95	\$469.40	149.99%	\$457.50	-\$11.90	\$469.50	0.00%	\$194.45	\$460.05	0.00%	-\$9.35	\$480.05	0.00%	\$15.65	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4283	\$312.95	\$469.40	149.99%	\$457.50	-\$11.90	\$469.50	0.00%	\$194.45	\$460.05	0.00%	-\$9.35	\$480.05	0.00%	\$15.65	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4283	\$312.95	\$469.40	149.99%	\$457.50	-\$11.90	\$469.50	0.00%	\$194.45	\$460.05	0.00%	-\$9.35	\$480.05	0.00%	\$15.65	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4283	\$312.95	\$469.40	149.99%	\$457.50	-\$11.90	\$469.50	0.00%	\$194.45	\$460.05	0.00%	-\$9.35	\$480.05	0.00%	\$15.65	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4283	\$312.95	\$469.40	149.99%	\$457.50	-\$11.90	\$469.50	0.00%	\$194.45	\$460.05	0.00%	-\$9.35	\$480.05	0.00%	\$15.65	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4283	\$312.95	\$469.40	149.99%	\$457.50	-\$11.90	\$469.50	0.00%	\$194.45	\$460.05	0.00%	-\$9.35	\$480.05	0.00%	\$15.65	\$1,256.10	\$70.90	159.00%	\$1,044.90	159.00%
4283	\$312.95	\$469.40	149.99%	\$457.5															

42758	\$1,091.70	\$1,063.80	\$1,115.25	\$45.35	\$1,069.85	\$1,128.10	0.00%	\$36.40	\$1,157.10	0	\$65.40	\$1,157.20	159.00%	\$65.50
42761	\$8,100.00	\$789.25	\$827.35	\$33.55	\$793.80	\$837.00	0.00%	\$27.00	\$858.40	0	\$48.40	\$858.40	158.95%	\$48.40
42764	\$10,000.00	\$826.80	\$826.80	\$33.00	\$793.80	\$837.00	0.00%	\$27.00	\$858.40	0	\$48.40	\$858.40	158.95%	\$48.40
42767	\$1,114.50	\$789.25	\$827.35	\$33.00	\$793.80	\$837.00	0.00%	\$27.00	\$858.40	0	\$48.40	\$858.40	158.95%	\$48.40
42770	\$3,067.50	\$1,658.35	\$1,737.45	\$1,701.75	\$1,667.70	\$1,738.45	0.00%	\$56.70	\$1,803.50	0	\$101.75	\$1,803.50	159.05%	\$101.75
42773	\$9,386.80	\$448.40	\$470.00	\$19.05	\$450.90	\$475.45	0.00%	\$24.55	\$487.90	0	\$27.75	\$487.90	159.05%	\$27.75
42776	\$1,392.65	\$1,372.40	\$1,437.10	\$35.90	\$1,380.10	\$1,455.20	0.00%	\$75.10	\$1,492.40	0	\$110.30	\$1,492.40	167.75%	\$110.30
42779	\$2,089.00	\$2,035.85	\$2,132.10	\$2,089.00	\$2,047.20	\$2,136.30	0.00%	\$46.90	\$2,336.30	0	\$247.30	\$2,336.30	167.75%	\$247.30
42782	\$2,605.65	\$2,539.45	\$2,628.10	\$2,605.65	\$2,553.55	\$2,628.10	0.00%	\$74.55	\$2,626.10	0	\$20.45	\$2,626.10	151.20%	\$20.45
42785	\$7,040.00	\$49,999.00	\$7,197.50	\$29.80	\$68,999.00	\$7,272.50	0.00%	\$74.55	\$7,272.50	0	\$74.55	\$7,272.50	159.00%	\$74.55
42788	\$5,515.50	\$5,515.50	\$5,636.60	\$23.05	\$5,540.50	\$5,636.60	0.00%	\$96.10	\$5,842.20	0	\$326.55	\$5,842.20	158.90%	\$326.55
42791	\$3,670.00	\$3,537.70	\$3,658.80	\$23.05	\$3,540.50	\$3,658.80	0.00%	\$118.40	\$3,842.20	0	\$326.55	\$3,842.20	158.90%	\$326.55
42794	\$7,045.00	\$5,515.50	\$5,636.60	\$23.05	\$5,540.50	\$5,636.60	0.00%	\$96.10	\$5,842.20	0	\$326.55	\$5,842.20	158.90%	\$326.55
42801	\$1,092.25	\$1,196.25	\$1,702.70	\$86.10	\$1,035.50	\$1,702.70	0.00%	\$39.55	\$1,118.80	0	\$6.10	\$1,118.80	158.70%	\$6.10
42802	\$8,189.40	\$7,974.25	\$8,559.90	\$787.45	\$8,002.55	\$8,559.90	0.00%	\$54.60	\$1,744.90	0	\$106.50	\$1,744.90	159.75%	\$106.50
42805	\$5,405.00	\$9,944.60	\$9,944.60	\$47.85	\$8,002.55	\$9,944.60	0.00%	\$1,942.00	\$8,721.10	0	\$53.15	\$8,721.10	159.75%	\$53.15
42806	\$3,670.00	\$5,515.50	\$5,636.60	\$23.05	\$5,540.50	\$5,636.60	0.00%	\$96.10	\$5,842.20	0	\$326.55	\$5,842.20	158.90%	\$326.55
42807	\$3,700.00	\$5,515.50	\$5,636.60	\$23.05	\$5,540.50	\$5,636.60	0.00%	\$96.10	\$5,842.20	0	\$326.55	\$5,842.20	158.90%	\$326.55
42808	\$3,700.00	\$5,515.50	\$5,636.60	\$23.05	\$5,540.50	\$5,636.60	0.00%	\$96.10	\$5,842.20	0	\$326.55	\$5,842.20	158.90%	\$326.55
42809	\$4,609.30	\$7,040.00	\$7,197.50	\$29.80	\$68,999.00	\$7,272.50	0.00%	\$74.55	\$7,272.50	0	\$74.55	\$7,272.50	159.00%	\$74.55
42810	\$5,900.00	\$8,663.50	\$9,006.30	\$337.00	\$8,663.50	\$9,006.30	0.00%	\$337.00	\$9,390.00	0	\$52.95	\$9,390.00	158.95%	\$52.95
42811	\$1,177.15	\$2,582.25	\$2,582.25	\$1,177.15	\$2,582.25	\$2,582.25	0.00%	\$1,177.15	\$2,582.25	0	\$46.00	\$2,582.25	159.10%	\$46.00
42815	\$6,100.00	\$9,966.05	\$10,077.65	\$41.30	\$9,966.30	\$10,077.65	0.00%	\$8.60	\$10,444.90	0	\$58.85	\$10,444.90	158.95%	\$58.85
42818	\$5,100.00	\$1,138.45	\$1,138.45	\$55.65	\$1,138.45	\$1,138.45	0.00%	\$55.65	\$1,138.45	0	\$55.65	\$1,138.45	158.95%	\$55.65
42821	\$7,045.00	\$5,515.50	\$5,636.60	\$23.05	\$5,540.50	\$5,636.60	0.00%	\$96.10	\$5,842.20	0	\$326.55	\$5,842.20	158.90%	\$326.55
42824	\$5,700.00	\$1,138.45	\$1,138.45	\$55.65	\$1,138.45	\$1,138.45	0.00%	\$55.65	\$1,138.45	0	\$55.65	\$1,138.45	158.95%	\$55.65
42833	\$6,100.00	\$9,966.05	\$10,077.65	\$41.30	\$9,966.30	\$10,077.65	0.00%	\$8.60	\$10,444.90	0	\$58.85	\$10,444.90	158.95%	\$58.85
42836	\$7,598.95	\$1,109.15	\$1,162.10	\$54.40	\$1,162.10	\$1,162.10	0.00%	\$54.40	\$1,162.10	0	\$54.40	\$1,162.10	158.95%	\$54.40
42839	\$7,728.80	\$1,091.70	\$1,144.45	\$54.45	\$1,144.45	\$1,144.45	0.00%	\$54.45	\$1,144.45	0	\$54.45	\$1,144.45	158.95%	\$54.45
42842	\$9,076.65	\$1,361.45	\$1,392.00	\$57.75	\$1,392.00	\$1,392.00	0.00%	\$57.75	\$1,392.00	0	\$57.75	\$1,392.00	158.95%	\$57.75
42845	\$1,197.10	\$2,965.65	\$3,020.00	\$54.35	\$2,965.65	\$3,020.00	0.00%	\$54.35	\$3,020.00	0	\$54.35	\$3,020.00	158.95%	\$54.35
42848	\$7,728.80	\$1,091.70	\$1,144.45	\$54.45	\$1,144.45	\$1,144.45	0.00%	\$54.45	\$1,144.45	0	\$54.45	\$1,144.45	158.95%	\$54.45
42851	\$6,100.00	\$9,966.05	\$10,077.65	\$41.30	\$9,966.30	\$10,077.65	0.00%	\$8.60	\$10,444.90	0	\$58.85	\$10,444.90	158.95%	\$58.85
42854	\$9,076.65	\$1,361.45	\$1,392.00	\$57.75	\$1,392.00	\$1,392.00	0.00%	\$57.75	\$1,392.00	0	\$57.75	\$1,392.00	158.95%	\$57.75
42860	\$9,386.80	\$6,537.00	\$6,935.30	\$400.00	\$6,537.00	\$6,935.30	0.00%	\$400.00	\$7,160.00	0	\$37.90	\$7,160.00	158.95%	\$37.90
42862	\$4,200.00	\$4,200.00	\$4,200.00	\$4,200.00	\$4,200.00	\$4,200.00	0.00%	\$4,200.00	\$4,200.00	0	\$4,200.00	\$4,200.00	158.95%	\$4,200.00
42865	\$7,728.80	\$1,091.70	\$1,144.45	\$54.45	\$1,144.45	\$1,144.45	0.00%	\$54.45	\$1,144.45	0	\$54.45	\$1,144.45	158.95%	\$54.45
42869	\$5,725.45	\$3,765.65	\$3,765.65	\$5,725.45	\$3,765.65	\$3,765.65	0.00%	\$5,725.45	\$3,765.65	0	\$22.55	\$3,765.65	159.00%	\$22.55
42872	\$2,500.00	\$3,765.65	\$3,765.65	\$5,725.45	\$3,765.65	\$3,765.65	0.00%	\$5,725.45	\$3,765.65	0	\$22.55	\$3,765.65	159.00%	\$22.55
43001	\$4,750.00	\$4,750.00	\$4,750.00	\$4,750.00	\$4,750.00	\$4,750.00	0.00%	\$4,750.00	\$4,750.00	0	\$4,750.00	\$4,750.00	158.95%	\$4,750.00
43021	\$6,942.50	\$6,942.50	\$6,942.50	\$6,942.50	\$6,942.50	\$6,942.50	0.00%	\$6,942.50	\$6,942.50	0	\$6,942.50	\$6,942.50	158.95%	\$6,942.50
43023	\$9,025.00	\$1,130.00	\$1,130.00	\$7,000.00	\$1,130.00	\$1,130.00	0.00%	\$7,000.00	\$1,130.00	0	\$7,000.00	\$1,130.00	158.95%	\$7,000.00
43024	\$4,843.30	\$6,114.00	\$6,114.00	\$6,114.00	\$6,114.00	\$6,114.00	0.00%	\$6,114.00	\$6,114.00	0	\$6,114.00	\$6,114.00	158.95%	\$6,114.00
43027	\$7,040.00	\$4,609.30	\$4,609.30	\$7,040.00	\$4,609.30	\$4,609.30	0.00%	\$7,040.00	\$4,609.30	0	\$7,040.00	\$4,609.30	158.95%	\$7,040.00
43030	\$7,040.00	\$4,609.30	\$4,609.30	\$7,040.00	\$4,609.30	\$4,609.30	0.00%	\$7,040.00	\$4,609.30	0	\$7,040.00	\$4,609.30	158.95%	\$7,040.00
43031	\$4,843.30	\$6,114.00	\$6,114.00	\$6,114.00	\$6,114.00	\$6,114.00	0.00%	\$6,114.00	\$6,114.00	0	\$6,114.00	\$6,114.00	158.95%	\$6,114.00
43032	\$7,040.00	\$4,609.30	\$4,609.30	\$7,040.00	\$4,609.30	\$4,609.30	0.00%	\$7,040.00	\$4,609.30	0	\$7,040.00	\$4,609.30	158.95%	\$7,040.00
43033	\$7,040.00	\$4,609.30	\$4,609.30	\$7,040.00	\$4,609.30	\$4,609.30	0.00%	\$7,040.00	\$4,609.30	0	\$7,040.00	\$4,609.30	158.95%	\$7,040.00
43034	\$7,040.00	\$4,609.30	\$4,609.30	\$7,040.00	\$4,609.30	\$4,609.30	0.00%	\$7,040.00	\$4,609.30	0	\$7,040.00	\$4,609.30	158.95%	\$7,040.00
43035	\$7,040.00	\$4,609.30	\$4,609.30	\$7,040.00	\$4,609.30	\$4,609.30	0.00%	\$7,040.00	\$4,609.30	0	\$7,040.00	\$4,609.30	158.95%	\$7,040.00
43036	\$7,040.00	\$4,609.30	\$4,609.30	\$7,040.00	\$4,609.30	\$4,609.30	0.00%	\$7,040.00	\$4,609.30	0	\$7,040.00	\$4,609.30	158.95%	\$7,040.00
43037	\$7,040.00	\$4,609.30	\$4,609.30	\$7,040.00	\$4,609.30	\$4,609.30	0.00%	\$7,040.00	\$4,609.30	0	\$7,040.00	\$4,609.30	158.95%	\$7,040.00
43038	\$7,040.00	\$4,609.30	\$4,609.30	\$7,040.00	\$4,609.30	\$4,609.30	0.00%	\$7,040.00	\$4,609.30	0	\$7,040.00	\$4,609.30	158.95%	\$7,040.00
43039	\$7,040.00	\$4,609.30	\$4,609.30	\$7,040.00	\$4,609.30	\$4,609.30	0.00%	\$7,040.00	\$4,609.30	0	\$7,040.00	\$4,609.30	158.95%	\$7,040.00
43040	\$7,040.00	\$4,609.30	\$4,609.30	\$7,040.00	\$4,609.30	\$4,609.30	0.00%	\$7,040.00	\$4,609.30	0	\$7,040.00	\$4,609.30	158.95%	\$7,040.00
43041	\$7,040.00	\$4,609.30	\$4,609.30	\$7,040.00	\$4,609.30	\$4,609.30	0.00%	\$7,040.00	\$4,609.30	0	\$7,040.00	\$4,609.30	158.95%	\$7,040.00
43042	\$7,040.00	\$4,609.30	\$4,609.30	\$7,040.00	\$4,609.30	\$4,609.30	0.00%	\$7,040.00	\$4,609.30	0	\$7,040.00	\$4,609.30	158.95%	\$7,040.00
43043	\$7,040.00	\$4,609.30	\$4,609.30	\$7,040.00	\$4,609.30	\$4,609.30	0.00%	\$7,040.00	\$4,609.30	0	\$7,040.00	\$4,609.30	158.95%	\$7,040.00
43044	\$7,040.00	\$4,609.30	\$4,609.30	\$7,040.00	\$4,609.30	\$4,609.30	0.00%	\$7,040.00	\$4,609.30	0	\$7,040.00	\$4,609.30	158.95%	\$7,040.00
43045	\$7,040.00	\$4,609.30	\$4,609.30	\$7,040.00	\$4,609.30	\$4,609.30	0.00%	\$7,040.00	\$4,609.30	0	\$7,040.00	\$4,609.30	158.95%	\$7,040.00
43046	\$7,040.00	\$4,609.30	\$4,609.30	\$7,040.00	\$4,609.30	\$4,609.30	0.00%	\$7,040.00	\$4,609.30	0	\$7,040.00	\$4,609.30	158.95%	\$7,040.00
43047	\$7,040.00	\$4,609.30	\$4,609.30	\$7,040.00	\$4,609.30	\$4,609.30	0.00%	\$7,040.00	\$4,609.30	0	\$7,040.00	\$4,609.30	158.95%	\$7,040.00
43048	\$7,040.00	\$4,609.30	\$4,609.30	\$7,040.00	\$4,609.30	\$4,609.30	0.00%	\$7,040.00	\$4,609.30	0	\$7,040.00	\$4,609.30	158.95%	\$7,040.00
43049	\$7,040.00	\$4,609.30	\$4,609.30	\$7,040.00	\$4,609.30	\$4,609.30	0.00%	\$7,040.00	\$4,609.30	0	\$7,040.00	\$4,609.30	158.95%	\$7,040.00
43050	\$7,040.00	\$4,609.30	\$4,609.30	\$7,040.00	\$4,609.30	\$4,609.30	0.00%	\$7,040.00	\$4,609.30	0	\$7,040.00	\$4,609.30	158.95%	\$7,040.00
43051	\$7,040.00	\$4,609.30	\$4,609.30	\$7,040.00	\$4,609.30	\$4,609.30	0.00%	\$7,040.00	\$4,609.30	0	\$7,040.00	\$4,609.30	158.95%	\$7,040.00
43052	\$7,040.00	\$4,609.30	\$4,609.30	\$7,040.00	\$4,609.30	\$4,609.30	0.00%	\$7,040.00	\$4,609.30	0	\$7,040.00	\$4,609.30	158.95%	\$7,040.00
43053	\$7,040.00	\$4,609.30	\$4,609.30	\$7,040.00	\$4,609.30	\$4,609.30	0.00%	\$7,040.00	\$4,609.30	0	\$7,040.00	\$4,609.30	158.95%	\$7,040.00
43054	\$7,040.00	\$4,609.30	\$4,609.30	\$7,040.00	\$4,609.30	\$4,609.30	0.00%	\$7,040.00	\$4,609.30	0	\$7,040.00	\$4,609.30	158.95%	\$7,040.00
43055	\$7,040.00	\$4,609.30	\$4,609.30	\$7,040.00	\$4,609.30	\$4,609.30</								

45530	\$1,143.95	148.02%	\$1,672.10	\$1,655.15	0.00%	\$7.65	\$1,624.40	0.00%	\$68.85	\$1,647.30	0.00%	-\$45.95	\$2,049.50	0	\$356.25	\$2,049.50	179.15%	\$36.25
45531	\$1,295.50	148.02%	\$1,893.30	\$1,888.60	0.00%	\$2.80	\$1,893.60	0.00%	-\$39.50	\$1,865.50	0.00%	-\$2.10	\$2,321.20	0	\$403.60	\$2,321.20	179.15%	\$403.60
45532	\$973.60	148.02%	\$1,367.00	\$1,364.25	0.00%	\$2.75	\$1,364.50	0.00%	-\$26.75	\$1,337.75	0.00%	-\$27.00	\$1,777.90	0	\$404.89	\$1,777.90	179.15%	\$404.89
45533	\$1,150.4	148.02%	\$1,676.00	\$1,676.95	0.00%	\$0.95	\$1,677.90	0.00%	-\$69.22	\$1,608.68	0.00%	-\$69.22	\$2,059.30	0	\$356.48	\$2,059.30	179.15%	\$356.48
45534	\$705.25	148.02%	\$969.35	\$969.05	0.00%	\$0.30	\$969.35	0.00%	-\$28.70	\$940.65	0.00%	-\$28.70	\$1,248.25	0	\$316.45	\$1,248.25	179.15%	\$316.45
45535	\$1,114.65	148.02%	\$1,629.30	\$1,629.35	0.00%	\$0.05	\$1,629.35	0.00%	-\$67.10	\$1,562.25	0.00%	-\$67.10	\$1,852.20	0	\$202.30	\$1,852.20	166.15%	\$202.30
45536	\$647.80	148.01%	\$946.85	\$946.80	0.00%	\$0.05	\$946.85	0.00%	-\$38.40	\$908.45	0.00%	-\$38.40	\$1,143.10	0	\$198.40	\$1,143.10	179.10%	\$198.40
45537	\$205.85	148.01%	\$300.95	\$300.95	0.00%	\$0.00	\$300.95	0.00%	-\$12.90	\$288.05	0.00%	-\$12.90	\$368.60	0	\$201.80	\$368.60	179.05%	\$201.80
45538	\$461.65	148.02%	\$674.65	\$674.65	0.00%	\$0.00	\$674.65	0.00%	-\$11.55	\$663.10	0.00%	-\$11.55	\$826.90	0	\$89.55	\$826.90	179.10%	\$89.55
45539	\$594.75	148.02%	\$869.25	\$869.25	0.00%	\$0.00	\$869.25	0.00%	-\$45.80	\$823.45	0.00%	-\$45.80	\$1,046.10	0	\$143.55	\$1,046.10	179.10%	\$143.55
45540	\$727.80	148.02%	\$1,063.80	\$1,063.80	0.00%	\$0.00	\$1,063.80	0.00%	-\$47.50	\$1,016.30	0.00%	-\$47.50	\$1,280.10	0	\$202.80	\$1,280.10	179.90%	\$202.80
45541	\$797.05	148.02%	\$1,164.80	\$1,164.80	0.00%	\$0.00	\$1,164.80	0.00%	-\$48.00	\$1,116.80	0.00%	-\$48.00	\$1,453.40	0	\$273.60	\$1,453.40	183.35%	\$273.60
45542	\$1,195.50	148.02%	\$1,747.10	\$1,747.10	0.00%	\$0.00	\$1,747.10	0.00%	-\$72.00	\$1,675.10	0.00%	-\$72.00	\$1,971.50	0	\$201.90	\$1,971.50	164.90%	\$201.90
45543	\$492.85	148.02%	\$729.50	\$729.50	0.00%	\$0.00	\$729.50	0.00%	-\$69.85	\$659.65	0.00%	-\$69.85	\$883.00	0	\$153.50	\$883.00	179.15%	\$153.50
45544	\$1,846.60	148.02%	\$2,699.15	\$2,699.15	0.00%	\$0.00	\$2,699.15	0.00%	-\$262.25	\$2,436.90	0.00%	-\$262.25	\$3,303.60	0	\$570.25	\$3,303.60	178.90%	\$570.25
45545	\$1,143.95	148.02%	\$1,672.10	\$1,672.10	0.00%	\$0.00	\$1,672.10	0.00%	-\$68.85	\$1,603.25	0.00%	-\$68.85	\$2,049.50	0	\$356.25	\$2,049.50	179.15%	\$356.25
45546	\$1,693.25	148.02%	\$2,492.15	\$2,492.15	0.00%	\$0.00	\$2,492.15	0.00%	-\$162.40	\$2,329.75	0.00%	-\$162.40	\$3,045.05	0	\$515.65	\$3,045.05	158.85%	\$515.65
45547	\$2,649.50	148.02%	\$3,872.75	\$3,872.75	0.00%	\$0.00	\$3,872.75	0.00%	-\$159.50	\$3,713.25	0.00%	-\$159.50	\$4,746.10	0	\$824.30	\$4,746.10	179.15%	\$824.30
45548	\$1,987.20	148.02%	\$2,893.70	\$2,893.70	0.00%	\$0.00	\$2,893.70	0.00%	-\$119.55	\$2,774.15	0.00%	-\$119.55	\$3,559.90	0	\$618.45	\$3,559.90	179.15%	\$618.45
45549	\$1,114.65	148.02%	\$1,629.30	\$1,629.30	0.00%	\$0.00	\$1,629.30	0.00%	-\$67.10	\$1,562.20	0.00%	-\$67.10	\$1,996.60	0	\$467.00	\$1,996.60	179.10%	\$467.00
45550	\$461.65	148.02%	\$674.65	\$674.65	0.00%	\$0.00	\$674.65	0.00%	-\$27.80	\$646.85	0.00%	-\$27.80	\$826.70	0	\$143.35	\$826.70	179.10%	\$143.35
45551	\$705.25	148.02%	\$969.35	\$969.35	0.00%	\$0.00	\$969.35	0.00%	-\$42.50	\$926.85	0.00%	-\$42.50	\$996.25	0	\$141.30%	\$996.25	141.30%	-\$47.45
45552	\$925.10	148.02%	\$1,351.30	\$1,351.30	0.00%	\$0.00	\$1,351.30	0.00%	-\$57.30	\$1,294.00	0.00%	-\$57.30	\$1,704.95	0	\$295.75	\$1,704.95	179.10%	\$295.75
45553	\$303.50	148.01%	\$443.50	\$443.50	0.00%	\$0.00	\$443.50	0.00%	-\$18.25	\$425.25	0.00%	-\$18.25	\$544.10	0	\$94.90	\$544.10	179.30%	\$94.90
45554	\$1,092.40	148.01%	\$1,595.40	\$1,595.40	0.00%	\$0.00	\$1,595.40	0.00%	-\$45.05	\$1,550.35	0.00%	-\$45.05	\$1,942.65	0	\$233.40	\$1,942.65	179.15%	\$233.40
45555	\$787.85	148.02%	\$1,168.60	\$1,168.60	0.00%	\$0.00	\$1,168.60	0.00%	-\$52.25	\$1,116.35	0.00%	-\$52.25	\$1,554.80	0	\$270.20	\$1,554.80	179.15%	\$270.20
45556	\$426.25	148.01%	\$620.80	\$620.80	0.00%	\$0.00	\$620.80	0.00%	-\$16.55	\$604.25	0.00%	-\$16.55	\$785.50	0	\$89.55	\$785.50	179.10%	\$89.55
45557	\$973.00	148.02%	\$1,396.80	\$1,396.80	0.00%	\$0.00	\$1,396.80	0.00%	-\$39.35	\$1,357.45	0.00%	-\$39.35	\$1,777.90	0	\$204.90	\$1,777.90	179.20%	\$204.90
45558	\$1,372.05	148.02%	\$1,955.05	\$1,955.05	0.00%	\$0.00	\$1,955.05	0.00%	-\$55.80	\$1,899.25	0.00%	-\$55.80	\$2,366.55	0	\$482.90	\$2,366.55	179.15%	\$482.90
45559	\$2,649.50	148.02%	\$3,872.75	\$3,872.75	0.00%	\$0.00	\$3,872.75	0.00%	-\$188.55	\$3,684.20	0.00%	-\$188.55	\$4,660.65	0	\$976.45	\$4,660.65	179.15%	\$976.45
45560	\$727.80	148.02%	\$1,063.80	\$1,063.80	0.00%	\$0.00	\$1,063.80	0.00%	-\$55.90	\$1,007.90	0.00%	-\$55.90	\$1,276.50	0	\$245.70	\$1,276.50	179.15%	\$245.70
45561	\$1,390.55	148.02%	\$2,058.30	\$2,058.30	0.00%	\$0.00	\$2,058.30	0.00%	-\$115.31	\$1,942.99	0.00%	-\$115.31	\$2,464.90	0	\$511.90	\$2,464.90	179.15%	\$511.90
45562	\$502.85	148.02%	\$735.05	\$735.05	0.00%	\$0.00	\$735.05	0.00%	-\$27.50	\$707.55	0.00%	-\$27.50	\$890.70	0	\$156.40	\$890.70	179.15%	\$156.40
45563	\$936.65	148.02%	\$1,366.40	\$1,366.40	0.00%	\$0.00	\$1,366.40	0.00%	-\$45.80	\$1,320.60	0.00%	-\$45.80	\$1,658.10	0	\$281.50	\$1,658.10	179.15%	\$281.50
45564	\$1,242.25	148.02%	\$1,783.25	\$1,783.25	0.00%	\$0.00	\$1,783.25	0.00%	-\$61.55	\$1,721.70	0.00%	-\$61.55	\$2,162.40	0	\$380.65	\$2,162.40	179.15%	\$380.65
45565	\$974.50	148.02%	\$1,402.25	\$1,402.25	0.00%	\$0.00	\$1,402.25	0.00%	-\$58.75	\$1,343.50	0.00%	-\$58.75	\$1,632.40	0	\$248.90	\$1,632.40	179.15%	\$248.90
45566	\$2,649.50	148.02%	\$3,872.75	\$3,872.75	0.00%	\$0.00	\$3,872.75	0.00%	-\$188.55	\$3,684.20	0.00%	-\$188.55	\$4,660.65	0	\$976.45	\$4,660.65	179.15%	\$976.45
45567	\$727.80	148.02%	\$1,063.80	\$1,063.80	0.00%	\$0.00	\$1,063.80	0.00%	-\$55.90	\$1,007.90	0.00%	-\$55.90	\$1,276.50	0	\$245.70	\$1,276.50	179.15%	\$245.70
45568	\$1,390.55	148.02%	\$2,058.30	\$2,058.30	0.00%	\$0.00	\$2,058.30	0.00%	-\$115.31	\$1,942.99	0.00%	-\$115.31	\$2,464.90	0	\$511.90	\$2,464.90	179.15%	\$511.90
45569	\$502.85	148.02%	\$735.05	\$735.05	0.00%	\$0.00	\$735.05	0.00%	-\$27.50	\$707.55	0.00%	-\$27.50	\$890.70	0	\$156.40	\$890.70	179.15%	\$156.40
45570	\$936.65	148.02%	\$1,366.40	\$1,366.40	0.00%	\$0.00	\$1,366.40	0.00%	-\$45.80	\$1,320.60	0.00%	-\$45.80	\$1,658.10	0	\$281.50	\$1,658.10	179.15%	\$281.50
45571	\$1,242.25	148.02%	\$1,783.25	\$1,783.25	0.00%	\$0.00	\$1,783.25	0.00%	-\$61.55	\$1,721.70	0.00%	-\$61.55	\$2,162.40	0	\$380.65	\$2,162.40	179.15%	\$380.65
45572	\$974.50	148.02%	\$1,402.25	\$1,402.25	0.00%	\$0.00	\$1,402.25	0.00%	-\$58.75	\$1,343.50	0.00%	-\$58.75	\$1,632.40	0	\$248.90	\$1,632.40	179.15%	\$248.90
45573	\$2,649.50	148.02%	\$3,872.75	\$3,872.75	0.00%	\$0.00	\$3,872.75	0.00%	-\$188.55	\$3,684.20	0.00%	-\$188.55	\$4,660.65	0	\$976.45	\$4,660.65	179.15%	\$976.45
45574	\$727.80	148.02%	\$1,063.80	\$1,063.80	0.00%	\$0.00	\$1,063.80	0.00%	-\$55.90	\$1,007.90	0.00%	-\$55.90	\$1,276.50	0	\$245.70	\$1,276.50	179.15%	\$245.70
45575	\$1,390.55	148.02%	\$2,058.30	\$2,058.30	0.00%	\$0.00	\$2,058.30	0.00%	-\$115.31	\$1,942.99	0.00%	-\$115.31	\$2,464.90	0	\$511.90	\$2,464.90	179.15%	\$511.90
45576	\$502.85	148.02%	\$735.05	\$735.05	0.00%	\$0.00	\$735.05	0.00%	-\$27.50	\$707.55	0.00%	-\$27.50	\$890.70	0	\$156.40	\$890.70	179.15%	\$156.40
45577	\$936.65	148.02%	\$1,366.40	\$1,366.40	0.00%	\$0.00	\$1,366.40	0.00%	-\$45.80	\$1,320.60	0.00%	-\$45.80	\$1,658.10	0	\$281.50	\$1,658.10	179.15%	\$281.50
45578	\$1,242.25	148.02%	\$1,783.25	\$1,783.25	0.00%	\$0.00	\$1,783.25	0.00%	-\$61.55	\$1,721.70	0.00%	-\$61.55	\$2,162.40	0	\$380.65	\$2,162.40	179.15%	\$380.65
45579	\$974.50	148.02%	\$1,402.25	\$1,402.25	0.00%	\$0.00	\$1,402.25	0.00%	-\$58.75	\$1,343.50	0.00%	-\$58.75	\$1,632.40	0	\$248.90	\$1,632.40	179.15%	\$248.90
45580	\$2,649.50	148.02%	\$3,872.75	\$3,872.75	0.00%	\$0.00	\$3,872.75	0.00%	-\$188.55	\$3,684.20	0.00%	-\$188.55	\$4,660.65	0	\$976.45	\$4,660.65	179.15%	\$976.45
45581	\$727.80	148.02%	\$1,063.80	\$1,063.80	0.00%	\$0.00	\$1,063.80	0.00%	-\$55.90	\$1,007.90	0.00%	-\$55.90	\$1,276.50	0	\$245.70	\$1,276.50	179.15%	\$245.70
45582	\$1,390.55	148.02%	\$2,058.30	\$2,058.30	0.00%	\$0.00	\$2,058.30	0.00%	-\$115.31	\$1,942.99	0.00%	-\$115.31	\$2,464.90	0	\$511.90	\$2,464.90	179.15%	\$511.90
45583	\$502.85	148.02%	\$735.05	\$735.05	0.00%	\$0.00	\$735.05	0.00%	-\$27.50	\$707.55	0.00%	-\$27.50	\$890.70	0	\$156.40	\$890.70	179.15%	\$156.40
45584	\$936.65	148.02%	\$1,366.40	\$1,366.40	0.00%	\$0.00	\$1,366.40	0.00%	-\$45.80	\$1,320.60	0.00%	-\$45.80	\$1,658.10	0	\$281.50	\$1,658.10	179.15%	\$281.50
45585	\$1,242.25	148.02%	\$1,783.25	\$1,783.25	0.00%	\$0.00	\$1,783.25	0.00%	-\$61.55	\$1,721.70	0.00%	-\$61.55	\$2,162.40	0	\$380.65	\$2,162.40	179.15%	\$380.65
45586	\$974.50	148.02%	\$1,402.25	\$1,402.25	0.00%	\$0.00	\$1,402.25	0.00%	-\$58.75	\$1,343.50	0.00%	-\$58.75	\$1,632.40	0	\$248.90	\$1,632.40	179.15%	\$248.90
45587	\$2,649.50	148.02%	\$3,872.75	\$3,872.75	0.00%	\$0.00	\$3,872.75	0.00%	-\$188.55	\$3,684.20	0.00%	-\$188.55	\$4,660.65	0	\$976.45	\$4,660.65	179.15%	\$976.45
45588	\$727.80	148.02%	\$1,063.80	\$1,063.80	0.00%	\$0.00	\$1,063.80	0.00%	-\$55.90	\$1,007.90	0.00%	-\$55.90						

45695	508.55	752.75	148.02%	5743.30	-59.45	735.70	0.00%	-517.05	5756.00	0.00%	33.25	5722.15	0.00%	-\$30.60	732.30	0.00%	-\$20.45	\$911.00	0	0	518.25	\$911.10	179.15%	\$158.35
45696	577.35	706.55	148.01%	5698.25	-58.30	690.65	0.00%	-515.90	5709.70	0.00%	35.15	5677.85	0.00%	-\$28.70	687.40	0.00%	-\$19.15	885.00	0	0	518.45	885.05	179.10%	\$148.50
45701	546.85	580.35	148.02%	5125.70	-51.95	524.75	0.00%	-528.55	5128.10	0.00%	33.85	5122.40	0.00%	-\$51.85	5123.60	0.00%	-\$34.65	514.90	0	0	527.65	514.90	179.10%	\$267.65
45704	531.95	563.20	148.01%	5457.50	-57.70	545.60	0.00%	-510.60	5465.10	0.00%	31.90	5444.40	0.00%	-\$49.80	5450.65	0.00%	-\$12.55	560.85	0	0	527.65	560.85	179.20%	\$97.65
45707	581.60	603.20	148.02%	5117.45	-51.48	517.75	0.00%	-526.85	5120.95	0.00%	35.65	51155.30	0.00%	-\$18.80	5117.60	0.00%	-\$32.70	5145.50	0	0	523.20	5145.50	179.15%	\$251.25
45710	508.55	572.75	148.01%	5743.30	-59.45	735.70	0.00%	-517.05	5756.00	0.00%	33.25	5722.15	0.00%	-\$30.60	732.30	0.00%	-\$20.45	911.00	0	0	518.25	911.10	179.15%	158.35
45713	579.15	587.20	148.01%	5846.55	-51.05	583.95	0.00%	-519.25	5861.00	0.00%	33.90	5822.40	0.00%	-\$34.80	5834.00	0.00%	-\$20.45	5103.40	0	0	518.20	5103.45	179.15%	180.25
45714	581.60	587.20	148.02%	5118.45	-51.48	517.75	0.00%	-526.85	5120.95	0.00%	35.65	51155.30	0.00%	-\$18.80	5117.60	0.00%	-\$32.70	5145.50	0	0	523.20	5145.50	179.15%	251.25
45716	518.45	518.45	148.02%	51470.35	-18.65	514.55	0.00%	-533.20	51486.00	0.00%	57.00	51428.45	0.00%	-\$68.30	51483.00	0.00%	-\$40.45	51802.30	0	0	513.30	51802.30	179.15%	313.30
45720	514.89	514.89	148.02%	51470.35	-20.95	514.61	0.00%	-537.55	51496.00	0.00%	57.00	51428.45	0.00%	-\$68.30	51483.00	0.00%	-\$40.45	5203.40	0	0	513.30	5203.40	179.15%	313.30
45723	5113.50	5167.90	148.02%	5167.90	-54.40	5164.75	0.00%	-548.50	51900.35	0.00%	52.75	51820.45	0.00%	-\$77.15	51846.10	0.00%	-\$51.50	5296.20	0	0	539.60	5296.20	179.10%	598.60
45726	518.45	518.45	148.02%	51470.35	-20.95	514.61	0.00%	-537.55	51496.00	0.00%	57.00	51428.45	0.00%	-\$68.30	51483.00	0.00%	-\$40.45	5203.40	0	0	513.30	5203.40	179.15%	313.30
45729	514.89	514.89	148.02%	51470.35	-20.95	514.61	0.00%	-537.55	51496.00	0.00%	57.00	51428.45	0.00%	-\$68.30	51483.00	0.00%	-\$40.45	5203.40	0	0	513.30	5203.40	179.15%	313.30
45731	514.89	514.89	148.02%	51470.35	-20.95	514.61	0.00%	-537.55	51496.00	0.00%	57.00	51428.45	0.00%	-\$68.30	51483.00	0.00%	-\$40.45	5203.40	0	0	513.30	5203.40	179.15%	313.30
45732	514.89	514.89	148.02%	51470.35	-20.95	514.61	0.00%	-537.55	51496.00	0.00%	57.00	51428.45	0.00%	-\$68.30	51483.00	0.00%	-\$40.45	5203.40	0	0	513.30	5203.40	179.15%	313.30
45734	514.89	514.89	148.02%	51470.35	-20.95	514.61	0.00%	-537.55	51496.00	0.00%	57.00	51428.45	0.00%	-\$68.30	51483.00	0.00%	-\$40.45	5203.40	0	0	513.30	5203.40	179.15%	313.30
45738	516.85	521.35	148.02%	5224.85	-53.20	523.00	0.00%	-552.40	52163.40	0.00%	53.50	52072.25	0.00%	-\$86.65	52179.30	0.00%	-\$51.50	5448.20	0	0	548.20	5448.20	179.10%	548.20
45739	516.85	521.35	148.02%	5224.85	-53.20	523.00	0.00%	-552.40	52163.40	0.00%	53.50	52072.25	0.00%	-\$86.65	52179.30	0.00%	-\$51.50	5448.20	0	0	548.20	5448.20	179.10%	548.20
45743	516.85	521.35	148.02%	5224.85	-53.20	523.00	0.00%	-552.40	52163.40	0.00%	53.50	52072.25	0.00%	-\$86.65	52179.30	0.00%	-\$51.50	5448.20	0	0	548.20	5448.20	179.10%	548.20
45745	516.85	521.35	148.02%	5224.85	-53.20	523.00	0.00%	-552.40	52163.40	0.00%	53.50	52072.25	0.00%	-\$86.65	52179.30	0.00%	-\$51.50	5448.20	0	0	548.20	5448.20	179.10%	548.20
45748	516.85	521.35	148.02%	5224.85	-53.20	523.00	0.00%	-552.40	52163.40	0.00%	53.50	52072.25	0.00%	-\$86.65	52179.30	0.00%	-\$51.50	5448.20	0	0	548.20	5448.20	179.10%	548.20
45753	520.35	530.60	148.02%	5269.50	-53.80	531.30	0.00%	-569.80	52733.60	0.00%	53.95	52618.60	0.00%	-\$112.50	52715.55	0.00%	-\$75.80	5303.50	0	0	557.85	5303.50	179.15%	573.85
45754	520.35	530.60	148.02%	5269.50	-53.80	531.30	0.00%	-569.80	52733.60	0.00%	53.95	52618.60	0.00%	-\$112.50	52715.55	0.00%	-\$75.80	5303.50	0	0	557.85	5303.50	179.15%	573.85
45758	520.35	530.60	148.02%	5269.50	-53.80	531.30	0.00%	-569.80	52733.60	0.00%	53.95	52618.60	0.00%	-\$112.50	52715.55	0.00%	-\$75.80	5303.50	0	0	557.85	5303.50	179.15%	573.85
45761	520.35	530.60	148.02%	5269.50	-53.80	531.30	0.00%	-569.80	52733.60	0.00%	53.95	52618.60	0.00%	-\$112.50	52715.55	0.00%	-\$75.80	5303.50	0	0	557.85	5303.50	179.15%	573.85
45764	520.35	530.60	148.02%	5269.50	-53.80	531.30	0.00%	-569.80	52733.60	0.00%	53.95	52618.60	0.00%	-\$112.50	52715.55	0.00%	-\$75.80	5303.50	0	0	557.85	5303.50	179.15%	573.85
45767	520.35	530.60	148.02%	5269.50	-53.80	531.30	0.00%	-569.80	52733.60	0.00%	53.95	52618.60	0.00%	-\$112.50	52715.55	0.00%	-\$75.80	5303.50	0	0	557.85	5303.50	179.15%	573.85
45770	520.35	530.60	148.02%	5269.50	-53.80	531.30	0.00%	-569.80	52733.60	0.00%	53.95	52618.60	0.00%	-\$112.50	52715.55	0.00%	-\$75.80	5303.50	0	0	557.85	5303.50	179.15%	573.85
45773	520.35	530.60	148.02%	5269.50	-53.80	531.30	0.00%	-569.80	52733.60	0.00%	53.95	52618.60	0.00%	-\$112.50	52715.55	0.00%	-\$75.80	5303.50	0	0	557.85	5303.50	179.15%	573.85
45776	520.35	530.60	148.02%	5269.50	-53.80	531.30	0.00%	-569.80	52733.60	0.00%	53.95	52618.60	0.00%	-\$112.50	52715.55	0.00%	-\$75.80	5303.50	0	0	557.85	5303.50	179.15%	573.85
45779	520.35	530.60	148.02%	5269.50	-53.80	531.30	0.00%	-569.80	52733.60	0.00%	53.95	52618.60	0.00%	-\$112.50	52715.55	0.00%	-\$75.80	5303.50	0	0	557.85	5303.50	179.15%	573.85
45782	520.35	530.60	148.02%	5269.50	-53.80	531.30	0.00%	-569.80	52733.60	0.00%	53.95	52618.60	0.00%	-\$112.50	52715.55	0.00%	-\$75.80	5303.50	0	0	557.85	5303.50	179.15%	573.85
45785	520.35	530.60	148.02%	5269.50	-53.80	531.30	0.00%	-569.80	52733.60	0.00%	53.95	52618.60	0.00%	-\$112.50	52715.55	0.00%	-\$75.80	5303.50	0	0	557.85	5303.50	179.15%	573.85
45788	520.35	530.60	148.02%	5269.50	-53.80	531.30	0.00%	-569.80	52733.60	0.00%	53.95	52618.60	0.00%	-\$112.50	52715.55	0.00%	-\$75.80	5303.50	0	0	557.85	5303.50	179.15%	573.85
45791	520.35	530.60	148.02%	5269.50	-53.80	531.30	0.00%	-569.80	52733.60	0.00%	53.95	52618.60	0.00%	-\$112.50	52715.55	0.00%	-\$75.80	5303.50	0	0	557.85	5303.50	179.15%	573.85
45794	520.35	530.60	148.02%	5269.50	-53.80	531.30	0.00%	-569.80	52733.60	0.00%	53.95	52618.60	0.00%	-\$112.50	52715.55	0.00%	-\$75.80	5303.50	0	0	557.85	5303.50	179.15%	573.85
45797	520.35	530.60	148.01%	5269.50	-53.25	528.55	0.00%	-567.55	52795.30	0.00%	53.45	5274.50	0.00%	-\$111.50	5279.50	0.00%	-\$70.50	5303.50	0	0	560.30	5303.50	179.10%	560.30
45799	520.35	530.60	148.01%	5269.50	-53.25	528.55	0.00%	-567.55	52795.30	0.00%	53.45	5274.50	0.00%	-\$111.50	5279.50	0.00%	-\$70.50	5303.50	0	0	560.30	5303.50	179.10%	560.30
45801	520.35	530.60	148.01%	5269.50	-53.25	528.55	0.00%	-567.55	52795.30	0.00%	53.45	5274.50	0.00%	-\$111.50	5279.50	0.00%	-\$70.50	5303.50	0	0	560.30	5303.50	179.10%	560.30
45803	520.35	530.60	148.01%	5269.50	-53.25	528.55	0.00%	-567.55	52795.30	0.00%	53.45	5274.50	0.00%	-\$111.50	5279.50	0.00%	-\$70.50	5303.50	0	0	560.30	5303.50	179.10%	560.30
45805	520.35	530.60	148.01%	5269.50	-53.25	528.55	0.00%	-567.55	52795.30	0.00%	53.45	5274.50	0.00%	-\$111.50	5279.50	0.00%	-\$70.50	5303.50	0	0	560.30	5303.50	179.10%	560.30
45807	520.35	530.60	148.01%	5269.50	-53.25	528.55	0.00%	-567.55	52795.30	0.00%	53.45	5274.50	0.00%	-\$111.50	5279.50	0.00%	-\$70.50	5303.50	0	0	560.30	5303.50	179.10%	560.30
45809	520.35	530.60	148.01%	5269.50	-53.25	528.55	0.00%	-567.55	52795.30	0.00%	53.45	5274.50	0.00%	-\$111.50	5279.50	0.00%	-\$70.50	5303.50	0	0	560.30	5303.50	179.10%	560.30
45811	520.35	530.60	148.01%	5269.50	-53.25	528.55	0.00%	-567.55	52795.30	0.00%	53.45	5274.50	0.00%	-\$111.50	5279.50	0.00%	-\$70.50	5303.50	0	0	560.30	5303.50	179.10%	560.30
45813	520.35	530.60	148.01%	5269.50	-53.25	528.55	0.00%	-567.55	52795.30	0.00%	53.45	5274.50	0.00%	-\$111.50	5279.50	0.00%	-\$70.50	5303.50	0	0	560.30	5303.50	179.10%	560.30
45815	520.35	530.60	148.01%	5269.50	-53.25	528.55	0.00%	-567.55	52795.30	0.00%	53.45	5274.50	0.00%	-\$111.50	5279.50	0.00%	-\$70.50	5303.50	0	0	560.30	5303.50	179.10%	560.30
45817	520.35	530.60	148.																					

45891	\$626.90	\$927.85	148.01%	5922.65	\$5.70	\$905.55	0.00%	\$27.30	\$930.60	0.00%	\$37.65	\$902.75	0.00%	\$25.10	\$914.00	0.00%	-\$13.85	\$914.00	145.80%	-\$11.85
45892	\$211.00	\$313.45	148.01%	\$307.60	\$1.80	\$307.60	0.00%	-\$27.30	\$930.60	0.00%	\$37.65	\$902.75	0.00%	\$25.10	\$914.00	0.00%	-\$13.85	\$914.00	145.80%	-\$11.85
45893	\$1,646.55	\$1,607.05	148.02%	\$1,607.05	\$9.40	\$1,607.05	0.00%	-\$39.50	\$1,651.50	0.00%	-\$66.95	\$1,601.85	0.00%	-\$44.70	\$1,621.30	0.00%	-\$25.25	\$1,621.30	145.75%	-\$25.25
45894	\$250.90	\$369.20	148.02%	\$369.20	\$5.00	\$369.20	0.00%	-\$17.70	\$690.50	0.00%	-\$29.00	\$669.30	0.00%	-\$10.70	\$678.10	0.00%	-\$11.60	\$678.10	145.75%	-\$11.50
45895	\$689.60	\$689.60	148.24%	\$689.60	\$5.00	\$689.60	0.00%	-\$18.45	\$1,183.35	0.00%	-\$7.70	\$1,177.85	0.00%	-\$3.05	\$1,180.05	0.00%	-\$11.60	\$1,180.05	145.75%	-\$11.50
45896	\$123.50	\$183.05	148.20%	\$183.05	\$1.25	\$183.05	0.00%	-\$5.10	\$1,999.50	0.00%	-\$8.40	\$1,919.55	0.00%	-\$3.55	\$1,986.80	0.00%	-\$11.45	\$1,986.80	145.80%	-\$11.45
45897	\$134.40	\$197.75	148.24%	\$197.75	\$0.20	\$197.75	0.00%	-\$5.25	\$2,323.25	0.00%	-\$10.20	\$2,283.50	0.00%	-\$5.70	\$2,329.30	0.00%	-\$4.15	\$2,329.30	145.70%	-\$4.15
45898	\$810.00	\$1,212.05	148.19%	\$1,212.05	\$0.15	\$1,212.05	0.00%	-\$24.35	\$955.40	0.00%	-\$40.05	\$925.90	0.00%	-\$27.20	\$935.30	0.00%	-\$15.80	\$935.30	145.80%	-\$15.80
45899	\$641.60	\$944.25	148.24%	\$944.25	\$1.30	\$944.25	0.00%	-\$24.35	\$955.40	0.00%	-\$40.05	\$925.90	0.00%	-\$27.20	\$935.30	0.00%	-\$15.80	\$935.30	145.80%	-\$15.80
45900	\$876.40	\$1,289.75	148.24%	\$1,289.75	\$1.90	\$1,289.75	0.00%	-\$33.15	\$1,301.10	0.00%	-\$54.70	\$1,262.00	0.00%	-\$37.20	\$1,277.60	0.00%	-\$21.60	\$1,277.60	145.80%	-\$21.60
45901	\$299.20	\$466.05	148.22%	\$466.05	\$3.00	\$466.05	0.00%	-\$33.15	\$1,301.10	0.00%	-\$54.70	\$1,262.00	0.00%	-\$37.20	\$1,277.60	0.00%	-\$21.60	\$1,277.60	145.80%	-\$21.60
45902	\$428.45	\$656.95	150.74%	\$656.95	\$2.50	\$656.95	0.00%	-\$9.25	\$686.90	0.00%	-\$35.80	\$654.95	0.00%	-\$18.50	\$662.10	0.00%	-\$6.15	\$662.10	145.75%	-\$6.15
45903	\$248.45	\$366.95	150.74%	\$366.95	\$2.40	\$366.95	0.00%	-\$9.25	\$686.90	0.00%	-\$35.80	\$654.95	0.00%	-\$18.50	\$662.10	0.00%	-\$6.15	\$662.10	145.75%	-\$6.15
45904	\$547.85	\$825.80	150.74%	\$825.80	\$2.05	\$825.80	0.00%	-\$6.85	\$860.00	0.00%	-\$34.20	\$849.15	0.00%	-\$23.30	\$851.70	0.00%	-\$12.55	\$851.70	173.70%	-\$12.55
45905	\$574.80	\$825.80	150.75%	\$825.80	\$2.35	\$825.80	0.00%	-\$6.85	\$860.00	0.00%	-\$34.20	\$849.15	0.00%	-\$23.30	\$851.70	0.00%	-\$12.55	\$851.70	173.70%	-\$12.55
45906	\$547.80	\$825.80	150.75%	\$825.80	\$2.35	\$825.80	0.00%	-\$6.85	\$860.00	0.00%	-\$34.20	\$849.15	0.00%	-\$23.30	\$851.70	0.00%	-\$12.55	\$851.70	173.70%	-\$12.55
45907	\$740.40	\$1,061.80	150.74%	\$1,061.80	\$3.25	\$1,061.80	0.00%	-\$11.75	\$1,474.45	0.00%	-\$44.05	\$1,401.90	0.00%	-\$39.95	\$1,423.30	0.00%	-\$16.15	\$1,423.30	173.70%	-\$16.15
45908	\$939.15	\$1,415.75	150.75%	\$1,415.75	\$4.30	\$1,415.75	0.00%	-\$11.75	\$1,474.45	0.00%	-\$44.05	\$1,401.90	0.00%	-\$39.95	\$1,423.30	0.00%	-\$16.15	\$1,423.30	173.70%	-\$16.15
45909	\$1,173.95	\$1,769.75	150.75%	\$1,769.75	\$5.80	\$1,769.75	0.00%	-\$12.40	\$2,190.15	0.00%	-\$88.00	\$2,113.15	0.00%	-\$69.85	\$2,039.30	0.00%	-\$26.95	\$2,039.30	173.70%	-\$26.95
45910	\$1,408.75	\$2,123.70	150.75%	\$2,123.70	\$30.80	\$2,123.70	0.00%	-\$10.25	\$2,210.15	0.00%	-\$65.15	\$2,183.55	0.00%	-\$59.85	\$2,447.40	0.00%	-\$32.70	\$2,447.40	173.75%	-\$32.70
45911	\$1,408.75	\$2,123.70	150.75%	\$2,123.70	\$30.80	\$2,123.70	0.00%	-\$10.25	\$2,210.15	0.00%	-\$65.15	\$2,183.55	0.00%	-\$59.85	\$2,447.40	0.00%	-\$32.70	\$2,447.40	173.75%	-\$32.70
45912	\$1,408.75	\$2,123.70	150.75%	\$2,123.70	\$30.80	\$2,123.70	0.00%	-\$10.25	\$2,210.15	0.00%	-\$65.15	\$2,183.55	0.00%	-\$59.85	\$2,447.40	0.00%	-\$32.70	\$2,447.40	173.75%	-\$32.70
45913	\$958.55	\$1,445.00	150.75%	\$1,445.00	\$4.00	\$1,445.00	0.00%	-\$14.56	\$1,504.85	0.00%	-\$59.85	\$1,437.80	0.00%	-\$40.75	\$1,665.00	0.00%	-\$20.00	\$1,665.00	173.70%	-\$20.00
45914	\$958.55	\$1,445.00	150.75%	\$1,445.00	\$4.00	\$1,445.00	0.00%	-\$14.56	\$1,504.85	0.00%	-\$59.85	\$1,437.80	0.00%	-\$40.75	\$1,665.00	0.00%	-\$20.00	\$1,665.00	173.70%	-\$20.00
45915	\$360.10	\$552.80	150.74%	\$552.80	\$2.30	\$552.80	0.00%	-\$5.40	\$565.35	0.00%	-\$22.55	\$558.15	0.00%	-\$15.35	\$569.30	0.00%	-\$6.80	\$569.30	186.85%	-\$6.80
45916	\$586.90	\$884.70	150.74%	\$884.70	\$2.60	\$884.70	0.00%	-\$5.40	\$565.35	0.00%	-\$22.55	\$558.15	0.00%	-\$15.35	\$569.30	0.00%	-\$6.80	\$569.30	186.85%	-\$6.80
45917	\$481.95	\$737.35	150.74%	\$737.35	\$3.30	\$737.35	0.00%	-\$6.10	\$761.60	0.00%	-\$30.35	\$749.75	0.00%	-\$25.00	\$764.40	0.00%	-\$13.10	\$764.40	173.70%	-\$13.10
45918	\$721.95	\$1,046.40	150.74%	\$1,046.40	\$4.10	\$1,046.40	0.00%	-\$6.10	\$761.60	0.00%	-\$30.35	\$749.75	0.00%	-\$25.00	\$764.40	0.00%	-\$13.10	\$764.40	173.70%	-\$13.10
45919	\$481.95	\$737.35	150.74%	\$737.35	\$3.30	\$737.35	0.00%	-\$6.10	\$761.60	0.00%	-\$30.35	\$749.75	0.00%	-\$25.00	\$764.40	0.00%	-\$13.10	\$764.40	173.70%	-\$13.10
45920	\$481.95	\$737.35	150.74%	\$737.35	\$3.30	\$737.35	0.00%	-\$6.10	\$761.60	0.00%	-\$30.35	\$749.75	0.00%	-\$25.00	\$764.40	0.00%	-\$13.10	\$764.40	173.70%	-\$13.10
45921	\$481.95	\$737.35	150.74%	\$737.35	\$3.30	\$737.35	0.00%	-\$6.10	\$761.60	0.00%	-\$30.35	\$749.75	0.00%	-\$25.00	\$764.40	0.00%	-\$13.10	\$764.40	173.70%	-\$13.10
45922	\$481.95	\$737.35	150.74%	\$737.35	\$3.30	\$737.35	0.00%	-\$6.10	\$761.60	0.00%	-\$30.35	\$749.75	0.00%	-\$25.00	\$764.40	0.00%	-\$13.10	\$764.40	173.70%	-\$13.10
45923	\$481.95	\$737.35	150.74%	\$737.35	\$3.30	\$737.35	0.00%	-\$6.10	\$761.60	0.00%	-\$30.35	\$749.75	0.00%	-\$25.00	\$764.40	0.00%	-\$13.10	\$764.40	173.70%	-\$13.10
45924	\$481.95	\$737.35	150.74%	\$737.35	\$3.30	\$737.35	0.00%	-\$6.10	\$761.60	0.00%	-\$30.35	\$749.75	0.00%	-\$25.00	\$764.40	0.00%	-\$13.10	\$764.40	173.70%	-\$13.10
45925	\$481.95	\$737.35	150.74%	\$737.35	\$3.30	\$737.35	0.00%	-\$6.10	\$761.60	0.00%	-\$30.35	\$749.75	0.00%	-\$25.00	\$764.40	0.00%	-\$13.10	\$764.40	173.70%	-\$13.10
45926	\$481.95	\$737.35	150.74%	\$737.35	\$3.30	\$737.35	0.00%	-\$6.10	\$761.60	0.00%	-\$30.35	\$749.75	0.00%	-\$25.00	\$764.40	0.00%	-\$13.10	\$764.40	173.70%	-\$13.10
45927	\$481.95	\$737.35	150.74%	\$737.35	\$3.30	\$737.35	0.00%	-\$6.10	\$761.60	0.00%	-\$30.35	\$749.75	0.00%	-\$25.00	\$764.40	0.00%	-\$13.10	\$764.40	173.70%	-\$13.10
45928	\$481.95	\$737.35	150.74%	\$737.35	\$3.30	\$737.35	0.00%	-\$6.10	\$761.60	0.00%	-\$30.35	\$749.75	0.00%	-\$25.00	\$764.40	0.00%	-\$13.10	\$764.40	173.70%	-\$13.10
45929	\$481.95	\$737.35	150.74%	\$737.35	\$3.30	\$737.35	0.00%	-\$6.10	\$761.60	0.00%	-\$30.35	\$749.75	0.00%	-\$25.00	\$764.40	0.00%	-\$13.10	\$764.40	173.70%	-\$13.10
45930	\$481.95	\$737.35	150.74%	\$737.35	\$3.30	\$737.35	0.00%	-\$6.10	\$761.60	0.00%	-\$30.35	\$749.75	0.00%	-\$25.00	\$764.40	0.00%	-\$13.10	\$764.40	173.70%	-\$13.10
45931	\$481.95	\$737.35	150.74%	\$737.35	\$3.30	\$737.35	0.00%	-\$6.10	\$761.60	0.00%	-\$30.35	\$749.75	0.00%	-\$25.00	\$764.40	0.00%	-\$13.10	\$764.40	173.70%	-\$13.10
45932	\$481.95	\$737.35	150.74%	\$737.35	\$3.30	\$737.35	0.00%	-\$6.10	\$761.60	0.00%	-\$30.35	\$749.75	0.00%	-\$25.00	\$764.40	0.00%	-\$13.10	\$764.40	173.70%	-\$13.10
45933	\$481.95	\$737.35	150.74%	\$737.35	\$3.30	\$737.35	0.00%	-\$6.10	\$761.60	0.00%	-\$30.35	\$749.75	0.00%	-\$25.00	\$764.40	0.00%	-\$13.10	\$764.40	173.70%	-\$13.10
45934	\$481.95	\$737.35	150.74%	\$737.35	\$3.30	\$737.35	0.00%	-\$6.10	\$761.60	0.00%	-\$30.35	\$749.75	0.00%	-\$25.00	\$764.40	0.00%	-\$13.10	\$764.40	173.70%	-\$13.10
45935	\$481.95	\$737.35	150.74%	\$737.35	\$3.30	\$737.35	0.00%	-\$6.10	\$761.60	0.00%	-\$30.35	\$749.75	0.00%	-\$25.00	\$764.40	0.00%	-\$13.10	\$764.40	173.70%	-\$13.10
45936	\$481.95	\$737.35	150.74%	\$737.35	\$3.30	\$737.35	0.00%	-\$6.10	\$761.60	0.00%	-\$30.35	\$749.75	0.00%	-\$25.00	\$764.40	0.00%	-\$13.10	\$764.40	173.70%	-\$13.10
45937	\$481.95	\$737.35	150.74%	\$737.35	\$3.30	\$737.35	0.00%	-\$6.10	\$761.60	0.00%	-\$30.35	\$749.75	0.00%	-\$25.00	\$764.40	0.00%	-\$13.10	\$764.40	173.70%	-\$13.10
45938	\$481.95	\$737.35	150.74%	\$737.35	\$3.30	\$737.35	0.00%	-\$6.10	\$761.60	0.00%	-\$30.35	\$749.75	0.00%	-\$25.00	\$764.40	0.00%	-\$13.10	\$764.40	173.70%	-\$13.10
45939	\$481.95	\$737.35	150.74%	\$737.35	\$3.30	\$737.35	0.00%	-\$6.10	\$761.60	0.00%	-\$30.35	\$749.75	0.00%	-\$25.00	\$764.40	0.00%	-\$13.10	\$764.40	173.70%	-\$13.10
45940	\$481.95	\$737.35	150.74%	\$737.35	\$3.30	\$737.35	0.00%	-\$6.10	\$761.60	0.00%	-\$30.35	\$749.75	0.00%	-\$25.00	\$764.40	0.00%	-\$13.10	\$764.40	173.70%	-\$13.10
45941	\$481.95	\$737.35	150.74%	\$737.35	\$3.30	\$737.35	0.00%	-\$6.10	\$761.60	0.00%	-\$30.35	\$749.75	0.00%	-\$25.00	\$764.40	0.00%	-\$13.10	\$764.40	173.70%	-\$13.10
45942	\$481.95	\$737.35	150.74%	\$737.35	\$3.30	\$737.35	0.00%	-\$6.10	\$761.60	0.00%	-\$30.35	\$749.75	0.00%	-\$25.00	\$764.40	0.00%	-\$13.10	\$764.40	173.70%	-\$13.10
45943	\$481.95	\$737.35	150.74%	\$737.35	\$3.30	\$737.35	0.00%	-\$6.10	\$761.60	0.00%	-\$30.35	\$749.75	0.00%	-\$25.00	\$764.40	0.00%	-\$13.10	\$764.40	173.70%	-\$13.10
45944	\$481.95	\$737.35	150.74%	\$737.35	\$3.30	\$737.35	0.00%	-\$6.10	\$761.60	0.00%	-\$30.35	\$749.75	0.00%	-\$25.00	\$764.40	0.00%	-\$13.10	\$764.40	173.70%	-\$13.10
45945	\$481.95	\$737.35	150.74%	\$737.35	\$															

47432	5663.20	\$865.15	133.61%	\$855.20	-59.95	\$893.15	0.00%	\$28.00	5915.65	0.00%	\$872.95	0.00%	\$7.80	\$889.85	0.00%	\$24.70	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47433	5431.05	\$683.55	133.61%	\$654.25	-12.35	\$1,083.65	0.00%	\$21.45	7070.75	0.00%	\$668.15	0.00%	\$6.05	\$681.05	0.00%	\$18.95	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47434	5682.85	\$1,063.55	133.61%	\$1,041.20	-15.30	\$1,346.75	0.00%	\$34.10	11,115.05	0.00%	\$1,063.65	0.00%	\$9.50	\$1,083.65	0.00%	\$30.10	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47441	5857.15	\$1,316.65	133.61%	\$1,301.35	-15.30	\$1,346.75	0.00%	\$30.10	11,381.00	0.00%	\$1,326.60	0.00%	\$11.95	\$1,354.30	0.00%	\$37.65	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47444	5235.15	\$336.15	133.59%	\$357.00	-21.85	\$372.90	0.00%	\$17.55	388.30	0.00%	\$364.45	0.00%	\$3.35	\$371.55	0.00%	\$10.40	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47450	5352.55	\$541.55	133.61%	\$535.50	-6.05	\$559.10	0.00%	\$16.50	5757.20	0.00%	\$546.45	0.00%	\$4.90	\$557.05	0.00%	\$15.50	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47457	5470.30	\$722.40	133.61%	\$713.95	-8.45	\$738.90	0.00%	\$16.50	7575.70	0.00%	\$728.95	0.00%	\$6.55	\$740.05	0.00%	\$20.65	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47461	5666.85	\$870.70	133.61%	\$860.70	-10.00	\$888.95	0.00%	\$28.25	921.60	0.00%	\$878.60	0.00%	\$7.90	\$895.60	0.00%	\$24.90	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47463	5274.25	\$441.30	133.61%	\$434.95	-6.35	\$443.95	0.00%	\$31.65	543.30	0.00%	\$425.10	0.00%	\$3.80	\$433.30	0.00%	\$24.00	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47465	5648.65	\$632.15	133.61%	\$624.70	-7.45	\$652.65	0.00%	\$20.50	669.10	0.00%	\$637.90	0.00%	\$5.75	\$656.85	0.00%	\$24.05	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47466	5117.40	\$180.30	133.59%	\$182.70	-2.40	\$186.15	0.00%	\$5.85	189.80	0.00%	\$181.95	0.00%	\$1.65	\$185.50	0.00%	\$5.20	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47467	5117.40	\$180.30	133.59%	\$179.20	-1.10	\$186.15	0.00%	\$29.10	180.80	0.00%	\$181.95	0.00%	\$7.60	\$185.50	0.00%	\$5.20	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47468	5450.50	\$361.15	133.59%	\$357.00	-4.15	\$372.90	0.00%	\$5.85	388.20	0.00%	\$364.50	0.00%	\$3.35	\$371.55	0.00%	\$10.40	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47471	5475.75	\$692.00	133.61%	\$684.10	-7.90	\$714.40	0.00%	\$22.40	773.20	0.00%	\$698.30	0.00%	\$6.30	\$711.80	0.00%	\$19.80	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47474	5195.80	\$300.75	133.55%	\$297.85	-2.85	\$310.50	0.00%	\$2.25	313.30	0.00%	\$299.35	0.00%	\$1.55	\$309.35	0.00%	\$2.00	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47477	5245.05	\$376.35	133.59%	\$371.90	-4.45	\$388.60	0.00%	\$12.25	398.40	0.00%	\$379.85	0.00%	\$3.50	\$387.20	0.00%	\$10.85	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47480	5489.75	\$732.30	133.61%	\$732.30	-0.00	\$776.70	0.00%	\$24.40	796.25	0.00%	\$759.10	0.00%	\$6.80	\$773.80	0.00%	\$21.50	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47483	5887.75	\$902.85	133.61%	\$892.20	-9.55	\$932.05	0.00%	\$29.20	995.55	0.00%	\$911.00	0.00%	\$18.15	\$928.65	0.00%	\$25.80	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47486	5975.60	\$1,504.75	133.61%	\$1,487.10	-17.65	\$1,553.50	0.00%	\$48.75	1,592.65	0.00%	\$1,518.40	0.00%	\$13.65	\$1,547.75	0.00%	\$43.00	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47489	\$1,469.40	\$2,252.15	133.61%	\$2,230.55	-21.60	\$2,338.95	0.00%	\$73.10	2,396.50	0.00%	\$2,277.55	0.00%	\$20.40	\$2,321.65	0.00%	\$64.50	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47491	1616.3	\$2,482.80	133.61%	\$2,456.80	-26.00	\$2,561.85	0.00%	\$143.70	2,526.50	0.00%	\$2,505.25	0.00%	\$22.45	\$2,533.75	0.00%	\$70.95	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47495	5488.75	\$732.30	133.61%	\$734.35	-2.05	\$776.70	0.00%	\$43.95	759.10	0.00%	\$759.10	0.00%	\$6.80	\$773.80	0.00%	\$21.50	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47498	5734.65	\$1,128.50	133.61%	\$1,115.25	-13.25	\$1,165.05	0.00%	\$56.50	1,194.40	0.00%	\$1,138.70	0.00%	\$10.20	\$1,160.75	0.00%	\$32.25	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47501	5978.60	\$1,594.75	133.61%	\$1,487.10	-117.65	\$1,553.50	0.00%	\$48.75	1,592.65	0.00%	\$1,518.40	0.00%	\$13.65	\$1,547.75	0.00%	\$43.00	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47511	1469.4	\$2,357.15	133.61%	\$2,335.05	-22.10	\$2,388.95	0.00%	\$71.80	2,392.70	0.00%	\$2,276.50	0.00%	\$20.40	\$2,321.65	0.00%	\$64.50	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47514	857.15	\$1,316.65	133.61%	\$1,302.85	-13.80	\$1,358.55	0.00%	\$11.95	1,354.30	0.00%	\$1,348.60	0.00%	\$1.95	\$1,354.30	0.00%	\$0.95	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47516	5450.50	\$692.00	133.61%	\$684.10	-7.90	\$714.40	0.00%	\$22.40	773.20	0.00%	\$698.30	0.00%	\$6.30	\$711.80	0.00%	\$19.80	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47519	5901.30	\$1,384.50	133.61%	\$1,368.00	-6.50	\$1,429.30	0.00%	\$44.80	1,465.35	0.00%	\$1,397.00	0.00%	\$12.50	\$1,424.05	0.00%	\$39.55	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47528	5783.80	\$1,203.90	133.60%	\$1,189.80	-14.10	\$1,242.95	0.00%	\$39.05	1,274.30	0.00%	\$1,214.90	0.00%	\$11.30	\$1,238.65	0.00%	\$34.50	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47531	5999.15	\$1,534.80	133.61%	\$1,516.65	-18.15	\$1,584.50	0.00%	\$49.70	1,624.45	0.00%	\$1,548.70	0.00%	\$13.90	\$1,578.65	0.00%	\$43.85	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47534	\$1,126.55	\$2,030.00	133.61%	\$1,701.20	-423.30	\$1,786.55	0.00%	\$56.05	1,831.60	0.00%	\$1,746.15	0.00%	\$15.65	\$1,779.95	0.00%	\$49.45	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47537	5450.50	\$692.00	133.61%	\$684.10	-7.90	\$714.40	0.00%	\$22.40	773.20	0.00%	\$698.30	0.00%	\$6.30	\$711.80	0.00%	\$19.80	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47540	5235.15	\$346.15	133.59%	\$341.85	-4.30	\$357.20	0.00%	\$11.75	386.20	0.00%	\$349.15	0.00%	\$3.20	\$355.90	0.00%	\$9.95	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47543	5235.15	\$346.15	133.59%	\$337.00	-9.15	\$372.90	0.00%	\$11.75	386.20	0.00%	\$349.15	0.00%	\$3.20	\$355.90	0.00%	\$9.95	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47546	5569.05	\$541.55	133.61%	\$535.50	-6.05	\$559.10	0.00%	\$16.50	5757.20	0.00%	\$546.45	0.00%	\$4.90	\$557.05	0.00%	\$15.50	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47549	5660.25	\$860.25	133.60%	\$850.20	-10.05	\$889.05	0.00%	\$30.80	914.45	0.00%	\$868.10	0.00%	\$7.85	\$884.90	0.00%	\$24.65	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47552	5391.80	\$601.85	133.61%	\$594.25	-7.60	\$624.30	0.00%	\$19.45	639.55	0.00%	\$607.30	0.00%	\$5.45	\$619.05	0.00%	\$17.20	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47555	5587.75	\$902.85	133.61%	\$892.20	-9.55	\$932.05	0.00%	\$29.20	995.55	0.00%	\$911.00	0.00%	\$18.15	\$928.65	0.00%	\$25.80	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47558	\$1,038.40	\$1,595.00	133.60%	\$1,576.30	-18.70	\$1,652.15	0.00%	\$57.15	1,693.25	0.00%	\$1,622.50	0.00%	\$38.65	\$1,640.50	0.00%	\$56.65	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47559	795.25	\$1,221.60	133.61%	\$1,208.30	-13.30	\$1,260.45	0.00%	\$38.85	1,293.65	0.00%	\$1,239.50	0.00%	\$11.05	\$1,250.65	0.00%	\$34.90	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47561	5241.00	\$436.20	133.60%	\$431.15	-5.05	\$459.35	0.00%	\$25.50	461.70	0.00%	\$440.20	0.00%	\$4.00	\$448.70	0.00%	\$34.00	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47562	5741.25	\$1,138.55	133.60%	\$1,125.20	-13.35	\$1,175.50	0.00%	\$56.60	1,205.15	0.00%	\$1,148.95	0.00%	\$10.40	\$1,171.15	0.00%	\$32.60	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47566	5941.90	\$1,451.45	133.61%	\$1,434.50	-16.95	\$1,484.45	0.00%	\$47.00	1,536.20	0.00%	\$1,464.60	0.00%	\$13.15	\$1,492.95	0.00%	\$41.50	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47568	406.15	\$564.60	133.61%	\$567.75	-1.65	\$576.40	0.00%	\$20.80	593.40	0.00%	\$560.55	0.00%	\$5.95	\$573.30	0.00%	\$18.70	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47570	5681.10	\$872.65	133.61%	\$862.35	-9.75	\$900.95	0.00%	\$51.00	889.50	0.00%	\$880.50	0.00%	\$7.90	\$897.60	0.00%	\$24.95	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47572	5710.20	\$1,080.95	133.61%	\$1,078.05	-2.90	\$1,126.65	0.00%	\$55.30	1,154.65	0.00%	\$1,090.80	0.00%	\$9.85	\$1,122.20	0.00%	\$31.15	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47578	5468.95	\$716.55	133.59%	\$712.90	-3.65	\$741.90	0.00%	\$15.00	770.20	0.00%	\$738.15	0.00%	\$6.75	\$746.15	0.00%	\$17.30	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47582	5468.95	\$716.55	133.60%	\$669.30	-48.25	\$714.10	0.00%	\$24.30	720.20	0.00%	\$668.15	0.00%	\$5.15	\$698.70	0.00%	\$16.40	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47586	5455.85	\$702.30	133.60%	\$689.85	-12.45	\$714.10	0.00%	\$13.95	731.30	0.00%	\$709.45	0.00%	\$6.35	\$712.75	0.00%	\$16.50	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47588	\$1,131.25	\$2,062.40	133.61%	\$2,081.90	-21.50	\$2,171.15	0.00%	\$68.15	2,239.40	0.00%	\$2,165.60	0.00%	\$6.55	\$2,166.55	0.00%	\$0.95	5924.30	0	559.15	\$924.30	164.10%	\$59.15
47591	\$1,665.50	\$2,338.35	133.61%	\$2,328.40	-9.95	\$2,444.15	0.00%	\$89.40	2,579.85	0.00%	\$2,											

49106	\$979.60	\$1,504.75	133.61%	\$1,487.10	-\$17.65	\$1,553.30	0.00%	\$87.90	\$1,518.40	\$13.65	\$1,547.75	0.00%	\$43.00	\$1,607.70	\$102.95	164.10%	\$1,607.70	\$102.95
49109	\$734.65	\$1,128.50	153.61%	\$1,115.25	-\$13.25	\$1,165.05	0.00%	\$65.90	\$1,138.70	\$10.20	\$1,160.75	0.00%	\$32.25	\$1,205.40	\$76.90	164.10%	\$1,205.40	\$76.90
49112	\$734.65	\$1,128.50	153.61%	\$1,115.25	-\$13.25	\$1,165.05	0.00%	\$65.90	\$1,138.70	\$10.20	\$1,160.75	0.00%	\$32.25	\$1,205.40	\$76.90	164.10%	\$1,205.40	\$76.90
49115	\$1,175.55	\$1,805.50	153.61%	\$1,786.50	-\$12.05	\$1,864.00	0.00%	\$102.65	\$1,821.85	\$16.30	\$1,857.15	0.00%	\$51.60	\$1,928.80	\$123.25	164.10%	\$1,928.80	\$123.25
49116	\$1,175.55	\$1,805.50	153.33%	\$2,364.50	-\$53.25	\$2,460.50	0.00%	\$102.65	\$2,404.90	\$16.30	\$2,451.45	0.00%	\$41.45	\$2,570.40	\$163.55	164.10%	\$2,570.40	\$163.55
49117	\$1,175.55	\$1,805.50	153.33%	\$2,828.15	-\$63.85	\$2,952.65	0.00%	\$102.65	\$2,885.85	\$16.30	\$2,941.70	0.00%	\$49.70	\$3,084.70	\$192.70	165.70%	\$3,084.70	\$192.70
49118	\$2,841.00	\$4,362.00	153.58%	\$4,311.15	-\$50.00	\$4,500.35	0.00%	\$225.55	\$4,255.50	\$40.25	\$4,448.70	0.00%	\$29.85	\$4,660.00	\$293.85	164.10%	\$4,660.00	\$293.85
49121	\$963.75	\$978.80	103.59%	\$966.85	-\$11.15	\$1,009.75	0.00%	\$57.20	\$986.95	\$12.55	\$1,006.05	0.00%	\$28.05	\$1,117.00	\$139.00	164.10%	\$1,117.00	\$139.00
49124	\$3,865.50	\$5,938.00	153.58%	\$5,929.55	-\$64.25	\$6,144.60	0.00%	\$366.85	\$5,765.20	\$67.65	\$6,107.50	0.00%	\$341.50	\$6,600.00	\$534.50	164.10%	\$6,600.00	\$534.50
49200	\$807.20	\$976.70	121.11%	\$1,225.65	\$248.95	\$1,318.30	0.00%	\$339.85	\$1,320.85	\$1.00	\$1,376.40	0.00%	\$55.55	\$1,398.20	\$161.80	164.10%	\$1,398.20	\$161.80
49206	\$887.75	\$902.75	103.59%	\$892.20	-\$10.65	\$932.05	0.00%	\$52.80	\$911.00	\$8.25	\$928.65	0.00%	\$37.65	\$964.50	\$86.80	164.10%	\$964.50	\$86.80
49209	\$783.80	\$1,203.85	153.59%	\$1,189.80	-\$14.05	\$1,242.95	0.00%	\$70.45	\$1,214.90	\$11.00	\$1,238.40	0.00%	\$53.50	\$1,286.20	\$106.80	164.10%	\$1,286.20	\$106.80
49210	\$1,034.60	\$1,607.05	153.33%	\$1,571.40	-\$35.65	\$1,640.70	0.00%	\$75.00	\$1,603.65	\$11.00	\$1,628.40	0.00%	\$72.60	\$1,714.00	\$109.60	165.65%	\$1,714.00	\$109.60
49212	\$924.65	\$1,346.65	153.59%	\$1,339.45	-\$4.45	\$1,388.60	0.00%	\$72.05	\$1,379.85	\$9.35	\$1,402.15	0.00%	\$52.75	\$1,474.00	\$106.95	164.10%	\$1,474.00	\$106.95
49213	\$676.05	\$1,346.65	153.60%	\$1,286.25	-\$12.15	\$1,339.45	0.00%	\$67.90	\$1,308.80	\$9.50	\$1,335.10	0.00%	\$53.50	\$1,402.15	\$106.95	173.65%	\$1,402.15	\$106.95
49215	\$676.05	\$1,346.65	153.60%	\$1,286.25	-\$12.15	\$1,339.45	0.00%	\$67.90	\$1,308.80	\$9.50	\$1,335.10	0.00%	\$53.50	\$1,402.15	\$106.95	173.65%	\$1,402.15	\$106.95
49216	\$2,841.00	\$4,362.00	153.58%	\$4,311.15	-\$50.00	\$4,500.35	0.00%	\$225.55	\$4,255.50	\$40.25	\$4,448.70	0.00%	\$29.85	\$4,660.00	\$293.85	164.10%	\$4,660.00	\$293.85
49219	284	\$436.20	153.60%	\$431.15	-\$5.05	\$450.35	0.00%	\$25.55	\$440.20	\$4.00	\$448.70	0.00%	\$12.55	\$466.00	\$164.10%	164.10%	\$466.00	\$164.10%
49220	\$636.75	\$977.90	153.58%	\$966.85	-\$11.90	\$1,009.75	0.00%	\$57.10	\$986.95	\$12.55	\$1,006.05	0.00%	\$28.05	\$1,117.00	\$139.00	164.15%	\$1,117.00	\$139.00
49221	\$636.75	\$977.90	153.61%	\$966.85	-\$11.90	\$1,009.75	0.00%	\$57.10	\$986.95	\$12.55	\$1,006.05	0.00%	\$28.05	\$1,117.00	\$139.00	164.15%	\$1,117.00	\$139.00
49224	\$734.65	\$1,128.50	153.61%	\$1,115.25	-\$13.25	\$1,165.05	0.00%	\$65.90	\$1,138.70	\$10.20	\$1,160.75	0.00%	\$32.25	\$1,205.40	\$76.90	178.65%	\$1,205.40	\$76.90
49227	\$734.65	\$1,128.50	153.61%	\$1,115.25	-\$13.25	\$1,165.05	0.00%	\$65.90	\$1,138.70	\$10.20	\$1,160.75	0.00%	\$32.25	\$1,205.40	\$76.90	178.65%	\$1,205.40	\$76.90
49230	\$958.50	\$1,472.45	153.61%	\$1,409.05	-\$63.40	\$1,519.30	0.00%	\$85.15	\$1,485.75	\$11.65	\$1,514.50	0.00%	\$42.05	\$1,665.00	\$192.55	164.10%	\$1,665.00	\$192.55
49233	\$403.6	\$619.95	153.61%	\$593.30	-\$26.65	\$639.70	0.00%	\$35.85	\$625.60	\$5.65	\$637.70	0.00%	\$17.75	\$635.70	\$117.95	157.50%	\$635.70	\$117.95
49236	\$608.45	\$934.65	153.61%	\$894.40	-\$40.25	\$964.35	0.00%	\$54.00	\$943.10	\$9.45	\$961.35	0.00%	\$26.70	\$967.20	\$124.35	172.35%	\$967.20	\$124.35
49239	\$302.7	\$465.00	153.61%	\$460.10	-\$4.90	\$479.75	0.00%	\$26.85	\$469.20	\$4.20	\$478.25	0.00%	\$13.25	\$472.30	\$42.30	172.40%	\$472.30	\$42.30
49300	\$568.10	\$833.15	153.60%	\$823.45	-\$9.70	\$862.15	0.00%	\$48.65	\$840.70	\$7.90	\$857.60	0.00%	\$23.85	\$890.00	\$161.60	164.10%	\$890.00	\$161.60
49303	\$568.10	\$833.15	153.60%	\$823.45	-\$9.70	\$862.15	0.00%	\$48.65	\$840.70	\$7.90	\$857.60	0.00%	\$23.85	\$890.00	\$161.60	164.10%	\$890.00	\$161.60
49306	\$1,216.65	\$1,730.50	153.61%	\$1,710.20	-\$20.30	\$1,762.95	0.00%	\$101.10	\$1,746.15	\$15.65	\$1,779.95	0.00%	\$49.45	\$1,848.70	\$118.20	164.10%	\$1,848.70	\$118.20
49309	\$783.80	\$1,203.90	153.60%	\$1,189.80	-\$14.10	\$1,242.95	0.00%	\$70.45	\$1,214.90	\$11.00	\$1,238.40	0.00%	\$53.50	\$1,286.20	\$106.80	164.10%	\$1,286.20	\$106.80
49311	\$881.65	\$1,354.20	153.60%	\$1,338.45	-\$15.75	\$1,388.60	0.00%	\$72.05	\$1,379.85	\$9.35	\$1,402.15	0.00%	\$52.75	\$1,474.00	\$106.95	164.10%	\$1,474.00	\$106.95
49318	\$1,371.25	\$2,064.00	153.61%	\$2,181.90	-\$75.50	\$2,274.55	0.00%	\$164.10	\$2,125.45	\$24.55	\$2,160.75	0.00%	\$60.15	\$2,300.30	\$213.90	169.20%	\$2,300.30	\$213.90
49319	\$2,409.15	\$3,700.70	153.61%	\$3,833.40	-\$132.70	\$4,020.15	0.00%	\$216.50	\$3,794.20	\$33.30	\$3,806.45	0.00%	\$105.75	\$4,057.40	\$252.40	164.10%	\$4,057.40	\$252.40
49321	\$1,665.50	\$2,588.35	153.61%	\$2,650.10	-\$91.75	\$2,764.25	0.00%	\$149.50	\$2,581.55	\$22.05	\$2,631.50	0.00%	\$73.15	\$2,787.20	\$248.85	167.95%	\$2,787.20	\$248.85
49360	\$357.90	\$569.75	153.61%	\$543.30	-\$66.45	\$567.55	0.00%	\$38.10	\$558.45	\$5.00	\$565.50	0.00%	\$17.55	\$587.30	\$37.65	164.10%	\$587.30	\$37.65
49363	\$431.00	\$642.00	153.60%	\$634.20	-\$7.80	\$663.50	0.00%	\$38.70	\$645.75	\$5.25	\$658.00	0.00%	\$19.00	\$707.10	\$45.15	164.05%	\$707.10	\$45.15
49366	\$636.75	\$977.90	153.61%	\$966.85	-\$11.90	\$1,009.75	0.00%	\$57.10	\$986.95	\$12.55	\$1,006.05	0.00%	\$28.05	\$1,117.00	\$139.00	164.05%	\$1,117.00	\$139.00
49372	\$958.8	\$1,474.35	153.61%	\$1,527.20	-\$52.85	\$1,576.05	0.00%	\$90.05	\$1,487.70	\$13.35	\$1,511.05	0.00%	\$42.15	\$1,624.20	\$149.85	169.20%	\$1,624.20	\$149.85
49374	\$783.80	\$1,203.90	153.61%	\$1,189.80	-\$14.10	\$1,242.95	0.00%	\$70.45	\$1,214.90	\$11.00	\$1,238.40	0.00%	\$53.50	\$1,286.20	\$106.80	169.20%	\$1,286.20	\$106.80
49376	\$1,919.6	\$2,738.20	153.61%	\$2,866.35	-\$128.15	\$2,994.55	0.00%	\$167.35	\$2,762.95	\$24.75	\$2,816.45	0.00%	\$82.15	\$3,016.40	\$248.20	169.20%	\$3,016.40	\$248.20
49378	\$1,919.6	\$2,738.20	153.61%	\$2,866.35	-\$128.15	\$2,994.55	0.00%	\$167.35	\$2,762.95	\$24.75	\$2,816.45	0.00%	\$82.15	\$3,016.40	\$248.20	169.20%	\$3,016.40	\$248.20
49380	\$231.05	\$350.75	153.61%	\$339.10	-\$18.35	\$357.95	0.00%	\$18.20	\$327.90	\$2.70	\$332.95	0.00%	\$9.30	\$348.40	\$29.70	169.20%	\$348.40	\$29.70
49382	\$301.65	\$463.90	153.61%	\$450.75	-\$16.65	\$476.45	0.00%	\$16.35	\$454.80	\$2.40	\$463.60	0.00%	\$13.40	\$494.50	\$40.70	169.20%	\$494.50	\$40.70
49384	\$358.1	\$527.35	153.61%	\$516.35	-\$16.15	\$536.45	0.00%	\$19.10	\$517.55	\$2.45	\$526.65	0.00%	\$13.55	\$554.50	\$46.85	169.20%	\$554.50	\$46.85
49386	\$248.15	\$367.35	153.61%	\$357.25	-\$16.35	\$373.95	0.00%	\$15.70	\$358.75	\$1.95	\$363.75	0.00%	\$9.45	\$394.50	\$30.75	169.20%	\$394.50	\$30.75
49388	\$278.6	\$413.35	153.61%	\$402.35	-\$16.35	\$419.35	0.00%	\$18.95	\$403.40	\$2.45	\$411.50	0.00%	\$12.35	\$434.50	\$34.25	169.20%	\$434.50	\$34.25
49390	\$428	\$642.35	153.61%	\$626.75	-\$15.60	\$642.15	0.00%	\$25.40	\$617.30	\$3.85	\$621.15	0.00%	\$18.25	\$650.80	\$48.25	169.20%	\$650.80	\$48.25
49392	\$783.80	\$1,203.90	153.61%	\$1,189.80	-\$14.10	\$1,242.95	0.00%	\$70.45	\$1,214.90	\$11.00	\$1,238.40	0.00%	\$53.50	\$1,286.20	\$106.80	169.20%	\$1,286.20	\$106.80
49394	\$413.6	\$618.90	153.61%	\$593.30	-\$25.30	\$618.60	0.00%	\$25.30	\$598.00	\$4.30	\$602.30	0.00%	\$14.30	\$617.50	\$48.25	169.20%	\$617.50	\$48.25
49396	\$743.35	\$1,103.90	153.61%	\$1,063.45	-\$40.45	\$1,115.05	0.00%	\$51.60	\$1,074.00	\$9.60	\$1,103.60	0.00%	\$29.60	\$1,160.00	\$86.40	169.20%	\$1,160.00	\$86.40
49398	\$206.85	\$303.65	153.61%	\$297.80	-\$113.25	\$317.05	0.00%	\$193.05	\$318.10	\$0.05	\$319.80	0.00%	\$80.25	\$340.50	\$30.95	169.20%	\$340.50	\$30.95
49399	\$306.80	\$451.30	153.61%	\$434.75	-\$77.10	\$461.30	0.00%	\$35.45	\$426.70	\$5.45	\$431.95	0.00%	\$17.30	\$458.50	\$31.55	168.05%	\$458.50	\$31.55
49400	\$508.40	\$762.50	153.61%	\$773.60	-\$137.95	\$811.60	0.00%	\$48.65	\$785.55	\$7.05	\$804.95	0.00%	\$19.30	\$838.00	\$56.55	168.10%	\$838.00	\$56.55
49406	\$784.15	\$1,173.80	153.61%	\$1,168.05	-\$5.65	\$1,211.60	0.00%	\$38.55	\$1,194.45	\$11.00	\$1,207.35	0.00%	\$33.25	\$1,259.10	\$74.35	169.25%	\$1,259.10	\$74.35
49409	\$783.80	\$1,203.90	153.60%	\$1,189.80	-\$14.10	\$1,242.95	0.00%	\$70.45	\$1,214.90	\$11.00	\$1,238.40	0.00%	\$53.50	\$1,286.20	\$106.80	169.20%	\$1,286.20	\$106.80
49412	\$1,371.25	\$2,064.00	153.60%	\$2,181.90	-\$75.50	\$2,274.55	0.00%	\$164.10	\$2,125.45	\$24.55	\$2,160.75	0.00%	\$60.15	\$2,300.30	\$213.90	169.20%	\$2,300.30	\$213.90
49415	\$1,371.25	\$2,064.00	153.60%	\$2,181.90	-\$75.50	\$2,274.55	0.00%	\$164.10	\$2,125.45	\$24.55	\$2,160.75	0.00%	\$60.15	\$2,300.30	\$213.90	169.20%	\$2,300.30	\$213.90
49418	\$2,409.15	\$3,700.70	153.61%	\$3,833.40	-\$132.70	\$4,020.15	0.00%	\$216.50	\$3,794.20	\$33.30	\$3,80							

51110	\$788.80	\$1,191.40	152.00%	\$1,191.35	\$0.05	\$1,207.05	0.00%	\$15.65	\$1,246.20	0.00%	\$1,113.00	0.00%	\$78.40	\$1,136.50	0.00%	\$54.90	\$1,238.90	0	\$47.50	\$1,268.80	161.90%	\$77.40
51111	\$333.10	\$506.30	151.99%	\$506.30	\$0.00	\$512.95	0.00%	\$6.65	\$529.60	0.00%	\$473.00	0.00%	\$23.30	\$483.00	0.00%	\$23.00	\$539.10	0	\$20.10	\$589.10	161.85%	\$32.40
51112	\$225.25	\$342.50	151.98%	\$342.50	\$0.00	\$346.85	0.00%	\$4.50	\$358.10	0.00%	\$319.85	0.00%	\$15.75	\$326.60	0.00%	\$13.85	\$366.80	0	\$13.85	\$420.50	161.85%	\$24.45
51113	\$248.80	\$379.70	151.99%	\$379.70	\$0.00	\$384.65	0.00%	\$5.85	\$397.10	0.00%	\$364.70	0.00%	\$17.45	\$363.20	0.00%	\$15.55	\$404.75	0	\$15.55	\$458.20	162.05%	\$25.10
51114	\$440.95	\$670.25	151.99%	\$670.25	\$0.00	\$679.05	0.00%	\$8.85	\$697.10	0.00%	\$662.15	0.00%	\$30.85	\$639.20	0.00%	\$26.50	\$713.55	0	\$26.50	\$783.55	161.80%	\$43.35
51115	\$440.95	\$670.25	151.99%	\$670.25	\$0.00	\$679.05	0.00%	\$8.85	\$697.10	0.00%	\$662.15	0.00%	\$30.85	\$639.20	0.00%	\$26.50	\$713.55	0	\$26.50	\$783.55	161.80%	\$43.35
51120	\$240.95	\$372.45	151.99%	\$372.45	\$0.00	\$377.35	0.00%	\$4.90	\$388.60	0.00%	\$347.95	0.00%	\$17.15	\$353.40	0.00%	\$14.85	\$396.70	0	\$14.85	\$445.35	161.90%	\$24.25
51126	\$1,866.55	\$2,836.85	152.00%	\$2,836.85	\$0.00	\$2,842.15	0.00%	\$28.30	\$2,967.45	0.00%	\$2,650.20	0.00%	\$186.65	\$2,706.20	0.00%	\$141.95	\$3,050.75	0	\$141.95	\$3,278.80	163.45%	\$129.20
51131	\$1,126.35	\$1,712.35	152.00%	\$1,712.35	\$0.00	\$1,734.85	0.00%	\$32.50	\$1,767.45	0.00%	\$1,599.70	0.00%	\$112.65	\$1,633.40	0.00%	\$85.85	\$1,841.55	0	\$85.85	\$1,997.05	163.45%	\$129.20
51140	\$460.40	\$699.75	151.99%	\$699.80	\$0.05	\$709.00	0.00%	\$9.25	\$732.00	0.00%	\$653.75	0.00%	\$32.25	\$667.60	0.00%	\$28.15	\$719.05	0	\$28.15	\$779.05	161.90%	\$45.75
51145	\$460.40	\$699.75	151.99%	\$699.80	\$0.05	\$709.00	0.00%	\$9.25	\$732.00	0.00%	\$653.75	0.00%	\$32.25	\$667.60	0.00%	\$28.15	\$719.05	0	\$28.15	\$779.05	161.90%	\$45.75
51150	\$463.50	\$704.50	152.00%	\$704.50	\$0.00	\$713.75	0.00%	\$9.25	\$732.00	0.00%	\$653.75	0.00%	\$32.25	\$667.60	0.00%	\$28.15	\$719.05	0	\$28.15	\$779.05	161.90%	\$45.75
51160	\$1,196.60	\$1,799.00	152.00%	\$1,799.00	\$0.00	\$1,842.75	0.00%	\$23.90	\$1,902.55	0.00%	\$1,691.15	0.00%	\$107.55	\$1,735.05	0.00%	\$72.55	\$1,937.05	0	\$72.55	\$2,118.20	161.90%	\$148.05
51165	\$1,508.75	\$2,293.30	152.00%	\$2,293.30	\$0.00	\$2,324.45	0.00%	\$30.15	\$2,388.85	0.00%	\$2,142.45	0.00%	\$150.65	\$2,187.70	0.00%	\$91.50	\$2,384.80	0	\$91.50	\$2,492.35	161.90%	\$148.05
51170	\$2,273.15	\$3,455.20	152.00%	\$3,455.20	\$0.00	\$3,490.65	0.00%	\$45.45	\$3,541.55	0.00%	\$3,271.85	0.00%	\$227.35	\$3,296.05	0.00%	\$256.60	\$3,491.40	0	\$256.60	\$3,647.20	162.75%	\$346.20
51171	\$954.60	\$1,403.25	152.00%	\$1,403.25	\$-47.75	\$1,470.05	0.00%	\$19.05	\$1,514.70	0.00%	\$1,327.85	0.00%	\$66.75	\$1,384.15	0.00%	\$56.85	\$1,440.90	0	\$56.85	\$1,501.40	162.75%	\$200.00
51180	\$89.80	\$131.35	152.00%	\$131.35	\$18.45	\$89.80	0.00%	\$23.10	\$99.80	0.00%	\$123.05	0.00%	\$10.15	\$126.60	0.00%	\$13.70	\$130.80	0	\$13.70	\$145.65	145.65%	\$6.00
51183	DERIVED	DERIVED	150.762	DERIVED	150.762	150.762	0.00%	DERIVED	150.762	0.00%	DERIVED	150.762	0.00%	DERIVED	150.762	0.00%	DERIVED	150.762	0	DERIVED	145.40%	\$17.90
51190	\$326.95	\$500.00	152.75%	\$500.00	\$26.95	\$326.95	0.00%	\$18.45	\$345.40	0.00%	\$177.70	0.00%	\$14.60	\$318.90	0.00%	\$26.00	\$344.90	0	\$26.00	\$361.90	145.80%	\$26.00
51309	DERIVED	DERIVED	150.762	DERIVED	150.762	150.762	0.00%	DERIVED	150.762	0.00%	DERIVED	150.762	0.00%	DERIVED	150.762	0.00%	DERIVED	150.762	0	DERIVED	145.40%	\$17.90
51312	DERIVED	DERIVED	150.762	DERIVED	150.762	150.762	0.00%	DERIVED	150.762	0.00%	DERIVED	150.762	0.00%	DERIVED	150.762	0.00%	DERIVED	150.762	0	DERIVED	145.40%	\$17.90
51315	\$283.45	\$414.95	152.74%	\$414.95	\$58.55	\$283.45	0.00%	\$72.95	\$283.45	0.00%	\$388.35	0.00%	\$72.95	\$399.65	0.00%	\$43.25	\$412.55	0	\$56.10	\$442.55	145.55%	\$56.15
51318	\$187.05	\$273.90	152.73%	\$273.90	\$38.70	\$187.05	0.00%	\$48.15	\$187.05	0.00%	\$256.25	0.00%	\$48.15	\$263.75	0.00%	\$28.55	\$272.40	0	\$37.20	\$272.40	145.65%	\$37.20
51700	\$89.00	\$130.25	151.89%	\$130.25	\$28.90	\$89.00	0.00%	\$36.60	\$144.40	0.00%	\$131.70	0.00%	\$41.05	\$136.15	0.00%	\$34.80	\$106.90	0	\$5.55	\$106.90	120.10%	\$5.55
51703	\$44.75	\$65.35	151.87%	\$65.35	\$14.40	\$44.75	0.00%	\$18.40	\$71.55	0.00%	\$66.25	0.00%	\$15.30	\$68.45	0.00%	\$17.50	\$51.10	0	\$0.15	\$51.10	114.20%	\$0.15
51800	\$89.80	\$131.35	149.72%	\$131.35	\$33.10	\$89.80	0.00%	\$47.35	\$143.60	0.00%	\$132.90	0.00%	\$9.15	\$137.40	0.00%	\$12.25	\$122.20	0	\$12.25	\$122.20	136.10%	\$12.25
51803	DERIVED	DERIVED	149.72%	DERIVED	150.762	150.762	0.00%	DERIVED	150.762	0.00%	DERIVED	150.762	0.00%	DERIVED	150.762	0.00%	DERIVED	150.762	0	DERIVED	145.40%	\$17.90
51900	\$338.25	\$499.60	152.84%	\$499.60	\$83.15	\$338.25	0.00%	\$66.20	\$542.75	0.00%	\$502.10	0.00%	\$83.15	\$519.05	0.00%	\$59.45	\$488.00	0	\$38.40	\$488.00	146.80%	\$38.40
51902	\$76.95	\$112.60	152.84%	\$112.60	\$8.35	\$76.95	0.00%	\$19.25	\$123.05	0.00%	\$113.90	0.00%	\$18.80	\$117.75	0.00%	\$13.50	\$113.20	0	\$8.95	\$113.20	147.10%	\$8.95
51904	\$478.30	\$692.85	152.84%	\$692.85	\$51.60	\$478.30	0.00%	\$92.35	\$752.25	0.00%	\$709.50	0.00%	\$116.00	\$724.15	0.00%	\$82.90	\$695.20	0	\$53.95	\$695.20	146.90%	\$53.95
51906	\$19.30	\$28.45	152.49%	\$28.45	\$11.65	\$19.30	0.00%	\$10.40	\$151.55	0.00%	\$106.25	0.00%	\$21.00	\$101.20	0.00%	\$12.60	\$106.90	0	\$8.70	\$106.90	146.85%	\$8.70
52000	\$85.80	\$125.60	152.49%	\$125.60	\$9.40	\$85.80	0.00%	\$16.75	\$133.20	0.00%	\$127.00	0.00%	\$18.10	\$131.25	0.00%	\$15.05	\$123.70	0	\$8.50	\$123.70	144.15%	\$7.50
52003	\$122.35	\$189.60	152.46%	\$189.60	\$13.20	\$122.35	0.00%	\$23.85	\$195.70	0.00%	\$181.10	0.00%	\$29.95	\$187.20	0.00%	\$10.55	\$176.30	0	\$10.55	\$176.30	144.10%	\$10.55
52006	\$122.35	\$189.60	152.46%	\$189.60	\$13.20	\$122.35	0.00%	\$23.85	\$195.70	0.00%	\$181.10	0.00%	\$29.95	\$187.20	0.00%	\$10.55	\$176.30	0	\$10.55	\$176.30	144.10%	\$10.55
52009	\$193.10	\$282.90	152.47%	\$282.90	\$21.30	\$193.10	0.00%	\$37.70	\$308.95	0.00%	\$285.80	0.00%	\$47.35	\$295.45	0.00%	\$17.00	\$282.80	0	\$17.00	\$282.80	144.30%	\$17.00
52010	\$264.25	\$398.00	152.47%	\$398.00	\$28.70	\$264.25	0.00%	\$51.55	\$422.25	0.00%	\$391.10	0.00%	\$64.75	\$404.30	0.00%	\$46.30	\$388.10	0	\$30.00	\$388.10	146.85%	\$30.00
52012	\$244.30	\$375.75	152.46%	\$375.75	\$25.65	\$244.30	0.00%	\$47.35	\$398.05	0.00%	\$369.15	0.00%	\$55.95	\$374.40	0.00%	\$41.90	\$350.00	0	\$41.90	\$350.00	143.15%	\$41.90
52015	\$114.30	\$172.50	152.48%	\$172.50	\$12.50	\$114.30	0.00%	\$22.30	\$189.85	0.00%	\$168.15	0.00%	\$38.00	\$174.90	0.00%	\$10.05	\$164.90	0	\$10.05	\$164.90	144.25%	\$10.05
52018	\$288.00	\$448.40	152.92%	\$448.40	\$131.20	\$288.00	0.00%	\$56.20	\$460.80	0.00%	\$426.25	0.00%	\$70.60	\$440.65	0.00%	\$50.45	\$414.80	0	\$24.60	\$414.80	144.05%	\$24.60
52021	\$41.45	\$61.40	152.42%	\$61.40	\$3.40	\$41.45	0.00%	\$8.90	\$54.80	0.00%	\$46.30	0.00%	\$7.45	\$44.60	0.00%	\$2.95	\$44.40	0	\$2.95	\$44.40	145.10%	\$2.95
52024	\$54.35	\$79.65	152.47%	\$79.65	\$9.95	\$54.35	0.00%	\$10.55	\$86.90	0.00%	\$80.45	0.00%	\$13.25	\$83.15	0.00%	\$6.80	\$83.15	0	\$4.45	\$83.15	143.80%	\$4.45
52025	\$191.35	\$289.25	152.49%	\$289.25	\$70.85	\$191.35	0.00%	\$37.30	\$306.10	0.00%	\$280.45	0.00%	\$46.85	\$282.75	0.00%	\$33.50	\$278.10	0	\$21.85	\$278.10	146.90%	\$21.85
52027	\$155.85	\$241.55	152.45%	\$241.55	\$61.95	\$155.85	0.00%	\$30.40	\$248.30	0.00%	\$230.65	0.00%	\$38.10	\$238.45	0.00%	\$27.30	\$224.40	0	\$13.25	\$224.40	143.90%	\$13.25
52029	\$93.65	\$141.85	152.45%	\$141.85	\$21.15	\$93.65	0.00%	\$18.60	\$148.80	0.00%	\$134.30	0.00%	\$22.95	\$143.30	0.00%	\$7.95	\$134.80	0	\$7.95	\$134.80	143.95%	\$7.95
52032	\$191.35	\$289.25	152.49%	\$289.25	\$70.85	\$191.35	0.00%	\$37.30	\$306.10	0.00%	\$280.45	0.00%	\$46.85	\$282.75	0.00%	\$33.50	\$278.10	0	\$21.85	\$278.10	146.90%	\$21.85
52034	\$44.75	\$65.35	152.40%	\$65.35	\$17.75	\$44.75	0.00%	\$9.75	\$71.55	0.00%	\$66.25	0.00%	\$10.95	\$69.25	0.00%	\$7.85	\$64.30	0	\$3.70	\$64.30	143.70%	\$3.70
52035	\$498.30	\$757.10	152.48%	\$757.10	\$141.40	\$498.30	0.00%	\$96.65	\$793.50	0.00%	\$723.10	0.00%	\$121.40	\$759.48	0.00%	\$86.80	\$727.20	0	\$56.10	\$727.20	143.80%	\$56.10
52036	\$131.10	\$199.40	152.49%	\$199.40	\$68.30	\$131.10	0.00%	\$25.75	\$211.35	0.00%	\$198.50	0.00%	\$32.35	\$203.10	0.00%	\$16.50	\$189.40	0	\$10.40	\$189.40	143.40%	\$10.40
52039	\$38.25	\$48.60	152.47%	\$48.60	\$16.90	\$38.25	0.00%	\$6.20	\$54.75	0.00%	\$50.10	0.00%	\$8.15	\$51.65	0.00%	\$3.80	\$48.85	0	\$3.80	\$48.85	144.00%	\$3.80
52042	\$176.50	\$273.70	152.48%	\$273.70	\$93.95	\$176.50	0.00%	\$50.05	\$391.25	0.00%	\$368.65	0.00%	\$42.50	\$374.65	0.00%	\$31.50	\$358.45	0	\$15.35	\$358.45	144.00%	\$15.30
52048	\$386.55	\$592.35	152.48%	\$592.35	\$183.90	\$386.55	0.00%	\$75.40	\$618.45	0.00%	\$578.60	0.00%	\$129.95	\$597.45	0.00%	\$79.65	\$579.45	0	\$20.95	\$579.45	143.45%	\$20.90
52051	\$212.60	\$329.05	152.49%	\$329.05	\$77.20	\$212.60	0.00%	\$103.95	\$386.10	0.00%	\$377.10	0.00%	\$128.05	\$379.60	0.00%	\$30.85	\$354.65	0	\$30.85	\$354.65	143.50%	\$30.90
52054	\$311.40	\$489.0																				

53659	\$245.05	\$332.80	135.80%	\$358.60	\$25.80	\$379.80	0.00%	\$477.00	\$392.05	0.00%	\$59.25	\$362.65	0.00%	\$29.85	\$374.95	0.00%	\$42.15	\$356.10	0	\$23.30	\$356.15	145.35%	\$23.35
53660	\$498.80	\$678.60	135.81%	\$731.60	\$52.80	\$774.65	0.00%	\$958.85	\$799.60	0.00%	\$120.80	\$739.70	0.00%	\$60.90	\$764.70	0.00%	\$85.90	\$726.30	0	\$41.50	\$726.35	145.30%	\$41.50
53700	\$129.90	\$176.40	135.81%	\$204.60	\$28.20	\$232.90	0.00%	\$249.90	\$207.75	0.00%	\$31.35	\$199.25	0.00%	\$15.85	\$198.75	0.00%	\$22.35	\$190.50	0	\$14.10	\$190.55	146.65%	\$14.10
53702	\$65.05	\$88.30	135.76%	\$102.35	\$14.05	\$116.40	0.00%	\$127.50	\$104.05	0.00%	\$15.75	\$96.25	0.00%	\$7.95	\$99.50	0.00%	\$11.25	\$95.30	0	\$7.00	\$95.35	146.50%	\$7.00
53704	\$39.15	\$53.15	135.70%	\$61.60	\$8.45	\$69.95	0.00%	\$75.50	\$62.60	0.00%	\$9.45	\$57.95	0.00%	\$4.80	\$59.50	0.00%	\$6.75	\$57.50	0	\$4.35	\$57.55	146.85%	\$4.35
53706	\$129.90	\$176.40	135.81%	\$204.60	\$28.20	\$232.90	0.00%	\$249.90	\$207.75	0.00%	\$31.35	\$199.25	0.00%	\$15.85	\$198.75	0.00%	\$22.35	\$190.50	0	\$14.10	\$190.55	146.65%	\$14.10
54001	\$89.00	\$89.00	0	\$89.00	\$0.00	\$89.00	0.00%	\$0.00	\$89.00	0.00%	\$0.00	\$89.00	0.00%	\$0.00	\$89.00	0.00%	\$0.00	\$89.00	0	\$0.00	\$89.00	146.65%	\$0.00
54002	\$44.75	\$44.75	0	\$44.75	\$0.00	\$44.75	0.00%	\$0.00	\$44.75	0.00%	\$0.00	\$44.75	0.00%	\$0.00	\$44.75	0.00%	\$0.00	\$44.75	0	\$0.00	\$44.75	146.65%	\$0.00
54003	\$89.00	\$89.00	0	\$89.00	\$0.00	\$89.00	0.00%	\$0.00	\$89.00	0.00%	\$0.00	\$89.00	0.00%	\$0.00	\$89.00	0.00%	\$0.00	\$89.00	0	\$0.00	\$89.00	146.65%	\$0.00
54004	\$44.75	\$44.75	0	\$44.75	\$0.00	\$44.75	0.00%	\$0.00	\$44.75	0.00%	\$0.00	\$44.75	0.00%	\$0.00	\$44.75	0.00%	\$0.00	\$44.75	0	\$0.00	\$44.75	146.65%	\$0.00
54006	\$89.00	\$89.00	0	\$89.00	\$0.00	\$89.00	0.00%	\$0.00	\$89.00	0.00%	\$0.00	\$89.00	0.00%	\$0.00	\$89.00	0.00%	\$0.00	\$89.00	0	\$0.00	\$89.00	146.65%	\$0.00
54007	\$44.75	\$44.75	0	\$44.75	\$0.00	\$44.75	0.00%	\$0.00	\$44.75	0.00%	\$0.00	\$44.75	0.00%	\$0.00	\$44.75	0.00%	\$0.00	\$44.75	0	\$0.00	\$44.75	146.65%	\$0.00
54011	\$89.00	\$89.00	0	\$89.00	\$0.00	\$89.00	0.00%	\$0.00	\$89.00	0.00%	\$0.00	\$89.00	0.00%	\$0.00	\$89.00	0.00%	\$0.00	\$89.00	0	\$0.00	\$89.00	146.65%	\$0.00
54012	\$44.75	\$44.75	0	\$44.75	\$0.00	\$44.75	0.00%	\$0.00	\$44.75	0.00%	\$0.00	\$44.75	0.00%	\$0.00	\$44.75	0.00%	\$0.00	\$44.75	0	\$0.00	\$44.75	146.65%	\$0.00
55028	\$111.75	\$111.75	0	\$111.75	\$0.00	\$111.75	0.00%	\$14.15	\$128.10	0.00%	\$16.35	\$127.40	0.00%	\$15.65	\$129.65	0.00%	\$17.90	\$111.75	0	\$0.00	\$111.75	146.65%	\$0.00
55029	\$38.75	\$38.75	0	\$38.75	\$0.00	\$38.75	0.00%	\$4.85	\$44.35	0.00%	\$5.60	\$44.15	0.00%	\$5.40	\$44.95	0.00%	\$6.20	\$38.75	0	\$0.00	\$38.75	146.65%	\$0.00
55030	\$111.75	\$111.75	0	\$111.75	\$0.00	\$111.75	0.00%	\$14.15	\$128.10	0.00%	\$16.35	\$127.40	0.00%	\$15.65	\$129.65	0.00%	\$17.90	\$111.75	0	\$0.00	\$111.75	146.65%	\$0.00
55031	\$38.75	\$38.75	0	\$38.75	\$0.00	\$38.75	0.00%	\$4.85	\$44.35	0.00%	\$5.60	\$44.15	0.00%	\$5.40	\$44.95	0.00%	\$6.20	\$38.75	0	\$0.00	\$38.75	146.65%	\$0.00
55032	\$111.75	\$111.75	0	\$111.75	\$0.00	\$111.75	0.00%	\$14.15	\$128.10	0.00%	\$16.35	\$127.40	0.00%	\$15.65	\$129.65	0.00%	\$17.90	\$111.75	0	\$0.00	\$111.75	146.65%	\$0.00
55033	\$38.75	\$38.75	0	\$38.75	\$0.00	\$38.75	0.00%	\$4.85	\$44.35	0.00%	\$5.60	\$44.15	0.00%	\$5.40	\$44.95	0.00%	\$6.20	\$38.75	0	\$0.00	\$38.75	146.65%	\$0.00
55036	\$113.95	\$113.95	0	\$113.95	\$0.00	\$113.95	0.00%	\$14.45	\$130.65	0.00%	\$16.70	\$129.90	0.00%	\$15.95	\$132.20	0.00%	\$18.25	\$113.95	0	\$0.00	\$113.95	146.65%	\$0.00
55037	\$38.75	\$38.75	0	\$38.75	\$0.00	\$38.75	0.00%	\$4.85	\$44.35	0.00%	\$5.60	\$44.15	0.00%	\$5.40	\$44.95	0.00%	\$6.20	\$38.75	0	\$0.00	\$38.75	146.65%	\$0.00
55038	\$111.75	\$111.75	0	\$111.75	\$0.00	\$111.75	0.00%	\$14.15	\$128.10	0.00%	\$16.35	\$127.40	0.00%	\$15.65	\$129.65	0.00%	\$17.90	\$111.75	0	\$0.00	\$111.75	146.65%	\$0.00
55039	\$38.75	\$38.75	0	\$38.75	\$0.00	\$38.75	0.00%	\$4.85	\$44.35	0.00%	\$5.60	\$44.15	0.00%	\$5.40	\$44.95	0.00%	\$6.20	\$38.75	0	\$0.00	\$38.75	146.65%	\$0.00
55048	\$112.15	\$112.15	0	\$112.15	\$0.00	\$112.15	0.00%	\$14.20	\$128.55	0.00%	\$16.40	\$127.85	0.00%	\$15.70	\$130.10	0.00%	\$17.95	\$112.15	0	\$0.00	\$112.15	146.65%	\$0.00
55049	\$38.75	\$38.75	0	\$38.75	\$0.00	\$38.75	0.00%	\$4.85	\$44.35	0.00%	\$5.60	\$44.15	0.00%	\$5.40	\$44.95	0.00%	\$6.20	\$38.75	0	\$0.00	\$38.75	146.65%	\$0.00
55064	\$111.75	\$111.75	0	\$111.75	\$0.00	\$111.75	0.00%	\$14.15	\$128.10	0.00%	\$16.35	\$127.40	0.00%	\$15.65	\$129.65	0.00%	\$17.90	\$111.75	0	\$0.00	\$111.75	146.65%	\$0.00
55065	\$100.60	\$100.60	0	\$100.60	\$0.00	\$100.60	0.00%	\$9.40	\$112.00	0.00%	\$11.40	\$114.70	0.00%	\$11.30	\$116.70	0.00%	\$13.75	\$100.60	0	\$0.00	\$100.60	146.65%	\$0.00
55066	\$223.45	\$223.45	0	\$223.45	\$0.00	\$223.45	0.00%	\$0.00	\$223.45	0.00%	\$0.00	\$223.45	0.00%	\$0.00	\$223.45	0.00%	\$0.00	\$223.45	0	\$0.00	\$223.45	146.65%	\$0.00
55068	\$35.80	\$35.80	0	\$35.80	\$0.00	\$35.80	0.00%	\$3.40	\$39.90	0.00%	\$4.10	\$40.80	0.00%	\$5.00	\$41.55	0.00%	\$5.75	\$35.80	0	\$0.00	\$35.80	146.65%	\$0.00
55070	\$100.60	\$100.60	0	\$100.60	\$0.00	\$100.60	0.00%	\$9.40	\$112.00	0.00%	\$11.40	\$114.70	0.00%	\$11.30	\$116.70	0.00%	\$13.75	\$100.60	0	\$0.00	\$100.60	146.65%	\$0.00
55071	\$212.35	\$212.35	0	\$212.35	\$0.00	\$212.35	0.00%	\$3.20	\$212.35	0.00%	\$0.00	\$212.35	0.00%	\$3.20	\$212.35	0.00%	\$5.60	\$212.35	0	\$0.00	\$212.35	146.65%	\$0.00
55073	\$34.85	\$34.85	0	\$34.85	\$0.00	\$34.85	0.00%	\$3.20	\$38.70	0.00%	\$3.85	\$40.45	0.00%	\$4.90	\$40.45	0.00%	\$5.60	\$34.85	0	\$0.00	\$34.85	146.65%	\$0.00
55076	\$111.75	\$111.75	0	\$111.75	\$0.00	\$111.75	0.00%	\$14.15	\$128.10	0.00%	\$16.35	\$127.40	0.00%	\$15.65	\$129.65	0.00%	\$17.90	\$111.75	0	\$0.00	\$111.75	146.65%	\$0.00
55079	\$38.75	\$38.75	0	\$38.75	\$0.00	\$38.75	0.00%	\$4.85	\$44.35	0.00%	\$5.60	\$44.15	0.00%	\$5.40	\$44.95	0.00%	\$6.20	\$38.75	0	\$0.00	\$38.75	146.65%	\$0.00
55084	\$100.60	\$100.60	0	\$100.60	\$0.00	\$100.60	0.00%	\$9.40	\$112.00	0.00%	\$11.40	\$114.70	0.00%	\$11.30	\$116.70	0.00%	\$13.75	\$100.60	0	\$0.00	\$100.60	146.65%	\$0.00
55085	\$34.85	\$34.85	0	\$34.85	\$0.00	\$34.85	0.00%	\$3.20	\$38.70	0.00%	\$3.85	\$40.45	0.00%	\$4.90	\$40.45	0.00%	\$5.60	\$34.85	0	\$0.00	\$34.85	146.65%	\$0.00
55118	\$282.15	\$282.15	0	\$282.15	\$156.55	\$438.70	0.00%	\$47.50	\$324.65	0.00%	\$47.50	\$324.65	0.00%	\$39.50	\$327.30	0.00%	\$45.15	\$282.15	0	\$0.00	\$282.15	146.65%	\$282.15
55126	\$236.25	\$236.25	0	\$236.25	\$128.25	\$364.50	0.00%	\$82.00	\$282.50	0.00%	\$82.00	\$282.50	0.00%	\$69.30	\$274.05	0.00%	\$78.90	\$236.25	0	\$0.00	\$236.25	146.65%	\$236.25
55127	\$236.25	\$236.25	0	\$236.25	\$128.25	\$364.50	0.00%	\$82.00	\$282.50	0.00%	\$82.00	\$282.50	0.00%	\$69.30	\$274.05	0.00%	\$78.90	\$236.25	0	\$0.00	\$236.25	146.65%	\$236.25
55128	\$236.25	\$236.25	0	\$236.25	\$128.25	\$364.50	0.00%	\$82.00	\$282.50	0.00%	\$82.00	\$282.50	0.00%	\$69.30	\$274.05	0.00%	\$78.90	\$236.25	0	\$0.00	\$236.25	146.65%	\$236.25
55129	\$236.25	\$236.25	0	\$236.25	\$128.25	\$364.50	0.00%	\$82.00	\$282.50	0.00%	\$82.00	\$282.50	0.00%	\$69.30	\$274.05	0.00%	\$78.90	\$236.25	0	\$0.00	\$236.25	146.65%	\$236.25
55130	\$174.10	\$174.10	0	\$174.10	\$87.05	\$261.15	0.00%	\$46.60	\$214.45	0.00%	\$50.05	\$198.45	0.00%	\$24.90	\$201.95	0.00%	\$28.30	\$174.10	0	\$0.00	\$174.10	146.65%	\$174.10
55132	\$236.25	\$236.25	0	\$236.25	\$128.25	\$364.50	0.00%	\$82.00	\$282.50	0.00%	\$82.00	\$282.50	0.00%	\$69.30	\$274.05	0.00%	\$78.90	\$236.25	0	\$0.00	\$236.25	146.65%	\$236.25
55133	\$212.65	\$212.65	0	\$212.65	\$106.33	\$318.98	0.00%	\$74.00	\$244.65	0.00%	\$74.00	\$244.65	0.00%	\$62.00	\$234.65	0.00%	\$72.05	\$212.65	0	\$0.00	\$212.65	146.65%	\$212.65
55134	\$236.25	\$236.25	0	\$236.25	\$128.25	\$364.50	0.00%	\$82.00	\$282.50	0.00%	\$82.00	\$282.50	0.00%	\$69.30	\$274.05	0.00%	\$78.90	\$236.25	0	\$0.00	\$236.25	146.65%	\$236.25
55135	\$563.10	\$563.10	0	\$563.10	\$281.55	\$844.65	0.00%	\$140.30	\$423.35	0.00%	\$140.30	\$423.35	0.00%	\$116.85	\$406.50	0.00%	\$133.30	\$563.10	0	\$0.00	\$563.10	146.65%	\$563.10
55137	\$236.25	\$236.25	0	\$236.25	\$128.25	\$364.50	0.00%	\$82.00	\$282.50	0.00%	\$82.00	\$282.50	0.00%	\$69.30	\$274.05	0.00%	\$78.90	\$236.25	0	\$0.00	\$236.25	146.65%	\$236.25
55141	\$212.65	\$212.65	0	\$212.65	\$106.33	\$318.98	0.00%	\$74.00	\$244.65	0.00%	\$74.00	\$244.65	0.00%	\$62.00	\$234.65	0.00%	\$72.05	\$212.65	0	\$0.00	\$212.65	146.65%	\$212.65
55143	\$212.65	\$212.65	0	\$212.65	\$106.33	\$318.98	0.00%	\$74.00	\$244.65	0.00%	\$74.00	\$244.65	0.00%	\$62.00	\$234.65	0.00%	\$72.05	\$212.65	0	\$0.00	\$212.65	146.65%	\$212.65
55145	\$546.10	\$546.10	0	\$546.10	\$273.05	\$819.15	0.00%	\$109.20	\$406.95	0.00%	\$109.20	\$406.95	0.00%	\$91.15	\$388.60	0.00%	\$109.20	\$546.10	0	\$0.00	\$546.10	146.65%	\$546.10
55146	\$488.20	\$488.20	0	\$488.20	\$244.10	\$732.30	0.00%	\$96.45	\$335.85	0.00%	\$96.45	\$335.85	0.00%	\$79.70	\$316.30	0.00%	\$96.45	\$488.20	0	\$0.00	\$488.20	146.65%	\$488.20
55148	\$175.																						

55721	\$117.75	\$117.75	0	\$117.75	\$0.00	\$140.65	0.00%	\$22.90	\$143.00	0.00%	\$25.25	\$134.25	0.00%	\$16.50	\$136.60	0.00%	\$18.85	\$0.00	118.60%	\$139.65	\$21.90
55723	\$38.90	\$46.45	0	\$57.23	\$0.00	\$46.45	0.00%	\$7.55	\$47.20	0.00%	\$8.30	\$44.35	0.00%	\$5.45	\$45.10	0.00%	\$6.20	\$0.00	118.60%	\$46.00	\$7.10
55725	\$40.95	\$48.80	0	\$49.95	\$0.00	\$48.80	0.00%	\$7.85	\$49.60	0.00%	\$8.65	\$46.70	0.00%	\$5.75	\$47.50	0.00%	\$6.55	\$0.00	118.55%	\$48.55	\$7.60
55729	\$27.90	\$33.25	0	\$33.25	\$0.00	\$33.25	0.00%	\$5.35	\$33.80	0.00%	\$5.90	\$31.80	0.00%	\$3.20	\$32.85	0.00%	\$4.45	\$0.00	118.45%	\$33.05	\$5.15
55736	\$130.05	\$155.35	0	\$130.05	\$0.00	\$155.35	0.00%	\$25.30	\$157.95	0.00%	\$27.90	\$148.25	0.00%	\$18.20	\$150.85	0.00%	\$20.80	\$0.00	118.60%	\$154.25	\$24.20
55739	\$58.35	\$69.65	0	\$58.35	\$0.00	\$69.65	0.00%	\$11.30	\$70.85	0.00%	\$12.45	\$66.50	0.00%	\$8.15	\$67.70	0.00%	\$9.35	\$0.00	118.50%	\$69.15	\$10.80
55759	\$153.60	\$183.50	0	\$153.60	\$0.00	\$183.50	0.00%	\$29.90	\$186.55	0.00%	\$32.95	\$175.10	0.00%	\$21.50	\$178.20	0.00%	\$24.60	\$0.00	118.50%	\$182.00	\$28.40
55762	\$61.45	\$73.35	0	\$61.45	\$0.00	\$73.35	0.00%	\$11.90	\$74.55	0.00%	\$13.10	\$70.05	0.00%	\$8.60	\$71.20	0.00%	\$9.85	\$0.00	118.30%	\$72.70	\$11.25
55764	\$163.85	\$195.70	0	\$163.85	\$0.00	\$195.70	0.00%	\$31.85	\$198.95	0.00%	\$35.10	\$186.80	0.00%	\$22.95	\$190.05	0.00%	\$26.20	\$0.00	118.50%	\$194.15	\$30.30
55766	\$66.55	\$79.45	0	\$66.55	\$0.00	\$79.45	0.00%	\$12.90	\$80.75	0.00%	\$14.20	\$75.85	0.00%	\$9.30	\$77.20	0.00%	\$10.65	\$0.00	118.65%	\$78.95	\$12.40
55770	\$163.85	\$195.70	0	\$163.85	\$0.00	\$195.70	0.00%	\$31.85	\$198.95	0.00%	\$35.10	\$186.80	0.00%	\$22.95	\$190.05	0.00%	\$26.20	\$0.00	118.50%	\$194.15	\$30.30
55772	\$163.85	\$195.70	0	\$163.85	\$0.00	\$195.70	0.00%	\$31.85	\$198.95	0.00%	\$35.10	\$186.80	0.00%	\$22.95	\$190.05	0.00%	\$26.20	\$0.00	118.50%	\$194.15	\$30.30
55774	\$66.55	\$79.45	0	\$66.55	\$0.00	\$79.45	0.00%	\$12.90	\$80.75	0.00%	\$14.20	\$75.85	0.00%	\$9.30	\$77.20	0.00%	\$10.65	\$0.00	118.65%	\$78.95	\$12.40
55781	\$111.75	\$122.10	0	\$111.75	\$0.00	\$122.10	0.00%	\$19.30	\$124.30	0.00%	\$21.55	\$117.45	0.00%	\$15.65	\$119.05	0.00%	\$17.90	\$0.00	118.50%	\$119.15	\$31.25
55814	\$38.75	\$42.25	0	\$38.75	\$0.00	\$42.25	0.00%	\$5.40	\$43.00	0.00%	\$4.25	\$44.15	0.00%	\$3.40	\$44.95	0.00%	\$4.30	\$0.00	118.75%	\$38.75	\$11.75
55814	\$38.75	\$42.25	0	\$38.75	\$0.00	\$42.25	0.00%	\$5.40	\$43.00	0.00%	\$4.25	\$44.15	0.00%	\$3.40	\$44.95	0.00%	\$4.30	\$0.00	118.75%	\$38.75	\$11.75
55844	\$89.45	\$97.75	0	\$89.45	\$0.00	\$97.75	0.00%	\$13.30	\$99.50	0.00%	\$10.05	\$101.95	0.00%	\$7.40	\$103.75	0.00%	\$8.30	\$0.00	118.50%	\$89.45	\$0.00
55844	\$89.45	\$97.75	0	\$89.45	\$0.00	\$97.75	0.00%	\$13.30	\$99.50	0.00%	\$10.05	\$101.95	0.00%	\$7.40	\$103.75	0.00%	\$8.30	\$0.00	118.50%	\$89.45	\$0.00
55846	\$38.75	\$42.25	0	\$38.75	\$0.00	\$42.25	0.00%	\$5.40	\$43.00	0.00%	\$4.25	\$44.15	0.00%	\$3.40	\$44.95	0.00%	\$4.30	\$0.00	118.75%	\$38.75	\$11.75
55846	\$38.75	\$42.25	0	\$38.75	\$0.00	\$42.25	0.00%	\$5.40	\$43.00	0.00%	\$4.25	\$44.15	0.00%	\$3.40	\$44.95	0.00%	\$4.30	\$0.00	118.75%	\$38.75	\$11.75
55848	\$139.90	\$184.70	0	\$139.90	\$0.00	\$184.70	0.00%	\$24.80	\$187.50	0.00%	\$27.90	\$176.30	0.00%	\$19.60	\$181.20	0.00%	\$22.40	\$0.00	118.90%	\$184.70	\$0.00
55850	\$184.70	\$214.70	0	\$184.70	\$0.00	\$214.70	0.00%	\$31.00	\$217.70	0.00%	\$34.15	\$206.55	0.00%	\$25.65	\$211.45	0.00%	\$29.55	\$0.00	118.70%	\$184.70	\$0.00
55852	\$111.75	\$117.75	0	\$111.75	\$0.00	\$117.75	0.00%	\$19.30	\$124.30	0.00%	\$21.55	\$117.45	0.00%	\$15.65	\$119.05	0.00%	\$17.90	\$0.00	118.50%	\$111.75	\$0.00
55854	\$111.75	\$117.75	0	\$111.75	\$0.00	\$117.75	0.00%	\$19.30	\$124.30	0.00%	\$21.55	\$117.45	0.00%	\$15.65	\$119.05	0.00%	\$17.90	\$0.00	118.50%	\$111.75	\$0.00
55856	\$111.75	\$117.75	0	\$111.75	\$0.00	\$117.75	0.00%	\$19.30	\$124.30	0.00%	\$21.55	\$117.45	0.00%	\$15.65	\$119.05	0.00%	\$17.90	\$0.00	118.50%	\$111.75	\$0.00
55857	\$38.75	\$42.25	0	\$38.75	\$0.00	\$42.25	0.00%	\$5.40	\$43.00	0.00%	\$4.25	\$44.15	0.00%	\$3.40	\$44.95	0.00%	\$4.30	\$0.00	118.75%	\$38.75	\$0.00
55858	\$124.00	\$143.05	0	\$124.00	\$0.00	\$143.05	0.00%	\$20.05	\$143.85	0.00%	\$22.40	\$134.35	0.00%	\$17.35	\$143.85	0.00%	\$19.85	\$0.00	118.40%	\$124.00	\$0.00
55859	\$43.05	\$43.05	0	\$43.05	\$0.00	\$43.05	0.00%	\$0.00	\$43.05	0.00%	\$0.00	\$43.05	0.00%	\$0.00	\$43.05	0.00%	\$0.00	\$0.00	118.75%	\$43.05	\$0.00
55861	\$38.75	\$42.25	0	\$38.75	\$0.00	\$42.25	0.00%	\$5.40	\$43.00	0.00%	\$4.25	\$44.15	0.00%	\$3.40	\$44.95	0.00%	\$4.30	\$0.00	118.75%	\$38.75	\$0.00
55862	\$124.00	\$143.05	0	\$124.00	\$0.00	\$143.05	0.00%	\$20.05	\$143.85	0.00%	\$22.40	\$134.35	0.00%	\$17.35	\$143.85	0.00%	\$19.85	\$0.00	118.40%	\$124.00	\$0.00
55864	\$43.05	\$43.05	0	\$43.05	\$0.00	\$43.05	0.00%	\$0.00	\$43.05	0.00%	\$0.00	\$43.05	0.00%	\$0.00	\$43.05	0.00%	\$0.00	\$0.00	118.75%	\$43.05	\$0.00
55864	\$43.05	\$43.05	0	\$43.05	\$0.00	\$43.05	0.00%	\$0.00	\$43.05	0.00%	\$0.00	\$43.05	0.00%	\$0.00	\$43.05	0.00%	\$0.00	\$0.00	118.75%	\$43.05	\$0.00
55865	\$38.75	\$42.25	0	\$38.75	\$0.00	\$42.25	0.00%	\$5.40	\$43.00	0.00%	\$4.25	\$44.15	0.00%	\$3.40	\$44.95	0.00%	\$4.30	\$0.00	118.75%	\$38.75	\$0.00
55866	\$124.00	\$143.05	0	\$124.00	\$0.00	\$143.05	0.00%	\$20.05	\$143.85	0.00%	\$22.40	\$134.35	0.00%	\$17.35	\$143.85	0.00%	\$19.85	\$0.00	118.40%	\$124.00	\$0.00
55867	\$43.05	\$43.05	0	\$43.05	\$0.00	\$43.05	0.00%	\$0.00	\$43.05	0.00%	\$0.00	\$43.05	0.00%	\$0.00	\$43.05	0.00%	\$0.00	\$0.00	118.75%	\$43.05	\$0.00
55868	\$111.75	\$117.75	0	\$111.75	\$0.00	\$117.75	0.00%	\$19.30	\$124.30	0.00%	\$21.55	\$117.45	0.00%	\$15.65	\$119.05	0.00%	\$17.90	\$0.00	118.50%	\$111.75	\$0.00
55869	\$38.75	\$42.25	0	\$38.75	\$0.00	\$42.25	0.00%	\$5.40	\$43.00	0.00%	\$4.25	\$44.15	0.00%	\$3.40	\$44.95	0.00%	\$4.30	\$0.00	118.75%	\$38.75	\$0.00
55870	\$124.00	\$143.05	0	\$124.00	\$0.00	\$143.05	0.00%	\$20.05	\$143.85	0.00%	\$22.40	\$134.35	0.00%	\$17.35	\$143.85	0.00%	\$19.85	\$0.00	118.40%	\$124.00	\$0.00
55871	\$43.05	\$43.05	0	\$43.05	\$0.00	\$43.05	0.00%	\$0.00	\$43.05	0.00%	\$0.00	\$43.05	0.00%	\$0.00	\$43.05	0.00%	\$0.00	\$0.00	118.75%	\$43.05	\$0.00
55872	\$111.75	\$117.75	0	\$111.75	\$0.00	\$117.75	0.00%	\$19.30	\$124.30	0.00%	\$21.55	\$117.45	0.00%	\$15.65	\$119.05	0.00%	\$17.90	\$0.00	118.50%	\$111.75	\$0.00
55873	\$38.75	\$42.25	0	\$38.75	\$0.00	\$42.25	0.00%	\$5.40	\$43.00	0.00%	\$4.25	\$44.15	0.00%	\$3.40	\$44.95	0.00%	\$4.30	\$0.00	118.75%	\$38.75	\$0.00
55874	\$124.00	\$143.05	0	\$124.00	\$0.00	\$143.05	0.00%	\$20.05	\$143.85	0.00%	\$22.40	\$134.35	0.00%	\$17.35	\$143.85	0.00%	\$19.85	\$0.00	118.40%	\$124.00	\$0.00
55875	\$43.05	\$43.05	0	\$43.05	\$0.00	\$43.05	0.00%	\$0.00	\$43.05	0.00%	\$0.00	\$43.05	0.00%	\$0.00	\$43.05	0.00%	\$0.00	\$0.00	118.75%	\$43.05	\$0.00
55876	\$111.75	\$117.75	0	\$111.75	\$0.00	\$117.75	0.00%	\$19.30	\$124.30	0.00%	\$21.55	\$117.45	0.00%	\$15.65	\$119.05	0.00%	\$17.90	\$0.00	118.50%	\$111.75	\$0.00
55877	\$38.75	\$42.25	0	\$38.75	\$0.00	\$42.25	0.00%	\$5.40	\$43.00	0.00%	\$4.25	\$44.15	0.00%	\$3.40	\$44.95	0.00%	\$4.30	\$0.00	118.75%	\$38.75	\$0.00
55878	\$124.00	\$143.05	0	\$124.00	\$0.00	\$143.05	0.00%	\$20.05	\$143.85	0.00%	\$22.40	\$134.35	0.00%	\$17.35	\$143.85	0.00%	\$19.85	\$0.00	118.40%	\$124.00	\$0.00
55879	\$43.05	\$43.05	0	\$43.05	\$0.00	\$43.05	0.00%	\$0.00	\$43.05	0.00%	\$0.00	\$43.05	0.00%	\$0.00	\$43.05	0.00%	\$0.00	\$0.00	118.75%	\$43.05	\$0.00
55880	\$111.75	\$117.75	0	\$111.75	\$0.00	\$117.75	0.00%	\$19.30	\$124.30	0.00%	\$21.55	\$117.45	0.00%	\$15.65	\$119.05	0.00%	\$17.90	\$0.00	118.50%	\$111.75	\$0.00
55881	\$38.75	\$42.25	0	\$38.75	\$0.00	\$42.25	0.00%	\$5.40	\$43.00	0.00%	\$4.25	\$44.15	0.00%	\$3.40	\$44.95	0.00%	\$4.30	\$0.00	118.75%	\$38.75	\$0.00
55882	\$124.00	\$143.05	0	\$124.00	\$0.00	\$143.05	0.00%	\$20.05	\$143.85	0.00%	\$22.40	\$134.35	0.00%	\$17.35	\$143.85	0.00%	\$19.85	\$0.00	118.40%	\$124.00	\$0.00
55883	\$43.05	\$43.05	0	\$43.05	\$0.00	\$43.05	0.00%	\$0.00	\$43.05	0.00%	\$0.00	\$43.05	0.00%	\$0.00	\$43.05	0.00%	\$0.00	\$0.00	118.75%	\$43.05	\$0.00
55884	\$111.75	\$117.75	0	\$111.75	\$0.00	\$117.75	0.00%	\$19.30	\$124.30	0.00%	\$21.55	\$117.45	0.00%	\$15.65	\$119.05	0.00%	\$17.90	\$0.00	118.50%	\$111.75	\$0.00
55885	\$38.75	\$42.25	0	\$38.75	\$0.00	\$42.25	0.00%	\$5.40	\$43.00	0.00%	\$4.25	\$44.15	0.00%	\$3.40	\$44.95	0.00%	\$4.30	\$0.00	118.75%	\$38.75	\$0.00
55886	\$124.00	\$143.05	0	\$124.00	\$0.00	\$143.05	0.00%	\$20.05	\$143.85	0.00%	\$22.40	\$134.35	0.00%	\$17.35	\$143.85	0.00%	\$19.85	\$0.00	118.40%	\$124.00	\$0.00
55887	\$43.05	\$43.05	0	\$43.05	\$0.00	\$43.05	0.00%	\$0.00	\$43.05	0.00%	\$0.00	\$43.05	0.00%	\$0.00	\$43.05	0.00%	\$0.00	\$0.00	118.75%	\$43.05	\$0.00
55888	\$111.75	\$117.75	0	\$111.75	\$0.00	\$117.75	0.00%	\$19.30	\$124.30	0.00%	\$21.55	\$117.45	0.00%	\$15.65	\$119.05	0.00%	\$17.90	\$0.00	118.50%	\$111.75	\$0.00
55889	\$38.75	\$42.25	0	\$38.75	\$0.00	\$42.25	0.00%	\$5.40	\$43.00	0.00%	\$4.25	\$44.15	0.00%	\$3.40	\$44.95	0.00%	\$4.30	\$0.00	118.75%		

61324	\$653.05	\$653.05	0.00%	\$0.00	\$653.05	0.00%	\$0.00	\$757.55	0.00%	\$104.50	\$770.60	0.00%	\$117.55	\$0.00	100	-\$653.05	\$653.05	0	\$0.00
61325	\$329.00	\$329.00	0.00%	\$0.00	\$329.00	0.00%	\$0.00	\$381.65	0.00%	\$52.65	\$288.20	0.00%	\$59.20	\$0.00	100	\$329.00	\$329.00	0	\$0.00
61326	\$227.65	\$227.65	0.00%	\$0.00	\$227.65	0.00%	\$0.00	\$264.00	0.00%	\$36.35	\$268.65	0.00%	\$41.00	\$0.00	100	-\$227.65	\$227.65	0	\$0.00
61329	\$982.05	\$982.05	0.00%	\$0.00	\$982.05	0.00%	\$0.00	\$1,139.20	0.00%	\$157.15	\$1,158.80	0.00%	\$176.75	\$0.00	100	-\$982.05	\$982.05	0	\$0.00
61333	\$443.35	\$443.35	0.00%	\$0.00	\$443.35	0.00%	\$0.00	\$443.35	0.00%	\$0.00	\$443.35	0.00%	\$0.00	\$0.00	100	\$0.00	\$443.35	0	\$0.00
61336	\$605.05	\$605.05	0.00%	\$0.00	\$605.05	0.00%	\$0.00	\$605.05	0.00%	\$0.00	\$605.05	0.00%	\$0.00	\$0.00	100	\$605.05	\$605.05	0	\$0.00
61337	\$479.80	\$479.80	0.00%	\$0.00	\$479.80	0.00%	\$0.00	\$479.80	0.00%	\$0.00	\$479.80	0.00%	\$0.00	\$0.00	100	\$479.80	\$479.80	0	\$0.00
61340	\$253.00	\$253.00	0.00%	\$0.00	\$253.00	0.00%	\$0.00	\$293.50	0.00%	\$40.50	\$293.55	0.00%	\$45.55	\$0.00	100	-\$253.00	\$253.00	0	\$0.00
61341	\$600.70	\$600.70	0.00%	\$0.00	\$600.70	0.00%	\$0.00	\$600.70	0.00%	\$0.00	\$600.70	0.00%	\$0.00	\$0.00	100	\$600.70	\$600.70	0	\$0.00
61345	\$982.05	\$982.05	0.00%	\$0.00	\$982.05	0.00%	\$0.00	\$1,139.20	0.00%	\$171.15	\$1,158.80	0.00%	\$176.75	\$0.00	100	-\$982.05	\$982.05	0	\$0.00
61348	\$443.35	\$443.35	0.00%	\$0.00	\$443.35	0.00%	\$0.00	\$514.50	0.00%	\$71.15	\$521.15	0.00%	\$79.80	\$0.00	100	-\$443.35	\$443.35	0	\$0.00
61349	\$982.05	\$982.05	0.00%	\$0.00	\$982.05	0.00%	\$0.00	\$1,139.20	0.00%	\$171.15	\$1,158.80	0.00%	\$176.75	\$0.00	100	-\$982.05	\$982.05	0	\$0.00
61353	\$386.60	\$386.60	0.00%	\$0.00	\$386.60	0.00%	\$0.00	\$448.50	0.00%	\$61.90	\$456.20	0.00%	\$69.60	\$0.00	100	-\$386.60	\$386.60	0	\$0.00
61356	\$392.80	\$392.80	0.00%	\$0.00	\$392.80	0.00%	\$0.00	\$455.50	0.00%	\$62.70	\$463.50	0.00%	\$70.70	\$0.00	100	-\$392.80	\$392.80	0	\$0.00
61357	\$653.05	\$653.05	0.00%	\$0.00	\$653.05	0.00%	\$0.00	\$757.55	0.00%	\$104.50	\$770.60	0.00%	\$117.55	\$0.00	100	-\$653.05	\$653.05	0	\$0.00
61360	\$403.35	\$403.35	0.00%	\$0.00	\$403.35	0.00%	\$0.00	\$468.00	0.00%	\$64.65	\$474.95	0.00%	\$72.60	\$0.00	100	-\$403.35	\$403.35	0	\$0.00
61361	\$461.40	\$461.40	0.00%	\$0.00	\$461.40	0.00%	\$0.00	\$535.00	0.00%	\$73.60	\$544.45	0.00%	\$83.05	\$0.00	100	-\$461.40	\$461.40	0	\$0.00
61364	\$496.95	\$496.95	0.00%	\$0.00	\$496.95	0.00%	\$0.00	\$576.50	0.00%	\$79.55	\$586.40	0.00%	\$89.45	\$0.00	100	-\$496.95	\$496.95	0	\$0.00
61368	\$223.10	\$223.10	0.00%	\$0.00	\$223.10	0.00%	\$0.00	\$259.00	0.00%	\$35.90	\$263.25	0.00%	\$40.15	\$0.00	100	-\$223.10	\$223.10	0	\$0.00
61369	\$2015.75	\$2015.75	0.00%	\$0.00	\$2015.75	0.00%	\$0.00	\$2,338.50	0.00%	\$322.75	\$2,378.60	0.00%	\$362.85	\$0.00	100	-\$2015.75	\$2015.75	0	\$0.00
61372	\$223.10	\$223.10	0.00%	\$0.00	\$223.10	0.00%	\$0.00	\$259.00	0.00%	\$35.90	\$263.25	0.00%	\$40.15	\$0.00	100	-\$223.10	\$223.10	0	\$0.00
61373	\$489.70	\$489.70	0.00%	\$0.00	\$489.70	0.00%	\$0.00	\$568.50	0.00%	\$78.30	\$577.85	0.00%	\$88.15	\$0.00	100	-\$489.70	\$489.70	0	\$0.00
61376	\$143.35	\$143.35	0.00%	\$0.00	\$143.35	0.00%	\$0.00	\$166.50	0.00%	\$23.15	\$169.15	0.00%	\$25.80	\$0.00	100	-\$143.35	\$143.35	0	\$0.00
61381	\$574.35	\$574.35	0.00%	\$0.00	\$574.35	0.00%	\$0.00	\$666.00	0.00%	\$91.65	\$677.45	0.00%	\$103.40	\$0.00	100	-\$574.35	\$574.35	0	\$0.00
61383	\$624.95	\$624.95	0.00%	\$0.00	\$624.95	0.00%	\$0.00	\$725.00	0.00%	\$100.05	\$737.45	0.00%	\$112.50	\$0.00	100	-\$624.95	\$624.95	0	\$0.00
61384	\$687.70	\$687.70	0.00%	\$0.00	\$687.70	0.00%	\$0.00	\$797.50	0.00%	\$109.80	\$811.50	0.00%	\$123.80	\$0.00	100	-\$687.70	\$687.70	0	\$0.00
61386	\$332.50	\$332.50	0.00%	\$0.00	\$332.50	0.00%	\$0.00	\$385.50	0.00%	\$53.00	\$392.35	0.00%	\$59.85	\$0.00	100	-\$332.50	\$332.50	0	\$0.00
61387	\$430.75	\$430.75	0.00%	\$0.00	\$430.75	0.00%	\$0.00	\$490.50	0.00%	\$59.45	\$498.30	0.00%	\$66.70	\$0.00	100	-\$430.75	\$430.75	0	\$0.00
61389	\$370.55	\$370.55	0.00%	\$0.00	\$370.55	0.00%	\$0.00	\$430.50	0.00%	\$59.45	\$437.25	0.00%	\$66.70	\$0.00	100	-\$370.55	\$370.55	0	\$0.00
61390	\$409.95	\$409.95	0.00%	\$0.00	\$409.95	0.00%	\$0.00	\$475.50	0.00%	\$65.55	\$483.75	0.00%	\$73.80	\$0.00	100	-\$409.95	\$409.95	0	\$0.00
61393	\$605.50	\$605.50	0.00%	\$0.00	\$605.50	0.00%	\$0.00	\$702.50	0.00%	\$97.00	\$714.50	0.00%	\$109.00	\$0.00	100	-\$605.50	\$605.50	0	\$0.00
61394	\$653.05	\$653.05	0.00%	\$0.00	\$653.05	0.00%	\$0.00	\$757.55	0.00%	\$104.50	\$770.60	0.00%	\$117.55	\$0.00	100	-\$653.05	\$653.05	0	\$0.00
61397	\$246.85	\$246.85	0.00%	\$0.00	\$246.85	0.00%	\$0.00	\$286.50	0.00%	\$39.65	\$291.30	0.00%	\$44.45	\$0.00	100	-\$246.85	\$246.85	0	\$0.00
61398	\$982.05	\$982.05	0.00%	\$0.00	\$982.05	0.00%	\$0.00	\$1,139.20	0.00%	\$157.15	\$1,158.80	0.00%	\$176.75	\$0.00	100	-\$982.05	\$982.05	0	\$0.00
61402	\$605.05	\$605.05	0.00%	\$0.00	\$605.05	0.00%	\$0.00	\$702.00	0.00%	\$96.95	\$713.95	0.00%	\$108.90	\$0.00	100	-\$605.05	\$605.05	0	\$0.00
61406	\$982.05	\$982.05	0.00%	\$0.00	\$982.05	0.00%	\$0.00	\$1,139.20	0.00%	\$157.15	\$1,158.80	0.00%	\$176.75	\$0.00	100	-\$982.05	\$982.05	0	\$0.00
61409	\$873.50	\$873.50	0.00%	\$0.00	\$873.50	0.00%	\$0.00	\$1,013.50	0.00%	\$140.00	\$1,030.75	0.00%	\$157.25	\$0.00	100	-\$873.50	\$873.50	0	\$0.00
61410	\$982.05	\$982.05	0.00%	\$0.00	\$982.05	0.00%	\$0.00	\$1,139.20	0.00%	\$157.15	\$1,158.80	0.00%	\$176.75	\$0.00	100	-\$982.05	\$982.05	0	\$0.00
61413	\$225.95	\$225.95	0.00%	\$0.00	\$225.95	0.00%	\$0.00	\$262.00	0.00%	\$36.05	\$266.60	0.00%	\$40.65	\$0.00	100	-\$225.95	\$225.95	0	\$0.00
61414	\$653.05	\$653.05	0.00%	\$0.00	\$653.05	0.00%	\$0.00	\$757.55	0.00%	\$104.50	\$770.60	0.00%	\$117.55	\$0.00	100	-\$653.05	\$653.05	0	\$0.00
61421	\$479.80	\$479.80	0.00%	\$0.00	\$479.80	0.00%	\$0.00	\$556.50	0.00%	\$76.70	\$566.15	0.00%	\$86.35	\$0.00	100	-\$479.80	\$479.80	0	\$0.00
61425	\$600.70	\$600.70	0.00%	\$0.00	\$600.70	0.00%	\$0.00	\$697.00	0.00%	\$86.30	\$708.85	0.00%	\$108.15	\$0.00	100	-\$600.70	\$600.70	0	\$0.00
61426	\$554.80	\$554.80	0.00%	\$0.00	\$554.80	0.00%	\$0.00	\$643.00	0.00%	\$88.70	\$654.65	0.00%	\$99.85	\$0.00	100	-\$554.80	\$554.80	0	\$0.00
61429	\$543.00	\$543.00	0.00%	\$0.00	\$543.00	0.00%	\$0.00	\$630.00	0.00%	\$87.00	\$640.75	0.00%	\$97.75	\$0.00	100	-\$543.00	\$543.00	0	\$0.00
61430	\$559.45	\$559.45	0.00%	\$0.00	\$559.45	0.00%	\$0.00	\$650.00	0.00%	\$90.55	\$663.15	0.00%	\$101.70	\$0.00	100	-\$559.45	\$559.45	0	\$0.00
61433	\$486.95	\$486.95	0.00%	\$0.00	\$486.95	0.00%	\$0.00	\$576.00	0.00%	\$79.55	\$588.40	0.00%	\$89.45	\$0.00	100	-\$486.95	\$486.95	0	\$0.00
61434	\$615.40	\$615.40	0.00%	\$0.00	\$615.40	0.00%	\$0.00	\$714.00	0.00%	\$98.60	\$726.15	0.00%	\$110.75	\$0.00	100	-\$615.40	\$615.40	0	\$0.00
61435	\$672.95	\$672.95	0.00%	\$0.00	\$672.95	0.00%	\$0.00	\$780.50	0.00%	\$102.55	\$794.15	0.00%	\$121.15	\$0.00	100	-\$672.95	\$672.95	0	\$0.00
61438	\$469.70	\$469.70	0.00%	\$0.00	\$469.70	0.00%	\$0.00	\$568.00	0.00%	\$78.30	\$577.85	0.00%	\$88.15	\$0.00	100	-\$469.70	\$469.70	0	\$0.00
61441	\$753.35	\$753.35	0.00%	\$0.00	\$753.35	0.00%	\$0.00	\$873.50	0.00%	\$119.10	\$887.75	0.00%	\$135.40	\$0.00	100	-\$753.35	\$753.35	0	\$0.00
61445	\$786.80	\$786.80	0.00%	\$0.00	\$786.80	0.00%	\$0.00	\$933.50	0.00%	\$125.70	\$933.40	0.00%	\$151.60	\$0.00	100	-\$786.80	\$786.80	0	\$0.00
61446	\$333.55	\$333.55	0.00%	\$0.00	\$333.55	0.00%	\$0.00	\$387.00	0.00%	\$53.45	\$396.60	0.00%	\$69.05	\$0.00	100	-\$333.55	\$333.55	0	\$0.00
61449	\$486.20	\$486.20	0.00%	\$0.00	\$486.20	0.00%	\$0.00	\$570.00	0.00%	\$82.80	\$583.30	0.00%	\$98.15	\$0.00	100	-\$486.20	\$486.20	0	\$0.00
61450	\$397.35	\$397.35	0.00%	\$0.00	\$397.35	0.00%	\$0.00	\$461.00	0.00%	\$63.65	\$469.30	0.00%	\$71.55	\$0.00	100	-\$397.35	\$397.35	0	\$0.00
61453	\$314.70	\$314.70	0.00%	\$0.00	\$314.70	0.00%	\$0.00	\$397.00	0.00%	\$82.30	\$407.35	0.00%	\$92.65	\$0.00	100	-\$314.70	\$314.70	0	\$0.00
61457	\$470.45	\$470.45	0.00%	\$0.00	\$470.45	0.00%	\$0.00	\$545.00	0.00%	\$75.50	\$553.15	0.00%	\$84.70	\$0.00	100	-\$470.45	\$470.45	0	\$0.00
61461	\$327.85	\$327.85	0.00%	\$0.00	\$327.85	0.00%	\$0.00	\$381.50	0.00%	\$53.65	\$382.85	0.00%	\$69.00	\$0.00	100	-\$327.85	\$327.85	0	\$0.00
61462	\$129.00	\$129.00	0.00%	\$0.00	\$129.00	0.00%	\$0.00	\$149.50	0.00%	\$20.30	\$152.20	0.00%	\$23.20	\$0.00	100	-\$129.00	\$129.00	0	\$0.00
61469	\$346.10	\$346.10	0.00%	\$0.00	\$346.10	0.00%	\$0.00	\$404.00	0.00%	\$58.50	\$410.75	0.00%	\$62.65	\$0.00	100	-\$346.10	\$346.10	0	\$0.00
61473	\$175.40	\$175.40	0.00%	\$0.00	\$175.40	0.00%	\$0.00	\$203.50	0.00%	\$28.10	\$206.95	0.00%	\$31.55	\$0.00	100	-\$175.40	\$175.40	0	\$0.00
61485	\$386.85	\$386.85	0.00%	\$0.00	\$386.85	0.00%	\$0.00	\$448.50	0.00%	\$61.65	\$456.90	0.00%	\$69.65	\$0.00	100	-\$386.85	\$386.85	0	\$0.00
61489	\$995.20	\$995.20	0.00%	\$0.00	\$995.20	0.00%	\$0.00	\$1,139.00	0.00%	\$159.80	\$1,179.05	0.00%	\$179.85						

COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-22

This is the Annexure marked "DD-22" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

Electoralates with lowest proportion of bulk-billed patients

ACT	Canberra	32.9%
WA	Curtin	36.9%
ACT	Bean	38.5%
QLD	Brisbane	38.8%
NSW	Warringah	39.1%
VIC	Goldstein	40.0%
VIC	Higgins	40.8%
TAS	Clark	41.4%
QLD	Griffith	42.4%
TAS	Franklin	42.8%

Electoralates with highest proportion of bulk-billed patients

VIC	Lalor	91.8%
NSW	Parramatta	92.1%
NSW	Greenway	92.6%
NSW	Watson	93.0%
NSW	Macarthur	93.6%
NSW	McMahon	94.7%
NSW	Blaxland	95.7%
NSW	Werriwa	95.9%
NSW	Fowler	96.1%
NSW	Chifley	96.7%

COMMONWEALTH OF AUSTRALIA

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Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-23

This is the Annexure marked "DD-23" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

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Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

[Check your eligibility](#)

Eligible members could pay no out-of-pocket costs* for a knee or hip joint replacement.

[Check your eligibility](#)

How Medibank's No Gap Joint Replacement Program works

The No Gap Joint Replacement Program allows eligible members to pay no out-of-pocket costs* on a wide range of services as part of hospital admission for elective surgery for a joint replacement¹. That means they will only pay their excess if they participate in the program.

The program has been designed to provide members with more affordable care options and transparency about out-of-pocket costs* when undergoing a joint replacement with participating surgeons and hospitals.

Ready for joint replacement surgery? There are some steps to consider including your eligibility and medical advice from a GP

Check your eligibility



Doctor-led and designed

The doctor-designed model of care has been developed to help patients spend less time in hospital and get back to doing what they love faster. The typical joint replacement experience may have people in hospital for 5 days.² The No Gap Joint Replacement Program typically has people in hospital between 1-3 days.³ This means we can pass on no out-of-pockets to our members.

Through this model of care people may return to mobility faster, aiding an improved range of movement and outcome.⁴



Have questions?

Our team of experts are ready to help!

Phone

Store

Or, check out our [FAQs](#) and guides to help get you started.

Ready for joint replacement surgery? There are some steps to consider including your eligibility and medical advice from a GP

Check your eligibility



Patient education and support

With the No Gap Joint Replacement Program, members may spend less time in hospital but that doesn't mean they get less support. The program is designed to provide eligible members access to personalised support before and after their surgery.

This may include: pre-admission joint school, rehabilitation with a physiotherapist, other allied health support if their treating doctors consider it to be clinically appropriate.



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Check your eligibility

rehabilitation is right.

What costs are covered in the No Gap Joint Replacement Program?

Usually, there are several out-of-pocket costs* associated with an elective joint replacement surgery: surgeon fees, bills for scans and blood tests, the anaesthetist's bill and more – it adds up. That's why we've partnered with a range of surgeons and participating hospitals to deliver no gap knee or hip joint replacement surgeries.



Pre-admission joint school



Joint replacement surgery with a participating surgeon, including your prosthesis (artificial joint)

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Ready for joint replacement surgery? There are some steps to consider including your eligibility and medical advice from a GP

Check your eligibility

Assistant surgeon costs



Hospital accommodation, including all theatre costs



Diagnostic tests (scans and blood tests)

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Check your eligibility



What about rehabilitation?

There isn't a one-size-fits-all approach to rehabilitation because everyone is different. A surgeon will decide whether rehabilitation is required as part of a joint surgery recovery plan. If rehabilitation is required there are two ways: in hospital or at home.

If clinically appropriate, and there is a rehabilitation at home provider in the area, eligible Medibank members can receive rehabilitation in the comfort of their own home at no additional cost.

Please note: excess and any per-day payments under the policy are still payable.

Learn more about Medibank at Home

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Check your eligibility

To help you prepare for and recover from hospital admission, eligible members can access support over the phone from our Health Concierge clinicians, or visit the online hub for helpful tips and tools.⁵



Health advice that never sleeps

Members with hospital cover can call our 24/7 Medibank Nurse Phone Service to speak to a qualified nurse about their health concerns at any time of the day or night.⁶



Mental health support around the clock

Members with hospital cover can chat to experienced and qualified mental health professionals over the phone to discuss any mental health questions or issues and get advice on what to do next via our 24/7 Medibank Mental Health Phone Support.⁶

Questions to ask your health professionals

These questions have been developed as a guide to help you feel better informed, prepared and confident with your health care options.

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Ready for joint replacement surgery? There are some steps to consider including your eligibility and medical advice from a GP

Check your eligibility



FAQs

What if there are complications?



What out of pockets will I have?



Have questions?

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Phone

Store

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Ready for joint replacement surgery? There are some steps to consider including your eligibility and medical advice from a GP

[Check your eligibility](#)

Things you should know

* There may be out-of-pocket expenses associated with outpatient appointments, such as your initial visit with a participating surgeon in their consulting rooms. If a member has chosen an excess or per-day payment on their cover to lower their monthly premium, this will still be payable (for example, if you're claiming for the first time that calendar year, you may need to pay an excess).

¹ Excludes joint replacements resulting from an emergency admission.

² Schilling C, Keating C, Barker A, Wilson S, Petrie D. 'Predictors of inpatient rehabilitation after total knee replacement: an analysis of private hospital claims data', Med J Aust 2018; 209(5):222-227.

³ Medibank No Gap Joint Replacement Program member clinical Indicators average length of stay data taken from July 2020 to November 2021.

⁴ Soffin E, YaDeau J. 'Enhanced recovery after surgery for primary hip and knee arthroplasty: A review of the evidence', Br J Anaesth 2016; 117(3):iii62-iii72.

⁵ Health Concierge is available to all eligible Medibank members who hold hospital cover. Excludes Overseas Visitor Health Cover, Working Visa Health Cover and Overseas Student Health Cover (OSHC). Some referred services may involve out of pocket costs.

⁶ OSHC members should call the Student Health and Support Line on [1800 887 283](tel:1800887283).

Offered only by participating orthopaedic surgeons and only at participating hospitals. The surgeon and hospital will work with you to decide if the pilot is right for you and your health needs. However, if the surgeon refers you to a non-participating hospital and/or the pilot is not otherwise right for your health needs, any such procedure will not be part of the no gap joint replacement program and you may incur out-of-pocket costs.

The listing of a provider does not comprise any sort of representation or recommendation by Medibank regarding the provider. To the fullest extent allowed by law, such reference should not

Have questions?

Our team of experts are ready to help!

[Phone](#)

[Store](#)

Or, check out our [FAQs](#) and guides to help get you started.

Ready for joint replacement surgery? There are some steps to consider including your eligibility and medical advice from a GP

Check your eligibility

Insurance

Useful links

About

Connect with us

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[Privacy Policy](#) [Legal information](#)

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COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-24

This is the Annexure marked "DD-24" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

REST EASY WITH OUR NO-GAP JOINTS PROGRAM

NO-GAP JOINTS PROGRAM THAT PUTS YOU IN CONTROL

We believe Uncommon Care is taking a holistic approach to your health and wellbeing. So, when it comes to having primary hip or knee replacement surgery, we want to give eligible members* greater flexibility to make their experience simple and supported.

Our No-Gap Joints program for primary hip and knee replacements, gives eligible members peace of mind with no out-of-pocket costs from hospital admission through to discharge and post-surgery rehab, with participating private hospitals and clinicians*.

The No-Gap Joints program is scheduled to end between March 2023 and April 2024, depending on the participating hospital.

[Get cover now](#)

Eligible HCF members will have access to:

primary hip and knee replacements with no out-of-pocket costs through participating private hospitals and clinicians in NSW and Vic⁺

peace of mind – we'll cover the costs during and after surgery, so you can focus on recovery

continuity of care with the same health professionals and hospital coordinating your care from admission through to post-surgery rehab

treatment with a participating surgeon in a complete package including rehab.

Eligible members need to be accepted into the program in line with clinical criteria by the participating clinician and hospital*.

ALREADY AN HCF MEMBER?

Eligible members who have held HCF hospital cover that includes primary hip and knee replacements for at least 12 months are covered for No-Gap Joints. You'll then need to be accepted into the program by a participating surgeon and hospital before the relevant end date (excludes Overseas Visitors Health Cover members)*.

Find out if you're eligible by logging in to [My Membership app \(/members/manage-your-health/hcf-apps\)](/members/manage-your-health/hcf-apps) and [online member services \(/memberservices/mycover/cover-details\)](/memberservices/mycover/cover-details), by calling us on [13 13 34](tel:131334) or visiting your local [branch \(/locations/find-a-branch\)](/locations/find-a-branch).

[Login now](#)

NOT A MEMBER YET?

To be eligible to access the No-Gap Joint program you must have held a policy with HCF for 12 months with appropriate level of HCF cover, which includes primary hip and knee replacements. The program* is scheduled to end between March 2023 and April 2024, depending on the participating hospital.

[Get a quote](#)

CARE AND SUPPORT WHEN IT COUNTS

We help eligible members find ways to be fit and strong before a procedure with access to a range of chronic disease management programs:

[Healthy Weight for Life](/members/manage-your-health/weight-management/healthy-weight-for-life) (</members/manage-your-health/weight-management/healthy-weight-for-life>) assists eligible members[#] with losing weight who are over 18, with a BMI over 28 and have hip or knee osteoarthritis.

[The COACH Program](/members/manage-your-health/coach-program) (</members/manage-your-health/coach-program>) is a telephone support program provided at no extra cost for eligible members[^] with heart conditions or diabetes. You'll be teamed with one of our qualified coaches who's a dietitian, pharmacist or nurse, for up to 6 coaching sessions to help you improve your heart health.

WHERE CAN YOU ACCESS OUR NO-GAP JOINTS PROGRAM?

We know that giving you the choice of specialists, hospitals and services is important. That's why we've partnered with these hospitals to make your primary hip or knee replacement experience as simple, affordable and supportive as possible.

[East Sydney Private Hospital, NSW \(https://www.shortstayjointreplacement.com.au/\)](https://www.shortstayjointreplacement.com.au/)

[Macquarie University Hospital, NSW \(https://www.mqhealth.org.au/patients-and-visitors/macquarie-university-hospital/no-gap-partnerships\)](https://www.mqhealth.org.au/patients-and-visitors/macquarie-university-hospital/no-gap-partnerships)

[Hurstville Private Hospital, NSW \(https://nogapsurgery.com/\)](https://nogapsurgery.com/)

[Vermont Private Hospital, Vic \(https://www.nexushospitals.com.au/our-hospitals-services/hcf-no-gap-joints-program/\)](https://www.nexushospitals.com.au/our-hospitals-services/hcf-no-gap-joints-program/)

FAQS

DO YOU HAVE MORE QUESTIONS ABOUT NO-GAP JOINTS?

How do I know if I'm eligible for the No-Gap Joints program?

Eligible members that have held HCF hospital cover including primary hip and knee replacements for at least 12 months are covered for No-Gap Joints, once they are accepted into the program by a participating surgeon and hospital (excludes Overseas Visitors Health Cover members)*. Please visit the [participating hospitals' page](#) to see the list of surgeons involved in the program.

Will I have any out-of-pocket costs?

Our No-Gap Joints program covers eligible members on their primary hip or knee replacement journey from hospital admission through to discharge and post-surgery rehab, with participating private hospitals and clinicians*.

HCF members who are eligible to participate in the program won't have any out-of-pocket costs except for any hospital policy excess (an excess may apply depending on your level of cover and if you're claiming for the first time in a calendar year), or any additional services. Additional services may be required if you have other medical conditions such as diabetes or cardiac conditions. These additional services are not covered by the No-Gap Joints program and additional costs may apply.

If there are complications during your hospital admission that require additional care or services beyond what's included in the No-Gap Joints program, there may also be additional costs. Please speak with your participating surgeon about any risks that may be associated with your chosen surgery.

The No-Gap Joints program includes:

- participating surgeon costs for primary hip or knee replacement surgery. This doesn't include pre-surgical consultations but includes post-surgical consults
- diagnostics (pathology and radiology) for any inpatient diagnostics performed while admitted for the primary hip or knee replacement surgery
- hospital services including accommodation and theatre. Excludes any hospital excess you need to pay
- any costs related to anaesthetists and theatre support to assist with the surgery
- rehabilitation, organised by the participating hospital if clinically required.

Please speak to your participating surgeon to make sure you're aware of and have given Informed Financial Consent for any additional costs.

If you have been charged any out-of-pocket costs and would like to check with HCF, please get in touch with us by calling [13 13 34](tel:131334) or email service@myhcf.com.au (<mailto:service@myhcf.com.au>).

How do I access the No-Gap Joints program?

To access the program, eligible HCF members need to be accepted into the program in line with clinical criteria by a participating clinician and hospital on a patient by patient basis and undergo their joint replacement surgery before the relevant proposed trial program end date*. Please visit the [participating hospital's page](#) to see the list of surgeons involved in the program.

Can I choose my surgeon?

You can choose any of the participating No-Gap Joints program surgeons - please visit the [participating hospitals](#) to see the list of surgeons in the program. You'll need to confirm whether the hospital and surgeon is available and they must accept you into the program.

If I change cover or move health funds, is there a waiting period?

Yes, the program is only available once you've held hospital cover that includes primary hip and knee replacements with HCF for 12 months (excluding Overseas Visitors Health Cover)*.

What if I can't access or don't live near one of the participating hospitals?

If you can't participate in the No-Gap Joints program, you can still access No-Gap surgeons who participate in our No Gap or Known Gap arrangement. Call us on [13 13 34](tel:131334) to find out more on hospitals and surgeons that are part of our participating network near you. Please note participating surgeons have the discretion to choose in line with clinical criteria if members are accepted into the program on a patient-by-patient basis.

When does the No-Gap Joints program end?

The No-Gap Joints program is proposed to end at:

Hurstville Private Hospital, NSW on 31 March 2023

Macquarie University Hospital, NSW on 31 September 2023

East Sydney Private Hospital, NSW on 31 March 2024

Vermont Private Hospital, Vic on 30 April 2024

You must undergo your joint replacement surgery before the relevant proposed trial program end date.

I have more questions about the No-Gap Joints program - who can I speak to?

For any questions, get in touch with us on [13 13 34](tel:131334) or email service@myhcf.com.au (<mailto:service@myhcf.com.au>). We aim to get back to you within 2 business days.

Will HCF contact me regarding No-Gap Joints?

As part of our No-Gap Joints program we may email you a short survey about your experiences with HCF and the program. Hearing your feedback will help us improve the services we offer you and other members.

MORE OF OUR PROGRAMS

PREPARING FOR HOSPITAL: KNEE REPLACEMENT

Learn how the surgery works, how to prepare, what your recovery may be like and more.

[Read more](#) 

PREPARING FOR HOSPITAL: HIP REPLACEMENT

Learn about what to do and expect when preparing for a hip replacement.

[Read more](#) 
rep

LIVING WITH OSTEOARTHRITIS

People living with osteoarthritis share their strategies for managing their condition.

[Read more](#) 
rep

HEALTHY WEIGHT FOR LIFE

This program is designed to kickstart your weight loss, improve activity and provide tools to create healthy routines.

[Read more](#) 
me

IMPORTANT INFORMATION

*Eligible members will need to have HCF hospital cover including primary hip and knee replacements for 12 months (excluding Overseas Visitors Health Cover). Members will be accepted into the program in line with clinical criteria by the participating clinician and hospital on a patient-by-patient basis. Must be admitted at Macquarie University Hospital, East Sydney Private Hospital, Hurstville Private Hospital or Vermont Private Hospital. You must undergo your joint replacement surgery before the proposed trial program end date. The No-Gap Joints program is proposed to end 31 March 2023 at Hurstville Private Hospital, 30 September 2023 at Macquarie University Hospital, 31 March 2024 at East Sydney Private Hospital and 30 April 2024 at Vermont Private Hospital.

#To be eligible, members must meet the clinical requirements of the program and have held an eligible hospital cover for 12 months that covers the relevant condition. Excludes Accident Only Basic cover. For the eligibility criteria see [hcf.com.au/hwfl \(/members/manage-your-health/weight-management/healthy-weight-for-life\)](https://hcf.com.au/hwfl (/members/manage-your-health/weight-management/healthy-weight-for-life)) or call [1800 226 180](tel:1800226180).

+Excludes any hospital excess payable.

^To be eligible, members must have had a heart-related condition or diabetes and have had hospital cover that includes heart conditions and vascular system for at least 12 months. Excludes members who only have risk factors for heart disease and members with these

COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

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Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-25

This is the Annexure marked "DD-25" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

The Australian Health Service Alliance

Operating for more than 20 years

Represents 27 of the 37 private Health Insurance funds in Australia

Health funds are small to medium in size and are located nationally

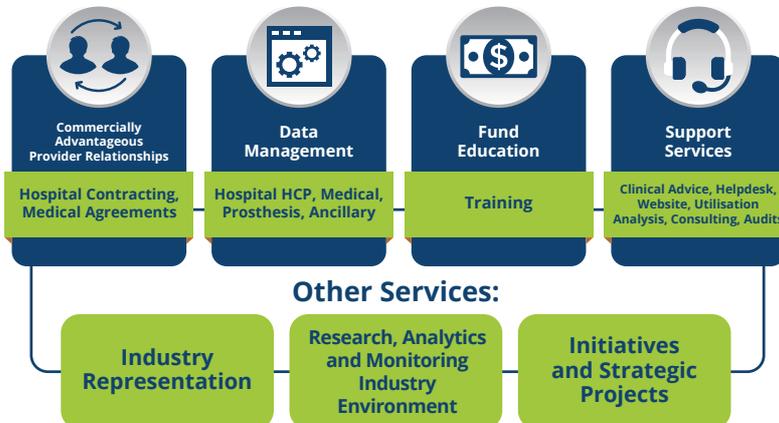
AHSA's market share is 19.06% which covers 2.17 million Australians

Funds pay more than \$2billion in benefits to healthcare providers annually



AHSA is a not-for profit organisation whose primary purpose is to provide services for its participating health funds

AHSA Services for Participating Funds



BENEFITS



AHSA exists for its members. Our mission is to provide our participating funds with services that enable them to successfully compete in their marketplace.



Around 90c in every \$1 earned by health funds is paid in benefits. The bulk of this is paid to hospitals. This means that the hospital agreements AHSA negotiates on behalf of participating funds are vitally important to their viability.



The strength of AHSA is the combined market share of the participating funds which enables AHSA to negotiate commercially advantageous relationships on their behalf.



The success of AHSA is tied to the success of our participating funds and vice versa



The key strength of AHSA's success is the combined expertise of the AHSA staff including hospital negotiators, clinical staff (doctors and nurses), health information managers, trainers for fund education, analysts, IT staff, and compliance staff.



Contact us

<https://www.ahsa.com.au/web> | 03 9805 0060 | assistance@ahsa.com.au

COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

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Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-26

This is the Annexure marked "DD-26" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

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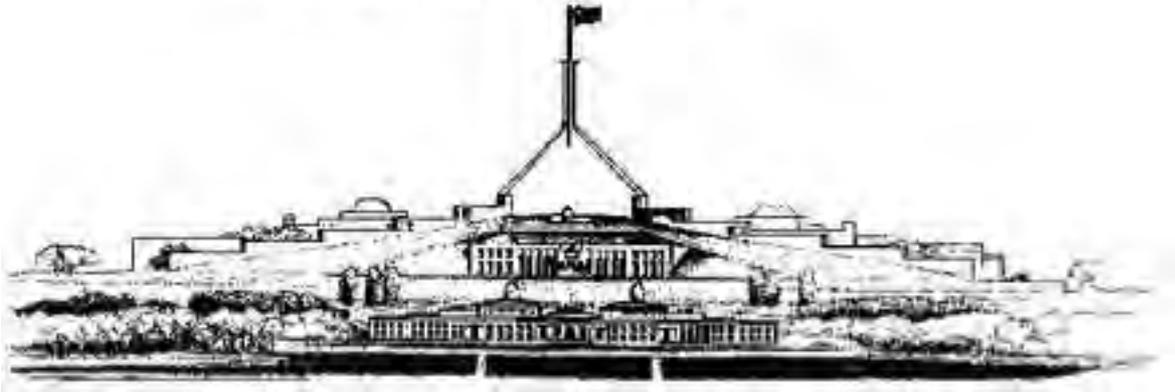
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Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.



COMMONWEALTH OF AUSTRALIA

PARLIAMENTARY DEBATES



HOUSE OF REPRESENTATIVES

PRIVATE HEALTH INSURANCE BILL 2006

Second Reading

SPEECH

Thursday, 7 December 2006

BY AUTHORITY OF THE HOUSE OF REPRESENTATIVES

SPEECH

<p>Date Thursday, 7 December 2006 Page 6 Questioner Speaker Abbott, Tony, MP</p>	<p>Source House Proof No Responder Question No.</p>
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Mr ABBOTT (Warringah—Minister for Health and Ageing) (9.23 am)—I move:

That this bill be now read a second time.

This government is committed to choice in health care. Initiatives such as the 30 per cent rebate, the increased rebate for older Australians, no gap and known gap arrangements, the Medicare levy surcharge and Lifetime Health Cover are important measures which the government has implemented to enhance choice, certainty and the value of private health care.

The government's strong commitment to choice in health care ensures a viable and sustainable private health sector and, in turn, improves the capacity of the public hospital system. It also gives millions of Australians, often on low and fixed incomes, peace of mind. They know that when something serious happens to them they can face the trauma of hospital and medical care with the freedom to choose their doctors and places of treatment.

It is a matter of pride for the government that these measures have halted the slide in private health insurance membership. From just over 30 per cent seven years ago, private health insurance membership has stabilised at about 43 per cent of the Australian population. Private hospital admissions, mostly funded by private health insurance, now account for almost three-fifths of all surgical procedures. Medical practitioners who work in the private sector, again largely funded by private health insurance, earn a return on their efforts that makes them willing to do the sessional work in the public sector on which our public hospitals depend.

Still, there is the ongoing task of revitalising the private health sector. The next step is to help it adapt to the realities of early 21st century health care: a way of care that does not always centre on admission to hospital. Day procedures, outpatient services, hospital in the home, wellness and prevention are all part of the healthcare equation in a way that simply was not envisaged when the current regulatory regime was devised over half a century ago.

This package of bills, to come into effect from 1 April next year, will enact the reforms to private health insurance announced on 26 April 2006. These changes should translate into greater competition and improved services for consumers. The changes should also mean much clearer and simpler regulation for health insurers and service providers.

Private Health Insurance Bill 2006

The main bill, the Private Health Insurance Bill 2006, is a significant piece of legislation. It sets out a comprehensive regulatory framework for the private health insurance sector to replace the current regime, mainly set out in the National Health Act 1953, the Health Insurance Act 1973, and the Private Health Insurance Incentives Act 1998.

This bill contains important measures for consumers, including broader health cover, standard product information, a comparative website for consumers, and changes to Lifetime Health Cover for those with 10 years continuous cover.

By far the most significant new measure is the introduction of broader health cover. Hospital cover will expand to cover out-of-hospital services that substitute for or prevent hospital care. This is a groundbreaking change. Health insurers will now have the choice to offer it to the almost nine million Australians with hospital cover.

Broader health cover will apply to services that can safely be delivered outside a hospital and which substitute for or prevent hospital care. This will potentially include a wide range of services, such as dialysis and chemotherapy, allied health services and domestic nursing assistance.

Broader health cover will also allow health insurers to work with a wide range of service providers to develop more flexible and innovative products that reflect modern clinical practice and consumer expectations. Health

insurers will be able to better assist consumers to manage and prevent acute and chronic conditions. Many people can benefit from tailored programs that support and sustain healthy lifestyles, services such as personalised health checks, dietary guidance, exercise supervision, and support to quit smoking.

Some things will not be covered under broader health cover, including:

- general practice services;
- specialist and physician consultations that attract a Medicare rebate; and
- the costs of normal residential accommodation in aged-care facilities.

Consumers can expect products that offer greater convenience and relevance to their needs all of the time, not just when they go to hospital. Broader health cover policies will be fully covered by the government's private health insurance rebates.

The bill also ensures that the contracts that doctors have with insurers may not limit the clinical freedom of doctors to choose the most appropriate treatment for their patients.

Effective choice depends on information. Consumers will benefit from new requirements on insurers to produce standard information statements for their products. These information requirements will help consumers to compare health insurance policies and to understand their entitlements under them. This will assist consumers when they are shopping around for cover and, importantly, when they need to use their cover. With funding announced in this year's budget, the Private Health Insurance Ombudsman is developing a website to present this information to further assist consumers with their private health choices.

As the government announced earlier this year, the ministerial role in reviewing private health insurers' premium applications is being retained. This is an important consumer protection, as well as safeguarding the Australian people's investment in the private health insurance rebate. As part of the annual premium application process, the government may give informal advice on the factors the minister will take into account in considering proposed premium increases.

The government previously announced that it would legislate to provide annualised health insurance contracts, so that a member would not face more than one rate adjustment in any one premium year. However, after extensive consultation with industry and employers handling salary deductions for private health insurance, the government has decided not to proceed with this measure on the grounds of expense and efficiency.

Indeed, the government is pleased that the industry has been behaving responsibly in regard to helping its members through rate changes. We are happy that funds have honoured prepaid contributions applying after a rate change, and in lieu of legislation we expect this responsible self-regulation to continue.

This bill also includes changes to Lifetime Health Cover. People who have retained their private hospital insurance continuously for more than 10 years will no longer be subject to Lifetime Health Cover penalties. This recognises and rewards people who have made the effort to maintain their cover over time, having first joined after the age of 30. They have made the effort and they deserve credit for their commitment and loyalty.

Efficiently run health funds mean lower overheads and lower pressure on premiums. This bill includes significant regulatory reforms which aim to make private health clearer and simpler.

The first such measure changes the focus of regulation from insurers to products. Under the existing arrangements, product regulation is achieved through an arcane set of conditions of registration imposed on insurers. Currently insurers are subject under the National Health Act to no fewer than 48 conditions of registration, and could be deregistered for breaching any of them. This is as clumsy as it is onerous.

By regulating products not providers the government wants to open the door more widely to new entrants into the private health insurance industry and the possibility of existing health insurers adapting their businesses to current market conditions and consumer demands.

The bill also includes offence provisions for breaching the new product standards. The penalties are the maximum allowable. It will be open to a court to impose a lesser penalty depending on the magnitude of the offence.

Chief executive officers and directors can be held personally liable only if they do not exercise due diligence in putting in place systems to ensure that insurers comply with the product standards. The government's intent is to align health insurer director and chief executive obligations with general corporate governance expectations. The directors of insurers, except as mentioned, will not be personally liable for any breach of the new act by insurers. The corporation, not the individual board members and chief executives, will be held accountable instead.

Accountability for poor governance and decision making is more properly a matter for the Corporations Law, for members where the fund is a mutual corporation and, in the case of any future for-profit insurers, shareholders. It should also be noted that the majority of the offence provisions in the bill currently exist in health insurance legislation. The few new offence provisions, while industry specific, have been framed to maximise consistency with existing Commonwealth law.

The second significant regulatory measure is the clarification of the operating rules relating to health benefits funds. While insurers are required to have health benefits funds under the existing arrangements, there are no clear requirements on the conduct of such funds.

The bill sets out a framework for the establishment, operation, merger and termination of these funds. This will require that the assets of the health benefits fund only be used to meet the liabilities arising from the health insurance business or any health related business. Insurers registered to operate on a for-profit basis may withdraw money for other purposes if the capital adequacy and solvency standards are not breached.

The new health benefits funds provisions will improve prudential oversight and protection of the public interest. They will also make it easier to restructure or amalgamate insurance businesses. And by drawing a clear line between the wider business of the insurer and the business of the fund, the bill will also make it easier for new entrants to access the market.

The bill also clarifies aspects of the role of the Private Health Insurance Administration Council, PHIAC, in supervising insurers and their health benefits funds. The current ability for PHIAC to set capital adequacy and solvency standards will be maintained, together with the ability to direct insurers to take action to meet the standards. The bill will also allow PHIAC to set prudential standards for insurers.

The bill allows for subordinate legislation known as the Private Health Insurance Rules to be made by legislative instruments. The rules will:

- continue current default benefit arrangements;
- maintain front end deductible limits for hospital products; and
- restrict eligibility for the private health insurance rebates to people who are eligible for Medicare.

The bill also includes a number of smaller but significant measures that simplify and reduce regulation, including the simplification of the Lifetime Health Cover rules and the rewriting of the rules around waiting periods and portability requirements.

The government has made an undertaking to the industry to review the operation of the legislation as industry develops to meet its requirements over the next few years.

The government has worked cooperatively and constructively with the private health sector in developing this legislation. I have also given an undertaking that I will consider further input over the summer recess and am prepared to introduce government amendments to give effect to refinements that are consistent with the government's policy objectives.

Finally, I should also place on the record the government's thanks to the team of officers in my department who have worked long and hard to develop this highly complex legislation in a matter of months.

I commend the bill to the House.

Debate (on motion by **Mr Edwards**) adjourned.

COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-27

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Before me:

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Signature of witness

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AUSTRALIAN COMMISSION
ON SAFETY AND QUALITY IN HEALTH CARE



THE STATE OF PATIENT SAFETY AND QUALITY IN AUSTRALIAN HOSPITALS 2019

Published by the Australian Commission on Safety and Quality in Health Care

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THE STATE OF PATIENT SAFETY AND QUALITY IN AUSTRALIAN HOSPITALS 2019

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SUMMARY

Patients, consumers and the community trust clinicians and health service organisations to provide safe, high-quality health care, and most Australians have access to such care. Australians experience comparatively better health outcomes and live longer than people from most other highly developed countries. The Australian health system is more efficient than many other similar health systems¹, and Australia's clinicians are highly regarded as skilled professionals who are committed to meeting the healthcare needs of their patients.

Although most health care in Australia leads to good outcomes, patients do not always receive the care that is most appropriate for them, and preventable adverse events occur across the Australian health system.² Lapses in safety and quality, and unwarranted variation in health care provided to different populations within Australia have substantial costs, in terms of both the effect on people's lives and finances.^{2,3}

The personal and financial impact of patient safety lapses is considerable. In 2013, approximately 12% to 16.5% of total hospital activity and expenditure was the direct result of adverse events.⁴ In the financial year 2017–18, admissions associated with hospital-acquired complications (HACs)* were estimated by the Australian Commission on Safety and Quality in Health Care (the Commission) to cost the public sector \$4.1 billion or 8.9%*** of total hospital expenditure. The most burdensome adverse event types include healthcare-associated infections (HAIs), medication complications, delirium and cardiac complications.**

* HACs list complications only

** Public hospitals only, and all care types

*** Projected based on 2016–17 National Hospital Cost Data Collection

Australia has adopted a nationally consistent approach to improving the safety and quality of health care. In 2006, the Council of Australian Governments (COAG) established the Commission to lead and coordinate national improvements in the safety and quality of health care.

In 2011, the Federal Parliament passed the *National Health Reform Act 2011* which established the Commission as a corporate Commonwealth entity under the *Public Governance, Performance and Accountability Act 2013*. The Commission's governance structure is determined by these Acts.

The Commission works in partnership with patients, carers, clinicians, the Australian, state and territory health systems, the private sector, managers and healthcare organisations to achieve a safe, high-quality and sustainable health system. Key functions of the Commission include: developing national safety and quality standards, developing clinical care standards to improve the implementation of evidence-based health care, coordinating work in specific areas to improve outcomes for patients, and providing information, publications and resources about safety and quality.

The Australian approach to safety and quality has been to identify systemic risks to patients, to mitigate those risks and to improve patient outcomes through clinically appropriate risk management responses.

Measurement is foundational to this, as meaningful metrics are required to understand what the major safety issues are across the care continuum, proactively mitigate patient safety risks and engender improvement.

As global understanding of the nature of safety and quality issues improves, and as new issues emerge, the Commission and partners have continued to evolve Australia's approach to supporting improvement across the health system. Internationally, and within the Australian health system, there has been an increasing focus on delivering value-based health care for consumers and funders - achieving the best care possible for each patient while maintaining an efficient use of resources.⁵ In supporting this move towards value-based health care, the Commission has been fostering system change in five key areas to:

- Focus on people
- Measure and report on safety and quality
- Use evidence-based guidance and policy
- Strengthen clinical governance
- Embed safety and quality into national systems.

Moving forward, over the coming year the Commission will be building on existing work in these areas, and specifically focusing on: supporting implementation of the NSQHS Standards and improving the reliability of accreditation processes; setting national goals to reduce HACs; promoting rapid knowledge exchange on safety and quality

practices; and supporting quality improvement through a health learning system for measurement and monitoring of safety and quality. Sustained and nationally coordinated action in these areas provides health service organisations with the guidance and tools required to make multi-faceted and meaningful improvement to the safety and quality of care delivered within the Australian health system. **Box 1** provides a description and definition of the term 'safety and quality'.

Box 1: What is safety and quality?

Patient safety and quality is often summarised as the right care, in the right place, at the right time and cost. The Commission defines patient safety as prevention of error and adverse effects associated with health care; and quality as 'the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge'.⁶

PATIENT SAFETY AND QUALITY IN AUSTRALIA

The performance of the Australian health system

Australia has better health outcomes at a population level than most other highly developed economies.¹ Australians have the third longest life expectancy among Organisation for Economic Co-operation and Development (OECD) countries, at 82.8 years, and a high number of years spent in good health.⁷ The cost effectiveness of Australia's health system is also high compared with other OECD countries, as we spend less on health than many countries for similar or better outcomes.^{1,8}

Health care in Australia is provided by teams of clinicians working in partnership with patients, families and carers. It is delivered in a wide variety of public and private health service organisations, ranging from sole proprietorships to large statutory corporations and public companies.⁹

Patients, consumers and the community trust clinicians and health service organisations to provide safe, high-quality health care, and most Australians have access to such care. Australia's clinicians are highly regarded as skilled professionals who are committed to meeting the healthcare needs of their patients.⁹

Although most health care in Australia leads to good outcomes, patients do not always receive the care that is most appropriate for them, and preventable adverse events occur across the

Australian health system.³ Lapses in safety and quality, and unwarranted variation in health care provided to different populations within Australia have substantial costs, in terms of both the effect on people's lives and finances.^{2,3}

The personal and financial impact of patient safety lapses is considerable. In 2013, approximately 12% to 16.5% of total hospital activity and expenditure was the direct result of adverse events.⁴ In the financial year 2017–18, admissions associated with HACs* were estimated by the Commission to cost the public sector \$4.1 billion or 8.9%*** of total hospital expenditure. The most burdensome adverse event types include HAIs, medication complications, delirium and cardiac complications.**

* HACs list complications only

** Public hospitals only, and all care types

*** Projected based on 2016–17 National Hospital Cost Data Collection.

The delivery of health care is a complex endeavour. Contemporary models of care are sophisticated and rapidly changing, as are the expectations of patients and consumers. Health service organisations such as hospitals sit within intricate networks of different types of services across tertiary, secondary and primary sectors. Patients and consumers move between these services and sectors, and safety and quality risks exist at all points on this journey.^{9,10}

Key safety and quality risks have been identified nationally, and strategies are being implemented to improve the safety and quality of health care in Australia at local, regional, state and territory and national levels.

Australian leadership in patient safety and quality

Clinical teams provide relief to sick and injured people through the provision of safe, high-quality health care. Good health outcomes are dependent on the skills and ability of individual clinicians, clinical teams, and support staff and the clinical governance, teaching and research capability of the health service organisation.

Adverse clinical outcomes were traditionally viewed as the result of unavoidable complications caused by the patient's condition, and harm was thought to be isolated to rare cases.⁷

In 1995 Australia took the lead internationally by exploring safety and quality improvement across the health system and publishing the first large-scale Australian study of adverse events. The ground-breaking *Quality in Australian Health Care Study*, published in *The Medical Journal of Australia*, reported that 16% of patients in hospitals experienced some form of adverse event during their admission and approximately 50% of these were preventable.¹¹ This proved to be a turning point for the Australian health system, dramatically raising the profile of patient safety and stimulating major review of safety of patient care.

Landmark reports followed this Australian study, including *To Err is Human*¹² in 2000, which revealed that in the United States as many as one in 10 hospital patients were harmed unnecessarily, and that a substantial proportion of patients died as a direct result of medical care.⁷ Increasingly, patient harm was understood to be not just a result of human fallibility, but the result of system failures in the way care was organised and coordinated, and potentially preventable through improvement efforts targeted at clinical practice, health service organisations and systems.

Clinical risk, once regarded primarily as a professional indemnity issue for clinicians, became a priority for healthcare policymakers and providers, and a focus for consumers. Knowledge gaps were identified, the healthcare sector began to draw on

safety lessons from other high-risk industries and the role of clinical governance and organisational culture to support patient safety was accepted.

See **Figure 1** for a summary of key developments in safety and quality in health care nationally and internationally.



Figure 1: Summary of key developments in safety and quality in health care nationally and internationally

INTERNATIONAL AND NATIONAL SAFETY AND QUALITY MILESTONES

1990

2000

EVENT

1991

Harvard Medical Practice Study (US)^(a)
 Formal patient complaint mechanisms established in states and territories

1995

Quality in Australian Healthcare Study (Australia)^(b)

1996

Professional Indemnity Review (Australia)^(c)



TARGET

Recognition of scope of patient harm
 Highlighted need for focus on patient safety
 Recognition of need for formal patient complaint processes

National approach to safety and quality monitoring and improvement

Broader understanding of contributing factors to harm
 Importance of governance, culture and reporting recognised

Increased transparency and understanding of scope of harm and focus areas

2000

To Err is Human (US)^(d)
 An Organisation with a Memory (UK)^(e)
 The Australian Council for Safety and Quality in Health Care established

2001

Crossing the Quality Chasm (US)^(f)
 Bristol Royal Infirmary Inquiry Report (UK)^(g)
 First Australian Hospital Inquiry Report (King Edward Memorial)^(h)

2002-04

Hospitals required to report sentinel events nationally according to the Australian Sentinel Events List⁽ⁱ⁾
 First national Open Disclosure Standard (Australia)^(j)

2010

2006

The Australian Commission on Safety and Quality in Health Care established Requirement for hospitals to introduce incident management systems

2008-11

Australian Charter of Healthcare Rights endorsed ^(k)
The Australian Safety and Quality Framework for Health Care endorsed by Health Ministers ^(l)
Australian Health Service Safety and Quality Accreditation Scheme ^(m)

2013-18

Health service accreditation assessment against the first edition of the NSQHS Standards for hospitals and day procedure services commenced ⁽ⁿ⁾

More than 1,330 hospitals and day procedure services assessed against the NSQHS Standards by 2017
Consultation on and development of the second edition of the NSQHS Standards, released in November 2017 ^(o)

Development of the hospital-acquired complications (HACs) list ^(p)
National Model Clinical Governance framework released ^(q)
Australian Atlas of Healthcare Variation Series: 1, 2 and 3 released ^(r)

2019

Health service accreditation assessment against the second edition of the NSQHS Standards commenced ^(o)
New accreditation scheme commenced
Integration of HACs into funding model from July 2018

2020

Common set of safety and quality metrics and public reporting of safety and quality data, using the Australian Health Performance Framework^(s)

Enhancement of consumer role

Greater understanding of causes of sentinel events and preventative strategies

No-blame culture

Consistent approach to consumer rights and recognition of importance of consumer participation in care

Three core principles specified for safe and high-quality care: consumer-centred, driven by information, and organised for safety

Nationally consistent approach to accreditation

Accreditation focus on systems for clinical risk, consumer-focused care and governance.

Commission and jurisdictions develop resources to support health service improvement

Increased understanding of safety and quality strengths and weaknesses

Improvements in key areas of care and governance

No-blame culture moves to learning culture

Defined focus areas for reducing complications, cost and practice variation; and for establishing robust clinical governance in health service organisations

Strengthened focus on cognitive impairment, mental health, health literacy, end-of-life care, Aboriginal and Torres Strait Islander health

Health system-wide learning systems to support safe, quality care

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AUSTRALIA ADOPTS A NATIONALLY CONSISTENT APPROACH TO MAKE HEALTH CARE SAFER



Primum non nocere:
‘First, do no harm’.



In 2006, the Council of Australian Governments (COAG) established the Australian Commission on Safety and Quality in Health Care (the Commission) to lead and coordinate national improvements in the safety and quality of health care. The Commission's permanent status was confirmed with the passage of the *National Health and Hospitals Network Act 2011*¹³, while its role was codified in the *National Health Reform Act 2011*.¹⁴ The Commission commenced as an independent statutory authority on 1 July 2011, funded jointly by the Australian Government and state and territory governments.

Box 2: The role of the Australian Commission on Safety and Quality in Health Care

The Commission leads and coordinates national improvements in healthcare safety and quality. It works in partnership with patients, carers, clinicians, the Australian, state and territory health systems, the private sector, managers and healthcare organisations to achieve a safe, high-quality and sustainable health system.

Key functions of the Commission include: developing national safety and quality standards, developing clinical care standards to improve the implementation of evidence-based health care, coordinating work in specific areas to improve outcomes for patients, and providing information, publications and resources about safety and quality. The Commission works in four priority areas:

- Patient safety
- Partnering with patients, consumers and communities
- Quality, cost and value
- Supporting health professionals to provide care that is informed, supported and organised to deliver safe and high-quality care.

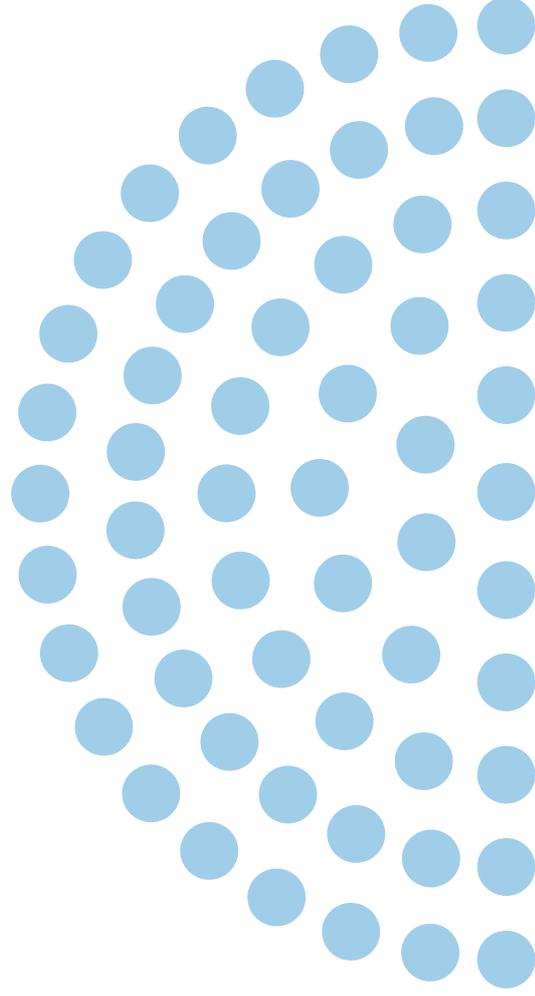
Australia adopts a nationally consistent approach to make health care safer

The Australian approach to safety and quality is to identify systemic risks to patients, to mitigate those risks and to improve patient outcomes through clinically appropriate risk management responses. In taking this approach, the health sector has adopted industrial principles from aviation, mining and used human factors analysis to develop patient safety standards.

Robust clinical governance, setting of standards, meaningful consumer partnerships, and measurement and reporting are central to Australia's approach to safety and quality. These issues have been highlighted in a range of activities to address safety and quality in Australia including the development and implementation of:

- Australian Charter of Health Care Rights²²
 - Australian Atlas of Healthcare Variation series.²³
- In June 2017, all Australian Governments committed to develop and implement reforms to improve health outcomes for patients and decrease potentially avoidable demand for public hospital services through the National Health Reform Agreement (NHRA) Addendum.²⁴ This Addendum sets out governments' intent to develop and implement reforms to:
- Improve patient outcomes
 - Incentivise the system to provide the right care, in the right place, at the right time
 - Decrease avoidable demand for public hospital services
- Signal to the health system the need to reduce instances of preventable poor-quality patient care, while supporting improvements in data quality and information available to inform clinicians' practice.²⁵

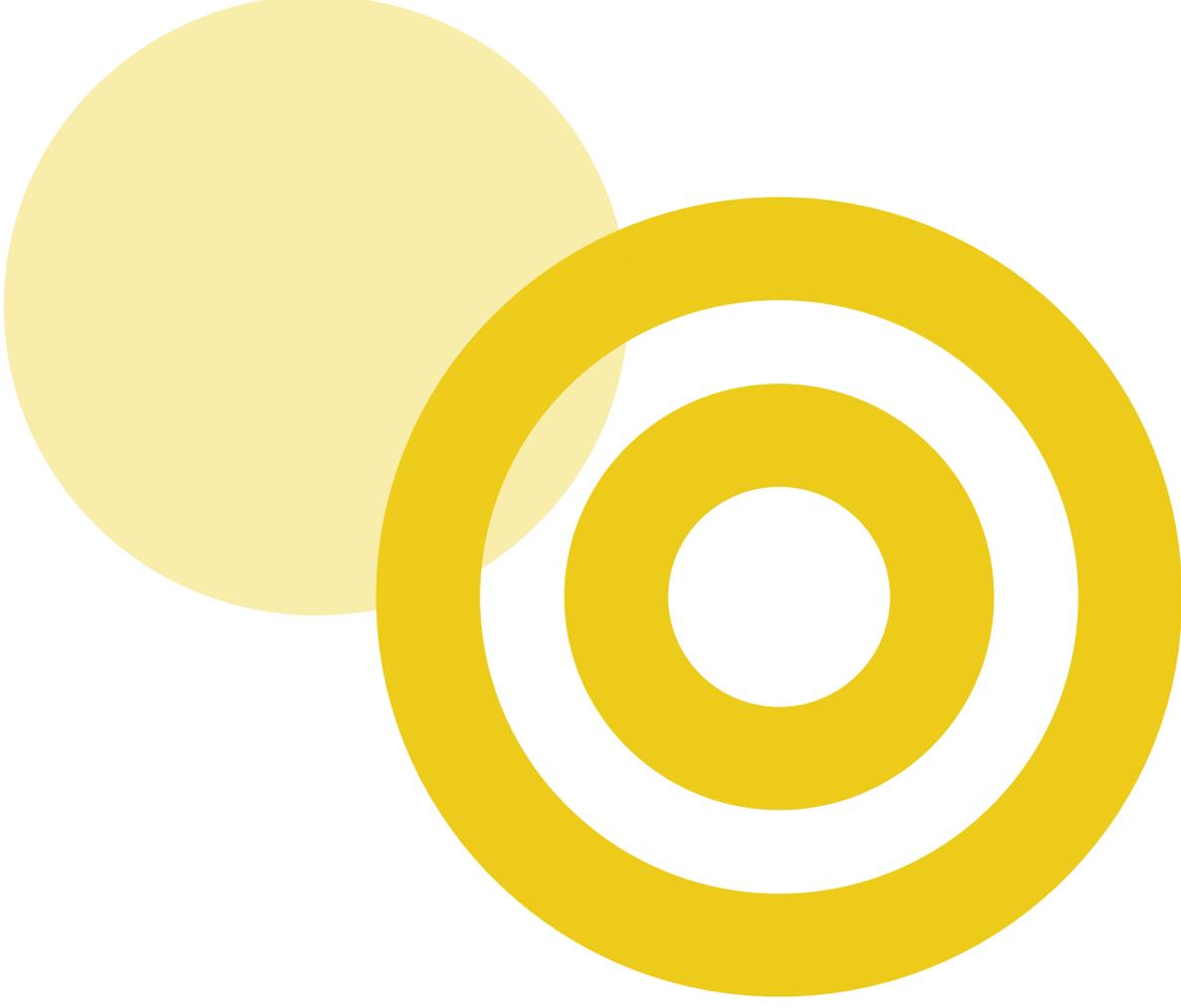
- National Safety and Quality Health Service (NSQHS) Standards (first and second edition)^{15, 16}
- Australian Health Service Safety and Quality Accreditation Scheme¹⁷
- Review of the Australian Health Service Safety and Quality Accreditation Scheme¹⁸
- Health service organisations' clinical risk management systems
- Measurement and reporting of sentinel events
- Hospital-acquired complications (HACs) specification for measurement and reporting¹⁹
- Adverse event reporting systems and open disclosure²⁰
- Measurement and reporting of patient experience
- Feedback and complaints management systems
- National Model Clinical Governance Framework⁹
- Australian Safety and Quality Framework for Health Care²¹



For the first time from 2017, funding and pricing arrangements for sentinel events and HACs have been incorporated into the national funding processes for public hospitals, and work is progressing on other potential markers.²⁵ Sentinel events, HACs and avoidable readmissions are discussed in detail in the Patient Safety Surveillance section of this report.

The Commission also provides evidence-based information, education and guidance for policy, strategy and action to improve safety and quality in high-risk areas. These include information, education and guidance on infection prevention and control; antimicrobial stewardship and medication safety; management and prevention of deterioration in physical and mental state; management of cognitive impairment; prevention of falls and pressure injuries; open disclosure and clinical communication.

The Commission has also developed a range of clinical care standards for conditions or treatments where the *Australian Atlas of Healthcare Variation* has indicated there may be unwarranted variation in care across Australia. **Box 3** provides information on clinical care standards.



Box 3: Clinical care standards

A clinical care standard is a nationally agreed statement on the care patients should be offered by health professionals and health services for a specific clinical condition, such as hip fracture, acute stroke or delirium. Clinical care standards play an important role in guiding the delivery of appropriate care and reducing unwarranted variation, as they identify and define the care people can expect to be offered or receive, regardless of where they are treated in Australia. Patients and consumers can use the clinical care standards, where relevant to their condition, to guide discussions with their healthcare professional about suitable treatment options.²⁶

Each clinical care standard contains a set of up to 10 quality statements that describe the key aspects of evidence-based care that a patient should be offered for a specific clinical condition or defined part of a clinical pathway. Accompanying each clinical care standard is a set of suggested indicators to assist local health services to monitor how well they implement the care described in the clinical care standard, and for use in quality improvement.²⁶

Each clinical care standard, in conjunction with clinical guidelines on which it is based, should contribute to improvements in care outlined in the NSQHS Standards. Used together, the clinical care standards and the NSQHS Standards aim to ensure people will receive safe and appropriate care.

THE AUSTRALIAN HEALTH SERVICE SAFETY AND QUALITY ACCREDITATION SCHEME



The very first requirement in a hospital...it should do the sick no harm.

Florence Nightingale, 1863²⁷



The Commission is responsible, with Australia and state and territory partners, under the *National Health Reform Act 2011* for the formulation of standards relating to healthcare safety and quality and for formulating and coordinating national models of accreditation for health service organisations.

Local implementation of the National Safety and Quality Health Service Standards

The primary aim of the NSQHS Standards is to protect the public from harm and to improve the quality of health service provision. They outline safety and quality outcomes that a health service organisation must achieve, while allowing health service organisations the flexibility to decide how to achieve these outcomes in a way that is appropriate for their context.

All hospitals and day procedure services are required to implement the NSQHS Standards. They must implement organisation-wide safety and quality processes and a comprehensive clinical governance framework.

There are eight NSQHS Standards, which cover high-prevalence adverse events, healthcare-associated infections, medication safety, comprehensive care, clinical communication, the prevention and management of pressure injuries, the prevention of falls, and responding to clinical deterioration. Importantly, these NSQHS Standards have provided a nationally consistent statement about the standard of care consumers can expect from their health service organisations.¹⁶



The eight NSQHS Standards are:



Clinical Governance, which describes the clinical governance, and safety and quality systems that are required to maintain and improve the reliability, safety and quality of health care, and improve health outcomes for patients.



Communicating for Safety, which describes the systems and strategies for effective communication between patients, carers and families, multidisciplinary teams and clinicians, and across the health service organisation.



Partnering with Consumers, which describes the systems and strategies to create a person-centred health system by including patients in shared decision making, to ensure that patients are partners in their own care, and that consumers are involved in the development and design of quality healthcare.



Blood Management, which describes the systems and strategies for the safe, appropriate, efficient and effective care of patients' own blood, as well as other supplies of blood and blood products.



Preventing and Controlling Healthcare-Associated Infection, which describes the systems and strategies to prevent infection, to manage infections effectively when they occur, and to limit the development of antimicrobial resistance through prudent use of antimicrobials, as part of effective antimicrobial stewardship.



Recognising and Responding to Acute Deterioration, which describes the systems and processes to respond effectively to patients when their physical, mental or cognitive condition deteriorates.¹⁶

With the NSQHS Standards and a clinical governance framework in place, health service organisations reduce the risk of harm to patients from hospital-acquired infections, the wrong medicines, falls, pressure injuries, or failures to communicate or identify and manage acute deterioration. They can also ensure better care for Aboriginal and Torres Strait Islander people and patients with cognitive impairment, mental illness or at the end of life.



Medication Safety, which describes the systems and strategies to ensure that clinicians safely prescribe, dispense and administer appropriate medicines to informed patients, and monitor use of the medicines.



Comprehensive Care, which describes the integrated screening, assessment and risk identification processes for developing an individualised care plan, to prevent and minimise the risks of harm in identified areas.

Assurance to the community — the accreditation (assessment) process

In Australia, all public and private hospitals, day procedure services and most public dental practices must be accredited against the NSQHS Standards, under the Australian Health Service Safety and Quality Accreditation (AHSSQA) Scheme.¹⁷ Accreditation is a program in which trained external reviewers assess a health service organisation's implementation of the NSQHS Standards.

Assessment involves an on-site visit during which surveyors seek evidence of implementation against the actions in the NSQHS Standards. Surveyors assess a hospital's performance during an accreditation visit of up to five days, during which they interview clinical staff, patients, consumer representatives, review hospital performance data such as HACs, observe clinical practice, inspect resources and test high-risk scenarios.

Assessment against the NSQHS Standards and the awarding of accreditation status provides assurance to the community that a health service organisation has the safety and quality systems and processes in place to meet expected patient safety and quality standards of care. The AHSSQA Scheme provides for the national coordination of accreditation processes, and consists of five inter-related elements to support the application of the NSQHS Standards:

- Health Ministers endorse the NSQHS Standards and receive information about health service organisations' performance against the NSQHS Standards

- Australian, state and territory governments determine the health service organisations required to be assessed against the NSQHS Standards. They receive data on the outcomes of assessment of health service organisations and respond to emerging issues
- Health service organisations implement the actions required to meet the NSQHS Standards and select an approved accrediting agency to assess their compliance in meeting the NSQHS Standards
- Approved accrediting agencies assess health service organisations against the NSQHS Standards
- The Commission, through coordination of a national program, develops and maintains the NSQHS Standards, approves accrediting agencies to assess health service organisations against the NSQHS Standards, undertakes ongoing liaison with state and territory health departments on opportunities to improve the NSQHS Standards and the accreditation system, and reports to Health Ministers annually on safety and quality.¹⁷

Following feedback from state and territory regulators, chief executives and others from health service organisations on the reliability of accreditation to the first edition of the NSQHS Standards, the Commission has implemented changes to improve accreditation processes.

Box 4 summarises the implementation of the NSQHS Standards.

Box 4: Implementation of the NSQHS Standards

Since January 2013, all hospitals and day procedure services in Australia have been accredited at least once to the first edition of the NSQHS Standards, and 906 health service organisations have completed two assessment cycles. Of these organisations, 67% (609 organisations) met all core actions at initial assessment for their first accreditation cycle, compared to 74% (672 organisations) for the second accreditation cycle, demonstrating an improvement in accreditation results over time.

Both the NSQHS Standards and the AHSSQA Scheme have been reviewed since their introduction, with the second edition of the NSQHS Standards released in November 2017. Health service organisations have been assessed to the second edition since 1 January 2019 under the revised AHSSQA Scheme.

What has been achieved?

Despite the limitations of data availability, significant improvements in the safety and quality of care over the past decade are evident. There has been a reduction in HAIs, reductions in preventable in-hospital cardiac arrests, improved experience and outcomes for patients, better governance of clinical care and more meaningful involvement of patients and consumers in health care.

A review of the impact of implementing the first edition of the NSQHS Standards shows a range of benefits, including prevention of harm, improvements in patient care, empowerment of patients and consumers, development of better governance systems, wiser investment and reduction of waste.²⁸

Box 5 summarises the key changes observed.

Box 5: Improvements in patient outcomes arising from implementation of the first edition of the NSQHS Standards 2013–2018

Key changes observed following implementation of the first edition of the NSQHS Standards included:²⁸

- A drop in the yearly number of methicillin-resistant *Staphylococcus aureus* bacteraemia cases between 2010–11 and 2016–17 from 505 to 290^{53,54}
- A decline in the *Staphylococcus aureus* bacteraemia rate per 10,000 patient days under surveillance between 2010–11 and 2016–17 from 1.1 to 0.76 cases^{53,54}
- A decline of almost one-half in the national rate of central line-associated bloodstream infections between 2012–13 and 2013–14 from 1.02 to 0.64 per 1,000 line days
- The number of hospitals with antimicrobial stewardship increased from 36% in 2010 to 98% in 2015
- Formularies restricting use of broad-spectrum antimicrobials increased from 41% in 2010 to 86% in 2015
- Better documentation of adverse drug reactions and medication history
- Reduction in yearly red blood cell issues by the National Blood Authority between mid-2010 and mid-2015 from about 800,000 units to 667,000 units
- Declining rates of in-hospital cardiac arrest and intensive care unit admissions following cardiac arrests:
 - NSW Between the Flags program report 51.5% decrease in cardiac arrest rates between 2010 and 2016
 - Victorian hospitals report a 20% relative reduction in monthly cardiac arrest rates between 2010 and 2014
- Early warning or track and trigger tools in 96% of recognition and response systems in 2015, compared with 35% in 2010
- The majority of hospital boards or their governance equivalent (84%) reported that as a result of the NSQHS Standards the board understood and enacted their roles and responsibilities concerning patient safety and quality.

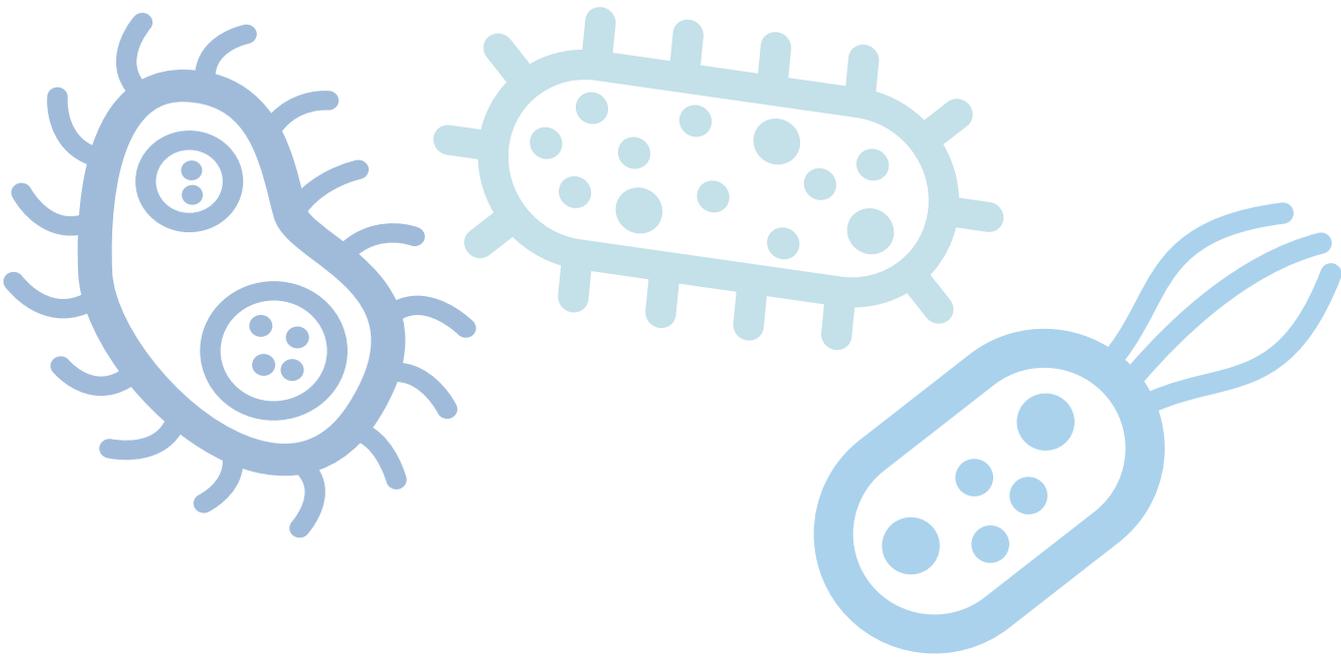
In addition to the clinical safety improvements achieved, the NSQHS Standards have driven more effective clinical governance systems by helping to expand and define the roles of governments, executives, boards, clinicians and consumers in care safety and quality. As a result, responsibility for improving the safety and quality of health care is no longer seen to rest solely with frontline clinicians. Hospital boards say the NSQHS Standards have led to better integration of governance and quality improvement systems, and have clarified the roles and responsibilities of boards, with health service leaders and clinicians working together to improve safety and quality.²⁸

Significant changes in healthcare cultures and practices have been achieved through the NSQHS Standards' focus on consumer engagement in their own care and in improving services. Health service organisations are increasingly involving consumers and patients in decision-making around the governance, planning, communications, design and delivery of services. In many organisations, consumer participation has become part of everyday practice through consumer advisory committees and representatives, dedicated consumer engagement staff and executive leadership.²⁸

The review of the impact of implementation of the first edition of the NSQHS Standards, as well as a range of reviews of patient safety events undertaken by the Commission have identified areas that require further action to support safety and quality improvement. **Box 6** presents a summary of these areas.

Box 6: Areas requiring further action to support safety and quality improvement

- Implementation of an open disclosure response consistent with national and local standards
- Ensuring that incident management and investigation systems provide adequate surveillance to recognise major safety lapses and risks
- Implementation of corrective action in response to identified patient safety risks and lapses
- Establishment of complaint management systems that include a partnership with patients and carers
- Implementation of informed patient consent
- Ensuring a robust and positive safety culture
- Clearly understanding the roles and responsibilities of governing bodies, the executive, clinical teams and clinicians in clinical governance.⁹



PATIENT SAFETY SURVEILLANCE



Reporting systems can be designed differently but their principal purpose should be learning and improvement.

OECD, 2019²⁹



Measurement is fundamental to improving safety

Measurement is fundamental to advancing safety and quality improvement – meaningful metrics are required to understand what the major safety issues are across the care continuum, to proactively mitigate patient safety risks and to stimulate improvement.^{29, 30}

Evidence demonstrates that the provision of relevant and timely clinical information to clinicians and managers is an effective driver of safety and quality improvement.^{31, 32}

The Commission has worked to support a consistent national approach to measurement by specifying, validating and gaining agreement on key safety and quality indicators. This work allows clinicians, health service organisations and states and territories the opportunity to compare outcomes and identify areas for quality improvement. It also provides a basis for reporting to patients, carers and consumers generally.

Australian patient safety measures

The Commission in collaboration with its partner organisations has developed and specified patient safety measures and indicators for sentinel events, adverse events, core hospital-based outcome indicators and HACs. In addition, the Commission has developed and tested national indicators for patient experience – the Australian Hospital Patient Experience Question Set (AHPEQS)³³ – and work is commencing on exploring national patient reported outcome measures and safety culture. The Commission also develops indicators to monitor implementation of national standards including the Commission’s clinical care standards and the NSQHS Standards.

This section details current data for some of these indicator sets, and discusses work being undertaken by the Commission and partners to provide further guidance in measuring patient safety.

Mandatory reporting

Since 2007, Australian hospitals have in place a mandatory system to manage and report clinical incidents including the provision of appropriate feedback to patients, families, carers and clinicians, and the sharing of lessons learned to prevent patient harm.

Sentinel events

Sentinel events are rare, and are occurring less frequently

A sentinel event is a particular type of serious incident that is preventable and has caused serious harm to, or death of, a patient.

In Australia, reporting of sentinel events, against a nationally endorsed and agreed sentinel event list (endorsed by all Australian Health Ministers in 2002), has been mandatory since 2007. Since 2017, public hospitals receive no Australian Government funding for an episode of care in which a patient experiences or suffers from a sentinel event.

The Commission has recently reviewed the Australian sentinel event list, clarifying its purpose, definitions and criteria.³⁴ Broad consultation across Australia resulted in the removal of two sentinel events, and the addition of two others. **Box 7** shows the latest version of the list – the Australian sentinel event list (version 2)³⁵, which was endorsed for national use in December 2018. The Australian sentinel event list (version 2) will be incorporated into the national public hospital funding arrangements from 1 July 2019.

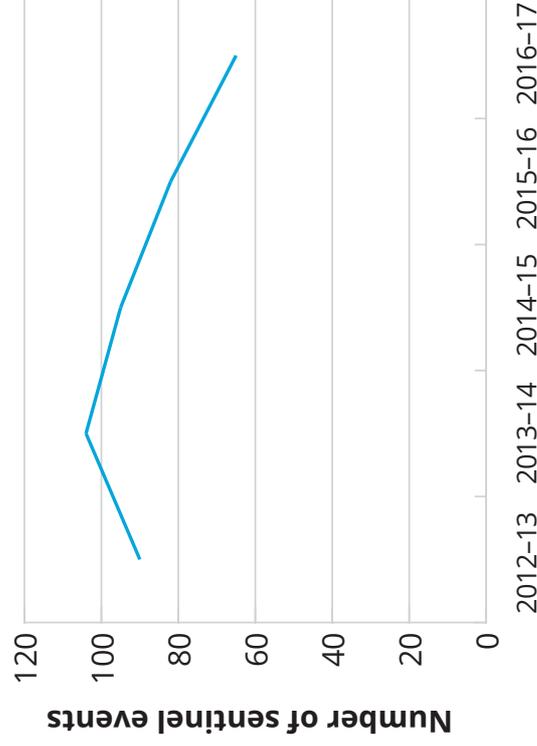
Box 7: Australian sentinel event list (version 2)

Sentinel events are a subset of clinical incidents that are wholly preventable and result in serious harm to, or death of, a patient and include:

1. Surgery or other invasive procedure performed on the wrong site resulting in serious harm or death
2. Surgery or other invasive procedure performed on the wrong patient resulting in serious harm or death
3. Wrong surgical or other invasive procedure performed on a patient resulting in serious harm or death
4. Unintended retention of a foreign object in a patient after surgery or other invasive procedure resulting in serious harm or death
5. Haemolytic blood transfusion reaction resulting from ABO blood type incompatibility resulting in serious harm or death
6. Suspected suicide of a patient in an acute psychiatric unit or acute psychiatric ward
7. Medication error resulting in serious harm or death
8. Use of physical or mechanical restraint resulting in serious harm or death
9. Discharge or release of an infant or child to an unauthorised person
10. Use of an incorrectly positioned oro- or nasogastric tube resulting in serious harm or death.³⁵

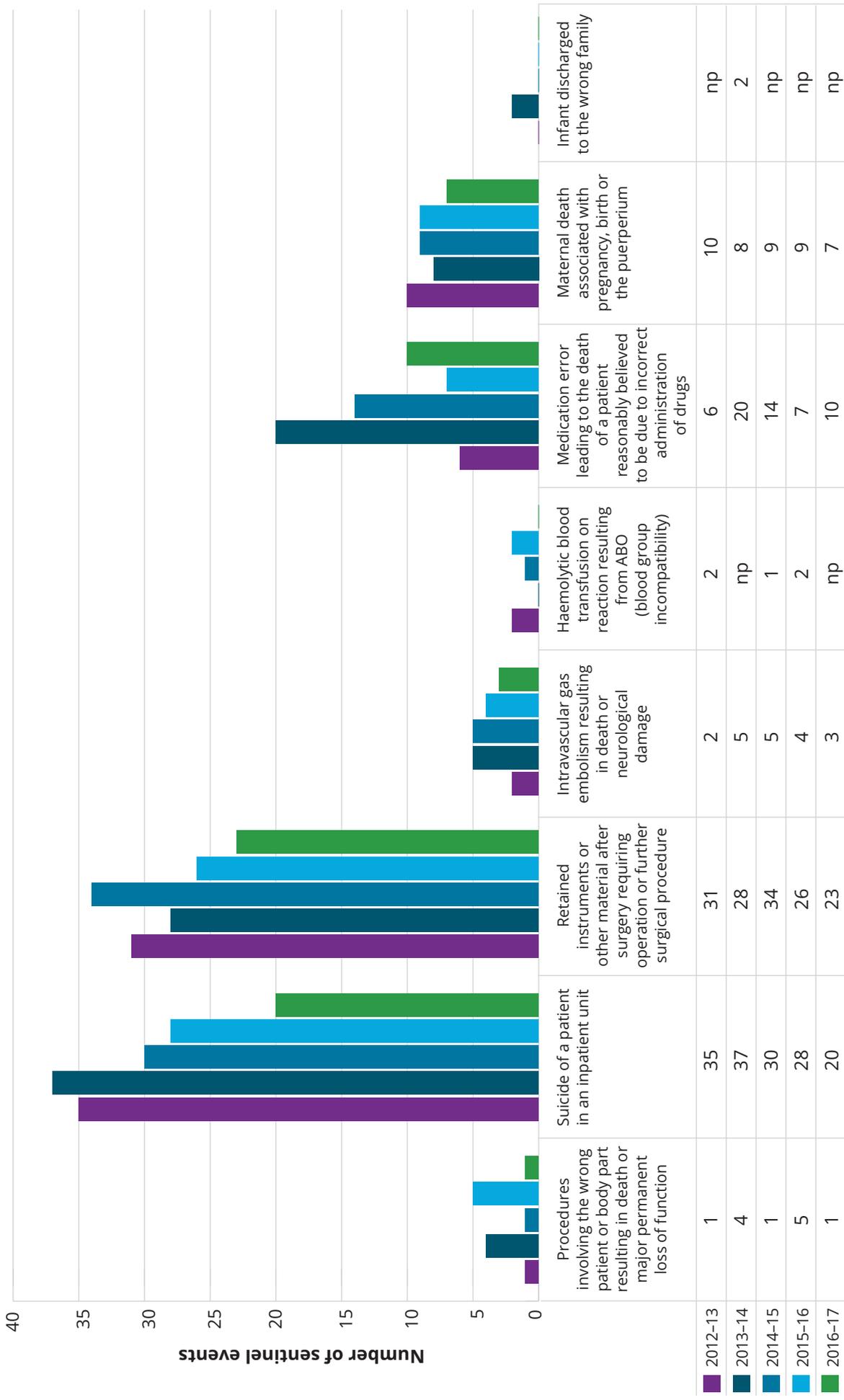
Very serious, fully preventable patient safety events are rare in Australia. However, they have the potential to seriously undermine public confidence in the health system.⁸ Time-series analysis for the period 2012-2017, against the previous sentinel event list (version 1), shows that these most serious clinical incidents are now occurring less frequently (**Figures 2-4**).³⁶

Figure 2: Total number of sentinel events by year Australia, 2012-2017



Source: Productivity Commission, Report on Government Services 2019.

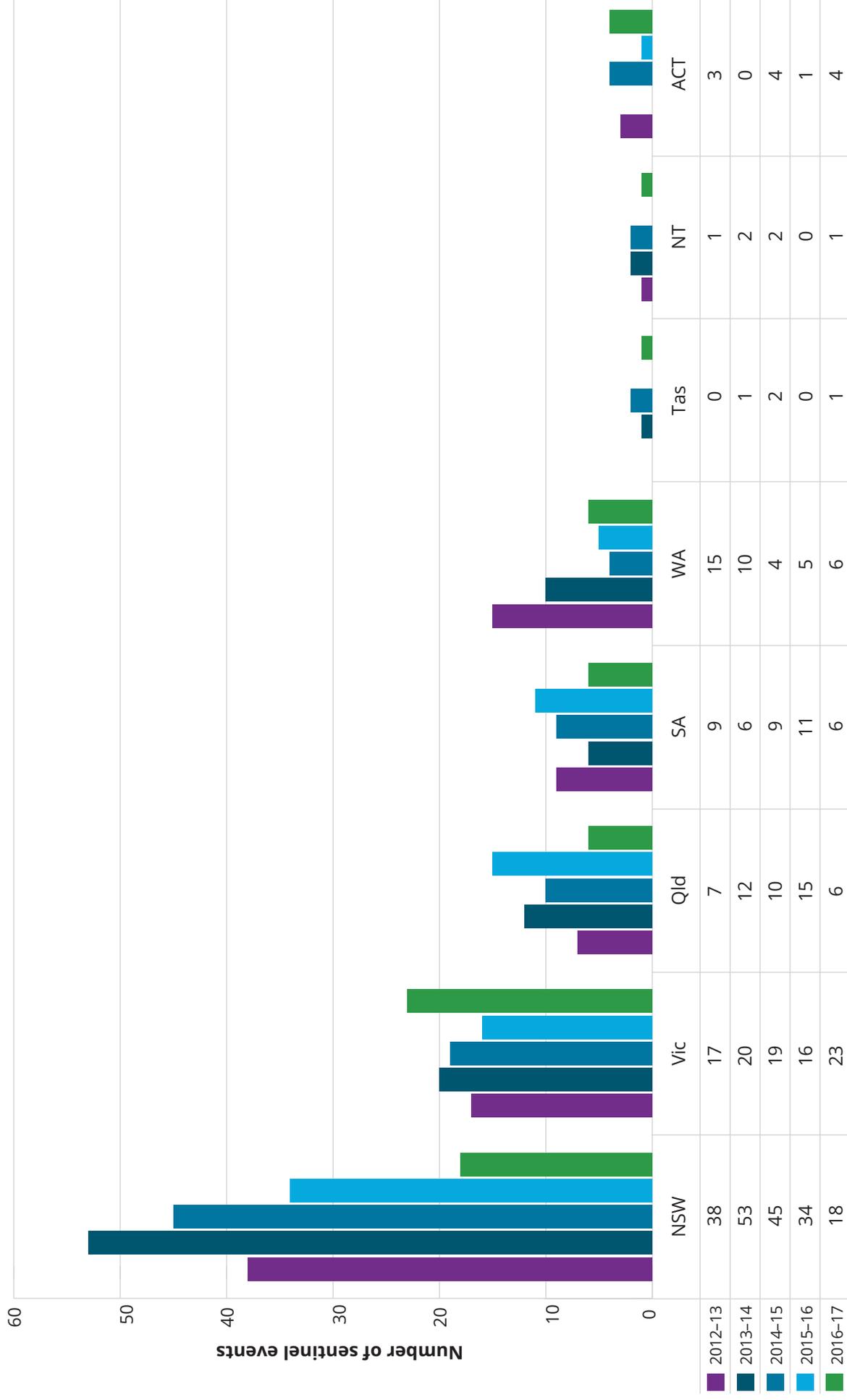
Figure 3: Number of reported sentinel events by event type by year, 2012–17



Source: Productivity Commission, Report on Government Services 2019.

Note: np = not provided

Figure 4: Number of reported sentinel events by state and territory, 2012-17



Source: Productivity Commission, Report on Government Services 2019.



NSW Ministry of Health – aims of clinical incident reporting systems and management

Case study 1 provides the aims of the NSW Ministry of Health’s clinical incident management system:

- a. “Ensure a consistent and coordinated approach to incident management including the identification, notification, investigation and analysis of incidents resulting in appropriate action
- b. Allow the lessons learned to be shared across the whole health system
- c. Ensure health services establish processes that comply with the legal aspects of both clinical and corporate incident management
- d. Establish standard approaches to both clinical and corporate incident management, including the establishment of performance indicators to monitor compliance.”³⁷

Clinical incidents

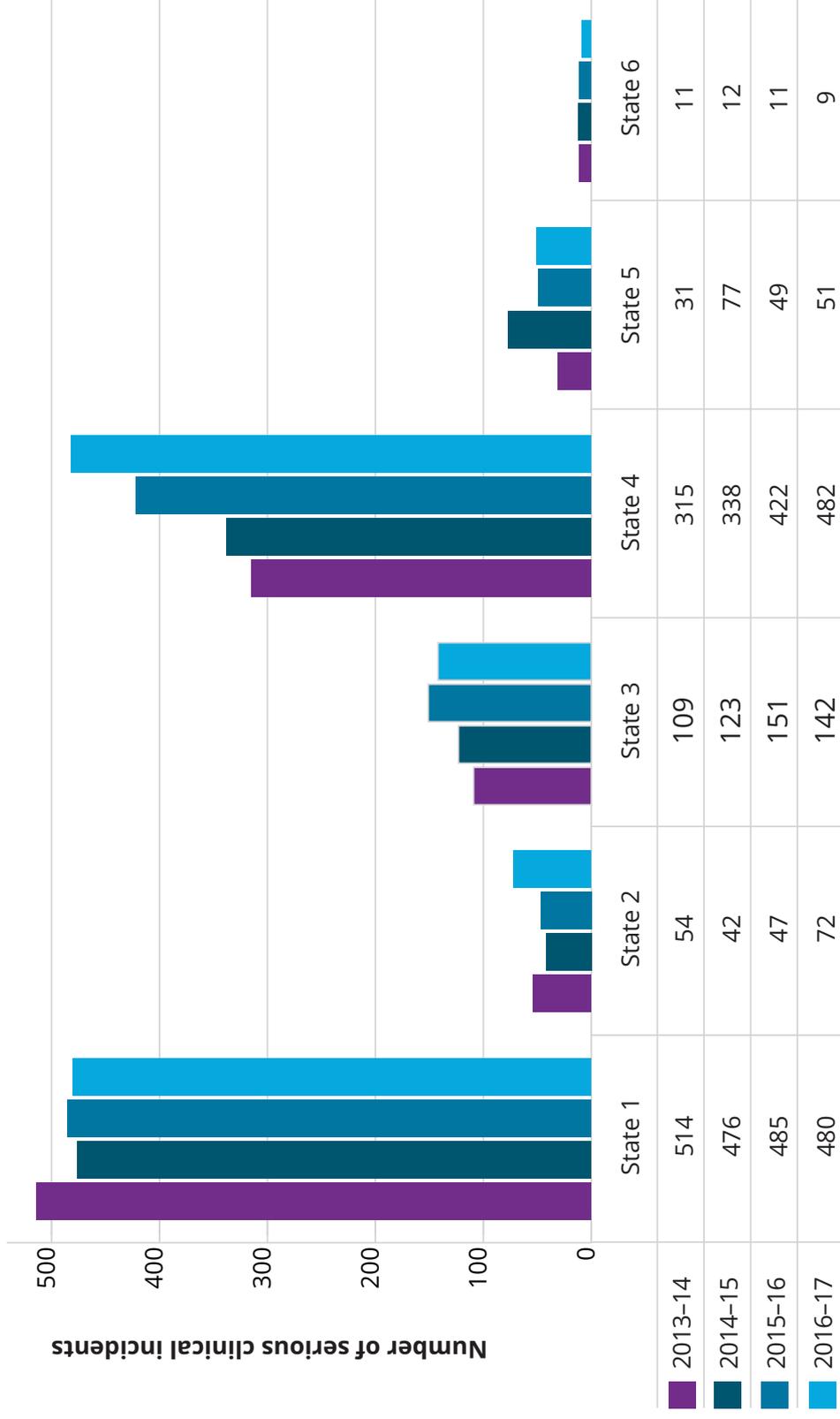
Australia has implemented a mandated reporting system where clinical incidents, their causes and any relevant contextual information are systematically recorded in a central repository. The information is then analysed and deployed to improve deficient processes where relevant, share lessons across related settings, improve safety for patients and prevent similar incidents from happening again.²⁹

The rate of clinical incidents appears to be steady. However, action is being taken to support improved clinical incident reporting which can be used to inform local quality improvement.

Clinical incidents have varying degrees of severity, ranging from near misses where minimal or no harm is experienced to incidents that can result in serious harm or death. Severity Assessment Codes (SACs), or similar risk rating scales, are used by state and territory health departments to rate the severity of incidents in public hospitals and to guide the level of investigation and action needed. For example, in New South Wales (NSW) and South Australia (SA), the most serious types of clinical incidents are rated as SAC1.^{38,39}

Available data show the rate of serious clinical incidents (SAC1s) has not changed significantly between 2013–14 and 2016–17 (**Figures 5 and 6**). However, assessing the rate of the most serious clinical incidents (for example SAC1s) across Australia is complicated as there are different incident reporting processes and severity classification systems used by the states and territories. Work is underway within the Commission to better understand and to support improvements to clinical incident reporting.

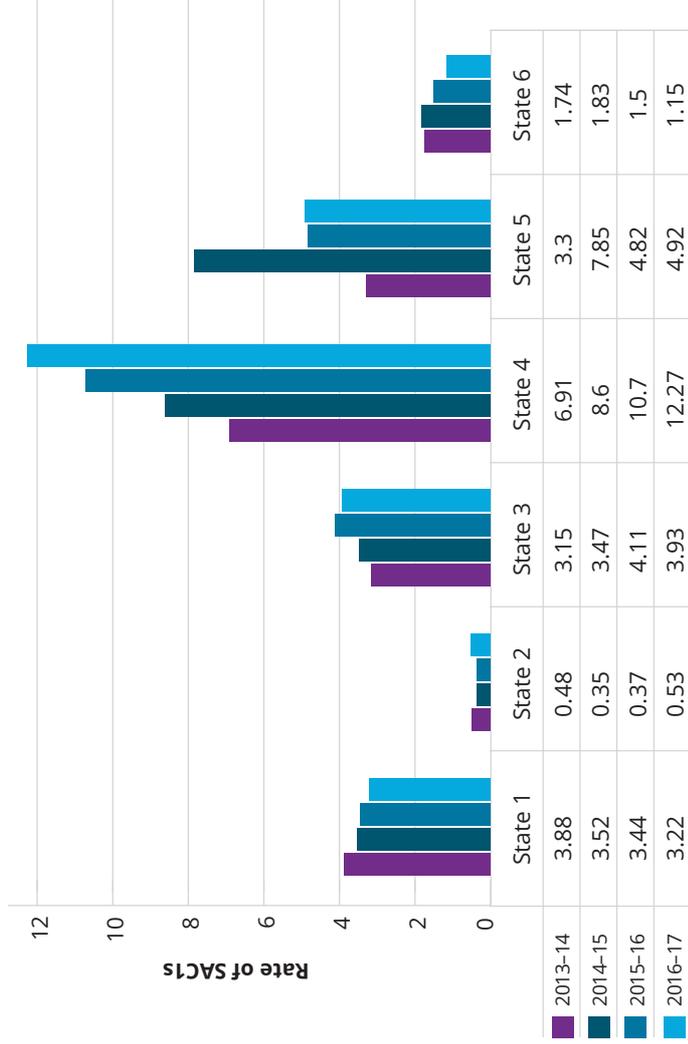
Figure 5: Number of serious clinical incidents (SAC1) by state and territory, as reported through the different state and territory incident management systems, 2013–2017



Source: Australian Commission on Safety and Quality in Health Care, unpublished correspondence, 2019.

Note: Rating systems, classifications and definitions for clinical incidents vary between states and territories. Due to these inconsistencies clinical incident data may not be comparable across states and territories. The most serious clinical incidents are included in these figures (Severity Assessment Code 1 [SAC1]).

Figure 6: Rate of serious clinical incidents (SAC1) per 10,000 separations by state and territory, as reported through the different state and territory incident management systems, 2013–2017



Source: Australian Commission on Safety and Quality in Health Care, unpublished correspondence, 2019.

Note: Rating systems, classifications and definitions for clinical incidents vary between states and territories. Due to these inconsistencies clinical incident data may not be comparable across states and territories. The most serious clinical incidents are included in these figures (Severity Assessment Code 1 [SAC1]). Rates are per 10,000 separations.

Box 8: Clinical incident management and open disclosure

Open disclosure of harm with patients is an important part of clinical incident management, and requires a just and learning culture to be built within organisations. In Australia, clinical incident management systems and incident reporting is open to all healthcare staff. The opportunity to report the details of the specific incident from the perspective of the reporter, and the ability to analyse contributing factors and how the event could have been prevented all form part of incident management systems to improve safety and quality of care.²⁹

Open disclosure and discussion of clinical incidents resulting in harm with patients, their families and carers is important. It entails an apology, explaining what occurred; discussing the experience and consequences; and describing what steps are being taken to manage the incident and prevent recurrence. Australia has instituted open disclosure policies as a regulatory requirement, guided by the Australian Open Disclosure Framework.²⁰

Open disclosure has been shown to convey a range of benefits. For patients, their families and carers it can allay feelings of anxiety and abandonment after harm and has also been shown to have a cooling effect on desires to litigate - most commonly motivated by patients simply wishing to find out exactly what happened when faced with evasion and lack of communication.⁴⁰ For providers, who can be seen as the 'second victims' of harm, open disclosure can be a healing process.⁴¹ Open disclosure – endorsed and supported by organisational leaders – also contributes to the 'just culture'.⁴⁰

Hospital-acquired complications

Hospital-acquired complications (HACs) are a sub-set of adverse healthcare events that have been identified as originating during the patient's hospital stay and are not present when the patient is admitted. A HAC refers to a complication for which clinical risk mitigation strategies may reduce (but not necessarily eliminate) the risk of that complication occurring.⁴² The Commission has developed a list of 16 high-priority HACs. Many of the identified HACs represent those adverse events whose occurrence – while perhaps difficult to prevent in each single case – in aggregate, can be reduced through consistent mitigation strategies.²⁹

The Commission, together with clinicians and other experts, developed the HACs based on four criteria: preventability, patient impact (severity), health service impact and clinical priority. The national list of 16 HACs was developed through a comprehensive process that included reviews of the literature, clinical engagement and testing of the concept with public and private hospitals.¹⁹

In April 2016, all Australian, state and territory governments signed a Heads of Agreement that committed to improve Australians' health outcomes and decrease avoidable demand for public hospital services through a series of reforms, including the development and implementation of funding and pricing approaches for safety and quality.⁴³

These reforms are detailed in Schedule 1 of the Addendum to the National Health Reform Agreement: Revised Public Hospital Arrangements 2017, which provides agreement to develop and implement reforms to integrate safety and quality into the pricing and funding of public hospitals services.²⁴

In February 2017, the Australian Government Minister for Health directed the Independent Hospital Pricing Authority (IHPA) to implement three recommendations of the COAG Health Council relating to sentinel events, HACs and avoidable readmissions. IHPA's recommendations in relation to this were set out in *The Pricing Framework for Australian Public Hospital Services 2017–18*.²⁵

For HACs, this included, consistent with the Ministerial Direction, that IHPA reduce the funding level for all HACs across every hospital to reflect the extra cost of a hospital admission with a HAC from 1 July 2018, subject to a shadow year from 1 July 2017.²⁵

In the financial year 2017–18, admissions associated with HACs* were estimated by the Commission to cost the public sector \$4.1 billion or 8.9%*** of total hospital expenditure. The most burdensome adverse event types include HAIs, medication complications, delirium and cardiac complications.**

- * HACs list complications only
- ** Public hospitals only, and all care types
- *** Projected based on 2016–17 National Hospital Cost Data Collection

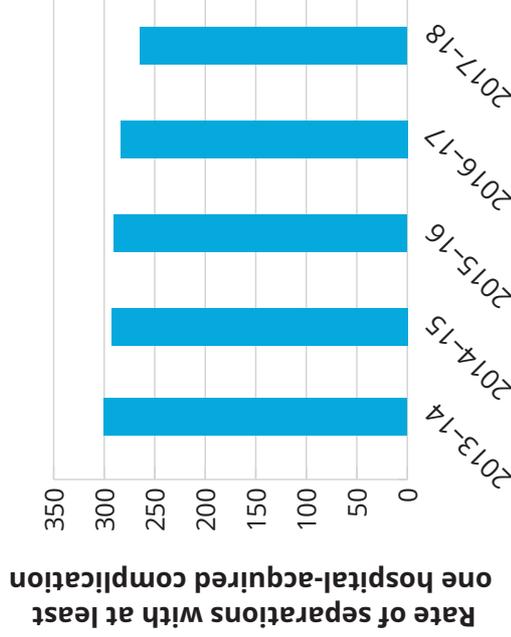
Reducing hospital-acquired complications at the local hospital level

The Commission has developed a range of resources to encourage and support the local monitoring of the HACs list and improve patient safety and healthcare quality. This includes an information kit to provide frontline clinicians and others with tools to minimise the occurrence of HACs in their health service organisation. The release of this information kit draws upon consultation with clinicians from across Australia, as well as the latest evidence and clinical guidelines. The information kit provides strategies related to 15 HACs. The fact sheets outline steps clinicians, managers, governing bodies and others can put in place to reduce the occurrence of HACs. The kit also highlights the importance of ongoing monitoring of these HACs, which can provide an indication of the success of a service, or signify safety and quality issues that require improvement.⁴²

The overall rate of hospital-acquired complications is decreasing, and data collection is improving

Overall HAC rates in Australia appear to be gently decreasing over time (**Figure 7**). Actual numbers of incidents or episodes are generally increasing. For some HACs, such as medication, respiratory and cardiac complications, this increase is large (**Table 1**). There is a strong drive to increase the focus on more accurate measurement and monitoring of HACs as part of a national approach to reducing HACs. It is anticipated that as data becomes more reliable and coding more consistent, clearer trends for HACs rates will become apparent.

Figure 7: Rates of identified hospital-acquired complications per 10,000 separations, 2013–14 to 2017–18



Source: Admitted Patient Care National Minimum Data Set, 2013–14 to 2017–18.

Note: Public hospitals only, which meet the robust condition onset flag coding criteria, all care types. Rates are per 10,000 separations

Table 1: List and number of hospital-acquired complications for 2014–15 to 2017–18

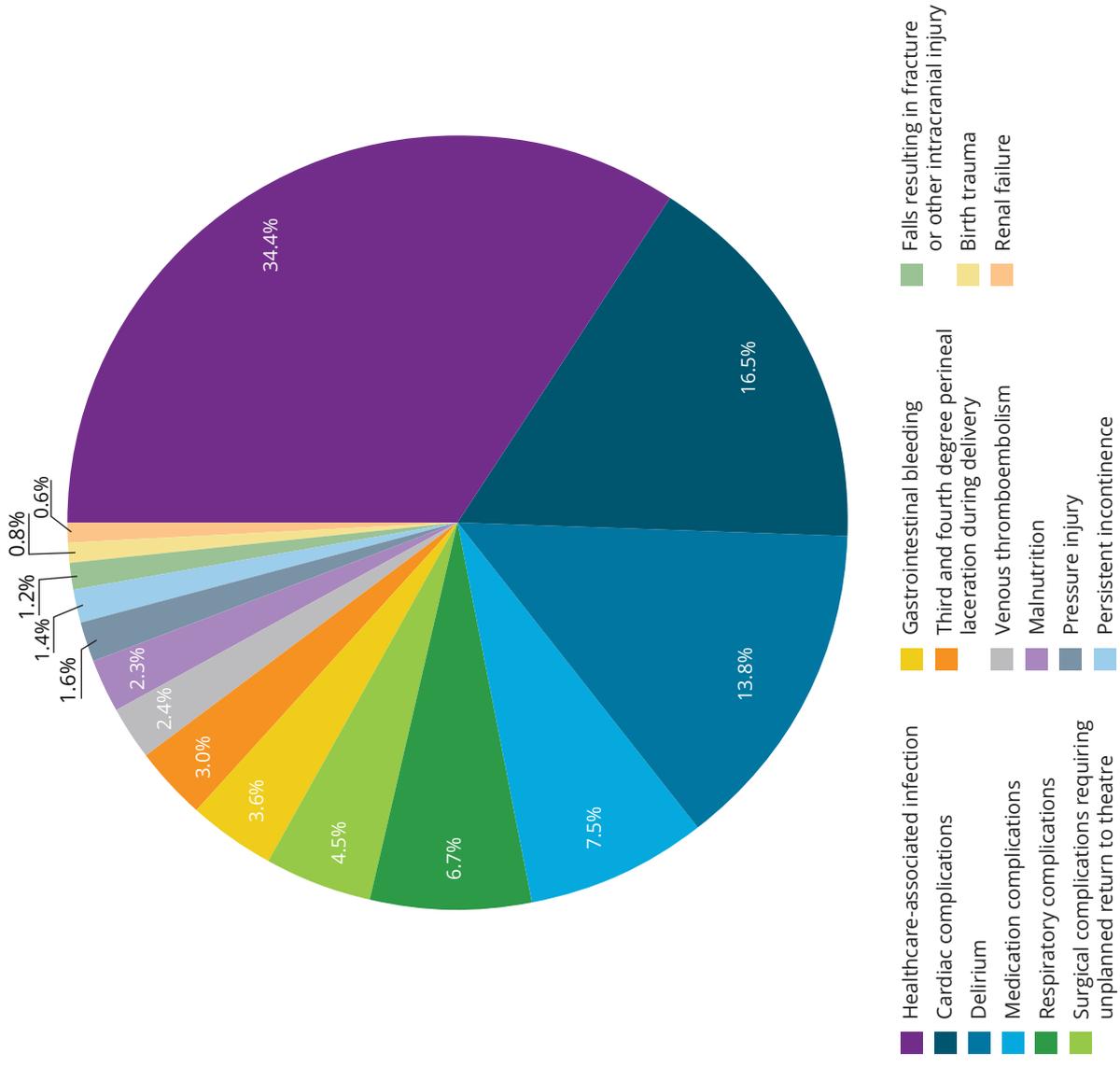
No.	Complication	2014–15	2015–16	2016–17	2017–18
	Total episodes with a HAC	107,268	122,540	134,739	140,393
	<i>Number of episodes with:</i>				
1	Pressure Injury	2,831	2,965	3,393	4,369
2	Falls resulting in fracture or other intracranial injury	1,614	1,764	1,930	2,036
3	Healthcare associated infection	51,803	54,131	58,692	61,297
4	Surgical complications requiring unplanned return to theatre	8,165	8,324	8,946	9,135
5	Unplanned intensive care unit admission	na	na	na	na
6	Respiratory complications	5,742	9,218	10,260	10,700
7	Venous thromboembolism	3,122	3,150	3,387	3,437
8	Renal failure	863	859	994	981
9	Gastrointestinal bleeding	5,559	5,637	6,224	6,330
10	Medication complications	7,628	10,249	12,517	13,725
11	Delirium	17,119	19,319	21,478	23,033
12	Persistent incontinence	2,974	3,211	3,729	3,801
13	Malnutrition	4,043	4,755	5,145	5,487
14	Cardiac complications	17,746	29,105	31,173	31,096
15	Third and fourth degree perineal laceration during delivery	5,008	5,154	5,764	5,642
16	Neonatal birth trauma	745	809	990	1,108

Source: Admitted Patient Care National Minimum Data Set, 2014-15 to 2017-18.
Note: Public hospitals only, which meet the robust condition onset flag coding criteria, all care types. Sum of individual HACs will not equal total HAC episodes, due to single episodes having multiple HACs. Unplanned return to theatre is not currently reported in the national data. Surgical complication numbers are based on the HAC diagnosis codes.

Patient safety surveillance

The HACs with the highest incidence are healthcare-associated infection, cardiac complications, delirium and medication complications (Figure 8). The Commission, states and territories and local health service organisations are working to implement strategies to address these identified HACs. **Case study 2** illustrates work undertaken to reduce healthcare-associated infection.

Figure 8: Distribution of HACs, 2017–18



Source: Admitted Patient Care National Minimum Data Set, 2017–18.

Note: Public hospitals only, which meet the robust condition onset flag coding criteria, all care types. Total (n) is sum of all HACs across the 15 complication groups, which can currently be measured at the national level.

CASE STUDY 2

Reducing healthcare-associated infections

Healthcare-associated infections (HAIs) are HACs that have the potential to cause significant harm to patients in hospital, including pain and suffering, and increased healthcare costs through prolonged hospital stay and associated treatment. HAIs are one of the most common complications affecting hospital patients; they increase the risk of morbidity, mortality and readmission within 12 months.⁴⁴⁻⁴⁶

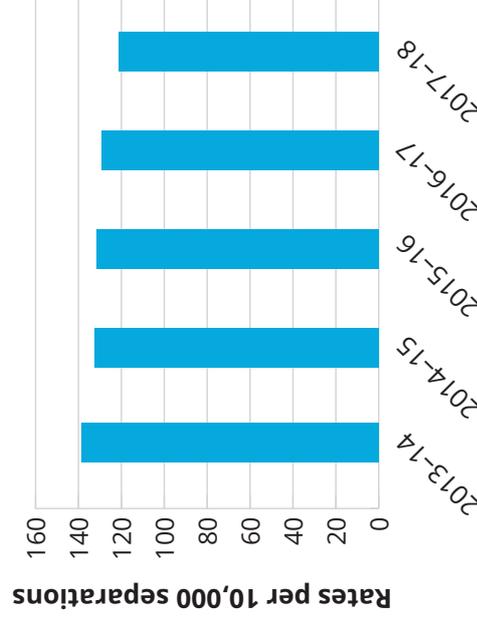
The Commission has led national work and collaboration on HAIs since 2006, bringing a breadth of stakeholders together to develop and implement strategies to reduce HAIs. A range of strategies to promote effective infection prevention and control undertaken by the Commission have been incorporated into the NSQHS Standards and have become essential components of NSQHS Standard 3: Preventing and Controlling Healthcare-Associated Infection. These include:

- The National Hand Hygiene Initiative⁴⁷
- The development of standard definitions for the surveillance of *Staphylococcus aureus* bacteremia (SAB), central line-associated blood stream infections and *Clostridium difficile* infection
- The national surveillance initiative for the prevention of HAIs, contributing to a national definition of SAB and the reporting and monitoring of SAB rates nationally
- Antimicrobial Stewardship programs
- The Antimicrobial Stewardship Clinical Care Standard⁴⁸
- Clinician capacity building
- *The Australian Guidelines for the Prevention and Control of Infection in Healthcare* in conjunction with the National Health and Medical Research Council⁴⁹

- Strategies to reduce multi-resistant organisms and for surveillance of surgical site infection
- The Antimicrobial Use and Resistance in Australia Surveillance System⁵⁰
- Activities undertaken by the states and territories.⁴⁶

Marked reductions in the rate of HAIs have been observed over time and are linked to coordinated effort across the health system to improve infection control and the appropriate use of antimicrobials (Figure 9).^{28, 46}

Figure 9: Rates of healthcare-associated infections in Australian hospitals per 10,000 separations, 2013-14 to 2017-18



Source: Admitted Patient Care National Minimum Data Set, 2013-14 to 2017-18.

Note: Public hospitals only, which meet the robust condition onset flag coding criteria, all care types. Rates are per 10,000 separations.

Continued...
The Commission's activities in this area, as well as those led by state and territory health departments and clinical groups, have led to a reduction in HAI rates, including those associated with serious morbidity.²⁸ Key outcomes include:

- An increase in the overall hand hygiene compliance rate in public and private hospitals from 63% in 2009 to 84% in 2017^{51, 52}
- A decline in the *Staphylococcus aureus* bacteraemia (SAB) rate per 10,000 patient days under surveillance from 1.1 to 0.76 between 2010–11⁵³ and 2016–17⁵⁴
- A reduction in the yearly number of methicillin-resistant *Staphylococcus aureus* (MRSA) bacteraemia cases in Australian public hospitals from 505 to 290 between 2010–11⁵³ and 2016–17⁵⁴
- A decline in the national rate of central line-associated blood stream infections (CLABSI) from 1.02 to 0.64 per 1,000 line days between 2012–13 and 2013–14.^{28, 46, 55}

National goals for optimal outcomes and reducing hospital-acquired complications

HACs are highly burdensome both to individual patients and the broader healthcare system, and extended admissions as a result of a HAC can incur significant cost implications. When examining the rate of each HAC across peer hospitals with similar patient cohorts, it is clear that there is significant variation. The Commission encourages all hospitals to work towards the rates achieved in the top quartile of peer facilities. If all hospitals with higher rates of a HAC can learn from better performing peer hospitals, and similarly reduce the incidence of that HAC, a significant overall reduction in HACs could be achieved. This would provide significant value to patients and the health system in terms of reduced morbidity, mortality, bed days and costs.

In identifying the rate for the top quartile of hospitals for each HAC by peer group, the Commission is providing a reasonable goal for health service organisations to work towards in achieving optimal outcomes for patients. Each hospital is expected to examine their individual HAC rates, identifying which HAC rates are higher than the rate for the top quartile, and apply quality improvement methodologies in order to reduce the incidence of these HACs.

Table 2 details the rates for the top quartile for three peer groups that health service organisations should strive for in reducing HACs and providing optimal outcomes for patients. The impact of health service organisations achieving that goal is illustrated for eight HACs in **Figures 10-17**.

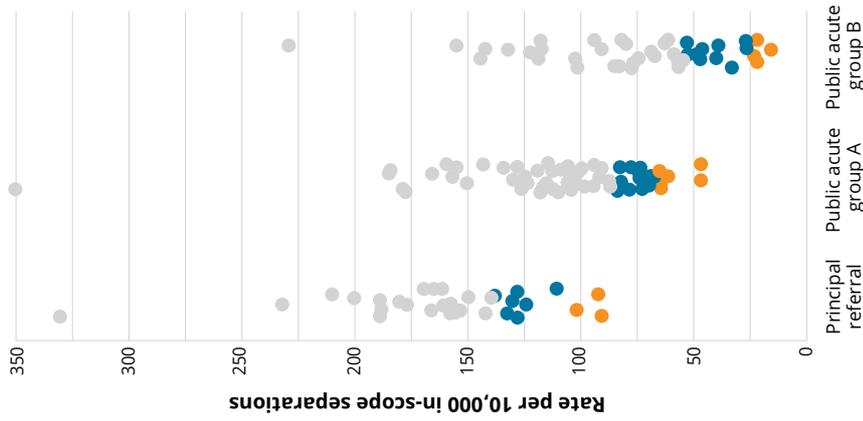
Table 2: Setting national goals for achieving optimal outcomes and reducing hospital-acquired complications

Hospital-acquired complication	National goal (rates per 10,000)		
	Principal referral hospital	Public acute group A	Public acute group B
Pressure injury	3.7	3.3	2.1
Medication complications	29.1	16.5	9.4
Delirium	57.9	38.7	17.3
Persistent incontinence	4.3	2.0	1.9
Malnutrition	6.4	2.3	1.7
Cardiac complications	67.4	43.6	25.3
Third and fourth degree perineal laceration during delivery	349.3	273.7	219.8
Birth trauma	54.2	37.8	29.5
Falls resulting in fracture or other intracranial injury	3.2	3.4	2.4
Healthcare-associated infection	138.4	84.9	52.0
Surgical complications requiring unplanned return to theatre	20.2	9.7	2.3
Respiratory complications	32.5	17.0	7.4
Venous thromboembolism	9.8	5.3	1.9
Renal failure	2.7	np	np
Gastrointestinal bleeding	13.1	9.1	4.8

Source: Admitted Patient Care National Minimum Data Set, 2017–18.
Note: Calculated using public hospitals only, which meet the robust condition onset flag coding criteria. The lowest decile of HAC rates for each peer group have been excluded from the calculation of goals for optimal clinical outcomes. This will be reviewed as data integrity improves.
 Rates per 10,000 separations. Birth trauma per 10,000 newborns. Perineal lacerations per 10,000 deliveries. np = not provided.

Figure 10: Potential impact of reducing healthcare-associated infections

Healthcare-associated infections



Around 61,862 healthcare-associated infections occur each year in Australian public hospitals

if we reduce the rate to the level of the best 25% of peer hospitals

IN PRINCIPAL REFERRAL HOSPITALS



138.4

IN PUBLIC ACUTE GROUP A



84.9

IN PUBLIC ACUTE GROUP B



52

this would result in 11,142 fewer healthcare-associated infections with a possible value capture of 229,992 bed days \$459,984,691

KEY

● Hospitals with the lowest decile, which have been excluded from calculation ● Hospitals achieving optimal outcomes for reducing HACs ● Hospitals that can improve HAC rates

Source: Admitted Patient Care National Minimum Data Set, 2017-18

Note: Public hospitals only, which meet the robust condition onset flag coding criteria. Rates are per 10,000 hospitalisations. Value capture figures are based on the national average length of stay per complication and average cost per day. Orange dots indicate hospitals with the lowest decile of HAC rates for each peer group. These hospitals have been excluded from the calculation of goals for optimal clinical outcomes. This will be reviewed as data integrity improves. See Australian Hospital Peer Groups for definitions of hospital peer groups: <https://www.aihw.gov.au/reports/hospitals/australian-hospital-peer-groups/contents/table-of-contents>.

Figure 11: Potential impact of reducing venous thromboembolism

Venous thromboembolism



KEY

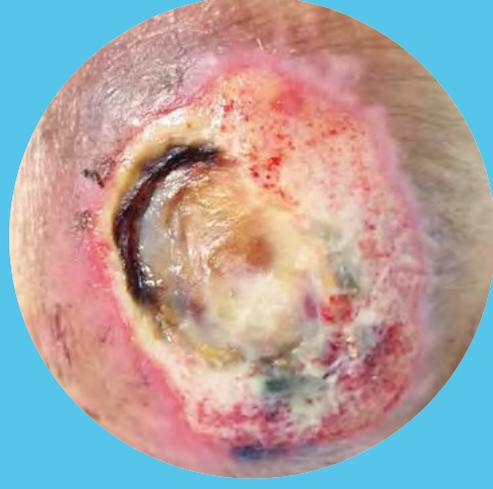
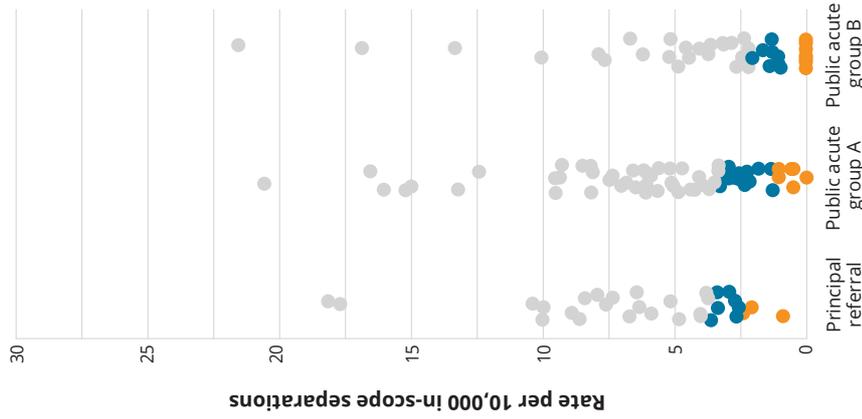
● Hospitals with the lowest decile, which have been excluded from calculation ● Hospitals achieving optimal outcomes for reducing HACs ● Hospitals that can improve HAC rates

Source: Admitted Patient Care National Minimum Data Set, 2017-18

Note: Public hospitals only, which meet the robust condition onset flag coding criteria. Rates are per 10,000 hospitalisations. Value capture figures are based on the national average length of stay per complication and average cost per day. Orange dots indicate hospitals with the lowest decile of HAC rates for each peer group. These hospitals have been excluded from the calculation of goals for optimal clinical outcomes. This will be reviewed as data integrity improves. See Australian Hospital Peer Groups for definitions of hospital peer groups: <https://www.aihw.gov.au/reports/hospitals/australian-hospital-peer-groups/contents/table-of-contents>.

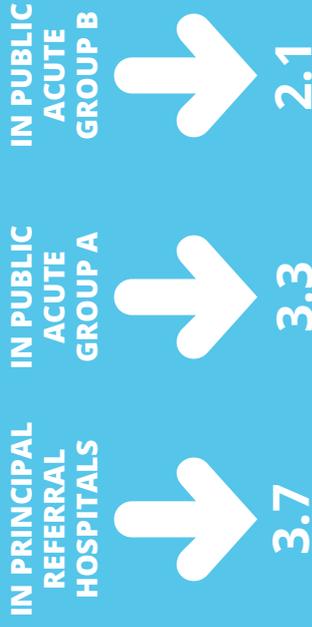
Figure 12: Potential impact of reducing pressure injuries

Pressure injuries



Around 2,840 stage 3 and 4 pressure injuries occur each year in Australian public hospitals

if we reduce the rate to the level of the best 25% of peer hospitals



this would result in 986 fewer pressure injuries with a possible value capture of 29,447 bed days \$58,894,248

KEY

● Hospitals with the lowest decile, which have been excluded from calculation ● Hospitals achieving optimal outcomes for reducing HACs ● Hospitals that can improve HAC rates

Source: Admitted Patient Care National Minimum Data Set, 2017-18

Note: Public hospitals only, which meet the robust condition onset flag coding criteria. Rates are per 10,000 hospitalisations. Value capture figures are based on the national average length of stay per complication and average cost per day. Orange dots indicate hospitals with the lowest decile of HAC rates for each peer group. These hospitals have been excluded from the calculation of goals for optimal clinical outcomes. This will be reviewed as data integrity improves. See Australian Hospital Peer Groups for definitions of hospital peer groups: <https://www.aihw.gov.au/reports/hospitals/australian-hospital-peer-groups/contents/table-of-contents>.

Figure 13: Potential impact of reducing surgical complications

Surgical complications





Around 8,054 surgical complications requiring return to theatre occur each year in Australian public hospitals

if we reduce the rate to the level of the best 25% of peer hospitals

IN PRINCIPAL REFERRAL HOSPITALS	IN PUBLIC ACUTE GROUP A	IN PUBLIC ACUTE GROUP B
20.2	9.7	2.3

this would result in 1,895 fewer surgical complications with a possible value capture of 46,876 bed days \$93,752,462

KEY

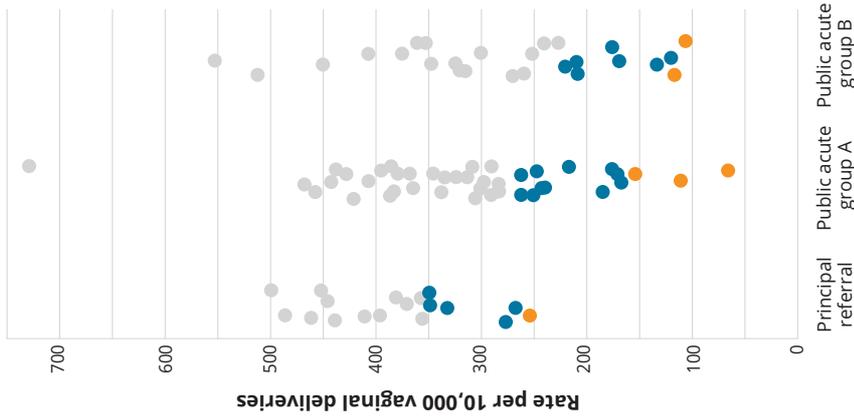
● Hospitals with the lowest decile, which have been excluded from calculation ● Hospitals achieving optimal outcomes for reducing HACs ● Hospitals that can improve HAC rates

Source: Admitted Patient Care National Minimum Data Set, 2017-18

Note: Public hospitals only, which meet the robust condition onset flag coding criteria. Rates are per 10,000 hospitalisations. Value capture figures are based on the national average length of stay per complication and average cost per day. Orange dots indicate hospitals with the lowest decile of HAC rates for each peer group. These hospitals have been excluded from the calculation of goals for optimal clinical outcomes. This will be reviewed as data integrity improves. See Australian Hospital Peer Groups for definitions of hospital peer groups: <https://www.aihw.gov.au/reports/hospitals/australian-hospital-peer-groups/contents/table-of-contents>.

Figure 14: Potential impact of reducing perineal tears

Perineal tears



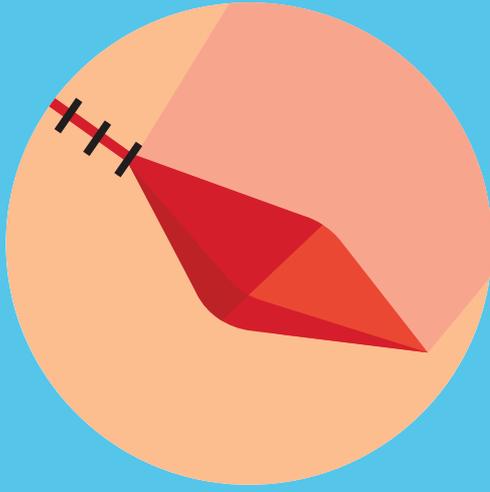
if we reduce the rate to the level of the best 25% of peer hospitals

IN PRINCIPAL REFERRAL HOSPITALS IN PUBLIC ACUTE GROUP A IN PUBLIC ACUTE GROUP B



this would result in 876 fewer

perineal tears with a possible value capture of 2,735 bed days \$5,469,484



Around 5,352 tears occur each year in Australian public hospitals

KEY

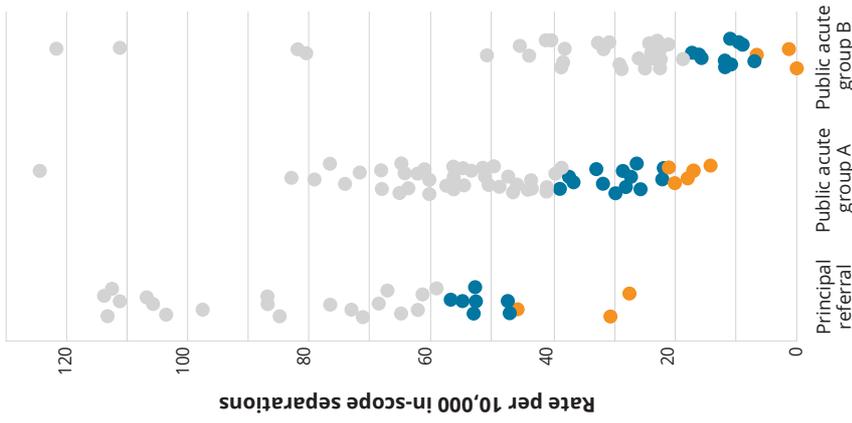
● Hospitals with the lowest decile, which have been excluded from calculation ● Hospitals achieving optimal outcomes for reducing HACs ● Hospitals that can improve HAC rates

Source: Admitted Patient Care National Minimum Data Set, 2017-18

Note: Public hospitals only, which meet the robust condition onset flag coding criteria. Rates are per 10,000 vaginal deliveries, estimate based on 150 vaginal deliveries in 2017-18. Value capture figures are based on the national average length of stay per complication and average cost per day. Orange dots indicate hospitals with the lowest decile of HAC rates for each peer group. These hospitals have been excluded from the calculation of goals for optimal clinical outcomes. This will be reviewed as data integrity improves. See Australian Hospital Peer Groups for definitions of hospital peer groups: <https://www.aihw.gov.au/reports/hospitals/australian-hospital-peer-groups/contents/table-of-contents>.

Figure 15: Potential impact of reducing delirium

Delirium



if we reduce the rate to the level of the best 25% of peer hospitals

Category	Rate
IN PRINCIPAL REFERRAL HOSPITALS	57.9
IN PUBLIC ACUTE GROUP A	38.7
IN PUBLIC ACUTE GROUP B	17.3

Around 24,774 episodes of delirium occur each year in Australian public hospitals

this would result in 5,795 fewer episodes of delirium with a possible value capture of 101,410 bed days \$202,820,391

KEY

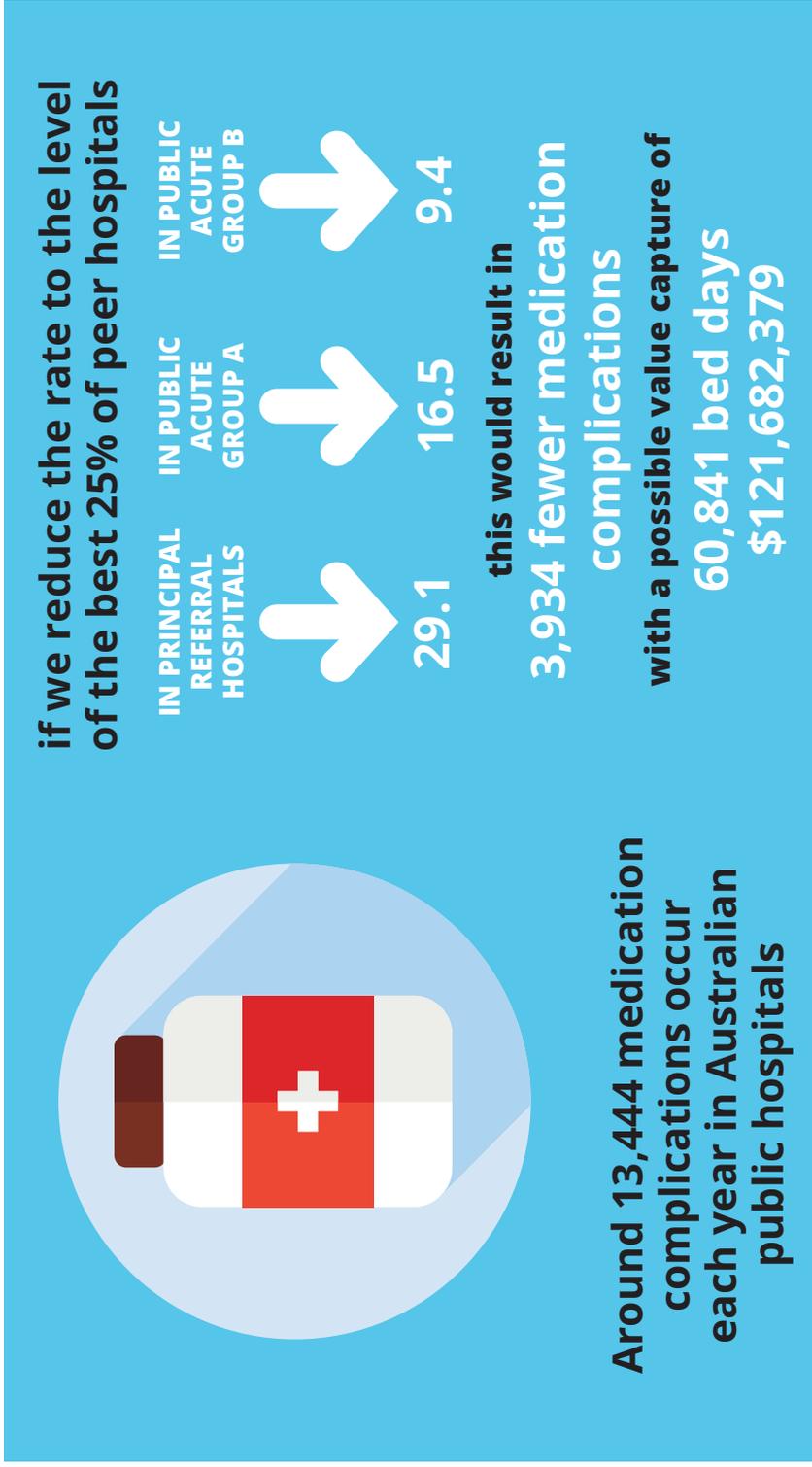
● Hospitals with the lowest decile, which have been excluded from calculation ● Hospitals achieving optimal outcomes for reducing HACs ● Hospitals that can improve HAC rates

Source: Admitted Patient Care National Minimum Data Set, 2017-18

Note: Public hospitals only, which meet the robust condition onset flag coding criteria. Rates are per 10,000 hospitalisations. Value capture figures are based on the national average length of stay per complication and average cost per day. Orange dots indicate hospitals with the lowest decile of HAC rates for each peer group. These hospitals have been excluded from the calculation of goals for optimal clinical outcomes. This will be reviewed as data integrity improves. See Australian Hospital Peer Groups for definitions of hospital peer groups: <https://www.aihw.gov.au/reports/hospitals/australian-hospital-peer-groups/contents/table-of-contents>.

Figure 16: Potential impact of reducing medication complications

Medication complications



KEY

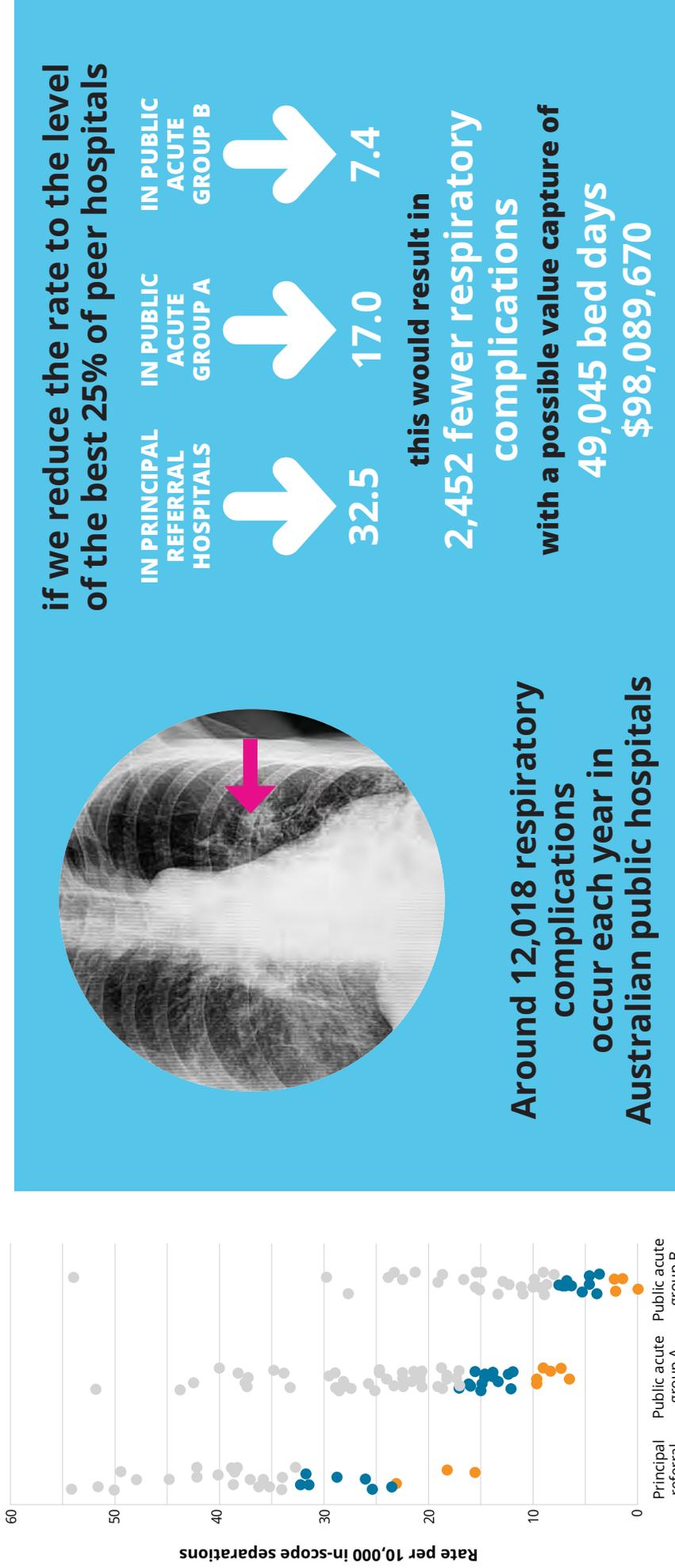
● Hospitals with the lowest decile, which have been excluded from calculation ● Hospitals achieving optimal outcomes for reducing HACs ● Hospitals that can improve HAC rates

Source: Admitted Patient Care National Minimum Data Set, 2017-18

Note: Public hospitals only, which meet the robust condition onset flag coding criteria. Rates are per 10,000 hospitalisations. Value capture figures are based on the national average length of stay per complication and average cost per day. Orange dots indicate hospitals with the lowest decile of HAC rates for each peer group. These hospitals have been excluded from the calculation of goals for optimal clinical outcomes. This will be reviewed as data integrity improves. See Australian Hospital Peer Groups for definitions of hospital peer groups: <https://www.aihw.gov.au/reports/hospitals/australian-hospital-peer-groups/contents/table-of-contents>.

Figure 17: Potential impact of reducing respiratory complications

Respiratory complications



Avoidable hospital readmissions

Avoidable hospital readmissions are costly, and rates remain relatively steady. However, action is being taken to improve data collection which can be used to inform local quality improvement.

Rates of avoidable hospital readmissions provide another insight into the safety and quality performance of the health system. An avoidable hospital readmission occurs when a patient who has been discharged from hospital is admitted again within a certain time interval, and the readmission:

- Is clinically related to the original admission, and
- Has the potential to be avoided through improved clinical management and/or appropriate discharge planning in the original admission.⁵⁶

The Commission has developed a list of avoidable hospital readmission conditions and their associated condition-specific timeframes (**Table 3**). This list was developed in consultation with clinical and consumer experts.⁵⁶

Table 3: List of hospital readmission conditions considered to be avoidable

Readmission condition	Readmission diagnosis	Readmission interval
Pressure injury	Stage III ulcer	14 days
	Stage IV ulcer	7 days
	Unspecified decubitis and pressure area	14 days
Infections	Urinary tract infection	7 days
	Surgical site infection	30 days
	Pneumonia	7 days
	Blood stream infection	2 days
	Central line and peripheral line associated blood stream infection	2 days
	Multi-resistant organism	2 days
	Infection associated with devices, implants and grafts	90 days
	Infection associated with prosthetic devices, implants and grafts in genital tract or urinary system	30 days
	Infection associated with peritoneal dialysis catheter	2 days
	Gastrointestinal infections	28 days
Surgical complications	Postoperative haemorrhage / haematoma	28 days
	Surgical wound dehiscence	28 days
	Anastomotic leak	28 days
	Pain following surgery	14 days
	Other surgical complications	28 days

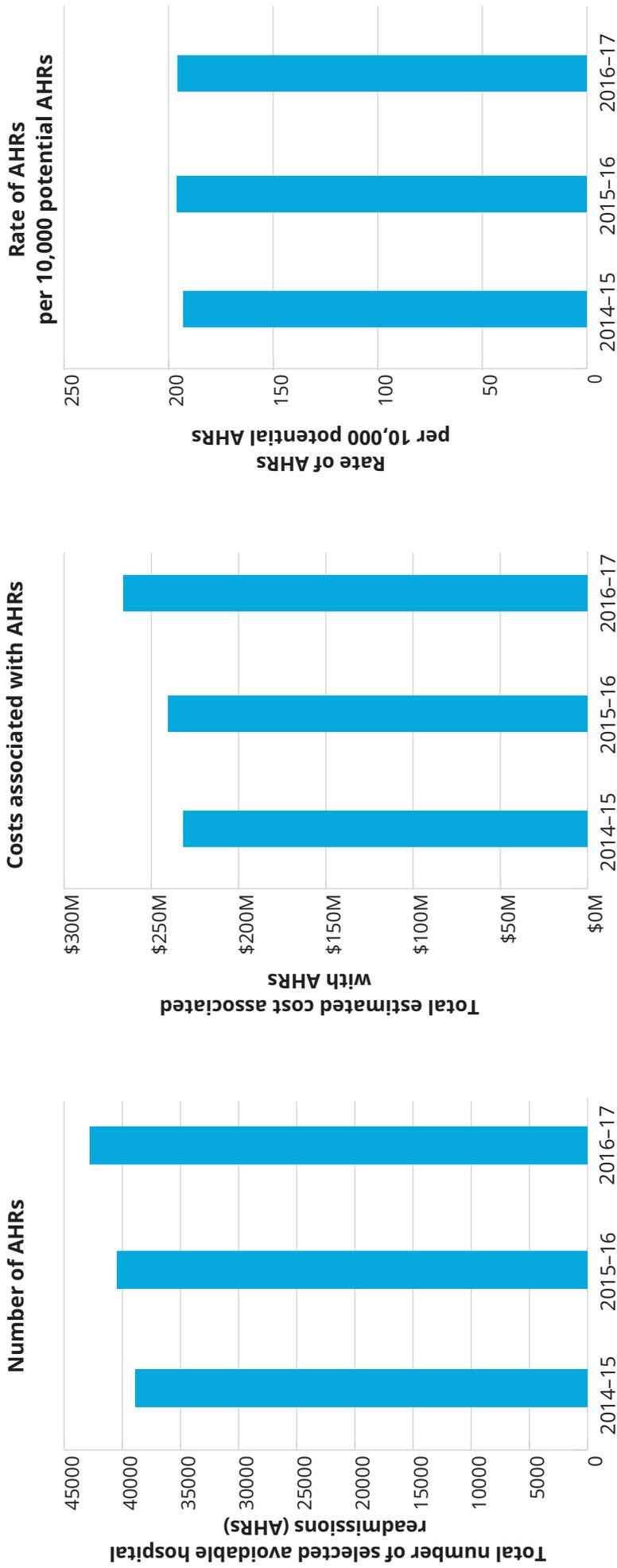
Table 3 continued

Readmission condition	Readmission diagnosis	Readmission interval
Respiratory complications	Respiratory failure including acute respiratory distress syndromes	21 days
Venous thromboembolism	Aspiration pneumonia	14 days
	Venous thromboembolism	90 days
Renal failure	Renal failure	21 days
Gastrointestinal bleeding	Gastrointestinal bleeding	2 days
Medication complications	Drug related respiratory complications / respiratory depression	2 days
Delirium	Hypoglycaemia	4 days
	Delirium	10 days
Cardiac complications	Heart failure and pulmonary oedema	30 days
	Ventricular arrhythmias and cardiac arrest	30 days
Other	Atrial tachycardia	14 days
	Acute coronary syndrome including unstable angina, STEMI and NSTEMI	30 days
Other	Constipation	14 days
	Nausea and vomiting	7 days

Source: Australian Commission on Safety and Quality in Health Care, 2019.⁵⁶

Rates of avoidable hospital readmissions on the Commission's list have remained steady over time and are associated with a financial cost to the Australian health system in excess of \$200 million dollars annually (**Figure 18**). Reducing avoidable hospital readmissions is an important aspect of value-based care as it supports better health outcomes, improves patient safety and leads to greater efficiency in the health system.⁵⁶

Figure 18: Selected avoidable hospital readmissions and cost to the Australian health system, 2014–15 to 2016–17



Source: Admitted Patient Care National Minimum Data Set, 2014–15 to 2016–17.

Note: Public hospitals only, excluding WA, due to data quality issues. Only accounts for readmissions back to the same hospital as the index admission. Costs are calculated for each year based on the National Weighted Activity Unit of the readmission.

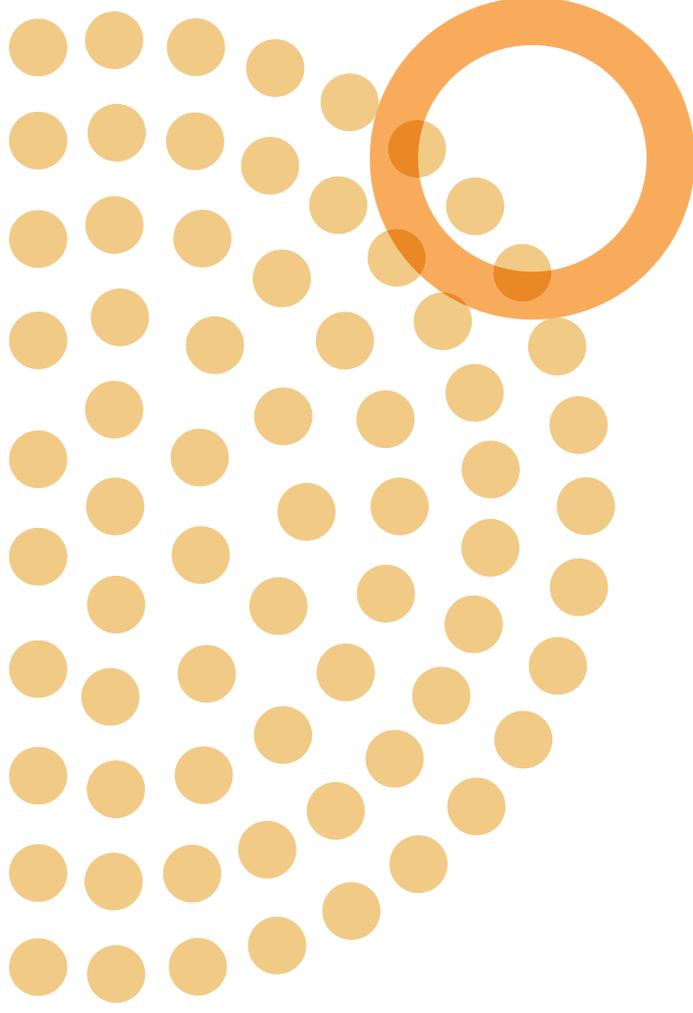
CASE STUDY 3

Reducing readmissions locally

In 2015, staff at the Hunter New England Local Health District undertook a project aimed at reducing recurrent re-presentations and

readmissions. The project involved developing a process to identify patients at high risk of re-presenting to hospital and implementing methods to address their medical and psycho-social needs. This new model of care has reduced the need for care by using partners in the primary care sector to provide support for these patients in the community. Key results from this project include:

- “A combined decrease of 44% in readmissions for these patients to hospital (Calvary Mater Newcastle achieving a 47% decrease and Maitland and Kurri Kurri achieving a 56% decrease)
- A combined decrease of 17% in presentations by these patients to the ED (Calvary Mater achieving a 17% decrease, Maitland achieving a 16% decrease and Kurri Kurri achieving a 19% decrease)
- There is now more accurate identification and assessment of vulnerable, high-needs patients through the use of the SCALE-UP tool
- Introduction of personalised care plans (VIP Action Plan) which now address psycho-social vulnerabilities and focus on improving quality of life”.⁵⁷



QUALITY - APPROPRIATE CARE

Australia has one of the best health systems in the world, but there are large variations in the way health care is currently delivered across the country. Healthcare variation is not necessarily bad, and if it reflects differences in patients' needs or preferences it is a good thing. But when a difference in use does not reflect these factors, it is unwarranted variation and represents an opportunity for the health system to improve.

This improvement may involve increasing access to treatment options that produce better outcomes for patients, or reducing treatment with little or uncertain benefit. Addressing unwarranted healthcare variation can therefore benefit patients and improve the value gained from the health budget.

The Australian Atlas of Healthcare Variation

The Commission has produced a series of Australian Atlases of Healthcare Variation (the Atlas series) to map differences in healthcare use according to where people live. The first *Australian Atlas of Healthcare Variation* was produced in partnership with the NHPA and published in 2015; the second and third Atlases were produced in partnership with the Australian Institute of Health and Welfare (AIHW) and published in 2017 and 2018. They revealed substantial variation in the use of many treatments and diagnostic procedures, and have raised

important questions about why this variation might be occurring.³⁸⁻⁶⁰

The Commission has worked closely with clinicians and government health departments to understand the reasons for variation seen in each intervention mapped in the Atlas series and – most importantly – what can be done where unwarranted variation is suspected.

What are the reasons for variation?

Rates of an intervention that are substantially higher or lower in some areas can highlight:

- Clinical practice that is not supported by evidence-based guidelines
- Inequity of access to evidence-based care, and the need to deliver services more fairly
- Higher rates of private health insurance in areas of greater socioeconomic advantage
- Inadequate system supports for appropriate care, and the need for changes in training or financial incentives
- Uncertainty about the intervention's place in therapy, and the need for better data on its benefits and harms.

Differences in the ages of different populations are accounted for in the data analysis to allow comparisons between populations with different age structures. All rates are based on a person's place of residence, not the location of the hospital or health service where they were treated.

What is being done to reduce unwarranted variation?

The Atlases were published relatively recently (2015, 2017 and 2018), and implementing changes in complex systems takes time. **Table 5** gives examples of how different groups within the health sector have addressed issues highlighted in the first and second Atlases, in the context of the many other organisations working to improve health care in Australia. More in-depth case studies are shown in **Case studies 4 and 5**.

Highlights from the third Atlas

Concerning rates of early, planned caesarean section with no medical reason

There is a growing body of evidence that planned birth before 39 weeks' gestation can increase short-term risks to the baby and long-term developmental problems in children.⁶¹⁻⁷⁰ Waiting until 39 weeks' gestation is recommended by several international organisations and some Australian states if there are no medical or obstetric reasons for an earlier birth.⁷¹⁻⁷⁴ A position statement from the Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) states that 'On balance, weighing up the risk of respiratory morbidity following elective caesarean section and the risk of labouring prior to caesarean section, it is recommended that elective caesarean section in

women without additional risks should be carried out at approximately 39 weeks gestation'.⁷⁵

Data about planned caesarean section before 39 weeks have only recently begun to be collected routinely in Australia. Only four states and territories had sufficient data for reporting in the Atlas. Despite the data limitations, the third Atlas showed some concerning patterns:

- In 2015, between 42% and 60% of planned caesarean sections performed before 39 weeks'

gestation did not have a medical or obstetric indication

- In 2015, between 10% and 22% of caesarean sections performed before 37 weeks did not have a medical or obstetric indication
- Percentages of planned caesarean sections without an obstetric or medical indication were higher for privately funded compared with publicly funded patients (less than 39 weeks: 60% versus 52%).

Given the emerging research on long-term effects of early-term births, practices need to be re-considered. Strategies to reduce rates of early planned birth should include: providing parents with information about short- and long-term adverse effects of early-term births, clinician education, improving data collection and monitoring and hospital-level public reporting of this indicator.



Source: Australian Commission on Safety and Quality in Health Care, Third Australian Atlas of Healthcare Variation, 2018.

High rates of antibiotic dispensing for children

The third Atlas found high rates of antibiotic dispensing for children aged 0 to 9 years – equivalent to one antibiotic prescription annually for every child. Rates were highest for children aged 0 to 4 years.

Australia has one of the highest rates of antibiotic medicine use in children compared with other similar countries. The use of antibiotics in children of this age group in Australia was three times the rates of Norway and the Netherlands in 2015. The very high

rates of antibiotic dispensing in Australian children suggest that antibiotics are frequently prescribed inappropriately – such as to treat viral infections where they have no benefit.⁷⁶

Overuse of antibiotics is potentially putting many children at risk of serious long-term adverse effects. Antibiotic use may change a child's normal gut bacteria and increase the risk of a number of conditions in later years including asthma and Crohn's disease.⁷⁷⁻⁷⁹



Source: Australian Commission on Safety and Quality in Health Care, Third Australian Atlas of Healthcare Variation, 2018.

Changes between the first and the third Atlases

The Commission will publish a report with further detail about these trends in Atlas topics in the near future, and will continue to monitor and publish data reflecting areas examined by the Atlases as a way of providing feedback to the health system.

Trends in data can signal where interventions are successful - and where greater efforts are needed. The third Atlas examined changes in rates of dispensing for commonly prescribed medicines between 2013–14 and 2016–17, as shown in **Table 4**.

Table 4: Changes in Australian national rates of medicines dispensing per 100,000 people, between 2013–14 and 2016–17

Type	Change	Comment
Antimicrobial medicines	9% decrease	This reduction is encouraging, given that rates of use of Australia are substantially higher than in some other countries, raising concerns about growing antibiotic resistance. Continued effort to improve use of antibiotics is needed.
Antipsychotic medicines for people aged 65 years and over	Little change	The current use of antipsychotic medicines outside current guideline recommendations as a form of restrictive practice to manage behavioural and psychological symptoms of dementia in aged care homes is a matter of grave concern. Efforts to reduce inappropriate use of antipsychotic medicines in Australia have included guidelines, safety warnings, education and policy. The Commission proposes a series of regulatory responses.
ADHD medicines for people aged 17 years and under	30% increase	Further investigation is required to determine whether this is due to increased incidence and diagnosis of attention deficit hyperactivity disorder (ADHD), or increased prescribing outside guideline recommendations. Ongoing vigilance is required to promote appropriate prescribing of these medicines.
Opioid medicines	5% increase	It is unclear whether these changes are due to more people requiring opioids for appropriate uses or an increase in inappropriate prescribing. Despite the number of regulatory efforts already in place to minimise harm from these medicines, continued focus on improving medicine use in this area is needed.

Source: Australian Commission on Safety and Quality in Health Care, Third Australian Atlas of Healthcare Variation, 2018.

Response to the Atlas series

The aim of the Atlas series is to provide clinically meaningful information that can be used to investigate and improve the appropriateness,

effectiveness and efficiency of health care. Examples of work by a number of groups to improve care in clinical areas analysed in the Atlas series are outlined in **Table 5**.

Table 5: Examples of initiatives to address unwarranted variation in Atlas topics

Atlas findings	Responses
<p>Anxiolytic medicines</p> <p>The rate of anxiolytic prescriptions dispensed for people aged 18-64 years was 4.8 times higher in some areas compared to others, 2013-14; and the rate of antidepressant prescriptions dispensed for people age 18-64 years was 2.8 times higher in some areas compared to others.</p>	<p>Tasmanian health services led improvements in prescribing through new mental health pathways, as well as education and audits (see Case study 4: A state response to high psychotropic medicines use).</p> <p>ACT Health implemented mental health pathways with general practitioners (GPs) to reduce unnecessary prescribing of antidepressants.</p> <p>The Royal Australian and New Zealand College of Psychiatrists has produced updated clinical practice guidelines on the management of mood disorders (depressive and bipolar disorders), schizophrenia and anxiety disorders, to provide greater clarity about treatment options and when medication is appropriate.</p>
<p>Antipsychotic medicines</p> <p>The rate of antipsychotic prescriptions dispensed for people 65 years and over was 7.1 times higher in some areas compared to others, in 2013-14.</p>	<p>Efforts to reduce inappropriate use of antipsychotic medicines in Australia have included guidelines, safety warnings, education and policy. The Commission proposes a series of regulatory responses.</p>
<p>ADHD medicines</p> <p>The rate of prescriptions dispensed for ADHD for people aged 17 years and under, in 2013-14.</p>	<p>Paediatricians are researching reasons for variation in prescribing medicines for ADHD, and antidepressants and antipsychotic medicines for children.</p>
<p>Knee arthroscopy</p> <p>Rate of admissions for knee arthroscopy in people 55 years and over was 7.1 times higher in some areas compared to others, in 2012-13.</p>	<p>The Medicare Benefits Schedule (MBS) Review Taskforce used Atlas data on knee arthroscopy to guide its review.</p> <p>The Commission released the Osteoarthritis of the Knee Clinical Care Standard⁶⁰ (see Case study 5: Falling rates of knee arthroscopy).</p>

Atlas findings

Responses

Chronic diseases

Potentially preventable hospitalisations due to several conditions showed substantial variation; for example, a 16-fold difference between the highest and lowest areas for chronic obstructive pulmonary disease (COPD); and a 12-fold difference for diabetes complications, in 2014–15.

The Queensland Clinical Senate met to discuss the Atlas findings and strategies to reduce potentially preventable hospitalisations.⁸¹

The Northern Territory Clinical Senate discussed Atlas findings at its inaugural meeting.

Colonoscopy

The rate of MBS-funded colonoscopies was 30 times higher in some areas than in others, and was lower in areas of low socioeconomic status (despite higher rates of bowel cancer in this group), in 2013–14.

The MBS Review Taskforce used Atlas data on colonoscopy to guide its review.

Hysterectomy

The rate of hysterectomy was 6.6 times higher in some areas than in others, and was markedly higher in regional areas than in major cities, in 2014–15.

The Commission released the Heavy Menstrual Bleeding Clinical Care Standard.⁸²

Caesarean section

The rate of Caesarean section in selected women aged 20–34 years was 3.0 times higher in some areas than in others, in 2012–2014.

AIHW adopted the Robson classification for reporting data on all births including caesarean section, as recommended in the first Atlas. Data reported using this system allows comparison of rates of caesarean section between groups with the same obstetric and neonatal risk factors. This makes it easier to see where variation in rates is likely to be due to differences in clinical practice rather than patient characteristics.

Source: Australian Commission on Safety and Quality in Health Care, 2019.

CASE STUDY 4

State response to high psychotropic medicines use

Several areas of Tasmania were among the highest users in Australia of anxiety and depression medicines in the first Atlas, and Hobart – North West had more than double the national average rate of use of anxiety medicines.⁵⁸ Differences in rates of anxiety and depression in the population did not account for these high rates. A lack of awareness of, and access to, non-medicine treatment for mental illnesses was thought to be a potential problem.

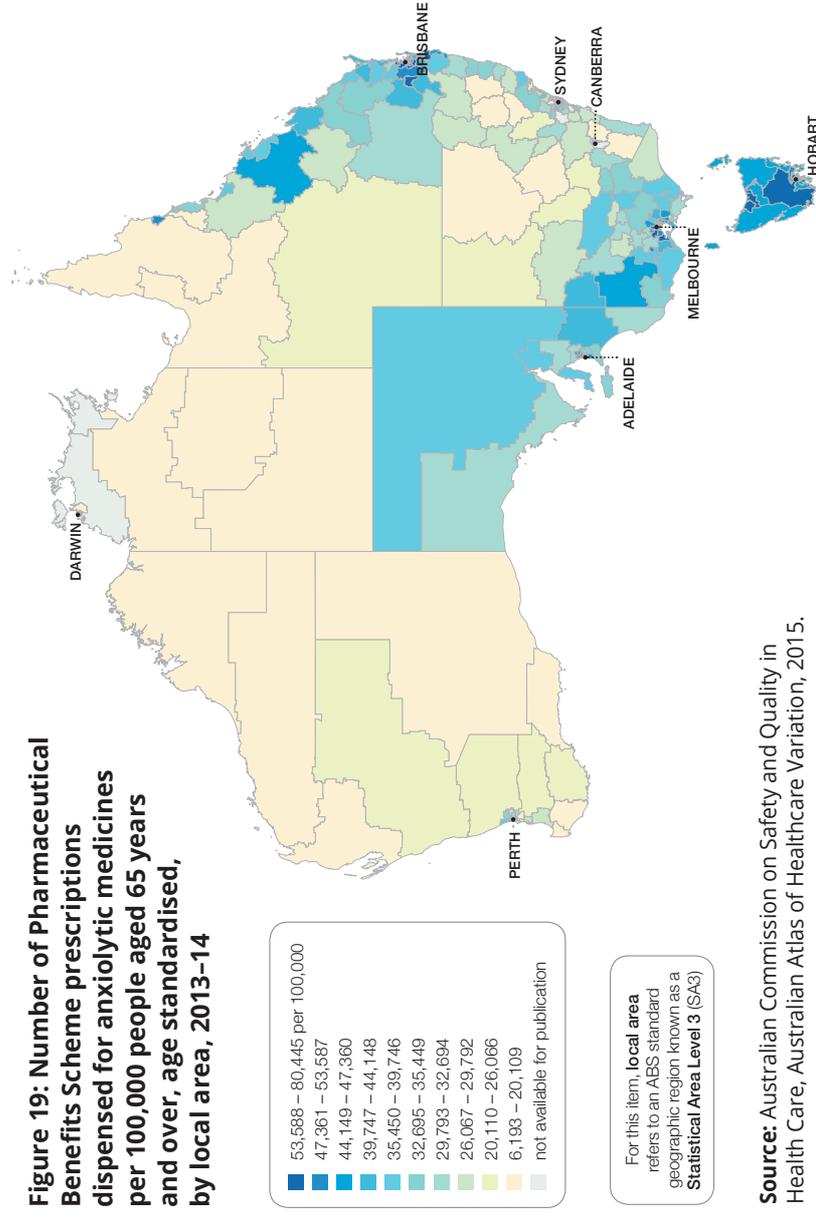
Primary Health Tasmania undertook a comprehensive needs assessment to gain a deeper understanding of the Atlas findings, and to see how resources to support optimal treatment of anxiety and depression could best be used. Staff from Primary Health Tasmania collaborated with other clinicians, including the Chief Psychiatrist, and consulted with the Chief Pharmacist, to look more closely at treatment of mental illnesses in different parts of Tasmania.

Primary Health Tasmania, together with the Tasmanian Health Service and the Department of Health and Human Services, took a multifaceted approach to improving the quality of clinical care. Quality improvement initiatives included:

- Auditing practice data
- Having conversations with clinicians in target areas and providing peer support to improve practice
- Developing de-prescribing resources and training clinicians in their use
- Developing and promoting Tasmanian Health Pathways for mental health.

The team assessed the availability of mental health services in different areas of Tasmania, and increased access where gaps were found. The team increased access to face-to-face social work and psychology supports, promoted patient self-management tools for depression and anxiety, and increased the use of GP Mental Health Treatment Plans.

Figure 19: Number of Pharmaceutical Benefits Scheme prescriptions dispensed for anxiolytic medicines per 100,000 people aged 65 years and over, age standardised, by local area, 2013–14



Source: Australian Commission on Safety and Quality in Health Care, Australian Atlas of Healthcare Variation, 2015.

CASE STUDY 5

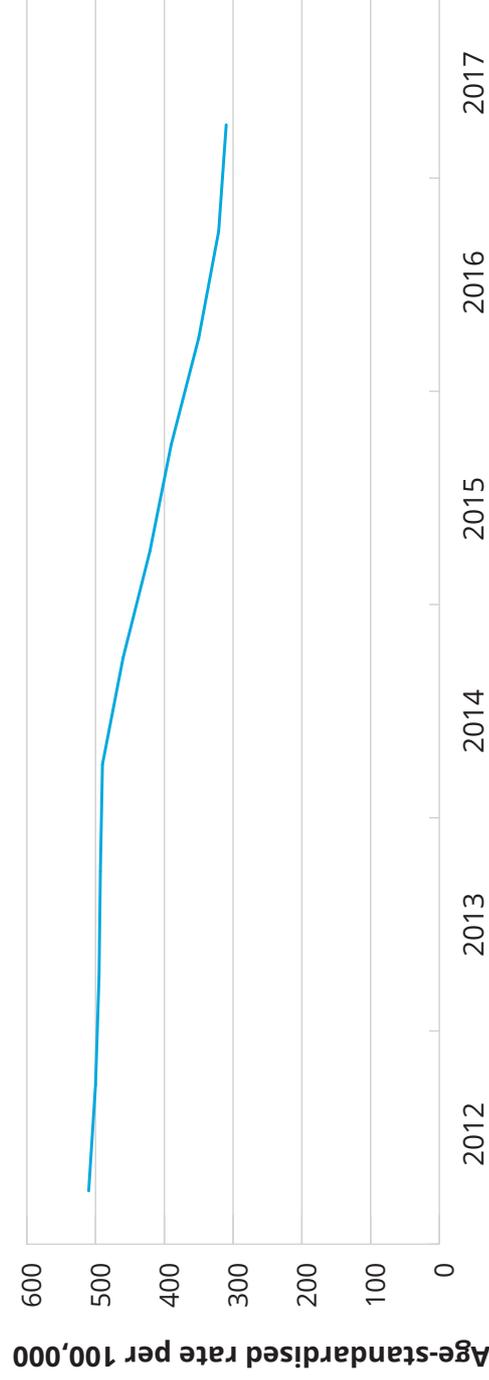
Falling rates of knee arthroscopy

Knee arthroscopy is a surgical procedure for examining the inside of the knee joint and, if necessary, repairing it. Arthroscopic procedures are not effective for treating knee osteoarthritis.^{83, 84} In older patients with knee pain caused by osteoarthritis or degenerative meniscal changes, arthroscopic procedures provide only minor pain relief, which is offset by an increased risk of harm, when compared with conservative management.⁸⁵ Exercise therapy

is more effective than knee arthroscopy for reducing osteoarthritic knee pain.⁸⁶ In 2015, the first Atlas reported that there were more than 33,000 admissions for knee arthroscopy in people aged 55 years and over in Australia in 2012–13.⁵⁸ The rate of admissions was seven times higher in the area with the highest rate compared with the area with the lowest rate. In light of the Atlas findings, the Commission released a clinical care standard for osteoarthritis of the knee (OAK)⁸⁰ and commissioned a documentary about appropriate care for knee pain. The Commission

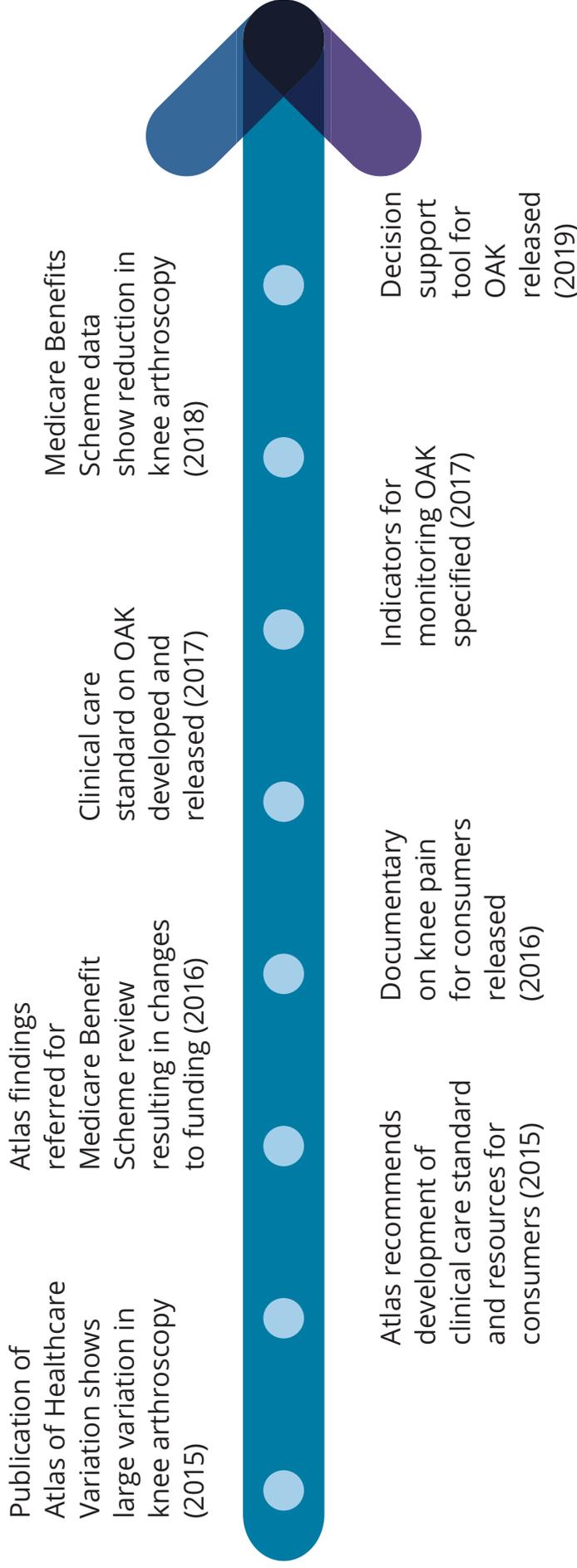
also referred the findings to the MBS Review Taskforce, which subsequently recommended removal of funding for knee arthroscopy for degenerative changes. The rate of knee arthroscopy in people aged 55 years and over in Australia fell from 412 per 100,000 in 2015 to 312 per 100,000 in 2017 – a 24% decline (Figure 20).⁸⁷ Figure 21 illustrates how the Commission used different types of resources, levers and approaches to influence and enact change within the health system on osteoarthritis of the knee.

Figure 20: Rate of knee arthroscopy in people aged 55 years and over, Australia, 2012–2017



Source: Australian Commission on Safety and Quality in Health Care analysis of MBS data, 2018.

Figure 21: Action by the Commission to improve treatment for osteoarthritis of the knee (OAK), 2015–2019



Source: Australian Commission on Safety and Quality in Health Care, 2019.

MOVING TOWARDS VALUE-BASED HEALTH CARE

Internationally, and within the Australian health system, there has been an increasing focus on delivering value-based health care for consumers and funders. Value-based health care is about achieving the best care possible for each patient while maintaining an efficient use of resources.⁵ Importantly, the strategy provides a common goal for patients, clinicians, provider organisations, administrators, governments and policy makers, because it places patient outcomes as the focus for health system performance.

Creating high-performing health systems involves delivering services that improve health outcomes that matter to patients; understanding and improving the experience of both staff and consumers; and ensuring the efficiency and effectiveness of healthcare delivery.⁸⁸

There is significant work happening across Australia towards refocusing health systems, and value-based health care has been the subject of discussions and seminars auspiced by national and state governments. The NSW Government in particular, has implemented a number of initiatives to deliver better outcomes for patients and better value for the NSW health system. The NSW Ministry of Health's Leading Better Value Care program is the state's core approach to value-based health care.⁸⁹

The literature and global discussion on value-based health care identifies a number of basic building blocks. The most common are: measuring patient outcomes (particularly patient reported outcomes) and related costs; a system of guidelines and standards for best

practice; identifying payment methods focusing on the outcome of care for a pathway or cycle of care; and an enabling information technology platform.⁹⁰⁻⁹³

The Commission has been supporting the achievement of value-based health care by fostering system change in five key areas to:

- Focus on people: understanding and responding to what matters to consumers and staff
- Measure and report on safety and quality: using data to identify, monitor and report on patient experience and outcomes, staff experience, costs and variation in practice. This means focusing on a new generation of outcome indicators that show how well health systems are serving people's needs, including patient reported experience and outcome measures
- Use evidence-based guidance and policy: using evidence to inform clinical practice and improvement
- Strengthen clinical governance: embedding accountability and strategies for safety and quality within organisational governance
- Embed safety and quality into national systems: using information and knowledge about safety and quality to inform national systems.

Figure 22 illustrates the Commission's key work in these areas, which are critical to delivering value-based health care.



Figure 22: Examples of Commission key work in supporting value-based health care

Commission action to strengthen clinical governance:

National Safety and Quality Health Service Standards (1st and 2nd ed.), accreditation scheme, National Model Clinical Governance Framework, clinical trials framework, electronic medication management, ehealth systems.

Commission action to support evidence-based policy and guidance:

Clinical care standards (ACS, stroke, colonoscopy, delirium, HMB, Hip fracture, OAK, VTE), policies and guidance (antimicrobial stewardship, mental health, cognitive impairment, comprehensive care, healthcare-associated infection, blood management, falls, clinical communication, pressure injuries, end-of-life care, medication safety) Atlas recommendations.

Commission action to embed national systems:

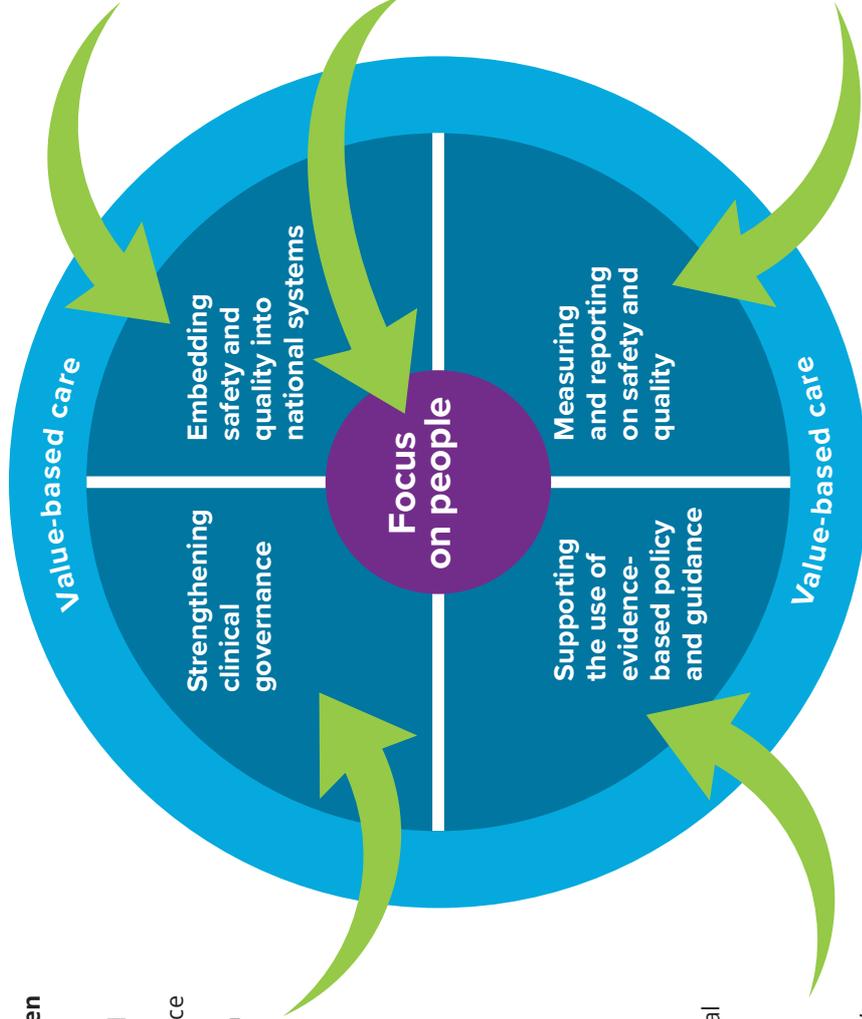
National Safety and Quality Health Service Standards (1st and 2nd ed.), accreditation scheme, funding and pricing models, MBS reviews, credentialing changes, clinical trials framework, MyHealth record safety, certification framework for digital mental health, electronic medication management, ehealth systems.

Commission action to focus on people:

Charter of Healthcare Rights, policy (person-centred care, health literacy, shared decision making, comprehensive care, clinical communication, teamwork, informed consent) AHPEQs, PROMs, safety culture, National Model Clinical Governance Framework, Australian Safety and Quality Framework for Healthcare.

Commission action on measuring and reporting on safety and quality:

Patient safety learning, and measurement systems; public and private reporting, registries, HACs, AHPEQs, sentinel event reporting, adverse event reporting, CHBOI, safety culture, Atlas reporting, Antimicrobial Use and Resistance Australia, patient reported outcome measures clinical trials, clinical care standards indicators, National Safety and Quality Health Service Standards indicators.



Source: Australian Commission on Safety and Quality in Health Care, 2019.

Note: acute coronary syndrome (ACS), Australian Hospital Patient Experience Questions (AHPEQs), core hospital based outcome indicators (CHBOI), heavy menstrual bleeding (HMB), Medicare Benefit Schedule (MBS), osteoarthritis of the knee (OAK), patient-reported outcome measures (PROMs), venous thromboembolism (VTE).

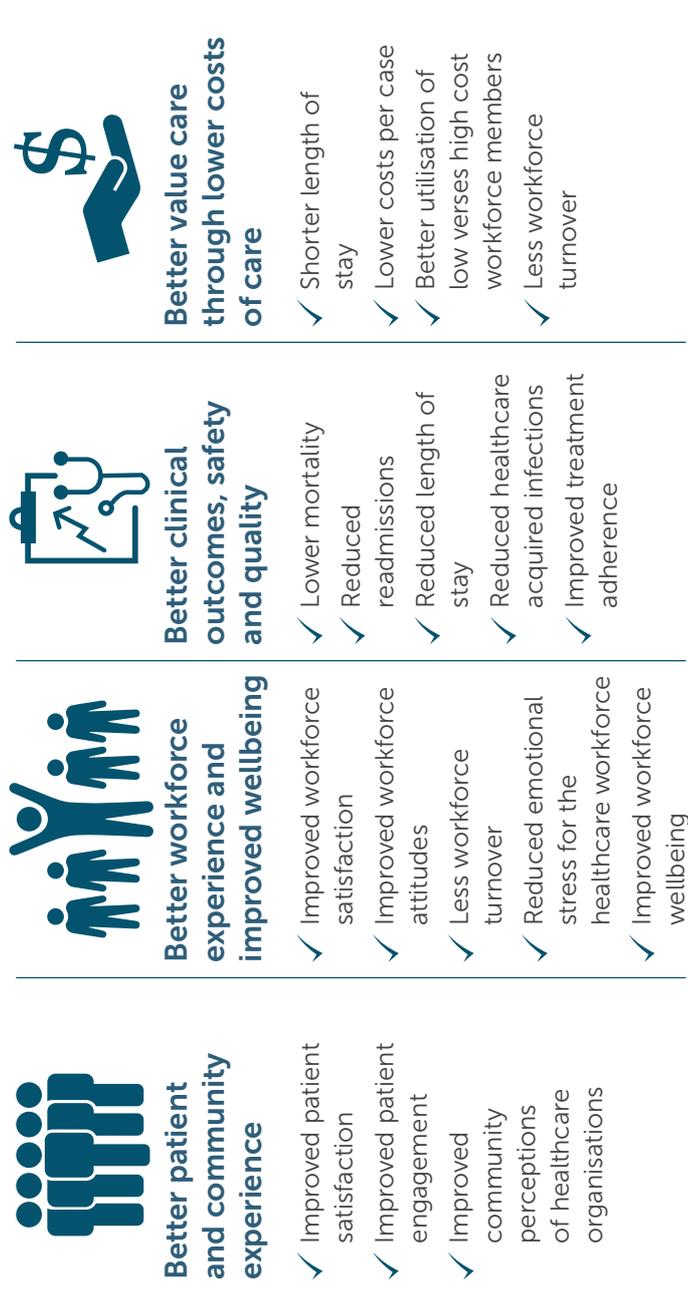
Focus on people

A key principle is to reorganise health care around patient values, rather than focusing on volume and throughput. Placing people at the centre of health care offers clear potential to improve the value delivered by health service organisations as it is integral to delivering care that matters to the patient. The potential benefits of having a focus on person-

centred health care are widely recognised and are illustrated in **Figure 23**.

In Australia, a person-centred focus is not new. An understanding of the importance of patient and staff experience, and the goal of delivering care that meets the needs and preferences of consumers, is reflected in national, state and territory policies, as well as in activities within individual health service organisations.

Figure 23: Benefits of person-centred care



Source: Australian Commission on Safety and Quality in Health Care, 2018.

The Commission's action

The Commission has embedded the principles of person-centred care within a range of national policies and frameworks such as the Australian Safety and Quality Framework for Health Care²¹, Australian Safety and Quality Goals for Health Care⁹⁴ and the Australian Charter of Healthcare Rights.²² This has been reinforced through the Partnering with Consumers Standard in the first and second editions of the NSQHS Standards, which places an increasing emphasis on the need for health service organisations to engage with consumers as partners in their own care, as well as involving consumers as partners in governance systems and processes.

The Commission has also provided guidance on measuring patient experience as a means of identifying whether health care is person-centred, and has developed the AHPEQS, a non-proprietary question survey instrument which assesses core aspects of patient experience.³³

CASE STUDY 6

Identifying attributes of organisations that excel in person-centred care

In 2018, the Commission published a review identifying key attributes of high-performing person-centred healthcare organisations and the benefits of embedding person-centred care into systems.⁹⁵

The identification of these attributes helps healthcare organisations identify and prioritise areas of action to support a person-centred focus. See **Figure 24** for the seven attributes identified through this work.

Figure 24: Attributes of high-performing person-centred healthcare organisations

Source: Australian Commission on Safety and Quality in Health Care, 2018.



Measure and report on safety and quality

A fundamental step towards creating a high-performing health system is the standardised measurement of outcomes that matter to the patient. Standardised measures can be used by clinicians to improve interventions and care for patients, and can be used by system managers, government and national agencies to encourage gains in safety, quality and patient outcomes.

This requires monitoring, measurement, reporting, learning and action at all levels of the health system – making the information available to patients, carers and consumers, clinicians, hospitals, administrators, policy-makers and government, so that learning and improvements can be made.

A multifactorial approach to monitoring and reporting on patient safety and quality is becoming increasingly common nationally and internationally, and systems implementing this approach are realising improved outcomes as a result.

People want to be assured that health care is safe and high-quality. Providing this assurance requires robust measurement and reporting of data that meaningfully and usefully assesses patient safety, and appropriateness of care.

Measurement and reporting on safety and quality informs people designing, delivering and funding health care about any gaps or variation in the

delivery of health care; the impact of improvement activity; and how a health service organisation performs compared with national and international standards. Key to effective measurement is:

- Ensuring robust health information standards and clinical indicators are available for health service organisation and system use
- Providing a model for local, regional and national monitoring of patient safety and quality
- Supporting consistent and transparent public reporting on safety and quality by all sectors of the health system, including both public and private hospitals.

Some guiding principles that are core to safety and quality measurement are identified in **Box 9**.

Box 9: Ten guiding principles for safety measurement and monitoring

In 2014, Vincent described ten guiding principles for safety measurement and monitoring in health care. These included:

1. “A single measure of safety is a fantasy
2. Safety monitoring is critical and does not receive sufficient recognition
3. Anticipation and proactive approaches to safety
4. Integration and learning: invest in technology and expertise in data analysis
5. Mapping safety measurement and monitoring across the organisation
6. A blend of externally required metrics and local development
7. Clarity of purpose is needed when developing safety measures
8. Empowering and devolving responsibility for the development and monitoring of safety metrics is essential
9. Collaboration between regulators and the regulated is critical
10. Beware of perverse incentives.”⁹⁶

National reporting

Australia has been described as lagging behind and ‘less advanced’ than many countries when it comes to public reporting of healthcare safety and quality. In Australia, there are multiple channels of public reporting across the public and private sectors and locally, but no consistent, readily accessible, national public reporting of patient safety and quality healthcare outcomes across the hospital sector.

A number of reports have signalled a commitment by the Australian Government for increased transparency in reporting about health services, particularly to:

- Promote informed decision-making by the people using those services
- Contribute to quality improvement and quality assurance.

In October 2017, the Australian Government Productivity Commission released the report *Introducing Competition Informed and User Choice into Human Services: Reforms to human services*.⁹⁷ One area of focus for the report was improving consumer choice through increased transparency and public reporting. Recommendation 11 focused on information to support patient choice and self improvement by healthcare providers, and included strengthening and expanding public reporting.

In 2011, the Australian Government introduced the MyHospitals website⁹⁸, the only nationally consistent and comparable public reporting system for public and private providers (mandatory for public hospitals, but voluntary for private sector providers). Currently, owing to methodological challenges and

lack of data, only seven of the 17 proposed indicators are reported.

Despite the extent of public reporting of health information occurring in Australia, this information is not well known to clinicians and the public, and there is limited awareness of the MyHospitals website.

Australian governments are committed to increased transparency in reporting about public services, and recently created the Australian Health Performance Framework (AHPF)⁹⁹ which provides a single health-system wide reporting framework that takes into account factors that influence service delivery and health and workforce outcomes. The AHPF provides a structure for national reporting, but it does not yet contain a contemporary, discrete set of indicators that would give summary information on patient safety and quality health care in both public and private hospitals nationally. The AHPF is designed to ‘support achievement of the National Healthcare Agreement objective: to improve health outcomes for all Australians and ensure the sustainability of the Australian health system.’⁹⁹

In August 2017, the COAG Health Council asked the Commission to identify options to align public reporting standards of patient safety and quality health care across public and private hospitals nationally. The COAG Health Council intended that the output of this work be incorporated into the national work being progressed on the AHPF.

Local reporting

There are varying degrees of public reporting across the states and territories, ranging from well-developed public reporting mechanisms such as those in South Australia¹⁰⁰, Queensland¹⁰¹ and New

South Wales¹⁰², to other less developed models. Although most hospitals in Australia measure and collect information on adverse events, clinical incidents, and other patient clinical record data, the indicators used for collection are not consistent across the sector, and it is not always clear how the information collected is used for local improvement.

The Commission’s action

The Commission has been working on developing a defined set of indicators – common specifications for measuring safety and quality consistently and transparently. The Commission has developed this set of indicators for local monitoring and reporting, and is now working on specifying those indicators for consistent national reporting. The indicators have largely been designed for automatic capture from multiple sources – including the electronic health record in states and territory jurisdictions and (in the future) My Health Record nationally. The Commission acknowledges the importance of contemporary real-time data as a long-term goal and preference.

The set of indicators form the core components of a national patient safety measurement tool, or framework, which the Commission is currently developing. Further information on this framework is included on pages 71 to 73.

The Commission is also proposing that the indicators be specified for use as standards for public reporting – this proposal will form part of the advice to COAG Health Council on options to align public reporting standards of patient safety and quality health care across public and private hospitals nationally. **Table 6** shows the potential indicators mapped against AHPF health system reporting dimensions.

Table 6: Examples of potential indicators mapped to reporting measures for safety and quality

AHPF health system dimension	Reporting measure	Potential indicator / indicator status
Safety	Compliance with national health service standards (NSQHS Standards)	Accreditation status and reason for failure, presented by hospital; standard specifications developed by the Commission
	Patient outcomes	Mortality Avoidable hospital readmissions
	Adverse events	Hospital-acquired complications set <i>Staphylococcus aureus</i> bacteraemia surveillance Australian Sentinel Events list
Appropriateness	Patient reported measures	Australian Hospital Patient Experience Question Set (see Case study 7) <i>Patient reported outcome measures*</i>
	Staff safety culture	<i>Patient safety culture survey*</i>

*The Commission is investigating feasibility of indicators.

CASE STUDY 7

The Australian Hospital Patient Experience Question Set

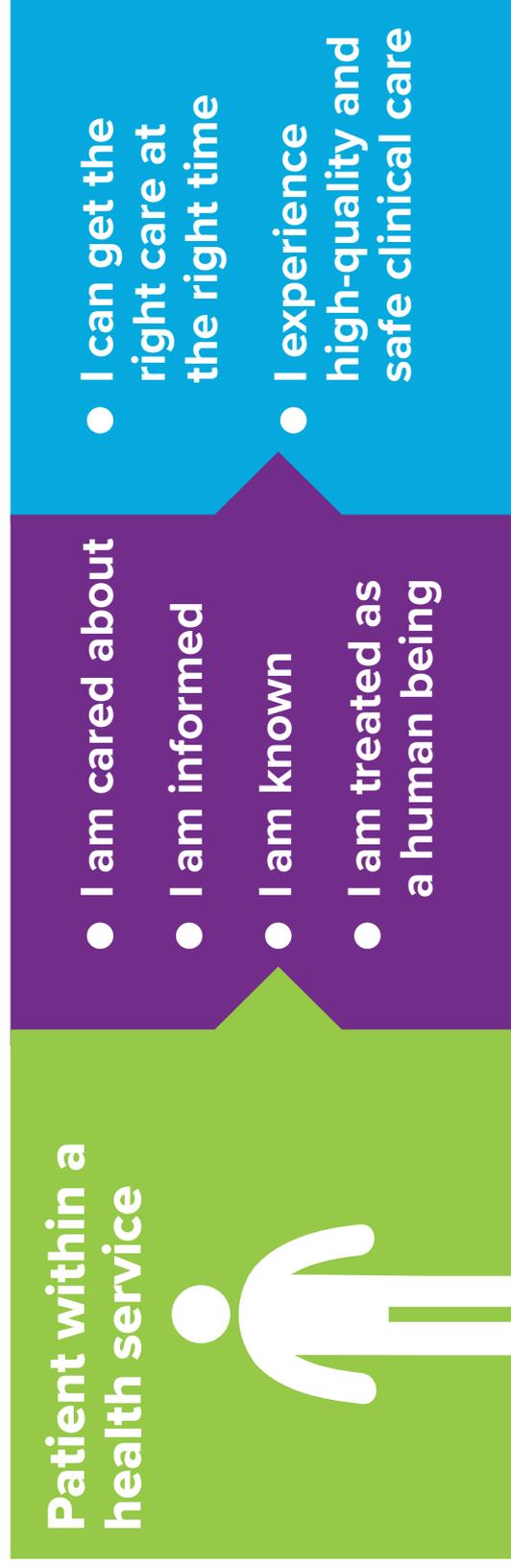
The Australian Hospital Patient Experience Question Set (AHPEQS) is a tool developed to assess the person-centeredness of health service organisations. It was originally commissioned by Health Ministers to be a data source for the

nationally consistent measurement of patients' healthcare experience.

The AHPEQS is a non-proprietary 12-question survey instrument which assesses core aspects of patient experience without placing undue time burdens on the person. The short, generic and simple nature of the tool will enable systematic and routine capture and use of patients' perspectives on the quality

and safety of their health care in a way that is efficient for funders, providers and patients. The questions may be used free of charge by organisations in both public and private sectors. The Commission is now working to establish a methodology for potential future nationally-consistent measurement of patients' experiences using the questions.

Figure 25: Domains for Australian Hospital Patient Experience Question Set



Source: Australian Commission on Safety and Quality in Health Care, 2018.

Use evidence-based policy and guidance

Evidence-based policy and guidance provides a foundation for delivering safe and high-quality care. It provides information about what is known to work in health care, and also reinforces the imperative to continually build the evidence base to better inform future decisions and action. Using an evidence-based approach is grounded in rigorous research, data, analytics, and evaluation of new innovations.

Sometimes it can be challenging for health service organisations and clinicians to keep up to date with changes to the evidence base, guidance and best practice for health care in an environment burdened with competing information and priorities. The collation and distribution of evidence-based guidance and policy from a trusted source provides a valuable service to the health system.

The Commission's action

The Commission's work involves the development of evidence-based policy and guidance, and includes:

- Undertaking and using research to inform new policies and guidance to improve the safety and quality of health care
- Supporting data collection and analysis to inform decision making and approaches
- Developing policies that incentivise the use of evidence-based approaches.

The Commission has developed a range of clinical care standards describing quality care for a range of conditions where there has been variation

in practice. **Box 10** gives information on clinical care standards. In addition, the Commission has developed evidence-based guidance, policies and national consensus statements on a range of topics that have been identified as areas where safety and quality improvement could be made across the health system. The topics for these include mental health, cognitive impairment, comprehensive care, healthcare-associated infection, antimicrobial stewardship, blood management, falls, clinical communication, pressure injuries, end-of-life care, medication safety and others.

Box 10: Clinical care standards

Clinical care standards play an important role in guiding the delivery of appropriate care and reducing unwarranted variation.

The Commission has developed clinical care standards on antimicrobial stewardship, acute coronary syndrome, acute stroke, colonoscopy, delirium, heavy menstrual bleeding, hip fracture, osteoarthritis of the knee, and venous thromboembolism.²⁶

Each clinical care standard is developed in collaboration with a topic working group of clinicians, researchers and consumers, using the most current evidence from guidelines and standards, information about gaps between evidence and practice, their expertise and knowledge of the issues affecting the

appropriate delivery of care, and consideration of issues that are important to consumers.

Clinical care standards:

- Help people to know what care to expect for a particular clinical condition; help them make informed decisions about treatment in collaboration with their health professional
- Provide guidance to health professionals so they can deliver quality care and have informed discussions about treatment options with their patients
- Set out the components of care that health services can use to guide practice and monitor improvement in their hospitals and other services where the clinical care standard is applicable.²⁶

The National Model Clinical Governance Framework

Since 2015, a number of state and territory governments have engaged the Commission to review identified patient safety problems. These reviews have shown that some health service organisations have problems implementing key clinical governance processes. Issues that have been identified during these reviews include problems with:

- Implementing an open disclosure response consistent with national and local standards
- Ensuring that incident management and investigation systems can provide adequate surveillance to recognise major safety failures or risks
- Implementing corrective action in response to identified patient safety risks and failures
- Establishing complaint management systems that include a partnership with patients and carers
- Ensuring a robust and positive safety culture
- Clearly understanding the roles and responsibilities of boards, the executive, clinical teams and clinicians in clinical governance.

Clinical governance is the set of relationships and responsibilities established by a health service organisation between its state or territory department of health (for the public sector), governing body, executive, workforce, patients, consumers and other stakeholders to ensure good clinical outcomes. It ensures that the community and health service organisations can be confident that

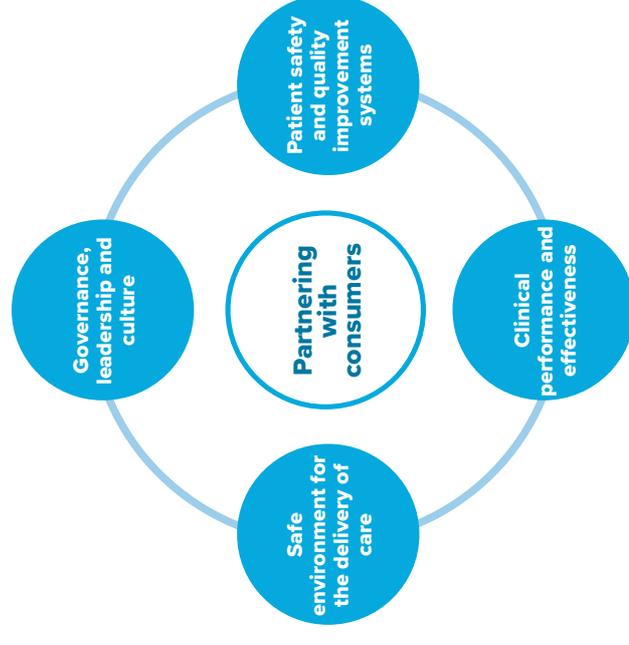
systems are in place to deliver safe and high-quality health care, and continuously improve services.

Clinical governance is an integral component of corporate governance of health service organisations. It ensures that everyone – from frontline clinicians to managers and members of governing bodies, such as boards – is accountable to patients and the community for assuring the delivery of health services that are safe, effective, integrated, high quality and continuously improving.

The Commission developed the National Model Clinical Governance Framework (the Framework)⁹ to improve clinical governance. It provides a consistent national framework for clinical governance that is based on the NSQHS Standards. It supports a shared understanding of clinical governance among everyone working in health service organisations, including clinicians, managers and members of the governing body. The Framework has five components as illustrated in **Figure 26**.

The Framework applies to public and private health service organisations in the acute sector, and is mandatory for health service organisations that need to meet the requirements of the NSQHS Standards.

Figure 26: National Model Clinical Governance Framework



Source: Australian Commission on Safety and Quality in Health Care, 2017.

Embed safety and quality into national systems

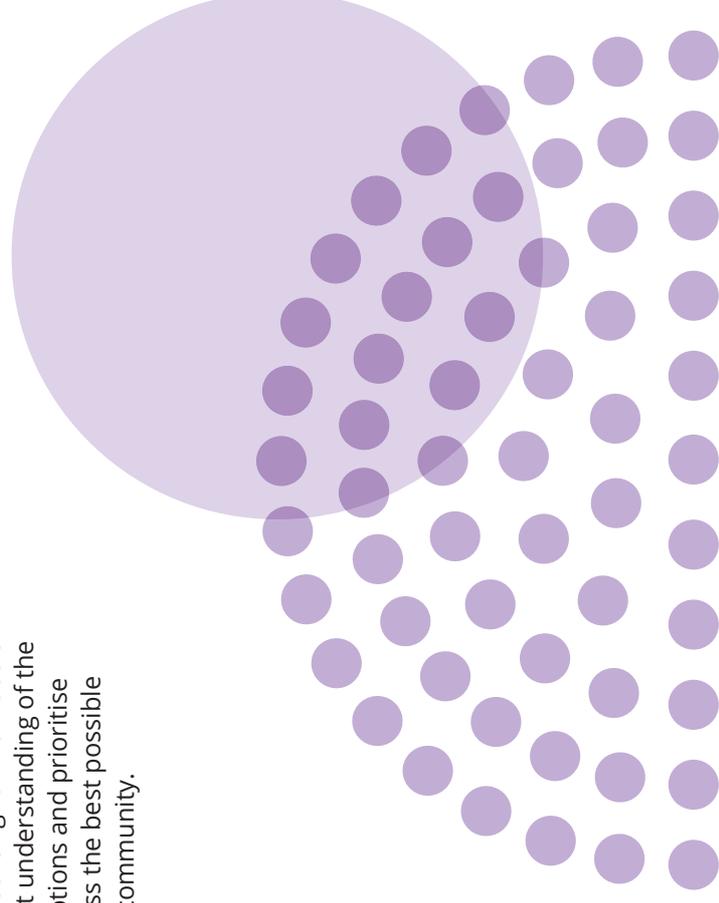
Embedding safety and quality into national systems involves using knowledge and evidence about a person-centred focus; evidence-based policy and guidance; and measurement and reporting of safety and quality into the overarching systems and structures that influence the way health care is delivered. These systems and structures include credentialing, professional registration, professional education, accreditation, funding and legislation.

It is about ensuring that national systems and structures are focused on delivering and funding value-based care that improves patient experience and outcomes, rather than simply rewarding activity. Using knowledge about patients' outcomes and experience, combined with resourcing for individuals and the system help to support understanding of the value of different treatment options and prioritise resourcing for patients to access the best possible care for themselves and their community.

The Commission's action

The Commission has accumulated significant knowledge and expertise in key areas of healthcare variation where safety and quality improvements can be implemented. The NSQHS Standards are a key example of action to support health service organisations to provide safe, quality care that is based on embedding evidence-based approaches into the policies, practices, systems and governance that guide everyday care. **Case study 8** illustrates how developing evidence-based policy and guidance and embedding it into systems through the NSQHS standards can contribute to improved outcomes for patients.

In addition, the Commission has developed credentialing requirements for areas where there have been identified risks for patients. It is also developing a national clinical trials framework for greater consistency and application of clinical trials within health service organisations, and is working with partner agencies to integrate safety and quality into funding and pricing (**Box 11**).



Box 11: Funding and pricing for safety and quality

There is a substantial body of research arguing that healthcare pricing models should reward quality and safety. Therefore having a focus on value-based care requires a consideration of pricing and funding systems in health care. There are four commonly used models for funding or pricing health care in Australia:

- **Best-practice pricing:** evidence-based decisions on what constitutes 'best practice' for treatment of a particular condition, then applying a price to the provision of this best-practice package of service or model of care
- **Normative pricing:** use of price to influence the delivery of care (for example, to provide more in-home care for certain conditions)
- **Quality structures pricing:** linkage of the accreditation standards to funding in the private hospital system
- **Payment for Performance (P4P) or Safety and Quality pricing:** linkage of quality, safety and funding through the imposition of financial incentives and/or disincentives for certain behaviours or outcomes.¹⁰³

In Australia, Australian Government funding for hospitals is directed to Local Health Networks rather than to specific hospitals or to clinical departments within hospitals. However, the international literature indicates that incentives built into the model at this level would not be effective unless those incentives flow down to the hospital or ward.¹⁰³

Research has shown that best practice and normative pricing models are generally considered to be better than pay for performance in creating incentives for new models of care but many models are narrow in scope.¹⁰³ It is important to note that the strongest evidence overall on how to genuinely improve quality and safety exists for clinical quality registry and benchmarking systems, which use clinical registry data to compare the performance of providers, to identify best practice and to drive improvements in quality and patient outcomes.

In 2015 and 2016, IHPA and the Commission investigated best-practice pricing options for funding some hip fracture care. This approach would see purchasing of healthcare services for hip fracture care at a price that reflects the elements that constitute best practice. The best-practice price was proposed to align with the Commission's Hip Fracture Clinical Care Standard as it forms the evidence-base for a national care pathway for hip fracture care which has support from clinicians and consumers. In its annual pricing framework, IHPA noted that it would not proceed with the model in the short term, but would work with jurisdictions and other stakeholders to further examine the viability and implications of implementing a best-practice pricing approach for hip fracture care in future years.²⁵

See page 27 for more information about how the Commission is working to integrate safety and quality into pricing.

CASE STUDY 8

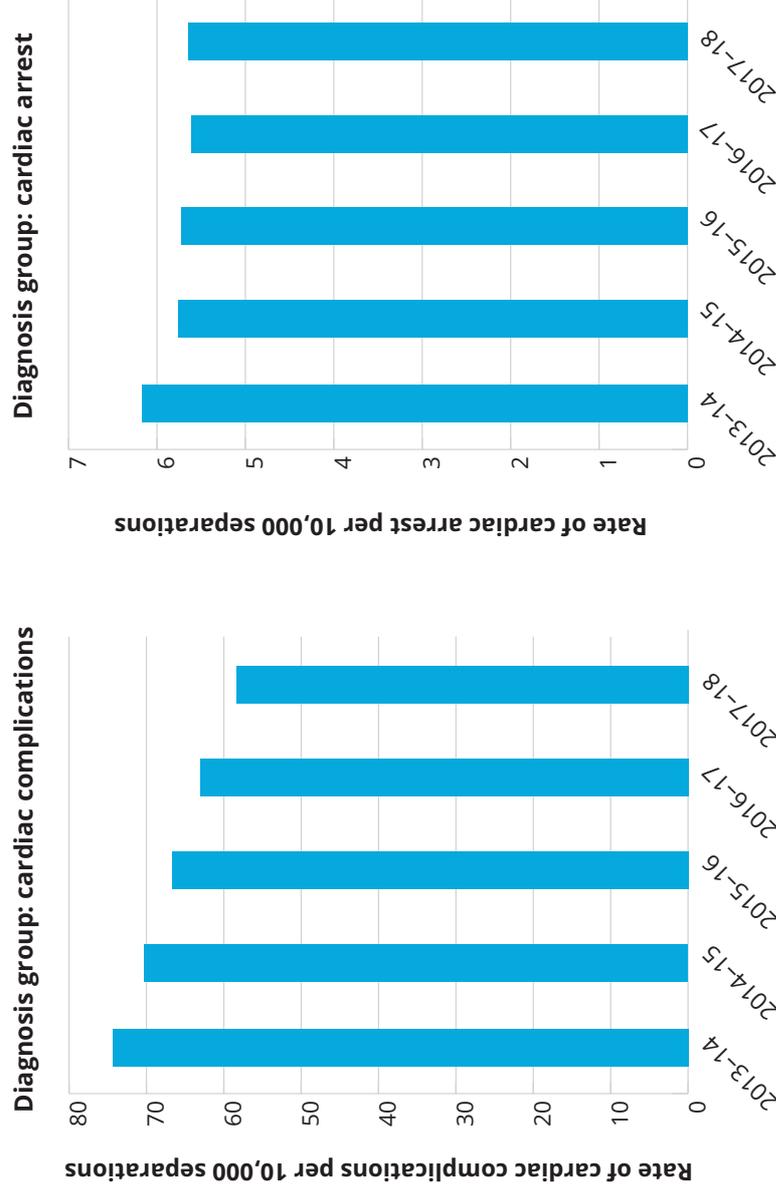
Reducing cardiac complications through better recognition and response systems – from policy to standards to change

Each year, patients in Australia experience almost 31,000 cardiac complications while in hospital.¹⁰⁴ These complications range from unstable angina, through to acute myocardial infarction, arrhythmias, pulmonary oedema and even cardiac arrest.⁴² Reductions over time in the rate of cardiac complications and cardiac arrest rates, demonstrate how evidence-based interventions at the national system, state and territory and local level are working together to enhance patient safety (Figure 27).²⁸

In 2010, the Commission published a National Consensus Statement (the consensus statement) outlining eight essential elements for recognising and responding to clinical deterioration in hospitalised patients.¹⁰⁵ NSQHS Standard 9: Recognising and Responding to Clinical Deterioration in Acute Health Care arose from this consensus statement.²⁸

Many states and territories have been active in this area and there has been considerable change in systems for managing the deteriorating patient and the nature of rapid response systems including a greater use of early warning tools, graded response protocols and structured handover. The reductions in rates of cardiac arrests reflect their work and the initiatives in individual hospitals over more than two decades, as well as the impact of the NSQHS Standards and other Commission initiatives.²⁸

Figure 27: Rates of in-hospital cardiac complications and cardiac arrest, Australia, 2013–14 to 2017–18



Source: Admitted Patient Care National Minimum Data Set, 2013–14 to 2017–18.

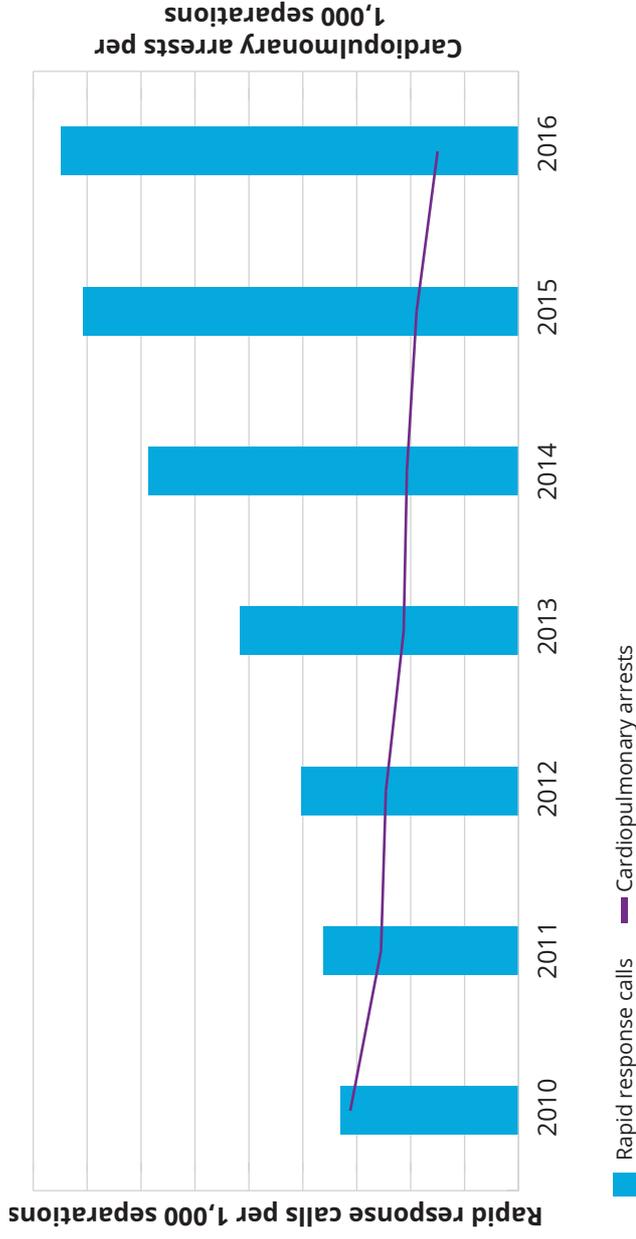
Note: Public hospitals only, which meet the robust condition onset flag coding criteria, all care types. Rates are per 10,000 separations.

Case study 8 continued

An example of the impact of state and territory action can be seen in the findings from the NSW Between the Flags program. Implemented in NSW public health facilities in 2010, the program's key elements align with NSQHS Standard 9 and include a focus on governance, standard calling criteria,

clinical emergency response systems, education and evaluation.¹⁰⁶ Findings from the program indicate that from 2010-2016, the rapid response call rate increased by 156% and the cardiac arrest rate decreased by 51.5% in NSW (**Figure 28**).²⁸

Figure 28: Unexpected cardiopulmonary arrest rates and rapid response call rates per 1,000 acute separations – Between the Flags NSW, 2010–2016



Source: NSW Clinical Excellence Commission, 2017.

THE COMMISSION WILL SUPPORT HEALTH SERVICES DURING 2019–20

Supporting implementation of the second edition of the NSQHS Standards

The second edition of the NSQHS Standards addresses gaps identified in the first edition, including mental health and cognitive impairment, health literacy, end-of-life care, and the health of Aboriginal and Torres Strait Islander peoples. It also updates the evidence for actions, and consolidates and streamlines standards and actions to make them clearer and easier to implement. Assessment to the second edition commenced from 1 January 2019.¹⁰⁷

The Commission is supporting health service organisations in a range of ways to transition to the second edition of the NSQHS Standards through the development of information, education and guidance. This includes:

- Guides, advisories, workbooks and fact sheets on meeting the requirements for hospitals, small hospital and multi-purpose services, and day procedure services
- Tailored information and user guides describing strategies for implementing NSQHS Standards with specific patient populations including children, Aboriginal and Torres Strait Islander peoples, people with mental health conditions,

- chemotherapy patients, people with cognitive impairment, and people at the end of life
- Education modules, fact sheets and user guides for different people working within the health system including assessors, clinicians, quality managers, board members, chief executive officers and others.
- All of this information, education and guidance has been brought together into a custom built microsite to ensure it is easy for health service organisations, consumers, assessors and regulators to find and use.

The Commission is working closely with state and territory regulators, accreditation agencies and health service organisations as implementation of the second edition of the NSQHS Standards progresses to inform the development of new guidance and support, and identify areas for improvement and action.



Improving the reliability of the accreditation process

In 2016-17, the Commission undertook a comprehensive review of accrediting agencies, including a review of the approval process and held performance review meetings with all approved agencies. During this, state and territory regulators and chief executives of health service organisations raised concerns about the reliability of the assessment process. They particularly noted that, in their view:

- Assessment processes did not reliably verify that a health service organisation's safety and quality systems were operational and effective
- There can be variation in how assessors interpret the intent and requirements of the NSQHS Standards
- Accreditation can be awarded, with later reviews finding clinical governance was not fully embedded.¹⁸

The Commission is responding to industry concerns and is implementing six strategies to improve the reliability of the accreditation process, described in **Box 12**. Combined, these strategies will ensure the accreditation process will more accurately assess a health service organisation's compliance against the NSQHS Standards, rather than examine their preparedness for an assessment. Implementation of these strategies commenced, along with the second edition of the NSQHS Standards, from January 2019.

Box 12: Strategies to improve the reliability of the accreditation process

Strategy 1: Improve the veracity of health service organisation assessments
Standardise the length of cycle and assessments; amend rating scale; test high-risk scenarios; assessment conducted at short notice; standardise reporting by accrediting agencies to health service organisations; require repeat assessment if actions are not met; use of patient journey methodology; clinical governance attestation statements; describe flexible transition arrangements for the first year of operation

Strategy 2: Improve the effectiveness and expertise of the assessment team
Improve the oversight and feedback on accreditation agency performance; develop a structured assessment methodology for the Clinical Governance and Partnering with Consumers Standards; provide orientation and training for assessors in the NSQHS Standards

Strategy 3: Assess the health service organisation's safety and quality data to better inform assessment processes
Use administrative and clinical data to target assessments; prescribe the data to be reviewed by assessors

Strategy 4: Improve regulatory oversight
Reduce the need to comply with other safety and quality standards; address conflicts of interest

Strategy 5: Improve communications about the assessments and their outcomes
Public reporting on assessment outcomes; communicate with stakeholders about accreditation

Strategy 6: Improve resources and support for health service organisations
Support health service organisations before assessment; formalise internal assessments against the NSQHS Standards for health service organisations; provide guidance about the use of patient journey methodology by health service organisations.¹⁸

Promoting rapid knowledge exchange through the establishment of a national safety and quality portal

The Commission will establish a national centralised repository for reviews of important patient safety practices. This will provide clinicians, health service organisations, patients, carers, consumers and others with an accessible mechanism for obtaining objective, detailed information on the evidence supporting the effectiveness of patient safety practices.

The establishment of this portal complements the Commission's work in supporting the use of evidence-based guidance, strategies and standards for the improving the safety and quality of health care. It is expected that a range of patient safety practices will be reviewed against the following domains: scope of the problem, strength of evidence for effectiveness, evidence on potential for harmful unintended consequences, estimate of costs, how much is known about implementation and how difficult the practice is to implement.

Collection and review of patient safety practices for inclusion in the portal is likely to involve:

- Commissioning the development of systematic reviews to provide comprehensive, evidence-based information on common, costly medical conditions, and new healthcare technologies and strategies

- Developing a tool to allow comparison of patient safety practices, which would allow the generation of side-by-side comparisons for any combination of two or more practices
 - Establishing an electronic forum for exchanging information on patient safety practices, their development, implementation and use
 - Compiling a centralised annotated bibliography of patient safety practices where users can search for citations for publications and resources
- safety practices, including practice development and methodology, structure, evaluation and implementation.

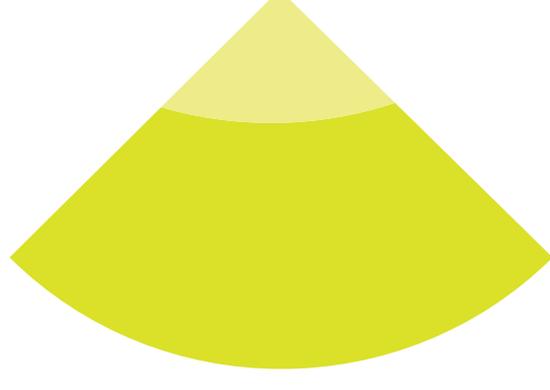
Supporting quality improvement and health learning systems through measuring and monitoring safety

Measurement is an important part of safety and quality improvement. Collecting, reporting and acting on data about safety and quality supports accountability and transparency in service provision, but effective reporting is an ongoing challenge, as it requires multiple measures at different levels of the system.²⁹

Measurement and reporting are tools which can be used to inform policy levers, which ensure that action is taken to improve, learn from, and spread good practice. Action is enabled at practice level, organisational level and system level through sound reporting and information sharing.²⁹

In Australia, reporting standards and measures differ across states and territories, and between the private and public sectors, and there is little publicly available information on health service quality and patient safety. The lack of a single source of data that provides comprehensive information, or a single set of measures or indicators that could be used to reflect the state of safety and quality, compromises understanding and identification of safety and quality issues. It also makes it difficult for patients and consumers to access useful information to inform their decisions and restricts the health system's ability to learn and evolve.

Significant progress has been made, as described in this report, to improve the safety and quality of the Australian health system, and there are many excellent examples of learning systems developed by some states, by the private sector and by health providers. **Box 13** provides some details of the SA Health Safety Learning System.¹⁰⁸



Box 13: SA Health's Safety Learning System

SA Health's Safety Learning System is an application that enables all SA Health services to record, manage, investigate and analyse patient and worker incidents, consumer feedback and notifications. The Safety Learning System facilitates good clinical governance by providing a single coordinated system that allows for consistent and coordinated review and reporting. The domains included are:

- Clinical incidents
- Worker incidents
- Security incidents
- Consumer feedback
- Notifications, including for medical indemnity, coronial notifications, alleged sexual assault or sexual misconduct and employee disciplinary matters.¹⁰⁸

Introduction of the Australian Health Performance Framework⁹⁹ provides a single, flexible approach for reporting on health and healthcare performance. It will support the assessment and evaluation of value and sustainability, and inform the identification of priorities for improvement and development.

To advance measurement and monitoring of safety and quality further, what is now needed is a national model that details key safety and quality measures and indicators, as well as guidance about how to use this information at different levels of the health system to bring about change and improve outcomes.

Measuring and reporting on patient safety and quality health care

A robust patient safety monitoring system measures multiple elements of patient safety. The Commission continues to progress work on a range of measures that can be monitored together to obtain a comprehensive and accurate picture of patient safety; and provide relevant information that can be fed back to clinicians to encourage improvements. These measures use multiple sources of data including data that is routinely coded from the patient clinical record (International Classification of Diseases) data. They include:

- Accreditation against the NSQHS Standards
- A suite of outcome indicators (mortality)
- The national list of HACs
- Surveys of patient hospital experience (AHPEQS) – patient reported measures
- Structured analyses of selected sets of incident types

- Surveys of organisational safety culture.

The model is being designed to apply across different levels of the health system. The information generated by monitoring and collection of planned core common metrics will help to address the approaches to patient safety, set out below, as suggested by Vincent for safety measurement and monitoring¹⁰⁹:

- Past harm
- Reliability
- Sensitivity to operations
- Anticipation and preparedness
- Integration and learning.

The utility of these core common metrics is that they can be used to evaluate multiple areas concurrently, to give a holistic view of the safety and quality of the health system. These metrics should be reviewed together to identify appropriate safety and quality improvement strategies, and like the work done by the Health Foundation in the United Kingdom, the model will provide a guide to applying the information at different levels of the health system to drive action.¹¹⁰

The Commission has already developed CHBOI (mortality indicators), the HACs set, *Staphylococcus aureus* bacteraemia surveillance indicators, the Sentinel events list, and the AHPEQS. These indicators were largely developed for use as local-level safety and quality monitoring tools, with the aim of supporting safety and quality improvement initiatives in public or private hospitals. Two additional areas of focus for the development of common safety and quality metrics are patient

reported outcomes measures (PROMs), and patient safety culture measurement.

Patient reported outcomes measures

There has been increasing interest and activity in the development of PROMs, as they provide a systematic way to assess the effectiveness of healthcare interventions from the patient's perspective. They record the patient's assessment of how health services and interventions have, over time, affected their quality of life, daily functioning, symptom severity, and other dimensions of health which only patients can know. PROMs promise to fill a vital gap in our knowledge about outcomes and about whether healthcare interventions actually make a difference to people's lives.

Evidence to support the use of PROMs to inform quality improvement is growing internationally. The evidence is strongest for their use in understanding variation in clinical practice, as they can help in determining the relative effectiveness of different treatments and interventions. However, there is also emerging evidence that using PROMs can improve the patient-clinician interaction.¹¹¹

In Australia, PROMs are an emerging method of assessing the quality of health care. While exciting and innovative work is happening in many places, PROMs are not yet embedded in routine measurement at regional, jurisdictional or national level and current work in PROMs is scattered and uncoordinated. In 2017–18, the Commission completed a literature review, environmental scan and stakeholder interview report to shape the work of PROMs in Australia¹¹¹⁻¹¹³ and established an expert advisory group to guide this national work program.

The Commission will continue to take a leading role in providing strategic, policy and practical support for the large-scale evidence-based collection and meaningful use of PROMs in Australia.

Patient safety culture measurement

Within health service organisations, intelligence about emerging safety and quality issues is gathered by frontline staff during the normal course of their everyday work. These clinicians, administrators, managers and auxiliary staff are the closest observers of concerning patterns, and of workplace conditions which allow these patterns to emerge and persist.

Developing a culture of safety is an essential task for health service organisations as they strive to eliminate the factors that contribute to medical errors, patient harm, and unsafe conditions. For example, a 2017 systematic review of 62 studies found that organisational and workplace cultures were correlated with patient outcomes in over 90% of studies.¹¹⁴ However, this important source of safety information is not always routinely captured. This has prompted an increasing interest in patient safety culture measurement.

The Commission conducted an environment scan and literature review in 2016–17 and found that while most jurisdictions use staff survey tools, tools to assess the staff perspective on safety culture within their organisation were not widely used. Research evidence shows associations between staff experiences of organisational safety culture and other safety and quality outcomes, including adverse event rates and patient experience. Consequently, the Commission will be working in collaboration with

stakeholders to progress work to identify common measures for patient safety culture that could be used nationally.

Patient safety diagnostic service

The Commission can add value to the work already being undertaken in states and territories and across the private sector by setting national benchmarks, providing national comparison and predictive and prescriptive analysis, and setting consistent standards of reporting safety and quality.

To date, the Commission has been progressing work on individual elements of the learning system for patient safety measuring and monitoring. But there are gaps: feedback on safety reporting and experiential learning, lack of awareness of the range of patient safety issues and shortage of opportunities for professional and system-based improvement efforts.

To complement work on the patient safety measuring and monitoring model, the Commission plans to develop a national online audit and surveillance platform to support the learnings from some of the elements of the model. The Commission will establish a confidential diagnostic service to help clinicians and health service organisations measure and improve safety across acute health systems.

In the first instance, this will be a multi-modal approach that draws on different measurement methods as necessary to understand patient safety, using the measures the Commission has already developed.

Initially, the following data sources will be used to enable health service organisations to compare

The Commission will support health services during 2019-20

themselves to peer groups across Australia, using risk adjusted data in the following categories:

- Sentinel event data
- Serious adverse events or clinical incidents
- HACs at a granular level
- Potentially preventable hospital readmissions
- Patient-reported measures – patient experience and patient reported outcomes.

Figure 29 shows a sample of the type of information that could be provided to health service organisations by the patient diagnostic safety service.

Figure 29: Sample of information provided by a patient safety diagnostic service



CONCLUSION

Australia has come a long way in understanding and improving the safety and quality of health care since the *Quality in Australian Health Care Study*¹, was first published in 1995. Australia's approach to safety and quality is maturing. It increasingly acknowledges that patient harm is not just a result of human fallibility, but can be a result of system failures in the way care is organised and coordinated, and is potentially preventable through improvement efforts targeted at clinical practice, organisations and systems.

Key safety and quality risks have been identified nationally, and strategies exist and are being implemented to improve the safety and quality of health care in Australia at local, regional, state and territory and national levels.

The majority of health care that people receive in Australia today is safe and high quality. Australia's clinicians are highly regarded as skilled professionals who are committed to meeting the healthcare needs of their patients², and Australian health service organisations have been integrating safety and quality improvement systems into their organisational governance processes for some time.

Internationally, and within the Australian health system, there has been an increasing focus on delivering value-based health care for consumers and funders. Value-based health care is about achieving the best care possible for each patient while maintaining an efficient use of resources.⁵

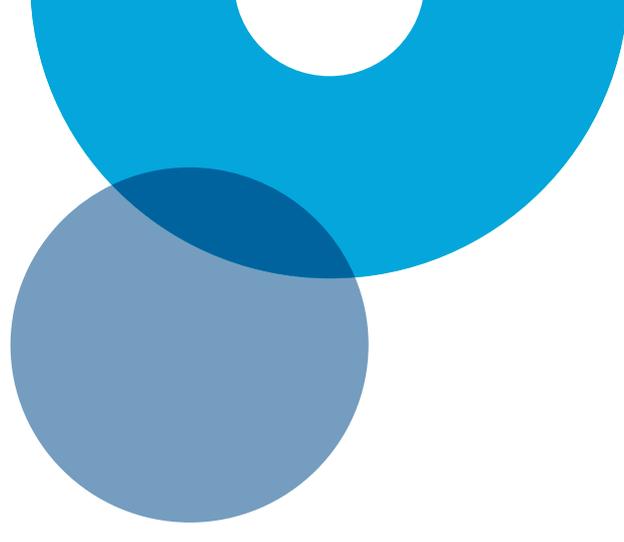
The Commission and partners have been supporting the achievement of value-based health care by fostering system change in five key areas to:

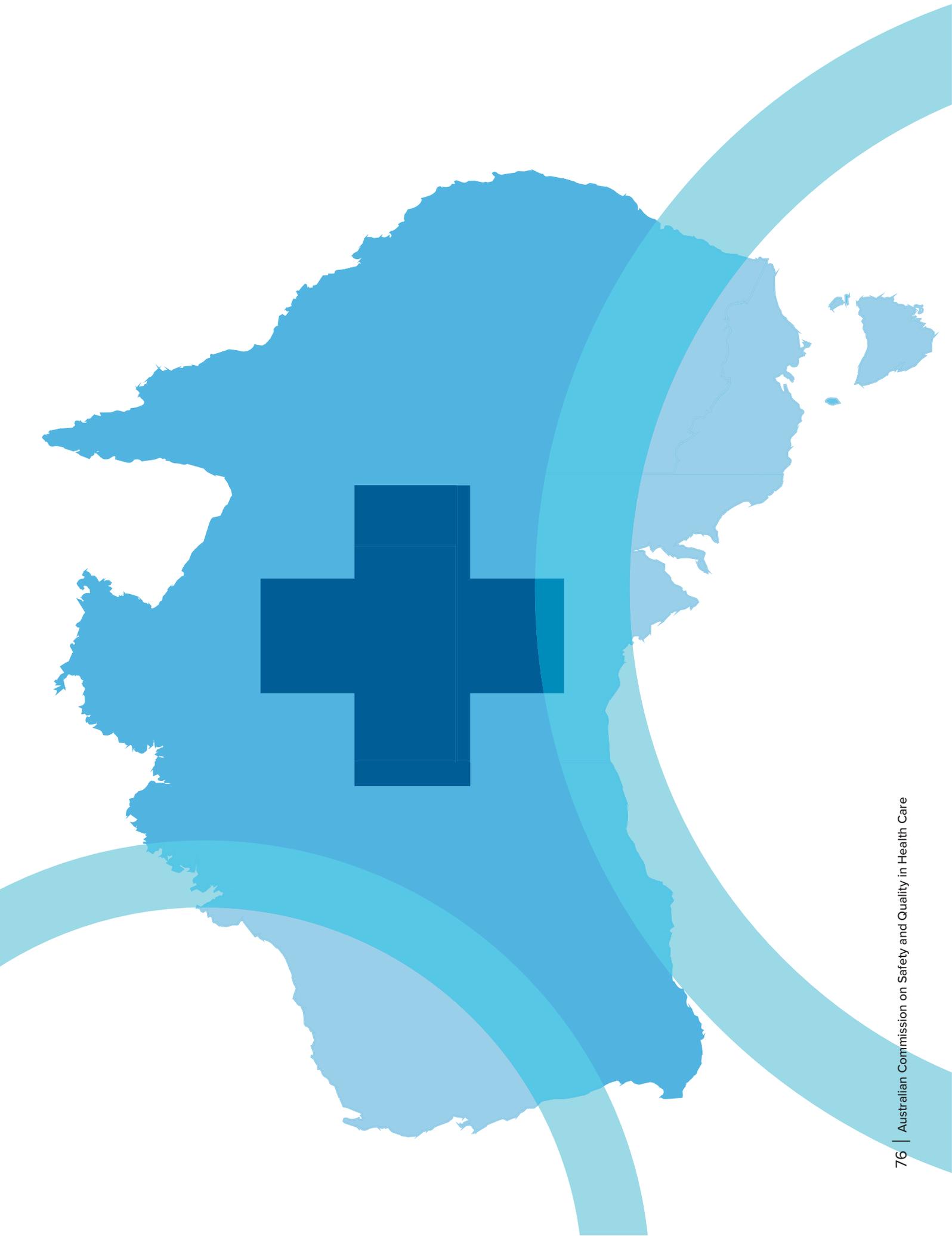
- Focus on people
- Measure and report on safety and quality
- Use evidence-based policy and guidance
- Strengthen clinical governance
- Embed safety and quality into national systems.

The Commission, in collaboration with the Australian Government, states and territories, the private sector, clinicians and patients, has been driving safety and quality improvement by identifying systemic risks to patients, and providing standards, guidance and policy to mitigate those risks and improve patient outcomes through clinically appropriate risk management responses.

Measurement is a particularly important part of safety and quality improvement, and delivering value-based health care. Moving forward, the Commission is developing a National Patient Safety Learning Model that will help health service organisations measure safety and quality consistently, and identify where improvements can be made both locally and nationally. In addition, emerging work on a patient safety clearing house and diagnostic service will complement the support, guidance and improvements to the NSQHS Standards and AHSSQA Scheme.

Providing safe and quality care has always been a focus of those working in the health system. The Commission continues to work with stakeholders in the health system to create greater consistency, coordination and reliability of data about what is happening within the system, as well as providing evidence policy and guidance to inform actions to improve health care.





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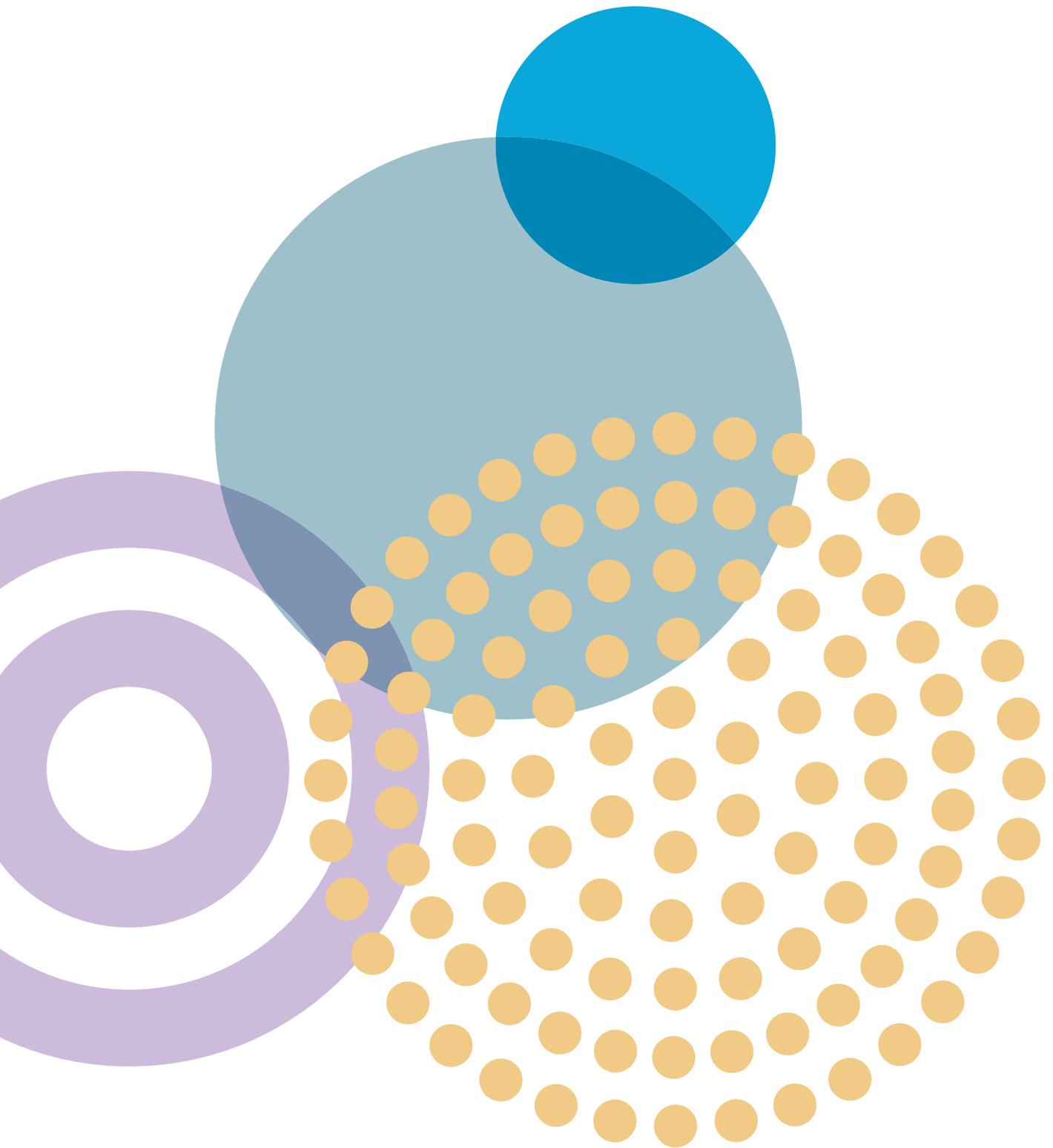
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COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-28

This is the Annexure marked "DD-28" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

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An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

Low value care is a health hazard that calls for patient empowerment

To protect themselves from the potential harms of low value care, patients must take an active role in clinical decision making

Low value care is care that is ineffective, harmful or confers marginal benefit at disproportionately high cost.¹ Professionally-led campaigns such as Choosing Wisely Australia and the Royal Australasian College of Physicians' EVOLVE program aim to reduce the prevalence of such care. However, similar overseas campaigns have been marred by selective focus on infrequent, low impact, or less financially lucrative practices;² uncertainty about the most effective de-adoption strategies;³ and limited success to date in reducing overuse.⁴ While clinician-targeted education programs, audit and feedback, and decision support feature prominently, evidence appears stronger and impact seems greater for strategies directed to, or mediated by, patients.⁵

Framing low value care as a health hazard for patients

Although clinicians accept responsibility for resource stewardship, they also believe their primary care obligation is to the individual patient, with costs being a secondary consideration.⁶ Most patients hold similar views, until out-of-pocket expenses become unaffordable.⁷

Reframing low value care as having negative consequences, not just "worth a go" or "better safe than sorry", may incentivise patients, clinicians and policymakers to engage more in mitigation efforts.⁸ Negative consequences can arise directly from an episode of low value care, or indirectly from subsequent downstream care cascades, such as invasively investigating incidental but benign findings from a previous unnecessary investigation. Harms can be physical, psychological, social, financial and relational (mistrust). Even providing potentially beneficial care to patients who do not want it can cause harm, at least psychologically. Moreover, giving low value care to one individual may result in delayed delivery of high value care to another individual, who may then suffer preventable harm.

The burden of negative consequences

Recent studies have begun to quantify the negative consequences of different forms of low value care. A review of 54 case descriptions of 63 overused services revealed an average of 3.2 negative consequences per case, most (33/54, 61%) featuring an overuse cascade feedback loop.⁹ Reported harms (91 in total) comprised injury (69%), psychological harm (16%), treatment burden (9%), financial loss (3%), and dissatisfaction (2%).⁹

Recent care cascades were reported by 374 internists in the United States following incidental findings from



tests that a third deemed clinically inappropriate but which led to a new invasive test (77.2% of instances), an emergency department visit (54.8%), or hospitalisation (50.6%).¹⁰ These caused patients physical (15.6%) or psychological harm (68.4%), financial loss (57.5%), social disruptions (8.7%), and dissatisfaction (27.6%).¹⁰

Seven low value procedures characterised 9330 admissions to 225 Australian hospitals, including endoscopy for dyspepsia or colonoscopy for constipation in young people, knee arthroscopy for osteoarthritis and meniscal tears, and spinal fusion for uncomplicated low back pain.¹¹ Between 0.2% and 15.0% of patients, depending on the procedure, developed one or more hospital-acquired complications, most commonly infection (26.3% of instances), with a twofold or more increase in the median length of stay.¹¹ Among 72 unnecessary admissions to one US hospital of low risk syncope patients, one in eight had an adverse event from tests and treatments.¹²

In a study of 405 695 individuals with new onset, non-specific low back pain, those receiving lumbar spine magnetic resonance imaging (MRI) within 6 weeks, compared with matched controls without an early MRI, incurred significantly more surgery (1.48% *v* 0.12%), greater opioid use (35.1% *v* 28.6%), and worse pain scores (3.99 *v* 3.87).¹³ Among 5057 individuals with incidentally detected lung nodules on chest x-rays, those receiving intense diagnostic investigation versus guideline-concordant care had more procedure-related adverse events (8.1% absolute increase) and more radiation exposure, with no higher incidence of advanced cancer at 2 years' follow-up.¹⁴

In a study of 1488 hospitalised patients who received antibiotics for at least 24 hours, 287 (19%) of the antibiotic regimens were not indicated (eg, asymptomatic bacteriuria, aspiration pneumonitis, congestive heart failure), with 56 (20%) being associated with an adverse drug event, including seven cases of *Clostridium difficile* infection.¹⁵ Adding aspirin with no clear

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indication to 1107 of 3280 patients (33.8%) prescribed direct oral anticoagulants (DOACs) for confirmed indications was associated with more bleeding events (31.6 *v* 26.0 bleeding events per 100 patient years) and hospitalisations (9.1 *v* 6.5) than matched controls receiving direct oral anticoagulants only.¹⁶

The role of patients in reducing low value care

While clinicians often complain of patients demanding inappropriate care,⁷ many patients perceive the negative consequences of overuse,¹⁷ and interventions that empower patients to challenge such overuse are effective in decreasing it by 25–40%.¹⁸ In a review of 22 studies, 19 (86%) reported significant reductions in unnecessary use of antibiotics and benzodiazepines, Caesarean deliveries, elective labour inductions, surgery for knee and hip osteoarthritis, non-beneficial intensive care treatments, computed tomography scans for mild head injury in children, cardiac stress testing in low risk adults, and routine screening tests (full blood counts, electrocardiograms).¹⁸ These empowerment interventions comprised patient-oriented educational materials and shared decision-making protocols, the latter having greater effect. In another study, encouraging patients to identify their health concerns before a clinical encounter, and increasing their knowledge about their condition and care options, also rendered clinician advice more concordant with best practice by 33–60%.¹⁹

However, successful engagement depends on several factors: motivation and ability of clinicians to engage patients in decision making; clinician knowledge of, and agreement with, what constitutes low value care; the clinical context; and availability of decision support resources for both parties within clinical workflows. Clinicians do not always attempt to facilitate patient involvement and may not adjust care to patient preferences.²⁰ Such engagement is time-consuming for clinicians and inadequately remunerated, impractical in emergency situations or for patients unable or unwilling to engage, and may incite patient anxiety or dissuade them from further consultations.

In response, evidence-based strategies can overcome these barriers²¹ and reinforce patient perceptions of receiving optimal care and their desire to reconsult. More research needs to define the most effective mix of techniques for supporting patient engagement (eg, educating clinicians on communication techniques, deploying multidisciplinary teams, using trained decision coaches and patient decision aids), and their effects on consultation time and costs.²² Whether such engagement, by specifically reducing low value care, actually improves patient health remains uncertain, although its absence predisposes to worse clinical outcomes, lower quality care and increased health care utilisation.²³

Empowering patients to engage in reducing low value care

Many patients refrain from participating in discussions aimed at avoiding overuse because of a power asymmetry wherein they sense the

need to seek clinician permission to discuss their options, feel they have insufficient knowledge to ask pertinent questions or understand the jargon (“doctor knows best”), and fear repercussions from being seen to challenge clinician credibility (desire to be a good patient). Alternatively, patients may want to avoid responsibility for making a wrong decision they will later regret, or feel unable to participate because of illness symptoms, cognitive impairment, language or cultural barriers, or need for emergency or intensive care.¹⁷

Nevertheless, clinicians must avoid making false assumptions about how much a patient desires involvement in decision making. Methods are needed for identifying which patients, encounters and clinicians need more support to enact the most appropriate form of shared decision making. Patients usually desire a more active role when the matter is serious, invasive interventions are being considered, or if significant out-of-pocket costs, lengthy time off work, or interruptions to social activities may be incurred. Younger patients, women and those with higher educational and socio-economic status are more likely to participate.²⁴ Greater engagement and less overuse are seen within long term clinician–patient relationships characterised by mutual trust and continuity of care,²⁵ and where public messaging within practice environments encourages and legitimates engagement.²⁶

Patients can be trained to ask questions, and adult learning programs can assist those with low health literacy.²⁷ Choosing Wisely Australia (www.choosingwisely.org.au) and other organisations²⁸ provide conversation starter patient resources; other sources provide topic-specific lists of questions (eg, www.prosdex.com for prostate-specific cancer antigen testing, and www.bresdex.com for breast cancer surgery). Decision aids, option grids and fact boxes can also assist.

As a minimum, patients should be encouraged to ask these questions:

- Is there a decision we need to make? In urgent situations, clinicians may need to reach out and not wait for patients to ask.
- What are my options? All clinically viable options should be presented, including doing nothing.
- What are potential benefits and harms of each option? Where possible, these should be expressed using natural numbers (eg, four out of 100 people like you will experience a stroke every year; this treatment will reduce that to two out of 100, although one person of 100 will have a significant bleeding event).
- How will each option affect me in terms of what I consider important? Patients may want to know costs involved, duration of inability to work or perform social activities, skill and place of those performing a procedure.

Consumer organisations should be resourced to run community education campaigns focused on

engagement, while clinicians must be educated about the benefits of patient engagement and receive the tools, time and remuneration to support it within busy work schedules.

Conclusion

Efforts to increase patient empowerment in decision making should be seen as foundational for reducing low value care, and should underpin all other strategies targeting clinicians, payers and policymakers.

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COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

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Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-29

This is the Annexure marked "DD-29" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

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Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

The value of inpatient rehabilitation after uncomplicated knee arthroplasty: a propensity score analysis

Justine Maree Naylor^{1,2,3}, Andrew Hart¹, Rajat Mittal¹, Ian Harris^{1,2,3}, Wei Xuan^{1,2}

The known Privately insured patients often undertake inpatient rehabilitation after total knee arthroplasty, but there is no evidence that it improves recovery after surgery.

The new Rehabilitation pathways incorporating inpatient rehabilitation were significantly more expensive, but did not achieve patient-reported recovery superior to that of pathways not including inpatient rehabilitation.

The implications Given the substantial difference in costs, better value alternatives than inpatient rehabilitation should be considered for patients who have not experienced a major complication or progressed slowly after total knee arthroplasty.

Annual rates of total knee arthroplasty (TKA) have been increasing in Australia since 2003; 50 623 primary TKA procedures were undertaken in 2015, 6.1% higher than in 2014.¹ This trend is consistent with those in other countries.^{2,3} The procedure reduces pain, improves function, and enhances health-related quality of life, but is expensive;⁴ TKA is often cited as a major driver of increases in private health insurance premiums.^{5,6}

An important but underappreciated contributor to the overall cost of TKA is post-operative care in an inpatient rehabilitation facility. Two large private insurers in Australia indicated that the average rebate per overnight stay in 2015 was \$700 (personal communication); as the average length of stay is 12 days, the average total rebated cost is \$8400. Inpatient rehabilitation is more common in the private sector because privately insured health care consumers have ready access to (private) rehabilitation beds, but public health care patients do not; about 40% of TKA patients with private insurance reportedly undergo inpatient rehabilitation, compared with 5–10% of those not privately insured.⁷

It is unknown whether inequity in access undermines recovery from surgery, as little research has been undertaken in this area.^{8,9} Because privately insured patients are reluctant to be randomised to a therapy other than the one to which they feel entitled, it is difficult to conduct a randomised controlled trial (RCT) that compares the most resource-intensive pathway (inpatient rehabilitation) with less resource-intensive alternatives. The preferences of orthopaedic surgeons and carers, the preferences of patients about being discharged directly home, and the relationships between treatment centres and rehabilitation facilities are other factors that make RCTs difficult.

In an attempt to redress the lack of research in this area, we conducted a propensity score-matched cohort study of privately insured TKA patients, in which we compared the effectiveness of a rehabilitation pathway including inpatient rehabilitation with one that did not. A propensity score is the conditional probability of treatment assignment according to observed baseline characteristics.^{10,11} We matched

Abstract

Objective: To compare the effectiveness of rehabilitation after total knee arthroplasty (TKA) in models with or without an inpatient rehabilitation component.

Design, setting and participants: A propensity score-matched cohort of privately insured patients with osteoarthritis who underwent primary, unilateral TKA in one of 12 Australian hospitals between August 2013 and January 2015 were included. Those discharged to an inpatient facility because of poor progress or who experienced significant complications within 90 days of surgery were excluded.

Intervention: Discharge after surgery to an inpatient rehabilitation facility or home.

Main outcome measures: Patient-reported knee pain and function (Oxford Knee Score; at 90 and 365 days after surgery) and health rating (EuroQol “today” health scale; at 35, 90 and 365 days). Inpatient and community-based rehabilitation provider charges were also assessed.

Results: 258 patients (129 pairs) from a sample of 332 were matched according to their propensity scores for receiving inpatient rehabilitation; covariates used in the matching included age, sex, body mass index, and markers of health and impairment. The only significant difference in outcomes was that EuroQol health scores were better on Day 35 for patients not undergoing inpatient rehabilitation (median difference, 5; IQR, –10 to 19; $P = 0.01$). Median rehabilitation provider charges were significantly higher for those discharged to inpatient therapy (total costs: median difference, \$9500; IQR, \$7000–11 497; $P < 0.001$; community therapy costs: median difference, \$749; IQR, \$0–1980; $P < 0.001$).

Conclusions: Rehabilitation pathways incorporating inpatient rehabilitation did not achieve better joint-specific outcomes or health scores than alternatives not including inpatient rehabilitation. Given the substantial cost differences, better value alternatives should be considered for patients after uncomplicated TKA.

people on their propensity scores to minimise bias associated with being allocated to a particular treatment (in this case, inpatient therapy) on the basis of baseline patient characteristics.^{10–13} This approach is superior to traditional multiple regression techniques because treatment effects are reported in the same manner as if an RCT had been undertaken, facilitating interpretation.^{10,11} We hypothesised that the more expensive inpatient rehabilitation pathway would yield better joint-specific and general health outcomes in the short and longer term than a pathway not including inpatient rehabilitation. We also estimated rehabilitation provider charges for the two pathways.

Method

This study was nested in a national, prospective observational investigation of the relationships between care received and

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outcomes after knee or hip arthroplasty ([ClinicalTrials.gov](https://clinicaltrials.gov/ct2/show/study/NCT01899443) identifier: NCT01899443).

Sampling and hospital recruitment

In the larger study, public and private hospitals performing more than 275 TKA or total hip arthroplasty procedures during 2012 were eligible to participate. Eligible hospitals were identified by their listing in the Australian Orthopaedic Association National Joint Replacement Registry.¹ The sampling procedure has been described in detail elsewhere.¹⁴ The original sample included ten public and nine private hospitals from five Australian states (all except Western Australia).

Patient enrolment and eligibility

During August 2013 – December 2014, people awaiting arthroplasty secondary to osteoarthritis were screened by site coordinators during their pre-admission review. Patients were eligible for the larger study if the arthroplasty was the primary surgery and undertaken no later than January 2015; no further arthroplasty within 3 months of the first was planned; and the patient was able to understand the protocol, and could be followed up by telephone for 12 months. An additional inclusion criterion for this nested study was that the patient had private insurance cover for the surgery. To eliminate treatment selection bias and to improve generalisability to uncomplicated TKA, we excluded patients referred to inpatient rehabilitation because of slow progress, and those who had conditions that would alter their typical recovery and rehabilitation pathway, such as simultaneous bilateral surgeries, as well as those who experienced a significant complication within 90 days of surgery. We therefore only included patients for whom the rehabilitation pathway was not dictated by a medical or physical indication and the decision for inpatient therapy was probably made prior to surgery.

Data collection

The following baseline data were collected at the time of patient consent: weight and height; insurance status; comorbid conditions, including requirement for daily medication; education level; presence of other lower limb or back conditions that impair mobility; and the patient-reported outcomes measures described below. Site coordinators provided additional patient-specific data in forms completed by clinicians, including American Society of Anesthesiologists (ASA) scores, complications, hospital length of stay (LOS), and discharge destination, with reason for the specific destination. Thirty-five day, 90-day, and 365-day outcomes, and data on time off work (for patient and carer) were obtained in telephone follow-up interviews. For quality control, clinician-reported data were re-abstracted from medical records, and significant complications reported by patients during follow-up were verified by treating hospitals, general practitioners, or orthopaedic surgeons.

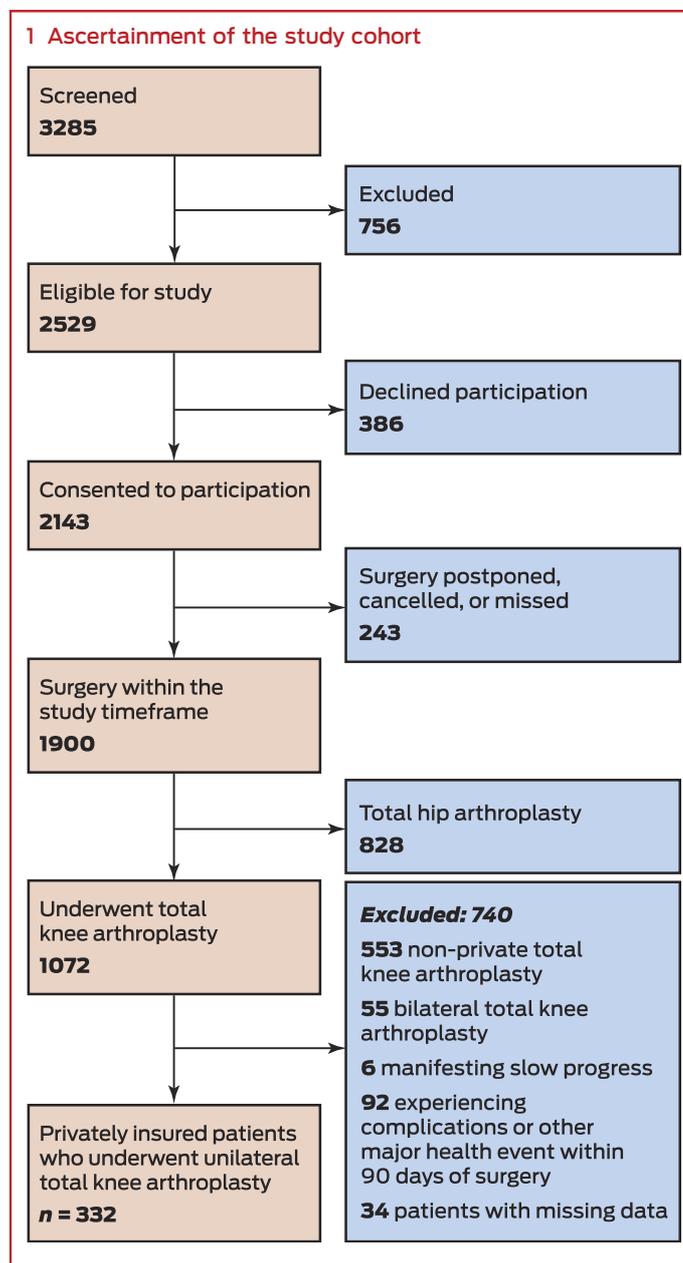
Complications

Acute complications were coded according to the Clavien–Dindo classification,¹⁵ based on the type of care deviation necessitated by the complication. Patients experiencing a complication during their acute admission (typically grade 3 or higher) that probably required referral to inpatient rehabilitation were flagged. Complications graded as less severe, but which would probably undermine rehabilitation (such as footdrop or knee instability requiring bracing), were also flagged. Complications and unrelated health events manifested after discharge (including

re-admission within 90 days) were also captured, as they potentially affect the continuity of rehabilitation.

Outcomes

Primary patient-reported outcomes included the Oxford Knee Score (OKS; at 90 and 365 days)¹⁶ and the EuroQol Visual Analogue Scale for “today” health (EQ-VAS; at 35, 90 and 365 days).¹⁷ The OKS comprises 12 joint-specific Likert-style questions about pain and functional impairment during the previous month; responses are scored from 0 (maximal discomfort/pain or maximal impairment) to 4 (no pain/discomfort or impairment), providing a total score out of 48; higher scores indicate better joint status. EQ-VAS is a scaled measure of how the respondent perceives their own overall health on the day, from 0 (worst health imaginable) to 100 (best health imaginable). Baseline scores were based on responses by patients to the printed survey, while follow-up scores were collected by telephone interview; the two approaches have been shown to be equivalent.¹⁷



Rehabilitation charges were determined from the perspective of the provider. Adjustments for inflation were made if the source document for costs was published before 2015.¹⁸ Overall provider charges for each participant were based on the types of therapy received up to ten weeks after surgery. The unit costs applied and the associated justification are provided in online [Appendix 1](#).

Statistical analysis

The sample size for this nested study was dictated by the projected sample size for the main study ($n = 2000$). Given the sample size required to detect a conventionally defined moderate treatment effect¹⁹ (half the standard deviation of the baseline mean) for a continuous outcome is 128, we conservatively anticipated we would have sufficient power (at $\alpha = 0.05$) to detect a moderate effect.

Normality of data was assessed prior to analysis. Descriptive statistics were used to characterise the cohorts. The covariates of the unmatched cohorts were assessed in independent t and χ^2 tests; outcomes data were analysed in paired t tests, Wilcoxon signed rank tests, and McNemar tests, as were the covariates in the matched cohorts.

Propensity scores (PSs) for the prediction of referral to inpatient rehabilitation were estimated for all eligible patients and used to match each patient who received inpatient rehabilitation with one

who did not (1:1). PSs were determined by unconditional logistic regression, with the outcome being treatment group; the predictors (covariates) were variables known or thought to influence either treatment allocation prior to surgery or the primary outcomes.¹⁰⁻¹³ Covariates included in the model were the continuous variables baseline OKS and EQ-VAS scores, age and body mass index, and the categorical or ordinal variables sex, ASA scores, comorbidity, other lower limb or back problems limiting mobility, and education level.

We applied caliper matching without replacement to determine the matched pairs.^{10,11} An absolute difference in PS of 0.05 was initially trialled; a caliper distance of 0.03 (equivalent to one-fifth of the pooled standard deviation of the PS) improved matching.¹¹ Successful matching was primarily deemed to be indicated by a standardised difference between the groups of less than 0.10 for a variable;^{11,13} a marginally greater difference was tolerated if the variable was not significantly different in both the pre- and post-matched cohorts. We did not rely upon changes in significance alone (from significance to non-significance), given the reduction in sample size that inevitably accompanies matching and the consequently increased likelihood of type II errors.¹³ Variables not included in the matching were interaction terms, employment status (presumed not to influence treatment allocation or primary outcomes), and “surgeon” and “hospital” (their inclusion caused non-convergence of the estimate in the PS calculation, a

2 Characteristics of patients undergoing total knee arthroplasty, August 2013 – January 2015: before matching

	Inpatient rehabilitation	No inpatient rehabilitation	Standardised mean difference*	P
Number of patients	185	147		
Variables included in matching				
Age (years), mean (SD)	68.9 (8.9)	67.2 (7.3)	0.21	0.06
Sex (men)	117 (63%)	72 (49%)	0.29	0.009
Body mass index (kg/m ²), mean (SD)	31.0 (6.0)	30.4 (5.0)	0.10	0.36
Highest level of education				
1 (no formal education)	3 (2%)	1 (1%)	0.09	0.43
2 (year 10 or less)	43 (23%)	35 (24%)	0.00	1.0
3 (year 11 or 12)	100 (54%)	86 (59%)	0.09	0.42
4 (tertiary degree)	38 (21%)	17.0 (25)	0.09	0.41
American Society of Anesthesiologists (ASA) score				
1 (healthy)	11 (6%)	19 (13%)	0.24	0.03
2 (mild systemic disease)	90 (49%)	82 (56%)	0.14	0.21
3 (severe systemic disease)	81 (44%)	46 (31%)	0.27	0.02
4 (life-threatening severe systemic disease)	2 (1%)	0	0.15	0.20
Comorbidity				
None	13 (7%)	18 (12%)	0.18	0.10
Yes, but no daily medication	10 (6%)	8 (5%)	0.02	0.84
Yes, with daily medication	181 (87%)	121 (82%)	0.13	0.23
Oxford Knee Score, mean (SD)	23.6 (8.7)	25.2 (7.2)	0.20	0.02
EQ-VAS, mean (SD)	71.8 (18.9)	76.3 (14.4)	0.27	0.08
Other lower limb or back problems limiting mobility	81 (44%)	47.6 (70)	0.08	0.49
Variables not included in matching				
Paid employment	43 (23%)	43 (29%)	0.14	0.31
Length of acute hospital stay (days), mean (SD)	6.8 (2.2)	6.2 (2.2)	0.29	0.009

EQ-VAS = EuroQol Visual Analogue Scale. SD = standard deviation. For the Oxford Knee Score and EQ-VAS, higher scores indicate lesser joint impairment and better health respectively. * Standardised mean difference = $(\text{mean}_1 - \text{mean}_2) / \sqrt{\frac{\text{SD}_1^2 + \text{SD}_2^2}{2}}$ ◆

consequence of the high correlation between surgeon or hospital and treatment). In response to this last problem, we performed multiple linear regression analyses that incorporated “hospital” for the entire eligible cohort (online [Appendix 2](#)).

Several patients had a second arthroplasty (different joint) or experienced a major health event, such as hip surgery, between 90 and 365 days after surgery. We conducted sensitivity analyses of the 365-day outcomes that excluded these patients, as these events could have affected the primary outcomes and were deemed to be unrelated to the mode of rehabilitation provided.

Ethics approval

Ethics approval for the main study was provided by nine human research ethics committees (HRECs): the Hunter New England HREC (New South Wales; reference, LNR/12/HNE/390); St Vincent's Health and Aged Care HREC (Queensland; reference, HREC #13/10); Austin Health HREC (Victoria; reference, LNR/14/Austin/208 LNRR MAP); Barwon Health HREC (Victoria; reference, 13/82); Epworth HREC (Victoria; reference, LR138-13); Calvary Health Care Clinical and Research Ethics Committee (Tasmania; references, 2:05:13 and 5:13:12), and Calvary Healthcare Adelaide HREC (South Australia; reference, 13-CHREC-E007). Each participating patient provided written informed consent before their operation.

Results

Cohort ascertainment is summarised in [Box 1](#). A total of 129 pairs were matched from an eligible sample of 332 privately insured patients from 12 hospitals; 98% of patients had had their operations in private hospitals.

In the unmatched cohort, the group of patients discharged to inpatient rehabilitation had a lower mean “today” health score ($P = 0.08$), included more patients with lower ASA scores, and a higher proportion of men ($P = 0.009$), and had longer mean acute care LOS ($P = 0.009$) ([Box 2](#)). Matching reduced the standardised difference for 12 covariates included in the matching; the largest remaining mean difference in this group of covariates was 0.12 ([Box 3](#)). For the remaining covariates (including three of the four education categories), between-treatment group differences were not statistically significant in either the pre- or post-matched comparisons.

Matched cohort

Outcomes for the inpatient rehabilitation group were not superior at any time point ([Box 4](#)), and their “today” health ratings were significantly worse than those of the comparison group on Day 35 ($P = 0.01$). Median rehabilitation provider costs were 26 times as

3 Characteristics of patients undergoing total knee arthroplasty, August 2013 – January 2015: after matching

	Inpatient rehabilitation group	No inpatient rehabilitation group	Standardised mean difference*	P
Number of patients	129	129		
Propensity score, mean (SD)	0.55 (0.13)	0.53 (0.13)		
Variables included in matching				
Age (years), mean (SD)	68.6 (9.2)	67.6 (7.3)	0.12	0.34
Sex (men)	75 (58%)	69 (54%)	0.09	0.45
Body mass index (kg/m ²), mean (SD)	30.6 (5.9)	30.7 (5.1)	0.03	0.82
Highest level of education				
1 (no formal education)	3 (2%)	1 (1%)	0.13	0.31
2 (Year 10 or lower)	28 (22%)	34 (26%)	0.11	0.38
3 (Year 11 or 12)	68 (53%)	73 (57%)	0.08	0.53
4 (tertiary degree)	30 (23%)	21 (16%)	0.18	0.16
American Society of Anaesthesiologists (ASA) score				
1 (healthy)	10 (8%)	10 (8%)	0.00	1
2 (mild systemic disease)	70 (54%)	74 (57%)	0.06	0.62
3 (severe systemic disease)	49 (38%)	45 (35%)	0.06	0.60
4 (life-threatening severe systemic disease)	0	0	NA	NA
Comorbidity				
None	7.8 (10)	12 (9%)	0.06	0.66
Yes, but no daily medication	3.1 (4)	6 (5%)	0.08	0.52
Yes, with daily medication	89.2 (115)	111 (86%)	0.09	0.45
Oxford Knee Score, mean (SD)	24.6 (8.4)	24.7 (7.0)	0.01	0.92
EQ-VAS, mean (SD)	74.9 (16.2)	75.3 (14.8)	0.02	0.84
Other lower limb or back problems limiting mobility	49.6 (64)	48.1 (62)	0.03	0.90
Variables not included in matching				
Paid employment	28 (22%)	34 (26%)	0.11	0.67
Length of acute hospital stay (days), mean (SD)	6.5 (1.9)	6.3 (2.8)	0.12	0.60

EQ-VAS = EuroQol Visual Analogue Scale. NA = not applicable. SD = standard deviation. ♦

4 Outcomes 35, 90 and 365 days after surgery for the matched cohort of patients receiving or not receiving inpatient rehabilitation (n = 129 per group)

Time	Oxford Knee Score: median (IQR)	EQ-VAS score: median (IQR)	Rehabilitation costs: median (IQR)	Rehabilitation costs, excluding inpatient rehabilitation: median (IQR)	Patients with time off work (> 6 weeks): proportion (95% CI)	Carers with time off work (any): proportion (95% CI)
35 days						
Inpatient rehabilitation	—	80 (70–87)	—	—	—	14.4% (8.9–22.3%)
No inpatient rehabilitation	—	80 (75–90)	—	—	—	18.6% (12.3–27.1%)
Median difference*	—	–5 (–19 to 10)	—	—	—	–4.2% (–12.8% to 4.4%)
P	—	0.01	—	—	—	0.34
90 days						
Inpatient rehabilitation	40 (34–43)	85 (75–90)	\$9978 (\$7599–11 841)	\$1123 (\$510–2296)	16.1% (10.2–24.3%)	—
No inpatient rehabilitation	40 (34–43)	90 (80–91)	\$374 (\$0–722)	\$374 (\$0–722)	18.6% (12.3–27.1%)	—
Median difference*	0 (–6 to 5)	–2.5 (–15 to 10)	\$9500 (\$7000–11 497)	\$749 (\$0–1980)	–2.5% (–12.6% to 7.6%)	—
P	0.54	0.09	< 0.001	< 0.001	0.62	—
365 days						
Inpatient rehabilitation	44 (42–45)	85 (75–90)	—	—	—	—
No inpatient rehabilitation	44 (42–46)	85 (80–90)	—	—	—	—
Median difference*	0 (–4 to 3)	0 (–10 to 6)	—	—	—	—
P	0.40	0.32	—	—	—	—

CI = confidence interval. EQ-VAS = EuroQol Visual Analogue Scale. IQR = interquartile range. * Inpatient rehabilitation group v no inpatient rehabilitation group. ♦

high for the inpatient group as for the comparison group ($P < 0.001$). After excluding inpatient rehabilitation charges, provider charges for the inpatient rehabilitation group were still three times as high because of the greater number of community physiotherapy visits (median, 8 visits; interquartile range [IQR], 5–11; for non-inpatients: median, 5 visits; IQR, 0–9; $P < 0.001$). The patients in this group also preferred comparatively expensive day hospital rehabilitation to other community-based alternatives (online Appendix 3). Time off work for patients and carers was not statistically significantly lower for the inpatient group (Box 4).

Sensitivity analysis of 365-day outcomes yielded similar results (online Appendix 4).

Discussion

The authors of a Canadian RCT of knee and hip arthroplasty recipients reported that 18 days' inpatient rehabilitation was not associated with better outcomes than an average of eight domiciliary physiotherapy sessions.⁹ Our own group recently completed the only RCT to have compared the efficacy of inpatient rehabilitation with that of a simple home program after TKA for public patients;⁸ we found that recovery of mobility and patient-reported outcomes were not superior for patients receiving inpatient therapy. The results of our current study of privately insured patients reinforce these findings. Further, the results for patients undergoing inpatient rehabilitation were not

superior despite the fact that they received more community-based therapy.

Our study has several strengths. Propensity-based scoring helps reduce the bias inherent to observational studies, permitting researchers to more reliably estimate treatment effects.¹⁰⁻¹³ We used a national cohort from hospitals with high volumes of arthroplasty procedures, and the characteristics of the unmatched cohort were typical for patients who undergo TKA in Australia.^{4,8,17,20,21} Our matched cohort should therefore be a representative sample of such patients. Our PS strategy achieved acceptable matching between the cohorts on many variables purported to influence treatment allocation and outcomes. In addition to matching, our comprehensive screening and sensitivity analysis excluded patients with conditions that predisposed them to either requiring inpatient rehabilitation or a worse outcome, thereby eliminating these sources of confounding and bias.

A limitation of propensity-based scoring is that the extent to which bias is reduced depends on the degree to which covariates are matched.¹⁰⁻¹³ While the PSs and exclusion criteria accounted for many factors, unrecognised covariates may have remained unbalanced. Most notably, we could not account for the effects of "surgeon" or "hospital" because most surgeons and hospitals almost routinely referred patients to one pathway or the other. Our supplementary regression analysis (online Appendix 2) indicated that adding "hospital" ("hospital" and "surgeon" are highly correlated) did not influence the OKS outcome, but did affect

EQ-VAS health scores, with a negative effect on the scores of those in the inpatient group. Prosthesis type was also not included in the matching, but patient-reported recovery in the short term appears not to be influenced by this factor.^{22,23}

Recall bias may be a limitation of a study with respect to data on return to work and community-based therapy visits (and by extension, provider charges), but we have no reason to assume that this bias would have been more prominent in either treatment group. A larger sample size may have clarified the trends in time off work. The lack of objective markers of recovery might also be considered a limitation, although earlier research has not detected differences in such outcomes.^{8,9} Perhaps the most important limitation is that our results cannot be extrapolated to patients who experience significant complications, nor to those who are referred to inpatient rehabilitation because of poor progress. We therefore acknowledge that inpatient rehabilitation may be more beneficial for some subgroups of patients, and thus remains a valid treatment option.

In conclusion, our study provides new observations on the comparative effectiveness and costs of rehabilitation pathways for privately insured patients after uncomplicated TKA. Pathways involving inpatient rehabilitation are more expensive because of the costs of both the inpatient treatment and subsequent community-based therapy, but were not found to be associated with improved patient-reported outcomes. Alternatives to inpatient rehabilitation after uncomplicated TKA should therefore be considered first.

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Competing interests: This study was partially funded by a grant awarded by the HCF Research Foundation, but the funder had no influence on the study design or the research plan.

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COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-30

This is the Annexure marked "DD-30" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.



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Doctors warn against unnecessary arthroscopic knee surgery

Doctors warn against unnecessary arthroscopic knee surgery

New medical advice suggests arthroscopic knee surgery for osteoarthritis is 'low-value' and can be harmful for some patients.

The advice is one of five recommendations released today by the Australian Rheumatology Association (ARA), one of the Royal Australasian College of Physicians (RACP) specialty societies as part of the Evolve initiative.



Discussing the recommendations, Professor Rachelle Buchbinder from the ARA said:

“Arthroscopy is used to treat osteoarthritis of the knee and can involve washing out the joint or cleaning up the lining,” Professor Buchbinder said.

“The research shows that arthroscopic surgery for knee osteoarthritis does not seem to affect a patient’s outcome and in some cases, the procedure can actually do more harm than good.

“Doctors and their patients should be considering the benefits and risks of this procedure and discussing alternatives before performing this surgery, especially for those over the age of 50 as health insurer statistics suggest approximately half of these procedures are for this age group.

“We hope these latest recommendations will help doctors and patients avoid unnecessary and potentially harmful tests and rheumatology procedures.”

Despite the lack of scientific evidence that the procedure works, approximately 43,000 Medicare Benefit Scheme funded arthroscopic knee surgeries were performed in the 2016-2017 financial year, costing around \$22 million in Medicare benefit payments.

Ms Leanne Wells, CEO of Consumer Health Forum of Australia, said:

“Patients depend on their doctors to recommend treatments that are evidence-based. “These days it is all about value-based care. We want the system and patients to be paying for treatments that get the best outcome for people.

“We don’t want to see arrangements where procedures continue to be performed for years despite a dearth of evidence of their benefit. That’s why CHF welcomed the MBS Review and participates in profession-led initiatives such as Evolve and Choosing Wisely to support the development of more patient-focused information and resources to help informed decisions about treatment.”

To help patients make informed decisions about their treatments, Choosing Wisely Australia has developed '[5 Questions to Ask your Doctor.](#)'

The Evolve initiative highlights a specialty group’s ‘top five’ clinical practices that may be overused, provide little or no medical benefit or cause unnecessary harm.

Read the full list of recommendations from the ARA at <https://evolve.edu.au/published-lists/australian-rheumatology-association/>.

There are now 19 Evolve lists published, with further ‘top five’ lists in development. For more information go to: <https://evolve.edu.au>.



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COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

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File No: ACT 4 of 2021 and ACT 5 of 2021

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Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-31

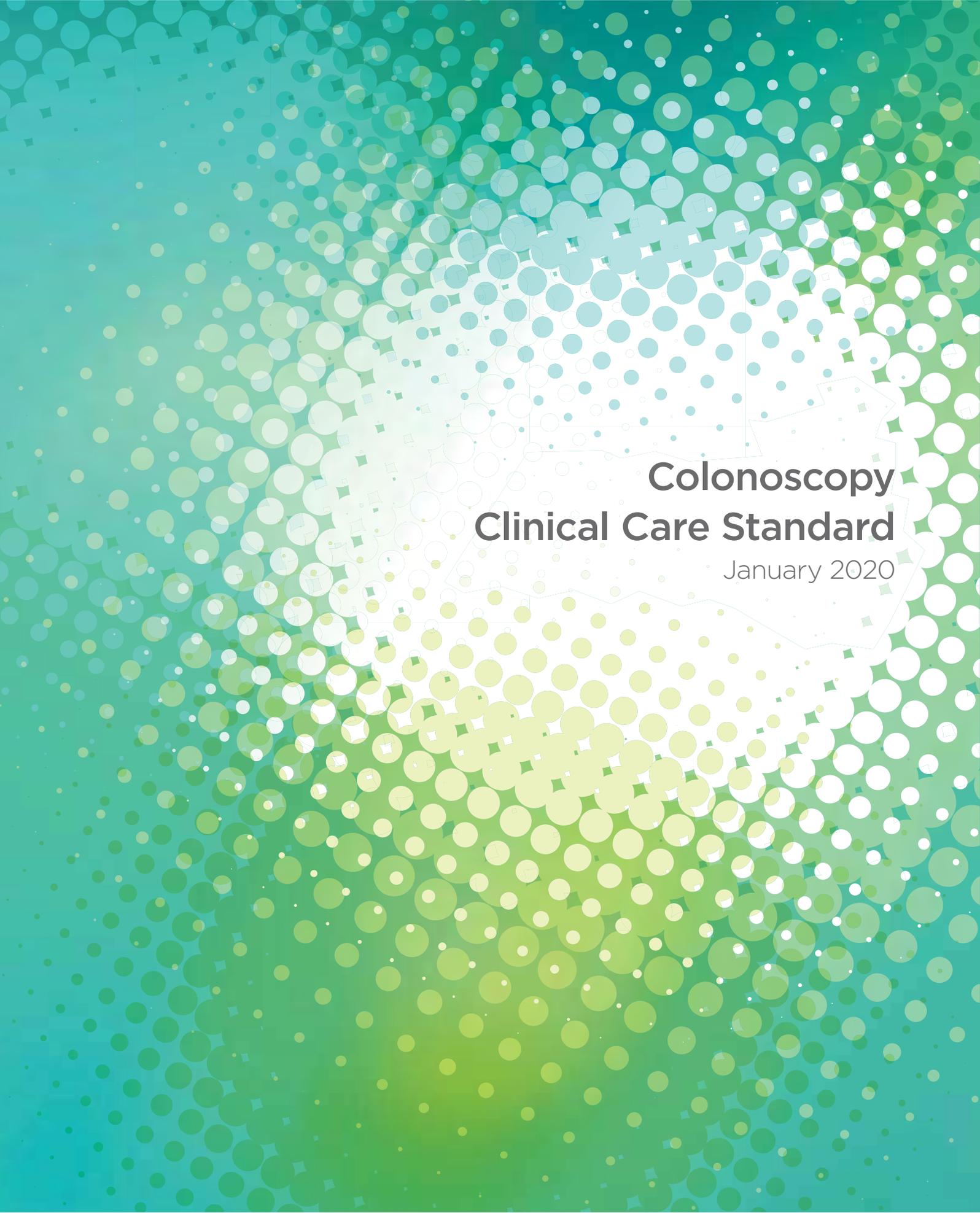
This is the Annexure marked "DD-31" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.



**Colonoscopy
Clinical Care Standard**

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The Australian Commission on Safety and Quality in Health Care has produced this clinical care standard to support the delivery of appropriate care for a defined condition. The clinical care standard is based on the best evidence available at the time of development. Healthcare professionals are advised to use clinical discretion and consideration of the circumstances of the individual patient, in consultation with the patient and/or their carer or guardian when applying information contained within the clinical care standard. Consumers should use the information in the clinical care standard as a guide to inform discussions with their healthcare professional about the applicability of the clinical care standard to their individual condition.

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Colonoscopy Clinical Care Standard



1 Initial assessment and referral

When a patient is referred for consideration of colonoscopy, the referral document provides sufficient information for the receiving clinician to assess the appropriateness, risk and urgency of consultation. The patient is allocated an appointment according to their clinical needs.



2 Appropriate and timely colonoscopy

A patient is offered timely colonoscopy when appropriate for screening, surveillance, or the investigation of signs or symptoms of bowel disease, as consistent with national evidence-based guidelines. Decisions are made in the context of the patient's ability to tolerate the bowel preparation and colonoscopy, and their likelihood of benefit. If colonoscopy is not appropriate, the receiving clinician advises the patient and their referring clinician of alternate recommended management.



3 Informed decision making and consent

Before starting bowel preparation, a patient receives comprehensive consumer-appropriate information about bowel preparation, the colonoscopy and sedation or anaesthesia. They have an opportunity to discuss the reason for the colonoscopy, its benefits, risks, financial costs and alternative options before deciding to proceed. Their understanding is assessed, and the information provided and their consent to sedation, colonoscopy and therapeutic intervention is documented.



4 Bowel preparation

A patient booked for colonoscopy receives a bowel preparation product and dosing regimen individualised to their needs, co-morbidities, regular medicines and previous response to bowel preparation. The importance of good bowel preparation for a quality colonoscopy is discussed with the patient. They are provided with consumer-appropriate instructions on how to use the bowel preparation product and their understanding is confirmed.



5 Sedation

Before colonoscopy, a patient is assessed by an appropriately trained clinician to identify any increased risk, including cardiovascular, respiratory or airway compromise. The sedation is planned accordingly. The risks and benefits of sedation are discussed with the patient. Sedation is administered and the patient is monitored throughout the colonoscopy and recovery period in accordance with Australian and New Zealand College of Anaesthetists guidelines.



6 Clinicians

A patient's colonoscopy is performed by a credentialed clinician working within their scope of clinical practice, who meets the requirements of an accepted certification and recertification process. Sedation or anaesthesia and clinical support are provided by credentialed clinicians working within their scope of clinical practice.



7 Procedure

When a patient is undergoing colonoscopy their entire colon – including the caecum – is examined carefully and systematically. The adequacy of bowel preparation, clinical findings, biopsies, polyps removed, therapeutic interventions and details of any adverse events are documented. All polyps removed are submitted for histological examination.



8 Discharge

Following recovery and before discharge, the patient is advised verbally and in writing about the preliminary outcomes of the colonoscopy, the nature of any therapeutic interventions or adverse events, when to resume regular activities and medication, and arrangements for medical follow-up. The patient is discharged into the care of a responsible adult when it is safe to do so.



9 Reporting and follow-up

The colonoscopist communicates the reason for the colonoscopy, its findings, any histology results and recommendations for follow-up in writing to the general practitioner, any other relevant clinician and the patient, and documents this in the facility records. Recommendations for surveillance colonoscopy, if required, are consistent with national evidence-based guidelines. If more immediate treatment or follow-up is needed, appropriate arrangements are made by the colonoscopist.

About the clinical care standards

Clinical care standards aim to support the delivery of appropriate evidence-based clinical care, and promote shared decision making between patients, carers and clinicians.

A clinical care standard is a small number of quality statements that describe the clinical care a patient should be offered for a specific clinical condition. The quality statements are linked to a number of indicators that can be used by health service organisations to monitor how well they are implementing the care recommended in the clinical care standard. A clinical care standard differs from a clinical practice guideline; rather than describing all the components of care for managing a clinical condition, the quality statements address priority areas for improvement.

Each clinical care standard intends to support key groups of people in the healthcare system in the following ways:

- The public will have a better understanding of what care should be offered by the healthcare system, and will be better able to make informed treatment decisions in partnership with their clinician
- Clinicians will be better able to make decisions about appropriate care
- Health services will be better able to examine the performance of their organisation and make improvements in the care they provide.

This clinical care standard was developed by the Australian Commission on Safety and Quality in Health Care (the Commission) following consultation and development of a national safety and quality model for colonoscopy (the safety and quality model). The development of a clinical care standard was an integral component of the safety and quality model. The Commission collaborated and consulted with consumers, clinicians, researchers and health organisations during the development of the safety and quality model and many of these groups were represented on the Colonoscopy Clinical Care Standard Topic Working Group. The clinical care standard complements existing efforts that support care of patients undergoing colonoscopy for screening and diagnostic purposes, including state and territory-based initiatives.

For more information about the development of this clinical care standard and the indicators, visit: www.safetyandquality.gov.au/ccs.

Updates in 2020

The Colonoscopy Clinical Care Standard was amended in 2020. The update included the addition of a fourth indicator for sessile serrated adenoma detection.

Introduction

Context

Colonoscopy refers to the examination of the entire large bowel using a camera in a flexible tube, or colonoscope. It is a complex task that requires the colonoscopist to manipulate the colonoscope effectively in order to visualise the bowel, while performing therapeutic interventions such as removing polyps or tissue samples when required.

Colonoscopy is often performed as a diagnostic intervention to investigate possible bowel cancer, either in people with symptoms and signs of bowel disease, or those with an increased risk of bowel cancer as indicated by a positive screening test, previous pathology, or family history or genetic conditions. It may also be used to help diagnose the cause of symptoms in conditions such as inflammatory bowel disease.

Bowel cancer is one of Australia's most common cancers, particularly in people over 50 years of age.¹ Evidence-based guidelines describe when colonoscopy should be used and how frequently testing should occur, according to the patient's presenting symptoms, history and risk.

In Australia, most screening for bowel cancer involves a faecal occult blood test (FOBT), which occurs either through the National Bowel Cancer Screening Program (NBCSP) or when the test is requested as a Medicare-subsidised test by a clinician. For people whose personal and/or family health history puts them at significantly higher than average risk of bowel cancer, screening is by regular colonoscopy.

The National Bowel Cancer Screening Program (NBCSP) is a government funded, population based screening program which aims to reduce illness and death from bowel cancer through early detection or prevention of the disease. Eligible Australians aged 50 to 74 are sent a free FOBT kit to screen for bowel cancer. Participants with a positive screening result, indicated by blood in the stool sample, are advised to consult their primary health care provider to discuss further diagnostic assessment—in most cases, this will be a colonoscopy. During the colonoscopy, small growths inside the bowel (polyps) can be removed and examined for signs of cancer. Some polyps have no cancerous cells while others

show abnormal changes which may lead to cancer. These abnormal polyps are called adenomas.

High quality colonoscopy is critical to the early detection and treatment of bowel cancer. Removal of polyps and adenomas may prevent bowel cancer developing, while early diagnosis of bowel cancer can improve treatment outcomes and survival. Colonoscopy can also identify those who require regular colonoscopy surveillance due to having an increased risk of bowel cancer.

The NBCSP has been shown to reduce illness and mortality from bowel cancer in Australia.² Planned expansion of the NBCSP means that by 2020, all eligible Australians aged between 50 and 74 will be invited to screen every two years, with an associated increase in the number of diagnostic colonoscopies.³

The NBCSP Register records details of participants and their health care and outcomes related to bowel cancer screening. It relies on the information provided by GPs and colonoscopists to maintain accurate and comprehensive records and to assess the outcomes of the national program.

The quality of colonoscopy is also important for minimising the risk of complications from the procedure. Complications associated with colonoscopy include:

- Risks of the procedure itself such as perforation and bleeding
- Risks associated with bowel preparation including dehydration and electrolyte imbalances which can be serious.⁶
- Complications arising from sedation or anaesthesia.

The risk of serious complications is approximately 4 perforations and 8 major bleeding events per 10,000 screening colonoscopies⁴ with an estimated mortality rate of 0.007%.⁵ Risk increases with age, with the number of colonoscopies and when polyps are removed.⁴ While the risk of complication is relatively small, a large number of people undergo colonoscopy, many of whom are not diagnosed with any disease.

More than 900,000 colonoscopies are performed in Australia annually. Despite the large number of procedures performed annually, there is considerable geographic variation in diagnostic colonoscopy, with up to a 30-fold variation in age-standardised rates of MBS funded colonoscopies across Australia.⁷

Between 20% and 25% of colonoscopies are performed in public hospitals, with the remainder performed in private hospitals and day procedure centres. A relatively small proportion (4.7% in 2015)* is performed on people with a positive FOBT through the NBCSP.

In 2016–17, a safety and quality model for colonoscopy was developed by the Commission through national consultation and agreement with the public and private hospital sectors, clinical colleges and societies, and consumers. Its development was funded by the Australian Government Department of Health. The safety and quality model comprises three elements:

- A Colonoscopy Clinical Care Standard (this document)
- Initial certification, and periodic recertification of colonoscopists' performance, in accordance with defined quality indicators and performance targets determined by the Conjoint Committee for the Recognition of Training in Gastrointestinal Endoscopy, a national body comprising representatives of the Royal Australasian College of Physicians (RACP), the Gastroenterological Society of Australia (GESA), and the Royal Australasian College of Surgeons (RACS)
- Implementation of the Colonoscopy Clinical Care Standard in all public and private hospitals and day procedure services.

This clinical care standard supports the delivery of high quality colonoscopy in terms of:

- Processes to support a high quality procedure including bowel preparation, sedation, colonoscopy and recovery
- Clinical skills and ongoing competence required to deliver all aspects of care
- Appropriate use of colonoscopy according to evidence-based guidelines
- Information provided to consumers before and after a colonoscopy and their participation in shared decision-making
- Clinical communication during referral, reporting and follow-up.

Goal

The goal of the clinical care standard is to ensure the safe and appropriate use of colonoscopy, and to maximise patients' likelihood of benefit from the procedure while reducing their risk of avoidable harm.

Scope

The Colonoscopy Clinical Care Standard relates to the care of adult patients undergoing colonoscopy for screening, diagnosis, surveillance, or treatment. It covers the period from when a patient is referred for consideration of colonoscopy through to discharge including planning for follow-up care. The Colonoscopy Clinical Care Standard is relevant to the care provided in primary and acute healthcare settings including general practice, specialist's rooms, and public and private hospitals including day procedure services.

* Medicare data, Australian Government Department of Health

Using the clinical care standard

Related standards and guidelines

Implementation of the Colonoscopy Clinical Care Standard should be undertaken within the context and requirements of the National Safety and Quality Health Service (NSQHS) Standards and other relevant standards and guidelines for health service organisations and clinicians providing colonoscopy services.

Key guidelines

Key evidence sources referred to in the development of this clinical care standard are the Cancer Council Australia Guidelines including:

- *Clinical practice guidelines for the prevention, early detection and management of colorectal cancer.*⁸
Accessed at: https://wiki.cancer.org.au/australia/Guidelines:Colorectal_cancer
- *Clinical practice guidelines for surveillance colonoscopy.*⁹

The clinical care standard supports the use of current guidelines for sedation and anaesthesia from the [Australian and New Zealand College of Anaesthetists](#) including:

- *Guidelines for the perioperative care of patients selected for day stay procedures (PS 15)*¹⁰
- *Guidelines on sedation and/or analgesia for diagnostic and interventional medical, dental or surgical procedures (PS 09).*¹¹

The National Safety and Quality Health Service (NSQHS) Standards

The Commission developed the NSQHS Standards in collaboration with the Australian government, states and territories, clinical experts, and consumers. The NSQHS Standards aim to protect the public from harm and improve the quality of health service provision. They provide a quality assurance mechanism that tests whether relevant systems are in place to ensure that expected standards of safety and quality are met.

The second edition of the NSQHS Standards was launched in November 2017, and health service organisations have been assessed against the new standards since January 2019.

In the NSQHS Standards (2nd ed.), the Clinical Governance Standard and the Partnering with Consumers Standard combine to form the clinical governance framework for all health service organisations.

The Clinical Governance Standard aims to ensure that there are systems in place within health service organisations to maintain and improve the reliability, safety and quality of health care.

The Partnering with Consumers Standard aims to ensure that consumers are partners in the design, delivery and evaluation of healthcare systems and services, and that patients are given the opportunity to be partners in their own care.

It is expected that colonoscopy will be provided by a health service organisation that has been assessed to the NSQHS Standards.

The NSQHS Standards require that all hospitals and day services providing colonoscopy in Australia are to be accredited to the Colonoscopy Clinical Care Standard.

Health service organisations are expected to implement the NSQHS Standards in a manner that suits the services provided and their associated risks. Individual standards within the NSQHS Standards (2nd ed.) that are particularly relevant to the safety and quality of colonoscopy services, and their associated actions, are as follows:

- The Clinical Governance Standard, including actions related to:
 - Governance, leadership and culture (for example, action 1.1)
 - Safety and quality monitoring, including incident reporting systems (1.8 and 1.11)
 - Policies and procedures (for example 1.7)
 - Credentialing and scope of clinical practice (1.23 and 1.24)
 - Evidence-based care (1.27)

- Variation in clinical practice and health outcomes (1.28)
- Safe environment (1.29) including for Aboriginal and Torres Strait Islander people (1.33)
- The Partnering with Consumers Standard, including actions related to:
 - Informed consent (2.4)
 - Information for consumers (2.9) and communication of clinical information (2.10)
- The Preventing and Controlling Healthcare-Associated Infection Standard, including actions related to:
 - Infection prevention and control systems (3.5–3.13)
 - Reprocessing of reusable medical devices (3.14)
- The Communicating for Safety Standard, including actions related to:
 - Communication of critical information (6.9 and 6.10)
 - Documentation of information (6.11)
- The Recognising and Responding to Acute Deterioration Standard, including actions related to:
 - Responding to deterioration (8.10 to 8.13).

Competencies and service capability

This clinical care standard recognises that safety and quality of care may be at risk if the workforce does not have the appropriate skills or experience.¹³ The medical, nursing, procedural, and sedation/ anaesthetic competencies required for high-quality and safe colonoscopy should be considered as part of health service organisations clinical services planning.^{12, 14} For colonoscopy, health service organisations should take into account the work of the Conjoint Committee for the Recognition of Training in Gastrointestinal Endoscopy (CCRTGE) as well as the requirements of individual professional organisations.

Credentialing, certification and recertification of colonoscopists

Certification (of training) and recertification (of ongoing competency) in adult colonoscopy are now mandatory for all practitioners working in health service organisations being assessed to the NSQHS Standards (second edition).

Health service organisations will be asked to demonstrate that colonoscopists working in their facility have provided evidence of certification and recertification.

Certification

Certification of gastroenterologists, surgeons and general practitioner endoscopists is through the CCRTGE.

The CCRTGE is a national body comprising representatives of the Gastroenterological Society of Australia (GESA), the Royal Australasian College of Physicians and the Royal Australasian College of Surgeons. It sets the minimum standards for training in adult colonoscopy.

Recertification

GESA is the only organisation currently providing recertification of colonoscopists in Australia. The GESA program provides for triennial recertification and incorporates:

- a formal recertification program using evidence from the clinician’s online logbook
- training and education opportunities for practising colonoscopists.

More information on recertification is available in the fact sheet titled [*Certification and recertification of practising adult colonoscopists*](#) available from the Commission’s website.

Indicators to support local monitoring

The Commission has identified a set of indicators to support healthcare providers and local health service organisations to monitor how well they implement the care described in the clinical care standard. The indicators are a tool to support local clinical quality improvement and may be relevant to other quality assurance and peer review activities.

The indicators described in this clinical care standard align with the performance indicators for certification and recertification developed by the CCRTGE and GESA.

The process to develop the indicators specified in this document comprised:

- An environmental scan of existing local and international indicators
- Prioritisation, review and refinement of the indicators with the Colonoscopy Clinical Care Standard Topic Working Group.

Measuring and monitoring patient experience

Systematic routine monitoring of patients' experiences of healthcare is an important way to ensure that service improvements and patient-centredness are driven by the patients' perspective. This is the case in all health service organisations, including those performing colonoscopy.

While there are no indicators in this standard specific to patient experience measurement, the Commission strongly encourages health service organisations to adopt the Australian Hospital Patient Experience Question Set (AHPEQS). The AHPEQS is a short 12 question generic patient experience survey which has been tested and found reliable and valid for both day-only and admitted hospital patients across a wide variety of clinical settings. The instrument is available free of charge to both private and public sector health service organisations. The Commission's website contains more information about this tool at www.ahpeqs.safetyandquality.gov.au.

Where to find the indicator specifications

In this document, the indicator titles and hyperlinks to the specifications are included with the relevant quality statement under the heading *Indicators for local monitoring*. Full specifications of the *Colonoscopy Clinical Care Standard* indicators can be found in the Metadata Online Registry (METeOR) at meteor.aihw.gov.au/content/index.phtml/itemId/697168.

METeOR is Australia's web-based repository for national metadata standards for the health, community services and housing assistance sectors. Hosted by the Australian Institute of Health and Welfare (AIHW), METeOR provides users with online access to a wide range of nationally endorsed data and indicator definitions.

Supporting documents

Supporting information for this clinical care standard is available from the Commission's website at www.safetyandquality.gov.au/colonoscopy-ccs. This includes the resources listed below.

Fact Sheets

- Colonoscopy Clinical Care Standard – Clinician Fact Sheet
- Colonoscopy Clinical Care Standard – Consumer Fact Sheet
- NSQHS Standards – Implementing the Colonoscopy Clinical Care Standard – informed consent
- NSQHS Standards – Certification and Recertification of practicing colonoscopists

Poster

- Colonoscopy Clinical Care Standard poster

Templates

- Colonoscopy Referral Information Template
- Colonoscopy Report Template
- Colonoscopy Follow Up letter Template – from the specialist to the GP and patient



Quality statement 1 – **Initial assessment and referral**

When a patient is referred for consideration of colonoscopy, the referral document provides sufficient information for the receiving clinician to assess the appropriateness, risk and urgency of consultation. The patient is allocated an appointment according to their clinical needs.

Purpose

To ensure that communication of information from referring clinicians to colonoscopy clinics and specialists enables the timely and accurate assessment of patients according to clinical urgency and appropriateness.

What the quality statement means



For patients

People might have a colonoscopy for different reasons and every person's situation is different. Just because you are referred to a specialist to consider having a colonoscopy does not mean that it will be the right thing for you. It is important that the doctor or health service organisation that you are referred to has the right information about you and your medical history. This will help them decide if a colonoscopy is likely to help you. Your current and past medical conditions, your age, your family medical and cancer history, current medicines and the results of previous tests, imaging and colonoscopies should all be included in the referral document. In some health service organisations, the referral is also used to decide how soon to book your appointment.

The doctor who writes the referral will explain what you need to do next, how soon you need the appointment and what to do if you are not given an appointment within that time.



For clinicians

When referring patients for consideration of colonoscopy, provide a comprehensive referral to prevent delays and enable accurate assessment of the patient's suitability for colonoscopy. Standard (electronic) templates can help, for example those included in local Health Pathways. The referral should include:

- The indication for the referral including presenting symptoms and the preliminary diagnosis
- All relevant medical and family history, including of bowel and other cancers, known genetic predispositions
- Current medicines and other medical conditions.
- Previous relevant treatment
- Results of previous investigations, including of FOBT (indicating whether this was through the NBCSP), colonoscopies and histopathology.

Consider the indications and surveillance intervals recommended in current evidence-based guidelines such as the Cancer Council Australia's [*Clinical practice guidelines for the prevention, early detection and management of colorectal cancer*](#)⁸, and *Clinical practice guidelines for surveillance colonoscopy*⁹, the patient's co-morbidities and the patient's willingness to proceed. Advise the patient that the specialist receiving the referral will assess them individually before undertaking the colonoscopy. Provide clear instructions to the patient on what they need to do to act on the referral, the degree of urgency, and what to do if they cannot get an appointment in the recommended timeframe.

For clinicians receiving referrals, ensure that there are processes for allocating appointments according to clinical need.



For health services

For health service organisations that refer patients, use consistent processes for referring patients for colonoscopy to ensure that referrals are comprehensive and accurate to enable assessment and triage. For health service organisations receiving, allocating or prioritising referrals for clinical assessment or colonoscopy (including open access services) ensure that clear referral guidelines are available for referring clinicians, identifying the type and format of clinical information required. Use of this information will support the provision of services according to patient's clinical priority. Using agreed, standardised templates can assist the communication of important information between referring clinicians and colonoscopy services; these may be in electronic format.

Related resources:

A referral template is available to support implementation. See www.safetyandquality.gov.au/colonoscopy-ccs



Quality statement 2 – **Appropriate and timely colonoscopy**

A patient is offered timely colonoscopy when appropriate for screening, surveillance, or the investigation of signs or symptoms of bowel disease, as consistent with national evidence-based guidelines. Decisions are made in the context of the patient's ability to tolerate the bowel preparation and colonoscopy, and their likelihood of benefit. If colonoscopy is not appropriate, the receiving clinician advises the patient and their referring clinician of alternate recommended management.

Purpose

To ensure colonoscopy is offered to patients who are most likely to benefit from the procedure and within a timeframe concordant with their risk, in a manner consistent with current national evidence-based guidelines.

What the quality statement means



For patients

Colonoscopy is used when doctors want to look at the inside of the bowel to check for signs of disease. It may be recommended if you are experiencing certain bowel problems, to follow-up a previous bowel condition, because of test results (such as a CT scan or FOBT) or your family history. You should only be offered a colonoscopy if the benefits outweigh any risks of the procedure for you. While most people do not have any complications, the bowel preparation, the sedation and the colonoscopy all have some risks. Your doctor or nurse will discuss these risks with you, considering your general health. You should also talk about the risks of not having the colonoscopy. For some people a colonoscopy may need to be carried out as soon as possible, while for other people it may need to be done less urgently. If a colonoscopy is not recommended then the doctor may suggest an alternative test.



For clinicians

Consider whether colonoscopy is indicated for the patient according to national evidence-based guidelines and the epidemiology of colonic disease. Assess the likely benefits to the patient, as well as the risks associated with the bowel preparation, sedation, the procedure itself, and the risks associated with not having the procedure.

- For people with symptoms suggestive of bowel cancer or a positive immunochemical FOBT, refer to Cancer Council Australia's [*Clinical practice guidelines for the prevention, early detection and management of colorectal cancer*](#)⁸, and the recommended triage criteria to ensure prompt scheduling for patients.
- For people requiring surveillance colonoscopy, refer to the Cancer Council Australia's *Clinical practice guidelines for surveillance colonoscopy*.⁹ regarding the frequency and surveillance intervals for colonoscopy in high-risk individuals.

If colonoscopy is not appropriate, advise the patient and their referring clinician about recommended alternative diagnostic strategies or management.



For health services

Ensure that policies and processes support the timely and appropriate provision of colonoscopy. This includes:

- Supporting and promoting clinicians' use of national evidence-based guidelines including Cancer Council Australia's [*Clinical practice guidelines for the prevention, early detection and management of colorectal cancer*](#), and *Clinical practice guidelines for surveillance colonoscopy*.^{8, 9}
- Supporting and encouraging clinician participation in quality improvement and peer-review processes.

For health service organisations that receive referrals, reflect guideline recommendations from the Cancer Council Australia in policies and procedures for triage and scheduling of colonoscopy appointments.



Quality statement 3 – **Informed decision making and consent**

Before starting bowel preparation, a patient receives comprehensive consumer-appropriate information about bowel preparation, the colonoscopy, and sedation or anaesthesia. They have an opportunity to discuss the reason for the colonoscopy, its benefits, risks, financial costs and alternative options before deciding to proceed. Their understanding is assessed, and the information provided and their consent to sedation, colonoscopy and therapeutic intervention is documented.

Purpose

To ensure that each patient is provided with adequate information and time to consider the risks and benefits of colonoscopy before providing informed consent and before starting bowel preparation or any other aspect of the procedure.

What the quality statement means



For patients

If your doctor recommends that you have a colonoscopy, you will need to decide whether to go ahead with it. If you decide to have the colonoscopy, you will be asked to give consent. Giving consent means that you understand what is involved in having the colonoscopy, what the risks and benefits are for you, and that you agree to have the colonoscopy. To help you make your decision, you will be informed about all the parts of the process including:

- Bowel preparation – the process for clearing your bowel before the colonoscopy using medicines, changing your diet and fasting (not eating for a period of time)
- Sedation – medicines given to minimise discomfort during the colonoscopy
- The colonoscopy procedure – how the colonoscope is used to look at your bowel, and to help remove polyps or tissue samples.

The discussion will include:

- Why the doctor is suggesting a colonoscopy
- Benefits to your health
- Risks of the bowel preparation, sedation and the colonoscopy
- Risks of not having the colonoscopy
- Any out-of-pocket costs
- Any alternatives to colonoscopy.

It is important that you understand this information before giving consent and that you ask questions if you need more information before you make your decision. This should happen before you start the bowel preparation. If you need an interpreter, this can be arranged. If you choose to have the colonoscopy, your consent will be recorded in writing. Even after you have given your consent, you can ask for more information or change your mind about having the colonoscopy at any time before the colonoscopy begins.



For clinicians

Provide the patient (or their responsible decision-maker where relevant) with clear and comprehensive information about all aspects of the colonoscopy relevant to the patient's decision and consent including the bowel preparation, sedation (or anaesthesia) the colonoscopy and any therapeutic interventions, using language that they can understand. Arrange an interpreter if required. Inform the patient the reason for the colonoscopy, its likelihood of benefit and potential adverse events including those related to the bowel preparation or sedation, perforation, bleeding (immediate and delayed) and missed pathology. Provide information about the financial costs and the alternatives to having the colonoscopy, including any risks of not having the colonoscopy. Provide adequate time for the patient to consider the information provided and to ask questions before consenting. Respect the patient's decision and document it and their informed consent in the medical record, with a description of the information discussed and provided to the patient.



For health services

Ensure that clear, written information is available to patients for all aspects of the colonoscopy for which the health service organisation is responsible, which may include bowel preparation, the colonoscopy and associated sedation or anaesthesia. When consent is being obtained, ensure protocols and procedures enable patients to receive adequate information to inform their decision, are supported to ask questions and consent before the start of bowel preparation. Ensure interpreter services are accessible and their use is supported. Ensure policies and procedures support the principles and practices of informed consent and appropriate documentation.¹⁵⁻¹⁷

Related resources:

A fact sheet describing the informed consent requirements for the Colonoscopy Clinical Care Standard is available. See www.safetyandquality.gov.au/colonoscopy-ccs.



Quality statement 4 – **Bowel preparation**

A patient booked for colonoscopy receives a bowel preparation product and dosing regimen individualised to their needs, co-morbidities, regular medicines and previous response to bowel preparation. The importance of good bowel preparation for a quality colonoscopy is discussed with the patient. They are provided with consumer-appropriate instructions on how to use the bowel preparation product and their understanding is confirmed.

Purpose

To ensure that patients who present for colonoscopy have a clear bowel that enables a thorough examination.

What the quality statement means



For patients

Before you have a colonoscopy, you need to make sure your bowel is as clear as possible. If your bowel is not clear, polyps or even cancers may be missed, or you may need to have the colonoscopy again. This means it is important for you to follow the instructions carefully and ask questions if you do not understand what to do.

To get your bowel ready for the colonoscopy, you will be told what (and what not) to eat and drink, including when to drink extra fluids to stop you from getting dehydrated. You will be given, or asked to buy, medicine to clear out your bowel by causing diarrhoea. Make sure you understand when to take the medicines, usually starting the day before the colonoscopy. Your doctor or nurse will explain how these medicines may affect you. You should tell them about any previous experience you have had with bowel preparation.

Preparation for colonoscopy can also affect your other health conditions or medicines, such as medicines for diabetes or medicines to prevent blood clots. You may need to change the way you take your other medicines or follow special instructions in the days before your colonoscopy. Your doctor will discuss with you any changes you may need to make. Some people may need extra personal or health support during bowel preparation and a few may need an overnight stay in hospital.

If at any time during the bowel preparation you are unsure what to do, ring your doctor or clinic to check.



For clinicians

Provide written and verbal consumer-appropriate information to patients preparing for colonoscopy, using interpreter services where necessary. Select an appropriate bowel preparation agent and ensure the patient knows how to obtain and use it, taking into account individual risks, co-morbidities, current medicines, and the patient's previous experience with bowel-cleansing medicines.⁶ Clearly explain the purpose of bowel preparation, the importance of following the prescribed procedure, the regimen and the potential side effects of the bowel preparation products. Allow the patient appropriate time to ask questions and confirm that they understand what to do and its importance.

A split-dose regimen is recommended as this results in a higher quality colonoscopy examination compared with ingestion of the entire preparation on the day or evening before the colonoscopy, and has been associated with increased adenoma detection rates.¹⁸ Typically this involves splitting the standard dose of the bowel preparation between the day before and the morning of the colonoscopy (3-6 hours before the planned start of the procedure).¹⁸

Ensure patients on diabetes medicines, anticoagulants, antiplatelets or other medicines are provided with individualised instructions about how to adjust their medicines and manage their condition as they undergo bowel preparation. Consider whether a patient with relevant co-morbidities needs specific health or personal support whilst undergoing bowel preparation, for example, overnight admission for patients who are unlikely to manage bowel preparation independently.



For health services

Ensure that policies and procedures support best practice for bowel preparation. Support patients by enabling access to information about bowel preparation. For health service organisations with responsibility for providing bowel preparation and advice, provide clear, written patient information about the bowel preparation procedure and a telephone number for any inquiries patients may have as the bowel preparation proceeds; ensure interpreter services or translated materials are available. Ensure patient information is approved and periodically reviewed by clinical staff. Where relevant to the facility, ensure policies support the provision of extra assistance to patients who are unlikely to manage bowel preparation independently, including overnight admission if needed.

Indicator for local monitoring

Bowel preparation

Indicator: Proportion of patients scheduled for a colonoscopy whose bowel preparation was adequate.

METeOR link: meteor.aihw.gov.au/content/index.phtml/itemId/691696

More information about this indicator and the definitions needed to collect and calculate it can be found online in the above METeOR link.

Related resources:

A consumer video is available to support implementation.
See www.safetyandquality.gov.au/colonoscopy-ccs.



Quality statement 5 – Sedation

Before colonoscopy, a patient is assessed by an appropriately trained clinician to identify any increased risk, including cardiovascular, respiratory or airway compromise. The sedation is planned accordingly. The risks and benefits of sedation are discussed with the patient. Sedation is administered and the patient is monitored throughout the colonoscopy and recovery period in accordance with Australian and New Zealand College of Anaesthetists guidelines.

Purpose

To ensure the safe and appropriate sedation of patients undergoing colonoscopy.

What the quality statement means



For patients

During your colonoscopy you will be given medicines to minimise your pain or discomfort (sedation). Before the colonoscopy, a doctor or nurse will check whether there are any particular risks for you when you are having the sedation. They will ask about your health, other medical conditions, medicines and previous experiences with sedation or anaesthesia. This is to make sure that you are given sedation safely. They will also talk with you about the medicines they will use during your sedation, their risks and benefits, and what you can expect to be aware of during the colonoscopy and as you recover. Discuss any concerns or preferences with your doctor. Your sedation will be given according to current professional recommendations, guidelines and taking into account your risks. Your sedation may sometimes be given by a specialist anaesthetist but this is not always required.



For clinicians

Ensure that the patient's suitability for sedation and any increased risks such as cardiovascular, respiratory or airway compromise are assessed in advance of the colonoscopy by a clinician who is appropriately trained to make such an assessment. Ensure that the facility is appropriate for the patient taking into account their clinical requirements and co-morbidities, as described in [ANZCA Guidelines for the Perioperative Care of Patients Selected for Day Stay Procedures](#).¹⁰ If an increased risk is identified, an anaesthetist, or other trained and credentialed medical practitioner within his/her scope of practice, should assess the patient and be present during the colonoscopy to care for the patient. The sedationist should discuss the risks and benefits with the patient and obtain their informed decision and consent. Ensure that the patient understands that their awareness of the colonoscopy will depend upon the depth of sedation, and that this in turn depends on the scope of practice of the clinician providing the sedation. Sedation must be administered by a credentialed practitioner working within their scope of practice. Provide sedation as described in current [ANZCA](#) guidelines such as the *Guidelines on Sedation and/or Analgesia for Diagnostic and Interventional Medical, Dental or Surgical Procedures (PS09)*, with respect to:

- The number of staff present during the sedation and their level of training, competence and scope of clinical practice

- Facilities, equipment and medicines
- Administration of sedation
- Monitoring of patients during the colonoscopy and in the recovery room.



For health services

Sedation should be provided in accordance with current [ANZCA](#) recommendations such as the *Guidelines on Sedation and/or Analgesia for Diagnostic and Interventional Medical, Dental or Surgical Procedures*¹¹ and *Guidelines for the Perioperative Care of Patients Selected for Day Stay Procedures*.¹⁰ Ensure that systems are in place, and services adequately resourced, to implement the ANZCA guidelines. Policies should ensure that pre-sedation assessment is carried out by appropriately trained clinicians, in order to identify patients who are not suitable for intravenous sedation in the absence of an anaesthetist, and to plan for sedation accordingly. Ensure that clinicians who administer sedation or anaesthesia for colonoscopy are credentialed by the health service organisation and operating within their defined scope of clinical practice and that they maintain their skills by participating in ongoing professional development and review of performance. Implement and ensure compliance with policies and procedures for the safe supervision of trainees, where relevant to the facility.



Quality statement 6 – **Clinicians**

A patient's colonoscopy is performed by a credentialed clinician working within their scope of clinical practice, who meets the requirements of an accepted certification and recertification process. Sedation or anaesthesia, and clinical support are provided by credentialed clinicians working within their scope of clinical practice.

Purpose

To ensure all colonoscopies and associated sedation and clinical care are provided by skilled clinicians at a high level of safety and quality.

What the quality statement means



For patients

When you have a colonoscopy you can expect to be cared for by qualified doctors and nurses who have met necessary health service organisation and professional requirements and standards. This includes those providing your nursing care, sedation or anaesthesia, and your colonoscopy. You can expect that the doctor or specialist nurse who carries out the colonoscopy will keep their skills and knowledge up to date.



For clinicians

Ensure that your training, skills and experience allow you to provide safe, high quality care to a patient undergoing colonoscopy, in accordance with expected professional standards. Comply with your health service organisation's policies and procedures regarding your scope of clinical practice. Interact with your peers to ensure your performance, and theirs, meets the accepted requirements for safety and quality (for example, participate in peer review meetings, quality clinical improvement processes including the collection of quality indicators, and reviews of evidence-based best practice). If you are a colonoscopist, undergo certification and participate in a recertification process that is accepted by your professional association and employer. Supervise trainees at a level appropriate to their skill and experience.



For health services

Identify credentials that are required for clinicians to perform colonoscopy or provide sedation or anaesthesia for patients undergoing colonoscopy, and ensure credentialing processes are adequate, as set out in *Credentialing health practitioners and defining the scope of clinical practice: A guide for managers and practitioners*¹⁴. For clinicians performing colonoscopy, identify accepted certification and recertification processes according to their clinical speciality and professional body and use this when credentialing clinicians and defining their scope of clinical practice. Ensure non-anaesthetist practitioners who provide sedation meet a defined standard of competency for sedation.¹¹ Support participation by clinicians in peer review activities. Monitor and periodically review individual and service performance against accepted quality indicators and ensure under-performance is addressed promptly and effectively. Where relevant to the health service organisation, implement and ensure compliance with policies and procedures for the safe supervision of trainees.

Related resources:

A fact sheet about the certification and recertification requirements for practising colonoscopists is available. See www.safetyandquality.gov.au/colonoscopy-ccs.



Quality statement 7 – Procedure

When a patient is undergoing colonoscopy their entire colon – including the caecum – is examined carefully and systematically. The adequacy of bowel preparation, clinical findings, biopsies, polyps removed, therapeutic interventions and details of any adverse events are documented. All polyps removed are submitted for histological examination.

Purpose

To optimise detection and management of disease, to minimise adverse outcomes for all patients who undergo colonoscopy, and to ensure the colonoscopy is documented adequately in the patient's health record.

What the quality statement means



For patients

Your colonoscopy will be performed to a high standard. During the colonoscopy, the whole length of your bowel will be carefully examined. This will make it more likely that bowel problems can be found and that growths such as polyps can be seen and removed. If bowel tissue or polyps are removed from your bowel they will be sent to pathology laboratories for examination under a microscope. All the records kept by health service organisations will have information about your colonoscopy, the findings and any problems that may have occurred, which you can ask to see if you want to.



For clinicians

To maximize adenoma detection, intubate the caecum or terminal ileum and allow adequate time for mucosal inspection whenever performing colonoscopy.¹⁹ In people with previous resection, examine the remaining bowel thoroughly. Document the quality of the bowel preparation, whether caecal intubation was achieved (with photo-documentation if feasible), withdrawal time, clinical findings, the details of polyps removed, how they were removed and whether they were retrieved. Ensure all polyps that are removed are retrieved where possible and are sent for histopathology examination. Clearly identify histology samples generated through participation in the NBCSP to enable pathologists to complete data collection on screening outcomes recommended by the NBCSP. Record adverse events including perforation, post-polypectomy bleeding and sedation-related cardio-respiratory compromise in the patient record and relevant quality systems (for example the facility's incident monitoring system). Inform the patient if these have occurred and how they have been managed.



For health services

Ensure that the number of patients booked on each list enables the colonoscopist to undertake a careful and systematic examination of each patient's colon. Provide systems that require and support colonoscopists to maintain accurate records of the colonoscopy including the adequacy of bowel preparation, biopsies taken, polyps removed and retrieved, all diagnostic and therapeutic interventions, procedure duration and details of any adverse events. Ensure complications or adverse events of colonoscopy are reported in the health service organisation's incident management system, monitored and reviewed as part of quality monitoring and clinical quality improvement activities (such as morbidity and mortality reviews or clinical review meetings).

Indicators for local monitoring

Indicator: Caecal intubation

Proportion of patients undergoing a colonoscopy who have their entire colon examined

METeOR link: meteor.aihw.gov.au/content/index.phtml/itemId/691703

Indicator: Adenoma detection rate

Proportion of patients who had a colonoscopy that detected one or more adenoma(s)

METeOR link: meteor.aihw.gov.au/content/index.phtml/itemId/691715

Indicator: Sessile serrated adenoma detection rate

Proportion of patients who had a colonoscopy that detected one or more sessile serrated adenoma(s)/polyp(s)

METeOR link: <https://meteor.aihw.gov.au/content/index.phtml/itemId/717364>

More information about the indicators and the definitions needed to collect and calculate them can be found online in the above METeOR links.

Related resources:

A colonoscopy report template is available for use by colonoscopists. See www.safetyandquality.gov.au/colonoscopy-ccs.



Quality statement 8 – **Discharge**

Following recovery and before discharge, the patient is advised verbally and in writing about the preliminary outcomes of the colonoscopy, the nature of any therapeutic interventions or adverse events, when to resume regular activities and medicines, and arrangements for medical follow-up. The patient is discharged into the care of a responsible adult when it is safe to do so.

Purpose

To ensure patients recover and are discharged safely with available information about the outcomes of the colonoscopy and arrangements for follow-up.

What the quality statement means



For patients

After your colonoscopy, you will be cared for while you recover from the sedation. Before you go home, a doctor or nurse will tell you what happened during the colonoscopy, whether any polyps or other tissue was removed and whether there were any problems during the procedure. They will tell you about any arrangements or follow-up appointments you need to make. You may find it difficult to remember this information so it will be also given to you in writing.

You will be able to go home once your doctor or nurse is satisfied that you have recovered from the sedation. You should not drive and will need an adult to accompany you home. It is also recommended that you have someone stay with you on the night after the colonoscopy. If this is not possible, discuss this with your doctor before you have the colonoscopy.

You will be given written instructions on how to care for yourself when you go home and when to start your regular medicines and diet again. You will be provided with information about what to do if you have any problems after going home including a phone number that you can call after hours.



For clinicians

Before discharge, the responsible clinician or their delegate should talk to the patient and briefly describe what happened during the colonoscopy, whether the colonoscopy was completed satisfactorily, initial observations, whether biopsies or polypectomies were performed, and if any adverse events occurred. Advise patients of any arrangements for follow-up medical consultation and when final results and recommendations will be provided to them and their referring clinician.

Ensure patients are discharged by authorised clinical personnel into the care of a responsible adult, once satisfactory discharge criteria are met. Provide instructions about early post-procedure care and resumption of normal activities, including making legally binding decisions, operating machinery and resuming regular medication. Advise patients of what to do if they experience symptoms suggesting a complication of the colonoscopy, and provide them with specific contact details for obtaining appropriate advice. Any information given verbally about the procedure or post-discharge should also be provided in written format. Consider admission for a patient at high risk of an adverse outcome if they are to be discharged without adequate adult support at home, or who is otherwise not suitable for discharge.



For health services

Ensure that policies and procedures for monitoring, supervising and discharging patients align with current recommendations for post-operative care following anaesthesia (for example ANZCA guidelines for perioperative care [PS15]¹⁰). Ensure that procedures are in place for discharging patients into the care of a responsible adult, and that written instructions are provided about early post-procedure care and resumption of normal activities including medicines. Ensure that there is a response plan for patients in the event of problems arising post-discharge, and that the discharge information includes specific health service contact details after hours. Policies should allow for overnight admission if needed for patients who have comorbidities and cannot be cared for adequately at home in the immediate period post-discharge or who do not meet discharge criteria (as appropriate to the type of facility).



Quality statement 9 – Reporting and follow-up

The colonoscopist communicates the reason for the colonoscopy, its findings, any histology results and recommendations for follow-up in writing to the general practitioner, any other relevant clinician and the patient, and documents this in the facility records. Recommendations for surveillance colonoscopy, if required, are consistent with national evidence-based guidelines. If more immediate treatment or follow-up is needed, appropriate arrangements are made by the colonoscopist.

Purpose

To ensure the results of colonoscopy are effectively communicated and that patients are offered follow-up treatment or ongoing surveillance in accordance with evidence-based guidelines.

What the quality statement means



For patients

The results of your colonoscopy will be given to you, your general practitioner, and any of your other doctors who may need to be informed. The letter or report will say why you had the colonoscopy, and what was found, whether any tissue or growths (such as polyps) were removed from your bowel and sent for testing, and the results of those tests.

The report will also say whether you need to go and see a doctor for a follow-up visit, have further tests or treatment or another colonoscopy in the future and when this should happen. These recommendations will be different for each person and will depend on your medical and family history and what was found during the colonoscopy.



For clinicians

Provide follow-up recommendations to the patient, general practitioner and other relevant clinician based on the colonoscopy findings and final histology results, which are consistent with national evidence-based guidelines. Include the reason for the colonoscopy in the report, and ensure that both positive and negative patient's medical history, histology findings are communicated. The need and time interval for future screening and surveillance colonoscopies should be guided by evidence-based guidelines, such as the Cancer Council Australia's [*Clinical practice guidelines for the prevention, early detection and management of colorectal cancer*](#)⁸, and *Clinical practice guidelines for surveillance colonoscopy*.⁹ If prompt treatment or investigation is required (such as for histologically-confirmed colorectal cancer or high-risk lesions), make the necessary arrangements and ensure these are communicated to the patient and their referring clinician. For NBCSP participants, provide colonoscopy outcomes, results and adverse events to the NBCSP Register.



For health services

Ensure that policies and procedures for information management and communication support the complete reporting of colonoscopy and histology outcomes to referring clinicians, other relevant clinicians and the patient, and that responsibilities are clearly delineated. These policies should include arrangements for the reporting of all histology results if any tissue was removed, regardless of the histological findings. Ensure systems are in place for the prompt communication and management of histologically-confirmed colorectal cancer or high-risk lesions as appropriate for the type of facility. Support and promote clinicians' use of national evidence-based guidelines on surveillance colonoscopy, such as the Cancer Council Australia's [*Clinical practice guidelines for the prevention, early detection and management of colorectal cancer*](#)⁸, and *Clinical practice guidelines for surveillance colonoscopy*⁹, when making recommendations for future surveillance and follow-up. Support reporting to the NBCSP for patients referred through participation in this program.

Related resources:

The following templates for colonoscopists are available to support implementation:

- a colonoscopy report template
- a template for follow-up letters to GPs and patients.

See www.safetyandquality.gov.au/colonoscopy-ccs.

Glossary

Adenoma

A benign (non-cancerous) growth which has specific characteristics that can be seen using pathology testing techniques (proliferation of neoplastic epithelial cells). Adenomas may be protuberant, flat or depressed. Some adenomas may change over time and develop into malignant growths (cancers).

Benign growth (tumour)

A benign growth is one which is not able to spread to other parts of the body. It may also be described as pre-cancerous or pre-malignant.

Bowel

Part of the digestive tract extending from the stomach to the anus. It has two main sections – the small and large bowel (also known as the small and large intestine). The small bowel continues from the stomach – its various parts are the duodenum, jejunum and ileum. The small bowel joins up with the large bowel at the terminal ileum. The large bowel is made up of the colon and rectum. The rectum joins up with the anus.

Bowel cancer

Cancer of the large bowel; also known as colorectal cancer, colon cancer or rectal cancer.⁸

Bowel preparation

The use of medicines and changes in the diet to clean out the bowel in preparation for a test, scan or operation, allowing the lining of the bowel to be seen more clearly.

Caecum

The first part of the ascending colon of the large bowel. This is one of the important landmarks when performing a colonoscopy, to ensure the procedure has examined the whole bowel.

Clinician

A qualified and trained health professional who provides direct patient care (that is, the diagnosis and/or treatment of patients including recommending preventative action). In this document it may refer to a doctor, nurse or nurse practitioner, depending on the care that is being described and the individual's scope of professional practice.^{20, 21}

Colon

The main part of the large bowel, which absorbs water and electrolytes from undigested food (solid waste). Its four parts are the ascending colon, transverse colon, descending colon and sigmoid colon.⁸

Colonoscopist

A clinician with the necessary qualifications and training who performs the colonoscopy. This may be a physician, surgeon, general practitioner or nurse. In a health service organisation, this person will be credentialed to perform colonoscopy within their scope of practice and have demonstrated suitability to do so in accordance with local requirements and with reference to the requirements of the relevant national professional body.

Colonoscopy

An examination of the entire large bowel using a camera on a flexible tube, which is passed through the anus.⁸ Colonoscopy can be performed to establish if there is something wrong in the bowel (diagnostic) or to treat a known bowel problem (therapeutic). (See also Flexible Sigmoidoscopy)

Colorectal

Referring to the large bowel, comprising the colon and rectum.⁸

Credentialing

The formal process used to verify the qualifications, experience, professional standing and other relevant professional attributes of health practitioners for the purpose of forming a view about their competence, performance and professional suitability to provide safe, high-quality health services within specific organisational environments.¹⁴

Dehydration

Dehydration occurs when the body loses more fluid than it takes in. It can result in problems like feeling dizzy, falls, chemical imbalances and kidney problems. It is important to follow instructions about fluid intake during bowel preparation to prevent dehydration.

Faecal occult blood test (FOBT)

A test that can detect microscopic amounts of blood in stools. Types of FOBT include immunochemical FOBTs (iFOBTs), which directly detect haemoglobin using antibodies specific for the globin moiety of human haemoglobin, and guaiac FOBTs (gFOBTs), which detect peroxidase activity, an indirect method for identification of haemoglobin.⁸

The NBCSP sends a free FOBT to eligible Australians aged 50 to 74 to screen for bowel cancer, every two years.

Family history

A family history of cancer is present when there are members of the family who have been diagnosed with cancers. Although bowel cancer is the most important, other cancers such as the uterus, breast and stomach are also relevant. The risk of getting bowel cancer is related to the number of affected relatives and the age at which they were diagnosed with cancer.

Familial syndromes

Genetic disorders in which inherited genetic mutations in one or more genes predispose a person to developing cancer, particularly at an early age.⁸

First presentation

The first presentation occurs when an individual first seeks advice leading to their first colonoscopy – this may be because of a positive faecal occult blood test in the NBCSP or symptoms.

Flexible sigmoidoscopy

A procedure used by doctors to examine the inner lining of the rectum and sigmoid colon (unlike a colonoscopy, in which the entire colon is examined).⁸

General anaesthesia

The use of medicines to bring about a state of controlled unconsciousness, where the person is unaware of pain and has no awareness of what is going on around them.²²

A drug-induced state characterised by absence of purposeful response to any stimulus, loss of protective airway reflexes, depression of respiration and disturbance of circulatory reflexes.¹¹

See also 'Sedation'.

iFOBT

Immunochemical Faecal Occult Blood Test (see entry for Faecal occult blood test)

Informed consent

Informed consent involves a conversation with the patient in which the risks and benefits are discussed and the patient has the opportunity to ask questions before making a decision.²³

Inflammatory bowel disease

A group of inflammatory conditions of the colon and small intestine, including Crohn's disease and ulcerative colitis.²⁴

Laxative

A medicine used to stimulate the bowel and clean it of faecal matter. Laxatives are important as part of preparation of the bowel prior to colonoscopy so the lining of the bowel can be seen clearly.

Malignant tumour

A growth that is able to spread into nearby normal tissue and travel to other parts of the body.²⁴
A malignant growth is a cancer.

National Bowel Cancer Screening Program (NBCSP)

A national program available to people ≥ 50 years of age which aims to decrease bowel cancer and illness and death related to it.

In Australia, government-funded, population-based bowel cancer screening is available through the National Bowel Cancer Screening Program (NBCSP). The NBCSP started in 2006 and is managed by the Department of Health in partnership with state and territory governments. The Program sends a free Faecal Occult Blood Test (FOBT) to eligible Australians aged 50 to 74 to screen for bowel cancer every two years. Participants with a positive screening result, indicated by blood in the stool sample, are advised to consult their primary health care provider to discuss further diagnostic assessment—in most cases, this will be a colonoscopy.

The NBCSP Register maintains records of participants and the outcomes of screening, using information provided by clinicians.

Open Access Colonoscopy

An open access colonoscopy service is a service where a patient can be referred by a clinician for a colonoscopy without a prior consultation with the specialist performing the colonoscopy. A number of open access models have been developed to improve access to services. More appropriate services provide contact between the patient and a suitably trained clinician. This allows consideration of the patient's co-morbidities, discussion of the procedure and preparation, potential risks and benefits of the procedure and any residual questions to be answered.

Polyp

A growth of colonic tissue which protrudes into the lumen (space) above the lining of the bowel. Polyps are usually asymptomatic, but sometimes cause visible rectal bleeding and, rarely, other symptoms. Polyps may be neoplastic (for example, adenomas) or non-neoplastic (for example, inflammatory polyps).

Rectum

The final section of the large bowel, ending at the anus.

Referring clinician

The doctor or nurse practitioner who refers the patient for a specialist consultation. In most cases this is the general practitioner.

Sessile serrated adenoma:

A sessile serrated adenoma (SSA) is a flat (or sessile) lesion, or growth in the colon, thought to lead to colorectal cancer.

Scope of clinical practice

As defined by health service organisations, follows on from credentialing and involves delineating the extent (scope) of an individual practitioner's clinical practice within a particular organisation based on:

- the individual's credentials, competence, performance and professional suitability
- the needs of the organisation and its capability to support the practitioner's scope of clinical practice.

A practitioner's scope of clinical practice can be separated into:

- routine scope of clinical practice (core scope of clinical practice) based on qualifications, professional awards and statements of competency from relevant education and training bodies such as a professional college in a speciality or sub-speciality area of practice
- Scope of clinical practice requiring specific credentialing (specific scope of clinical practice) based on additional training, the introduction of new clinical procedures, equipment or where any other significant change in practice occurs.

Screening

Screening is the performance of a test in an individual at average risk of a disease who does not have symptoms. A positive test identifies an individual in whom further tests are usually needed to exclude or detect the disease being screened for.

For bowel cancer screening in Australia, those ≥ 50 years are invited to undertake a faecal occult blood test (FOBT) through the national screening program. If the test is positive, a colonoscopy is usually recommended.

Screening colonoscopy

Individuals who are at markedly higher than average risk for bowel cancer are advised to undergo screening colonoscopy, as per NHMRC screening recommendations. This includes those with familial syndromes such as Lynch Syndrome.

Sedation

Sedation refers to the use of medicines to allow a person to tolerate uncomfortable or painful procedures. Sedation is a form of anaesthesia.

Sedation occurs along a continuum, which can range from 'conscious sedation' through to 'deep sedation' and 'general anaesthesia'. While different medicines are used for sedation and general anaesthesia, people can respond differently to the same medicines.

Conscious sedation refers to depression of consciousness during which patients are able to respond to verbal commands or light touch. Conscious sedation may be achieved by a wide variety of drugs including propofol, and may accompany local anaesthesia. All conscious sedation techniques should provide a margin of safety that is wide enough to render loss of consciousness unlikely. However interventions to maintain a patent airway, spontaneous ventilation and/or cardiovascular function may be required in exceptional cases.¹¹

Deeper sedation is characterised by depression of consciousness that can readily progress to the point where consciousness is lost and patients respond only to painful stimulation. It is associated with loss of the ability to maintain a patent airway, inadequate spontaneous ventilation and/or impaired cardiovascular function, and has similar risks to general anaesthesia, requiring an equivalent level of care.¹¹

Sigmoid colon

The last section of the colon before it connects to the rectum.⁸

Surveillance colonoscopy

A colonoscopy performed in:

- Someone who has previously had disease to see if it has returned or if new disease is present (for example, after previous bowel cancer or adenoma removal)
- Someone who currently has disease to see if it has progressed (for example, inflammatory bowel disease).

Surveillance intervals are recommended in the Cancer Council Australia guidelines.

Terminal ileum

The end of the small bowel (intestine) where it joins the large bowel (intestine).

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Acknowledgements

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Many individuals and organisations have freely given their time and expertise to develop this document. In particular, the Commission thanks the Colonoscopy Clinical Care Standard Topic Working Group and other experts who gave their time and advice during the development of the safety and quality model for colonoscopy and the clinical care standard. The involvement and willingness of all concerned to share their experience and expertise is greatly appreciated.

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**AUSTRALIAN COMMISSION
ON SAFETY AND QUALITY IN HEALTH CARE**



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COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-32

This is the Annexure marked "DD-32" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

5.2 Repeat colonoscopy MBS services, all ages

Why is this important?

Colonoscopy is used to investigate bowel problems or symptoms. Repeat colonoscopy is mainly used to monitor for bowel cancer and its precursor, polyps (adenomas), in people with an increased risk of developing bowel cancer. Less commonly, colonoscopy is repeated to manage chronic inflammatory conditions of the bowel.

The first and third Atlases in the *Australian Atlas of Healthcare Variation* series found substantial variation in rates of colonoscopy according to where people live.^{1,2} Differences in adherence to surveillance guidelines were identified as a possible reason for the variation. Guideline recommendations on the timing of repeat colonoscopies are based on bowel cancer risk. There are limited reasons for repeating a colonoscopy after a period of less than three years.

The fourth Atlas examines rates of colonoscopy that are repeated within two years and 10 months of an earlier colonoscopy, using Medicare Benefits Schedule (MBS) data.

What did we find?

In 2018–19, there were almost 148,000 MBS-subsidised services for repeat colonoscopy performed within two years and 10 months in people of all ages.

The rate in the area with the highest rate was **19.9 times as high** as the rate in the area with the lowest rate. Rates were markedly higher in major cities than elsewhere. In major cities, rates increased with socioeconomic advantage.

What can be done?

More needs to be done to improve the consistent application of the national guidelines on bowel cancer screening and surveillance. A concerted focus by clinicians, medical colleges and health service organisations to drive implementation of the *Colonoscopy Clinical Care Standard* and national guidelines could reduce inappropriate requests for repeat colonoscopies and free up services for people at high risk of bowel cancer.³⁻⁵

Structured referral forms could aid assessment of requests for repeat colonoscopies against guidelines. Health service organisations could ensure that re-credentialing requirements for clinicians performing colonoscopy include clinical audit against guidelines to promote high-quality colonoscopies.

Wider consumer awareness about the impact of lifestyle on cancer risk is needed. Educating people on ways they can reduce their risk of bowel cancer and improve their general health should be an integral part of surveillance. Integration of data about cancer incidence and lifestyle into healthcare pathways, training guidelines and consumer resources could help prompt discussion between clinicians and patients and may reduce inappropriate repeat colonoscopy.

Repeat colonoscopy MBS services, all ages

Context

This item examines rates of MBS-subsidised services for repeat colonoscopy performed within two years and 10 months of an earlier colonoscopy for people of all ages in Australia in 2018–19.

What is colonoscopy?

Colonoscopy is the examination of the large bowel (colon) using a small, flexible tube with a camera on the end, called a colonoscope. It can also include removal of polyps (adenomas) or other abnormal growths, and a biopsy. Polyps can be precursors of bowel cancer and are a marker of increased risk.

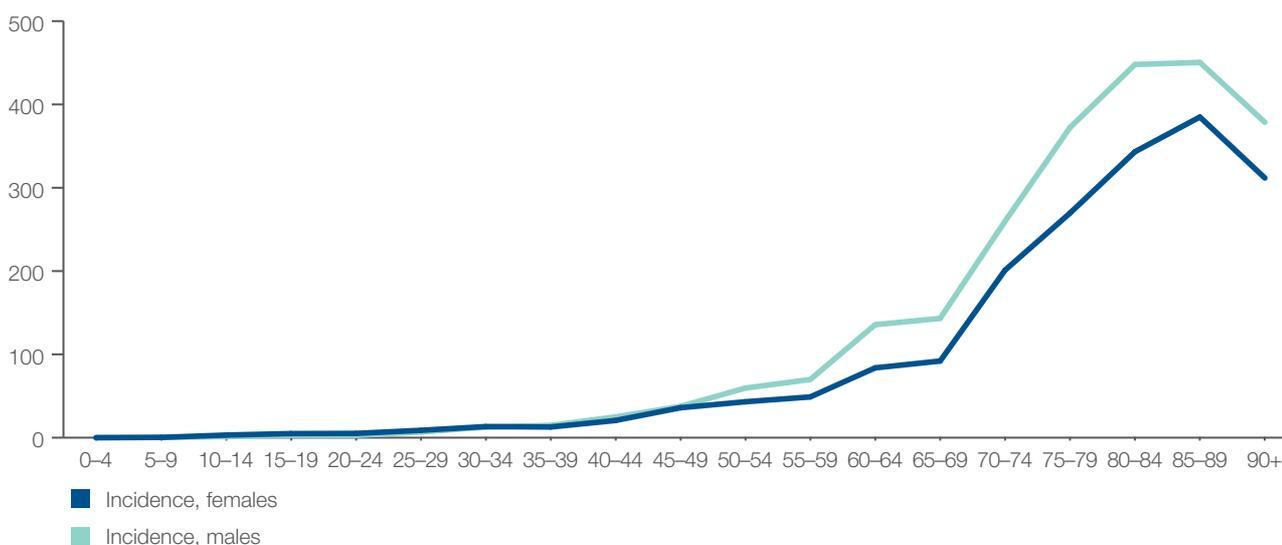
What is it used for?

Colonoscopy is used to investigate bowel problems or symptoms. It is also used to monitor for and detect polyps or bowel cancer (colorectal cancer) in people with no symptoms but with an increased risk, and to manage chronic conditions of the bowel, such as inflammatory bowel disease (IBD). Increased

risk of bowel cancer can be identified from a faecal occult blood test (FOBT) of a person's bowel motion (possibly done as part of the National Bowel Cancer Screening Program [NBCSP]), previous results of a colonoscopy, a family history of bowel cancer or a high-risk genetic condition.³ Bowel cancer is the fourth most commonly diagnosed cancer in Australia.^{6,7} After the age of 50, the incidence of bowel cancer steadily increases (Figure 5.10).⁴ About 55% of the bowel cancer burden in Australia can be attributed to lifestyle factors including diet (high in processed meat, red meat and sugar), physical inactivity, being overweight, smoking and alcohol use.⁷

While the age-standardised incidence of bowel cancer in Australia declined from 2001 to 2020* (from 66 to 51 cases per 100,000 people), the estimated number of people diagnosed with bowel cancer increased (from 12,806 to 15,494 people) because of the ageing population.⁸

Figure 5.10: Colorectal cancer rates (per 100,000 people), by sex and age group, 2020*



* 2020 incidence estimates are projections based on 2007–2016 incidence data.

Source: Australian Institute of Health and Welfare.⁸

When does a colonoscopy need to be repeated?

The most common reasons to repeat a colonoscopy are^{4,5}:

- Monitoring (surveillance) of the bowel after colorectal surgery or removal of polyps that can lead to bowel cancer
- Monitoring (surveillance) of chronic conditions of the bowel such as IBD
- Regular screening of people with a strong family history of bowel cancer, or a hereditary cancer syndrome that can lead to bowel cancer
- Removal (treatment) of previously identified polyps
- Onset of new signs or symptoms thought to be from the lining of the bowel
- Inadequate previous colonoscopy; for example, because of an incomplete colonoscopy or poor bowel preparation.

High-quality colonoscopy can detect about 95% of bowel cancers and polyps, but it is an invasive and costly procedure with a risk of complications.⁵ For this reason, colonoscopy for population screening is reserved for people with an increased risk of bowel cancer, if there is a higher chance of diagnosing significant disease.⁷ Similarly, recommendations for a repeat colonoscopy and its timing for greatest benefit are based on a person's risk of bowel cancer.

The national *Colonoscopy Clinical Care Standard* mandates that, if surveillance is required, colonoscopy is repeated at intervals consistent with evidence-based guidelines.³ Two Australian national guidelines address the need for and timing of repeat colonoscopy – one focuses on the use of colonoscopy in screening high-risk groups (that is, people with a family history of bowel cancer or a hereditary cancer syndrome), while the other focuses on the use of colonoscopy for surveillance.^{4,5}

If guidelines are followed, a small proportion of people who have an initial colonoscopy might be expected to need a repeat within three years. These would usually be people identified as having a high risk of bowel cancer or who have IBD. A poor-quality colonoscopy, or uncertainty about when a previous colonoscopy was performed, are also reasons a colonoscopy may be repeated within one or two years.^{4,5} However, the *Colonoscopy Clinical Care Standard* addresses the problem of uncertainty about the timing of a previous colonoscopy by stipulating that the results of colonoscopies are communicated to the person who had the procedure, the general practitioner (GP) and any other relevant clinicians involved in the person's care.³

Colonoscopy surveillance guidelines identify a person's risk of bowel cancer based on the results of their previous colonoscopy or colonoscopies.^{5,9} These guidelines apply to anyone who has had a colonoscopy, including participants in the NBCSP who had a colonoscopy because of a positive FOBT. The timing of the next colonoscopy, if needed, depends on the number, size and type of polyps removed.⁹ The greater the risk, the smaller the interval before repeating the procedure. People at potentially high risk will generally require a repeat colonoscopy every one to two years. Yearly colonoscopies are also recommended for high-risk people with IBD, and a repeat colonoscopy is also recommended within 12 months of bowel resection (surgery).⁵

A colonoscopy is also recommended every one to two years for people with, or at high risk of having, a hereditary cancer syndrome, such as Lynch syndrome, and may start at 25 years or younger for people with this syndrome.⁴

Repeat colonoscopies are also recommended for other groups, such as people with a strong family history and people otherwise at moderate risk of bowel cancer. However, for most people in these groups, the recommended intervals between colonoscopies are longer than that examined in this Atlas.^{4,5}

Repeat colonoscopy MBS services, all ages

Why examine repeat colonoscopy?

The first and third Atlases in the *Australian Atlas of Healthcare Variation* series examined MBS-subsidised services for colonoscopy and hospitalisations for colonoscopy, respectively.^{1,2} Although these Atlases used different datasets, each found substantial variations in colonoscopy rates according to where people live. They also found patterns of use that did not match the burden of disease. Outer regional areas and areas of socioeconomic disadvantage have the highest rates of bowel cancer incidence and mortality in Australia^{7,10}, yet both Atlases found the highest rates of colonoscopy in the most socioeconomically advantaged areas of major cities.

Clinical practice that is not supported by guidelines, such as repeating colonoscopies sooner than is recommended, was identified as a possible reason for the high rates of colonoscopy in some metropolitan areas. Differences in uptake of the NBCSP were also identified as a possible reason for the variation between major cities and other areas.^{1,2}

Little is known about the rate of repeat colonoscopies in Australia. This Atlas examines variation in rates of short-interval repeat colonoscopy using MBS-subsidised services performed in the same person in 2018–19. The interval of two years and 10 months was chosen to exclude services to people who present early for their three-yearly colonoscopy.

Data from this Atlas item should provide a baseline for evaluating changes to MBS items for colonoscopy introduced by the Australian Government in 2019, which included new item numbers with guideline-recommended surveillance intervals.¹¹ It should also be helpful for evaluating implementation of the *Colonoscopy Clinical Care Standard*, mandated in 2019, as part of the National Safety and Quality Health Service (NSQHS) Standards for the accreditation of all hospitals and day procedure services performing colonoscopy.^{3,12}

About the data

Data are sourced from the MBS dataset. This dataset includes information on MBS claims processed by Services Australia. It covers a wide range of services (attendances, procedures, tests) provided across primary care and hospital settings.

The dataset does not include:

- Services for publicly funded patients in hospital
- Services for patients in outpatient clinics of public hospitals
- Services covered under Department of Veterans' Affairs arrangements.

The dataset does not allow analysis by Aboriginal and Torres Strait Islander status.

Rates are based on the number of MBS-subsidised services for repeat colonoscopy per 100,000 people of all ages, age and sex standardised, in 2018–19.

Because a record is included for each service rather than for each patient, patients who receive the service more than once in the financial year will have more than one service counted.

In the patient count analysis, patient counts reflect the number of unique patients, regardless of the number of services the patient may have received in the year.

The analysis and maps are based on the patient's postcode recorded in their Medicare file and not the location of the service.

Rates are age and sex standardised to allow comparisons between populations with different age and sex structures.

What do the data show?

Magnitude of variation

In 2018–19, there were 147,875 MBS-subsidised services for repeat colonoscopy performed within two years and 10 months, representing 522 services per 100,000 people of all ages (the Australian rate).

The number of MBS-subsidised services for repeat colonoscopy across 324* local areas (Statistical Area Level 3 – SA3) ranged from 62 to 1,236 per 100,000 people. The rate was **19.9 times as high** in the area with the highest rate compared with the area with the lowest rate. The number of MBS-subsidised services for repeat colonoscopy varied across states and territories, from 191 per 100,000 people in the Northern Territory to 596 in Queensland (Figures 5.13–5.16).

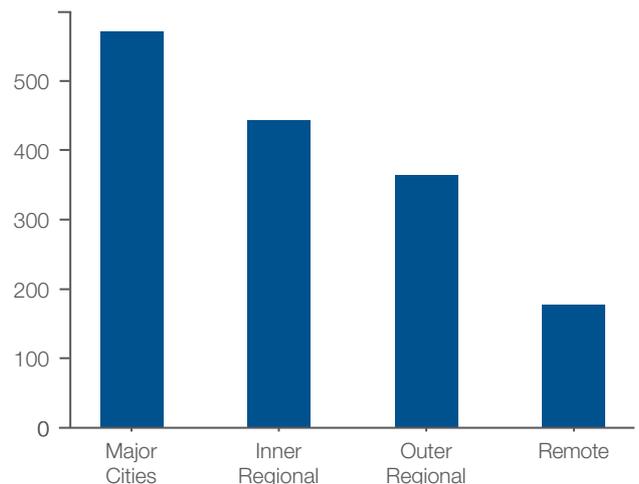
After the highest and lowest 10% of results were excluded and 260 SA3s remained, the number of MBS-subsidised services per 100,000 people was 2.7 times as high in the area with the highest rate compared with the area with the lowest rate.

Analysis by remoteness and socioeconomic status

Rates for MBS-subsidised services for repeat colonoscopy were higher in major cities than elsewhere. The rate for major cities was 3.2 times as high as the rate for remote areas (Figures 5.11 and 5.17).

Rates increased with socioeconomic advantage in major cities and overall. The rate in the highest socioeconomic group was 1.6 times as high as the rate in the lowest (Figures 5.12 and 5.17).

Figure 5.11: Number of MBS-subsidised services for repeat colonoscopy per 100,000 people of all ages, age and sex standardised, by remoteness of patient residence, 2018–19



The data for Figures 5.11 and 5.12 are available at safetyandquality.gov.au/atlas

* There are 340 SA3s. For this item, data were suppressed for 16 SA3s due to a small number of services and/or population in an area, or potential identification of individual patients, practitioners or business entities.

Notes:

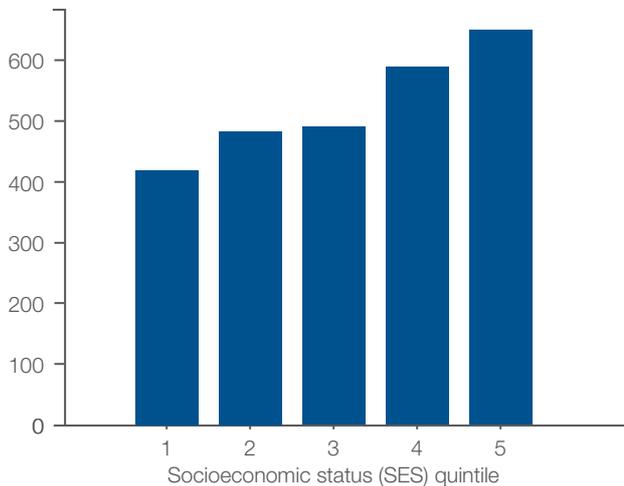
Some SA3 rates are more volatile than others. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia.

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Repeat colonoscopy MBS services, all ages

Figure 5.12: Number of MBS-subsidised services for repeat colonoscopy per 100,000 people of all ages, age and sex standardised, by socioeconomic area of patient residence, 2018–19



Analysis by number of people who had at least one repeat colonoscopy

In 2018–19, there were 139,072 people who had at least one MBS-subsidised service for repeat colonoscopy, representing 491 people per 100,000 people of all ages.

Analysis by number of repeat colonoscopy services without polyp removal

In 2018–19, there were 71,464 MBS-subsidised services for repeat colonoscopy without polyp removal, representing 257 services per 100,000 people of all ages (the Australian rate). The percentage of MBS-subsidised services for repeat colonoscopy without polyp removal was 49%, and varied across states and territories, from 35% in the Australian Capital Territory to 55% in Victoria and the Northern Territory.

The data and graphs for analysis by number of people who had at least one repeat colonoscopy, analysis by number of repeat colonoscopy services without polyp removal, and analysis by Primary Health Network are available at safetyandquality.gov.au/atlas

Notes:

Areas with a low SES (=1) have a high proportion of relatively disadvantaged people. Areas with a high SES (=5) have a low proportion of relatively disadvantaged people.

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Interpretation

Variation is warranted when it reflects variation in underlying disease and need for care; however, the rates of repeat colonoscopy do not appear to match this pattern, nor do they match the epidemiology of disease. There was widespread variation in repeat colonoscopy use, with rates much higher in major cities compared with elsewhere. Rates were also lower in areas of socioeconomic disadvantage.

These findings are consistent with the findings in the first and third Atlases, which examined rates of MBS-subsidised colonoscopy, and public and private hospitalisations for colonoscopy, respectively.

Variation in rates of repeat colonoscopy is likely to be due to the geographical differences in the factors discussed below.

Variation between areas may not directly reflect the practices of the clinicians who are based in these areas. The analysis is based on where people live rather than where they obtain their health care. Patients may travel outside their local area to receive health care.

Clinical decision-making

High rates of early repeat colonoscopy may be related to clinical practice that is not supported by guidelines. Australian and international studies have found that one-third of colonoscopies are repeated at intervals sooner than the guidelines recommend, with some reporting this to be as high as half.¹³⁻¹⁸ Difficulties in keeping up to date with guidelines and differences in clinical opinion on management may also contribute.¹⁹

Fear of litigation for not investigating symptoms may also influence clinicians' decisions about when and how often to provide repeat colonoscopies for the same person, particularly if they are unaware of current recommendations, or of evidence about the incidence of gastrointestinal (GI) cancers and the risk of symptoms leading to significant disease. Concerns about late diagnosis and subsequent litigation, and a lack of disincentives for over-testing, may also contribute to overuse.¹⁹

Some colonoscopies may be repeated because the previous report was not easily accessible or did not contain the information required to guide clinical decision-making.

Quality of bowel preparation

High-quality bowel preparation is essential for a successful colonoscopy.⁵ In the United Kingdom, poor bowel preparation has been reported to account for up to 25% of failed colonoscopies.²⁰ Poor bowel preparation results in poor visualisation of the colon, and has been associated with up to 47% lower likelihood of detecting and removing polyps that can lead to the development of bowel cancer.²¹ For this reason, people who had a colonoscopy with poor bowel preparation require a repeat colonoscopy within a year.^{5,22} Poor bowel preparation also results in considerable inconvenience and waste. Australian guidelines recommend that successful bowel preparation should be achieved in at least 90% of colonoscopies.⁵

The training and experience of the colonoscopist may also contribute to variation. International studies report a three-to-six-fold difference in adenoma detection rate variability between colonoscopists.⁵

Consumer expectations

A person's understanding about their risk of bowel cancer and the rate of development of bowel cancer may drive anxiety and lead to more frequent surveillance. Anxiety about interval cancers – cancers that occur between routine surveillance – has been suggested as a reason for repeating colonoscopies at shorter intervals than guidelines currently recommend.²³ Lack of access to a GP, specialist or surgeon who is informed about the evidence to help allay a person's anxiety about their risk of developing cancer may also lead to inappropriate repeat colonoscopies.

Repeat colonoscopy MBS services, all ages

People often have incorrect perceptions of their cancer risk and the benefits of interventions such as screening and surveillance to detect GI cancer.^{24,25} These perceptions can influence their preference and demand for investigations, even when their risk of cancer is low.²⁶

Access to services and number of clinicians providing services

Access to clinicians may influence the likelihood of people seeking care and the rates of repeat colonoscopy. The practice styles of individual clinicians may be more likely to affect rates in areas with fewer clinicians, such as rural and regional locations, than in areas with more clinicians.

Availability and affordability of services may also influence patterns of use. Ability to pay out-of-pocket costs for services is likely to be lower in areas of socioeconomic disadvantage, and access is likely to be more difficult in areas with fewer services. Open-access endoscopy services, in which GPs are able to request colonoscopy without specialist review, may also influence patterns of use.

Financial incentives

Greater remuneration for providing a service rather than a consultation may lead to variation and over-servicing in some areas.

Promoting appropriate care

More must be done to improve the consistent application of the national guidelines on bowel cancer screening and surveillance. The Atlas shows a pattern of repeat colonoscopy use that is not consistent with the prevalence of disease, indicating possible overuse in some areas and underuse in others. Repeating the procedure in people who are unlikely to benefit puts them at risk of procedural harms and may reduce opportunities for people who are at high risk of bowel cancer and more in need of the procedure. It also results in inconvenience, cost and confusion to the individual and the health system.

A concerted focus by clinicians, medical societies and colleges, and health service organisations across Australia to implement the *Colonoscopy Clinical Care Standard*³ is needed to drive improvements in the appropriate use of colonoscopy, reduce inappropriate short-interval repeat colonoscopies and free up services for people at high risk of bowel cancer.

The *Colonoscopy Clinical Care Standard* aims to ensure colonoscopies are used appropriately and performed safely, and is mandated as part of the NSQHS Standards for the accreditation of hospitals and day procedure services performing colonoscopy in Australia.^{3,12} To improve the follow-up and reporting of a colonoscopy, it recommends that the clinician who performs the colonoscopy communicates in writing the reason for the colonoscopy, its findings, any histology results, and recommendations for management to the person having the procedure, the GP, and any other relevant clinicians, and documents this in the facility records. It recommends that, if surveillance colonoscopy is required, it must be consistent with the intervals in national evidence-based guidelines.

Health service organisations could improve the implementation of the *Colonoscopy Clinical Care Standard*³ by ensuring that credentialing requirements for clinicians performing colonoscopy include a clinical audit against the clinical care standard, and that they provide audit results to the hospital's clinical review meetings and re-credentialing committee. Resources for colonoscopists to support implementation include a colonoscopy report template and a template for follow-up letters to GPs and patients (see Resources).

The low rates of short-interval repeat colonoscopies in disadvantaged remote areas are concerning, because they suggest that people at high risk of bowel cancer could be missing out on appropriate surveillance. These low rates are consistent with participation rates reported in the NBCSP.⁷ Strategies to improve participation in the NBCSP and access to colonoscopy services for people living in remote areas are a priority.

Unwarranted variation in repeat colonoscopy could be addressed in the following ways.

Quality colonoscopy and clinical audit

Recertification of ongoing competency is now mandatory for all practitioners working in health service organisations that are assessed against the NSQHS Standards.¹² Only colonoscopists who meet the certification and recertification standards can perform colonoscopy independently in Australia. The quality indicator together with the standard for reporting should reduce the proportion of repeat colonoscopies performed because of uncertainty about the quality of another clinician's colonoscopy.

Clinical audit could be used more widely to support decision-making about repeat colonoscopies. Audits in this area could also be part of continuing education requirements for clinicians.

Structured referral forms and checklists outlining the appropriate reasons for, and frequency of, repeat colonoscopy for greatest benefit, as recommended in the *Colonoscopy Clinical Care Standard*³ and national guidelines, could aid assessment of requests that do not meet guideline-recommended intervals.

Clinician education

Educational programs for clinicians could improve the appropriateness of requests for repeat colonoscopies. Improving clinician familiarity with guidelines, with the evidence base for recommended surveillance intervals and with the consequences of overuse of colonoscopy could better equip them to manage requests for performing colonoscopy earlier than the guidelines recommend.

Consumer education and reassurance

Informing and reassuring people of their risk of developing bowel cancer, and that the rate of progression from polyp formation to bowel cancer is generally slow may reduce demand for more frequent surveillance. Improving a person's understanding about their cancer risk is important to reduce anxiety and dispel myths about cancer. Interactive tools that identify a person's cancer risk – such as the Australian Institute of Health and Welfare cancer summary data tool (see 'Resources' on page 282) – may aid understanding.⁸

Integration of data about cancer incidence and lifestyle into healthcare pathways and consumer resources could help prompt these discussions between consumers and clinicians.

Reducing risk factors

Wider consumer awareness about risk factors and the impact of lifestyle on bowel cancer risk is needed. Bowel cancer incidence could be significantly reduced with successful modification of the key population attributable risks – that is, addressing diet (21.8%), physical inactivity (16.5%), being overweight or obese (12.5%), smoking (7.4%) and alcohol use (5.5%).^{7*} Public health initiatives to address risk factors should be targeted to areas with a high prevalence of these.

Educating consumers on ways they can reduce their risk of bowel cancer and improve their general health should be an integral part of colonoscopy surveillance, and may reduce requests for colonoscopies to be performed sooner than the guidelines recommend.

* Attributable burden from multiple risk factors cannot be combined or added together due to the complex pathways and interactions between risk factors.

Repeat colonoscopy MBS services, all ages

Triage systems

Many states and territories are introducing evidence-based triage systems for prioritising and allocating people for gastroscopy and colonoscopy, with the aim of reducing variation in use of these procedures:

- Victorian health services require clinicians to refer people for colonoscopy according to the categorisation guidelines²⁷
- Tasmania has adopted the Victorian categorisation guidelines and formed a statewide endoscopy network to monitor the quality of its services²⁸
- New South Wales has developed categorisation guidelines to support the appropriate use of colonoscopy across all healthcare settings²⁹
- Queensland and Western Australia have introduced clinical prioritisation criteria for many clinical areas, including gastroenterology, to triage patients referred to public specialist outpatient services.³⁰⁻³²

Wider use of such systems could result in more appropriate prioritisation of colonoscopy, as well as gastroscopy.

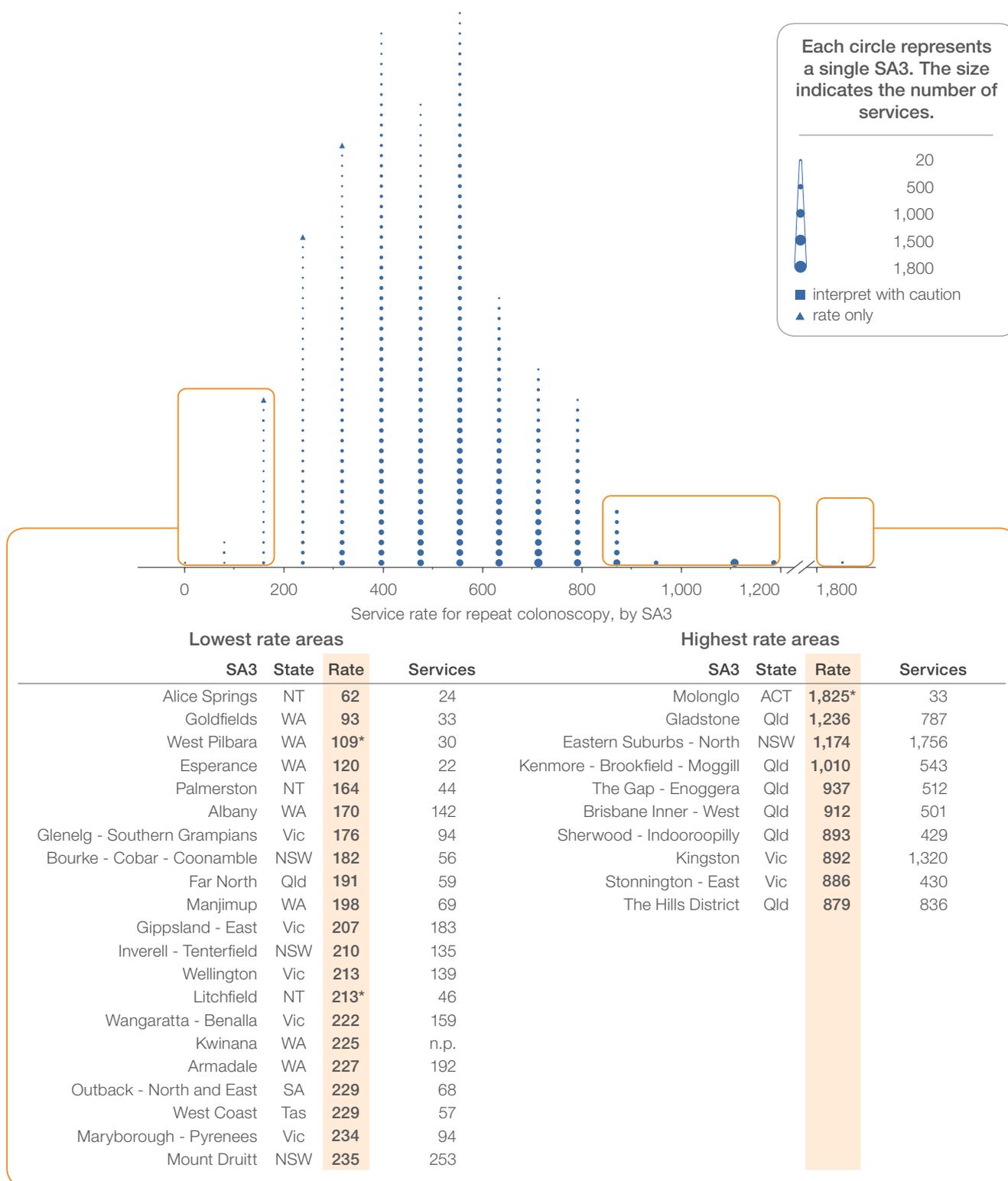
Promoting existing initiatives

As part of the Choosing Wisely Australia initiative, the Gastroenterological Society of Australia made the following recommendation in 2016, to promote the appropriate use of surveillance colonoscopy³³:

- Do not repeat colonoscopies more often than recommended by the National Health and Medical Research Council–endorsed guidelines.

Rates by local area

Figure 5.13: Number of MBS-subsidised services for repeat colonoscopy per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Notes:

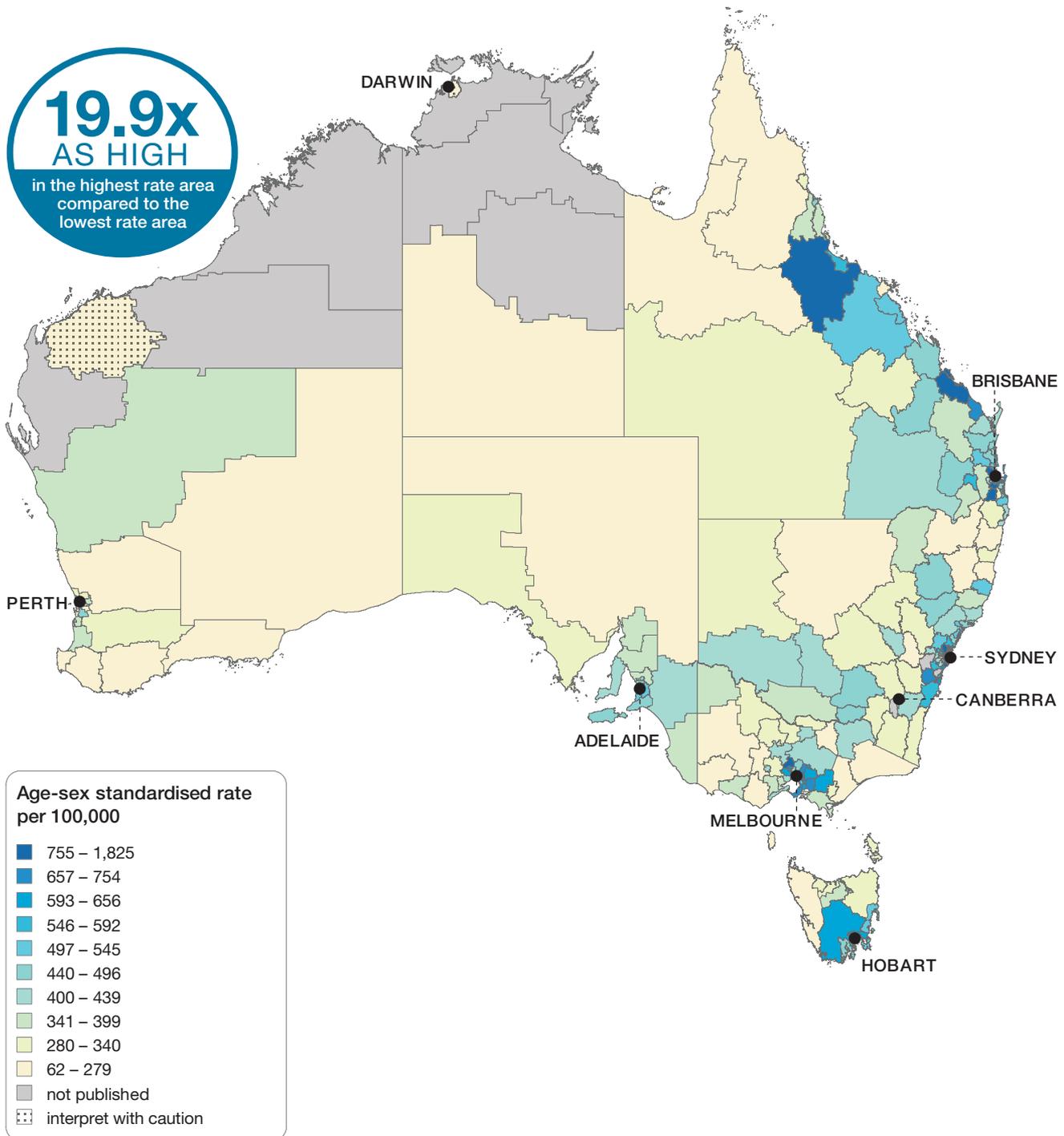
Squares (■) and asterisks (*) indicate rates that are considered more volatile than other published rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of services are not published (n.p.) for confidentiality reasons. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Repeat colonoscopy MBS services, all ages

Rates across Australia

Figure 5.14: Number of MBS-subsidised services for repeat colonoscopy per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



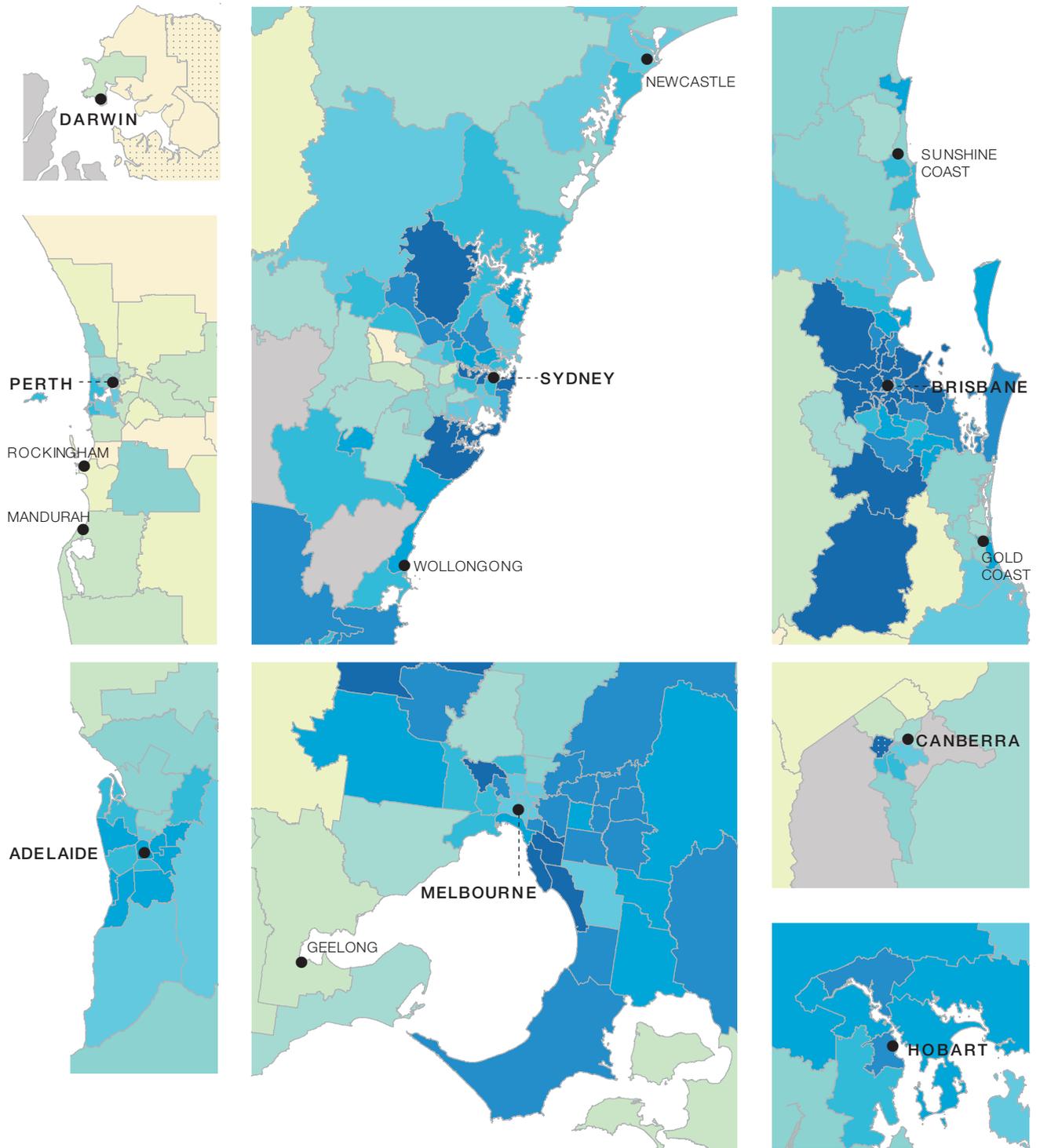
Notes:

Dotted areas indicate rates that are considered more volatile than other published rates and should be interpreted with caution. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Rates across capital city areas

Figure 5.15: Number of MBS-subsidised services for repeat colonoscopy per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Notes:

Dotted areas indicate rates that are considered more volatile than other published rates and should be interpreted with caution. For further detail about the methods used, please refer to the Technical Supplement.

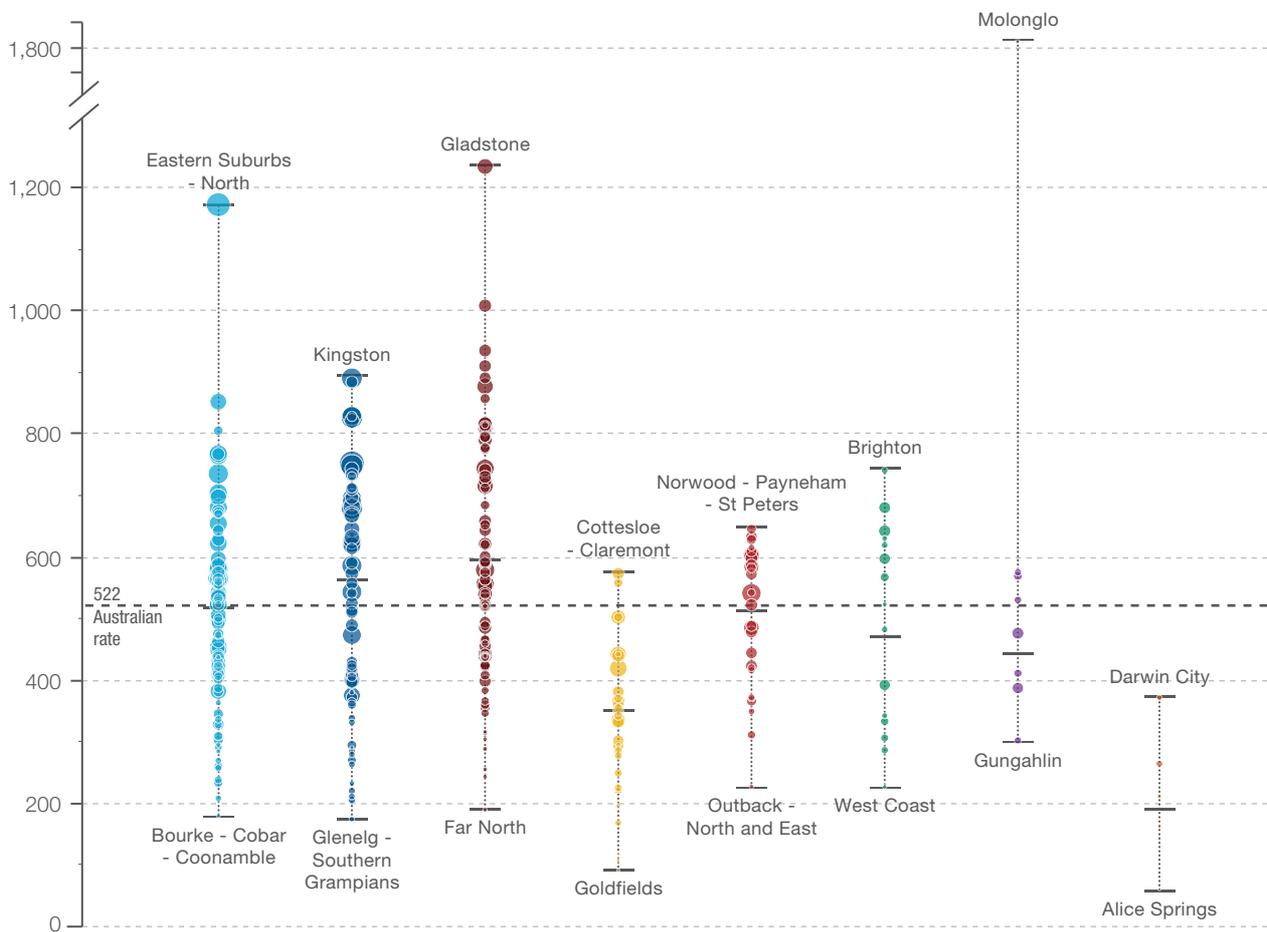
Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Repeat colonoscopy MBS services, all ages

Rates by state and territory

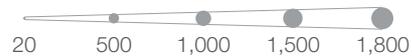
Figure 5.16: Number of MBS-subsidised services for repeat colonoscopy per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Highest rate	1,174	892	1,236	575	647	742	1,825*	373
State/territory	517	562	596	352	513	472	443	191
Lowest rate	182	176	191	93	229	229	304	62
Total services	47,257	40,377	33,629	9,977	11,002	3,331	1,884	391



Each circle represents a single SA3. The size indicates the number of services.

▲ rate only ■ interpret with caution



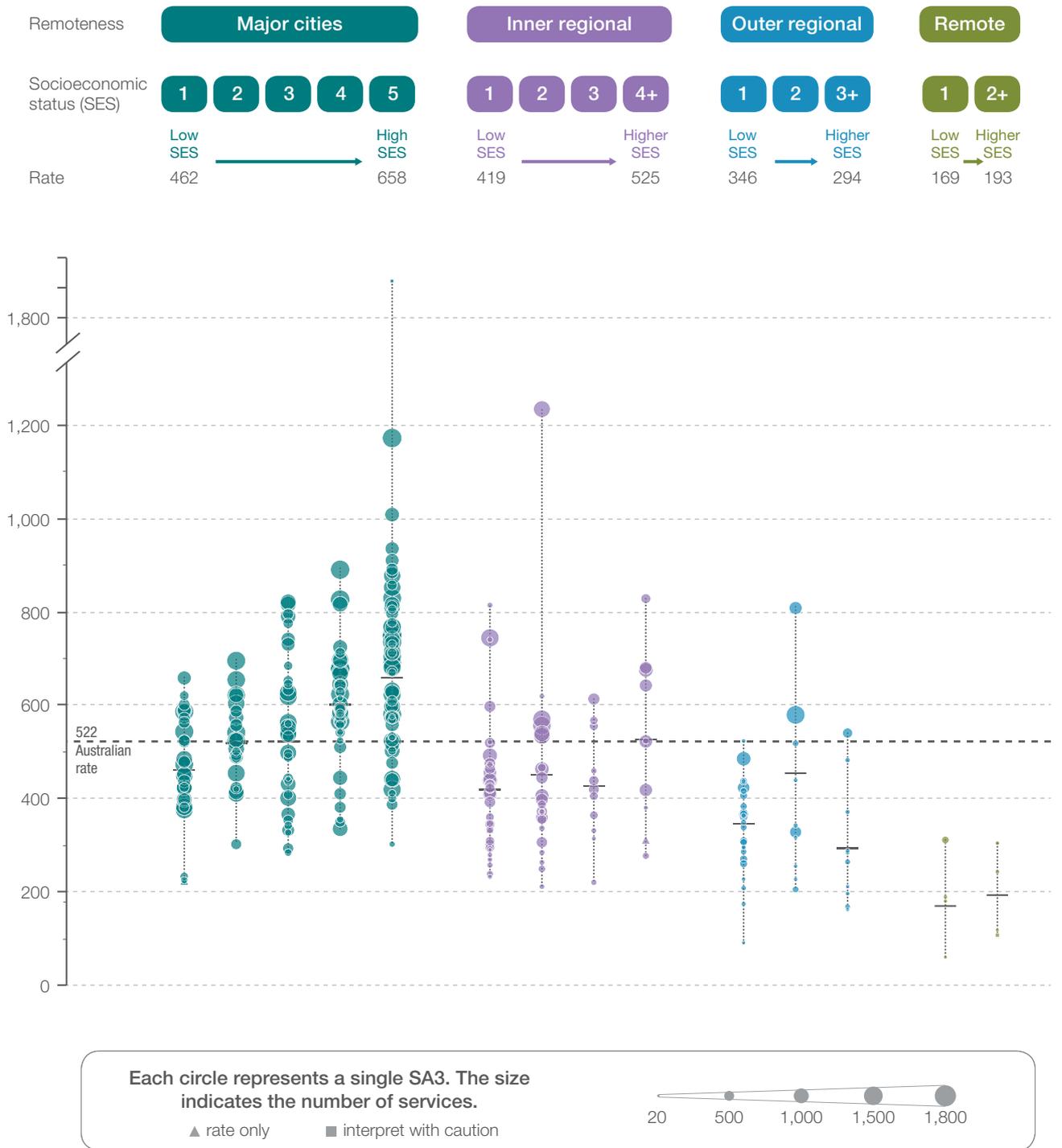
Notes:

Squares (■) and asterisks (*) indicate rates that are considered more volatile than other published rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of services are not published for confidentiality reasons. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Rates by remoteness and socioeconomic status

Figure 5.17: Number of MBS-subsidised services for repeat colonoscopy per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Notes: Squares (■) and asterisks (*) indicate rates that are considered more volatile than other published rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of services are not published for confidentiality reasons. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Repeat colonoscopy MBS services, all ages

Resources

- Australian Commission on Safety and Quality in Health Care, *Colonoscopy Clinical Care Standard*³
- Cancer Council Australia, *Clinical Practice Guidelines for the Prevention, Early Detection and Management of Colorectal Cancer*⁴
- Cancer Council Australia, *Clinical Practice Guidelines for Surveillance Colonoscopy*⁵
- Australian Institute of Health and Welfare, Cancer summary data visualisations⁸, aihw.gov.au/reports/cancer/cancer-data-in-australia/contents/cancer-summary-data-visualisation

Australian initiatives

Information in this chapter will complement work already underway to prevent inappropriate repeat colonoscopy in Australia. At a national level, this work includes:

- Australian Commission on Safety and Quality in Health Care, *Colonoscopy Clinical Care Standard*³
- Gastroenterological Society of Australia, Choosing Wisely recommendation 1: Do not repeat colonoscopies more often than recommended by the National Health and Medical Research Council–endorsed guidelines.³³

Many state and territory initiatives also aim to improve colonoscopy use, including:

- Clinical Priority Category: Colonoscopy²⁹, Agency for Clinical Innovation, New South Wales
- *Colonoscopy Categorisation Guidelines*, Victoria³⁴
- *Endoscopy Action Plan*, Queensland³⁵
- Clinical prioritisation criteria: endoscopy³⁶ and Clinical prioritisation criteria: gastroenterology³⁰, Queensland
- *Referral Guidelines: Direct access gastrointestinal endoscopic procedures*, Western Australia³¹
- *Urgency Categorisation and Access Policy for Public Direct Access Adult Gastrointestinal Endoscopy Services*, Western Australia³²
- Statewide endoscopy care network, which monitors and assesses the quality of endoscopy services, Tasmania.²⁸

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Repeat colonoscopy MBS services, all ages

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COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-33

This is the Annexure marked "DD-33" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

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Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

Choosing wisely recommendations	Australasian Faculty of Rehabilitation Medicine	Recommendations from the Australasian Faculty of Rehabilitation Medicine. The Australasian Faculty of Rehabilitation Medicine (AFRM) is a Faculty of the Royal Australasian College of Physicians (RACP). AFRM provides training and continuing education for Rehabilitation Medicine Fellows and trainees throughout all stages of their career. AFRM trainees and Fellows are committed to providing high quality rehabilitation care to individuals and communities in Australia and New Zealand.	How was this list made: A working group within AFRM initially identified 10 recommendations on low value practices in the field of rehabilitation medicine that may be widespread in Australia and New Zealand. Following a review of the evidence these were reduced to seven. An online survey based on these seven recommendations was distributed to all AFRM members asking them to rate these recommendations based on whether they thought they were evidence based, whether the low-value practices targeted were still being undertaken in significant numbers, and whether the recommendation was important in terms of reducing harm and unnecessary costs to patients. The working group reviewed the feedback and finalised the 'top 5' recommendations which were approved by AFRM Executive in mid-2017.	https://www.choosingwisely.org.au/recommendations/afrm
Recommendation1	Do not discharge patients with osteoporotic fractures without an assessment and/or treatment for osteoporosis.	Studies of patients with osteoporotic fractures have found that they are at significantly greater risk of suffering a new fracture compared to the general population. This risk is particularly marked in but not restricted to elderly patients, particularly given that recent clinical guidelines recommend that all individuals over the age of 50 who sustain a fracture following minimal trauma (such as a fall from standing height or less) should be considered to have a presumptive diagnosis of osteoporosis. Despite this, there have been reports of insufficient provision for the management of these patients before discharge. Osteoporosis assessments and/or treatments before discharge are clinically very important and moreover may be highly cost effective even after taking account of the additional resources associated with providing these services.	Johansson H, Siggeirsdóttir K, Harvey NC, et al. Imminent risk of fracture after fracture. Osteoporos Int 2016; 28 (3):775-80. Johnell O, Kanis JA, Odén A, et al. Fracture risk following an osteoporotic fracture. Osteoporosis Int 2004; 15:175-9. Lih A, Nandapalan H, Kim M, et al. Targeted intervention reduces refracture rates in patients with incident non-vertebral osteoporotic fractures: a 4-year prospective controlled study. Osteoporos Int 2011; 22(3):849-58. McLellan AR, Wolowacz SE, Zimovetz EA, et al. Fracture liaison services for the evaluation and management of patients with osteoporotic fracture: a cost-effectiveness evaluation based on data collected over 8 years of service provision. Osteoporos Int 2011; 22(7):2083-98. Otmar R, Henry MJ, Kotowicz MA, et al. Patterns of treatment in Australian men following fracture. Osteoporos Int 2011; 22(1):249-54. The Royal Australian College of General Practitioners and Osteoporosis Australia.	https://www.choosingwisely.org.au/recommendations/afrm1
Recommendation2	Do not prescribe spinal orthotics or bed rest for patients with non-specific low back pain.	There is insufficient and conflicting evidence on the effectiveness of spinal orthotics and other forms of lumbar support for treating or preventing low back pain, either as an intervention in its own right or as a supplement to other interventions. While there is no evidence that short term bed rest is harmful, long periods of bed rest can lead to complications such as muscular atrophy. The only randomised control trial to assess optimal periods of bed rest suggests two days is as effective as any longer period but the evidence is of low quality. There is evidence to support other approaches, such as advice to stay active and exercise which help with pain relief and improved function.	Belavy DL, Armbrecht G, Richardson CA, et al. Muscle atrophy and changes in spinal morphology: is the lumbar spine vulnerable after prolonged bed-rest? Spine 2011; 36(2):137-45. Dahm KT, Jamtvedt G, Hagen KB, et al. Advice to rest in bed versus advice to stay active for acute low-back pain and sciatica. Cochrane Database Syst Rev 2009; (1):CD007612. Deyo RA, Diehl AK, Rosenthal M. How many days of bed rest for acute low back pain? A randomized clinical trial. N Engl J Med 1986; 23;315(17):1064-70. NICE. Low back pain and sciatica in over 16s: assessment and management. NICE Guideline NG59 2016. Oleske DM, Lavender SA, Andersson GBJ, et al. Are back supports plus education more effective than education alone in promoting recovery from low back pain? Results from a randomized clinical trial. Spine 2007; 32(19):2050-7. van Duijvenbode I, Jellema P, van Poppel M, et	https://www.choosingwisely.org.au/recommendations/afrm2

Recommendation3	Do not use Mini Mental State Examination as the only tool to assess cognitive deficit in acquired brain injury.	Numerous studies suggest that the Montreal Cognitive Assessment (MoCA) is one of the most effective means of assessing cognitive deficits in acquired brain injury (for instance after transient ischemic attack and stroke) and is to be preferred to the Mini Mental State Evaluation (MMSE). MMSE may under-detect cognitive impairment in acquired brain injury; it is more appropriate for assessing dementia.	<p>Burton L, Tyson SF. Screening for cognitive impairment after stroke: a systematic review of psychometric properties and clinical utility. <i>J Rehabil Med</i> 2015; 47(3):193-203.</p> <p>Pendlebury ST, Cuthbertson FC, Welch SJV, et al. Underestimation of cognitive impairment by Mini-Mental State Examination versus the Montreal Cognitive Assessment in patients with transient ischemic attack and stroke: a population-based study. <i>Stroke</i> 2010; 41(6):1290-3.</p> <p>Pendlebury ST, Mariz J, Bull L, et al. MoCA, ACE-R, and MMSE versus the National Institute of Neurological Disorders and Stroke-Canadian Stroke Network Vascular Cognitive Impairment Harmonization Standards Neuropsychological Battery after TIA and stroke. <i>Stroke</i> 2012; 43(2):464-9.</p> <p>Srivastava A, Rapoport MJ, Leach L, et al. The utility of the Mini-Mental Status Exam in older adults with traumatic brain injury. <i>Brain Inj</i> 2006; 20(13-14):1377-82.</p>	https://www.choosingwisely.org.au/recommendations/afm3
Recommendation4	Do not routinely use splinting for prevention and/or management of contractures after stroke.	Reviews of the evidence and individual case studies on the use of hand splinting for stroke patients have been unable to find conclusive evidence that it leads to improvements in managing spasticity and preventing contractures or more generally improving upper limb function. Moreover, there is high quality evidence that stretch, whether administered from splints or other means, does not have clinically important effects on joint mobility in people with or without neurological conditions, at least for the periods it is typically prescribed of less than seven months.	<p>Basaran A, Emre U, Karadavut KI, et al. Hand splinting for poststroke spasticity: a randomized controlled trial. <i>Top Stroke Rehabil</i> 2012; 19(4):329-37.</p> <p>Harvey LA, Katalinic OM, Herbert RD, et al. Stretch for the treatment and prevention of contractures. <i>Cochrane Database Syst Rev</i> 2017 1:CD007455.</p> <p>Lannin NA, Herbert RD. Is hand splinting effective for adults following stroke? A systematic review and methodologic critique of published research. <i>Clin Rehabil</i> 2003;17(8):807-16.</p> <p>Lannin NA, Cusick A, McCluskey A, et al. Effects of splinting on wrist contracture after stroke: a randomized controlled trial. <i>Stroke</i> 2007; 38(1):111-6.</p>	https://www.choosingwisely.org.au/recommendations/afm4
Recommendation5	Do not use imaging for diagnosing non-specific acute low back pain in the absence of red flags.	The majority of acute low back pain episodes are benign, self-limited cases that do not warrant the use of imaging (e.g. X-rays, CT or MRI). There is evidence that early imaging for low back pain in the absence of red flags does not facilitate improvements in primary outcomes such as pain and function, even for older patients. If anything such imaging may be harmful insofar as it may reveal incidental findings that divert attention and increase the risk of having unnecessary interventions and invasive treatments including unnecessary surgery.	<p>Chou R, Fu R, Carrino JA, et al. Imaging strategies for low-back pain: systematic review and meta-analysis. <i>Lancet</i> 2009; 373:463-72.</p> <p>Graves JM, Fulton-Kehoe D, Martin DP, et al. Factors associated with early magnetic resonance imaging utilization for acute occupational low back pain: a population-based study from Washington State Workers' Compensation. <i>Spine</i> 2012; 37(19):1708-18.</p> <p>Jarvik JG, Gold LS, Comstock BA, et al. Association of early imaging for back pain with clinical outcomes in older adults. <i>Jama</i> 2015; 313(11):1143-53.</p> <p>Webster BS, Bauer AZ, Choi Y, et al. Iatrogenic consequences of early magnetic resonance imaging in acute, work-related, disabling low back pain. <i>Spine</i> 2013; 38(22):1939-46.</p>	https://www.choosingwisely.org.au/recommendations/afm5

COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

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Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-34

This is the Annexure marked "DD-34" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

Best-practice pricing and clinical quality information on hip fracture care

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Acknowledgements

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Acknowledgements are extended to experts in South Australia, Queensland, Victoria and Western Australia who made presentations at Sub-Committee meetings.

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Executive Summary

This report by the Sub-Committee on Best-Practice Pricing and Clinical Quality Information (the Sub-Committee) was endorsed by the Joint Working Party on Pricing for Safety and Quality in Australian Public Hospitals (JWP) of the Independent Hospital Pricing Authority (IHPA) and the Australian Commission on Safety and Quality in Health Care (the Commission) on 29 June 2015. It outlines the requirements and a potential approach to implementing national best-practice pricing and the provision of hospital-level safety and quality data for hip fracture care in Australian public hospitals. This report was endorsed by the JWP on 29 June 2015, and endorsed by the Commission and IHPA Boards in September and August 2015 respectively.

The Sub-Committee's work was informed by domestic and international consultations, review of literature and analyses of data. A summary of recommendations is provided in Table 1, page vii.

Best-practice pricing describes an approach to purchasing of healthcare services for a specific procedure or intervention at a price that reflects the elements that constitute best-practice. Under a best-practice pricing model, a tariff is set proactively, based on the expected cost of providing best-practice services. Although financial incentives are one lever to influence delivery of care, evidence points to the utility of providing timely, relevant comparable data to front line clinicians.

There is local and international experience in incentivising best-practice hip fracture care to be drawn on in designing a national best-practice pricing approach. Two Australian jurisdictions have implemented a hip fracture pricing scheme; however, it is early days to assess outcomes. One scheme is based on six best-practice criteria (Western Australia) and the other (Queensland) is based on one criterion which is time to surgery. Internationally, a region in Italy introduced a tariff for hip fracture patients who underwent surgical treatment within 48 hours of admission. The United Kingdom's National Health Service (NHS) also has a hip fracture best-practice tariff (BPT). This scheme involves payment of a tariff, based on 8 criteria. The scheme has resulted in a reduction in hip fracture mortality. The simultaneous availability of comparable clinical information was deemed essential to early and successful efforts to achieve these outcomes.⁷

Accordingly, the Sub-Committee recommends that IHPA, in its national price setting role, should work with the Commission to simultaneously provide timely, relevant and comparable clinical information to hospitals should it chose to implement a best-practice pricing scheme for hip fracture (see **Recommendation 1**).

In Australia, there are existing national clinical guidelines and standards that should be utilised in defining criteria for a best-practice pricing scheme. The Sub-Committee recommends that IHPA develop a national best-practice price (BPP) that incentivises care that aligns with the Commission's Hip Fracture Clinical Care Standard (CCS) which has been distributed for community consultation in May 2015 (see **Recommendation 2**). The proposed quality statements are:

- Quality statement 1 – Care at presentation
- Quality statement 2 – Pain management
- Quality statement 3 – Orthogeriatric model of care
- Quality statement 4 – Timing of surgery

- Quality statement 5 – Mobilisation and weight bearing
- Quality statement 6 – Minimise the risk of another fracture
- Quality statement 7 – Transition from hospital care.

The technical design of a hip fracture best-practice pricing scheme requires clarity on which separations are eligible for funding under the scheme, what aspects of the CCS are considered as criteria for the BPP, and how much the BPP is.

Accordingly, the Sub-Committee recommends that the hip fracture cohort eligible or targeted for an initial BPP include:

- Patients aged 50 years and over (which represents 96% of activity and 94% of costs)
- Admissions with a care type of acute (since the Commissions standards focus on the acute episode and IHPA pays for acute and sub-acute separately)*
- Specified principal diagnoses (covering 90% of hip fractures and 88% of costs among those aged 50 years or more), and excluding multiple trauma episodes; and
- Specified hip surgery procedure codes and Australian Refined Diagnosis Related Groups (AR-DRGs) (see **Recommendation 3**).

Best-practice pricing is recommended for surgical and non-surgical interventions (two tariffs) to prevent unintended incentives toward any particular approach to management of hip fractures. In surgical cases where patients are transferred between hospitals, it is recommended that the operating hospital receive the BPP if criteria are met. More information on the rationale for this target cohort and these recommendations is on pages 7 to 11.

In Australia, there are approximately 21,000 hip fracture separations per annum at a total operational cost of just under \$350 million to the health care system. If these criteria were used to establish an initial hip fracture cohort then best-practice pricing would apply to 13,914 separations at a total operational cost of \$258.2 million.

Members recommend that the size of the best-practice price be set after IHPA undertakes or commissions a study to determine the cost of best-practice hip fracture care, as defined using the above-mentioned criteria, compared to the price paid under IHPA's current national efficient price (NEP) methodology. A discussion about implications, for incentives and Commonwealth expenditures, depending on whether the best-practice price is higher, lower or the same as the price paid under the NEP is provided on pages 11 and 12.

Furthermore, IHPA should signal its intention to explore the implementation of a best-practice scheme in its Pricing Framework for Australian Public Hospitals 2016-17 (see **Recommendation 4**).

* Agreement on this recommendation among Sub-Committee members was not universal, though all members agreed on the importance of subacute care to a patient's resultant health status. The lack of existing information systems that follow separations across their care types, however, was seen as a sizable issue to resolve before best-practice pricing could be attributed across the full pathway of care.

Sub-Committee members recommend that performance relevant to one or more of the following priority indicators, based on the Hip Fracture CCS, be considered as criteria relevant to determination of an initial BPP:

- i. Surgery occurred on the same day or the day following presentation for patients who had surgery
- ii. An orthogeriatric model of care was used for patients aged over 65 years, and over 50 years for Indigenous patients
- iii. The opportunity to mobilise occurred on the day after surgery (for surgical patients)
- iv. A cognitive assessment was conducted for all patients; pre-operatively for surgical patients
- v. A falls and bone health assessment was undertaken before the patient was discharged.

Sub-Committee members recommend the Commission and IHPA determine which one or more of these indicators are to be included in an initial BPT. Members considered that indicators need to be meaningful to patients and clinicians, simple to understand and easy to communicate, feasible to collect, precise, achievable, measurable, and cover a spectrum of the standards (see **Recommendations 5 and 6**).

The Sub-Committee noted the evidence that time to surgery has high predictive power for patient outcomes and this measure formed the basis of BPT in the NHS, Italy, WA and Qld. In 2012 the Audit Commission found that NHS organisations found the detail of the BPT for hip fracture difficult to understand (i.e. the eight criteria and how it translates into pricing).

The design and implementation of a best-practice pricing scheme requires reliable information on quality of care to determine eligibility for funding, and the Sub-Committee recommends that the scheme's implementation should be coupled with or preceded by the provision of timely, relevant and comparable clinical information for clinicians.

Interestingly, in 2014 the NHS introduced a new BPT for hip and knee replacement – this is a combination of pay for data and pay for patient reported outcome measures. Payment for performance is expected to follow. In Australia, the Sub-Committee envisions that the Commission might opt to include in its Work Plan activities that support the collection, analyses and provision of timely, comparable hip fracture care information to Local Hospital Networks and relevant public hospitals.

There are two main sources of nationally consistent information on patients who are admitted with hip fracture – the National Non-Admitted Patient Emergency Department Care Database (NNAPED) and the Admitted Patient Care National Minimum Data Set (APC). Both might be useful to measure some of the above-mentioned indicators.

There are other sources of valuable information on clinical quality, though these data are not yet nationally available (e.g. Australian and New Zealand Hip Fracture Registry, ANZHFR) or are not nationally consistent (e.g. patient experience data). The ANZHFR includes data that can be used to calculate indicators for each of Commission's Hip Fracture CCS. Any clinical quality registry used for best-practice pricing in hip fracture care should meet existing national standards, including having an amenable governance structure and national coverage as per the Commission's Framework for Clinical Quality Registries.⁹

Importantly, the ANZHFR has its own governance, funding and ownership arrangements which would need to be considered before implementation of a best-practice pricing model that depends on access, use and disclosure of information derived from ANZHFR data.

IHPA and the Commission would need to include best-practice data items in their Three Year Rolling Data Plans (see **Recommendation 7**).

Members recommend further consultation with stakeholders on the design approach for a best-practice pricing scheme coupled with the provision of timely, relevant clinical information, following any endorsement by the Pricing Authority and Commission Board. A full implementation plan, including an approach to evaluation, should be developed and an indicative plan is provided on page 19 (see **Recommendations 8, 9 and 10**).

Table 1. The ten recommendations made by the Sub-Committee for the Commission and IHPA Boards.

BEST-PRACTICE PRICING RECOMMENDATIONS TO THE JOINT WORKING PARTY ON PRICING FOR SAFETY AND QUALITY IN AUSTRALIAN PUBLIC HOSPITALS

Recommendation 1.1: IHPA, in its national price setting role, should consider the Sub-Committee's and subsequent JWP's advice in relation to best-practice pricing to support best care for hip fracture.

Recommendation 1.2: The design and implementation of a best-practice pricing scheme requires reliable information on quality of care to determine eligibility for funding. Implementation should be coupled with the provision of timely, relevant and comparable clinical information being fed back to clinicians. Jurisdictions may want to target their efforts towards this aspect.

Recommendation 2: Existing CCS and national guidelines be used as a basis of a best-practice pricing approach for hip fracture care, in particular the Hip Fracture CCS established by the Commission in 2015.

Recommendation 3: IHPA, in its national price setting role, should consider implementation of a best-practice pricing model for hip fracture care. This should include:

- Targeting the acute episode of care in public hospitals for people aged 50 years and over;
- Targeting episodes with a hip fracture diagnosis code as specified in Table F1, Appendix F as a principal diagnosis;
- Excluding multiple trauma events as specified in Table F4, Appendix F;
- Targeting episodes that have hip fracture surgery as specified in Table F6, Appendix F;
- Targeting episodes assigned to the AR-DRGs I03A, I03B, I08A, and I08B which account for the majority of separations.

Recommendation 4.1: IHPA should use a purpose designed study to cost best-practice hip fracture care to determine the incremental cost of best-practice care compared to the average cost of care.

Recommendation 4.2: IHPA should determine a best-practice hip fracture care adjustment that provides an incentive for service providers (clinicians and managers) to change practices and deliver care that meets the best-practice criteria.

Recommendation 4.3: IHPA should signal its intention to explore the implementation of a national best-practice price for hip fracture care through the *Pricing Framework for Australian*

Public Hospital Services 2016-17 and, if new data elements are required to support its implementation, through the IHPA Three Year Data Plan 2016-17 to 2018-19.

Recommendation 5.1: Based on the advice of the Sub-Committee, IHPA should determine which of the Hip Fracture CCS indicators will be used to determine whether best-practice has been delivered.

Recommendation 5.2: The Hip Fracture CCS indicators selected for inclusion into a national best-practice pricing model should be coupled with defined, more comparable information than is needed for pricing and funding determinations, and should be provided to support clinical improvement.

Recommendation 5.3: This quality improvement information should be provided through the ANZHFR to Local Hospital Networks and public hospitals in advance of the commencement of any best-practice pricing model on a quarterly basis (even if initially provided on a six-monthly basis).

Recommendation 6.1: That the JWP endorse the Sub-Committee's preferred Hip Fracture CCS indicators for best-practice pricing.

Recommendation 6.2: Subject to consultation with the relevant stakeholders, IHPA should determine which of the initial set of indicators are to be included in the preferred initial model for best-practice pricing for hip fractures to be applied to surgical separations.

Recommendation 7.1: IHPA must include appropriate best-practice data items within their *Three Year Rolling Data Plan* and the Commission similarly within their work program, as the mechanism to stimulate both data to support clinical improvement and a best-practice pricing approach for hip fracture care in Australia.

Recommendation 7.2: JWP must further consult with states and territories about participation in the ANZHFR so that issues such as access, use and disclosure of data derived from this registry will need to be prospectively negotiated to support pricing and funding determinations. These arrangements will also be necessary if the Commission, states and territories are to play a role in the provision of timely, comparable hospital-level information on hip fracture care to clinicians and hospital managers. Importantly, the National Health Information and Performance Principal Committee (NHIPPC) could serve as a national forum for IHPA and the Commission to resolve these important issues.

Recommendation 8: Further consultation with stakeholders on the design approach for the best-practice pricing model for hip fracture care should be undertaken following the Pricing Authority and Commission Board endorsement and be complementary to development of an implementation plan.

Recommendation 9: A phased approach to implementation of a national hip fracture best-practice price should be taken. This should be based around the timing of the development and implementation of the Hip Fracture CCS indicators, and in recognition of IHPA and the Commission's Data Plans and Work Plans, and in recognition of the work and time required to establish processes to support the routine provision of timely, hospital-level comparable information on hip fracture care.

Recommendation 10: An evaluation process should be built into any implementation plan for an Australian national approach to best-practice pricing in hip fracture care.

1. Introduction

This report to the Joint Working Party on Pricing for Safety and Quality in Australian Public Hospital Services (JWP) of the Independent Hospital Pricing Authority (IHPA) and the Australian Commission on Safety and Quality in Health Care (the Commission) outlines a potential approach and requirements for implementing national best-practice pricing and the provision of hospital-level safety and quality data for hip fracture care in Australian public hospitals.

In June 2014, the JWP established the Sub-Committee on Best-Practice Pricing and Clinical Quality Information (the Sub-Committee) to address issues in relation to best-practice pricing schemes supported by evidence, with a particular focus on hip fracture. Hip fracture was selected as the initial area of focus because it is a well-defined patient cohort and a there is reasonable consensus on best-practice management within Australia.

This report supported the JWP by offering advice in relation to the Sub-Committee's terms of reference to explore:

- a. the requirements and feasibility of introducing best-practice pricing in Australian public hospitals, with a specific focus on hip fracture patients; and
- b. an appropriate mechanism and format for providing safety and quality data to clinical teams and hospital leaders to drive quality improvement in ways that support implementation of best-practice in care teams and hospital leaders to drive quality improvement.

The Sub-Committee's terms of reference are provided at Appendix A.

Given this context, this report comprises:

- background and context, including the current approach to Australian public hospital pricing, an outline of, and evidence for, best-practice pricing, current local and international hip fracture best-practice pricing schemes and existing hip fracture care best-practice models;
- a discussion of the technical aspects and requirements for an Australian hip fracture care best-practice pricing model;
- a discussion of the complementary provision of data and information to drive quality improvement; and
- a series of recommendations for consideration by the Commission Board and the Pricing Authority.

2. Background

2.1 Activity Based Funding overview

The majority of public hospital services in Australia are funded on the basis of activity through the introduction of a national activity based funding (ABF) system under the *National Health Reform Agreement 2011* (NHRA). The National Efficient Price (NEP) is the basis for the price paid for an ABF activity. The NEP is empirically derived based on activity and cost data from Australian public hospitals.

Every episode of care provided in Australian public hospitals has a price derived from applying a price weight to the NEP. This is modelled using activity and cost data from the majority of Australian public hospitals. This means that the price of a particular service is constructed from the cost and case-mix data from hospitals.

In the national ABF system, IHPA's current pricing approach is based on the average cost at the patient level, and payments are made with adjustments for certain factors (e.g. remoteness, Indigeneity). Hospitals receive separate payments across emergency, admitted acute, admitted subacute and non-admitted episodes of care.

The National Weighted Activity Unit (NWAU) is the unit of measure of activity for the national ABF system. The NWAU is weighted by complexity, so an admission which is more complex and costly attracts a higher NWAU than an admission that is less complex and less expensive. The NEP is the price for a single NWAU. The NWAU is multiplied by the NEP to calculate the total efficient price of a public hospital service.

For example, in Australia there are approximately 21,000 hip fracture separations per annum at a cost of just under \$350 million to the health care system. Based on the 2015-16 NEP (\$4,971) if one of these hip fracture patients presented to hospital and was assigned to one of the hip fracture Australian Refined Diagnosis Related Groups[†] (AR-DRGs) this episode would have a weight of 3.0929 NWAUs and be priced at \$15,375.

2.2 Joint Working Party between IHPA and the Commission

Since 2012, the Commission and IHPA have examined potential options to incorporate safety and quality into national pricing of Australian public hospital services. The JWP was established to advise the two agencies on this work.

The evidence examined by the JWP indicated that quality of care in the hospital setting is best influenced by the systematic and timely provision of information to clinical teams on quality and performance. This led to the JWP establishing a Clinical Reference Group to develop and pilot a national set of high priority hospital complications and explore how information can be provided to clinical teams in the hospital environment to improve safety and quality. Along with commissioning other work, the JWP established the Sub-Committee to address issues in relation to best-practice pricing schemes supported by evidence, with a particular focus on hip fracture. The intention was that this work would be informed by best-practice pricing principles, domestic and international experiences, work of the Clinical Reference Group and work by the Commission to develop a Hip Fracture Care Clinical Care Standard (CCS). This document is the final report from the Sub-Committee which was endorsed by the JWP on 29 June 2015.

[†] I08B Other Hip and Femur Procedures without Catastrophic Complications and/ or Comorbidities, assuming average length of stay and that no patient adjustments (such as remoteness or Indigeneity) are applied.

2.3 Best-practice pricing principles

Best-practice is commonly specified through clinical standards, guidelines and clinician consensus. Best-practice pricing describes purchasing of healthcare services for a specific procedure or intervention at a price that reflects the elements that constitute best-practice. The approach described in this report encompasses best-practice pricing and providing clinical quality information as mechanisms to improve the quality of care and health outcomes.

Under a best-practice pricing model, provider remuneration is set proactively, based on the expected and agreed cost of providing an evidence-based package of services or elements for an intervention. This is in contrast to other approaches where fees are set based on *ex post* calculation of average costs, or through funder-provider negotiation. The best-practice pricing approach incentivises care that maximises the probability of optimal outcomes.

Behavioural economics and implementation science feature in the literature on development of best-practice pricing schemes. The motivation (utility functions) of individual practitioners is difficult to analyse and predict.¹ These functions become even more complex at the aggregate level of clinical teams and hospitals. Mehrotra et al (2010) also stated that the psychology of how people respond to incentives is not considered enough in the design of pricing incentives in healthcare (refer to Appendix B).² To account for this complexity, the Sub-Committee explored the development of a best-practice pricing approach complemented with providing meaningful data and information to clinicians.

The evidence examined to date supports investigating schemes based on a best-practice pricing model, and focusing on clearly delineated interventions or procedures. The common characteristics of successful best-practice pricing initiatives are:³

- i. **Clinically relevant** and built on an explicit evidence base.
- ii. **Uncomplicated** and, where possible, focused on **outcomes** of care.
- iii. Based on **reliable and timely data** that is trusted by clinicians.
- iv. Aimed at **discrete clinical interventions** and acute care (e.g. surgical procedures rather than care of chronic conditions).
- v. Impact/outcomes correlate with the size of the incentive (**materiality**).
- vi. Rewards or incentives are distributed to, or reinvested at, the **clinical level** (or at the level where behaviour change needs to occur).
- vii. **Aligned** with other quality improvement initiatives and broader policy objectives.
- viii. Clinician-led, with **support** provided to change behaviour.

Clarity on who to pay, what to pay for, the criteria for bonuses or penalties and how much to pay is important in the technical design of a best-practice pricing scheme.⁴

Therefore, Australian national best-practice pricing models should include these principles:

- Who to pay will be determined in line IHPA's current pricing approach, where Local Hospital Networks would receive the best-practice pricing payment
- What to pay for will be established by determining best-practice indicators
- When it comes to how much to pay, it has been suggested that the optimal incentive size should "follow the Goldilocks principle: not too little, but not too much".⁵ Local experience in hip fracture care from Australian states reflects this, as outlined below.

There are local and international experiences in incentivising best-practice hip fracture care to be drawn on, which are outlined below.

2.3.1 Australian initiatives

Two Australian jurisdictions have implemented specific best-practice pricing programs in hip fracture care. A third, South Australia, is considering a similar initiative in 2015-16. The Sub-Committee's recommendations are informed by testimony received from senior health officials from these three jurisdictions, as well as from a senior health official from Victoria regarding relevant initiatives that cross clinical areas.

A summary of each of the initiatives is provided below. For more detail, refer to Appendix E.

Table 2. Australian best-practice pricing initiatives specific to hip fracture care.

Jurisdiction	Program Name	Year Implemented	Details
WA	Hip Fracture Premium Payment	2012/13	From 2012/3, a bonus payment of \$200 is awarded per patient (aged >65 years) in tertiary hospitals where six clinical indicators are met.
QLD	Quality Improvement Payment	2012/13	In 2014/15, the price was reduced for a weighted activity unit for fractured neck of femur (patients aged >60 years) by 20 per cent if the time to surgery is over 48 hours.

2.3.2 National Health Service Best-practice Tariffs

The United Kingdom's National Health Service (NHS) best-practice tariff (BPT) program pays differential prices for a set of hospital procedures/interventions in which specified processes and multiple elements of best-practice are met. The fragility hip fracture BPT, one of several conditions to which an incentive has been applied, was established in 2010-11 and has evolved to reward care meeting the following elements:

Table 3. The eight NHS Fragility Hip Fracture clinical care elements

1	Surgery within 36 hours of admission
2	Shared care by surgeon and geriatrician
3	Admission using a care protocol agreed by geriatrician, surgeon and anaesthetist
4	Assessment by geriatrician within 72 hours of admission
5	Pre- and post-operative abbreviated mental test score (AMTS) assessment
6	Geriatrician-led multidisciplinary rehabilitation
7	Secondary prevention of falls
8	Bone health assessment

In a 2012 audit of the BPT program, the Audit Commission found that NHS organisations found the detail of the payment models difficult to understand and sometimes complex to implement.⁶ Consistency in achieving all of the elements in every case was deemed to be the main stumbling block within the hip fracture payment in delivering both high quality care and claiming the payment. Data quality was also an issue with Primary Care Trusts often making payments without proper evidence of compliance.

A more recent evaluation found evidence of improvements in process quality and outcomes for the hip fracture BPT.⁷ Testimony to the Sub-Committee by individuals in the UK suggests that the availability of comparable clinical information was essential to early and successful efforts to improve outcomes. In this expert testimony, it was claimed that there was a

reduction in mortality of patients with hip fracture associated with the BPT. Most importantly, in addition, the evaluations of the UK experience suggest that good quality care costs less.

In 2014/15, the NHS introduced a new BPT for hip and knee replacement. Effectively this is a combination of pay for data and pay for patient reported outcome measures. This appears to be a signal from the NHS that: (a) the completeness, accuracy and utility of clinical information may have been deemed pre-requisite to supporting efforts to improve patient care in these new clinical areas, and (b) that 'pay for data and useful measures' would commence before paying for shifts in delivery of care.

Australian public hospital services are yet to develop standardised Patient Reported Outcome Measures. Further discussion of available data sources is referred to in Chapters 5 and 7.

2.3.3 Lazio (Italy)

The Lazio region in Italy also recently introduced a tariff mechanism for hip fracture surgery to reduce inappropriate admissions and improve quality of care. The full Diagnosis Related Groups (DRG) rate is paid only for patients that underwent surgical treatment within 48 hours of admission. Rates for surgeries performed more than 48 hours after admission are proportionately reduced on the basis of the interval between admission and surgery.

An impact study concluded that elderly patients with hip fracture benefited from improved quality of care, especially in hospitals that only used the DRG system. This was a short term evaluation with only one year of data pre and post introduction of the new payment method.⁸

Recommendation 1.1: IHPA, in its national price setting role, should consider the Sub-Committee's and JWP's advice in relation to best-practice pricing to support best-practice care for hip fracture.

Recommendation 1.2: The design and implementation of a best-practice pricing scheme requires reliable information on quality of care to determine eligibility for funding. Implementation should be coupled with the provision of timely, relevant and comparable clinical information being fed back to clinicians. Jurisdictions may want to target their efforts towards this aspect.

3. Best-practice in hip fracture care: national consensus

Designing a best-practice pricing model and a mechanism for providing reliable information on quality of care is contingent on defining best-practice care and agreeing on the necessary elements that constitute best practice.

3.1 *The Australian and New Zealand Guideline for Hip Fracture Care*

The Australian and New Zealand Guideline for Hip Fracture Care was approved by the National Health and Medical Research Council and published on their Clinical Practice Guidelines portal in 2014. It is designed to help professionals providing care for hip fracture patients to deliver consistent, effective and efficient care. The guideline includes aspects of care for hip fracture patients from diagnosis and preoperative care, through to post-operative mobilisation strategies, models of care, and patient and carer perspectives. For further information, the guideline is available at:

<http://www.anzhfr.org/images/resources/Guidelines/ANZ%20Guideline%20for%20Hip%20Fracture%20Care.pdf>.

3.2 **The National Hip Fracture CCS**

The Commission is developing a series of CCS for a specified set of conditions and procedures. The Standards specify a set of elements (quality statements) that describe the elements of best-practice for a clinical condition. The standards are being developed in close consultation with clinical experts and consumers.

The hip fracture CCS was released for public consultation in May 2015 (Appendix C). It is due for publication in early 2016. Its finalisation will be instrumental in designing the national best-practice pricing model. For example, the group developing the Standard has discussed limiting it to the acute episode of care, and considered an element relating to re-fracture prevention. The former has clear implications for the model, while the latter would prove challenging to integrate with a financial incentive.

Recommendation 2: Existing CCS and national guidelines should be used as a basis of a best-practice pricing approach for hip fracture care, in particular the Hip Fracture CCS established by the Commission in 2015.

4. Designing a national best-practice pricing model for hip fracture care

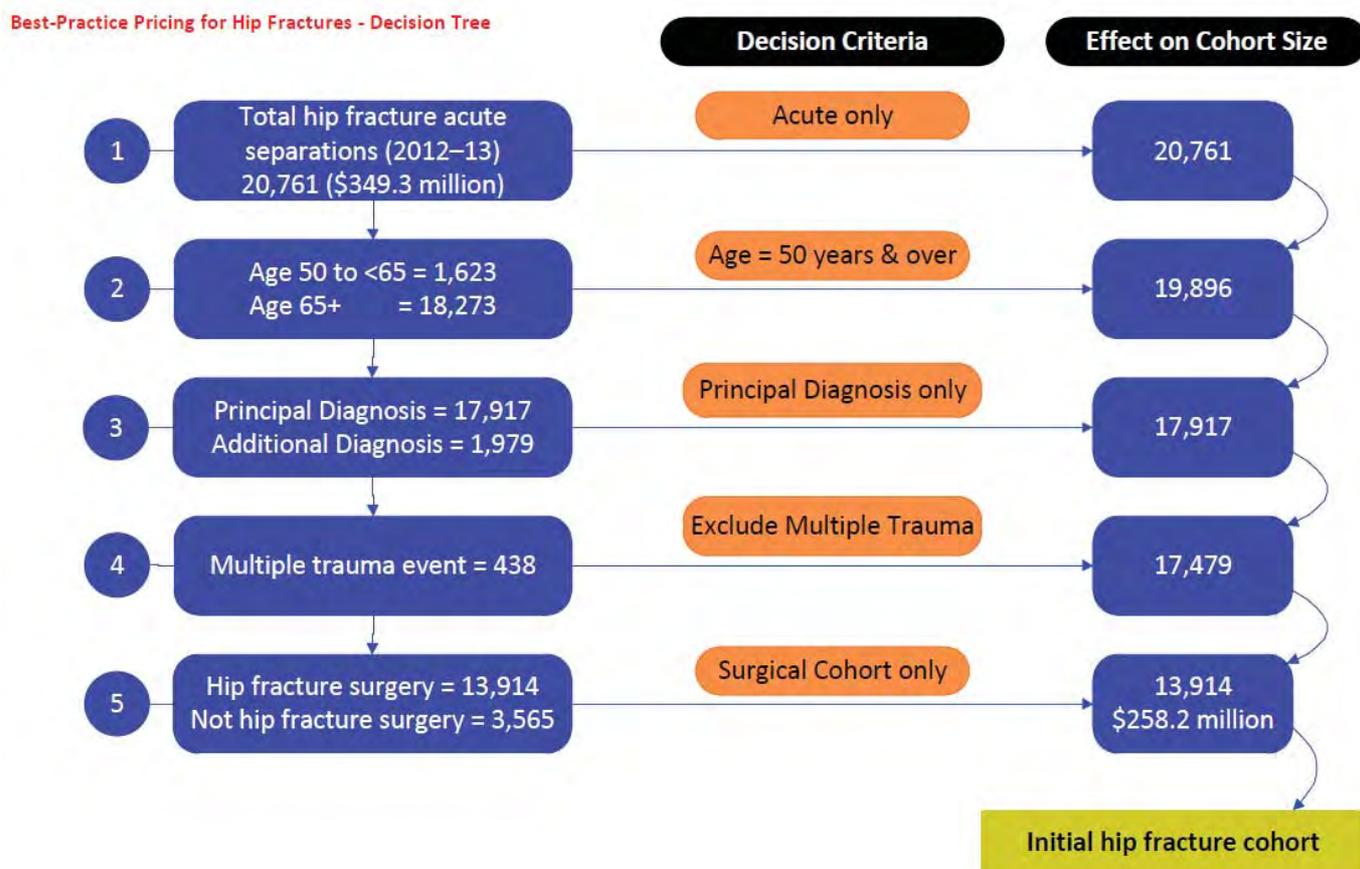
This chapter discusses the summary analysis of national hip fracture separations based on the most recently available national costing and activity data. The analysis uses the relevant hip fracture diagnosis and procedure codes in the ABF national data sets to inform the hip fracture cohort selection and a corresponding pricing approach.

4.1 Defining the target separations and episodes of care

Analyses of national hip fracture cost and activity data were conducted to define the target population. In summary, in 2012-13 there were 20,761 acute hip fracture separations in public hospitals nationally at a total cost of \$349.3 million.

The Sub-Committee further refined the analysis to establish a target hip fracture cohort (Table F1, Appendix F) based on decisions relating to factors including care type, patient age, principal and additional diagnosis, procedure and AR-DRGs. The algorithm is represented in Figure 1 with supporting detailed analysis included in Appendix F. A summary of the subsequent effect on the cohort size from each stage of the Sub-Committee’s decision logic algorithm follows.

Figure 1. Target cohort for a best-practice pricing approach to hip fracture care



4.1.1 Target Age

In 2012-13, eighty-eight per cent of the total acute hip fracture separations, at a cost of \$297.3 million, were for patients aged 65 years or more and 7.8 per cent were for people aged 50 to 65 years. Separations for patients aged 50 years and over account for 95.8 per cent of activity and 94.4 per cent of the cost of care for acute hip fracture separations across all hospitals that participated in the National Hospital Cost Data Collection (NHCDC), (Table F2, in Appendix F).

The NHS's BPT for Fragility Hip Fracture targets patients aged 60 years or more and Queensland and Western Australia target patients 60 and 65 or more years of age respectively, in their payment models.

The Sub-Committee received clinical advice and conducted analyses that suggest that a national best-practice pricing approach should target separations for patients aged 50 years or more because Aboriginal and Torres Strait Islander peoples comprise a disproportionately higher proportion of hip fracture patients aged 50 to 65 years (5.7 per cent) than non-Indigenous Australians due to the particular health needs of Indigenous Australians.

4.1.2 Target episode of care

In relation to episode of care decisions, IHPA's current approach is to determine prices separately across emergency, admitted acute, admitted subacute and non-admitted care types. As the Commission's Hip Fracture CCS focuses on the acute episode, particularly the timely receipt of surgery for those who warrant surgical intervention, the Sub-Committee's advice is to focus a national best-practice pricing approach on the admitted acute episode measured from the time of presentation at the initial emergency department. This incentivises both hospitals to perform timely surgery and to actively facilitate timely patient transfers. For more information, refer to 4.2.4 below. For some hospitals, there may be geographical challenges in this. However, from a patient perspective delays at the non-operating hospital may have a significant effect on patient outcomes.

Agreement on this recommendation among Sub-Committee members was not universal, though all members agreed on the importance of subacute care to a patient's resultant health status. The lack of existing information systems that follow separation of patients across their care types, however, was seen as a sizable issue to resolve before best-practice pricing could be attributed across the full pathway of care.

4.2 Defining best-practice hip fracture care for the purposes of pricing

4.2.1 Target cohort based on principal diagnosis

Eligible hip fracture episodes are those with diagnosis codes as outlined in Table F1 in Appendix F. Of the 19,896 admitted acute separations for patients aged 50 years or more, the data show that there were 17,917 separations (90.1 per cent) where hip fracture was the principal diagnosis. This represents 87.9 per cent of hip fracture costs for this cohort (Table F3, Appendix F). This means that the majority of activity and cost is attributable to cases where a hip fracture is the primary reason for an admission.

Separations for patients with a hip fracture as an additional diagnosis were excluded from the patient cohort selection following clinical advice that the most prevalent principal diagnoses for these episodes related to follow up care after surgery, such as rehabilitation type services.

4.2.2 Additional adjustment to further refine the cohort

The analysis showed that there was a relatively small number of cases (n=438) where the hip fracture diagnosis was related to a multiple trauma event (Tables F4 and F5, Appendix F) and the Sub-Committee advised that the consequential serious or life threatening issues, such as a severe head injury or multiple fractures, would directly affect the ability of clinicians and/or the appropriateness of delivering on some of the quality standards, particularly time to surgery. Therefore, multiple trauma episodes were excluded from the target cohort.

Hip fracture surgery was defined using principal or additional procedure codes as outlined in Table F6 in Appendix F. The analysis showed that hip fracture surgery was performed in 13,914 episodes (Table F7, Appendix F).

There were 968 episodes where patients were on anticoagulants. The group considered excluding these from the cohort as these medications may directly affect meeting the time to surgery indicator. The Sub-Committee also noted that the Queensland approach also excludes anticoagulant use. However, the Sub-Committee decided that patients with hip fracture who are on anticoagulants should remain in the target cohort as anticoagulant use is not necessarily a barrier to treatment; other medical issues are not excluded; and anticoagulant use is not comprehensively captured in the administrative data set.

4.2.3 Analysis on non-surgical separations

Further analysis of the separations (n=3,565) that did not have the nominated surgical procedures showed there were 2,038 cases where the patient was transferred to another acute hospital. It is likely that many of these transferred patients had surgery at the second hospital and, if they did, these separations would be included in the initial cohort (13,914 separations) discussed in Section 4.2.2.

690 of these patient separations went home and a further 488 patient separations were transferred to subacute care types such as palliative care or rehabilitation (see Table F9, Appendix F).

4.2.4 Initially targeting hospitals that undertake hip fracture surgery

Best-practice pricing is recommended for both episodes with surgery and without surgical interventions to introduce financial incentives into the system to deliver good quality care and to prevent unintended incentives toward any particular approach to management of hip fractures.

Nonetheless, the Sub-Committee emphasised that the strongest incentive for quality care created through the Hip Fracture CCS (described in Chapter 3) most closely aligns the care provided in hospitals performing surgery during the acute period of an admission. The Sub-Committee advised that IHPA should develop a national best-practice price that incentivises the key elements of the Hip Fracture CCS.

The Sub-Committee noted the evidence that time to surgery has high predictive power for patient outcomes. For the time to surgery indicator, the Sub-Committee's advice is that the 48-hour time limit should commence upon arrival to the emergency department and, for patients who are transferred from other hospitals for surgery, this time should commence from arrival at the initial emergency department. There was some debate about the terminology of '48 hours' compared with the Hip Fracture CCS quality statement which says 'surgery on, or the day after, presentation with hip fracture'. The Sub-Committee has

maintained its terminology consistent with the draft CCS, understanding that this may change dependent on the current public consultation around the standard.

As some patients initially present at a hospital with limited surgical infrastructure, such as small regional and remote hospitals, before being transferred to large or major hospitals for surgery, the Sub-Committee's advice is that the operating hospital should receive the best-practice payment if the best-practice indicators are met. Patients who present to an initial remote hospital should still be included in the cohort. The rationale is as follows:

- i. The best-practice pricing model should ensure compliance with the Clinical Care Standard and match its indicators. (The draft CCS is currently out for consultation and all feedback, including for the 48-hour target, will be considered before the CCS is finalised).
- ii. It encourages appropriate care, in that remote hospitals should have 'upstream' coordinated care networks to ensure that the management of the patient is effective and the patient gets to the incentivised operating hospital as quickly as possible
- iii. There should be no positive or negative discrimination in the best-practice pricing approach based on remoteness, noting that networks should be aware of the referral patterns in their areas
- iv. Often these patients have had longer to travel to present to the remote service, and so they have already experienced delays in care compared with metropolitan hospitals
- v. Non-ABF'd hospitals have no incentive from a pricing perspective which encourages the operating hospital to facilitate timely admission to achieve the best-practice price
- vi. In IHPA's National Efficient Price determination (2014-15), there are adjustments for admitted acute (and admitted subacute care) episodes where patient postcode is listed as outer regional, remote and very remote, at 8%, 16% and 22% respectively.

Commencing the time to surgery target from presentation to the emergency department at the initial hospital incentivises the hospital that performs the surgery to actively facilitate timely patient transfers and mitigate the perverse risk of gaming the time limit by holding patients at the hospital where the patient initially presents.

The Sub-Committee's advice therefore is that the national best-practice price should initially be targeted at episodes where hip fracture surgery is undertaken. The Sub-Committee also advised that IHPA should work with jurisdictions, clinicians and other stakeholders to consider whether additional steps are required for the non-surgical cohort to incentivise quality care and to prevent unintended incentives toward any particular treatment.

4.2.5 Target AR-DRGs

After the exclusions discussed in Sections 4.1.1 to 4.2.2 were applied to the data, the initial target hip fracture surgical cohort includes 13,914 separations at a cost of \$258.2 million. Table F10 presents the initial hip fracture surgical cohort grouped by AR-DRG which shows that four AR-DRGs account for 99.2 per cent of activity and 97.5 per cent of cost. The NHS BPT determined that episodes need to be assigned to specified hip fracture Health Resource Groups as part of the eligibility criteria for receiving the premium payment (Appendix E).

The Sub-Committee therefore recommended that in establishing a best-practice price, IHPA should have regard to limiting the number of AR-DRGs eligible to receive the best-practice price incentive to the top four AR-DRGs.

Recommendation 3: IHPA, in its national price setting role, should consider implementation of a best-practice pricing model for hip fracture care. This should include:

- Targeting the acute episode of care in public hospitals for people aged 50 years and over;
- Targeting episodes with a hip fracture diagnosis code as specified in Table F1, Appendix F as a principal diagnosis;
- Excluding multiple trauma events as specified in Table F4, Appendix F;
- Targeting episodes that have hip fracture surgery as specified in Table F6, Appendix F;
- Targeting episodes assigned to the AR-DRGs I03A, I03B, I08A, and I08B that account for the majority of patients.

In 2012-13 there were 20,761 acute hip fracture separations in public hospitals nationally at a total cost of \$349.3 million. If these criteria were used to establish an initial hip fracture cohort then best-practice pricing would apply to 13,914 separations at a total cost of \$258.2 million.

4.3 Costing and pricing best-practice hip fracture care

The next steps in a national best-practice pricing model after determining an initial target hip fracture cohort are to cost and price the best-practice delivery of admitted acute care.

4.3.1 The incremental cost of best-practice hip fracture care

Costing best-practice care may be undertaken through analysing existing data collections with the potential to augment this analysis with detailed investigations into the costs of providing best-practice care at the hospital level. The key challenge to overcome in costing best-practice care will be costing the elements of care that are not readily captured in existing data collections.

IHPA would then establish the incremental cost for best-practice care for the target hip fracture cohort, then compare the cost of best-practice care to the average cost of care. The incremental cost may be higher than, lower than or the same as the average cost of care.

For example, if delivering best-practice care required a number of hospitals to increase the health and medical workforce for hip fracture care or invest in new data collection systems, then the incremental cost may be higher than the average cost, at least in the initial years. Conversely, reducing time to surgery (with a flow-on effect of decreasing length of stay) may result in an incremental cost that is lower than the average cost because length of stay is a major cost driver.

Understanding whether the incremental cost of best-practice care is higher, lower or the same as the average cost is important because incremental cost will inform the best-practice incentive price differential. If the incremental cost is lower than the average cost, the way in which the incentive price differential is determined will be different because adjustments to the NEP are normally based on empirical cost differences.

4.3.2 Pricing best-practice hip fracture care

IHPA's existing pricing approach includes a number of price adjustments where there are material patient-based empirical cost differences that are not adequately recognised in the classification systems (such as Indigenous status, remoteness and Intensive Care Unit usage). In establishing the best-practice pricing model, IHPA would determine a new adjustment to the NEP (a best-practice hip fracture adjustment) that may or may not be revenue neutral.

A best-practice hip fracture adjustment where the incremental cost of best-practice care is higher than the average cost of care is consistent with the existing approach of basing adjustments on empirical cost differences. The Sub-Committee noted that a key learning from the NHS BPT for fragility hip fractures is that there needed to be an "incentive" price and it needed to be material enough to encourage the service providers (both managers and clinicians) to change practices and deliver care that met the best-practice criteria. This scenario would require existing funds to be re-allocated from other patients, or additional funding to pay for the price adjustment.

However, a best-practice hip fracture adjustment where the incremental cost of best-practice care is the same as or lower than the average cost of care would be a departure from the existing approach because there would not be an empirical cost differential on which to base the adjustment.

Recommendation 4.1: IHPA should use a purpose designed study to cost best-practice hip fracture care to determine the incremental cost of best-practice care compared to the average cost of care.

Recommendation 4.2: IHPA should determine a best-practice hip fracture care adjustment that provides an incentive for service providers (clinicians and managers) to change practices and deliver care that meets the best-practice criteria.

Recommendation 4.3: IHPA should signal its intention to explore the implementation of a national best-practice price for hip fracture care through the *Pricing Framework for Australian Public Hospital Services 2016-17* and, if new data elements are required to support its implementation, through the *IHPA Three Year Data Plan 2016-17 to 2018-19*.

5. Providing quality data to drive improvement

The design and implementation of a best-practice pricing scheme requires reliable information on quality of care to determine eligibility for funding, and its implementation should be coupled with or preceded by the provision of timely, relevant and comparable clinical information fed back to clinicians.

5.1 What information is needed to support quality improvement and payment determinations?

The evidence examined by the JWP indicates that quality of care in the hospital setting is best influenced by the systematic and timely provision of comparable information to clinical teams on quality and performance. Accordingly, the JWP asked the Sub-Committee to provide advice on an appropriate mechanism and format for providing safety and quality data to clinical teams and hospital leaders.

An NHS payment reform report recently described data as a “key limitation to the design, implementation and success of payment systems”⁵ and, at the same time, those familiar with the NHS BPT report that the increased availability of comparable performance information to clinicians on clinical quality of hip fracture care was instrumental to the success of this initiative.

There are two main sources of nationally consistent information on patients who are admitted with hip fracture – the NNAPED and the APC. There are other sources of valuable information on clinical quality, though these data are not yet nationally available (e.g. ANZHFR, see Table 2) or are not nationally consistent (e.g. patient experience data).

Table 4: The Australian and New Zealand Hip Fracture Registry.

The ANZHFR is a clinically owned and clinically driven Registry which provides real time comparative data for hospitals. It has representation from a number of key professional bodies and organisations with an interest in hip fracture care.

The development of the ANZHFR will allow for timely comparison of meaningful data around hip fracture care. It aims to understand practice and trigger the case for change in places where care might be improved. For more information, the registry details are at <http://www.anzhfr.org/home/history>.

Data collection commenced in 2014 with 14 Australian hospitals now collecting data and 17 more in the pipeline awaiting ethics approvals (May 2015). The ANZHFR dataset is modelled on the UK’s National Hip Fracture Database, with modifications for the Australian context. It includes the majority of the key measures that the Commission is considering in the development of the Hip Fracture CCS. However, it has some limitations with only a handful of Australian hospitals currently collecting and recording data in the registry. Data collection is also currently undertaken in a voluntary capacity.

Further investment in the registry will be required to enable all states and territories to collect the measures for purposes of a best-practice pricing approach. These issues are discussed in Chapter 7.

Any clinical quality registry used for best-practice pricing in hip fracture care must meet existing national standards, including having an amenable governance structure and national coverage as per the Commission's Framework for Clinical Quality Registries.⁹

If IHPA, or states and territories elect to commence best-practice pricing using existing nationally consistent information on patients who are admitted with hip fracture, then the Sub-Committee's advice must be specific about the degree to which CCS indicators in the Commission's Hip Fracture CCS could be measured with the NNAPED and APC. Appendix C contains the full list of indicators at time of public consultation of the CCS. It includes:

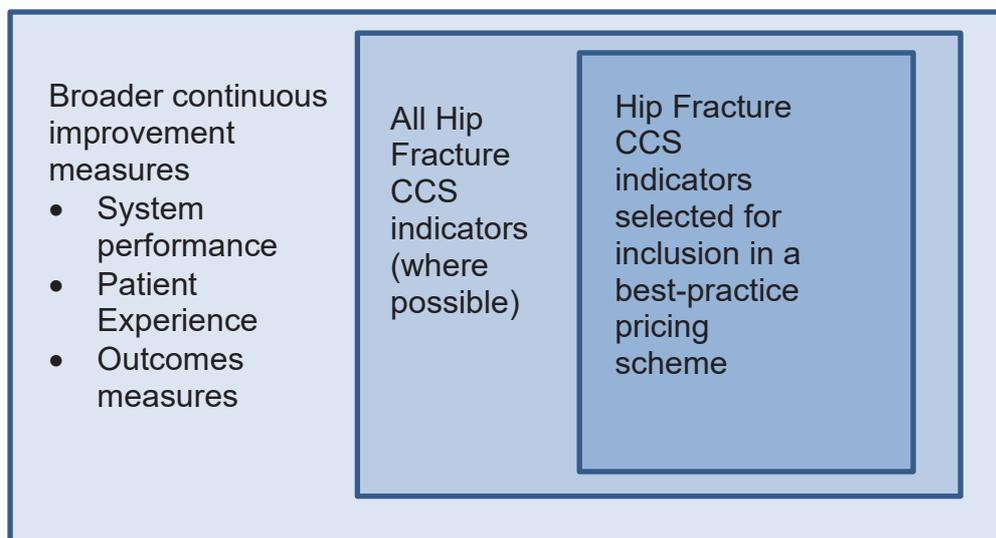
- Quality statement 1 – Care at presentation
- Quality statement 2 – Pain management
- Quality statement 3 – Orthogeriatric model of care
- Quality statement 4 – Timing of surgery
- Quality statement 5 – Mobilisation and weight bearing
- Quality statement 6 – Minimise the risk of another fracture
- Quality statement 7 – Transition from hospital care.

The indicators for each of these quality statements are included in the ANZHFR dataset. Furthermore, the Sub-Committee heard that there may also be a need for information beyond that required to support reporting on the Hip Fracture CCS that can be used by clinicians to support quality improvement. Such information would include, for example:

- System performance measures – such as length of stay and surgery cancellation rates
- Patient experience measures not covered by the CCS
- Outcomes measures – that can demonstrate the benefits of quality improvements over time, including Patient Reported Outcome Measures
- Information on cost drivers.

Figure 2 illustrates how information to inform best-practice price and funding determinations can be considered a subset of information needed across all the Hip Fracture CCS, which can be considered a subset of information that clinicians may desire to support quality improvement. Appendix G provides a broad list of possible measures across these categories.

Figure 2: Subsets of continuous improvement information in relation to hip fracture.



5.2 The audience and timing of providing quality improvement information

The target audience for quality improvement information is clinical teams and hospital managers. The requirements of this audience have particular implications for the timing of information provision and the appropriate level at which it is provided. Clinical information should be frequently used to drive improvements, and with a higher level of detail than the information that would be required for the purposes of determining best-practice for pricing purposes.

To best support clinical teams and hospital leaders to drive continuous improvement, the provision of comparable information would need to commence before a best-practice pricing model. This will give clinicians and hospital managers an understanding of the baseline for continuous improvement before any form of incentive pricing takes effect.

A determination in relation to the timeliness and frequency of this information is important to inform and enable monitoring of continuous improvement initiatives by clinicians and hospital managers. This might initially mean providing information at six-monthly intervals, but in time this would ideally increase to quarterly provision.

Recommendation 5.1: Based on the advice of the Sub-Committee, the ACSQHC and IHPA should determine which of the Hip Fracture CCS indicators will be used to determine whether best-practice has been delivered.

Recommendation 5.2: The Hip Fracture CCS indicators selected for inclusion into a national best-practice pricing model should be coupled with defined, more comparable information be provided to support clinical improvement than is needed for pricing and funding determinations.

Recommendation 5.3: This quality improvement information should be provided through the ANZHFR to Local Hospital Networks and public hospitals in advance of the commencement of any best-practice pricing model on a quarterly basis (even if initially provided on a six-monthly basis).

6. Preferred initial national model for best-practice pricing of hip fracture care

The preferred initial national model for best-practice pricing for hip fractures would require a set of indicators to be established so that it can be determined whether best-practice had been achieved.

The Sub-Committee reviewed the Hip Fracture CCS quality statements and associated indicators (included in Appendices C and D) and selected an initial set of indicators.

The Sub-Committee considered that the indicators need to be meaningful to patients and clinicians, simple to understand and easy to communicate, feasible to collect, precise, achievable, measurable, and cover a spectrum of the standards.

Members recommended including the following preferred indicators for consideration by the JWP:

- i) Surgery occurred on the same day or the day following presentation for patients who had surgery
- ii) An orthogeriatric model of care was used for patients aged over 65 years, and over 50 years for Indigenous patients
- iii) Remobilisation occurred on the day after surgery (for surgical patients)
- iv) An abbreviated mental state test was conducted for all patients; pre-operatively for surgical patients
- v) A falls and bone health assessment was conducted before the patient was discharged.

Subject to consultation with stakeholders, the Commission and IHPA should determine which of the five indicators are to be included in the initial model. That is, there may be one to five indicators initially chosen in the first iteration of a pricing model.

The preferred initial national model for best-practice pricing for hip fractures would apply the best-practice price to all relevant hip fracture episodes that have met all the agreed indicator(s). That is, if data is supplied for an episode that satisfies that the indicator(s) has/have been met, the best-practice price will apply for that episode.

Beyond the preferred initial national model for best-practice pricing for hip fractures, future iterations of the model may include all aspects of the patient journey. This would be dependent on clinical care standards and indicators being available.

Recommendation 6.1: That the JWP endorse the Sub-Committee's preferred Hip Fracture CCS indicators for best-practice pricing. *Note: the recommendations were endorsed by the JWP on 29 June 2015.*

Recommendation 6.2: Subject to consultation with the relevant stakeholders, IHPA should determine which of the initial set of indicators are to be included in the preferred initial model for best-practice pricing for hip fractures to be applied to surgical patients.

7. Implementation approach

7.1 Using existing data to support pricing and quality improvement

In accordance with established processes, the Sub-Committee envisions that IHPA would work with jurisdictions including through the IHPA Jurisdictional Advisory Committee (JAC) to seek advice and guide implementation of any best-practice pricing scheme. IHPA would signal its intention in relation to best-practice pricing for hip fractures to the Australian community in its *Pricing Framework for Australian Public Hospital Services*.

Following the public consultation around the hip fracture CCS, the Sub-Committee envisions that the Commission might opt to include in its Work Plan activities that support the collection, analyses and provision of timely, comparable hip fracture care information to Local Hospital Networks and relevant public hospitals. These activities would support answers to questions such as:

- How might comparable hospital-level information be routinely created from existing, nationally consistent databases to support efforts to improve hip fracture care?
- How might comparable hospital-level information be routinely created with the new national clinical registry to support efforts to improve hip fracture care?
- How might the Commission support this work?

There are established processes for accessing and using existing national databases through *IHPA's Three Year Data Plan* and the Commission's work plan respectively. If the development of new data elements is required, consultation should occur with jurisdictions and IHPA and the Commission, as these data elements might already exist in state and territory data collections (e.g. time to surgery), or might need to be specified through national data governance processes to support their nationally consistent collection.

7.2 Potential data to support pricing, funding and quality improvement

In the NHS, Queensland and WA, the introduction of best-practice pricing has focused on time to surgery and, in the case of the NHS, full participation in their clinical registry.

The Sub-Committee was advised that the new ANZHFR collects information relevant to many more indicators across the seven proposed Hip Fracture CCS quality statements than existing nationally consistent information systems. However, these ANZHFR data are not yet nationally complete for major and large public hospitals, though hospital participation rates are increasing.

If IHPA was to commence best-practice pricing using some of the proposed Hip Fracture CCS indicators, then it should promote early and rapid adoption of the ANZHFR by public hospitals for future use of this data as a source of clinical quality improvement information as well as for establishing whether best-practice has been met for pricing and funding purposes. The Administrator and the National Health Funding Body would need to access the resultant data for the purposes of funding determinations.

IHPA could promote adoption of the ANZHFR by including a requirement for these data in its *Three Year Rolling Data Plan* or by requiring the data as pre-requisite to be eligible for best-practice pricing. IHPA and the Commission could support national coordination of state and territory effort through the National Health Information and Performance Principal Committee (NHIPPC) and, potentially, facilitate a national approach to funding the registry via the NHIPPC.

Importantly, the ANZHFR has its own governance, funding and ownership arrangements which would need to be considered before implementation of a best-practice pricing model that depends on access, use and disclosure of information derived from ANZHFR data.

Recommendation 7.1: IHPA must include appropriate best-practice data items within their *Three Year Rolling Data Plan* and the Commission similarly within their Work Program, as the mechanism to stimulate both data collection to support clinical improvement and a best-practice pricing approach for hip fracture care in Australia.

Recommendation 7.2: JWP must further consult with states and territories about participation in the ANZHFR so that issues such as access, use and disclosure of data derived from this registry will need to be prospectively negotiated to support pricing and funding determinations. These arrangements will also be necessary if the Commission, states and territories are to play a role in the provision of timely, comparable hospital-level information on hip fracture care to clinicians and hospital managers. Importantly, NHIPPC could serve as a national forum for IHPA and the Commission to resolve these important issues.

7.3 Further stakeholder engagement and implementation plans

Engaging and persuading stakeholders of the merits of a national best-practice pricing scheme will be important for clinical behaviour change. Key stakeholders include the Commonwealth, states and territories, Local Hospital Networks, Clinical Colleges, clinicians and consumer groups. The existing Commission CCS Hip Fracture Topic Working Group has also been important to elucidate best-practice. Comprising clinicians, consumers and hospital administrators, this is a valuable group for development of an implementation plan.

A formal communication and consultation strategy will need to be developed to manage expectations, refine the best-practice price, and facilitate positive implementation. Subject to public consultation on the Hip Fracture CCS, further consultation will need to be undertaken with relevant clinical groups. These include, for example:

- Australian Orthopaedic Association
- Royal Australian College of Surgeons
- The Royal Australasian College of Physicians
- Australasian College for Emergency Medicine
- Australian and New Zealand College of Anaesthetists
- Australian and New Zealand Society for Geriatric Medicine.

Recommendation 8: Further consultation with stakeholders on the design approach for the best-practice pricing model for hip fracture care should be undertaken following the Pricing Authority and Commission Board endorsement and be complementary to development of an implementation plan.

A full implementation plan should be developed, but the Sub-Committee envisions that an indicative plan might include phases and key activities as illustrated in Figure 3.

Figure 3. Indicative phasing of a best-practice pricing approach to hip fracture care

Key responsibilities	Phasing of key activities				
Timeframe	2014-15	2015-16	2016-17	2017-18	2018-19
Key communication messages	Hip Fracture CCS		Best-practice pricing approach		Implementation
Key communication targets	Sub-Committee JWP Clinicians	Pricing Authority Jurisdictions Clinicians AHMAC Consumers Colleges	Pricing Authority IHPA Committees AHMAC Jurisdictions Other stakeholders	Pricing Authority IHPA Committees The Administrator AHMAC Jurisdictions Other stakeholders	
Commission	Finalise CCS	Incorporate activities into the Commission's Work Plan	Supports work that ensures baseline comparable information is provided locally	Supports work to enhance the provision of comparable information	Continue work to enhance the provision of comparable information
IHPA	BPP development Create dataset specifications for preferred initial model indicators		BPP signalled in Three Year Data Plan, including new data item(s). Price development.	NEP determination	Implementation
Enhance data infrastructure	Enhance nation-wide participation in the ANZHFR		Data extracts support work to enhance the provision of comparable information and, potentially, the next NEP determination		
	Establish agreements around access, use and disclosure of data to support best-practice pricing				

Recommendation 9: A phased approach to implementation of a national hip fracture best-practice price and provision of clinical quality information should be taken. This should be based around the timing of the development and implementation of the Hip Fracture CCS indicators, and in recognition of IHPA and the Commission's Data Plans and Work Plans. It should also recognise the work and time required to establish processes to support the routine collection and provision of timely, hospital-level comparable information on hip fracture care.

7.4 Evaluation

An evaluation process must be considered a key part of implementation of a best-practice pricing approach in Australia. Lessons learned from the NHS recommended building an evaluation process into the approach from the beginning of development.

The evaluation could consider issues such as the impacts of best-practice pricing; intended and unintended consequences; and should carefully identify how pricing and quality information provision separately and/or concurrently influenced behaviour and health outcomes.

Recommendation 10: An evaluation process should be built into any implementation plan for an Australian national approach to best-practice pricing in hip fracture care.

8. Appendices

- A. Sub-Committee on Best-practice Pricing Terms of Reference**
- B. Suggested design improvements to increase the impact of pay for performance schemes**
- C. The Commission's proposed clinical care standard for hip fracture quality statements**
- D. The Commission's proposed clinical care standard for hip fracture indicators**
- E. International and Australian Hip Fracture Care Best-Practice Pricing Initiatives**
 - a. WA Hip Fracture Premium Payments*
 - b. Queensland Health Fractured Neck of Femur Purchasing Initiative*
 - c. SA Health Transforming Care*
 - d. United Kingdom Fragility Hip Fracture Payment*
- F. Supporting data analysis for Chapter 4 - Designing and implementing the best-practice pricing model for hip fracture care**
- G. Additional potential measures for consideration in a hip fracture best-practice pricing approach**
- H. Reference list**

Appendix A. Sub-Committee on Best-practice Pricing and Quality Information Terms of Reference

TRIM (ACSQHC): D14-28232

TERMS OF REFERENCE

Joint Working Party on Pricing for Safety and Quality in Australian Public Hospital Services (JWP) of the Australian Commission on Safety and Quality in Health Care (the Commission) and Independent Hospital Pricing Authority (IHPA)

SUB-COMMITTEE ON BEST-PRACTICE PRICING AND CLINICAL QUALITY INFORMATION

1. Purpose

To investigate and advise the JWP on potential approaches to (a) best-practice pricing, and (b) provision of hospital-level safety and quality data in relation to select clinical areas identified as a priority by the JWP.

2. Background

The JWP was established in August 2012 to advise the Commission and IHPA on:

1. Emerging local and international literature on, and evidence for, pricing schemes and mechanisms, including how these would translate to the Australian context.
2. The project aiming to develop and pilot ways in which data and information can be provided to clinical teams in the hospital environment to promote improvement in safety and quality. Specifically, the JWP will provide advice on a proof of concept to test the draft national set of high priority hospital complications in selected Australian hospitals.
3. Ongoing consideration of the objectives of incorporating safety and quality in the pricing of Australian public hospital services, including:
 - a. identifying necessary features of potential schemes
 - b. emerging risks and opportunities unique to the Australian context.
4. Possible options for national implementation of mechanisms identified, studied and piloted, including:
 - a. the potential effects, consequences, risks and benefits to the Australian community of the options identified
 - b. strategies and specific issues for consideration prior to, and as part of, implementation of the identified options, including requirements to obtain the support of Australian governments and other stakeholders.

In early 2014 the JWP established a Sub-Committee to undertake work in relation to the proof of concept to test a draft national set of high priority hospital complications (item 2 above).

In June 2014 the JWP agreed to establish a second Sub-Committee to address issues in relation to items 1, 3 and 4 above, with a particular focus on the selected clinical area of hip fracture.

3. Terms of reference

The Sub-Committee on Best-practice Pricing and Clinical Quality Information (the Sub-Committee) is established to support the JWP by developing advice on proof of concepts in select clinical areas identified as a priority by the Chair of the JWP. Specifically, the Sub-Committee will explore, and advise the JWP on the following:

1. The requirements and feasibility of introducing best-practice pricing in Australian public hospitals, with a specific focus on priority clinical areas, focusing on hip care (fractured hip). This includes:
 - a. closer examination of local and international schemes
 - b. process for adopting or developing a clinical pathway or achieving consensus on 'best-practice', with initial focus on management of fractured hip
 - c. preliminary scoping of a national best-practice pricing model in the Australian public hospital funding context in light of (a) and (b).
2. An appropriate mechanism and format for providing safety and quality data to clinical teams and hospital leaders to drive quality improvement (including patient experience). This mechanism should support implementation of best-practice pricing in priority clinical areas, with a focus on hip care.

The Sub-Committee is not expected to undertake pilot work, or explore mechanisms that would involve public reporting.

In exploring and advising the JWP on these matters, the Sub-Committee will communicate with the appropriate agencies including, but not limited to, the Commission, IHPA and clinical specialty groups.

4. Membership

Member	Position
Dr Diane Watson (Co-Chair)	CEO National Health Performance Authority
Dr Robert Herkes (Co-Chair)	Clinical Director, Australian Commission on Safety and Quality in Health Care
A/ Professor Brian McCaughan	Cardiothoracic surgeon, Board Chair, Clinical Excellence Commission Board Chair, Agency for Clinical Innovation
Dr Stephen Christley	Chief Public Health Officer and Executive Director, Public Health and Clinical Systems at SA Health
A/ Professor Graham Reynolds	Consultant Paediatrician and Associate Dean (admissions) Australian National University Medical School
Dr Karen Luxford	Director Patient Based Care, Clinical Excellence Commission, NSW Health

Ms Janet Anderson (or Commonwealth nominee)	First Assistant Secretary, Acute Care Division Australian Government Department of Health
Prof Bernard Whitfield	Otolaryngology Head and Neck Chair – Royal Australasian College of Surgeons (QLD)
Ms Cindy Schultz-Ferguson	Nominee Consumers' Health Forum
Professor Jaqueline Close	Conjoint Professor, UNSW Consultant Geriatrician, Prince of Wales Hospital
Professor Ian Harris	Professor of Orthopaedic Surgery, University of NSW, Director of surgical specialties, South Western Sydney Local Health District
Ms Frances Diver	Deputy Secretary, Health Service Performance and Programs, Victorian Department of Health

Other attendees

Mr Luke Clarke	Director, Policy Development, IHPA
Mr Luke Slawomirski	Program Manager, the Commission
Ms Janelle Painter	Senior Policy Officer, IHPA
Ms Amanda Mulcahy	Senior Program Officer, the Commission (Secretariat)
Mr Michael Frost	Executive Director, National Health Performance Authority

5. Reporting

The Sub-Committee will provide a report at each meeting of the JWP, as a standing agenda item.

6. Timeframe

These Terms of Reference are effective from date of acceptance until 30 June 2015.

7. Acceptance

Version	Date accepted	Accepted by
1.0	19 September 2014	Dr Tony Sherbon, CEO, IHPA Prof D Picone AM, CEO, the Commission

Appendix B. Suggested design improvements to increase impact of pay for performance schemes²

Commonly currently used design	Suggested Improvement
Incentive given as a lump sum	Divide the lump sum into a series of smaller incentive payments
Relative thresholds (e.g. top 25% of physicians)	Tiered absolute thresholds (e.g. 25%, 50%, 75%, 90%)
Long lag time between care and receipt of incentive	Shorten lag time to as short as possible
Use of withhold payments	Bonus payment or use of deposit contracts
Complex uncertain structure of program (e.g. shared savings program)	Simplify program so that uncertainty minimized
Incentive often given as an increase in fee schedule reimbursement	Decouple incentive payment so that it is given separately, consider a lottery
Dollar incentives	“In kind” incentives

Appendix C. Australian Commission on Safety and Quality in Health Care draft Hip Fracture Clinical Care Standard quality statements

Note: public consultation on this standard is available at <http://www.safetyandquality.gov.au/our-work/clinical-care-standards/hip-fracture-care-clinical-care-standard/>

Hip Fracture Clinical Care Standard as at May 2015	
1	<p>Care at presentation A patient presenting to hospital with a suspected hip fracture receives care guided by timely assessment and management of the medical conditions, including diagnostic imaging, pain assessment and cognitive assessment.</p>
2	<p>Pain management A patient with a hip fracture is assessed for pain at the time of presentation and regularly throughout their hospital stay, and receives pain management including the use of multimodal analgesia as clinically appropriate.</p>
3	<p>Orthogeriatric model of care A patient with a hip fracture is offered treatment based on an orthogeriatric model of care as defined in the Australian and New Zealand Guideline for Hip Fracture Care.</p>
4	<p>Timing of surgery A patient presenting to hospital with a hip fracture or sustaining a hip fracture while in hospital, receives surgery on the day of or the day after, where clinically indicated and surgery is preferred by the patient.</p>
5	<p>Mobilisation and weight-bearing A patient with a hip fracture is offered mobilisation without weight-bearing restriction the day after surgery and at least once a day thereafter, depending on the patient's clinical condition and agreed goals of care.</p>
6	<p>Minimise the risk of another fracture Before a patient with a hip fracture leaves hospital, they are offered a falls and bone health assessment, and a management plan based on this assessment to reduce the risk of another fracture.</p>
7	<p>Transition from hospital care Before a patient leaves hospital, the patient and their carer are involved in the development of an individualised care plan that describes the ongoing care that the patient will require after they leave hospital. The plan includes a summary of any changes in medicines, any new medicines, mobilisation, wound care and function post injury, recommendations for future fracture prevention and referral to ongoing rehabilitation if clinically indicated.</p> <p>This plan is provided to the patient and their general practitioner or ongoing clinical provider within 48 hours of discharge.</p>

Appendix D. Australian Commission on Safety and Quality in Health Care draft Hip Fracture Clinical Care Standard indicators

	Supports improvement	Outcome measure
<p>Quality statement 1 – Care at presentation:</p> <ul style="list-style-type: none"> - Indicator 1a: Evidence of local arrangements for the management of patients with hip fracture in the emergency department. - Indicator 1b: Proportion of patients with a hip fracture who have had their pre-operative cognitive status assessed. 	<p>✓</p> <p>✓</p>	
<p>Quality statement 2 – Pain management:</p> <ul style="list-style-type: none"> - Indicator 2a: Evidence of local arrangements for timely and effective pain management for hip fracture. - Indicator 2b: Proportion of patients with a hip fracture who receive analgesia or have documented assessment of pain within 30 minutes of presentation to the emergency department. 	<p>✓</p> <p>✓</p>	
<p>Quality statement 3 – Orthogeriatric model of care:</p> <ul style="list-style-type: none"> - Indicator 3a: Evidence of orthogeriatric (or alternative physician) management during their admitted hip fracture episode of care. - Indicator 3b: Proportion of patients with a hip fracture receiving orthogeriatric (or alternative physician) assessment prior to hip fracture surgery. 	<p>✓</p> <p>✓</p>	
<p>Quality statement 4 – Timing of surgery:</p> <ul style="list-style-type: none"> - Indicator 4a: Proportion of patients with a hip fracture receiving surgery on or the day after presentation with hip fracture.^{∞Φ †} 	<p>✓</p>	
<p>Quality statement 5 – Mobilisation and weight-bearing:</p> <ul style="list-style-type: none"> - Indicator 5a: Proportion of patients with a hip fracture who are mobilised on day one post-surgery.[†] - Indicator 5b: Proportion of patients with a hip fracture with unrestricted weight-bearing immediately post-surgery. - Indicator 5c: Proportion of patients with a hip fracture experiencing a new Stage II or higher pressure injury during their hospital stay.^{†ψ} - Indicator 5d: Proportion of patients with a hip fracture returning to pre-fracture mobility.[†] 	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p>
<p>Quality statement 6 – Minimise the risk of another fracture:</p> <ul style="list-style-type: none"> - Indicator 6a: Proportion of patients with a hip fracture receiving a specialist falls assessment prior to discharge from hospital.^{*∞Φ} - Indicator 6b: Proportion of patients with a hip fracture receiving bone protection medication at discharge from the operating hospital. - Indicator 6c: Proportion of patients with a hip fracture readmitted to hospital with another fracture. 	<p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p>
<p>Quality statement 7 – Transition from hospital care:</p> <ul style="list-style-type: none"> - Indicator 7a: Proportion of patients with a hip fracture who have an individualised care plan at discharge. - Indicator 7b: Proportion of patients with a hip fracture returning to private residence. 	<p>✓</p> <p>✓</p>	<p>✓</p>



Indicators of effectiveness:		
- Indicator 8a: Re-operation of hip fracture patients within 30 day follow up.*	✓	✓
- Indicator 8b: Survival at 30 days post admission for hip fracture surgery.*†	✓	✓

Appendix E. International and Australian Hip Fracture Care Best-Practice Pricing Initiatives

WA Health

WA Health has integrated safety and quality into ABF since 2010. One of three WA performance based payments is for fracture neck of femur (others are for Stroke and Acute Myocardial Infarction). A bonus payment of \$200 is awarded per patient with fracture neck of femur over 65 years of age where all of these six clinical indicators are met:

1	Time to surgery within 36 hours from arrival in ED, or time of diagnosis if an inpatient [‡]
2	Admitted under the joint care of a consultant geriatrician and an orthopaedic surgeon
3	Admitted using and assessment protocol agreed by geriatric medicine, orthopaedic surgery and anaesthetics
4	Assessed by a geriatrician in the peri-operative period (within 72 hours of admission)
5	Post-operative geriatrician-directed multi-professional rehabilitation team
6	Fracture prevention assessments (falls and bone health)

The hip fracture bonus payment is implemented at the three tertiary hospitals in WA. Patients who transfer between hospitals only have the data entered at the operating tertiary hospital. Specifically, the time to surgery item is measured from the time the patient arrived in ED at the operating hospital. Patient level data are collected by hospital staff (usually an Orthopaedic Nurse) within a purpose built online clinical registry. To avoid duplication in collecting data items, approximately 1/3 of items migrate across to the clinical registry from existing Patient Administration System data. Data are then extracted by the Department of Health quarterly for payment to the appropriate Health Service.

Queensland Health

The Queensland Health quality improvement incentive for care of fractured neck of femur relates principally to time to surgery and has evolved over the past three financial years. In 2012-13, a target of 95% for patients admitted as an emergency for fractured neck of femur repair to be taken to theatre within 48 hours of admission was set. If the target was achieved, a bonus payment would be paid to the associated health service. The target was not reached in its first year, and was reduced to 80% in 2013-14. In 2014-15 the program was further amended, and Queensland now reduces the price for a weighted activity unit for fractured neck of femur by 20% if the time to surgery is not achieved (refer to appendix 4). Queensland's lessons learned from this project include:

1. Achievability of the target is essential.
2. Executive buy-in and quarterly performance information feedback at the executive team level is an important motivator.
3. Clinical engagement through networks and individual clinicians is essential during development process because it provides a sense of ownership.

[‡] Note: this is time to surgery from admission to Emergency Department of the operating hospital only

SA Health

At time of writing, SA Health was exploring areas of best-practice pricing. The clinical areas of focus are likely to be stroke and hip fracture, with the aim of aligning to national standards and quality indicators where possible. SA Health is reviewing the programs implemented in Queensland and WA, and will keep the Secretariat informed of progress in the coming months.

NHS Best-practice Tariff Program – Fragility Hip Fracture

The NHS United Kingdom’s Best-practice Tariff (BPT) program pays differential prices (tariff) for a set of hospital procedures/interventions in which specified processes and elements of best-practice are met. It is a key feature of the NHS ‘payment by results’, tariff-based payment system for acute care (i.e. activity based funding).

The aim of BPTs is to reduce unwarranted clinical variation and improve quality of care. The number of clinical areas, conditions and procedures covered by the scheme has grown from four to 18 since its inception in 2010-11. The criteria for selecting BPT clinical areas include:¹⁰

1. High impact (high volume, high variation in practice, or impact on outcomes)
2. A strong evidence base on what constitutes best-practice (and demonstrated benefit and cost effectiveness to the patient)
3. Clinical consensus on the characteristics of best-practice
4. The episode of care has a well-defined start and finish point
5. The care is planned in advance.

The fragility hip fracture BPT rewards care meeting the following specified elements:

Table 1. The eight NHS Fragility Hip Fracture clinical care elements

1	Surgery within 36 hours of admission
2	Shared care by surgeon and geriatrician
3	Admission using a care protocol agreed by geriatrician, surgeon and anaesthetist
4	Assessment by geriatrician within 72 hours of admission
5	Pre- and postoperative abbreviated mental test score (AMTS) assessment
6	Geriatrician-led multidisciplinary rehabilitation
7	Secondary prevention of falls
8	Bone health assessment

Data collection

The data are collected in an online clinical registry at www.nhfd.co.uk. Data are entered by hospital staff with new admissions for hip fracture and collected at 30 days, 120 days and 1 year post discharge. The BPT data items are mandatory fields. Data can be exported at any time into excel to be used by hospitals for local reporting and improvements. An annual report is also commissioned by the Healthcare Quality Improvement Partnership and managed by the Royal College of Physicians.

For hip fracture care, the BPT is disbursed only if all elements of care are completed and submitted to the registry. In effect, the scheme also contains a ‘pay for data’ component.

Incentive mechanism

The incentive mechanism has been a progressive reduction in the base tariff, and the concomitant introduction of an additional payment for meeting best-practice elements. This is illustrated in Figure 1.

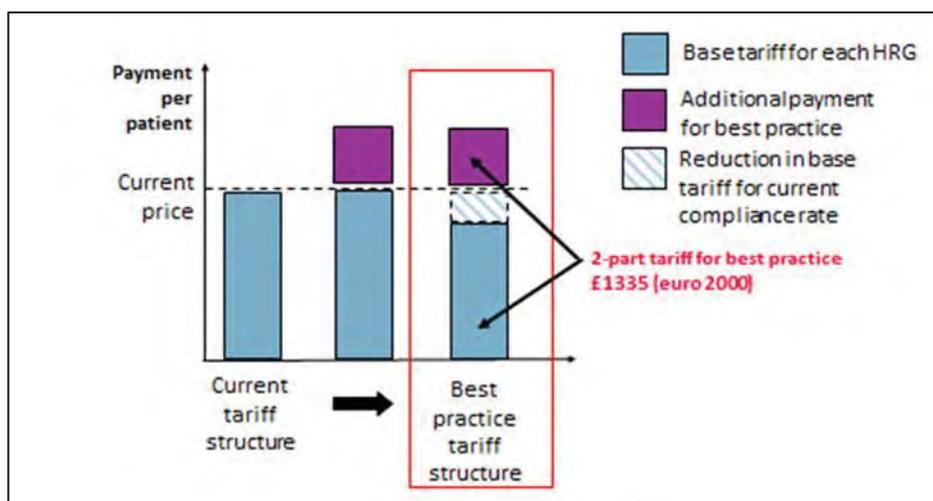


Figure 1. NHS BPT structure and implementation¹¹.

The differential between the base tariff and additional payment has increased since 2010-11,¹² and is now at £1,335. This has been principally achieved by lowering the base tariff and increasing the additional payments (Table 2). The overall payment for hip fracture has been reduced slightly between 2013-14 and 2014-15, in tandem with a reduction of episode-based tariffs across acute services in the NHS as part of a strategy to deliver efficiency dividends.

Table 2. NHS Fragility hip fracture differential between base and best-practice tariff.

Financial year	Differential
2010-11	£445
2011-12	£890
2012-13	£1,335
2013-14	£1,335
2014-15	£1,335

The approach to determining the differential price evolved year by year in consultation with health service managers, senior clinicians and consumers.¹³ To establish the first differential price in 2010-11, a costing exercise was undertaken by the NHS to determine a compliance adjustment to the average price for hip fracture HRGs. The differential between the base and best-practice prices was calculated at 7%, i.e. best-practice care was 7% more expensive than current average (base) care. In 2011-12, the differential was doubled as services improved their compliance with the best-practice elements. It was then then tripled to 21% in 2012-13. The price differential has remained the same since.¹⁴ This is believed to be due to soft intelligence feedback from stakeholder groups. That is, clinicians were wary of the potential of any unintended systemic effects on care if the differential was increased further

(e.g. safety concerns about reprioritizing theatre waitlists).¹³ A list of the 2014-15 base tariffs, best-practice tariffs and differentials for hip fracture HRGs is below in table 3.

Table 3: Base tariffs, BPTs, differential and percentage of base for hip fracture HRGs 2014-15¹⁵.

HRG code	HRG name	Base tariff (£)	Best-practice tariff (£)	Differential	% base
HA11A	Major Hip Procedures category 2 for Trauma with Major CC	7,569	8,904	1,335	18%
HA11B	Major Hip Procedures category 2 for Trauma with Intermediate CC	6,741	8,076	1,335	20%
HA11C	Major Hip Procedures category 2 for Trauma without CC	5,508	6,843	1,335	24%
HA12B	Major Hip Procedures category 1 for Trauma with CC	7,329	8,664	1,335	18%
HA12C	Major Hip Procedures category 1 for Trauma without CC	5,237	6,572	1,335	25%
HA13A	Intermediate Hip Procedures for Trauma with Major CC	5,932	7,267	1,335	23%
HA13B	Intermediate Hip Procedures for Trauma with Intermediate CC	4,549	5,884	1,335	29%
HA13C	Intermediate Hip Procedures for Trauma without CC	4,548	5,883	1,335	29%
HA14A	Minor Hip Procedures for Trauma with Major CC	1,662	2,997	1,335	80%
HA14B	Minor Hip Procedures for Trauma with Intermediate CC	1,052	2,387	1,335	127%
HA14C	Minor Hip Procedures for Trauma without CC	428	1,763	1,335	312%
VA11A	Multiple Trauma Diagnoses score <=23, with Interventions score 1-8	482	1,817	1,335	277%
VA11B	Multiple Trauma Diagnoses score 24-32, with Interventions score 1-8	1,445	2,780	1,335	92%
VA11C	Multiple Trauma Diagnoses score 33-50, with Interventions score 1-8	3,130	4,465	1,335	43%
VA11D	Multiple Trauma Diagnoses score >=51, with Interventions score 1-8	6,657	7,992	1,335	20%
VA12A	Multiple Trauma Diagnoses score <=23, with Interventions score 9-18	2,259	3,594	1,335	59%
VA12B	Multiple Trauma Diagnoses score 24-32, with Interventions score 9-18	3,942	5,277	1,335	34%
VA12C	Multiple Trauma Diagnoses score 33-50, with Interventions score 9-18	5,446	6,781	1,335	25%
VA12D	Multiple Trauma Diagnoses score >=51, with Interventions score 9-18	8,669	10,004	1,335	15%

Results

There has been a considerable increase in the achievement of best-practice elements over the course of the initiative. In the last quarter of 2013, care for 64% of hip fracture patient episodes qualified for the BPT. This figure was 59% for the same period in 2012. Two English hospitals report that none of their patients received care that was eligible for BPT throughout 2013.¹⁶

Overall, hip fracture care has been one of few clinical domains included in the BPT scheme to impact on outcome measures, with a modest but significant reduction in patient 30-day mortality¹². Patient-reported outcomes have not yet been formally evaluated.

Internal reviews of the Hip Fracture BPT have also demonstrated that there was no expenditure by the NHS in implementing the program. The total expenditure on hip fracture care by NHS purchasers has actually slightly reduced year by year (from £320 million in the year prior to the BPT implementation to £295 million two years after implementation).⁴

NHS England 2014-15 National Tariff Payment System Report – Patient Reported Outcome Measures¹⁷

This BPT is the first step towards linking payment to outcomes achieved for patients for the NHS. The system believes that through linking payment more closely to what matters to patients, namely their outcomes and experiences of care, incentives can be created for a more consistent delivery of efficient and clinically effective care.

The aim of the BPT is to reduce the unexplained variation that exists between providers in terms of the outcomes of surgery as reported by patients. The new BPT applies to all elective admissions that generate HRGs HB12B, HB12C, HB21B and HB21C. This BPT replaces the BPT for primary hip and knee replacements set out in previous 2013/14 guidance under the Payment by Results system. Payment of the BPT is conditional on criteria linked to data collected through Patient Reported Outcome Measures (PROMs) and the National Joint Registry (NJR), set out below.

There are considerable differences between individual providers' levels of compliance with both the PROMs and NJR collections. Collecting data on quality of care through PROMs and clinical audits is important as these data underpin high quality care and can inform choices made by commissioners and patients, as well as the development of policy. By linking payment for the BPT to achieving minimum levels of compliance and consent rates, we aim to improve data collection, submission and response rates.

Payment of the new BPT is therefore conditional on two areas of best-practice. The criteria for payment of the BPT are:

1. the provider not having an average health gain significantly below the national average (defined as 3 standard deviations (99.8% significance) below the mean)
2. the provider adhering to the following data submission standards:
 - a minimum PROMs participation rate of 50%;
 - a minimum NJR compliance rate of 75%; and
 - an NJR unknown consent rate below 25%.

Where these criteria are not met, providers will receive a price 10% below the best-practice price.

Health gain will be measured by the condition-specific Oxford hip score and Oxford knee score after applying a casemix adjustment for primary joint replacement procedures only. The casemix adjustment controls for patient characteristics, including the patient's health status before the operation and the average health that would be expected.

Collections of these data are well established so we do not expect this new requirement to be burdensome to providers. These particular collections contain all of the information a commissioner would need to help identify whether a provider is achieving best-practice. As data are regularly updated and published, commissioners will need to use the latest available data sets to assess whether or not providers have met the best-practice payment criteria. These are to be found at:

- PROMs: www.hscic.gov.uk/proms
- NJR: www.njrcentre.org.uk

This is a new and innovative approach to BPTs and the payment criteria have been set accordingly. The minimum criteria required to receive the BPT have been set at a level

thought achievable by most providers but below levels currently delivered by the highest achieving providers. The intention is that these rates will increase in future years in line with improvements. Therefore, all providers should strive to improve regardless of whether or not they meet the current standard. The intention is that providers and commissioners will monitor their data and, where identified as outliers, improve their performance. We recognise that there are circumstances where some providers will not be able to demonstrate that they meet all of the best-practice criteria, but where it would be inappropriate for the full BPT not to be paid.

Appendix F. Supporting analysis for Chapter 5 - Designing a national best-practice pricing model for hip fracture care

Table F1 Defining hip fracture diagnoses for the initial cohort

Diagnosis code	Diagnosis
S72.00	Fracture of neck of femur, part unspecified
S72.01	Fracture of intracapsular section of femur
S72.02	Fracture of upper epiphysis (separation) of femur
S72.03	Fracture of subcapital section of femur
S72.04	Fracture of midcervical section of femur (Transcervical Not Otherwise Specified)
S72.05	Fracture of base of neck of femur (Cervicotrochanteric section)
S72.08	Fracture of other parts of neck of femur (Fracture of hip Not Otherwise Specified, Head of femur)
S72.10	Fracture of trochanteric section of femur, unspecified, (Greater trochanter, lesser trochanter, transtrochanteric fracture)
S72.11	Fracture of intertrochanteric section of femur
S72.2	Subtrochanteric fracture

Clinical advice confirmed that the diagnoses in Table F1 are the relevant International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM) hip fracture diagnosis codes for the cohort of interest.

Table F2 Age of patient separations with hip fracture diagnoses*

Age Split	Total number of patients	Average length of stay (days)	Average Cost	Total Cost
0 to <50 years	865	9	\$22,548	\$19,504,265
50 to <65 years	1,623	9.9	\$20,071	\$32,575,118
65 years and over	18,273	9.1	\$16,267	\$297,252,824
Subtotal: 50 years and over	19,896	9.2	\$16,578	\$329,827,942
Total acute episodes	20,761	9.2	\$16,826	\$349,332,206

*Hip fracture diagnoses are those identified in Table F1.

Table F3 Principal and additional diagnoses of hip fracture cohort

Age	Diagnosis split	Number of cases	Average length of stay (days)	Average Cost	Total Cost
50 years and over	Principal diagnosis	17,917	8.7	\$16,179	\$289,873,606
	Additional diagnosis	1,979	13.2	\$20,189	\$39,954,336
	Total aged 50 years and over	19,896	9.2	\$16,578	\$329,827,942

Table F4 Multiple trauma codes (Major Diagnostic Category 21A) AR-DRG version 7

DRG code	DRG Long Descriptions
W01A	Tracheostomy for Multiple Significant Trauma
W01B	Ventilation and Cranial Procedures for Multiple Significant Trauma, without Tracheostomy with (Ventilation >=96hours or Catastrophic Complications and/or Comorbidities)
W01C	Ventilation and Cranial Procedures for Multiple Significant Trauma, without Tracheostomy without Ventilation >=96hrs without Catastrophic Complications and/or Comorbidities
W02A	Hip, Femur & Lower Limb Procedures for Multiple Significant Trauma with Catastrophic or Severe Complications and/or Comorbidities
W02B	Hip, Femur & Lower Limb Procedures for Multiple Significant Trauma without Catastrophic or Severe Complications and/or Comorbidities
W03Z	Abdominal Procedures for Multiple Significant Trauma
W04A	Multiple Significant Trauma with Other Operating Room Procedures with Catastrophic or Severe Complications and/or Comorbidities
W04B	Multiple Significant Trauma with Other Operating Room Procedures without Catastrophic or Severe Complications and/or Comorbidities
W60Z	Multiple Trauma, Died or Transferred to Acute Facility <5 Days
W61A	Multiple Trauma without Operating Room Procedures with Catastrophic or Severe Complications and/or Comorbidities
W61B	Multiple Trauma without Operating Room Procedures without Catastrophic or Severe Complications or Comorbidities

Table F5 Breakdown of principle diagnosis of hip fracture episodes by multiple trauma (Major Diagnostic Category 21A) status

	Number of cases	Average length of stay (days)	Average Cost	Total Cost
MDC 21A * - DRG W01A to W61B	438	10.9	\$20,890	\$9,149,644
Others - DRG NOT in W01A to W61B	17,479	8.7	\$16,061	\$280,723,962
Total DRG category	17,917	8.7	\$16,179	\$289,873,606

* Multiple trauma MDC21A includes DRGs identified in Table F4.

Table F6 Defining hip fracture surgery cohort - Hip fracture procedure codes for episodes with surgery (Australian Classification of Health Interventions Eighth Edition)

Procedure code number	Name of procedure
47519-00	Internal fixation of fracture of trochanteric or subcapital femur
47522-00	Hemiarthroplasty of femur (Austin Moore arthroplasty)
49318-00	Total arthroplasty of hip unilateral (total joint replacement of hip)
49319-00	Total arthroplasty of hip bilateral (total joint replacement of hip)
49312-00	Excision arthroplasty of hip
49315-00	Partial arthroplasty of hip

Table F7 Number of episodes, length of stay and costs associated with surgery (as defined in Table F6) / no surgery status

Principal or additional procedure code*	Number of episodes	Average of length of stay (days)	Average cost	Total Cost
47519-00 47522-00 49318-00 49319-00 49315-00 49312-00	13,914	9.7	\$18,556	\$258,192,621
The remainder of episodes without procedure codes identified in Table F6	3,565	4.8	\$6,320	\$22,531,341

* Refer to Table F6 for names of procedures

Table F8 Episodes with surgery excluding multiple trauma – Mode of admission (indicating transfers in for surgery)

Excluded episodes	Mode of admission split	Number of episodes	Average length of stay (days)	Average cost	Total Cost
Excluding Z92.1 D68.3 T45.5 Y44.2 (as shown in Table 7) and excluding MDC21A – Multiple trauma (DRGs W01A to W61B) as shown in Table F4	1 - admitted patient transferred from another hospital	1,665	8.2	17,374	\$28,927,368
	2 - statistical admission -episode type change	64	14.4	27,861	\$1,783,117
	3-other	12,183	9.8	18,668	\$227,435,561
	9-not reported/unknown	2	14	23,288	\$46,576
	Total	13,914			

Table F9 Length of stay and cost summary for hip fracture separations with no surgery cohort by separation mode

Sep mode	description	number of cases	Med. LOS	Avg. LOS	Med. Cost	Average Cost	Total Cost
1	discharge/transfer to an(other) acute hospital	2,038	1	2.8	\$1,200	\$3,666	\$7,471,395
2	discharge/transfer to a residential aged care service, unless this is the usual place of residence	136	4.5	8.6	\$5,170	\$9,322	\$1,267,747
3	discharge/transfer to an(other) psychiatric hospital	1	8	8	\$7,147	\$7,147	\$7,147
4	discharge/transfer to other health care accommodation (includes hospices)	24	4	7.3	\$4,756	\$11,138	\$267,314
5	statistical discharge - type change	488	6	8.4	\$6,147	\$10,976	\$5,356,097
6	left against medical advice/discharge at own risk	13	2	4.5	\$3,902	\$5,061	\$65,788
8	died	175	3	5.7	\$3,759	\$11,853	\$2,074,289
9	other (usual residence/own accommodation/welfare institution)	690	4	7	\$4,414	\$8,727	\$6,021,564

Table F10 Number, length of stay and cost for the refined cohort, hip fracture surgical episodes by AR-DRG

DRG	Description	No. of cases	Median LOS	Average of LOS	Median cost	Average cost	Total Cost \$m
I08B	Other Hip and Femur Procedures without Catastrophic Complications and/or Comorbidities	4,832	6	7.3	\$12,212	\$13,806	\$66.7
I08A	Other Hip and Femur Procedures with Catastrophic Complications and/or Comorbidities	3,987	9	12.1	\$16,945	\$20,784	\$82.9
I03B	Hip Replacement without Catastrophic Complications and/or Comorbidities	2,536	6	7.3	\$16,210	\$17,675	\$44.8
I03A	Hip Replacement with Catastrophic Complications and/or Comorbidities	2,447	10	12.2	\$20,583	\$23,403	\$57.3
I01A	Bilateral and Multiple Major Joint Procedures of Lower Limb with Revision or with Catastrophic Complications and/or Comorbidities	31	25	30.8	\$59,034	\$60,633	\$1.9
I31A	Revision of Hip Replacement for Infection/Inflammation of Joint Prosthesis or with Catastrophic Complications and/or Comorbidities	19	14	16.1	\$39,639	\$42,227	\$0.8
A06B	Ventilation >=96hrs and Operating Room Procedures (without Tracheostomy or without Catastrophic Complications and/or Comorbidities)	18	20.5	24.4	\$79,213	\$83,457	\$1.5
I02A	Microvascular Tissue Transfers or (Skin Grafts with Catastrophic or Severe Complications and/or Comorbidities), Excluding Hand	15	21	28.1	\$33,672	\$42,472	\$0.6
I31B	Revision of Hip Replacement not for Infection/Inflammation of Joint Prosthesis without Catastrophic Complications and/or Comorbidities	8	9.5	11.3	\$28,930	\$30,344	\$0.2
B82 C	Chronic and Unspecified Paraplegia/Quadriplegia with or without Operating Room Procedures without Catastrophic Complications and/or Comorbidities	5	9	9.6	\$25,093	\$22,822	\$0.1
B82B	Chronic and Unspecified Paraplegia/Quadriplegia with or without Operating Room Procedures with Catastrophic Complications and/or Comorbidities	4	17	15.8	\$26,305	\$33,367	\$0.1
I01B	Bilateral and Multiple Major Joint Procedures of Lower Limb without Revision without Catastrophic Complications and/or Comorbidities	3	8	8.3	\$29,996	\$30,386	\$0.1
I02B	Skin Grafts without Catastrophic or Severe Complications and/or Comorbidities , Excluding Hand	3	9	11.7	\$13,915	\$20,142	\$0.1
I05A	Other Joint Replacement with Catastrophic or Severe Complications and/or Comorbidities	3	21	17	\$37,493	\$36,879	\$0.1
A06A	Tracheostomy with Ventilation >=96hrs with Catastrophic Complications and/or Comorbidities	2	58	58	\$298,107	\$298,107	\$0.6
I07Z	Amputation	1	141	141	\$352,550	\$352,550	\$0.3
TOTALS		13,914	8	9.7	\$15,503	\$18,556	\$258.2

Appendix G. Additional potential measures for consideration in a hip fracture best-practice pricing approach

	Cost drivers	Supports improvement	Outcome measure
SYSTEM MEASURES			
Volume (no.)	✓		
Age profile/proportion geriatric (%)	✓		
Comorbidities (%)			
- Acute lower respiratory tract infection and influenza (%) [‡]	✓		
- Dysrhythmia (%) [‡]	✓		
- Heart failure (%) [‡]	✓		
- Ischaemic heart disease (%) [‡]	✓		
- Kidney failure (%) [‡]	✓		
Average length of stay (days) ^{*†}	✓	✓	
Surgery cancellation rate (%) [†]	✓	✓	
Standardised mortality ratio, fractured neck of femur (SMR score) [*] / 12-month mortality [†]		✓	✓
Complications (%)			
- Pressure ulcers (%) ^{†‡}	✓	✓	
▪ Unspecified decubitus ulcer and pressure area	✓	✓	
▪ Stage I ulcer	✓	✓	
▪ Stage II ulcer (see Indicator 5c above)	✓	✓	
▪ Stage III ulcer (see Indicator 5c above)	✓	✓	
▪ Stage IV ulcer (see Indicator 5c above)	✓	✓	
- Delirium (%) ^{†‡}	✓	✓	
- Venous thromboembolism (%) [‡]	✓	✓	
▪ Pulmonary embolism	✓	✓	
▪ Deep vein thrombosis	✓	✓	
- Pneumonia/chest infections (%) [†]	✓	✓	
- Arrhythmia/AMI (%) ^{†‡}	✓	✓	
- Healthcare-associated infection (%) [‡]	✓	✓	
Cost information: ^Δ			
- Direct costs of ward nursing staff	✓		
- Direct costs of ward medical staff	✓		
- Direct costs of ward allied health staff	✓		
- Direct costs of prosthetics	✓		
- Direct costs, operating room	✓		
PATIENT EXPERIENCE			
Patient experience (%) [†]			
- Pain management [†] (CATI-PEx Q7a and Q7b) [^] —see indicators 2a and 2b above		✓	✓
- Team coordination (CATI-PEx Q12) [^] —see indicators 3a and 7a above		✓	✓
- Preparation for discharge (CATI-PEx Q10 and Q11) [^] —see indicators 7a and 7b above		✓	✓
- Treated with dignity/respect (CATI-PEx Q1) [^]		✓	✓

- Informed about care (CATI-PEX Qs 1–6) [^]		✓	✓
- Discharge destination [†] —see indicator 7a above		✓	✓
Return to pre-morbid function [†] —see indicator 5d above		✓	✓
Sources [^] Hip Fracture Care Clinical Care Standard, decisions of the Indicator Subgroup, 11 December 2014 ^Δ Preliminary information from IHPA on most expensive cost buckets in hip fracture surgery. [*] Australian and New Zealand Guideline for Hip Fracture Care, September 2014 [†] NSW Agency for Clinical Innovation’s Minimum Standards for the Management of Hip Fracture in the Older Person, June 2014 [¥] CHBOI mortality risk adjusters [∞] UK National Health Service’s Fragility hip fracture Best Practice Tariff (BPT) program ^Φ WA Health Hip Fracture Premium Payments ^Ψ Draft national set of high-priority hospital complications [^] National set of core, common patient experience questions – for overnight-admitted patients, ACSQHC.			

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COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-35

This is the Annexure marked "DD-35" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.



Innovations in Health Funding – Global Horizon Scan

22 September 2019



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Disclaimer

Inherent Limitations

This Report has been prepared as outlined in the Introduction Section. The services provided in connection with this engagement comprise an advisory engagement which is not subject to Australian Auditing Standards or Australian Standards on Review or Assurance Engagements, and consequently no opinions or conclusions intended to convey assurance have been expressed.

No warranty of completeness, accuracy or reliability is given in relation to the statements and representations made by, and the information and documentation provided by stakeholders consulted as part of the process.

KPMG have indicated within this report the sources of the information provided. We have not sought to independently verify those sources unless otherwise noted within the report.

KPMG is under no obligation in any circumstance to update this report, in either oral or written form, for events occurring after the report has been issued in final form.

The findings in this report have been formed on the above basis.

Third Party Reliance

This report is solely for the purpose set out in the Introduction section and for the Independent Hospital Pricing Authority.

This Report has been prepared at the request of the Independent Hospital Pricing Authority in accordance with the terms of KPMG's engagement letter/contract dated 5th July 2018. Other than our responsibility to the Independent Hospital Pricing Authority, neither KPMG nor any member or employee of KPMG undertakes responsibility arising in any way from reliance placed by a third party on this Report. Any reliance placed is that party's sole responsibility.

1 Introduction

Around the world, health systems are looking to reform the way that they fund, organise and pay for health care. This is a response to the challenge of ensuring the sustainability of health care systems in the face of rising demand, as well as recognition that there needs to be a sharper focus on the outcomes that matter most to patients. These two elements inform the move towards value-based approaches to health care.

Australians enjoy good access to high quality health care. On most measures, Australia's system of health care is affordable, and delivers care that is appropriate and high quality. This is not to say that the Australian system is perfect; no health system is. Australia faces challenges that are similar to many confronting OECD economies – population growth, ageing, the challenges associated with higher rates of chronic disease, rising costs associated with advancing medical technology and workforce shortages. In addition, Australia faces the significant challenge of improving health outcomes for Aboriginal and Torres Strait Islander people.

There is growing interest from policy makers about whether the current arrangements for organising, delivering and funding health care in Australia are best suited to meet the current and emerging health care challenges. Against a backdrop of increasing prevalence of chronic disease, ageing populations and a health care system built around delivering care in discrete episodes, it is imperative that policy makers consider whether current payment mechanisms are best suited to efficient, effective and sustainable health care delivery into the future.

The way health services are funded and paid for forms a crucial element of this equation. In many respects, diagnosing the problems is an easier task than defining solutions. The complex structure of Australia's health system is reflected in its funding arrangements. The health system is funded by all levels of government. Funding also comes from non-government organisations, private health insurers, and individuals when they pay for some products and services without full, or with only partial, reimbursement.¹ This complexity should not deter investigation of alternative funding models that improve on the current arrangements and do not lead to unintended consequences or greater complexity without commensurate benefit.

The Independent Hospital Pricing Authority (IHPA) is responsible for the national approach to funding for public hospital services across Australia. Its primary responsibility is to determine the National Efficient Price (NEP) for public hospital services funded on an activity basis and the National Efficient Cost (NEC) for block funded services. The NEP has two key purposes²:

1. determine the amount of Government funding for public hospital services
2. provide a price signal or benchmark about the efficient cost of providing public hospital services.

Costing information used to determine the NEP is drawn from the National Hospital Cost Data Collection (NHCDC) as provided by States and Territories on an annual basis. Approximately 460 public hospitals nationwide, including all of the large metropolitan hospitals, receive funding based on their activity levels.³

IHPA recognised in the *2018-19 Pricing Framework*⁴ that there is tension between an activity based funding system oriented to treating health care episodically, and the increasing prevalence and financial significance of patients with chronic conditions, whose interaction with health services is far from episodic. IHPA also has a role to advise Australian Governments on alternative approaches to health

¹ AIHW (2018), *Australia's Health 2018*.

² Independent Hospital Pricing Authority (2019). *National Efficient Price Determination 2019-20*.

³ *ibid*

⁴ Independent Hospital Pricing Authority (2017). *Consultation Paper on the Pricing Framework for Australian Public Hospital Services 2018-19*.

funding and has identified the growing interest in value-based approaches to health funding as an issue requiring detailed consideration.

Value-based programs are a broad set of performance-based payment strategies that link financial incentives to providers' performance on a set of defined measures, in an effort to achieve better value by driving improvements in quality and slowing growth in health care spending. This report presents the findings of a global horizon scan of value-based approaches to health care informed by a review of the published literature and case studies from the United States of America.

2 Current funding approaches in Australia

Total expenditure on health goods and services in Australia was \$180.7 billion in 2016–17.⁵ This represents around \$7,400 per person and 10 per cent of overall economic activity. In 2016–17, governments spent \$124.2 billion on health, or 68.7 per cent of total health expenditure in Australia. The proportion of expenditure by governments has remained relatively stable over recent years, increasing by 1.5 percentage points between 2015–16 and 2016–17.

In 2016–17, overall government contributions grew by 8.3 per cent, including a 6.1 per cent increase in the Australian Government contribution (\$74.6 billion or 41.3 per cent of total health expenditure) and an 11.7 per cent increase in the State and Territory contribution (\$49.6 billion or 27.4 per cent of total health expenditure). Non-government sources (individuals, private health insurance and other non-government sources) provided the remaining \$56.5 billion—about one-third of total health expenditure.

Expenditure on public hospital services was \$53.5 billion in 2016–17. This was up from \$52.0 billion the previous year—a real growth of 2.9 per cent—below the average annual real growth over the decade of 4.1 per cent. In 2016–17, Australian Government expenditure on public hospital services (\$21.7 billion) was up by 6.2 per cent in real terms from 2015–16—1.6 percentage points above the 10-year average annual growth of 4.6 per cent. State and Territory and local government expenditure was \$27.3 billion—a 0.1 per cent real increase from 2015–16, well below the 10-year average annual growth of 3.4 per cent.

The responsibility for delivering health care for Australians is jointly shared by the Commonwealth, State and Territory governments. The complex structure of Australia’s health system is reflected in its funding arrangements. Commonwealth, State and Territory governments have a funding and delivery role across different care settings. Funding for health care also comes from non-government organisations, private health insurers, and individuals when they pay for some products and services without full, or with only partial, reimbursement.

Australia’s national public health insurance scheme, Medicare, funded and administered by the Australian Government, comprises of three components – medical services (including visits to general practitioners (GPs) and other medical practitioners), prescription pharmaceuticals, and hospital treatment as a public patient. The latter is jointly funded by the Australian and State/Territory governments.⁶

The health care system has multiple settings, often described as:

- **Primary Care** – broadly encompasses care that is not related to a hospital visit, including activities undertaken by general practitioners (GPs) and health promotion.⁷
- **Secondary Care** – medical care provided by a specialist or facility upon referral by a primary care physician (e.g. GP) and that requires more specialised knowledge, skill or equipment than that which the primary care physician can provide.⁸

⁵ Australian Institute of Health and Welfare (2018). *Health and welfare expenditure series no. 64. Cat. no. HWE 74*. Canberra: AIHW.

⁶ *ibid*

⁷ Australian Institute of Health and Welfare (2016). *Australia’s Health 2016. Australia’s Health series no.15. Cat. no. AUS199*. Canberra: AIHW.

⁸ Merriam-Webster (2018). ‘*Secondary Care*’ - accessed at <https://www.merriam-webster.com>.

- **Hospitals** – deliver a range of services to admitted and non-admitted patients (emergency department and outpatient services). Public hospitals are primarily run by State and Territory governments with the Australian government providing funding through the National Health Reform Agreement between the Australian Government and the States and Territories.

In the public hospital setting, the Commonwealth, States and Territories contribute to hospital services using activity based funding where practicable and block funding in other cases.⁹

Payment mechanisms utilised for primary care and public hospitals are outlined in Table 1 below.

Table 1 - Australia's health care payment mechanisms – primary care and public hospitals

Payment method	Description	Setting
Fee-for-service	Retrospective payment for individual services and patient contacts. Under this model, consumers pay providers directly for services received.	Predominant mode of payment for GPs
Case payment	In Australia, Activity Based Funding (ABF) is a way of funding hospitals whereby they get paid for the number and mix of patients they treat. If a hospital treats more patients, it receives more funding. Because some patients are more complicated to treat than others, ABF also takes this into account. ¹⁰	Payment for public hospital inpatient cases

A number of reforms are tackling the complexities of Australia's health care system. This includes addressing the fragmentation of health system and accountabilities between different layers of government. The February 2018 Heads of Agreement between the Commonwealth and the States and Territories on Public Hospital Funding (the Heads of Agreement), establishes the basis of negotiation for a new five-year, national health agreement commencing in July 2020.¹¹

The Heads of Agreement is based on four strategic pillars of health reform, including:

1. improving efficiency and ensuring financial sustainability
2. delivering safe, high quality care in the right place at the right time
3. prioritising prevention and helping people manage their health across their lifetime
4. driving best practice and performance using data and research.

The Heads of Agreement also articulates a number of key areas of focus for longer term reform. This includes new long-term, system-wide reforms focused on, among other areas, paying for value and outcomes.

Changing patterns of illness, increasing demand for health services, and growing health expenditure are providing the impetus to consider the effectiveness of Australia's current hospital payment mechanisms. While health systems around the world face similar problems, the approaches they have taken to addressing them, particularly with reference to the way that health services are funded, are widely different.

⁹ Council of Australian Governments (2018). *Heads of Agreement between the Commonwealth and the States and Territories on public hospital funding and health reform* <https://www.publichospitalfunding.gov.au/national-health-reform/agreement>

¹⁰ Independent Hospital Pricing Authority (2019). *Activity based funding*, <https://www.ihpa.gov.au/what-we-do/activity-based-funding>.

¹¹ Council of Australian Governments (2018). *Heads of Agreement between the Commonwealth and the States and Territories on public hospital funding and health reform*. Accessed at: <https://www.coag.gov.au/about-coag/agreements/heads-agreement-between-commonwealth-and-states-and-territories-public-0>

While activity based funding provides a price signal for public hospitals to provide services more efficiently (technical efficiency¹²), it does not consider whether the provision of that service is the most effective way to care for the patient (allocative efficiency). It also has the potential to provide a financial incentive for hospitals to prioritise service volume over patient outcomes.¹³ While measures of cost are definitive, benefit measures are more complex to construct. As countries grapple with issues facing their health systems, including the rising costs of health care, there has been a push to implement financial incentives linked to value-based programs.

The Productivity Commission estimates the benefits of better integration of health services to be in the order of over \$200 billion over 20 years.¹⁴ Reform of payment systems offer the potential to address some of the systemic problems in the Australian health system. The way health is funded, paid for and the alignment of incentives across the health system are vital contributors to health system performance and outcomes.

It is important however to recognise that, while they are important, payment systems form part of a wider system of health care organisation and delivery. Payment reform on its own is unlikely to deliver transformational change to the Australian health system. Payment reform should be considered as part of a suite of policy responses available to improve the way care is organised and delivered according to a broader policy objective (e.g. reducing fragmentation of service delivery, improving integration of care across the primary and hospital based services or improving patient outcomes in a particular clinical area).

Being clear about policy objectives, whether they be broad or quite specific, is an important ingredient for success. Any effort to reform payment systems to deliver better “value” from health care spending needs to be clear about:

- the objectives of the reforms, ie how value is defined, measured and delivered
- a detailed analysis of the likely benefits of the reform, including the impacts on patient outcomes, quality of health care services and the patient experience of health care and costs of implementation
- consideration of potential unintended consequences of the reform.

Just as there is no perfect health system, there is no perfect health payment model. Importing payment models from other systems is far from easy. We need to consider how well the schemes from other jurisdictions fit to the Australian context and assess how well they are likely to work in practice.

There have been a handful of pay for performance programs trialled in Australia, and a number of jurisdictions are undertaking detailed consideration of value-based approaches. IHPA has previously considered the introduction of a bundled pricing approach for maternity services before deciding that data limitations, particularly in relation to a paucity of data in relation to shared antenatal care, were such that a robust model could not be put forward with confidence, at this stage.

As noted in the *Pricing Framework for Australian Public Hospital Services 2019-20*, some State and Territory governments are developing funding models for some patient groups to drive the adoption of patient-centred models of care. The Victorian ‘HealthLinks: Chronic Care’ program was included on the General List of In-Scope Public Hospital Services for 2018–19, and IHPA is block funding the program on a trial basis with a number of conditions specified by the Pricing Authority for NEP18. The program is a capitation funding model for patients with chronic disease and aims to reduce avoidable readmissions and presentations to emergency departments. It is expected that States and Territories will continue to trial innovative funding models alongside the current ABF system, with IHPA continuing to explore new developments in health funding nationally and internationally and opportunities to explore their impact on providing efficiency and transparency in public health systems.

¹² **Technical efficiency** is a measure of how well an input is converted into an output. It is measured as the ratio of physical output to physical input. **Allocative efficiency** is a measure of how well the available resources are allocated to production that meets the preferences of the population. It is measured as a change in net benefits (broadly defined). *Productivity Commission 2013 On efficiency and effectiveness: some definitions*, Staff Research Note, Canberra.

¹³ Independent Hospital Pricing Authority (2017). *Bundled pricing for maternity care: Final report of IHPA and the Bundled Pricing Advisory Group*. Accessed at : <https://www.ihoa.gov.au/publications/bundled-pricing-maternity-care>

¹⁴ Productivity Commission (2017). *Shifting the Dial: 5 Year Productivity Review, Report No. 84, Canberra*

There is evidence that the national introduction of activity based funding in 2011-12 has slowed the growth in the costs of providing public hospital services across Australia.¹⁵ The activity based funding approach is also reviewed annually through a public consultation process, and there is scope for it to be refined and improved in response to changing health needs.

¹⁵ Independent Hospital Pricing Authority (2018). 2017-18 Annual Report.

3 Approach

3.1 Literature review

A review of the published academic and ‘grey’ literature was undertaken to identify how health systems around the world were reforming their approaches to health funding and payment systems. The focus was on value-based purchasing, pay for performance, accountable care organisations, bundled payments, capitation payments and block funding. The review included English-language literature published from 1st January 2008 using the PubMed electronic database.

This literature scan¹⁶ highlighted that many programs of payment reform are yet to mature. This makes evaluating their impact on health outcomes difficult to assess. The level of detail available regarding program design also varied considerably and understanding how programs work ‘on the ground’ was difficult to assess from the published reports. The evidence is summarised in Section 5 in this report.

It was clear from the scan that many of the programs recently introduced in different jurisdictions in the United States may provide valuable insights from an Australian perspective. Reform of payment approaches in the United States is being driven in large part by concerns regarding the sustainability of the health care system which is grappling with growth in the costs of health care as well as rising demand for services. The concerns, particularly in relation to cost and affordability, cut across both the public and private providers and payers.

There has been significant reform of the Medicare and Medicaid public insurance schemes which are overseen by the Centers for Medicare and Medicaid (CMS). The Center for Medicare and Medicaid Innovation was established within CMS to test and disseminate promising payment and service delivery models designed to reduce spending while preserving or improving quality. The Innovation Center supports the development and testing of innovative health care payment and service delivery models. CMS is testing more than 20 models under this authority that create new incentives for clinicians and organisations with the aim of delivering better care at lower cost. A key enabler to the payment reform program in the United States has seen CMS working with states as a convener for dialogue between multiple payers, clinicians and health care organisations, and other stakeholders in each state.¹⁷

3.2 Study tour

The concerns in the United States about containing the growth of health care expenditure, and the development of a range of value-based programs by the CMS, provides a useful comparison point for what might be possible in Australia.

A study tour undertaken by IHPA during March 2019 comprised visits to the Centers for Medicare and Medicaid in Baltimore, the Health Services Cost Review Commission in Baltimore, the New York State Health Department and the Staten Island Performing Provider System. The focus of these meetings with these organisations was to assess:

- how programs were being implemented on the ground
- barriers to implementation
- how outcomes from the programs are being evaluated.

The tour also included a visit to 3M to assess how coding and classification is being used to inform the development of indicator sets across various programs in the United States.

¹⁶ KPMG (2018). *Global Horizon Scan: innovations in health funding literature review*. (unpublished)

¹⁷ Rajkumar, R., Conway, P. and Tavenner, M. (2014). *CMS – Engaging multiple payers in payment reform*, Journal of the American Medical Association 311: 1967-8.

A meeting was held with the RAND Corporation to consider their research across the United States' health system, in particular work undertaken in relation to the evidence for value-based payment programs. A visit to the Commonwealth Fund provided insights into the overall direction of health policy in the United States as well as the examples of best practice in value-based approaches from around the country. Selected case studies, prepared following these visits, are presented in the Appendix to this report.

4 Literature review findings

A global horizon scan was undertaken to identify innovations in health service pricing, payments and funding that might be considered for implementation in Australia. A key component of the project is a literature review focusing on these key elements.

The objectives of the literature review were to identify international initiatives and innovations in health funding to inform consideration of innovative approaches in Australia and to provide IHPA with an analysis of the available evidence from the international literature.

The literature review was focused on five key approaches to value-based payment.

- **Value-based purchasing (VBP)**¹⁸ refers to a broad set of performance-based payment strategies that link financial incentives to providers' performance on a set of defined measures. Both public and private payers are using VBP strategies in an effort to drive improvements in quality and to slow the growth in health care spending.
- **Pay-for-performance**¹⁹ refers to a payment arrangement in which providers are rewarded (bonuses) and/or penalised (reductions in payments) based on meeting pre-established targets or benchmarks for measures of quality and/or efficiency. These financial incentives are intended to change provider behaviour to achieve a set of objectives specified by the payer.
- **Accountable care organisation (ACO)**²⁰ refers to a health care organisation composed of doctors, hospitals, and other health care providers who voluntarily come together to provide coordinated care and agree to be held collectively accountable for the overall costs and quality of care for an assigned population of patients. The ACO payment model ties provider reimbursements to performance on quality measures and reductions in the total cost of care. Under an ACO arrangement, providers in the ACO agree to take financial risk and are eligible for a share of the savings achieved through improved care delivery, provided they achieve quality and spending targets negotiated between the ACO and the payer.
- **Bundled payments**^{21,22} are a method in which payments to health care providers are based on the expected costs for a clinically defined episode or bundle of related health care services. The payment arrangement includes financial and quality performance accountability for the episode of care. Episodes can be defined in different ways and cover varying periods of time (e.g. one year for a chronic condition, the period of a hospitalisation etc).
- **Capitation payments** involve paying a provider or group of providers to cover the majority (or all) of the care provided to a specified population across different care settings and time periods. The regular payments are calculated as a lump sum per patient.²³ Capitation models are used to control the use of health care resources by sharing risk between payer and provider, or putting the physician at financial risk for services provided to patients. To ensure that patients do not receive sub-optimal levels of care, in some systems, managed care organisations measure rates of resource utilisation in physician practices. These reports are made available to the public as a measure of health care quality, and can be linked to financial rewards, such as bonuses. Outcome measures can also be applied to assess safety and quality.

¹⁸ Damberg, Cheryl L., et al. (2014). *Success in Health Care Value-Based Purchasing Programs: Summary and Recommendations*, Santa Monica, Calif.: RAND Corporation, RR-306/1-ASPE, 2014. Access at: https://www.rand.org/pubs/research_reports/RR306z1.html

¹⁹ *ibid*

²⁰ *ibid*

²¹ *ibid*

²² Other common terms used for bundled payment arrangements are episode-based payment, episode of care payment, case rate, evidenced-based case rate, global bundled payment and global payment.

²³ NHS (2016). *Capitation: an introduction*. Retrieved from <https://www.gov.uk/guidance/capitation>

The literature review was based on the following search strategy:

- a systematic search of English-language literature published from 1st January 2008 using the PubMed database
- database searching supplemented by snowball searching
- search of relevant websites, including government, professional organisations and academic institutions.

The review involved screening of 1,127 published articles and, following assessment, 34 studies were included in the review. Most (29 studies) related to pay-for-performance programs in the United States and the United Kingdom. These studies involve a wide range of care settings, financial incentives and outcome measures.

The findings of the literature review support the findings from published systematic reviews of the evidence.

A systematic review of research published between 2000 and 2009 focused on the question of whether financial incentives impacted on the quality of care provided by primary care physicians. The review set out to identify the different types of financial incentives that have improved quality, the characteristics of patient populations for whom quality of care has been improved by financial incentives, and the characteristics of primary care providers who have responded to financial incentives.

The authors conclude that “there is insufficient evidence to support or not support the use of financial incentives to improve the quality of primary health care”.²⁴

A systematic review of value-based purchasing programs in health care was undertaken for the US Department of Health and Human Services by the RAND Corporation based on English language articles published between January 2000 and December 2012. The detailed review included 103 studies on pay-for-performance programs. The review found mixed evidence that pay-for-performance was associated with modest improvements in process-of-care outcomes but had little effect on patient outcomes.²⁵

The RAND review was extended to include articles published over the period 2007 to 2016. This systematic review found 69 studies examining the effects of pay for performance programs targeted at the physician, group, managerial or institutional level on process-of-care and patient outcomes in ambulatory and inpatient settings. The review found:

- in the ambulatory setting, low-strength evidence that pay-for-performance programs may improve process of care outcomes over the short term (2-3 years)
- limited evidence of longer-term effects of pay-for-performance
- many of the studies reporting positive findings were conducted in the United Kingdom, where incentives are much larger than the incentives in the United States
- the largest improvements were observed in areas where the baseline performance was poor
- low-strength evidence that pay for performance had little or no effect on intermediate health outcomes, although there were inconsistencies among study results
- the evidence regarding patient health outcomes was insufficient because few methodologically rigorous studies reported these outcomes
- in the hospital setting, low strength evidence showed that pay for performance had a neutral effect on patient health outcomes and a positive effect on reducing hospital readmissions.²⁶

²⁴ Scott A, Sivey P, Ait Ouakrim D, Willenberg L, Naccarella L, Furler J, et al. (2011). *The effect of financial incentives on the quality of health care provided by primary care physicians*. Cochrane Database Syst Rev.

²⁵ Damberg, C et al. (2014). *Measuring success in health care value-based purchasing programs*. Rand Health Q. Dec 30; 4(3):9. eCollection 2014 Dec 30

²⁶ Mendelson, A. et al. (2017). *The Effects of Pay for Performance programs on Health, Health Care Use and Processes of Care: a systematic review*. Ann Intern Med. 2017; 166:341-353.

Defining value in health care

The literature also considered the definition of value in health care. “20th Century healthcare was dominated by clinicians, effectiveness and efficiency. 21st Century healthcare will be dominated by patients, outcomes and value, because the challenges facing 21st Century healthcare in every society are massive and growing”.²⁷

Defining what is meant by “value” is an important first step in considering payment reform. Defining value is not straightforward and, as noted in Section 5 the the definition of ‘value’ is often opaque and the relationship between value and payment design is often not explained. There are different approaches to the meaning of value in health care.

Value is often defined as ‘the health outcome per dollar of cost expended’.^{28 29}

The concept of the Triple Aim in health care, advanced by the Institute for Healthcare Improvement, is also gaining support in Australia. Value is constructed as the ‘maximum health benefit at minimum cost, and—operationally—better value translates into a combination of improved health outcomes and processes of care (clinical quality), better patient experience, and reduced costs of care’.^{30 31}

The definition of value also reflects the subjective judgements regarding what matters to whom in the health system. This will vary depending on the perspective of the patient, provider or payer. In outlining a theoretically preferred design for value-based provider payment, Cattell et al. (2018) identified five dimensions of value:³²

1. **High-quality care:** Care is safe, effective, patient-centred and timely. High quality comprises ‘technical’ or clinical quality as well as patient reported measures and outcomes (e.g. PROMS).
2. **Cost-conscious behaviour:** Scarce resources are efficiently used (i.e. no misuse or overuse).
3. **Well-coordinated care:** Multidisciplinary providers communicate and cooperate well in order to realise integrated, well-orchestrated care across the continuum of care.
4. **Cost-effective innovation:** Cost-saving services result in equal or better health and health-promoting innovations are worth the additional costs.
5. **Cost-effective prevention:** Deteriorations of health problems are prevented in a cost-effective way.

Establishing the definition of “value:” is critical in informing the payment program design, particularly in developing relevant measures, during implementation and engagement, and evaluation.

²⁷ Muir Gray, J. A. (2011). *How to Get Better Value Healthcare* Offox Press

²⁸ Porter, M, and Teisburg, E. (2006). *Redefining Health Care: Creating Value-Based Competition on Results*. Harvard Business Press

²⁹ Moriates, c., Arora, V. & Shah, N. (2015). *Understanding value-based healthcare*. McGraw Hill: United States of America.

³⁰ Berwick DM, Nolan TW and Whittington J. (2008). *The triple aim: care, health, and cost*, Health Affairs, 27(3): 759–769.

³¹ Conrad, D. (2015). *Health Services Research*; Dec 2015; 50; p2057-p2089

³² Cattell, D., Eijkenaar, F., and Schut, F., (2018). *Value-based provider payment: towards a theoretically preferred design*. Health Economics, Policy and Law.

5 Options for consideration

This section summarises the developments in health funding observed during the study tour and consideration of the opportunity for their application to the Australian health payments system. The discussion recognises that IHPA and several jurisdictions are already undertaking detailed consideration of value-based payment reform.

These options are not exhaustive; they are presented based on consideration of the challenges facing the Australian health care system, the existing funding and health system policy architecture and lessons from the literature. The approaches aim to refocus health financing arrangements away from payments based on the type and volume of services delivered and towards payments which are based on the value of care which is actually provided to patients. However, these trends have implications for how IHPA will count, classify, cost and price public hospital services.³³

Bundling

Current trends and evidence

Bundled payment schemes are gaining traction in the United States. For example, the Centers for Medicare and Medicaid have developed bundled pricing programs across 48 areas of clinical practice. Among those programs, the Comprehensive Joint Replacement Payment Reform Program (the Program) in Maryland illustrates how the state of Maryland is using bundled pricing to incentivise hospitals to reduce costs while maintaining or improving quality (see Appendix for a more detailed description).

The Program provides evidence for a bundle or episode-based payment in which costs of a patient's office visits, tests, treatments and hospitalisations associated with a patient's illness, medical event, or condition are grouped together. Under such arrangements, the value-based payment 'contractor' assumes responsibility for both the outcomes and the costs of the care across the continuum of the patient's trajectory for that condition.³⁴

Considerations

In an episode-based arrangement, several related episodes can be brought together. This requires data to be available, linked and of quality. Key enablers of the Comprehensive Joint Replacement payment reform program were robust data collection systems and clinician buy-in and engagement.

Bundled pricing offers particular benefit with regard to hospital based services, but it has also been used in relation to mental health and for chronic conditions such as diabetes. Bundled payments aim to incentivise efficient use of resources across the pathway, effective care co-ordination, appropriate treatment and reduction in avoidable activity.

Australian context

IHPA has previously detailed the potential benefits of the bundled pricing approach, the practical difficulties associated with designing a bundle and recommendations regarding how these difficulties might be overcome. IHPA's work to develop a bundled pricing approach for maternity care concluded that a single person identifier was a precondition to implementation, as a robust person identifier would

³³ Independent Hospital Pricing Authority (2019). *Pricing Framework for Australian Public Hospital Services 2019-20*

³⁴ New York Department of Health (2017). *DSRIP Program Roadmap (November 2017)*.

allow IHPA to accurately identify service delivery to patients across settings of care, financial years and hospitals.³⁵ This is an important difference when comparing the US and Australian health systems.

Consideration should be given to revisiting the options for bundling in maternity care, joint replacement and some areas of cancer treatment. There are two important issues that need to be resolved in the design phase:

- the clinical 'buy-in' and agreement on what constitutes good quality care
- data linkage to enable full understanding of the relationships between primary care, secondary care and hospital-based care and to enable better measurement of meaningful clinical outcomes. Effective data linkage is more complicated when data is fragmented among different payers and providers.

Capitation models

Current trends and evidence

Capitation models involve paying a provider or group of providers to cover the majority (or all) of the care provided to a specified population across different care settings and time periods. The regular payments are calculated as a lump sum per patient.³⁶

Considerations

This approach presents some challenges that would need to be considered and managed. The challenges include:

- a risk that the payment mechanism may create an incentive to reduce appropriate care for patients
- difficulties associated with prospectively setting appropriate resource use and defining the capitation price
- adjusting for severity of illness across different cohorts of patients to ensure fairness across different regions
- defining how risks and gains are shared and managed between funders and providers (noting that a capitation based-model for community-based chronic disease management would likely require multiple providers to work collaboratively).

These challenges can be addressed through careful design and need to be set against the potential for this payment reform to drive better integration of care for patients with chronic disease.

Australian context

In the Australian context, implementation of capitation models could involve a prospective payment to a local health authority (or some other vehicle or organisation) to manage care across different settings on behalf of a defined cohort of patients with an inherent incentive to provide the care at the lowest cost. Consideration could be given to whether this might be jointly managed by a Local Health Network and a Primary Health Network with an appropriate governance agreement setting out responsibilities, data sharing arrangements and reporting requirements. HealthLinks provides a useful example and future evidence-base to further develop capitation models across different settings.

³⁵ Independent Hospital Pricing Authority (2019). *Pricing Framework for Australian Public Hospital Services 2019-20*

³⁶ NHS (2016). *Capitation: an introduction*. Retrieved from <https://www.gov.uk/guidance/capitation>

In Victoria, HealthLinks: Chronic Care ('HealthLinks') enables health services to use funding for a specific cohort of patients with chronic and complex health needs more flexibly to deliver a different suite of services to better meet their needs. There is no new HealthLinks funding stream – the trial is funded from the current total weighted inlier equivalent separation (WIES) funding pool.

Health services have the flexibility to use projected inpatient activity-based WIES funding to design packages of care around the needs of some of their highly complex patients. The projected funds are converted into a separate funding pool ('HealthLinks capitation grant'). Although health services may choose to design packages for a subset of the enrolled patients, funding is based on the predicted average number of HealthLinks-enrolled patients.³⁷

Regionally-coordinated service responses to improve system-wide outcomes

Current trends and evidence

The Staten Island Performing Provider System (SI PPS) provides insight into how groups of providers can work together to tackle community-level challenges and proactively address service demand influenced by social determinants. The SI PPS focuses on improving the quality of care and overall health for Staten Island's Medicaid and uninsured populations, which include more than 180,000 Staten Island residents. Its goals are to:

- improve access to high quality, culturally sensitive care
- improve population health and health literacy
- reduce avoidable emergency room visits by 25 per cent
- reduce preventable hospital admissions and readmission.

Through partnership agreements, each PPS partner is collectively accountable for measurable improvements in clinical outcomes, system utilisation, population health and patient experience. Participating providers receive incentive payments for achieving project milestones via a managed care contract, with PPSs determining the method for distributing these funds.

Considerations

The successful application of the PPS program in Staten Island can be attributed to, among other things, the way its governance mechanisms facilitate provider collaboration, use of data and analytics to deliver real insights, its commissioning approach, and access to dedicated funding streams aligned to achievement of outcomes. These enablers to success are explored further below:

- **Health information exchange:** A critical underpinning of SI PPS is the use of health information exchange capabilities to support team-based care across PPS members and health care settings. This enables members to securely access patient data, and for members to view notifications of patient events, such as admissions and emergency department visits. This infrastructure is a fundamental component of the PPS program achieving its intended project outcomes, where the main interventions require robust, collaborative care planning and documentation³⁸. Moreover, patient-level data linked through the health information exchange provides a powerful, analytical basis for targeted interventions.
- **Turning data into business intelligence:** SI PPS operates on the philosophy that data is fundamental in delivering system reform. SI PPS and its partners leverage an integrated platform that gathers data from multiple sources, including claims data, core reports (including ambulance, schools and community data), Department of Health information and public data which feeds

³⁷ DHHS (2019). HealthLinks, <https://www2.health.vic.gov.au/about/publications/Factsheets/Healthlinks-factsheet>

³⁸ Medicaid (2017). *Achieving Coordination of Care to Improve Population Health: Provider collaboration in Delivery System Reform Incentive Payment Programs*, <https://www.medicaid.gov/medicaid/section-1115-demo/downloads/evaluation-reports/1115-ib2-508-dsrip-provider-collaboration.pdf>

directly into the electronic data warehouse. With geospatial-mapping, SI PPS can identify areas lacking in key services, filter in on specific conditions, and undertake trend and predictive analysis. This includes utilisation trends (including hospitalisation and medication usage) and claims data trends. Analysis can be filtered by demographics, chronic illness, and other key variables. This supports SI PPS and its partners to design and implement projects which are evidenced-based, and provide the basis to test and monitor innovative service delivery models.

- **Governance:** SI PPS is co-led by Staten Island University Hospital and Richmond University Medical Center, with a network of over 70 partners which includes skilled nursing facilities, behavioural health providers, home health care agencies and a wide range of community-based clinical facilities. A key enabler for SI PPS has been a strong governance structure and central staff that support all providers in the network to provide services in a coordinated manner that directly impacts system outcomes. This approach is also facilitated through the partnership agreement and funding mechanisms.
- **Funding mechanism:** A key focus in implementing SI PPs was to include a base payment, in addition to incentive funding to provide an impetus for providers to work collaboratively together to deliver community-level outcomes. Funding was also leveraged to build capability for all providers to deliver coordinated care. This included undertaking a comprehensive inventory of the health workforce to identify capability, supply and demand issues, and emerging job categories.
- **Building the capacity of the whole system:** A key focus for SI PPS has been on building capacity across the health care system with its partners at the organisation and workforce level. This has been undertaken through joined up training programs, regular symposiums, establishment of project working groups with clear governance arrangements, and partnership reporting. SI PPS has also prioritised engaging with patients in the design and implementation of projects and their active monitoring.

Australian context

The SI PPS case study provides a compelling case study in understanding how financial and regulatory levers can be used to collaboratively transform the delivery of health services within a defined region to deliver better outcomes. In the Australian health system, while existing service-delivery and governance structures have some of the same objectives, there is no obvious comparator. For example, while Primary Health Networks (PHNs) play a key commissioning role, and often work closely with other care providers within a given region, they are established and resourced to influence rather than manage the regions they govern. Specific challenges are outlined below.

- Shorter term funding cycles prevalent in the PHN funding environment create significant limitations in achieving sustainable community-level outcomes.³⁹ The SI PPS case study highlights the need for non-transactional approaches to commissioning to develop coordinated and collaborative models.
- While an overarching objective in its commissioning approach, co-commissioning requires significant effort to develop a shared understanding and objectives, navigate funding allocations, share data and commence co-planning.⁴⁰

As a major policy initiative, PHNs have significant potential to impact the integration of care and to improve the health of populations through devolving responsibilities for health planning and commissioning to the regional level.⁴¹ However, to achieve the outcomes associated with the SI PPS program, the following areas require consideration:

³⁹ *ibid*

⁴⁰ University of New South Wales et al. (2018). *Evaluation of the Primary Health Networks Program*, [https://www.health.gov.au/internet/main/publishing.nsf/Content/69C162040CFA4F7ACA25835400105613/\\$File/PHN%20Evaluation%20Final%20Report.pdf](https://www.health.gov.au/internet/main/publishing.nsf/Content/69C162040CFA4F7ACA25835400105613/$File/PHN%20Evaluation%20Final%20Report.pdf)

⁴¹ University of New South Wales (2019). *The National Evaluation of the Primary Health Network Program* <https://cphce.unsw.edu.au/research/health-system-integration-and-primary-health-care-development/national-evaluation-primary>

- An effective and supported health information exchange which provides service providers with access to a real-time data and analytical capability. The integration of data from multiple sources requires the resolution of a range of technical, privacy and security aspects
- Funding mechanisms which incentivise providers to deliver services in a coordinated and collaborative manner commensurate with the health needs of the community
- Governance structures which provide an impetus for coordinated and collaborative care delivery
- Redefined role of PHNs to enable them to intervene at the regional level to positively impact social determinants of health. This includes supporting legal instruments and agreements with partners.

Appendix

Appendix A: Case Studies

A.1 Innovative funding approaches in the United States

No country spends more on health than the United States. In 2017, health care expenditure was \$3.7 trillion.⁴² This represents around 17.2 per cent of Gross Domestic Product. This compares with the OECD average of 8.8 per cent and the 9.1 per cent in Australia. The expenditure per person in 2017 was \$10,209 in the United States, compared with the OECD average of \$3,992 and the Australia per person expenditure of \$4,543.⁴³

This expenditure on health care is not reflected in better health outcomes. On a range of health outcome measures, the United States does not perform as well as might be expected. The performance of the United States' health care system consistently rates last among high income countries. The major challenges facing the United States' health system include:

- Lack of access to health care for a large proportion of the population which do not have access to health insurance or who are under-insured
- Relative under-investment in primary care in the United States compared with other countries
- Administrative inefficiency of the United States' health care system resulting from the complexity of obtaining care and paying for it.⁴⁴

Addressing these challenges is complex and made doubly so by the 'hyper partisan' nature of health policy debate in the United States. The concerns regarding rising health care costs for both public payers and private payers (insurers), access to health care for a significant proportion of the population and the complexities of the organisation and delivery of health care are driving reform. While many of the issues confronting policy makers in the United States are different to those in Australia, the similarities with regard to the federal system of health care and the concerns about sustainability mean that the reform programs being pursued within the United States hold lessons for policy makers in Australia.

The *Affordable Care Act*, enacted in 2010, led to significant insurance and health systems reforms. The *Medicare Access and CHIP Reauthorization Act of 2015* (MACRA) was intended to align financial incentives for providers with high-value care. The reforms under the MACRA are designed to support the transition of the US health care system from fee-for-service payment to payments based on the value and quality of care delivered. The Trump Administration has changed aspects of the way programs are delivered under the *Affordable Care Act*, particularly the role of the State and Federal governments but has continued to 'by and large' enforce the law as written. Key programs are:

- Medicare is financed through a combination of payroll taxes, premiums, and federal general revenues.
- Medicaid is tax-funded and administered by the states, which operate the program within broad federal guidelines. States receive matching funds from the federal government for Medicaid at rates that vary based on their per-capita income. The expansion of Medicaid under the *Affordable Care Act* was fully funded by the federal government through 2017, after which the government's funding share will be phased down to 90 per cent by 2020 (subject to change under the new administration and Congress).

⁴² Martin A, Hartman M, Washington B, Catlin A et al. (2018). *National Health Care Spending In 2017: Growth Slows To Post–Great Recession Rates; Share Of GDP Stabilizes Health Affairs 38 (1)*

⁴³ All figures in US dollars and updated in November 2018. OECD data obtained from <http://www.oecd.org/els/health-systems/health-data.htm>

⁴⁴ Commonwealth Fund (2019). The US Health Care System https://international.commonwealthfund.org/countries/united_states/

Accessed 4 May 2019.

A number of reforms included in the *Affordable Care Act* attempt to develop payment methods in the Medicare and Medicaid programs that reward high-quality, efficient care. Some of these use pay-for-performance mechanisms, whereas others rely on bundled payments, shared savings, or global budgets to incentivise integration and coordination among health care providers.

In 2015, the U.S. Department of Health and Human Services announced a goal to move 50 per cent of Medicare payments to alternative payment models, including Accountable Care Organisation based arrangements.

A.2 Center for Medicare and Medicaid Innovation

In 2015, the Department of Health and Human Services established a goal to move to 50 per cent of Medicare payment to alternative payment models by 2018. The *Affordable Care Act* included a series of reforms to payment systems and established the Center for Medicare and Medicaid Innovation within CMS to test and disseminate promising payment and service delivery models designed to reduce spending while preserving or improving quality.

The Innovation Center within CMS supports the development and testing of innovative health care payment and service delivery models. CMS is testing more than 20 models under this authority that create new incentives for clinicians and organisations that deliver medical care through CMS programs to deliver better care at lower cost. The Innovation Center’s Innovation Models are organised into seven categories:

1. Accountable Care
2. Episode-based Payment Initiatives (e.g. Comprehensive Care for Joint Replacement Model – see following section for a case study)
3. Primary Care Transformation
4. Initiatives Focused on the Medicaid and CHIP Population
5. Initiatives Focused on the Medicare-Medicaid Enrollees
6. Initiatives to Accelerate the Development and Testing of New Payment and Service Delivery Models
7. Initiatives to Speed the Adoption of Best Practices.

A key enabler to the payment reform program in the United States has been CMS working with states to act as a convener for multiple payers, clinicians and health care organisations, and other stakeholders in each state.⁴⁵

Table 2: Payment taxonomy framework

Payment method	Description	CMS models
1. Fee-for-service: no link to quality	Payments are based on volume of service and not linked to quality or efficiency	<ul style="list-style-type: none"> • Limited in Medicare Fee for Service; majority of payments are now linked to quality
2. Fee-for-service: link to quality	At least a portion of payments vary based on the quality or efficiency of health care delivery	<ul style="list-style-type: none"> • Hospital Value-Based Purchasing • Physician value-based modifier

⁴⁵ Rajkumar, R., Conway, P. and Tavenner, M. (2014). *CMS – Engaging multiple payers in payment reform*, Journal of the American Medical Association 311: 1967-8.

Payment method	Description	CMS models
		<ul style="list-style-type: none"> • Readmissions/hospital acquired condition reduction program
3. Alternative payment models built on fee-for-service architecture	Some payment is linked to the effective management of a population or an episode of care. Payments still triggered by delivery of services, but opportunities for shared-savings or two-sided risk.	<ul style="list-style-type: none"> • Accountable care organisations • Medical homes • Bundled payments • Comprehensive primary care initiative
4. Population-based payment	Payment is not directly triggered by service delivery, so volume is not linked to payment. Clinicians and organisations are paid and responsible for the care of a beneficiary for a long period.	Eligible Pioneer Accountable Care Organisations in years 3-5

Source: Based on Rajkumar, R., Conway, P. and Tavenner, M. (2014). CMS – Engaging multiple payers in payment reform, *Journal of the American Medical Association* 311: 1967-8.

The models being tested are directly layered on top of fee-for-service architecture. In the case of Medicare, the base architecture is the Medicare Physician Fee Schedule, which also underlies the fee schedules in use in private insurance and Medicaid programs.⁴⁶

Program evaluation, results and implications

Four operational features affect the design and evaluation of new CMS payment and delivery models.⁴⁷ First, for most models, participation by hospitals, physicians and other clinicians, and community-based organisations is voluntary. As such, the design, scope, and implementation of the models are influenced by the need to engage willing partners.

Second, many models are designed to foster multi-payer participation. CMS finances only a portion of health care delivery in the United States. To achieve its aims, CMS must work with other payers to align incentives.

Third, CMS models are not static. Every model is designed with the intent that CMS will make changes incrementally and refine interventions and incentive structures as more is learned about the performance of models. That is, these models have feedback and learning systems embedded into their design to allow them to adapt to better meet their core objectives.

Fourth, the institutional, local, and market context in which model participants operate can vary substantially. It is important to determine how and why model participants succeed or fail in order to provide an accurate sense of what will happen if models are expanded and to inform how best to structure potential expansion activities.

Collectively, these four operational features make CMS models complex to evaluate. Many traditional research designs that may provide a high degree of rigor in evaluating “conceptually neat components of clinical practice,” such as randomised clinical trials, provide minimal insight when applied to complex, multi-component interventions. In short, the optimal evaluation approach varies according to both what

⁴⁶ Berenson, Robert A.; Ginsburg, Paul B. (2019). *Improving The Medicare Physician Fee Schedule: Make It Part Of Value-Based Payment*. Health Affairs. Febv2019, Vol. 38 Issue 2, p246-252. 7p. DOI: 10.1377/hlthaff.2018.05411

⁴⁷ Howell BL, Conway PH, Rajkumar R. (2015). *Guiding Principles for Center for Medicare & Medicaid Innovation Model Evaluations*. JAMA. 2015; 313(23):2317–2318. doi:10.1001/jama.2015.2902

information needs to be learned and what evidentiary threshold will be acceptable for action on evidence.

To manage this complexity, CMS applies three guiding principles when evaluating models:

- examine model progress frequently and in a timely manner so that both CMS and model participants can improve their performance over the life of the model
- apply the most rigorous evaluation methods possible to provide policy makers with the best information available
- evaluate comprehensively to determine whether a model is successful and to describe the drivers of that success.

CMS contracts with external evaluators for all Innovation Center Models to ensure the independence of evaluation results.

One of the models introduced by the CMMI is the Comprehensive Care for Joint Replacement.

Comprehensive Care for Joint Replacement model

The Comprehensive Care for Joint Replacement (CJR) model tests whether an episode-based payment approach for lower extremity joint replacement can incentivise hospitals to reduce costs while maintaining or improving quality.

Participating hospitals are financially accountable for the quality and cost of health care services during the 90 day episode. At the end of each performance year, the hospital's actual episode spending is compared to the hospital's quality adjusted target price, and hospitals can earn or lose money based on their performance. All hospitals in selected areas were required to participate. The mandatory, randomised design allows insights that would not be possible from voluntary models due to the ability to observe results in a wide variety of hospitals and markets.

Table 3: CJR Program Design

CJR strategies	Model Implementation	Model intended Impacts
<ul style="list-style-type: none"> Mandatory, randomised design to observe results in a wide variety of hospitals and markets. CJR hospitals receive separate episode target prices for MS-DRGs 469 and 470, reflecting the differences in spending for episodes initiated by each MS-DRG. Simple risk stratification methodology to set different target prices for patients with hip fractures within each MS-DRG. Participating hospitals receive bonuses or pay penalties based on Medicare spending per hip- or knee-replacement episode (defined as the hospitalisation plus 90 days after discharge). Hospitals share savings with Medicare if spending falls below the benchmark or, starting in 2017, they pay a penalty if spending exceeds the target. As with the accountable care organisation programs in Medicare, the savings or losses of hospitals are adjusted according to their performance in a mix of hip- or knee-replacement quality measures such as rates of complications. 	<ul style="list-style-type: none"> CJR implemented in 67 geographic areas, defined by metropolitan statistical areas (MSAs). On 1 December 2017, participation for all rural and low volume providers in CJR became voluntary as did participation for all providers located in 33 of the 67 MSAs. During a CJR episode, fee-for-service payments are made as usual to all providers. Participating hospitals then undergo an annual retrospective reconciliation process in which their average spending per episode is compared with a hospital-specific benchmark. The episode benchmark prices used to calculate hospitals' target prices are based on a blend of a hospital's own historical standardised spending and regional historical standardised spending on LEJR episodes, moving towards 100% regional pricing for Performance Years 4 and 5. 	<ul style="list-style-type: none"> Reduce spending without compromising quality across an entire episode of care during the index hospitalisation and after discharge.

Source: Based on CMS (2018), *Comprehensive Care for Joint Replacement Model*, retrieved from: <https://innovation.cms.gov/initiatives/CJR> and CMS *Comprehensive Care for Joint Replacement Model: Performance Year 1 Evaluation Report*, retrieved from: <https://innovation.cms.gov/Files/reports/cjr-firstannrpt.pdf>

An evaluation of the first two years of the program identified modest reduction in spending per hip- or knee-replacement episode, without an increase in rates of complications.⁴⁸ While the program yielded a three per cent reduction in payments, this was significantly offset by bonuses paid by Medicare to hospitals with spending below their benchmark.

Decreased Medicare spending on hip- and knee-replacement episodes at participating hospitals was almost exclusively related to reductions in the use of post-acute care services in skilled nursing facilities and inpatient rehabilitation facilities. The two year evaluation results were consistent with previous data demonstrating savings in bundled-payment models, and other alternative payment models have been concentrated in changing the use of post-acute care services.^{49,50} Post-acute care services may be the easiest target for hospitals to decrease episode-level spending because it is often unclear when these services are beneficial or what intensity of post-acute care is most appropriate.

The CJR program is unique in that it is one of the only payment models in Medicare implemented as a mandatory randomised trial. The mandatory participation in the CJR program generated considerable debate, culminating in the Trump administration transitioning the program to a partly voluntary model as of March 2018.⁵¹

While the future of mandatory payment models is uncertain, the CJR program was useful in addressing the question of whether savings seen in previous evaluations of bundled-payment programs were attributable to the select nature of the hospitals that volunteered.

A primary concern about current bundled-payment programs is that they create a financial incentive to treat healthier patients rather than those who are sicker and whose care may be more costly. There has been inconsistent evidence on risk selection in previous evaluations of voluntary bundling and the CJR program. While the CJR program evaluation did not identify any substantive changes in primary risk selection, in treatment areas, researchers found evidence of differential reductions in the percentage of disabled patients undergoing hip- or knee-replacement procedures. Adjustment for these and other observable characteristics of the patients had a minor effect on estimates of savings. However, the authors could not examine whether changes in other unobserved risk factors for high spending after surgery may have contributed to study results. Risk selection under the CJR program therefore requires further investigation.⁵²

Summary

- The CJR payment reform program focused on incentivising hospitals to reduce costs while maintaining or improving quality.
- The model provides evidence for a bundle or episode-based payment in which costs of a patient's office visits, tests, treatments and hospitalisations associated with a patient's illness, medical event, or condition are grouped together. Under such arrangements, the value-based payment 'contractor' assumes responsibility for both the outcomes and the costs of the care across the continuum of the patient's trajectory for that condition⁵³.
- In an episode-based arrangement, several related episodes can be brought together. This requires robust data quality and availability. A key enabler for CJR was robust data collection systems and clinician buy-in and engagement.

⁴⁸ Barnett, M et al. (2019). *Two-Year Evaluation of Mandatory Bundled Payments for Joint Replacement*, New England Journal of Medicine; 380:252-262.

⁴⁹ *Ibid*

⁵⁰ Damberg, C et al. (2014). *Measuring success in health care value-based purchasing programs*. Rand Health Q. Dec 30; 4(3):9. eCollection 2014 Dec 30

⁵¹ Barnett, M et al. (2019). *Two-Year Evaluation of Mandatory Bundled Payments for Joint Replacement*, New England Journal of Medicine; 380:252-262.

⁵² *ibid*

⁵³ New York Department of Health (2017). *DSRIP Program Roadmap*.

- Internationally, more and more countries are implementing emerging best practices to treat chronic conditions as full-year-of-care bundles, emphasizing the continuous nature of this care, including all condition-related care costs.⁵⁴
- New York State has prioritised the Maternity Care Arrangement (spanning the pregnancy, delivery, 60 days postpartum for the mother, and the first month of the baby's care) for bundle-payment.⁵⁵
- In Australia, several of the necessary preconditions for the successful implementation of bundled pricing for maternity care, and bundled pricing schemes generally within Australian public hospitals, was considered by IHPA in 2017.⁵⁶

A.3 The Maryland All Payer System

The state of Maryland has operated an all-payer hospital rate-setting system since the mid-1970s. It is the only state in the United States that was exempt from Medicare's Inpatient Prospective Payment System and Outpatient Prospective Payment System. Until the All-Payer Model took effect in 2014, Maryland maintained these exemptions by meeting the requirement that cumulative growth in Medicare inpatient payments per admission since January 1981 remain below cumulative growth nationally.

However, in recent years, the cost per admission grew at a faster rate in Maryland compared to the rest of the United States. This created concerns that without a change in cost trajectory, Maryland's long-standing waiver could be at risk. Furthermore, the focus on cost per admission was poorly aligned with other health care delivery system reforms underway in Maryland and across the United States that focused on comprehensive, coordinated care across delivery settings.⁵⁷

In response to these concerns, Maryland proposed a new hospital payment model which focused on a move from controlling payments per inpatient admission to controlling total payments for hospital services. On 1 January 2014, Maryland implemented its All-Payer Model for hospitals. This transitioned the state's hospital payment structure to an all-payer, annual, global hospital budget that encompasses regulated inpatient and outpatient hospital services.

Maryland adopted the All-Payer Model as the first step toward a population-based payment model that would hold hospitals responsible for use of all health care services by the populations they serve. Under the new agreement with the CMS, Maryland must do the following:⁵⁸

- limit all-payer per capita inpatient and outpatient hospital cost growth to the previous 10-year growth in gross state product, set at 3.58 per cent annually for the first 3 years of the model, with an opportunity to adjust the rate for Years 4 and 5 based on more recent data
- generate \$330 million in savings to Medicare over five years based on the difference in the Medicare per-beneficiary total hospital cost growth rate between Maryland and that of the nation overall
- reduce its 30-day readmission rate to the unadjusted national Medicare average over five years
- reduce the rate of potentially preventable complications by nearly 30 per cent over five years
- limit the annual growth rate in per-beneficiary total cost of care for Maryland Medicare beneficiaries to no greater than 1.0 percentage point above the annual national Medicare growth rate in that year
- limit the annual growth rate in per-beneficiary total cost of care for Maryland Medicare beneficiaries to no greater than the national growth rate in at least one of any two consecutive years

⁵⁴ de Bakker, D. H., J. N. Struijs, C. B. Baan, J. Raams, J. E. de Wildt, H. J. Vrijhoef and F. T. Schut. (2012). "Early results from adoption of bundled payment for diabetes care in the Netherlands show improvement in care coordination." *Health Aff (Millwood)* 31(2): 426-433; De Brantes, F., A. Rastogi and M. Painter (2010). "Reducing potentially avoidable complications in patients with chronic diseases: the Prometheus Payment approach." *Health Serv Res* 45(6 Pt 2): 1854-1871.

⁵⁵ *ibid*

⁵⁶ Independent Hospital Pricing Authority (2017). *Bundled pricing for maternity services – Final report.*

⁵⁷ Haber, S. et al. (2018). *Evaluation of the Maryland All-Payer Model: Third annual report.*

⁵⁸ *ibid*

- submit an annual report demonstrating its performance along various population health measures.

By July 2014, all 46 general acute-care hospitals in the state were operating under a global budget, with global budgets encompassing 95 per cent of hospital revenue. Under the Maryland All-Payer Model, the Health Services Cost Review Commission establishes an annual global budget, or allowed revenues, for each hospital.

The annual budget is built from revenues during a base period (2013), which are adjusted for future years using a number of factors, both hospital specific and industry wide. Each year the hospital's global budget is updated to reflect an allowed rate of hospital cost inflation, approved changes in the hospital's volume based on changes in population demographics and market share and additional adjustments related to reductions in potentially avoidable utilisation, quality performance, uncompensated care and changes in various adjustments (e.g. user fees).

The Health Services Cost Review Commission then sets rates for services that Maryland hospitals use to bill all payers so that total payments (based on expected utilisation) will match the global budget. Public payers (Medicare and Medicaid) are allowed a 6 per cent discount on charges, which was also in place before the implementation of the All-Payer Model. As under Maryland's previous hospital payment system, each hospital bills payers for services provided using the hospital's service-specific rates. Unlike the previous system, the global budget establishes a ceiling on hospital revenues. Except for certain hospitals, the global budget cap applies to services provided to both Maryland residents and non-residents. In addition to services provided to non-residents at hospitals with an exemption for non-resident services, hospitals are permitted non-regulated revenues for other specified services (for example, home health, outpatient renal dialysis, and skilled nursing facility services).

Hospitals have an incentive to ensure that revenues do not fall short of or exceed their budgets. To the extent that actual utilisation deviates from projected utilisation and hospital revenues vary from the global budget, a one-time adjustment to the approved budget for the following year is made to compensate hospitals for charges less than the approved budget and to recoup charges in excess of approved revenues.

Table 4: Maryland Program Design

Maryland All-Payer Model Strategies	Model Implementation	Model intended impacts
<ul style="list-style-type: none"> Hospital global budgets All-payer rate setting Quality based reimbursement Maryland hospital acquired condition program Care Redesign Program Workforce transformation Population health initiatives Other health system reform initiatives (CRISP, SHIP, PCMHs, ACOs, SIM Model Design grant, HCIA) 	<ul style="list-style-type: none"> Updates to hospital budgets, including penalties for billing in excess of budget, market share adjustments, penalties for potentially avoidable utilisation, and other performance-based payments Changes in charges to meet hospital budget target Investment in hospital infrastructure to support care management and population health improvement Participation in care coordination initiatives and community partnerships for population health improvement Participation in Care Redesign Program 	<p>Hospital Financial Performance</p> <ul style="list-style-type: none"> Changes in hospital revenue, operating expenses, and operating margins <p>Hospital Market Dynamics and Service Mix</p> <ul style="list-style-type: none"> Hospital-physician alignment Hospital alignment with unregulated providers Hospital mergers, acquisitions, and system alignments Hospital openings and closures Changes in hospital service lines <p>Quality of Care</p> <ul style="list-style-type: none"> Reduction in 30-day readmission rate Reduction in rate of admissions for potentially preventable conditions Reduction in occurrence of patient safety events Increase in rate of 14-day post discharge follow-up Improvement in patient experience of care Improvement in health outcomes
		<p>Health Care Utilisation</p> <ul style="list-style-type: none"> Reduction in hospital admissions Reduction in preventable emergency department visits Decrease in hospital length of stay Increase in outpatient utilisation in unregulated settings Increased use of preadmission and post-acute care services <p>Health Care Costs</p> <ul style="list-style-type: none"> Reduction in Medicare hospital payments Reduction in all-payer per capita hospital cost growth Reduction in per capita total health care expenditures Reduction in beneficiary cost sharing

Source: KPMG analysis based on Haber, S. et al. (2018), *Evaluation of the Maryland All-Payer Model: Third annual report.*

Three recent studies have sought to understand more about the effect of Maryland’s payment reforms on the delivery of care. One study reported on the experience of areas served by seven rural hospitals in the pilot period,⁵⁹ a second on the experience of eight counties not previously part of the pilot program during the first two years of the statewide model⁶⁰ and a third on all 24 Maryland counties through the first three years of the model.⁶¹

1. In terms of absolute changes that occurred during the intervention, the three studies all found similar experiences for the Medicare population in Maryland: reductions in hospital admissions and increases in emergency department use without admission.
2. Hospitals moved 100 percent of their revenue across all payers into population-based payments in just three years, and the state surpassed its cumulative savings target of \$330 million in reduced Medicare hospital expenditures, generating \$916 million in savings, relative to what was the estimated projected Maryland spending based on the national growth rate, through 2017.⁶²
3. Hospitals also improved quality, reducing by half the rate of potentially preventable conditions that comprise Maryland’s Hospital Acquired Condition program.⁶³

In the proposed next phase of the model, Maryland plans to commit to achieving savings in the total cost of care delivered to patients, whether in the hospital or the ambulatory setting.⁶⁴ The Maryland Total Cost of Care model, under the authority of the Innovation Center, marks the first time that CMS will hold a state accountable for the total cost of care incurred by resident Medicare fee-for-service beneficiaries.⁶⁵

Summary

- The focus of the Maryland All-Payer Model was on reducing hospital expenditure, primarily through hospital diversion and reduced utilisation.
- A fundamental component of the program was the close coordination between federal and state partners, from program design to execution. It also required extensive resource investment from CMS and the state, given the joint responsibility for administering the model’s programs.

⁵⁹ Roberts ET, Hatfield LA, McWilliams JM, et al. (2018). *Changes in hospital utilization three years into Maryland’s global budget program for rural hospitals*. Health Aff (Millwood). 2018; 37(4):644-653.

⁶⁰ Roberts ET, McWilliams JM, Hatfield LA, et al. (2018). *Changes in health care use associated with the introduction of hospital global budgets in Maryland*. JAMA Intern Med. 2018; 178(2):260-268.

⁶¹ Haber S, Beil H, Amico P, et al; RTI International. (2018). *Evaluation of the Maryland all-payer model: third annual report*. <https://downloads.cms.gov/files/cmmi/md-all-payer-thirdannrpt.pdf>. Published March 2018. Accessed April 12, 2018.

⁶² Health Services Cost Review Commission (2017). *All-payer model results, CY 2014-2017*. Retrieved from: <https://hscrc.state.md.us/Documents/Modernization/Updated%20APM%20results%20through%20PY4.pdf>.

⁶³ *Ibid*

⁶⁴ Sapra, K., Wunderlich, K., and Haft, H. (2019). *Maryland total cost of care model*, Journal of the American Medical Association, 321:10, 939-40.

⁶⁵ *Ibid*

A.4 New York State Delivery System Reform Incentive Payment

There are approximately six million Medicaid beneficiaries across New York State and Medicaid expenditure is around USD\$6 billion each year. In the period from 2003-2011, spending on Medicaid was rising at 10 per cent annually, reaching USD\$50 billion in 2011. Despite the spiraling expenditures, quality measures were declining.

New York embarked on a wide ranging program of Medicaid Redesign designed to improve health outcomes, efficiency of service delivery and value for money over a nine year period commencing in 2011. Through the Medicaid Redesign program, the state was able to curb the growth in spending and demonstrate projected saving of around USD\$17 billion. In 2014, the federal government approved a waiver which enabled New York State to reinvest \$8 billion of the future savings back into the system in the form of the Delivery System Reform Incentive Program (DSRIP). The DSRIP is running over the period 2014–2020.

One of the major components of this program is instituting a new payment model with the goal of converting 80-90 per cent of payments from fee-for-service to value-based by 2020. DSRIP is a major collective effort to transform New York State's Medicaid health care delivery system from a fragmented inpatient care focused system, to an integrated and community based system focused on providing care in or close to the home.⁶⁶

The guiding principles of the New York approach are shown in Table 6.

Table 6: Payment reform guiding principles

- Transparent and fair, increase access to high quality health care services in the appropriate setting, and create opportunities for both payers and providers to share savings generated if agreed benchmarks are achieved
- Be scalable and flexible to allow all providers and communities, regardless of size, to participate, reinforce health system planning, and preserve an efficient and essential community provider network
- Allow for a flexible multi-year phase to recognise administrative complexities including system requirements (i.e. information technology)
- Align payment policy with quality goals
- Reward improved performance as well as continued high performance
- Incorporate a strong evaluation component and technical assistance to assure successful implementation
- Engage in strategic planning to avoid the unintended consequences of price inflation, particularly in the commercial market
- Financially reward, rather than penalise, providers who deliver high value care through emphasising prevention, coordination, and optimal patient outcomes, including interventions that address underlying social determinants of health

Source: New York Department of Health (2017), *DSRIP Program Roadmap*.

Over the last two years of the program, New York has designed 11 different payment reform options ranging from mental health to diabetes to long term care. New York has put together a distinctly flexible 'menu of options' for providers to engage in payment reform. They have clearly articulated that by the end of the program, all providers' performance will be evaluated on a 'value basis' (i.e. reference to quality outcomes and efficiency of spend).

⁶⁶ New York Department of Health (2017). *DSRIP Program Roadmap*.

However, realising that there is a wide range of capability and appetite for adopting a new payment model, New York is allowing providers to 'opt in' when they want, how they want and with varying levels of risk sharing. Providers can select between options such as a capitated budget for a general population (e.g. based on a registered GP list) to a condition-specific bundle (e.g. maternity) to a capitated budget for a specific demographic (e.g. learning disabilities).

Therefore, multiple payment reform options can co-exist and be tailored to a provider's scale and care focus. Providers may also choose to adopt these arrangements virtually, with limited risk sharing for the first year or two to allow them to build up their capacity for risk bearing.

The scheme covers all Medicaid services for patients in the state, including primary, community and hospital care. The only exclusions are high cost drugs and transplantation services which continue to be paid for on a pass-through and fee-for-service basis respectively. All health care providers delivering Medicaid reimbursed services are encouraged to opt in to value-based payments. There is no tendering but there is a range of alternative providers and patient choice.

Providers are given a 'target budget' for a specific population or condition. If they are more cost efficient than the target budget and meet pre-determined quality measures, they are eligible for 'shared savings' which is split between the provider and commissioner. The more risk the provider bears, the higher proportion of the savings it keeps.

While New York is allowing providers to 'opt in' at their own discretion, there are a number of bonus incentive payments to increase early implementation of value-based payment. For example, providers who pilot value-based payment arrangements receive a bonus as do providers who quickly move up in levels of risk sharing.

In addition to the incentivising bonus payments for certain providers, New York also will be enforcing penalties (e.g. decreased future budget) to those providers who by Year 5 are exceeding their target budget and missing their quality measures. Providers who are partnering with others are responsible for coordinating amongst themselves how to distribute both risk sharing and any potential shared savings.

Patients can choose a range of competing systems for Medicaid services and switch away from one system for services when they wish to do so. This means that there is an additional constraint preventing providers from reducing access to or quality of care within a capitated system, alongside the measurement of access and quality standards as part of the scheme.

There is little publicly available information on the costs for purchasers and providers of administering the scheme. These may be quite high, given the costs of billing for reimbursement of services and the costs of monitoring providers' performance.

Since the New York DSRIP is ongoing, there are only preliminary results. Some early results show promise. On national comparisons of avoidable hospital use and cost, for example, New York has moved from 50th to 26th in the last six years. Over the period 2009 to 2015, New York's overall health system quality of care has also improved from 21st to 13th in the country. New York has garnered significant provider and stakeholder buy in with an estimated 15 value-based payment pilots beginning this year.

The scheme gives providers flexibility for providers to decide how to phase in new payments and incentives, allowing more advanced providers to excel and giving struggling providers time to adjust to the new reimbursement method. Many of the payment reform options can be piloted virtually with incremental risk transfer to help build up data on costs and performance and develop providers' capability to operate the new system. The opportunity for shared savings is more attractive to providers than an outcomes-based approach where the budget is top sliced and payment withheld until the achievement of the desired outcomes.

The approach requires strong system leadership, robust governance and a pragmatic timeline to implement multiple payment options. New York had a significant amount of upfront investment from the federal government to help implement this program. Many of the payment reforms focus on promoting prevention and primary care efforts, however it may take many years to truly realise the effects of these efforts. It may require a robust data and analytics capacity to implement the system.

One of the objectives of the DSRIP is to bridge the gap between health and social sectors through value-based payment arrangements in areas such as learning disabilities. They are doing this by incentivising

holistic outcomes (e.g. meaningful day measures) and also by looking at total expenditure across health and social care.

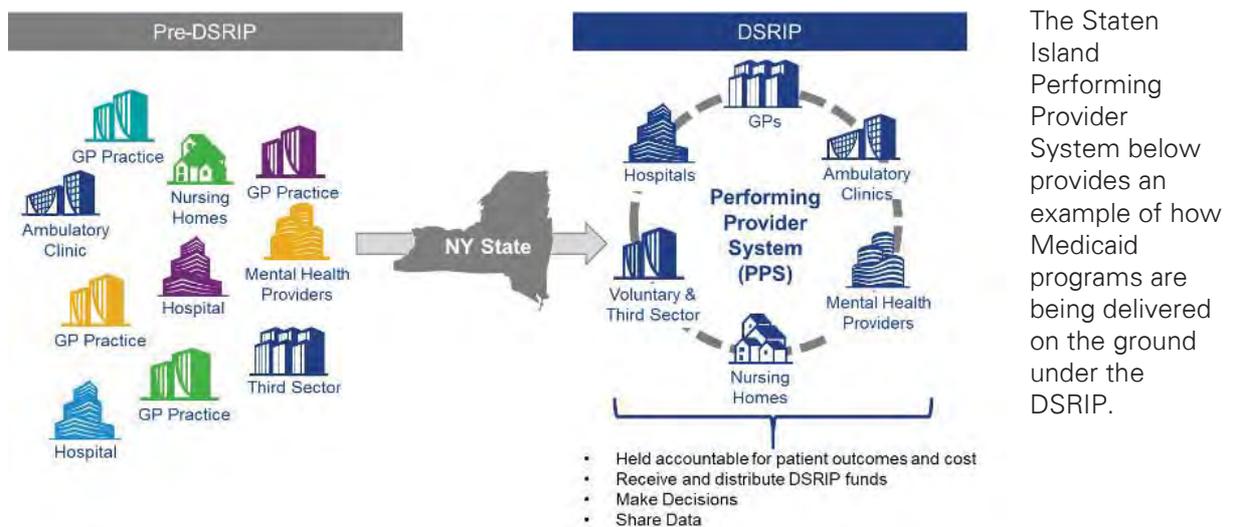
Overall, the New York program is also a good example of how to implement large payment reform across a varied provider landscape. By using a mix of ‘carrots and sticks’ to incentivise providers to adopt value-based payment arrangement, it simultaneously allows for progressive providers to move forward and lagging providers time to adjust.

New York organised its DSRIP by selecting lead entities through an application process to create Performing Provider Systems. The Performing Provider Systems are the provider clusters that are engaged in the Medicaid DSRIP.

A total of 25 Performing Provider Systems have been established in New York State to implement innovative projects focused on system transformation, clinical improvement and population health improvement. All DSRIP funds are based on achievement of performance goals and project milestones.

Performing Provider Systems were required to select between five and 11 clinical projects to implement from a menu of 44 projects curated by the state, in consultation with CMS. The range of projects addresses system transformation, clinical improvement, and population health. Projects are based in hospital, primary care, behavioural health, skilled nursing, and other home- and community-based settings. Performing Provider Systems are responsible for reporting to the state a robust set of process metrics and are accountable for meeting performance metrics, such as reductions in potentially avoidable emergency room visits, potentially avoidable readmissions, and Healthcare Effectiveness Data and Information Set metrics.⁶⁷

Figure 2: Pre and post DSRIP ecosystem



⁶⁷ Bachrach, D. et al. (2016). *Implementing New York’s DSRIP Program: Implications for Medicaid Payment and Delivery System Reform, Commonwealth Fund.*

A number of projects implemented and evaluated by the SI PPS have demonstrated positive impacts. More generally, in the context of the payment model, key findings from the most recent evaluation report regarding PPS include the following:⁶⁸

- Almost all the Performing Provider Systems reported major preparatory activities for the shift to value based payments with their partners. These activities included building educational tools.
- Some Performing Provider Systems began with many partners already having value based payment-equipped models and others with few partners equipped to implement value based payment. Community-based organisations needed more assistance in preparing for value based payments.
- Most stakeholders identified value based payment as fundamental to the DSRIP transformation of health care.
- Performing Provider System did not have full access to all State-wide Health Information Network for New York during Demonstration Years 0-2, which made it difficult to obtain the information they needed to develop projects and track progress.
- Many Performing Provider Systems moved funds to partners quickly and felt that this improved their partnership relationships. Others took a more conservative approach in order to maintain accountability for how funds were spent.

⁶⁸ Dewar, D. et al. (2018). *State-wide Annual Report by the Independent Evaluator for the New York State Delivery System Reform Incentive Payment (DSRIP) Program*. Retrieved from https://www.health.ny.gov/health_care/medicaid/redesign/dsrip/eval/docs/2018-final_eval_rpt.pdf



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COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-36

This is the Annexure marked "DD-36" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

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Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

Practice Incentives Program Quality Improvement Incentive (PIP QI) fact sheet



What is the PIP QI?

The Practice Incentives Program Quality Improvement Incentive (PIP QI) is a payment to encourage practices to participate in quality improvement activities, aimed at improving patient outcomes through the delivery of high-quality care. It was launched in August 2019.

What are the eligibility requirements for the PIP QI payments?

To participate in the PIP QI, practices must be accredited against The Royal Australian College of General Practitioners (RACGP) *Standards for general practices* (4th or 5th edition).

Practices need to register to participate in the PIP QI using their Provider Digital Access (PRODA) through their Health Professional Online Services (HPOS). Practices should advise their local Primary Health Network (PHN) when they register for the incentive. PHNs may require additional information from practices once they have applied for the PIP QI via HPOS.

Practices will be required to electronically submit the PIP Eligible Data Set from their general practice clinical information system to their local PHN on a quarterly basis. The PIP Eligible Data Set comprises de-identified patient data collected against 10 specified Improvement Measures.

General practices also need to commit to implement continuous quality improvement activities in partnership with their local PHN.

Do any current incentives cease with the commencement of the PIP QI?

Yes. Some Practice Incentive Payments and Service Incentive Payments have been impacted by the introduction of the PIP QI.

The following four Practice Incentive Payments and any associated Service Incentive Payments will no longer be available from 1 August 2019:

- Asthma Incentive
- Diabetes Incentive
- Cervical Screening Incentive
- Quality Prescribing Incentive.

How much is the PIP QI payment?

The amount of the PIP QI payment is dependent on the size of the practice and is a maximum payment of \$12,500 per quarter. Payments are based on \$5.00 per Standardised Whole Patient Equivalent, per year.

What are the Improvement Measures that are included in the PIP Eligible Data Set?

The 10 Improvement Measures are:

1. Proportion of patients with diabetes with a current glycated haemoglobin (HbA1c) result
2. Proportion of patients with a smoking status
3. Proportion of patients with a weight classification
4. Proportion of patients aged 65 and over who were immunised against influenza
5. Proportion of patients with diabetes who were immunised against influenza
6. Proportion of patients with chronic obstructive pulmonary disease (COPD) who were immunised against influenza
7. Proportion of patients with an alcohol consumption status
8. Proportion of patients with the necessary risk factors assessed to enable cardiovascular disease (CVD) assessment
9. Proportion of female patients with an up-to-date cervical screening
10. Proportion of patients with diabetes with a blood pressure result

In addition, identifying information about general practitioners (GPs) and general practices is collected. This identifying information is not part of the PIP Eligible Data Set and is collected to administer the PIP QI.

Why is data required for the PIP QI?

The intention is that data collected can be used to inform quality improvement at practice, regional and national levels.

How is the PIP Eligible Data Set protected?

It is intended that the privacy of the PIP Eligible Data Set will be maintained through a number of controls, including:

- no identified data should leave the practice's software
- suppression rules are applied to prevent the sharing of information where small numbers of patients are involved
- no data set linkage is permitted if there is a risk the PIP Eligible Data Set could be re-identified
- commercialisation of the PIP Eligible Data Set is not permitted
- collection, use and access is prescribed and monitored.

Access to the PIP Eligible Data Set by external researchers and other interested parties will be controlled by the Australian Institute of Health and Welfare (AIHW).

More information on the privacy controls can be found at the Australian Government Department of Health (DoH) [PIP QI guidance](#) (refer to PIP Eligible Data Set Data Governance Framework).

In addition to providing data, what quality improvement activities does my practice have to undertake to be eligible for the PIP QI?

The aim of the PIP QI is to reward practices for participating in continuous quality improvement activities in partnership with their local PHN.

There are no set targets for the Improvement Measures.

The definition of 'in partnership with your local PHN' is broad, and likely to be determined by the amount of support a general practice requires. For example, this may range from accessing self-service modules available on a PHN website or endorsed by the PHN, to highly supported quality improvement programs. It is up to each general practice to determine what type of support they require from their PHN.

Practices may wish to focus their quality improvement activities on the specified Improvement Measures. Alternatively, practices can choose to focus their activities on other areas. However, these areas must be informed by their clinical information system data and meet the needs of their practice population.

How will PHNs use the PIP Eligible Data Set?

The PIP Eligible Data Set will assist PHNs to:

- work with general practices to support quality improvement through reporting and feedback on managing the practice's patient population
- contribute to service planning and population health mapping at different levels, including PHN boundaries, local health districts, jurisdictional boundaries and at national level.

PHNs will share the aggregated data with the national data custodian – the AIHW – for national analysis and research.

Researchers may apply to access the data securely and in accordance with data access and release protocols, which will be developed in accordance with the PIP Eligible Data Set Data Governance Framework. The AIHW will not be collecting data for the first 12 months of the PIP QI Incentive; however, trial data exchanges will commence to ensure readiness for this to occur



What are the current issues with PIP QI?

Although the PIP QI was launched in August, there remains a number of outstanding issues for general practices wanting to participate, including:

- limited guidance regarding data transfer processes
- lack of clarity regarding privacy obligations for general practices and PHNs
- opt-out provisions for patients and GPs
- inadequate data-sharing agreements that do not provide details of risks and data security obligations
- lack of functionality in some of the data extraction tools to only extract the required data elements.

Many PHNs have been collecting general practice data for some time and have existing agreements and processes in place with practices. These existing arrangements generally collect more data than is required for the PIP QI. The RACGP is aware some PHNs are attempting to replicate these arrangements for PIP QI purposes.

General practices have been incorrectly advised they need to provide all of their data to receive the PIP QI. However, under the rules of the PIP QI, general practices only have to provide the data on the 10 Improvement Measures.

Practice owners should make sure any data-sharing agreements meet their needs, and clearly explain any risk and privacy obligations. The RACGP understands that the DoH is developing guidance for these agreements in response to concerns raised by the RACGP and other groups.

The RACGP is working to address these issues through the DoH, and recommends practices fully consider the PIP QI requirements before signing up.

Practices have until at least mid-October 2019 to sign up and provide data or apply for the PIP QI exemption using the form available at [PIP QI Incentive guidance](#).

Practices can withdraw from the PIP QI at any time via HPOS. Practices should advise their local PHN when they withdraw from the PIP QI.

Does my practice have to use a specific data extraction tool to extract the PIP Eligible Data Set?

No. As long as the PIP Eligible Data Set is submitted to the PHN in accordance with the relevant requirements of the PIP Eligible Data Set Data Governance Framework, the practice will meet the data-sharing eligibility requirement of the PIP QI Incentive. The two main data extraction tools in use are:

- [Pen Computing Systems](#) CAT 4 – compatible with Medical Director 3, Best Practice and Zedmed
- [POLAR GP from Outcome Health](#) – compatible with Best Practice, Medical Director and Pracsoft

The RACGP understands clinical information system vendors are working on PIP QI reporting for general practice.

How can my practice submit the PIP Eligible Data Set?

General practices currently exchanging data with their PHN

A general practice can continue to utilise the data extraction tool method agreed with their local PHN to submit the PIP Eligible Data Set. Practices should be mindful that data beyond the PIP Eligible Data Set is often being extracted.

General practices not currently exchanging data with their PHN

General practices not currently exchanging data with their local PHN can:

- use the data extraction method offered by their local PHN to submit the PIP Eligible Data Set if their current clinical software is compatible with this method
- purchase or license their own data extraction tool that is compatible with their local PHN
- work with their clinical information system provider and local PHN to submit the PIP Eligible Data Set in accordance with the PIP Eligible Data Set Data Governance Framework.

General practices that cannot exchange data with their local PHN

General practices that cannot exchange data with their local PHN because they do not have compatible software or do not want to use the software offered by their PHNs can:

- work with their clinical information system provider and local PHN to create a compatible system to submit the PIP Eligible Data Set in accordance with the PIP Eligible Data Set Data Governance Framework
- apply to the DoH for a time-limited exemption and work towards operationalising a compatible system.



How do I apply for an exemption?

The DoH may give general practices up to 12 months to ensure they have sufficient time to work with their PHN and clinical information system provider on finding a solution that complies with the PIP QI Incentive Guidelines and the PIP Eligible Data Set Data Governance Framework.

If practices are granted an exemption from submitting data, this will remain in place until 31 July 2020 or until the issues preventing the practice from submitting data have been resolved. From 1 August 2020, all general practices participating on the PIP QI Incentive are required to submit PIP Eligible Data set to their local PHN each quarter.

General practices seeking a time-limited extension should review the [PIP QI Incentive Exemption application form and fact sheet](#) carefully to ensure they fully understand the requirements of being exempted from uploading the PIP Eligible Dataset to their PHN.

If a time-limited exemption is approved by the DoH, practices will need to work in partnership with their local PHN to meet the other requirements of the PIP QI Incentive. If a practice can demonstrate it is making genuine efforts to supply the data, the practice will remain eligible for payment for the relevant quarter while these transitions issues are managed.

Can patients opt out of sharing their de-identified data?

General practices should advise patients they are sharing de-identified data, for example by including informing in their practice privacy policy and making this available on the practice website and waiting room. A practice may provide patients with the opportunity to opt out. Software providers are required to support patient opt out with simple options to manage this. Contact your software provider for specific advice on how to do this.

Can GPs opt out of sharing their data?

Yes, software providers will be required to support individual clinician opt out. However, at this stage it is not clear how GPs can opt out. The RACGP is addressing this with the DoH.

Disclaimer

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We acknowledge the Traditional Custodians of the lands and seas on which we work and live, and pay our respects to Elders, past, present and future.

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Where can I find out more information?

The DoH has released a number of resources to support practices to understand the PIP QI requirements and data governance arrangements including guidelines, FAQs and fact sheets. These can be found on the [PIP QI guidance](#) page.

Local PHNs can answer questions about the PIP QI including eligibility and quality improvement activities.

The Australian Government [Department of Human Services](#) can answer your questions regarding applying for the PIP QI, how payments are calculated and managing your participation online.

Clinical information system vendors

For queries regarding the PIP QI, the links below provide the contact details of the main general practice software providers:

- [Best Practice](#)
- [MedicalDirector](#)
- [Zedmed](#)
- [Genie Solutions](#)
- [Medtech global](#)
- [Stat Health Systems.](#)

RACGP resources

[Guiding principles for the secondary use of de-identified general practice data](#)



COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-37

This is the Annexure marked "DD-3" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

A.R.

Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.



HEALTH
MINISTERS

National Health Reform Agreement (NHRA)

Long-term Health Reforms

Roadmap



The National Health Reform Agreement Long Term Reforms Roadmap was endorsed by all Australian Health Ministers at the Health Ministers' Meeting on 17 September 2021.

The Strategy may be downloaded from Federal Financial Relations website or the Australian Department of Health website.

Inquiries about the content of the Strategy should be directed to LTR.Inbox@health.gov.au.

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National Health Reform Agreement (NHRA) – Long-term Health Reforms – Roadmap

The National Health Reform Agreement

The 2020–25 Addendum to National Health Reform Agreement (NHRA) aims to improve health outcomes for all Australians and ensure our health system is sustainable. Commonwealth, state and territory governments, as parties to the NHRA, are committed to a shared long-term vision for health reform. They will work together to achieve the agreed critical priorities of:

- improving efficiency and ensuring financial sustainability
- delivering safe, high-quality care in the right place at the right time
- prioritising prevention and helping people manage their health throughout their lifetime
- driving best practice and performance using data and research.

Purpose of the reform roadmap

This reform roadmap is attached to the *Addendum to the National Health Reform Agreement 2020-2025 (NHRA)*. Commonwealth, state and territory governments are committed to this reform roadmap and its implementation.

This roadmap provides a flexible approach to achieving the priorities outlined above. It allows programs to evolve and shift direction to incorporate learnings or changes in the health landscape. Implementation of the long-term reform activities set out here will take into account each jurisdiction's circumstances. States and territories will have the flexibility to identify priority reforms and determine the scope and timing of activities to best suit local needs and support local health system diversity, readiness and funder and provider capabilities.

Key areas of reform

The roadmap includes a vision statement, aim, case for change, links to other reforms, intended outcomes, key concepts and COVID related developments for each reform area. The roadmap identifies actions, deliverables and timeframes for these key areas of reform:

- nationally cohesive Health Technology Assessment
- paying for value and outcomes
- joint planning and funding at a local level
- empowering people through health literacy
- prevention and wellbeing
- enhanced health data
- interfaces between health, disability and aged care systems

COVID-19 impact

This program of reform has commenced at a time of unprecedented change due to the impacts of the COVID-19 pandemic. The response to COVID-19 included many novel approaches to providing health services and support and will inform the implementation of these reforms. The reforms will support the COVID-19 recovery by enabling flexible, innovative and data-informed approaches to delivering health care.

Governance

Health Ministers and Chief Executive Officers of Commonwealth, state and territory health departments are responsible for implementing these reforms. A governance diagram is at [Appendix A](#).

Key partners

Key partners in implementing these reforms will include, but not be limited to, Local Hospital Networks, Primary Health Networks, Aboriginal Community Controlled Health Organisations and national bodies such as the Independent Hospital Pricing Authority, the Administrator of the National Health Funding Pool, the Australian Institute of Health and Welfare, and the Australian Commission on Safety and Quality in Health Care. Other partners will be engaged in specific implementation activities.

To implement this program of reform, the Commonwealth and states will work in partnership with Aboriginal and Torres Strait Islander communities to co-design approaches tailored to their needs. This commitment recognises and will enable Aboriginal and Torres Strait Islander leadership, local decision-making processes, co-delivery of culturally safe and secure health services, and Aboriginal and Torres Strait Islander-led evaluation.

Interdependencies

The long-term reforms build on many initiatives aimed at improving patient outcomes and experiences within the health system. These include initiatives delivered by all jurisdictions at national, state, regional and local levels. This set of health reforms takes a system-wide approach and there are critical interdependencies between the streams of reform.

The *Enhanced health data* reform is an enabler for all the long-term system wide reforms and is the first priority. Access to joined-up data that provides an end-to-end view of patient pathways will enable policymakers and governments to develop a more accurate model of the health system, to inform system design, funding and improved patient access and experiences.

The Paying for value and outcomes and Joint planning and funding at a local level reforms are intrinsically linked and complementary. The first aims to deliver system-level payment reform and will create an enabling environment for trials of flexible models of care. The *Joint planning and funding* reform will strengthen governance, funding and accountability arrangements to support better collaboration at the local level. The *Enhanced health data* reform will develop supporting data collections, overarching governance arrangements and enhance linkage capabilities to support these reforms.

The Prevention and wellbeing and Empowering people through health literacy reforms will help reorient the health system around individuals and communities and reduce the prevalence of disease, supported by the structural reforms above.

The goal of the Nationally cohesive Health Technology Assessment (HTA) reform is to increase the consistency, timeliness, efficiency and value of HTA processes nationally. This will contribute to the Paying for value and outcomes reform.

The Interfaces between health, disability and aged care systems reform will develop performance interface indicators to monitor and report on new and existing interface issues and improve governance mechanisms to resolve issues. This reform is linked to the *Enhanced health data* reform given the need to link data across systems.

Review and evaluation

Evaluation and knowledge sharing are key commitments within each reform stream. A common evaluation framework will be developed to outline expectations and methods to review reform implementation. More specific evaluation questions or scope may be required for individual activities within each individual reform as needed.

Long term reforms

Reform stream	Nationally cohesive Health Technology Assessment
Vision	Improved health technology decision-making will deliver safe, effective, efficient care that is financially viable and improves population health.
Aim	Health technology assessment (HTA) is guided by a systematic, cohesive, efficient and responsive national framework for decision making across all levels of the health system.
Case for change	<p>The Commonwealth, states and territories acknowledge that, within the constraints of limited budgets, robust and transparent prioritisation of spending on health technologies is critical for coordinated, equitable and efficient service delivery.</p> <p>The current approach to HTA to inform policy investment and disinvestment decisions in Australia is fragmented. It does not support coordinated and timely responses to rapidly changing, emerging, and disruptive technologies, including high-cost and highly specialised therapies and services. Separate HTA processes exist across all levels of the health system, and across levels of government. This duplicates effort, creates inefficiencies and inconsistent advice, and delays access to innovative and emerging technologies. Current HTA processes often focus on new or emerging technologies before they are put into practice. Processes to compare benefits and cost-effectiveness with existing technologies, and processes for disinvesting in low value care, are under-developed.</p> <p>This reform will support ongoing policy and process development for HTA, implementation, monitoring and evaluation of new technologies, including a process for decisions about disinvesting where appropriate.</p>
Links to other reforms	Increased impact of HTA on funding (investment and disinvestment) and consideration of value in decision-making will contribute to the <i>Paying for value and outcomes</i> reform.
Intended outcomes	<p>During the term of this Addendum, all parties will strive to achieve:</p> <ul style="list-style-type: none"> • nationally consistent, appropriate and evidence-based investment and disinvestment decisions • improved patient access to cost effective health technologies • improved transparency and reduced duplication of effort between HTA bodies • coordinated and timely responses to rapidly changing technologies • effective sharing of information and recommendations between jurisdictions and the Commonwealth, including consistent outputs and standardised advice • improved stakeholder engagement, understanding and public trust in the HTA process
Key concepts	HTA is the systemic evaluation of the properties and effects of a health technology. HTA addresses direct and intended effects, as well as indirect and unintended consequences. It is used primarily to inform decision making. Health technologies include tests, devices, medicines, vaccines, procedures, programs and systems.
COVID-19 related developments	The COVID response resulted in expedited assessments and approvals. This reform will explore what changes to processes supported this and what lessons may be learned to inform nationally consistent HTA practice.

Key components

National health reform agreement commitments	NHRA clause	Deliverable	Timeframes			
			21-22	22-23	23-24	24-25
Agree consistent process for assessing and funding highly specialised therapies under the NHRA	C.11, C.12, Apx. B	Endorsed process				
Establish process to facilitate a cohesive approach to HTA nationally	C.13.a	National Committee				
Develop a national HTA framework, including processes to inform implementation, investment and disinvestment opportunities at Commonwealth and state levels	C.13.b	National framework				
Establish an information sharing platform	C.13.c	Information sharing platform				
Produce public and stakeholder guidance	C.13.d	Guidance materials				
Identify HTA workforce requirements and develop workforce framework	C.13.e	Workforce action plan				
Identify and prioritise technologies that will benefit from national level HTA	C.13.a	Agreed priority list				

Nationally cohesive Health Technology Assessment – Outcomes Map

Rationale: Australia needs a strategic, systematic, cohesive, efficient and responsive national framework for health technology assessment (HTA). The current approach to HTA to inform investment and disinvestment decisions is fragmented. It does not support coordinated and timely responses to rapidly changing technologies. Separate processes exist across all levels of the health system. This duplicates effort, creates inefficiencies and inconsistent advice, and delays access to innovative and emerging technologies. All governments acknowledge that the Commonwealth and states must prioritise spending on health technologies within the constraints of limited budgets, and do so consistently, equitably and efficiently. Improved health technology decision-making will deliver safe, effective, efficient care that is financially viable and improves population health.

Inputs

- Prioritisation matrix, templates and other tools developed by Health Technology Reference Group (HTRG)
- State and Territory HTA expertise
- Commonwealth HTA bodies (OHTA, PBAC, MSAC, PLAC)
- Existing HTA IT infrastructure e.g. OHTA IT platform, TGA, PBS, MBS & HTRG webpages

Activities

- Develop a federated approach to HTA to inform implementation, investment and disinvestment opportunities
- Review existing cross-stakeholder HTA guidance and identify gaps
- Produce public and stakeholder guidance
- Review and support HTA workforce requirements including roles, capabilities, gaps and future needs

Outputs

- A National High Cost and Highly Specialised Services Committee
- NCHTA framework with a standard set of principles and processes used by all jurisdictions to assess technologies
- A single information sharing platform to manage HTA coordination, submissions, inform stakeholders of review progress and recommendations, and host guidance
- Suite of guidance for HTA stakeholders
- HTA workforce framework identifying future requirements and direction

Outcomes

- Improved transparency and reduced duplication between HTA bodies
- Coordinated and timely responses to rapidly changing technologies
- Effective sharing of information and recommendations between jurisdictions and the Commonwealth, including consistent outputs and standardised advice
- Improved stakeholder engagement, understanding and public trust in the HTA process.
- Nationally consistent, appropriate and evidence-based investment and disinvestment decisions
- Improved patient access to cost effective health technologies
- Care delivered is safe, effective, efficient, financially viable and improves population health
- Appropriately supported and resourced HTA workforce

Reform stream	Paying for value and outcomes
Vision	The health financing system is proactive, responsive, supportive of contemporary models of care, value-based and focused on individual and community needs. Future funding models will give providers the flexibility to provide care in the right place, at the right time, by the right workforce.
Aim	State, territory and Commonwealth funding will support value and reduce duplication and fragmentation of health services, which is caused in part by multiple funding sources and programs. Providers will be rewarded for coordinating and delivering care pathways that have the best outcomes for patients in the most efficient way. A stronger focus on preventive health, early intervention, and care that is integrated across a treatment journey will lead to improved quality of care and the health outcomes that matter most to patients.
Case for change	The Commonwealth, states and territories recognise current health funding models do not adequately support and incentivise improvements in clinical care to address current and future population health challenges. The system does not provide the necessary funding flexibility and governance arrangements to address these challenges – such as managing chronic disease and an ageing population – or the responsiveness to support changing models of care. Under this reform, trials of funding and payment reform options will test how innovative funding models can best support contemporary care that leads to better patient outcomes and support.
Links to other reforms	<p>To fully realise its benefits, this reform is critically interdependent with other long-term health reforms, in particular the <i>Joint planning and funding at a local level</i> reform.</p> <p>The <i>Enhanced health data</i> reform will develop supporting data collections and overarching governance arrangements, including a primary and community care national minimum data set and patient reported outcome and experience measures. This will leverage evidence from the Atlas of Healthcare Variation, the National Clinical Quality Registry and Virtual Registry Strategy 2020-2030 and state-based programs.</p> <p>This reform will build on earlier work by the Independent Hospital Pricing Authority (IHPA) on bundled payments for specific conditions and cohorts. It will consider trials currently underway which relate to integrated care in out-of-hospital settings, pooled Commonwealth and state/territory funds, and bundled payments across a pathway of care.</p>
Intended outcomes	<p>During the term of this Addendum, all parties will strive to achieve:</p> <ul style="list-style-type: none"> • core principles for consistent outcome-focused, value-based health care measures across the health system • increased flexibility in national funding arrangements which supports more effective and efficient resource allocation and focuses on the outcomes that matter to patients • increased number of trials of innovative, flexible funding models across Australia (at state and federal level) • robust evaluations of trials and systematic sharing of the evidence • increased number of successful contemporary care models scaled up, systematised and funded recurrently to ensure benefits are realised and ongoing • improved patient-reported health outcomes and care experiences, and health care provider experiences • a reduction in inefficient health care practices (e.g. avoidable hospitalisations) and improved sustainability of health care funding
Key concepts	<p>‘Value’ is achieving the health outcomes that matter most to patients, relative to the cost of delivering those outcomes. Value encompasses and integrates many goals already sought in the delivery of health care, such as health outcomes, quality, safety, patient-centred care, efficiency in terms of cost and eliminating low value practices, and clinical process improvements. Cost is considered in terms of the full cost incurred across the course of care for a patient’s condition.</p> <p>‘Outcomes’ are the results people care about most when seeking treatment, including functional improvement and the ability to live fulfilling and productive lives. This should cover all services or activities required to successfully meet a patient’s health care needs. The outcomes that matter to patients are broad, multi-faceted and cannot be measured by a single, all-encompassing clinical or personal indicator (e.g. self-assessed quality of life, trust, comfort). Comprehensive health outcome and cost data is required to support measurement, including Patient Reported Measures (PRMs).</p> <p>The ‘Quadruple Aim’ in health care has four goals: improved health outcomes, improved patient experiences, improved provider experiences, and improved effectiveness and efficiency.</p>

Reform stream **Paying for value and outcomes**

COVID-19 related developments

In response to the COVID-19 pandemic, many jurisdictions expanded their use of flexibly funded models of care, such as Hospital in the Home, and innovative models of care, such as virtual care and secondary triage for residential aged care facilities, which were supported by the expanded application of MBS telehealth items. This reform will also consider the potential benefits and risks of embedding such initiatives in standard care.

The COVID-19 National Partnership Agreement is supporting a collaborative, cross-sectoral approach to implementing responses to COVID-19 within jurisdictions.

Key components

National health reform agreement commitments	NHRA clause	Deliverable	Timeframes			
			21-22	22-23	23-24	24-25
Identify and support removal of legislative, regulatory and technical barriers to implementing innovative funding and payment approaches	C.21.b	Action plan				
Develop a funding methodology that incorporates flexible funding options within the public hospital funding model that support innovative models of care	A.101.a	Endorsed methodology				
Develop a national health funding and payments framework	C.21.a	Framework				
Trial funding and payment reforms at a program level and progress system level changes	C.21.c	Bilateral and multilateral trials				
Implement a common approach to evaluation of trials and knowledge sharing to inform further decisions about scaling of trials and future reform directions.	C21.d	Evaluation reports				

Paying for value and outcomes – Outcomes Map

Rationale: Current funding models do not adequately support and incentivise improvements in clinical care to address current and future population health challenges. Reform will give service providers and health care organisations greater flexibility to address local population needs, allowing for a stronger focus on clinical outcomes, clinical best-practice and patient equity. State, territory and Commonwealth funding will support the sustainability of the entire health system by reducing duplication and fragmentation of health services, caused in part by multiple funding sources and programs. Trials of funding and payment reform options will test how innovative funding models can best support contemporary care and achieve better patient outcomes.

Inputs

- Stakeholder views
- Technical expertise
- Government staff and resources
- Management/ governance
- Australian Health Performance Framework (AHPF)
- Health Innovation Fund (HIF) Projects
- Appropriate data and performance measures, including from Enhanced Data and Transparency and Performance reforms (e.g. Patient Reported Measures)
- Existing coordinated care reforms
- IHPA advice and expertise
- Clinician and consumer views

Activities

- Develop a National Health Funding and Payments Framework
- Develop a flexible funding methodology within the public hospital funding model
- Identify and support removal of legislative, regulatory and technical barriers to implementing innovative funding and payment approaches
- Trial funding and payment reforms at a program and system level to deliver a financially sustainable future with a focus on outcomes
- Develop a common approach to evaluation of trials and knowledge sharing

Outputs

- Framework developed and agreed by all jurisdictions
- Flexible funding methodology developed within Activity Based Funding and broader health funding model
- Revised governance structures, legislation and regulations are in place to support innovative approaches
- Innovative funding and payment models developed
- Methodology and common measures for evaluation of new models of care developed
- Trials of increasing scope are implemented under bilateral agreements
- Communities of Practice established
- Improved evidence base available to inform future reforms

Outcomes

- | | | | | | |
|------------|---|--|--|--|---|
| Short-Term | Agreed core principles for consistent outcome-focused, value-based health care measures across the health system | Increased flexibility in national funding arrangements supports more effective and efficient resource allocation and focuses on the outcomes that matter to patients | Increased number of trials of innovative, flexible funding models across Australia (at both state and federal level) | Increased number of successful contemporary care models scaled up, systematised and funded recurrently to ensure benefits are realised and ongoing | Robust evaluations of trials and systematic sharing of the evidence |
| Long-Term | Improved provider experience – clinicians are empowered to deliver coordinated care to achieve the best outcomes for patients | Improved use of health funding across the system and greater efficiency and sustainability of allocations | Improved integration of care across the entire patient journey, including prevention and early intervention stages | Increase in patients reporting positive health care experiences | Reduction in inefficient health care practices (eg avoidable hospitalisations) and improved sustainability of health care funding |

Reform stream	Joint planning and funding at the local level
Vision	Better-integrated, patient-centred care will improve people's experiences and health outcomes and support equitable access to care. Integrated planning and funding of health services at a local level will support providers to plan, resource, work together, and coordinate care for patients across their treatment journey.
Aim	Local planning and service commissioning is driven by collaboration, integration and better investment decisions across care settings based on population and patient needs, with clear and shared accountability for outcomes and quality. Innovative governance models will increase flexibility and support providers to deliver value-based care according to the Quadruple Aim in health care - improved health outcomes, improved patient experience, improved provider experience, and improved effectiveness and efficiency.
Case for change	<p>The current health system in Australia is fragmented, making it difficult for people to get well-coordinated care and leading to poorer health outcomes. The system is not well-placed to meet the needs of people with chronic or complex health and social care needs, and older, frailer people who often use a wide range of health services. Poor coordination between providers can cause confusion and duplication and make services hard to navigate.</p> <p>Despite best efforts, providers often work in isolation rather than together. Investment decisions are far removed from service delivery and there is potential for blame and cost shifting between service providers, commissioners, health sectors and levels of government.</p> <p>The Commonwealth, states and territories recognise there is a need for greater collaboration across care settings, support for clinicians to adopt new practices, and a joint commitment across all agencies and governments to ensure better planning and co-ordination of health services at the local level. This reform complements the <i>Paying for value and outcomes</i> reform, which supports more flexible funding arrangements.</p>
Links to other reforms	<p>This reform is critically interdependent with other long-term health reforms, particularly the <i>Paying for value and outcomes</i> reform, which will deliver system-level payment reforms to create a supportive environment to trial effective commissioning arrangements.</p> <p>The <i>Enhanced health data</i> reform will develop new and improved data sets (including primary and community health) and enhance linkage capabilities to support integration and local commissioning.</p> <p>This reform offers a mechanism to address the findings in the Productivity Commission's report on Innovations in Care for Chronic Health Conditions (2021), and the recommendations and outcomes of the Royal Commission into Aged Care Quality and Safety (2021) and the Royal Commission into Violence, Abuse, Neglect and Exploitation of People with Disability (2023). It will leverage COVID-19 responses, existing jurisdiction initiatives and align with Commonwealth reforms to primary care.</p>
Intended outcomes	<p>During the term of this Addendum, all parties will strive to achieve:</p> <ul style="list-style-type: none"> • national principles for local level commissioning to support an increase in effective collaboration between primary, community and acute health care organisations • increased number of sustainable joint planning and funding initiatives to deliver improved experiences for patients and better health outcomes at the local level • increase in patients reporting positive health care experiences, using appropriate care settings and accessing integrated care pathways • increase in provider satisfaction and engagement, and increased participation in training to improve commissioning capability • trials that demonstrate reduction in service duplication and improved efficiency
Key concepts	<p>'Joint planning' involves various organisations collaborating to assess needs, for geographic regions and for specific populations, make decisions on what health services and health literacy and prevention measures are provided, and share accountability for outcomes.</p> <p>'Joint funding' involves using existing and new funding to support integrated care pathways, including pooled models where various funding sources may be combined.</p> <p>'Commissioning' is a continual cycle to develop and implement services based on needs assessment, planning, co-design, funding, monitoring and evaluation.</p>
COVID-19 related developments	This reform may build on relevant COVID developments including the Aboriginal and Torres Strait Islander Advisory Group on COVID-19, co-chaired by NACCHO and Commonwealth Health with all states involved, and local level PHN activities (e.g. emergency responses in Victoria and NSW).

Key components

National health reform agreement commitments	NHRA clause	Deliverable	Timeframes			
			21-22	22-23	23-24	24-25
Identify and support reform of barriers to joint governance, needs assessment, service integration, evaluation and funding, at a national, state and territory level	C28.b	Action plan				
Agree national principles for commissioning at the local level	C28.a	National principles				
Trial, evaluate, refine and scale up joint planning and funding arrangements	C28.c	Bilateral and multilateral trials				
Address workforce matters, including capability gaps for health services commissioning	C28.d	Action plan				
Explore innovative workforce models and potential new roles for care coordination	C28.d	Defined models and roles				
Develop outcome measures, reporting and accountability arrangements shared between local organisations	C28.e	New measures				

Joint planning and funding at the local level – Outcomes Map

Rationale: The current health system is fragmented and is not well-placed to meet the needs of people with chronic or complex health and social care needs, and older people who often use a wide range of health services. Poor coordination between providers can cause confusion and duplication. Reform will drive collaboration, integration, better planning and investment decisions across care settings, with clear accountability for outcomes and quality. It will address service gaps and introduce innovative governance models to increase flexibility and incentivise providers to deliver value-based care. This aligns with the Quadruple Aim in health care – improved patient experience, improved provider experience, improved health outcomes and sustainable cost.

Inputs

- Stakeholder views
- Technical expertise
- Government staff and resources
- Management/ governance
- Australian Health Performance Framework (AHPF)
- Health Innovation Fund (HIF) Projects
- Resources for enabling activities, including workforce capability and digital health infrastructure requirements
- Baseline data on workforce, patients, population and service utilisation
- Information and communications technology
- Existing coordinated care reforms

Activities

- Develop nationally agreed principles for local-level commissioning
- Identify and support removal of barriers to joint governance, needs assessment, service integration, evaluation and funding, at a national, state and territory level
- Trial, evaluate, refine and scale up joint planning and funding arrangements
- Address workforce matters, including capability gaps for effective health services commissioning, and explore innovative workforce models and new roles to support better care coordination
- Monitor and evaluate joint planning and funding arrangements, including shared outcome measures, to determine effectiveness

Outputs

- National Principles for local level commissioning developed and agreed
- Mechanisms in place to facilitate local collaborative planning and investment decision-making, including shared reporting and accountability arrangements
- Trials of joint planning and funding models, including for specific population groups, are undertaken and evaluated
- Innovative workforce models and new roles to support better care coordination are explored
- Models are evaluated in line with minimum agreed criteria and learning is shared widely
- Workforce uses guidelines and participates in training about collaborative commissioning

Outcomes

- | | | | | | |
|------------|--|---|---|---|---|
| Short-Term | Increased effective collaboration between primary, community and acute health care organisations | Increased number of enduring joint planning and funding initiatives to define and agree on local outcomes in alignment with the Quadruple aim | Increase in patients reporting positive health care experiences, using appropriate care settings and accessing integrated care pathways | Increased provider satisfaction and engagement, and increased participation in training to improve commissioning capability | Trials demonstrate reduction in service duplication, improved efficiency |
| | Local health organisations collaborate when planning health services and making investment decisions | Patients have equitable access to high quality integrated, person and community centred health services | Health outcomes improve for targeted populations | Clinician experience of the health care system improves | Sustainable system funding – Funding supports health system to be efficient and effective |

Reform stream	Empowering people through health literacy
Vision	Australians will be empowered to manage their own health, avoid illness, make informed health choices, engage effectively with health services, and achieve better health outcomes.
Aim	Service providers and policy makers will better support people's health literacy needs, including through strategic leadership for the health sector. The whole health system will be more responsive to individuals' health literacy needs, delivering person-centred health information, support and services to all Australians.
Case for change	The Commonwealth, states and territories recognise all Australians have a right to safe, high quality care. This is enhanced when people are informed about services, treatment options and costs in a clear and open way and are active participants in decisions and choices about their care. Health literacy is crucial to effective self-care. People with poor health literacy are less able to understand the consequences of poor health, take action to prevent or manage disease, navigate the health system or participate in their own health care decision-making. Poor health literacy can lead to higher rates of overweight and obesity, chronic conditions, hospitalisation, emergency care and adverse outcomes and disproportionately affects people from disadvantaged backgrounds.
Links to other reforms	<p>The <i>Enhanced health data</i> reform will develop quality information for consumers on health system performance, including the development and implementation of Patient Reported Measures.</p> <p>This reform will support Closing the Gap in disadvantage for Aboriginal and Torres Strait Islander people, and other vulnerable groups.</p> <p>Work to align government-funded information resources and digital platforms will align with My Health Record and Healthdirect initiatives.</p>
Intended outcomes	<p>During the term of this Addendum, all parties will strive to:</p> <ul style="list-style-type: none"> • embed health literacy standards and requirements into health care training and qualifications • increase innovation and cooperation on health literacy initiatives between governments, the health workforce, researchers, and the community • ensure people can easily access reliable, user-friendly, culturally and linguistically appropriate information and support • support patients and families to partner with their health care teams to make joint decisions about care options • promote the use of Patient Reported Measures to understand what patients value and improve patient experiences and outcomes
Key concepts	The <i>Empowering people through health literacy</i> reform is focused on creating a health system that promotes health literacy, including cultural change at the organisational and individual levels. It will take a universal approach to promoting health literacy responsiveness by recognising everyone benefits from clear, understandable, motivational (including non-stigmatising) and actionable information and that health workers are not expected to identify who has low levels of health literacy.
COVID-19 related developments	Relevant COVID developments include improved communications campaigns and the increased profile of government information resources and advice services, particularly in quality language materials and accessible formats.

Key components						
National health reform agreement commitments	NHRA clause	Deliverable	Timeframes			
			21-22	22-23	23-24	24-25
Better align government-funded information resources and digital platforms, ensuring they are culturally and linguistically appropriate, accessible, credible and evidence-based	C.33	Reviewed health digital platforms and information resources	■	■	■	■
Systematically measure patient reported health outcomes and care experiences	C.32	Patient reported measures framework (linked to <i>Enhanced health data</i>)	■	■	■	■
Build workforce capability to meet health literacy needs	C.32	Workforce engagement strategy	■	■	■	■
Make information on the performance of the health system and services more accessible	C.33	Accessible performance data	■	■	■	■
Share evidence of the effectiveness of health literacy initiatives across governments, the health workforce, researchers and the community	C.34	Information sharing strategies and mechanisms utilised/developed	■	■	■	■

Empowering people through health literacy – Outcomes Map

Rationale: People with poor health literacy are less able to prevent or manage disease, navigate the health system or participate in their own health care decision-making. People who are health literate are better equipped and empowered to manage their own health, engage effectively with health services, and achieve better health outcomes. Creating systems and organisations that are responsive to health literacy needs will support people to be active participants in their own health care. The health system will be more responsive to every individual's health literacy needs and deliver person-centred health information, support and services.

Inputs

- Infrastructure (including existing websites)
- Australian Health Performance Framework (AHPF)
- My Health Record infrastructure
- ACSQHC work on health literacy, standards and performance measures
- OECD Patient Reported Indicators Survey (PaRIS)
- Agency for Healthcare Research and Quality: Ten Attributes of Health Literate Health Care Organisations

Activities

- Provide strategic leadership for the sector to raise awareness of health literacy needs
- Build workforce capability to meet health literacy needs
- Better align government-funded information resources and digital platforms, ensuring they are culturally appropriate, accessible and evidence-based
- Make information on the performance of the health system and services more accessible
- Systematically measure patient reported health outcomes and care experiences
- Share evidence of the effectiveness of health literacy initiatives across governments, the health workforce, researchers and the community

Outputs

- Partnerships established with training providers to enhance education and training programs
- Government-funded resources are aligned and publicly promoted as sources of high quality, appropriate and credible information
- Indicators and measures of system and service performance are developed and clearly communicated
- Data collections include a nationally consistent approach to Patient Reported Measures (PRMs)
- Mechanisms to share evidence established

Outcomes

Short-Term

- Health literacy initiatives are nationally cohesive and include national standards for health literate organisations
- Health literacy is embedded in health workforce training and in health service design, policies and practices
- People can easily access reliable, user-friendly and culturally appropriate information and support
- Patients and families partner with their health care teams to make joint decisions about care options
- Nationally consistent approach to using PRMs informs service design and delivery
- Increased innovation and cooperation between researchers, health providers and people

Long-Term

- The health system is responsive to and works in partnership with consumers to deliver person-centred care
- Improved patient experience and outcomes, including increased uptake of health promoting behaviours, particularly among population groups at high risk of ill health
- Empowered people are informed and active participants in their own health care

Reform stream	Prevention and wellbeing
Vision	Australians will live healthier lives. This reform will promote and maintain good physical and mental health and wellbeing and reduce the proportion of people living with preventable chronic conditions and delay the onset of these conditions. It will address the underlying drivers of preventable ill health – including social, economic and environmental factors – and will focus on those with greatest need. This reform will make our health system more equitable and more sustainable.
Aim	Primary prevention investment will be increased and invested in scalable, high-value, evidence-based innovations so Australia’s health system can promote good health and wellbeing and better address preventable chronic disease.
Case for change	<p>Australia is a world leader in many areas of prevention, such as reducing levels of smoking, but despite ongoing action in other areas like tackling obesity, rates of chronic disease have not reduced.</p> <p>Almost 40 per cent of the total burden of disease could be prevented by reducing exposure to the top five risk factors – tobacco use, overweight and obesity, dietary risks, high blood pressure and high blood sugar. And approximately 40 per cent of preventable hospitalisations are due to chronic disease, placing a significant burden on the health system.</p> <p>Funding for preventive health is low and varies across jurisdictions, with public health in Australia accounting for just 1.5 per cent of total health expenditure. There are ongoing difficulties in measuring impacts, outcomes, and returns on investment for preventive health activities. There are limited mechanisms to generate investment or support cross sector collaboration.</p> <p>The Commonwealth, states and territories recognise that effective prevention requires cross-portfolio action and engagement to complement existing activities. Through the NHRA, all governments have committed to increase investment in primary prevention over time in evidence-based initiatives.</p>
Links to other reforms	This reform will build on the National Strategic Framework on Chronic Conditions, as well as the full range of evidence-based primary prevention activities undertaken nationally and within jurisdictions. It will support the implementation of existing commitments in development – such as the National Obesity Strategy, the National Preventive Health Strategy and the National Mental Health and Suicide Prevention Agreement.
Intended outcomes	<p>During the term of this Addendum, all parties will strive to achieve:</p> <ul style="list-style-type: none"> • a shared approach to the prevention of chronic conditions, their risk factors, and their underlying drivers • removal of barriers and disincentives for prevention activities across the healthcare system to promote a better balance between prevention and treatment within the health system • increased investment (by all sources) in prevention activities, and a sustainable national prevention funding mechanism with appropriate incentives • a strengthened evidence base for primary prevention initiatives, including improved collection, linkage, analysis, access, use of prevention related data and evaluation of initiatives
Key concepts	<p>The Commonwealth, states and territories will work together to explore innovative ways to finance evidence-based primary prevention activities, including through cross sector and non-government sources. This reform will lay the foundations for increased, sustained investment in preventing disease and promoting wellbeing, including addressing the wider determinants of health.</p> <p>Cohort-specific and risk-based approaches to planning and prioritisation will be explored.</p> <p>A national prevention and monitoring performance framework will include outcomes measures and indicators to show progress. It will develop targets and outcomes specifically relating to the health and wellbeing of Aboriginal and Torres Strait Islander populations. It will also develop a consistent way to measure the cost-effectiveness of prevention investment.</p>
COVID-19 related developments	<p>Key risk factors for illness and fatalities from COVID-19 included obesity and chronic disease, highlighting the risk to our population and the urgent need for action on non-communicable disease.</p> <p>The COVID-19 response included a number of preventive approaches, including: pro-active outreach programs to support people at high risk for COVID-19, including people with disabilities; mental health and wellbeing support programs; increased support for infectious disease emergency response research; and increased telephone and online access to support and</p>

Reform stream Prevention and wellbeing

information.

This reform will explore the potential benefits and risks of embedding initiatives such as these in ongoing programs.

Key components

National health reform agreement commitments	NHRA clause	Deliverable	Timeframes			
			21-22	22-23	23-24	24-25
Review health system barriers to prevention	C.40.e	Action plan				
Agree a national monitoring and reporting framework, including outcomes and progress measures to inform priorities for prevention investment	C.40.a	Framework				
Develop innovative fit-for-purpose financing mechanisms for scaling primary prevention initiatives	C.40.c C.40.b	Bilateral trials				
Explore evidence-based regulatory prevention measures	C.40.d	Recommendations				

Prevention and wellbeing – Outcomes Map

Rationale: Australia is a world leader in many areas of prevention but, despite ongoing action, rates of chronic disease have not reduced. Effective prevention requires cross-portfolio action and engagement to complement existing activities. Reform will explore innovative ways of financing primary prevention activities. Governments will consider sustainable, innovative mechanisms for financing preventive health activities, including the adoption of cohort-specific and risk-based approaches to planning and prioritisation.

Inputs

- National Strategic Framework for Chronic Conditions and other key policies relevant to primary prevention
- AIHW's health expenditure data
- National Preventive Health Strategy
- National Obesity Strategy
- National Tobacco Strategy
- Existing initiatives and investments at a national and jurisdictional level
- Head of Treasury's report on health financing
- Australian Social Impact Investing Taskforce final report

Activities

- Develop a national prevention monitoring and reporting framework, with a focus on shared priorities
- Increase investment in primary prevention over time
- Develop innovative, fit-for-purpose financing mechanisms for scaling primary prevention initiatives
- Explore evidence-based regulatory prevention measures
- Review and address health system barriers to prevention

Outputs

- Data is consistent nationally
- Return on investment for primary prevention is measured
- Shared priorities are identified
- Current prevention investment are analysed
- Prevention investment is accurately measured
- Long-term target for national prevention investment is agreed
- Prevention investment is sustained and increased over the long term
- Innovative investment mechanisms for primary prevention are identified
- Investment by non-government and private sectors increases
- A review of literature and evidence, including local and international experience
- Analysis of current barriers to prevention

Outcomes

- Australia has a national agenda to address preventable chronic disease and associated risk factors
- There is an increased focus on outcomes and accountability for prevention efforts
- Investment in prevention is increasing, including investment from non-government sources
- The evidence base is strengthened for prevention measures delivered at a whole of population scale, including regulatory prevention measures
- There are increased incentives and reduced disincentives for primary prevention within the health care system
- The underlying drivers of chronic ill health – including social, economic and environmental determinants – are being addressed
- The proportion of Australians living with preventable chronic conditions or associated risk factors is reduced
- Australians with chronic conditions, or associated risk factors, develop them later in life
- Priority populations, including Aboriginal and Torres Strait Islander people, have reduced risk of developing chronic conditions
- The sustainability of the health system is improving

Reform stream	Enhanced health data
Vision	Integrated data supports better decisions which improve health outcomes and save lives. Governments, clinicians, consumers and researchers will be able to access and link richer sources of information to help deliver better care which is more targeted, person-centred and value-based.
Aim	This reform aims to ensure the data generated by Australia’s health system drives better health outcomes and delivers effective, safe and efficient health care for all Australians.
Case for change	<p>Australia’s data resources represent substantial investments, but there are technical and other barriers which limit realisation of the full benefits of this resource.</p> <p>The Commonwealth, states and territories recognise that integrating data across patient journeys by using various health data sets will support better planning and decision-making by governments, health services, clinicians, consumers, researchers and communities. Data linked at the person-level helps policymakers and program designers provide more consumer-focused care to drive system improvements and break down siloes. Robust health data is also essential to understanding the wider determinants of health and wellbeing.</p>
Links to other reforms	<p>The <i>Enhanced health data</i> reform is key to fully realise other long-term health reforms, including <i>Paying for value and outcomes</i>, <i>Joint planning and funding at a local level</i>, <i>Interfaces between health, disability and aged care systems</i>, and support trials of innovative models of care under the Addendum Schedule A.</p> <p>Initiatives developed under this reform will be mindful of the need for better data to accurately measure outcomes for Aboriginal and Torres Strait Islander peoples and progress toward Closing the Gap.</p>
Intended outcomes	<p>During the term of this Addendum, all parties will strive to:</p> <ul style="list-style-type: none"> • establish a national standard and risk-based approach to govern the creation, access and sharing of data across all Australian governments • remove legislative and regulatory barriers to health data linkage, access and use, while maintaining appropriate privacy standards • increase access to regularly updated linked data, including multilateral linked data, across health care settings and patient journeys • increase use of best practice health data and analytics, including linked data and patient reported measures, to better understand health service use and inform planning and service delivery • increase health workforce capability to use health data and analytics effectively • ensure appropriate data is captured and used meaningfully to support other NHRA reform activities
Key concepts	The Parties are committed to achieving comprehensive health data access, usage and sharing, while at the same time maintaining data security and preserving individuals’ privacy.
COVID-19 related developments	This reform may be able to leverage COVID-19 responses to support rapid data collection for up-to-date monitoring and response, including the Australian Data and Digital Council (ADDC) Data Sharing to Support COVID-19 Recovery, the Critical Health Resource Information System (CHRIS), and changes to legislation during the pandemic to allow data sharing between agencies.

Key components						
National health reform agreement commitments	NHRA clause	Deliverable	Timeframes			
			21-22	22-23	23-24	24-25
Review data linkage and privacy legislation and regulations across Australia	C.46.f	Report				
Share information about current data systems, processes and guidelines to help inform solutions for data sharing	C.47.a					
Pilot projects for local implementation and feedback to all participants	C.47.b					
Scale up a national approach to data governance arrangements, structures and processes	C.46.a	Approach document and implementation plan	Dependent on C.46.f			
Develop a risk-based framework and standards for collection, sharing, and security of data	C.46.d	Framework and standards	Dependent on C.46.f			
Establish Commonwealth-state patient-level primary and community health care datasets	C.46.b	Datasets				
Develop and implement a consistent approach to the collection and use of Patient Reported Measures	C.46.e	Approach document and implementation plan				
Develop a health data workforce capability framework to define roles and standards, and identify necessary skills and capabilities	C.46.c	Framework and implementation plan				

Enhanced health data – Outcomes Map

Rationale: This reform supports Australia’s governments in their commitment to realise the value of public health data through greater data sharing and information access to transform healthcare, drive efficiency and safety, create productivity gains and allow better decision making. It will ensure that relevant, robust and timely data is available to the appropriate people, to support shared patient-clinician decision-making, improved service delivery, evidence-informed policy development, research and analytics, and system planning. Maintaining data security and preserving individuals’ privacy will be central to the reforms.

Inputs

- Existing governance committee structures, data sharing legislation, accredited integrating authority arrangements, and bilateral data sharing agreements
- Existing data analytics hosting environments, enduring cross-jurisdictional linked datasets, and enduring cross-domain linked datasets
- Existing sharing of public hospital data, MBS and PBS data, and other national minimum datasets
- My Health Record
- Existing collaborative analytics projects and analytics training opportunities

Activities

- Share information about current data systems, processes and guidelines
- Pilot projects for local implementation and feedback to all participants
- Review relevant legislation and regulations across Australia
- Scale up a consistent national approach to data governance arrangements, structures and processes
- Develop a risk-based framework and standards for collection, sharing and security of data
- Establish Commonwealth-state patient-level primary and community health care datasets
- Develop and implement a consistent approach to the collection and use of Patient Reported Measures
- Develop a health data workforce capability framework

Outputs

- Information is shared to help inform solutions for data collection, sharing, governance and use
- Recommendations on ways to support better data linkage, access, use and ensure appropriate protections for patient privacy
- A framework for developing and sharing data between all Australian governments
- A Commonwealth-state, risk-based framework to support information security
- A framework to build health data workforce capability to undertake high quality analytics
- A Commonwealth-state patient-level primary care National Minimum Data Set and a community care National Minimum Data Set
- A framework for collection of PRMs to build national level evidence

Outcomes

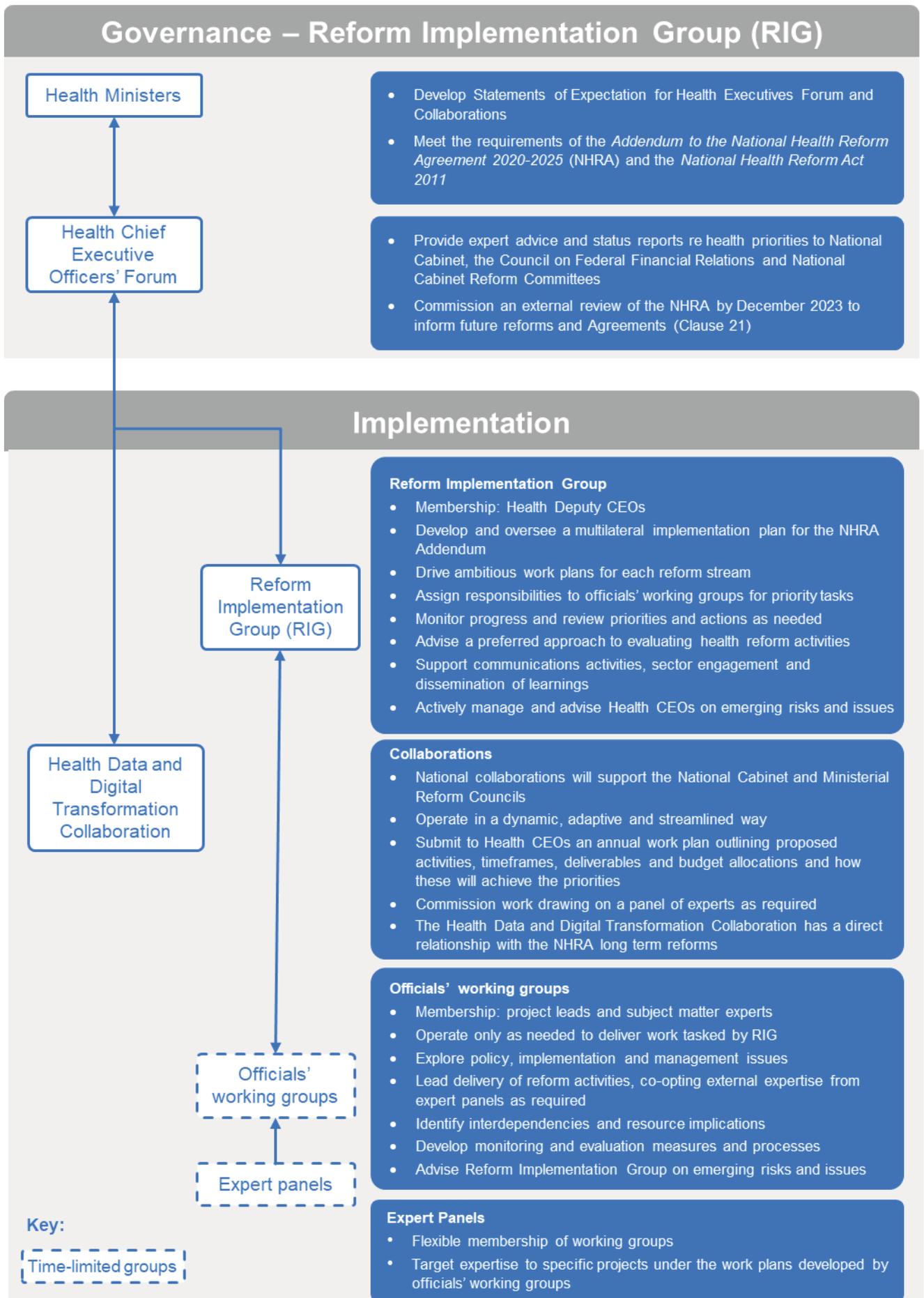
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|-------------------|---|---|---|--|
| Short-Term | Legislative and regulatory barriers to health data linkage, access and use are removed, while maintaining appropriate privacy standards | A national standard and risk-based approach governs the creation, access and sharing of data across all Australian governments | Commonwealth-State minimum data sets for primary care and community health are established and maintained | Appropriate data is captured and used meaningfully to support other NHRA reform activities |
| Long-Term | Access to regularly updated linked data, including multilateral linked data, across health care settings and patient journeys increases | Use of best practice health data and analytics, including linked data and patient reported measures, to better understand health service use and inform health care planning and service delivery increases | Health workforce capability to use health data and analytics effectively increases | |

Reform stream	Interfaces between health, disability and aged care systems
Vision	Better coordination between the health, primary care, aged care and disability systems will ensure people can access the services they need, when they need them and improve care outcomes for people.
Aim	People's experiences of transferring and navigating between health and social service systems will be timely, well-coordinated and streamlined, particularly for people with complex and chronic conditions and disabilities.
Case for change	The care needs of many Australians are becoming increasingly complex. Many people access multiple services across the health, primary care, disability and aged care systems. The Commonwealth, states and territories recognise they have a shared responsibility to better coordinate their services, particularly for people with chronic conditions and disability.
Links to other reforms	This reform supports the success of other NHRA long-term reforms, aligning with and expanding data projects underway by jurisdictions and the Commonwealth.
Intended Outcomes	<p>During the term of this Addendum, all parties will strive to:</p> <ul style="list-style-type: none"> • resolve interface issues quickly, consistently and sustainably • identify and address service gaps within agreed timeframes • ensure better coordination between the health, primary care, disability and aged care systems with improved consumer access and care outcomes • provide better access to the clinical and social care older people and people with disability need from the appropriate system at the appropriate time • make it easier for consumers, carers and their families to navigate the health, primary care, aged care and disability support systems to receive optimal care and support • reduce avoidable hospital presentations, time spent in hospital and discharge delays
Key concepts	The parties are committed to reducing barriers, inefficiencies and issues that impact patients who use both health and social service systems. The parties will address legislative, funding and policy issues that impede interface performance.
COVID-19 related developments	This reform will build on COVID developments, including: National Disability Insurance Agency/state data sharing Memorandums of Understanding; continuing telehealth services; in-reach support services, accessible communications and improved engagement and collaboration with disability and aged care sectors.

Key components

National health reform agreement commitments	NHRA clause	Deliverable	Timeframes			
			21-22	22-23	23-24	24-25
Establish health, primary care, aged care and disability interface performance indicators and associated data collection and reporting	F.12	New indicators and data collection				
Monitor and analyse interface performance and effectiveness of system and interface improvement strategies	F.13.e	Framework and regular reporting				
Monitor, report on and address services gaps and the effect of policy or service changes across systems	F.13.a-d	Regular reporting Action plan				
Clarify joint governance arrangements for monitoring and resolving issues between health, aged care and disability systems	F.14	Paper				
Explore the impact of housing security, provision and assistance on people's health outcomes	F.15	Report				
Work towards consistent application/interpretation of data across systems to assist understanding of linkages between data sets, establish sharing practices, explore viability of disability identifier in health data	F.16.c	Framework and regular reporting				
Improve data sharing for serious incident/missed care across systems to provide early warning flags for all regulators	F.16.d	Framework and regular reporting				
Work towards sustainability and improved coordination of health, primary health, aged care and disability services particularly in regional, rural and remote communities	F.16.e	Regular reporting				

Appendix A – Governance



COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-38

This is the Annexure marked "DD-38" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

ADDENDUM TO NATIONAL HEALTH REFORM AGREEMENT

2020-2025

This document is a compilation and is provided for ease of reference.

The Addendum as signed by First Ministers is available at:

www.federalfinancialrelations.gov.au/content/national_health_reform.aspx

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PRELIMINARIES, SYSTEM WIDE OBJECTIVES AND ROLES AND RESPONSIBILITIES

Preliminaries

1. This Addendum:
 - a. sets out the shared intention of the Commonwealth, State and Territory governments (the States) to work in partnership to improve health outcomes for all Australians and ensure the sustainability of the Australian health system;
 - b. re-affirms that all governments:
 - i. agree that the healthcare system will strive to eliminate differences in health status of those groups currently experiencing poor health outcomes relative to the wider community; and
 - ii. acknowledge that private providers and community organisations play a significant role in delivering health services to the community and will continue to be partners with government in meeting the objectives of this Addendum.
 - c. recognises that responsibility for health is shared between the Commonwealth and the States, and that all governments have a responsibility to ensure that systems work together effectively and efficiently to produce the best outcomes for people, including interfaces between health, aged care and disability services, regardless of their geographic location;
 - d. amends the National Health Reform Agreement (NHRA) for the period 1 July 2020 to 30 June 2025;
 - e. implements and supersedes the Heads of Agreement on public hospital funding and health reform as agreed by the Council of Australian Governments (COAG) in 2018;
 - f. re-affirms the Medicare Principles, as set out in clause 8;
 - g. builds on and re-affirms the high-level service delivery principles and objectives for the health system in the National Healthcare Agreement (agreed by COAG in 2008 and amended in July 2011) for the period of this Addendum;
 - h. continues the financial arrangements for Australian public hospital services, including Activity Based Funding (ABF) and block funding, as set out in in Schedule A of this Addendum;
 - i. acknowledges the shared commitment of the Commonwealth and States to work in partnership with Aboriginal and Torres Strait Islander communities in closing the gap through the COAG-agreed agenda;
 - j. recognises the responsibility for improving the mental health outcomes of Australians and preventing suicides is shared and that all governments are committed to reforming the provision of mental health care across the key areas of prevention, diagnosis, treatment and recovery, with the aim of:
 - i. promoting the mental health and wellbeing of the Australian community and,

where possible, prevent the development of mental health problems and mental illness;

- ii. reducing the impact of mental health problems and mental illness, including the effects of stigma on individuals, families and the community;
- iii. promoting recovery from mental health problems and mental illness; and
- iv. assuring the rights of people with mental health problems and mental illness, and enable them to participate meaningfully in society; and

k. is subject to the Intergovernmental Agreement on Federal Financial Relations (IGA FFR) and should be read in conjunction with that Agreement and subsidiary schedules.

2. The Commonwealth and the States agree the following four strategic priorities will guide further reform of our health system between 2020 and 2025:

- a. Improving efficiency and ensuring financial sustainability (Schedule A);
- b. Delivering safe, high-quality care in the right place at the right time, including long-term reforms in:
 - i. Nationally cohesive health technology assessment;
 - ii. Paying for value and outcomes; and
 - iii. Joint planning and funding at a local level.
- c. Prioritising prevention and helping people manage their health across their lifetime, including long-term reforms in:
 - i. Empowering people through health literacy; and
 - ii. Prevention and wellbeing; and
- d. Driving best practice and performance using data and research, including long-term reforms in:
 - i. Enhanced health data.

3. High level principles outlining the focus of reforms in clause 2 (b)-(d) are included in Schedule C, and implementation plans will be attached to this Addendum when agreed.

4. Included at Appendix A is a list of definitions for words and phrases used in this Addendum.

Objectives

5. The Commonwealth and the States recognise that this Addendum provides an opportunity to work together to ensure the best possible outcomes for the Australian people through the collective investments governments make in health. The Parties recognise that improving value in our health system means developing and implementing

reforms that:

- a. deliver improvements in outcomes that matter most to people and communities;
 - b. improve outcomes, experiences, quality, safety and efficiency of care through public reporting, such as promoting the uptake of Patient Reported Measures;
 - c. create stronger incentives for providers and funders to work together to better integrate care and drive efficiency across the system; and
 - d. ensure equitable access to care regardless of geographic location.
6. As part of the shared commitment to improving mental health outcomes, the Parties agree to work together informed by the Productivity Commission’s final report into mental health, the National Suicide Prevention Adviser’s final report and other inquiries, including the Victorian Royal Commission into Mental Health Services.
7. The Commonwealth and the States will work in partnership to implement arrangements for a nationally unified and locally controlled health system which will:
- a. improve patient outcomes, patient experience and access to services, including by focussing on what matters most to patients, supporting innovative models of care and trialling new funding arrangements (Schedule C);
 - b. improve the provision of GP and primary health care services, including Aboriginal and Torres Strait Islander community controlled health organisations, and the effective integration of health services at a local and national level (Schedule C);
 - c. improve care coordination for people with chronic and complex needs, building on the activities set out in the 2017 Bilateral Agreements on Coordinated Care and incorporating them into relevant long-term health reforms (Schedule C);
 - d. improve the safety and quality of health services through continuation of hospital pricing reforms agreed by COAG in 2017 (Schedule A);
 - e. improve standards of clinical care, including through guidance from the Australian Commission on Safety and Quality in Health Care (ACSQHC) (Schedule B);
 - f. improve accountability and performance reporting on the health system through the Australian Health Performance Framework and supporting national performance indicators (Schedule D);
 - g. improve local accountability and responsiveness to the needs of communities through continued operation and collaboration between Local Hospital Networks (LHNs) and Primary Health Networks (PHNs) (Schedule E);
 - h. work effectively with the aged care and disability support systems to deliver better outcomes (Schedule F);
 - i. improve access to and use of data to support service delivery and improved patient outcomes (Schedule C);
 - j. improve public hospital efficiency through the use of ABF based on a national efficient price (Schedule A);

- k. ensure the sustainability of funding for public hospitals by increasing the Commonwealth's share of public hospital funding through a 45 per cent contribution to the costs of growth, subject to the operation of the National Funding Cap (Schedule A); and
- l. maintain transparency of public hospital funding through the National Health Funding Pool (Schedule A).

Roles and responsibilities

- 8. Under this Addendum, States will provide health and emergency services through the public hospital system, based on the following Medicare Principles:
 - a. eligible persons must be given the choice to receive public hospital services free of charge as public patients;¹
 - b. access to public hospital services is to be on the basis of clinical need and within a clinically appropriate period; and
 - c. arrangements are to be in place to ensure equitable access to such services for all eligible persons, regardless of their geographic location.
- 9. Under this Addendum, the Commonwealth and the States will be jointly responsible for:
 - a. funding public hospital services, using ABF where appropriate and block funding in other cases;
 - b. funding growth in public hospital services and the increasing cost of public hospital services;
 - c. determining funding policy and exploring innovative models of care in the national funding model;
 - d. establishing and maintaining nationally consistent standards for healthcare and reporting to the community on the performance of health services;
 - e. collecting and providing patient-level data to support the objectives of this Addendum;
 - f. working together on policy decisions or areas of the system that impact on each other's responsibilities;
 - g. ensuring that the commitments outlined in this Addendum contribute to closing the gap in Aboriginal and Torres Strait Islander disadvantage and life expectancy. This will be given effect by:
 - i. working with Aboriginal and Torres Strait Islander communities to design approaches tailored to their needs, recognising and enabling Aboriginal and Torres Strait Islander leadership and local decision making processes;
 - ii. working to achieve cultural safety in the health system with Aboriginal and

¹ This Addendum recognises that clinical practice and technology changes over time and that this will impact on modes of service and methods of delivery. These principles should be considered in conjunction with the definition of public hospital services set out in Schedule A.

Torres Strait Islander people by co-developing and co-delivering culturally safe and secure health services;

- iii. developing a National Aboriginal and Torres Strait Islander Health Workforce Strategy; and
- iv. monitoring the impact of reforms through Aboriginal and Torres Strait Islander-led evaluation, including assessing the differential impact prior to implementation and during implementation, and making appropriate changes in partnership with Aboriginal and Torres Strait Islander organisations and communities;

h. identifying rural and remote areas where there is limited access to health and related services with a view to developing new models of care to address equity of access and improve outcomes; and

i. maintaining and improving population health.

10. Under this Addendum, the States will be responsible for:

a. system management of public hospitals, including:

- i. ensuring the legislative basis and governance arrangements for Local Hospital Networks are consistent with the objectives of this Addendum;
- ii. system-wide public hospital service planning and performance;
- iii. purchasing of public hospital services and monitoring delivery of services purchased;
- iv. planning, funding and delivering capital;
- v. planning, funding (with the Commonwealth) and delivering teaching, training and research;
- vi. managing Local Hospital Network performance; and
- vii. State-wide public hospital industrial relations functions, including negotiation of enterprise bargaining agreements and establishment of remuneration and employment terms and conditions to be adopted by Local Hospital Networks;

b. taking a lead role in managing public health activities; and

c. sole management of the relationship with Local Hospital Networks to ensure a single point of accountability in each State for public hospital performance, performance management and planning.

11. States affirm their commitment to the following:

a. providing public patients with access to all services provided to private patients in public hospitals;

b. ensuring that eligible persons who have elected to be treated as private patients have done so on the basis of informed financial consent;

c. providing and funding pharmaceuticals for public and private admitted patients, and for public non-admitted patients in public hospitals (except where Pharmaceutical Reform Arrangements are in place); and

- d. maintaining a Public Patients Hospital Charter and an independent complaints body and ensuring that people are aware of how to access these provisions.
12. In providing these services States will adhere to the Business Rules and other requirements set out in Schedule G.
13. Under this Addendum the Commonwealth will be responsible for:
 - a. maintaining the legislative basis and governance arrangements for the key independent national bodies (“national bodies”), comprising the Australian Commission on Safety and Quality in Health Care, Australian Institute of Health and Welfare, Independent Hospital Pricing Authority and Administrator of the National Health Funding Pool;
 - b. system management and support, policy and funding for GP and primary health care services including lead responsibility for Aboriginal and Torres Strait Islander Community Controlled Health Services (noting contributions of the States);
 - c. maintaining Primary Health Networks to promote coordinated GP and primary health care service delivery, and service integration over time;
 - d. working with each State and with PHNs on system-wide policy and State-wide planning for GP and primary health care;
 - e. supporting and regulating private health insurance to enable an effective private health sector and patient choice;
 - f. planning, funding, policy, management and delivery of the national aged care system;
 - g. continuing to focus on reforms in primary care that are designed to improve patient outcomes and reduce avoidable hospital admissions; and
 - h. functions transferred from Health Workforce Australia and the National Health Performance Authority when these organisations ceased operations on 6 August 2014 and 30 June 2016 respectively.
14. The Commonwealth affirms its commitment to the following:
 - a. funding the Medicare Benefits Schedule to ensure equitable and timely access to affordable primary health care and specialist medical services;
 - b. funding the Pharmaceutical Benefits Scheme to ensure timely and affordable access to safe, cost-effective and high quality medicines; and
 - c. affordable aged care services so that people needing this care can access it when required, regardless of geographic location.
15. The roles and responsibilities of the following national bodies and organisations under this Addendum are outlined in Schedule B:
 - a. Australian Commission on Safety and Quality in Health Care (ACSQHC);
 - b. Australian Institute for Health and Welfare (AIHW);
 - c. Independent Hospital Pricing Authority (IHPA); and

- d. Administrator of the National Health Funding Pool.
16. The Commonwealth, States and relevant national bodies will comply with applicable privacy legislation and principles during the implementation of this Addendum.

Implementation

17. This Addendum will be implemented through the following mechanisms:
- a. COAG will provide overall leadership, supported by COAG Councils (Health and Federal Financial Relations);
 - b. the COAG Health Council (CHC) will take responsibility for implementing this Addendum and further developing the six long-term reforms outlined in Schedule C, which will guide further reform of our national health system between 2020 and 2025;
 - c. the long-term reforms will need to take into account each State's particular circumstances. Implementation will allow individual States the flexibility to identify priority reforms and determine the scope and timing of activities that best suit local needs and support local health system diversity, readiness, and funder and provider capabilities;
 - d. CHC will be responsible for jointly developing multilateral implementation plans that will provide a broad framework and allow individual States the flexibility to identify priority reforms and determine the scope and timing of activities. Multilateral implementation plans will be considered by CHC as per clause 25 and, once approved, appended to this Addendum;
 - i. where appropriate, CHC will monitor multilateral implementation against the commitments in this Addendum and will escalate implementation issues to COAG when required; and
 - e. bilateral implementation plans for the long-term reforms will be developed where required by the relevant Commonwealth and State Ministers for Health and will take into account each States' particular circumstances:
 - i. relevant Ministers will monitor implementation against the commitments in the implementation plans.
18. In addition to the Medicare Principles outlined at clause 8, this Addendum affirms that the following implementation principles will underpin reform:
- a. all Australians should have equitable access to high quality health care, including those living in regional and remote areas;
 - b. all Australians should be able to access transparent, timely, meaningful and nationally comparable performance data and information on the hospital, GP and primary health care, aged care, disability and other health services systems; and
 - c. better coordination between the hospital, GP and primary health care, disability services and aged care systems is needed to ensure the health system meets the needs of communities.

19. Reforms will also:
- a. support and encourage integrated person-centred care;
 - b. incentivise local diversity and innovation in the health system as a crucial mechanism to achieve better outcomes;
 - c. promote positive health and wellbeing outcomes, social equity and the reduction of disadvantage, especially for Aboriginal and Torres Strait Islander people;
 - d. be evidence-based;
 - e. be evaluated to assess their impact on sustainability and patient outcomes;
 - f. consider the impacts of health workforce matters; and
 - g. engage providers, clinicians and patients when new approaches to care are developed.
20. To support implementation of the reforms, the Commonwealth provided \$100 million for a Health Innovation Fund for trials that support health prevention and the better use of health data. This funding is managed separately through a Project Agreement under the *Intergovernmental Agreement on Federal Financial Relations*.

Review

21. An external review of the Addendum commissioned by CHC will be undertaken at the midpoint of this Addendum, completed by December 2023. The review will assess if the Addendum is meeting its stated objectives and will consider the following matters:
- a. implementation of the long-term reforms and other governance and funding arrangements, and whether practice and policy in place delivers on the objectives of the Addendum;
 - b. the impact of external factors on the demand for hospital services and the flow-on effects on Addendum parameters;
 - c. for small rural and small regional hospitals, whether they continue to meet the block funding criteria determined by the IHPA;
 - d. whether any unintended consequences such as cost-shifting, perverse incentives or other inefficiencies that impact on patient outcomes have arisen, and the capacity of Parties to adopt and deliver innovative models, as a result of financial and other arrangements in this Addendum;
 - e. the performance of the national bodies against their functions, roles and responsibilities;
 - f. arrangements for approval and funding of high cost therapies offered in public hospitals, as outlined in Schedule C (clauses C11 and C12) and Appendix B; and
 - g. other matters as agreed by CHC or COAG.
22. Outcomes and learnings from the long-term health system reforms will be provided to CHC to inform future reforms and agreements.

23. The reviewer(s) and the terms of reference for the reviews are to be agreed by CHC. The review will be completed by December 2023, or at another time as agreed by CHC.

Process for amending the Agreement

24. Subject to clause 25, the NHRA may be amended at any time in writing with the agreement of all parties and with terms and conditions as agreed by all the parties.
25. The schedules to the NHRA may be amended or revoked, and new schedules added at any time, with the written agreement of the relevant portfolio Commonwealth Minister and all State and Territory Ministers for Health. Where an amendment has material funding implications for more than one State or Territory, agreement will be sought from First Ministers.

Dispute resolution

26. Any party may give notice to other parties of a dispute under the NHRA.
27. The Officials of relevant parties will attempt to resolve any dispute in the first instance. If a dispute cannot be resolved by Officials it may be escalated to the relevant Ministers, and if necessary, the relevant COAG Council.
28. If a dispute cannot be resolved by the relevant Ministers, it may be referred to COAG for consideration.

SCHEDULE A – SUSTAINABILITY OF FUNDING FOR PUBLIC HOSPITAL SERVICES

Preliminaries

- A1. This Schedule details public hospital funding arrangements between the Parties from 1 July 2020 to 30 June 2025. Arrangements for 1 July 2025 and beyond will be subject to negotiations between the Commonwealth and all jurisdictions.
- A2. The Parties agree the Commonwealth's contribution to health services in respect of this agreement will comprise funding relating to:
- a. hospital services provided to public patients in a range of settings and funded on an activity basis;
 - b. hospital services provided to eligible private patients in public hospitals;
 - c. hospital services provided to patients in public hospitals better funded through block grants, including relevant services in rural and regional communities;
 - d. teaching and training functions funded by States undertaken in public hospitals or other organisations (such as universities and training providers);
 - e. research funded by States undertaken in public hospitals; and
 - f. public health activities as determined by clause A15.
- A3. Commonwealth funding will be provided on the basis of activity through Activity Based Funding (ABF) except where it is neither practicable nor appropriate.
- A4. To provide financial predictability and sustainability as the national funding model evolves over time, funding arrangements will be implemented in accordance with the following principles:
- a. Information will be shared between jurisdictions and the national bodies on a timely and transparent basis to support development of the national funding model each year, implementation of services under the model, and final reconciliation of payments.
 - b. Data reporting and calculations of activity and funding should be accurate, transparent, accountable, and in accordance with the national funding model;
 - c. Activity and cost data will progressively be incorporated into the development of the national funding model;
 - d. Data reporting from jurisdictions and advice from national bodies should be provided as early as feasible to facilitate timely payments to local hospital networks and the determination of funding entitlements;
 - e. Where an error or unexpected outcome in activity or cost data has been identified, national bodies must consult with jurisdictions before taking any further action;
 - f. funding entitlements should be determined in a timely manner; and

- g. Parties, the Administrator and the IHPA will seek to resolve any disputes in a timely and transparent manner.
- A5. Growth in the Commonwealth’s total annual funding contribution to health services nationally under this Addendum as outlined at clauses A6 and A7 will not exceed 6.5 per cent a year (the national funding cap). Details on the operation of the national funding cap are outlined in clauses A56 to A58.
- A6. The Commonwealth will fund 45 per cent of efficient growth of ABF service delivery, subject to the operation of the national funding cap. Efficient growth consists of:
- a. the national efficient price for any changes in the volume of services provided; and
 - b. the growth in the national efficient price of providing the existing volume of services.
- A7. Where services or functions are more appropriately funded through block grants, the Commonwealth will fund 45 per cent of growth in the efficient cost of providing the services or performing the functions. The efficient cost will be determined annually by the IHPA, taking account of changes in utilisation, the scope of services provided and the cost of those services, to ensure the Local Hospital Network has the appropriate capacity to deliver the relevant block funded services and functions.
- A8. Commonwealth funding for public hospital services and functions under this Addendum is dependent on the provision of data requested by the national bodies outlined in this Addendum, including in relation to services to patients, information identifying the patient to whom the services were provided, the public or private status of the patient, the nature of the service and the facility providing the service.
- A9. The Commonwealth will also continue to support private health services through the Medicare Benefits Schedule (MBS), the Pharmaceutical Benefits Scheme (PBS) and Private Health Insurance Rebate. Subject to any exceptions specifically made in this Addendum or through variation to the Addendum, the Commonwealth will not fund patient services through this Addendum if the same service, or any part of the same service, is funded through any of these benefit programs or any other Commonwealth program.
- A10. The Parties agree that the following Commonwealth benefits constitute exceptions to the principle outlined at clause A9:
- a. MBS payments covered by a determination made by the Commonwealth Health Minister, or a delegate of the Minister, under s19(2) of the *Health Insurance Act 1973*;
 - b. MBS payments relating to services provided to eligible admitted private patients in public hospitals;
 - c. PBS benefits dispensed under Pharmaceutical Reform Arrangements agreed between the Commonwealth and the relevant State; and
 - d. the default bed day rate (or equivalent payment) supported through the private health insurance rebate.
- A11. Parties agree that from 1 July 2020, the Administrator should identify instances not covered by the exceptions outlined at clause A10 where services appear to have been paid under this Addendum and other Commonwealth programs, such as through the MBS

and PBS, and should refer these matters to the relevant Commonwealth officer in the first instance to support Commonwealth compliance activities through mechanisms outside this Addendum.

- a. The Administrator will determine the data matching business rules, with consultation of the Parties, to identify services funded by the Commonwealth through both this Addendum and other Commonwealth programs. Rationale for new business rules will be provided to Parties in the financial year preceding the introduction of the business rules.
- b. Data matching business rules will be reviewed as required by the Administrator. Upon the request of a party, the Administrator is to initiate a review of data matching business rules where material false positives or false negatives in matched data are demonstrated through Commonwealth compliance activities.
- c. Any data provided by the Administrator to the Commonwealth or a State or Territory for compliance activities will be de-identified matched data only and will include the relevant Medicare PIN. The relevant State or Territory will receive a copy of any matched data provided by the Administrator for verification purposes. Data provision will comply with applicable Commonwealth and State legislation including privacy legislation and principles.
- d. The relevant Commonwealth officer responsible for compliance will notify, consult and validate with the States and Territories and have regard to timely advice provided by affected States or Territories prior to undertaking any compliance activity relating to duplicate payments. State health departments will raise any validation or verification issues with the relevant Commonwealth officer responsible for compliance. This consultation will include providing relevant data back to the State or Territory.
- e. The Commonwealth will provide an annual report to the Administrator on the outcomes of compliance activities taken in relation to instances of duplicate payments.
- f. Commonwealth compliance activities, where possible, will be undertaken in a timely manner.

A12. Where instances of matched payments are identified and referred by the Commonwealth through compliance activities as outlined in clause A11, this will not impact Commonwealth national health reform funding, except when:

- a. amounts are identified where the services or any part of the service is funding through any Commonwealth program, that is not excepted through clause A10, and evidence is provided that reasonably demonstrates the amount is unable to be recovered through the process outlined in clause A11; and
- b. The relevant jurisdiction has been offered the opportunity outside of this agreement to address over-payments unable to be recovered through Commonwealth compliance activities. In this case, the Administrator will:
 - i. work with the relevant jurisdictions to identify additional mechanisms to prevent payment for patient services through this Addendum; and
 - ii. adjust Commonwealth NHR funding by the amount of the over-payment.

- c. the Administrator identifies that a matched payment is a false positive – for instance, a privately-funded hospital service has incorrectly been coded as a publicly-funded hospital service – the Administrator will not be required to directly adjust national health reform funding, but instead work with the relevant jurisdiction to correct the source data coding and reprocess the necessary calculations.

A13. The Parties agree to the principle that both the Commonwealth and States' funding models will be financially neutral with respect to all patients, regardless of whether patients elect to be private or public under the Addendum.

Public health activity funding

A14. The Commonwealth's commitment to public health will continue to grow by the former National Healthcare Specific Purpose Payment (SPP) growth factor.

- a. Payments for public health activities will be equal to the previous year's payment indexed by the former National Healthcare SPP growth factor.

A15. States will have full discretion over the application of public health funding to the outcomes set out in the National Healthcare Agreement 2012.

Public hospital funding arrangements

Scope of 'public hospital services'

A16. States will provide health and emergency services through the public hospital system, based on the Medicare principles set out at clause 8 and interpreted consistently with this section (clauses A17 to A32).

A17. Unless a State chooses to reach bilateral agreement with the Commonwealth under clauses A25 to A28 on this matter, the scope of public hospital services funded on an activity or block grant basis that are eligible for a Commonwealth funding contribution will include:

- a. all admitted services, including hospital in the home programs;
- b. all emergency department services provided by a recognised emergency department service; and
- c. other outpatient, mental health, subacute services and other services that could reasonably be considered a public hospital service in accordance with clauses A18 to A24.

A18. States will provide the IHPA with recommendations for other services that could reasonably be considered to be a public hospital service and which are not captured by clauses A17(a) and A17(b) that they consider should be eligible for a Commonwealth funding contribution.

A19. The IHPA will maintain and publish criteria for assessing services for inclusion on a general list of hospital services eligible for Commonwealth growth funding. The IHPA will consider each State's recommendations against the published criteria. If the IHPA considers the service should continue to be included or excluded, it will publicly release its determination and its rationale. In doing so, the IHPA will establish a general list of other services eligible for a Commonwealth funding contribution.

- A20. The COAG Health Council (CHC) may then request the IHPA to revise its determination of services included on or excluded from the general list. If the IHPA considers the service should continue to be included or excluded from the general list, the IHPA will publicly release its determination and the basis of that determination.
- A21. The IHPA may update the criteria and will update the general list based on any updated criteria, or as required to reflect innovations in clinical pathways. States may request the IHPA to update the list or to assess specific services against the criteria for inclusion on the general list.
- A22. In publishing criteria a primary consideration will be whether the service could reasonably be considered to be a public hospital service during 2010.
- A23. Services named on the general list will attract a Commonwealth funding contribution if provided by any Local Hospital Network as agreed between the State and that Local Hospital Network.
- A24. In addition to services on the general list (clause A17 of this Addendum) and services covered under a bilateral agreement (clause A25), grandfathered services in specific hospitals will also be eligible for Commonwealth funding. Grandfathered services in specific hospitals were made eligible under clause A17 of the 2011 National Health Reform Agreement (NHRA). In 2011, these services were agreed as eligible for Commonwealth funding for specific hospitals as they were purchased or provided by that hospital during 2010 (i.e. prior to the 2011 NHRA being agreed).
- A25. A State Health Minister and State Treasurer and the Commonwealth Health Minister and Commonwealth Treasurer may enter into a bilateral agreement to determine the scope of public hospital services funded on an activity or block grant basis that are eligible for a Commonwealth funding contribution.
- A26. The scope of public hospital services under a bilateral agreement will include:
- a. all admitted services, including hospital in the home programs;
 - b. all emergency department services provided by a recognised emergency department service;
 - c. all other services agreed between Ministers as being provided or purchased by a public hospital within the State during 2010; and
 - d. any other services, agreed between Ministers, provided or purchased by public hospitals in Australia.
- A27. Unless otherwise agreed by Ministers, the bilateral agreement will include lists of services which will be funded by the Commonwealth if provided by individual hospitals, and lists of services which will be funded by the Commonwealth if provided at any hospital in the State, or by types of hospital in the State.
- A28. A bilateral agreement will be reviewed every two years to reflect changing patterns of service delivery, and may be varied at any other time by mutual consent.
- A29. Public hospital services which attract a Commonwealth funding contribution will continue to be eligible for Commonwealth funding, even if they are subsequently provided outside a hospital in response to changes in clinical pathways.

- A30. States agree they will not change the management, delivery and funding of health and related services for the dominant purpose of making that service eligible for Commonwealth funding.
- A31. Should the IHPA identify anomalies in service volumes or other data which suggest that services have been transferred from the community to public hospitals, the IHPA will analyse those services and provide a report to the CHC. In performing the analysis the IHPA will consult with the relevant State, LHNs, PHN, and other stakeholders. Following an appropriate consultation period, the IHPA may determine that those particular services provided by that hospital have been transferred for the dominant purpose of making that service eligible for Commonwealth funding and those particular services provided by that hospital will not be eligible for Commonwealth funding.
- A32. The Commonwealth agrees that it will not change the management, delivery and funding of health and related services for the dominant purpose of directing services from the community into the hospital setting.

Activity based funding calculation

- A33. The Commonwealth will fund 45 per cent of the efficient growth of ABF Service delivery, subject to the operation of the national funding cap.
- A34. The Commonwealth's funding for all ABF Service Categories will be calculated individually for each State by summing:
- a. *previous year amount*— the Commonwealth's contribution rate for the relevant State in the previous year, multiplied by the volume of weighted ABF Services provided in the previous year, multiplied by the national efficient price in the previous year;
 - b. *price adjustment*—the volume of weighted services provided in the previous year, multiplied by the change in the national efficient price relative to the previous year, multiplied by 45 per cent; and
 - c. *volume adjustment*—the net change in volume of weighted services provided in the relevant State (relative to the volume of weighted ABF Services provided in the previous year), multiplied by the national efficient price, multiplied by 45 per cent.
- A35. Commonwealth funding will be distributed across all ABF Service Categories in each State at a single Commonwealth contribution rate:
- a. The single Commonwealth contribution rate in each State for all ABF service categories will be calculated by dividing the sum of clause A34 by the relevant year's total volume of weighted services multiplied by the national efficient price.
 - b. On implementation of the single Commonwealth contribution rate there will be an initial re-distribution of Commonwealth funding at the LHN level within each State but no aggregate change in the amount of Commonwealth funding that a State receives as a result of the introduction of the single Commonwealth contribution rate.
 - c. States will manage their funding levels such that there will be no impact on service level delivered at individual LHNs as a result of the introduction of a single Commonwealth contribution rate. Adjustments in service levels at individual LHNs and hospitals may still be made by the system managers for reasons other than the

introduction of the single Commonwealth contribution rate.

- A36. The Commonwealth’s contribution to funding public hospital services on an ABF basis (including efficient growth) will be calculated at the start of each financial year, and may be updated or revised during a year based on updated activity estimates, finalised reconciliation processes for prior years, and final activity data from jurisdictions and advice from the Administrator, including a final reconciliation of public hospital services.
- A37. All parties will participate in the development of parameters of the national funding model each year, through the IHPA process outlined in clauses B21 to B40, including efficient price, classifications and cost weights. This process will rely on transparent sharing of analysis, commissioned costing data, and shadow pricing and reporting (where appropriate) to support robust decision making.
- A38. The Administrator will provide the Commonwealth and States with a formal forecast of the Commonwealth’s funding contribution for each ABF service category before the start of each financial year. The formal forecast will be provided within 14 calendar days of receipt of both:
- a. service volume information for all Local Hospital Networks within a State, as provided in Service Agreements; and
 - b. the published national efficient price from the IHPA.
- A39. The Administrator will also provide informal estimates of the Commonwealth’s funding contribution to jurisdictions where requested.
- A40. The methodologies set out in clauses A34 to A35 relate to the calculation of preliminary payment entitlements. Final payment entitlements will be made after the reconciliation adjustments, as specified in clauses A63 to A76 have been completed.
- A41. The national activity based funding model will improve every year, informed by previous years’ cost and activity data. If the IHPA makes significant changes to the ABF classification systems or costing methodologies, the effect of such changes must be back-cast to the year prior to their implementation for the purpose of the calculations set out in clauses A34 and A35.
- A42. The IHPA will use transitional arrangements when developing new ABF classification systems or costing methodologies, including shadow pricing classification system changes and pricing based on a costing study, for two years or a period agreed with the Commonwealth and a majority of States to ensure robust data collection and reporting to accurately model the financial and counting impact of changes on the National Funding Model.
- a. Where a jurisdiction participates fully in the shadow pricing, including the provision of the best available data over the shadow period to support the implementation of the new ABF classification systems or costing methodologies, the Parties agree there will be no retrospective adjustments to the National Funding Model, excluding adjustments to Commonwealth contributions as a result of service volume reconciliations as set out in clauses A63, A65 and A73.
 - b. Business rules will be developed by the national bodies in consultation with Parties, addressing significance of changes, process and consultation around retrospective adjustments where appropriate.

- i. If the national bodies consider there is a potential need for a retrospective adjustment to the national funding model, national bodies will communicate, consult and collaborate with Parties. The national bodies will hold a consultation period of 45 days to allow Parties an opportunity to provide submissions on the matter.
- ii. Within 45 days following the jurisdiction 45-day consultation period, national bodies will prepare a report to the CHC, advising them of the national bodies' decision and the nature and circumstances of the recommended adjustment to the national funding model.
- iii. Once the report is provided to the CHC, the national bodies will incorporate the decision regarding the retrospective adjustment into the national funding model and provide parties with an updated report on funding entitlements from the national model.
- iv. When providing payment advice to the Commonwealth Treasurer following the six-month or annual reconciliation, the Administrator will include a section that notes any matters or concerns raised by State Ministers in the 45-day consultation period in the formation of that advice.

A43. ABF payments for eligible private patients must utilise the same ABF classification system as for public patients with the cost weights for private patients being calculated by excluding or reducing, as appropriate, the components of the service for that patient which are covered by:

- a. Commonwealth funding sources other than ABF;
- b. patient charges including:
 - v. prostheses; and
 - vi. accommodation and nursing related components/charge equivalent to the private health insurance default bed day rate (or other equivalent payment).

A44. To give effect to the principle agreed at clause A13, the IHPA will, in determining cost-weight price for private patients in any year, further adjust the price to the extent required to achieve overall payment parity between public and private patients in the relevant jurisdiction. These adjustments will take into account all hospital revenues, be subject to back-casting, and will apply from 1 July 2021, to ensure there are no funding incentives for hospitals to treat public or private patients differently.

Principles for determining the national efficient price

A45. The role of the national efficient price is to:

- a. form the basis for the calculation of the Commonwealth funding contribution; and
- b. provide a relevant price signal to States and Local Hospital Networks that will improve patient access to services, public hospital efficiency and funding effectiveness.

- A46. In determining the national efficient price, the IHPA must:
- a. have regard to ensuring reasonable access to public hospital services, clinical safety and quality, efficiency and effectiveness and financial sustainability of the public hospital system;
 - b. consider the actual cost of delivery of public hospital services in as wide a range of hospitals as practicable;
 - c. consider the expected changes in costs from year to year when making projections;
 - d. have regard to the need for continuity and predictability in prices;
 - e. have regard to any input costs funded through other Commonwealth programs, such as pharmaceuticals supplied under arrangements pursuant to section 100 of the *National Health Act 1953* and magnetic resonance imaging services funded through MBS bulk-billing arrangements; and
 - f. develop methods which allow consideration of reasonable and likely growth in cost inputs, so that the national efficient price can be projected into the future in a predictable and transparent manner.
- A47. In determining adjustments to the national efficient price, the IHPA must have regard to legitimate and unavoidable variations in wage costs and other inputs which affect the costs of service delivery, including:
- a. hospital type and size;
 - b. hospital location, including regional and remote status; and
 - c. patient complexity, including Indigenous status.
- A48. While these adjustments to the national efficient price should provide a relevant price signal to States and Local Hospital Networks, the IHPA should not seek to duplicate the work of the Commonwealth Grants Commission in determining relativities.

Block funded services funding

- A49. The Commonwealth will continue to provide funding to States for public hospital services or functions that are more appropriately funded through block funding, and will fund 45 per cent of the growth in the efficient cost of providing these services or performing these functions.
- A50. Payments will consist of the previous year's payment plus 45 per cent of the growth in the efficient cost of providing the services, adjusted for the addition or removal of block services as provided in clauses A52 to A55 (calculated in accordance with clause A7).
- A51. The IHPA, in consultation with jurisdictions, maintains block funding criteria and identifies whether hospital services and functions are eligible for block funding only or mixed ABF and block funding.
- A52. From 2013-14, the process for determining the discrete amounts for block funding is set out below:
- a. the IHPA, in consultation with jurisdictions, develops Block Funding Criteria and

identifies whether hospital services and functions are eligible for block funding only or mixed ABF and block funding

- b. States, during the consultation period, assess their hospital functions and services against the block funding criteria and, if necessary, provide advice to the IHPA on the potential impact of the criteria;
- c. the IHPA provides the block funding criteria to CHC for endorsement; and
- d. CHC considers the block funding criteria proposed by the IHPA and either:
 - vii. endorse the recommendation; or
 - viii. request the IHPA to refine the block funding criteria and bring it back to CHC.

A53. States provide advice to the IHPA on how their hospital services and functions meet the block funding criteria on an annual basis.

A54. On the basis of this advice, the IHPA will determine which hospital services and functions are eligible for Commonwealth funding on a block grant basis.

A55. Using the IHPA's determination the Administrator will then calculate the Commonwealth's funding contribution for block funded services and functions.

Funding cap

A56. Overall growth in Commonwealth funding will be capped at 6.5 per cent a year (the national funding cap). In doing so:

- a. A soft cap will be applied to the Commonwealth funding entitlement of each State throughout the relevant financial year;
- b. Any funding remaining under the national funding cap will be subject to proportionate redistribution as part of the annual reconciliation under clause A77;
- c. while the national funding cap applies to Commonwealth contributions to public hospital services in aggregate, any adjustments to funding as a result of the national funding cap will be applied to the Commonwealth funding contribution for ABF Services only;
- d. should the growth in Commonwealth funding under this Addendum not exceed 6.5 per cent at a national level, each State will receive its uncapped Commonwealth funding entitlement for that State; and
- e. no State will receive more than its uncapped Commonwealth funding entitlement for public hospital services delivered in a relevant financial year.

Interaction of pricing and funding for safety and quality reforms with the funding cap

A57. Adjustments to Commonwealth funding for an individual State resulting from sentinel events, hospital acquired complications (HACs) and avoidable hospital readmissions will be incorporated in the calculation and determination of the State's Commonwealth funding entitlement. The Commonwealth funding entitlement for a given year,

incorporating these adjustments, will form the base for the calculation of the State's soft cap in the following year.

- A58. Any downward adjustment to an individual State for sentinel events, HACs and avoidable hospital readmissions will not be deducted from the total available pool of Commonwealth funding under the national funding cap and will be available for redistribution under clause A56(b).

Calculating Commonwealth funding

Determining preliminary Commonwealth funding

- A59. Prior to the commencement of a relevant financial year covered by this Addendum, the Administrator will calculate a State's estimated Commonwealth funding entitlement as the lower of:
- a. 106.5 per cent of the State's most recent estimated Commonwealth funding entitlement for the State for the previous financial year, excluding any adjustments relating to prior year activities; or
 - b. That State's estimated uncapped Commonwealth funding entitlement for the relevant financial year.
- A60. Estimated Commonwealth funding entitlements can be updated during the course of the year as outlined in clause A143. Adjustments to payments remain subject to the soft cap.
- A61. The Administrator will provide information to jurisdictions about progress against the caps when the estimated Commonwealth funding is calculated or when the Commonwealth's funding contribution is adjusted.
- A62. For the avoidance of doubt, a State will not receive any Commonwealth funding in excess of the soft cap until the annual adjustment, at which time it may be entitled to payment of a redistribution amount.

Adjustments to the Commonwealth's contribution

- A63. There will be two levels of adjustments to the Commonwealth's funding contribution to Local Hospital Networks:
- a. a six-monthly adjustment, and
 - b. an annual adjustment.
- A64. Having regard to technological and operational improvements, States will consider moving to more frequent reconciliation and adjustment arrangements. Jurisdictions may agree to increase the frequency of reconciliation and adjustments through correspondence between health ministers.

Six-monthly adjustment

- A65. The six-monthly adjustment will be conducted in arrears and will arise from the reconciliation conducted to determine the actual volume for services provided by the Local Hospital Networks for Commonwealth payment purposes. Any State may request that the reconciliation be conducted more frequently.

- A66. States will provide to the Administrator, within three months (with a preference to reducing the period over time) of the end of December, gross volume and patient identified data regarding actual services delivered for those public hospital functions funded by the Commonwealth on an activity basis to enable the six monthly adjustment to be undertaken in accordance with clause A65.
- A67. Any variation to Commonwealth payments arising from the six-monthly adjustments will be spread equally across payments for a subsequent quarter, or an appropriate period as determined by the Administrator.
- A68. Variation to the Commonwealth payments arising from the six-monthly adjustments may be deferred until the annual adjustment if the relevant State/Territory health minister and the Commonwealth Minister for Health agree.
- A69. The Administrator will provide timely advice to the Commonwealth Treasurer, contingent on the data, preliminary and revised calculations, reports and advice being provided in a timely manner and on jurisdictions being able to resolve issues in trilateral discussions.
- A70. At the point of six-month reconciliation, and based on the data submitted by States, national bodies will inform Parties if there is any indication of an unexpected outcome from a change to the national funding model where transitional arrangements were not used.

Annual Adjustment

- A71. The Parties agree to seek to finalise the annual adjustment activities ahead of the Commonwealth Budget. To support this commitment, all parties agree to the principles outlined in clause A4.
- A72. The Administrator will undertake annual reconciliation for each State following the receipt of required data from all States. The Administrator will not finalise an annual reconciliation for individual States that have provided the required data until all other States have provided required data.
- A73. The annual adjustment will be conducted in arrears once actual volumes have been validated by the service volume reconciliations to ensure the Commonwealth meets its agreed contribution to the funding of efficient growth.
- A74. In order to attract a Commonwealth funding contribution for each public hospital service provided on an activity basis, States must ensure that all data relevant to the funding of that service has been provided.
- A75. In undertaking the annual reconciliation the Administrator will calculate any sentinel event or safety and quality adjustment that applies to a State in a relevant financial year.
- A76. The issues the Administrator should have regard to as part of the annual reconciliation process will include, but not be limited to, the reconciliation of general transcription errors, including the incorrect coding of services provided and duplicate entries, and the exclusion of services paid for by the Commonwealth via other funding streams, the exclusion of services for which data has not been provided (in either the year being reconciled or the prior year), and the exclusion of services with incomplete data (in either the year being reconciled or the prior year).

Annual Adjustment – Application of the Caps

- A77. Following the completion of the annual reconciliation, the Administrator will calculate the final Commonwealth funding entitlements for a State for that year as follows:
- a. Where a State has an uncapped Commonwealth funding entitlement less than or equal to the soft cap, then the State’s Commonwealth funding entitlement will equal its uncapped Commonwealth funding entitlement.
 - b. Where a State has an uncapped Commonwealth funding entitlement that is more than its soft cap and the sum of all of the States uncapped Commonwealth funding entitlements is less than or equal to the national funding cap, then the State’s Commonwealth funding entitlement will equal its uncapped Commonwealth funding entitlement.
 - c. Where a State has an uncapped Commonwealth funding entitlement that is more than its soft cap, and the sum of all of the States’ uncapped Commonwealth funding entitlements is more than the national funding cap, then the State’s Commonwealth funding entitlement is its soft cap, plus a redistribution amount, calculated by the following formula:

National funding available for redistribution	X	$\frac{\text{Individual State's funding shortfall}}{\text{National funding shortfall}}$
Where:		
<ol style="list-style-type: none"> i. The ‘national funding available for redistribution’ is the sum of the difference of each State’s uncapped Commonwealth funding entitlement and the soft cap where the State’s uncapped Commonwealth funding entitlement is less than the soft cap. ii. The ‘individual State’s funding shortfall’ is the amount by which its uncapped Commonwealth funding entitlement exceeds the soft cap. iii. The ‘national funding shortfall’ is the sum of all the ‘individual State’s funding shortfall’. 		

Annual Adjustment – Certainty of reconciliation

- A78. The Parties agree that the final Commonwealth funding entitlement of a State for a year, once decided by the Commonwealth Treasurer’s determination, will not be adjusted under the national funding model.
- a. This does not restrict the Administrator’s ability to make adjustments at any time if Auditors General or other relevant bodies find fraud or other illegal or dishonest activity.
 - b. Notification of fraud or other illegal or dishonest activity for the purpose of clause A78(a) must be issued in writing by a senior officer of the relevant health department and provide full particulars of the nature and extent of the issue and the likely impact on the Commonwealth funding. A Statement of Assurance must accompany any further submission of data by a State to remedy an identified issue.

- c. If an issue is identified or raised with the Administrator through clause A78(a), the Administrator will notify the Commonwealth and States of the issue and how the Administrator plans to resolve the issue.
- d. The Administrator will calculate the impact on the Commonwealth funding entitlement of each State, including any applicable redistribution amounts, following the assessment of an A78(a) issue by the Administrator.
- e. The Administrator will assess and advise whether adjustments to the Commonwealth funding entitlement of the States should be made. Following resolution of an A78(a) issue, the Administrator will notify the Commonwealth and States of the outcome.

Annual Adjustment – process and timeframes for advice

- A79. States will provide to the Administrator, within at least three months (with a preference to reducing the period over time) of the end of each reconciliation period, gross volume and patient identified data regarding annual actual services delivered for those public hospital functions funded by the Commonwealth on an activity basis to enable reconciliations to be undertaken in accordance with clause A73.
- A80. The Administrator will provide all Parties with a preliminary report on funding entitlements and reconciliation adjustments no later than 30 November following the end of the reconciliation period financial year.
- A81. The Administrator will facilitate a discussion between each of the States and the Commonwealth to resolve any issues or disputes with the application of the national funding model to the calculation of funding entitlements and reconciliation adjustments up to 28 February following the end of the reconciliation period financial year. The Administrator may release revised reconciliation advice following this consultation.
- A82. If the Administrator is not able to resolve the issue within the remit of the Administrator's functions, the issue may be dealt with under the resolution clauses B16 to B20.
- A83. The Administrator will provide advice on the annual entitlements and adjustments to the Commonwealth Treasurer by the end of March, contingent on the data, reports and advice being provided in a timely manner. Jurisdictions will be provided a copy of that advice contemporaneously.

Annual Adjustment – determination and payment

- A84. The Commonwealth Treasurer will aim to finalise the determination on funding within one month, or as soon as practicable after receiving the Administrator's final advice.
- A85. Where the Commonwealth Treasurer's Determination of funding differs from the Administrator's final advice on funding entitlements for a reconciliation period the Commonwealth will publish a Statement of Difference at the time of the Determination outlining the new final entitlement amounts and the reason for the dissimilarity between the Determination and the Administrator's final advice.
- A86. In addition to the Commonwealth's statement above, the Administrator will provide parties with detail on the funding and National Weighted Activity Units related to the Commonwealth Treasurer's Determination, by detailed classification at the local hospital network. The Administrator will also publish this information on its website.

- A87. The determination by the Commonwealth Treasurer will be reflected in Commonwealth payments into the National Health Funding Pool in the next practicable monthly payment run.
- A88. Any variation to Commonwealth payments arising from the adjustment will be spread equally across payments for a subsequent quarter, or appropriate period where the Administrator deems necessary.

State and Territory funding arrangements

Determining the State Funding Contribution

- A89. The State contribution to the funding of public hospital services and functions will be calculated on an activity basis or provided as block funding in accordance with the process outlined above in the eligibility clauses A17 to A24.
- A90. States will determine the amount they pay for public hospital services and functions and the mix of those services and functions, and will meet the balance of the cost of delivering public hospital services and functions over and above the Commonwealth contribution.
- A91. Variations in the State funding contribution in respect of individual Local Hospital Networks for services and functions funded under this Addendum may be required to enable States to play their role of system managers of the public hospital system. States may use their own proportion of public hospital funding, or Commonwealth block funding paid to the States (other than funding for teaching, training or research), to retain some funding from Local Hospital Networks and use it to adjust service levels across the State, and to respond to unforeseen events and other contingencies as set out at clause A141.
- A92. State funding paid on an activity basis to Local Hospital Networks will be based for each service category on:
- a. the price set by that State (which will be reported in Service Agreements); and
 - b. the volume of weighted services as set out in Service Agreements.
- A93. It is expected that these arrangements will create incentives for Local Hospital Network efficiency. If a Local Hospital Network is able to operate more efficiently than the level of funding set by the State under the Local Hospital Network Service Agreement, the Local Hospital Network will be able to retain and reinvest the benefits accruing from efficiency in service delivery and in accordance with State policy and practice, as guided by the Service Agreement.
- A94. There will be no requirement for Local Hospital Networks to be paid the full national efficient price if the State considers that a lower payment is appropriate, having regard to the actual cost of service delivery and the Local Hospital Network's capacity to generate revenue from other sources.
- A95. To improve transparency and national comparability, States will provide to the Administrator and the IHPA:
- a. the price per weighted service they determine;
 - b. the volume of weighted services as set out by the national ABF classification scheme; and

- c. any variations to service loadings from the national ABF classification schemes.

Innovative Models of Care

- A96. It is the intention of the Parties that this Addendum facilitate exploration and trial of new and innovative approaches to public hospital funding, to improve efficiency and health outcomes.
- A97. The Commonwealth and a State(s) may agree to trial an innovative model of care for a fixed period of time through a bilateral agreement in accordance with Schedule C.
- A98. During a trial, a State would need to continue to acquit and report Commonwealth funding on an ABF or a block funded basis as appropriate, as provided for in this Addendum.
- A99. A Party can seek to trial innovative models of care, either:
 - a. as an activity based funded service with shadow pricing, reporting, and appropriate interim block funding arrangements for the trial period; or
 - b. as a block funded service, with reporting against the national model and program outcomes for the innovative funding model.
- A100. The outcomes of any trials of an innovative model of care would be provided to IHPA and the CHC. If Commonwealth and the relevant State(s) agree through the CHC, the IHPA will be advised of any decision to continue an innovative funding model. The IHPA will work with jurisdictions to facilitate the continuation of the model for a further period of trial or translation as a permanent model of care.
- A101. To support the trialling of innovative models of care the IHPA will:
 - a. develop a funding methodology for CHC approval by April 2021 that does not penalise States undertaking trials, or other parties to the Addendum. Application of this methodology in individual instances would be agreed by the relevant State(s) and the Commonwealth.
 - b. advise the Commonwealth and State(s) on the application of the methodology at (a) above and on any issues it foresees with the proposed trial, with regard to the national funding model.
 - c. provide advice to CHC on any proposal to translate an innovative funding model to the national funding model. This advice would inform CHC consideration on the matter.

Maintenance of effort

- A102. Parties agree to, at a minimum for the period of 2020-21 to 2024-25, maintain 2018-19 levels of funding for Public Hospital Services through the National Health Funding Pool, while having regard to new, appropriate models of care that may change the setting in which care is delivered.
- A103. The Administrator and AIHW will work with all Parties towards consistency and transparency of reporting to enable the Administrator to provide an annual report on maintenance of effort.

Provision of service level data and Service Agreements to the Administrator

- A104. Parties agree to improve the accuracy of NWAU estimates by allowing States to provide non-binding advice to the Commonwealth and the Administrator on expected services to be delivered, without the need to vary Service Agreements. The provision of this advice will not affect Commonwealth payments or cash flows to Local Hospital Networks (LHNs).
- A105. States will provide the Administrator with an estimate of weighted service volumes for a financial year as an aggregated total, which the Administrator will share with the Commonwealth, by the end of March in the preceding financial year.
- A106. States will provide the Administrator with confirmed aggregate weighted service volumes for a financial year, and estimated service volumes for each Local Hospital Network, by the end of May in the preceding financial year. The estimated weighted service volumes provided are to incorporate the level of disaggregation required by the Administrator in order to calculate the Commonwealth's funding contribution.
- A107. States will provide the Administrator with a copy of the Service Agreement for each Local Hospital Network once agreed between the State and the Local Hospital Network.
- A108. States will provide to the Administrator all State-reported in-scope expenditure at the Local Hospital Network level, including distribution of block funding from State managed funds.
- A109. To improve transparency, the reporting of the distribution of block funding from State managed funds at the Local Hospital Network level will separately detail the distribution of all Commonwealth block funding received by the State.

Cross-border arrangements

- A110. The treatment of cross-border hospital activities will be governed by the following principles:
- a. the State where a patient would normally reside should meet the cost of services (exclusive of the Commonwealth contribution arrangements discussed below) where its resident receives hospital treatment in another jurisdiction;
 - b. in instances where quality and safety penalties have been applied the State funding contributions will not increase to offset the reduced Commonwealth contribution for those services;
 - c. where a patient is transferred from their resident State to another jurisdiction for treatment the referring hospital is to meet the costs of medical transfers;
 - d. where a patient is transferred from another jurisdiction to their resident State for treatment the resident State is to meet the costs of medical transfers;
 - e. patient out-of-pocket costs related to discharge home from the provider State will be met through the patient's resident State travel assistance scheme where appropriate;
 - f. payment flows (both Commonwealth and State) associated with cross-border services should be administratively simple, and where possible consistent with the broader arrangements of this Addendum;
 - g. the cross-border payment arrangements should not result in any unintended GST

distribution effects;

- h. States recognise their commitment under the Medicare principles which require medical treatment to be prioritised on the basis of clinical need;
- i. both States should have the opportunity to engage in the setting of cross-border activity estimates and variations, in the context that this would not involve shifting of risk; and
- j. there should be transparency of cross-border flows.

Funding Flows

- A111. Commonwealth funding contributions will flow to the provider jurisdiction through the National Health Funding Pool. Steps will be taken to prevent Commonwealth payments made in accordance with these arrangements being subject to equalisation by the Commonwealth Grants Commission to avoid financially disadvantaging one State.
- A112. The Administrator will release actual cross-border activity data and Commonwealth contribution advice to the States within one month of finalising reconciliation to support bilateral cross-border reconciliations.
 - a. Administrator cross-border data made available to States and Territories will include Commonwealth percentage funding rates, Commonwealth funding contributions, and activity flows for activity-based funded and block funded hospitals.
- A113. Funding contributions by the resident State will be made to the provider State through the National Health Funding Pool, either:
 - a. on a regular basis throughout the year, reflecting activity estimates between the parties as scheduled through a Cross-border Agreement with subsequent reconciliation for activity; or
 - b. within six-months of receiving activity data from the Administrator finalising reconciliation and releasing activity data and Commonwealth contribution advice to the States (subject to arrangements between jurisdictions outlined in cross-border agreements).

Agreement around Activity

- A114. Cross-border Agreements will be developed between jurisdictions which experience significant cross-border flows, where one of the parties requests a Cross-border Agreement be in place.
- A115. States and Territories will review the national cross-border agreement template for endorsement by the Australian Health Ministers' Advisory Council (AHMAC) before April 2021 (noting that final cross-border agreements will be adjusted to take into account bilateral arrangements).
- A116. States and Territories will share estimated cross-border activity levels by 31 May for the coming financial year, to provide capacity for both parties to contribute to service delivery planning.
- A117. Cross-border Agreement disputes will be dealt with as part of the IHPA dispute resolution process.

A118. States and Territories will endeavour to finalise cross-border agreements by 31 May for the coming financial year.

Pricing

A119. Prices will be set at the national efficient price, as determined by the IHPA including adjustments for any loadings for the provider Local Hospital Network, unless otherwise agreed by the parties to the cross-border Agreement.

A120. Outlier patients requiring Highly-Specialised Services, not appropriately defined within the existing classification system, and where costs are not reasonably funded by the pricing of the next closest Diagnosis-Related Group, should be flagged in advance by the provider State to the resident State when possible to simplify reimbursement through cross-border arrangements.

- a. Highly-Specialised Services are defined by procedures that do not appropriately fit within a Diagnosis-Related Group classification, are provided at limited sites nationally, have low volume (generally less than 200 separations nationally), and cost significantly more than the funding provided based on pricing in the relevant year's National Efficient Price Determination
- b. Parties recognise that referrals are often made and agreed to at the clinician level at short notice in the interests of patient well-being. Where it is not possible for States to notify the resident State prior to treatment commencing, the treating State will endeavour to communicate and notify as soon as possible thereafter.
- c. Highly-Specialised Services will be excluded from cross-border reconciliations and subject to separate reimbursement by agreement between jurisdictions. Payments will not be made directly to the treating hospital by the resident State.
- d. States and Territories will designate a point of contact to action this clause. If a point of contact is no longer reachable or appropriate the default point of contact will be the jurisdiction's representative for the Administrator's Jurisdictional Advisory Committee.

A121. Capital will not be explicitly priced by the IHPA, however cross-border dispute resolution can include disputes in relation to the resident State's contribution to capital funding.

A122. The Commonwealth and States agree that they will accept and implement any recommendations made by the IHPA in relation to cross-border disputes under clause B24(k), and will provide additional funding to the other party in a dispute if this is required.

A123. If, three months after the IHPA has made a recommendation under clause B24(k), a State has not complied with any element of the recommendation requiring it to make payments to another State, the IHPA may at the request of the second State, advise the Commonwealth Treasurer of any adjustments to Commonwealth payments to the National Health Funding Pool required to give effect to the recommendation. States agree to fund from their own resources any reduction in Commonwealth payments to Local Hospital Networks.

Cost-shifting

A124. Jurisdictions may make submissions to the IHPA requesting it advise whether a party to

this Addendum has shifted costs onto another jurisdiction in a manner which is contrary to the intent of this Addendum.

- A125. The IHPA will provide the other party a copy of the submission and request a responding submission to be provided within 60 days. The IHPA will provide this response to the initiating jurisdiction.
- A126. The IHPA will then assess the submissions, consult further with affected jurisdictions and publicly release its assessment should it consider that cost-shifting has occurred.

Funding Pool payments

- A127. A single National Health Funding Pool will be maintained, comprising a Reserve Bank of Australia account for each State, for the purposes of receiving all Commonwealth and activity-based State public hospital funding.
- A128. The existence and operation of the Pool in relation to a particular State owes its authority to the enabling legislation passed by both the Commonwealth Parliament and the Parliament of that State.
- A129. Pool accounts will be audited, have complete transparency in reporting and accounting, and will meet all other transparency requirements established by COAG and relevant legislation.
- A130. There will be complete transparency and line-of-sight of respective contributions into and out of Pool accounts to Local Hospital Networks, discrete State managed funds, or to State health departments in relation to public health funding and any top-up funding, and of the basis on which the contributions are calculated. There will also be complete transparency and line-of-sight of respective contributions out of State managed funds to Local Hospital Networks.
- A131. Additional streams of funding may be incorporated into the National Health Funding Pool, once agreed by COAG, with the aim of optimising transparency and efficiency of all public hospital funding flows.
- A132. Commonwealth payments into the pool will be made monthly, calculated as 1/12th of the estimated annual payment. Commonwealth payments will be made into the National Health Funding Pool in accordance with Schedule D of the IGA FFR.
- A133. States will determine when State payments are made into the Pool and State managed funds.

Payments from the National Health Funding Pool and State Managed Funds

- A134. Payments will be made from the Pool accounts to Local Hospital Networks and State managed funds in accordance with Service Agreements to be agreed between the States and Local Hospital Networks.
- A135. Payments may be made out of the Pool accounts directly to other parties on the behalf of Local Hospital Networks for the provision of shared services, as detailed in a Service Agreement between a Local Hospital Network and a State. Any subsequent reference to payments made to Local Hospital Networks in this Addendum includes a reference to payments made to other parties for the provision of shared services.
- A136. States and Local Hospital Networks can agree amendments to Service Agreements in

order to adjust service volumes or pricing to take account of such matters as changing health needs, variations in actual service delivery and hospital performance.

- A137. States, as the system manager of public hospitals, can determine the frequency of alterations to Service Agreements. States will notify the Administrator, within 28 calendar days, of agreed variations to a Service Agreement.
- A138. The payment arrangements for Commonwealth funding are as follows:
- a. ABF will flow directly to Local Hospital Networks through Pool accounts;
 - b. funding for block grants will flow through Pool accounts to State managed funds and from there to Local Hospital Networks;
 - c. funding for teaching, training and research will flow through Pool accounts to State managed funds and from there to Local Hospital Networks or other organisations (such as universities and training providers) depending upon the specific funding arrangements established in each State for the provision of those services; and
 - d. public health funding and any top-up funding will flow through Pool accounts to State health departments.
- A139. The payment arrangements for States' funding are as follows:
- a. ABF will flow directly through Pool accounts to Local Hospital Networks;
 - b. funding for block grants will flow through State managed funds to Local Hospital Networks; and
 - c. funding for teaching, training and research will flow through State managed funds to Local Hospital Networks or other organisations (such as universities and training providers) depending upon the specific funding arrangements established in each State for the provision of those services.
- A140. States will direct the disbursement of State funding from Pool accounts and State managed funds to Local Hospital Networks. The frequency of State payments to Local Hospital Networks will be in accordance with Service Agreements, agreed between the State and Local Hospital Network.
- A141. States are able to make exceptional payments through a Pool account or a State managed fund to Local Hospital Networks at any time.
- A142. States will direct the timing of Commonwealth payments from Pool accounts and State managed funds to Local Hospital Networks. However, States will not redirect Commonwealth payments:
- a. between Local Hospital Networks;
 - b. between funding streams (for example from ABF to block funding); or
 - c. to adjust the payment calculations underpinning the Commonwealth's funding.
- A143. States can cause Commonwealth payments to be modified by changing the relevant Service Agreements, if they wish, and by notifying the Administrator of an agreed

variation, in accordance with clause A137. These changes to Commonwealth funding will take effect in the next payment period.

- A144. To ensure that payments flowing out of the National Health Funding Pool are correct, no payment will flow from the Pool until the respective State has validated the schedule of payment and instructed the Administrator to make payment on the State's behalf.

Administrator of the National Health Funding Pool

- A145. The Administrator will calculate and advise the Commonwealth Treasurer of the monthly Commonwealth payments into the National Health Funding Pool. The States, in consultation with the National Health Funding Body, will continue to determine when State payments are made into the National Health Funding Pool and State managed funds.

- A146. The Administrator will apply the national funding cap and soft cap in calculating and delivering advice to the Commonwealth Treasurer in respect of the Commonwealth contribution to the National Health Funding Pool under the Addendum.

Reporting by the Administrator

- A147. The Administrator will provide a monthly report to the Commonwealth and States detailing the following at the Local Hospital Network level:
- a. the basis for the amount of Commonwealth funding flowing into Pool accounts;
 - b. the basis for the amount of State funding flowing into Pool accounts and State managed funds;
 - c. the number of public hospital services funded and provided as a running yearly total, in accordance with the national system of ABF; and
 - d. the delivery of other public hospital functions funded by the National Health Funding Pool and State managed funds as a running yearly total.
- A148. The same transparency arrangements that apply to the National Health Funding Pool will also apply to the State managed funds. States will provide data to the Administrator in accordance with the timeframe and format specified in the Administrator's data plan on the:
- a. flow of Commonwealth and State funds into and out of State managed funds; and
 - b. provision of public hospital services by Local Hospital Networks.
- A149. All reports produced by the Administrator will be publicly available.
- A150. Reporting undertaken by the Administrator will be structured to avoid duplication and overlap with the reporting undertaken by other bodies detailed in this Addendum.
- A151. Financial audits will be undertaken at least annually, at the completion of each financial year. Performance audits may be undertaken at any time.

- A152. Further to clause B81, in publishing information on compliance with data requirements, the Administrator will publish additional information including:
- a. dates on which each State provided data under clauses A66, A79, A105 and A106;
 - b. dates on which resubmissions of data were provided; and
 - c. dates on which Reconciliation was completed.

A153. The Administrator will ensure that determinations, and final activity and entitlements at the Local Hospital Network level, are publicly available for all years that the Addendum has been in operation.

Data quality and integrity

A154. Consistent with clause B76, jurisdictions will work together and with the national bodies to share and work towards best practice approaches to data quality and integrity.

Data Conditional Payment

A155. The Parties agree to continue the operation of a Data Conditional Payment (DCP) to encourage the prompt provision of the required data in order to facilitate timely Reconciliation and payment of any Redistribution Amounts due to States. The DCP will be a variation to the timing of payments under clause A132.

A156. If a State has not provided the Required Data for annual Reconciliation within three months of the end of the Reconciliation period the Administrator will, in calculating the Commonwealth contribution to the National Health Funding Pool for that State, advise the Commonwealth Treasurer to defer payment of 10 per cent of the amount payable to the State in November of the current year, until the Required Data is provided.

A157. If a State has not provided the Required Data for the annual Reconciliation within four months of the end of the Reconciliation period, the Administrator will, in calculating the Commonwealth contribution to the National Health Funding Pool for that State, advise the Commonwealth Treasurer to defer a further 15 per cent of the amount payable to the States in December of the current year, until the Required Data is provided.

A158. If an amount is deferred under clauses A156 or A157:

- a. the Administrator will advise the affected State of that fact; and
- b. any funds deferred will be paid in the next available monthly payment once the Required Data is provided.

A159. The Administrator will be responsible for applying the DCP and providing advice to jurisdictions as to its operation.

Reforms to decrease avoidable demand for public hospital services

A160. All Parties commit to implement reforms to improve outcomes for patients and decrease potentially avoidable demand for Public Hospital Services. This Part does not preclude pursuing other reforms to improve health outcomes and the efficiency of public hospitals in the future.

Incorporating quality and safety into hospital pricing and funding

- A161. Australia’s public hospitals deliver safe, high quality care but there remain opportunities for improvement. Reducing Sentinel Events, Hospital Acquired Complications (HACs) and Avoidable Readmissions will deliver better health outcomes, improve patient safety and support greater efficiency in the health system.
- A162. The Parties agree to continue reforms integrating safety and quality into the pricing and funding of Public Hospital Services in a way that:
- a. Improves patient outcomes;
 - b. Provides an incentive in the system to provide the right care, in the right place, at the right time;
 - c. Decreases avoidable demand for public hospital services; and
 - d. Signals to the health system the need to reduce instances of preventable poor quality patient care, while supporting improvements in data quality and information available to inform clinicians’ practice.
- A163. The Parties agree that pricing and funding adjustments for Sentinel Events, HACs and Avoidable Readmissions are part of a multifaceted, system-wide approach to safety and quality, which includes national standards, accreditation, and workforce development.
- a. The Parties recognise that safety and quality reforms are connected to wider health system reforms, particularly better coordinated care.
 - b. Together, these reforms will establish better system capability and culture to support the reduction of ineffective interventions and procedures known to be harmful in the longer term, beyond the immediate focus on Sentinel Events, HACs and Avoidable Readmissions.
- A164. For the avoidance of doubt, the Parties agree that Sentinel Events and Safety and Quality adjustments will be subject to back-casting under clause A41.

Sentinel events

- A165. The Parties agree that any episode of care that gives rise to a Sentinel Event will not be funded by the Commonwealth. The episode will be assigned a NWAU of zero.
- A166. States agree to apply a digital flag to any episode that includes a Sentinel Event and report this information to IHPA as part of data submissions under clauses A8 and B72 of this Addendum.

Hospital Acquired Complications

- A167. The Parties agree to continue to develop, in consultation with the ACSQHC, IHPA and the Administrator, a comprehensive pricing and funding model, that:
- a. Is rigorous, fair and transparent;
 - b. Does not incentivise under reporting, or adversely affect service delivery; and
 - c. Is significant enough to be an effective overall price signal from the Commonwealth

through to hospitals.

A168. To confirm the suitability of the complications on the HAC List in a pricing and funding model, the Parties will use the following four criteria:

a. Preventability:

- i. Clinical evidence is available to demonstrate that the HAC can be prevented with 'best clinical practice';
- ii. Evidence supports that individual LHNs (including single campus and specialist hospitals) are able to prevent the HAC and that the causes of such condition are within the control of the hospital;
- iii. The strength of external influences (e.g. patient factors) does not unduly impact the LHN's ability to avoid the HAC;
- iv. There is sufficient evidence to inform / instruct health services on how to avoid the HAC; and
- v. The development of the HAC measure has been subjected to valid construction. The inferences used to test the HAC have been made on the basis of appropriate measurements and occurrences can be easily defined, identified and adequately measured.

b. Impact:

- i. The introduction of the financial adjustments related to specific HAC will result in a significant enough change to funding at the hospital level to drive the intended clinical practice outcome, impact appropriately on patients and improve patient outcomes;
- ii. Unintended consequences as a result of practice or reporting changes are not likely to be to the detriment of individual and hospital-wide patient care; and
- iii. The rate of HAC by LHN (giving consideration to size and type of hospital) is sufficient to warrant introduction of a financial mechanism.

c. Feasibility:

- iv. Reporting mechanisms are sufficiently robust to ensure that any benefit obtained through under reporting is minimised;
- v. Sufficient information is available to other bodies, such as the National Health Funding Body, to monitor the impact of the financial mechanism on the prevalence of the HAC across the system;
- vi. Sufficient processes, systems, policies, feedback mechanisms and data collections are in place to support the reduction of the HAC across each LHN; and
- vii. The introduction of the HAC is prioritised to obtain maximum benefit.

d. Equity:

- i. The application of pricing and funding adjustment does not unfairly impact any one, or group, of providers as a result of characteristics beyond their control (e.g. size, location and type of hospital).

Avoidable Hospital Readmissions

- A169. The Parties recognise that there is variation in the way States currently define Avoidable Hospital Readmissions, presenting challenges to the immediate development of a pricing and funding model.
- A170. The ACSQHC will develop and maintain a list of clinical conditions, subject to AHMAC approval, that arise from complications of the management of the original condition, which can be considered Avoidable Hospital Readmissions, including identifying suitable condition-specific timeframes for each of the identified conditions.
- A171. The Parties agree that the IHPA will consult with and have regard to the advice of the ACSQHC and Parties in the development of a pricing model for Avoidable Hospital Readmissions, for implementation by 1 July 2021, following approval from the CHC.

Evaluation

- A172. The Parties agree that IHPA will provide advice to CHC by April 2021 evaluating these reforms against the principles outlined at clause A168, to support COAG consideration of new or additional reforms from 1 July 2021.
- A173. In addition, IHPA, the ACSQHC and the Administrator will provide advice to CHC by April 2021 providing options for the further development of safety and quality-related reforms, including examining ways that avoidable and preventable hospitalisations can be reduced through changes to the Addendum.
- A174. IHPA will work with the Parties, national bodies and other related stakeholders to establish a framework to evaluate the reforms against the following principles:
- a. Reforms are evidence based and prioritise patient outcomes:
 - i. Better patient health outcomes underpin the design and implementation of reform;
 - ii. The design and implementation of pricing and funding models for safety and quality, and reducing avoidable readmissions, are based on robust evidence;
 - iii. Adjustments are based on evidence of a causal link to the condition or complication, and are commensurate with the additional care required as a result of the complication;
 - iv. Adjustments relate to conditions or complications which clinicians and other health professionals are reasonably able to take action to reduce their incidence or impact; and
 - v. Pricing and funding models add to the evidence base for strategies to address safety and quality, with robust monitoring of the effectiveness of implementation and ultimately, their impact on patient outcomes.

- b. Reforms are consistent with whole-of-system efforts to deliver improved patient health outcomes:
 - i. Adjustments complement existing national and State measures to improve patient health outcomes and reduce avoidable hospital demand, including but not limited to the ACSQHC’s goals, national benchmarking, data reporting, and accreditation;
 - ii. The design and implementation of pricing and funding models acknowledge that mechanisms other than pricing and funding have a role in achieving the reform intention and that complementarity of all mechanisms is desirable; and
 - iii. The design and implementation of pricing and funding models should not compromise State system financial sustainability and quality and should therefore be focused on system level performance improvement.
- c. Reforms are transparent and comparable:
 - i. As far as practicable, the financial levers are designed to ensure there is transparency between the approach and the intended outcome; and
 - ii. Pricing and funding models use an appropriate risk adjustment methodology to consider different patient complexity levels or specialisation across jurisdictions and hospitals.
- d. Reforms provide budget certainty:
 - i. Any downward adjustment to an individual State is not deducted from the available pool of funding under the overall cap of 6.5 per cent.

Transparency

- A175. States agree to implement a pricing approach for Sentinel Events and safety and quality adjustments, to give effect to the model developed by the IHPA, within their funding and purchasing arrangements (including in Service Level Agreements and Purchasing Agreements) for public hospital services at the episode of care level.
- A176. States agree to each provide an annual report to AHMAC, within nine months from the end of each financial year, on the outcomes of the implementation of the pricing approach for safety and quality. These reports will include information on:
- a. the financial impacts at the LHN level; and
 - b. any relevant safety and quality programs.

Roles and responsibilities

- A177. CHC will oversee the continuing development, implementation and the ongoing refinement of reforms to integrate safety and quality into the pricing and funding of public hospital services, including:
- a. advising national bodies on pricing and funding approaches, including shadow approaches, for HACs and avoidable readmissions; and
 - b. final approval of the Sentinel Events, HACs and avoidable readmissions lists for

funding and pricing purposes.

- A178. States will seek to refine and improve public hospital activity monitoring and reporting capability to support the system in making safety and quality improvements.
- A179. The Commonwealth will work collaboratively with States and national bodies to support pricing and funding reforms for public hospital services, and advise on how these reforms intersect with private hospital services and primary health care services.

Private or not-for-profit provision of public hospital services

- A180. Where a State contracts with a private or not-for-profit provider to operate a public hospital, that hospital will be treated as a public hospital for the purposes of this Addendum, and may be, or form part of, a Local Hospital Network. This arrangement will apply to existing contracts and contracts entered into after the Addendum commences.
- A181. Hospitals owned by charitable organisations which are recognised as public hospitals, whether by legislation or by other arrangements, will be treated as a public hospital for the purposes of this Addendum, and may be, or form part of, a Local Hospital Network.
- A182. Other public hospital services provided by the private or not-for-profit sector can be contracted for in the following ways:
- a. the State may contract centrally and establish a notional ‘contracted services Local Hospital Network’ which is not required to meet usual Local Hospital Network governance arrangements; or
 - b. Local Hospital Networks may enter into individual contracts with the private or not-for-profit sectors.
- A183. For any notional contracted services Local Hospital Network, the State will provide information on forecast and actual contracted activity to the Administrator, and this will include the same type, level and specificity of data on the contracted activity as required of other Local Hospital Networks under this Addendum.
- A184. The Commonwealth will provide funding in respect of the contracted activity through the National Health Funding Pool to the State. IHPA determined loadings will apply in respect of patient characteristics, and service location.
- A185. Public hospital services provided under contract by the State with the private sector or not-for-profit sector will be treated as being provided by public hospitals and will be treated consistently with the approach in clauses A17 to A24 to determine eligibility for a Commonwealth funding contribution.

Veteran Entitlements

- A186. Arrangements for funding and provision of health care for entitled veterans are the subject of a separate Commonwealth-State agreement. Nothing in any separate agreement will interfere with the rights of entitled veterans to access public hospital services as public patients.

Nationally Funded Centres

- A187. These arrangements may have an impact on Nationally Funded Centres. This will be considered further by the CHC.

SCHEDULE B – NATIONAL BODIES

Introduction

- B1. The national bodies are:
- a. The Independent Hospital Pricing Authority (the IHPA);
 - b. The Administrator of the National Health Funding Pool (the Administrator) and the National Health Funding Body (the NHFB);
 - c. The Australian Commission on Safety and Quality in Health Care (the ACSQHC); and
 - d. The Australian Institute of Health and Welfare (the AIHW).
- B2. The national bodies are established by relevant Commonwealth and State legislation to undertake specific functions including under this Addendum.
- B3. For avoidance of doubt, any jurisdiction that enacts or amends legislation that is inconsistent with the provisions of this Addendum relating to the new National Health Reform funding arrangements, including the establishment, appointment, powers and functions of the Administrator, will be in breach of this Addendum.
- B4. The Commonwealth and States will consult with COAG on any proposed amendments to legislation establishing the position and functions of the national bodies and the operation of the National Health Funding Pool.
- B5. Parties recognise that the national bodies are independent and expect these bodies to carry out their functions in a timely manner that advances the objectives of this Addendum and regularly consult with each other, Parties to this Addendum and other relevant stakeholders. The consultation requirements and processes set out in this Addendum are not intended to be exhaustive.
- B6. The functions and roles of national bodies relating to this Addendum may overlap from time-to-time. Where the work of one national body affects the work of another, relevant bodies are expected to work collaboratively together and keep Parties informed of their work through their relevant advisory committees.
- B7. Commonwealth and State departments of health will be the primary contact for the national bodies, and will be responsible for engaging with other government agencies in their jurisdictions (noting the Administrator's statutory role in providing advice to the Commonwealth Treasurer).

National funding bodies

Consultation and transparency

- B8. For the purposes of this Schedule, the national funding bodies are the IHPA, the Administrator and the NHFB.
- B9. The Commonwealth established the national funding bodies under the *National Health*

Reform Act 2011 on behalf of all parties to facilitate and administer the public hospital funding arrangements under the Act and this Addendum. The Commonwealth Minister must consult and have regard to the views of COAG Health Council (CHC) on any direction to the IHPA.

- B10. Given the significance to all Parties of the functions discharged by the national funding bodies, the bodies will consult with CHC on changes that materially impact the application of the national funding model. Such consultation will be in addition to specific consultation requirements and processes with Parties set out in this Addendum.
- B11. The national funding bodies must consult with affected Parties and provide relevant analysis and documentation on decisions that could materially impact Parties before releasing draft or final advice on the matter.
- B12. When a Party has raised a matter formally in writing with a national funding body through a consultation process under this Addendum or otherwise, the relevant body is to provide a written statement explaining how the matter has been considered and addressed on request from a Party. The request and statement must be timely in relation to the matter raised.
- B13. The Commonwealth or two or more States may request that the national funding bodies present for Health Ministers' consideration a final or draft business rule, decision or determination that affects the national funding model or the calculation of the Commonwealth funding contribution. Such consultation will be in addition to specific consultation requirements and processes set out in the Addendum, and provide no less than 45 days for response by Health Ministers.
- B14. As per clause A42, National Bodies will develop business rules related to process and consultation related to retrospective adjustments, for consideration and unanimous agreement by CHC, by April 2021.
- B15. National Bodies will formally consult with Parties on the development of business rules and policies as per clause A42.

Resolving national funding body matters

- B16. Consistent with the principles articulated in this Addendum and prior to raising a matter under this section:
 - a. Parties should follow the consultation requirements and processes under this Addendum and work together with the relevant national funding bodies to understand the different perspectives and attempt to resolve the matter;
 - b. National funding bodies should work collaboratively and with Parties as appropriate, and have regard to advice provided by Parties; and
 - c. Parties and national funding bodies should use existing governance mechanisms including Jurisdictional Advisory Committees productively and transparently.
- B17. The Commonwealth, or a State (with the support of another party) or national funding

body can raise a dispute under this section through CHC.

- B18. Once a dispute is raised, the appropriate national body will conduct a 45 day ministerial consultation period seeking submissions from the Parties and other national bodies. Within 45 days of the close of the consultation period, the national body will provide a statement on the dispute to CHC ahead of the Administrator providing any advice to the Commonwealth Treasurer.
- a. The statement is to address submissions received during the consultation period and make recommendations on how the matter can be resolved in the context of the Addendum and on the basis of the submissions from Parties.
- B19. After the consultation period closes, a parallel report from the Australian Health Ministers' Advisory Council (AHMAC) is to be provided to CHC within 45 days. The report is to address submissions received within the consultation period and make recommendations on how the matter can be resolved in the context of the Addendum.
- B20. The process under this section is intended to be an intermediary step prior to a matter being formally referred to COAG under the dispute resolutions under clauses 26 to 28.

Independent Hospital Pricing Authority

Functions

- B21. The Independent Hospital Pricing Authority is an independent Commonwealth statutory authority established under the *National Health Reform Act 2011* (the Act) to promote improved efficiency in and access to Australian public hospital services.
- B22. In performing its functions, the IHPA must:
- a. have regard to this Addendum;
- b. follow the process and meet the conditions or requirements set out in this Addendum; and
- c. have regard to submissions made at any time by the Commonwealth, a State or a Territory.
- B23. The main functions of the IHPA are to:
- a. determine the national efficient price for health care services provided by public hospitals where the services are funded on an activity basis;
- b. determine the national efficient cost for health care services provided by public hospitals where the services are block funded; and
- c. publish this, and other information, for the purpose of informing decision makers in relation to the funding of public hospitals.

- B24. The IHPA has the following determinative functions:
- a. developing and specifying the national classifications to be used to classify activity in public hospitals for the purposes of ABF;
 - b. subject to clause B67, determining the supporting data requirements and data standards to apply to data to be provided by States, including:
 - i. data and coding standards to support uniform provision of data; and
 - ii. patient demographic characteristics and other information that is relevant to classifying, costing and paying for public hospital functions;
 - c. subject to clause B67, specifying costing data, methods and standards to be used in studies of the costs of delivering public hospital services, and to collect such data from Local Hospital Networks, through the States, to enable it to calculate the national efficient price and loadings;
 - d. determining the national efficient price for services provided on an activity basis in public hospitals through empirical analysis of data on actual activity and costs in public hospitals, taking account of any time lag and the cost weights to be applied to specific types of services;
 - e. determining the national efficient cost of services provided on a block funded basis in public hospitals through empirical analysis of data on actual activity and costs in Australian public hospitals, taking account of any time lag;
 - f. developing, refining and maintaining such systems as are necessary to calculate the national efficient price, including determining classifications, costing, data elements and data collections;
 - g. determining adjustments ('loadings') to the national efficient price required to take account of legitimate and unavoidable variations in the costs of service delivery, including those driven by hospital size, type and location;
 - h. developing projections of the national efficient price for a four year period, updated on an annual basis and providing confidential reports on these projections to the Commonwealth and States;
 - i. determining what other services provided by public hospitals are eligible for a Commonwealth funding contribution (Schedule A – Scope of 'Public Hospital Services' refers);
 - j. determining the Block Funded Criteria to be applied to agreed hospitals, functions and services that would be better funded in that way every three years from 2013-14. Before this determination can be made the Block Funding Criteria must have been endorsed by COAG (clause A53 refers);
 - k. resolving disputes on cross-border issues, where parties are unable to reach bilateral

agreement and either party seeks a determination from the IHPA; and

- I. determining the national efficient price that will apply to eligible private patients receiving public hospital services.

B25. The CHC may direct the IHPA to refine the determination of public hospital services eligible for a Commonwealth funding contribution (clause B24(i) refers).

B26. The IHPA has the following advisory functions:

- a. advising COAG on a nationally consistent definition and typology of public hospitals eligible for:
 - i. block funding only (including small rural and regional hospitals better funded in that way); and
 - ii. mixed ABF and block funding;
- b. making recommendations to the Treasurer to adjust Commonwealth contributions to implement cross-border recommendations under clause A123;
- c. making an assessment in relation to cost-shifting in line with clauses A124 to A126.

B27. In relation to the safety and quality reforms described in this Addendum the IHPA will:

- a. implement an approach whereby any episode of care that includes a Sentinel Event, across all care settings, will not be funded in its entirety;
- b. implement an approach whereby all HACs across every public hospital will have a reduced funding level to reflect the extra cost of a hospital admission with a HAC and will be risk adjusted; and
- c. develop a pricing and funding approach for avoidable hospital readmissions related to a prior HAC, based on a set of definitions developed by the ACSQHC.

B28. Parties may request the IHPA provide monitoring and support for the development of innovative models of care and funding for inclusion into the national funding model under clauses A96 to A101.

B29. The IHPA will improve transparency by publicly reporting on:

- a. ABF, including release of nationally consistent classifications, costing methods and data and efficient prices;
- b. its advice in respect of block funding and the basis of that advice; and
- c. its findings and supporting analysis on cost-shifting and cross-border issues raised by parties to the Addendum, following consultation with the relevant jurisdictions.

B30. The IHPA will provide all governments with draft copies of its reports before they are

released publicly. All governments will have 45 calendar days in which to comment on the reports.

- B31. The IHPA may undertake data collection and research, including by commissioning others to undertake specified studies and research.
- B32. In carrying out its functions, the IHPA will:
- a. publicly call for submissions from interested parties annually;
 - b. have regard to any submissions from governments regardless of when they are made; and
 - c. draw on relevant expertise and best practice within Australia and internationally.
- B33. Should the IHPA, in carrying out its functions, identify significant anomalies in service provision or pricing which potentially suggest activity contrary to the intent of this Addendum, the IHPA may consult with the relevant jurisdiction. If the matter is unresolved following consultation with the relevant jurisdiction, the IHPA may confidentially provide information to all jurisdictions about the matter. Should a jurisdiction consider this information evidence of cost-shifting, they can make a submission to the IHPA (as set out in clause A125).
- B34. Any information provided as a result of consultation under clause B33 by a jurisdiction to IHPA can only be used to resolve the matter in relation to which the information was provided for.

Governance

- B35. The IHPA comprises an independent board and chief executive officer, supported by officials from the Commonwealth Department of Health operating at the direction of the IHPA CEO. The ongoing costs of the IHPA will continue to be met by the Commonwealth.
- B36. In seeking to make an appointment to the position of the IHPA CEO, the IHPA Board will consult with the Parties.

Consultation

- B37. The IHPA must seek guidance from Parties, through the IHPA Jurisdictional Advisory Committee, when implementing changes to the national funding model that will impact the way services are delivered. Parties may escalate a funding policy issue to the HSPC, AHMAC or CHC for consideration.
- B38. The IHPA must provide a Statement of Impact to Parties when material changes or significant transitions are proposed to the national funding model, including changes that will have a major impact on any one party or materially redistribute activity between service streams.
- B39. The Statement of Impact must be timely in relation to the matter raised and:

- a. include a risk assessment of the proposed changes or adjustments;
- b. outline appropriate transition arrangements;
- c. be informed by consultation with the Parties; and
- d. have input from the Administrator.

B40. The IHPA will provide AHMAC with a clear understanding of IHPA's processes, governance arrangements and its committees on national funding model matters.

Administrator of the National Health Funding Pool

Functions

B41. The Administrator of the National Health Funding Pool (the Administrator) is an independent statutory office holder, distinct from Commonwealth and State and Territory governments and established by the *National Health Reform Act 2011*.

B42. The functions of the Administrator are to:

- a. calculate and advise the Commonwealth Treasurer of the Commonwealth contribution to the National Health Funding Pool under this Addendum;
- b. reconcile estimated and actual volume of service delivery, informed by the results of data checking activities conducted by other bodies on behalf of the Administrator, and incorporate the result of this reconciliation into the calculation of the Commonwealth contribution to the National Health Funding Pool;
- c. maintain accounts (established by each State) with the Reserve Bank of Australia in the name of each State, collectively known as the National Health Funding Pool;
- d. oversee payment of Commonwealth funding determined under this Addendum into State accounts established at the Reserve Bank of Australia under State legislation;
- e. oversee payments into Pool accounts of State funding provided under this Addendum;
- f. pay State funding from Pool accounts to Local Hospital Networks and other recipients in accordance with the direction of the relevant State Health Minister; and
- g. publicly report on:
 - i. funding received into the National Health Funding Pool from the Commonwealth;
 - ii. funding received into the National Health Funding Pool from the States;
 - iii. payments made from the National Health Funding Pool to Local Hospital Networks and State managed funds, and the basis on which these payments are made;

- iv. payments made, and the basis on which these payments are made, from the State managed funds to Local Hospital Networks and other providers, based on information provided by States;
 - v. payments made by the Commonwealth through the National Health Funding Pool to the States for the provision of public health services;
 - vi. top-up payments made by the Commonwealth through the National Health Funding Pool to the States;
 - vii. the volume of public hospital services provided by Local Hospital Networks; and
 - viii. the delivery of other public hospital functions funded by the National Health Funding Pool and State managed funds.
- h. calculate Commonwealth Funding Entitlement of States with reported Sentinel Events;
 - i. calculate Safety and Quality Adjustments to be made using the pricing and funding models nominated for this purpose by the Parties; and
 - j. advise the Commonwealth Treasurer of h) and i) during annual Reconciliation and a) during six monthly assessment reporting.

Governance

- B43. As per the *National Health Reform Act 2011*, the Chief Executive Officer of the National Health Funding Body is appointed by the Commonwealth Minister.
- B44. In seeking to make an appointment to the position of the NHFB CEO, the Commonwealth Minister will consult with the States.

Consultation

- B45. The Administrator must have regard to intent and objectives of the Addendum and avoid unnecessary administrative burden for Parties when considering implementation of the Addendum.
- B46. The Administrator will provide AHMAC with a clear understanding of the Administrator's processes, governance arrangements, its committees on national health funding matters and changes to these arrangements.

Australian Commission on Safety and Quality in Health Care

Functions

- B47. The Australian Commission on Safety and Quality in Health Care is a Commonwealth statutory authority established under the *National Health Reform Act 2011*. The ACSQHC is a body corporate subject to the *Public Governance, Performance and Accountability Act 2013* (PGPA Act).

- B48. The role of the ACSQHC is to:
- a. lead and coordinate improvements in safety and quality in health care in Australia by identifying issues and policy directions, and recommending priorities for action;
 - b. disseminate knowledge and advocate for safety and quality;
 - c. report publicly on the state of safety and quality including performance against national standards;
 - d. recommend national data sets for safety and quality, working within current multilateral governmental arrangements for data development, standards, collection and reporting;
 - e. provide strategic advice to CHC on best practice thinking to drive quality improvement, including implementation strategies; and
 - f. recommend nationally agreed standards for safety and quality improvement.
- B49. The ACSQHC will expand its role of developing national clinical standards and strengthened clinical governance. These arrangements will be further developed in consultation with Parties to this Addendum via AHMAC.
- B50. The ACSQHC will:
- a. formulate and monitor safety and quality standards and work with clinicians to identify best practice clinical care, to ensure the appropriateness of services being delivered in a particular health care setting; and
 - b. provide advice to CHC about which of the standards are suitable for implementation as national clinical standards.
- B51. The ACSQHC does not have regulatory functions.
- B52. In relation to the safety and quality reforms described in this Addendum, the ACSQHC will:
- a. curate the Sentinel Events and HAC lists for the purposes of ensuring they remain robust and relevant for clinical improvement purposes, within its existing governance arrangements and in conjunction with IHPA Technical Advisory Committee advice;
 - b. maintain a HAC Curation Clinical Advisory Group (HCCAG) to advise on new and existing complications on the HAC list. The HCCAG will have regard to the recommendations of specialty Clinical Panels established by the ACSQHC where necessary;
 - c. assess rates of preventability for each HAC to inform a risk adjustment methodology developed by IHPA;
 - d. maintain a nationally consistent definition for avoidable hospital readmissions

associated with a HAC;

- e. consult with ACSQHC committees to ensure proposals forwarded to AHMAC and CHC best represent matters that are supported by the relevant committees; and
- f. advise on clinician engagement.

Consultation

- B53. The Parties expect that, in performing its functions, the ACSQHC will provide advice to the CHC on best practice thinking to drive quality improvement, including implementation strategies.
- B54. The Parties expect that, in performing its functions, the ACSQHC will collaborate with Parties via AHMAC.
- B55. The ACSQHC is expected to liaise with AHMAC to provide a clear understanding of the ACSQHC's processes, governance arrangements, its committees on national safety and quality matters and any changes to these arrangements.

Australian Institute of Health and Welfare

Functions

- B56. The Australian Institute of Health and Welfare is a Commonwealth statutory authority established under the *Australian Institute of Health and Welfare Act 1987* (the Institute Act). The AIHW is a body corporate subject to the *Public Governance, Performance and Accountability Act 2013* (PGPA Act).
- B57. The AIHW is an independent agency that provides reliable, regular and relevant information on Australia's health and welfare. The AIHW's broad health-related functions are set out in section 6 of the Institute Act and include:
 - a. collecting and producing health-related information and statistics; coordinating and assisting the collection and production of such information by other bodies;
 - b. developing methods and undertaking studies designed to assess the provision, use, cost and effectiveness of health services and health technologies;
 - c. conducting and promoting research into health and health services; developing statistical standards and classifications; and
 - d. subject to confidentiality requirements in the Institute Act, providing access to health information and statistics.
- B58. The AIHW, in accordance with the Australian Health Performance Framework, will:
 - a. provide clear and transparent annual public reporting of the performance of every Local Hospital Network, the hospitals within it, every private hospital and every Primary Health Network;

- b. develop additional performance indicators, when asked by the Commonwealth Health Minister at the request of CHC; and
- c. maintain the MyHospitals website and MyHealthyCommunities website.

- B59. In undertaking its work, the AIHW will provide comparative analysis across Local Hospital Networks and Primary Health Networks.
- B60. The AIHW will carry out work designed to facilitate jurisdictions' understanding of service performance in line with implementation of the Australian Health Performance Framework, as agreed from time to time by CHC.
- B61. The AIHW will develop specifications for performance indicators to be reported under the Australian Health Performance Framework that align with AHMAC's intentions for health sector performance reporting (see Schedule D).
- B62. The AIHW will continue to develop the National Integrated Health Services Information Analysis Asset which will comprise linked health services data to inform contemporary health policy development and the planning and monitoring of health and residential aged care service delivery (see clause C44(d) in Schedule C). The AIHW will do this in consultation with key stakeholders, including jurisdictions, clinicians and consumer representatives, and through established committee processes.
- B63. The AIHW will establish a 'national front door' as a reporting platform for performance information, to assist Australians to make informed decisions about the performance of the health system.

Consultation

- B64. The Parties expect that, in performing its functions, the AIHW will collaborate with Parties via AHMAC.
- B65. The AIHW will provide AHMAC with a clear understanding of the AIHW's processes, governance arrangements and its committees on national health information matters and changes to these arrangements.

Data requirements for the national bodies

- B66. The national bodies will develop rolling three year data plans indicating their future data needs, in line with the following process:
- a. each national body will develop a data plan that takes into account the objectives of this Addendum and the requirements in clause B67;
 - b. each national body will provide its data plan to the CHC; and
 - c. the plan will be considered final and complete 30 calendar days after release, unless the process referred to in clause B70 is invoked.

- B67. In determining data requirements, each body must:
- a. seek to meet its data requirements through existing national data collections, where practical;
 - b. conform with national data development principles and wherever practical use existing data development governance processes and structures, except where to do so would compromise the performance of its statutory functions;
 - c. allow for a reasonable, clearly defined, timeframe to incorporate standardised data collection methods across all jurisdictions;
 - d. support the concept of ‘single provision, multiple use’ of information to maximise efficiency of data provision and validation where practical, in accordance with privacy requirements;
 - e. balance the national benefits of access to the requested data against the impact on jurisdictions providing that data; and
 - f. consult with the Commonwealth and States when determining its requirements.
- B68. AHMAC will periodically review the three-year data plans of the national bodies for the effectiveness and appropriateness of data requested from jurisdictions. The review will consider the administrative burden of non-essential data requests:
- a. The review will check the three-year data plans conform with the data requirements of clause B67; and
 - b. The review of three-year data plans will be conducted at least once every three years.
- B69. Privacy of individual healthcare users is paramount and will be protected at all times. The national bodies will collect, secure and use information in accordance with relevant legislation and Australian Privacy Principles, ethical guidelines and practices in order to protect the privacy of individuals. To give effect to this commitment, the Commonwealth will consult with relevant privacy stakeholders on Commonwealth-related data aspects of this Addendum.
- B70. The CHC may direct the national bodies in respect of specific elements of their data plans or interim data plans:
- a. if it determines that a plan does not meet the requirements set out at clause B67; and
 - b. provided that such a direction would not diminish the achievement of transparency, comparability or other objectives of this Addendum or materially delay implementation.
- B71. If a jurisdiction intends to request CHC to consider changes to the data plan under clause B70, the following procedure will be used:

- a. within 45 calendar days of the release of the plan, the jurisdiction must lodge a submission with CHC, setting out its reasons for seeking the direction;
 - b. the jurisdiction must provide the body that developed the data plan with a copy of the submission; and
 - c. within 21 calendar days of receiving the submission, CHC will consider the matter out of session and agree its response.
- B72. Subject to clauses B67 and B69, the Commonwealth and States will provide the national bodies outlined above with the data the national bodies determine is required to carry out their functions in accordance with their data plans. This data will be provided to each agency as required, with the exception of patient identified data which will be provided to the Services Australia (formerly the Commonwealth Department of Human Services) for the purpose of de-identifying the data (as set out in clause B74). This de-identified data will then be used by the IHPA and NHFB in the calculation of the national efficient price and ensure appropriate Commonwealth payments for public hospital services.
- B73. Data requested by a national body from a jurisdiction, additional to the requirements of the published three year data plan, can only be used to resolve the matter in relation to the which the information and/or data was provided, or other purposes agreed by the Parties.
- B74. Where patient identified data is required, States will provide that data with patients identified by a Medicare Card Number to Services Australia. Services Australia will then de-identify that data and provide it to the relevant national body. Where patient identified data is required it will be subject to relevant Commonwealth and State statutory protections of individuals' privacy.
- B75. The Commonwealth Department of Health will be able to access relevant matched data to allow it to perform Medicare compliance activities and State health departments will be able to access a copy of the matched data relevant to their jurisdiction for verification purposes.
- B76. The Commonwealth and the States will take responsibility for the data integrity within their systems and agree to establish appropriate independent oversight mechanisms for data integrity, to provide certainty to the Australian public about the actual performance of hospitals and other parts of the health system.
- B77. As set out in clause B67(d), data provided to the national bodies may be shared between agencies as set out by the following principles:
- a. the national bodies will be able to access data to allow them to meet their functions as set out by this Addendum;
 - b. the Australian Bureau of Statistics will be able to access relevant data required to meet its legislative and contractual reporting requirements;
 - c. the Australian Institute of Health and Welfare (AIHW) will be able to access relevant

data to allow the AIHW to meet its statutory and contractual reporting requirements;

- d. Services Australia will be able to access data to perform its role of de-identifying patient level data to allow the Administrator to perform their functions; and
- e. the Commonwealth Department of Health, the Commonwealth Department of Veterans' Affairs, the Commonwealth Treasury, State health departments and State treasuries will be able to access all de-identified data for the purposes of policy analysis and planning.

- B78. To ensure that States are able to effectively fulfil their responsibilities in public hospital management and health planning, the Commonwealth will provide reasonable access to Local Hospital Network level and PHN level health and ageing data about Commonwealth programs in accordance with arrangements under Schedule C (see Enhanced health data). CHC will agree appropriate protocols and procedures to govern the operation of this arrangement, including compliance with Commonwealth legislative obligations.
- B79. With regard to clause B77(e), those agencies will not publish, or use in any way publicly, or provide data to a third party without the express written approval of the originating jurisdiction in writing, except where there is a legislative basis to do so.
- B80. In using the data available, agencies listed in clause B77 will have regard to the caveats and limitations of the collected data.
- B81. Each body will publish details of Commonwealth and State compliance with the data requirements of the national bodies on a quarterly basis.

Statement of Assurance

- B82. States will provide the IHPA with a Statement of Assurance from a senior health department official on the completeness and accuracy of approved data submissions provided under clauses A66, A79, B76 and B77 of this Addendum:
- a. consistent with clause B77, the IHPA will provide statements of assurance to the Administrator;
 - b. jurisdictions will use the Statement of Assurance template agreed by AHMAC; and
 - c. the provision of the Statement of Assurance does not prevent a State from resubmitting data to improve previous submissions, subject to the requirements in clause A78. Each approved submission or resubmission of data will be accompanied by a Statement of Assurance.
- B83. Data provided to the Administrator by the Commonwealth under clauses A8 and A9 will also require a statement of assurance on completeness and accuracy of data submitted by the relevant Divisional Data Steward.

SCHEDULE C – LONG-TERM HEALTH REFORM PRINCIPLES

- C1. Shared action on long-term health system reform is essential to achieve the agreed critical priorities of:
- a. Improving efficiency and ensuring financial sustainability
 - b. Delivering safe, high-quality care in the right place at the right time; through
 - i. Nationally cohesive health technology assessment
 - ii. Paying for value and outcomes
 - iii. Joint planning and funding at a local level
 - c. Prioritising prevention and helping people manage their health across their lifetime; through
 - i. Empowering people through health literacy
 - ii. Prevention and wellbeing
 - d. Driving best practice and performance using data and research; through
 - i. Enhanced health data
- C2. The Parties acknowledge that a genuine commitment to shared action on long term health system reform with clearly identified approaches will contribute to improved patient outcomes, reducing emergency department demand, avoidable hospital admissions and extended stays. Actions to improve the interfaces with the health system will also be essential in addressing this demand (see Schedule F).
- C3. Facilitation of innovative approaches will be critical. The Parties agree funding pools and models must have sufficient flexibility to enable the testing and trialling of these approaches. The Parties will also work collaboratively on the fundamental enablers of the reform such as strengthened governance arrangements, including for sharing and developing data simplifying processes to support long term health system reform objectives.
- C4. The Parties agree to jointly develop detailed implementation plans for each of the six long-term reforms outlined above, to be considered by COAG Health Council (CHC). Once approved, the implementation plans will be appended to this Addendum. The implementation plans will include steps and timelines for delivery of activities, objectives, expected outcomes and evaluation.
- C5. The Parties agree that activities included as part of this schedule and in the implementation plans will be delivered within existing resources and programs, unless specific budget authority or agreement by jurisdictions has been sought and granted.
- C6. The Parties also:
- a. Commit to regular progress reports to CHC on implementation of reforms and progress against key outcomes, including reducing emergency demand, avoidable hospital admissions and extended stays in public hospitals;

- b. Agree that a common approach to evaluation is required to assess reform outcomes and inform CHC considerations to refine, further scale or apply reforms nationally; and
- c. Recognise that reforms should be tested in a range of circumstances to ensure they meet the needs of all Australians, including rural and remote areas, as well as vulnerable populations.

Nationally cohesive health technology assessment

- C7. Australia requires a strategic, systematic, cohesive, efficient and responsive national framework for health technology assessments (HTA). The current approach to the use of HTA to inform investment and disinvestment decisions in Australia is fragmented and does not facilitate coordinated and timely responses to rapidly changing technologies.
- C8. Separate processes exist across all levels of the health system, which has the potential to duplicate effort, create inefficiencies and inconsistent advice, and delay access to innovative and emerging technologies. Proactive planning will optimise financial and organisational access to innovative and emerging technologies.
- C9. The Parties agree that:
- a. HTA is an important means of delivering value to patients and the broader health system;
 - b. the Commonwealth and States must determine how to prioritise spending on health technologies within the constraints of limited budgets, and do so in a way that is consistent, equitable and efficient; and
 - c. the development and implementation of a nationally cohesive approach to HTA is an opportunity for governments to make informed decisions to deliver safe, effective and efficient care that is financially viable and improves population health.
- C10. The Parties further agree to jointly develop a federated approach to health technology assessment, with a view to towards a unified framework in the longer term. The goal is to increase the impact of HTA on policy, funding (investment and disinvestment) and service delivery decision making at all levels of the health system. The Parties acknowledge that a unified framework is ambitious and commit to testing and trialling this strategy within an initial narrow and defined scope.
- C11. The Parties agree that funding arrangements for new high cost, highly specialised therapies (HSTs), recommended for delivery in a public hospital setting by the Medical Services Advisory Committee, will be determined on the basis of hospital funding contributions specified in Schedule A with the following exceptions for the term of this Addendum:
- a. the Commonwealth, for these types of therapies, will provide a contribution of 50 per cent of the growth in the efficient price or cost (including ancillary services), instead of 45 per cent; and
 - b. they will be exempt from the funding cap at clause A56 for a period of two years from the commencement of service delivery of the new treatment.
 - c. Upon commencement of service delivery of the new treatment in a State, the State

may request advice from the Administrator on the operation of the cap exemption for that treatment in that State.

- C12. The Parties agree that there will be joint decision making by Chairs of MSAC and PBAC and a nominated representative of CHC, on the referral for HTA of applications for a new HST likely to be offered within public hospitals. This decision will consider potential impact on other public hospital clinical services, as well relevant legislation guiding the HTA process. This decision will occur within 30 days of the application so that HTA is not unreasonably delayed by early consideration of implementation. The governance process for these arrangements is outlined at Appendix B.
- C13. The reform will also include the following components:
- a. establishment of a process to facilitate a consistent approach to HTA nationally, identify and prioritise technologies that would benefit from national level HTA;
 - b. development of a national HTA framework, including processes for HTA to inform advice on implementation, investment and disinvestment opportunities at Commonwealth and State levels;
 - c. establishment of an information sharing platform to enable collaboration between relevant jurisdictional and national bodies;
 - d. Production of public and stakeholder guidance; and
 - e. Review and support of HTA workforce.
- C14. The Parties agree that the Australian Health Ministers' Advisory Council (AHMAC) and its relevant authorised committees will oversee the design and delivery of the HTA federated approach.
- C15. The Parties jointly agree to ensure that other relevant agencies and committees directly or partially engaged in HTA remain informed of and consulted on the progress of this long term health reform.
- C16. The Parties agree to continue to work together to improve the engagement with, and transparency of, HTA processes where the item under assessment is likely to be delivered in a public hospital setting.

Paying for value and outcomes

- C17. While Australia's health system performs comparatively well, current models for commissioning and funding health care are fragmented and do not reward providers for planning, coordination, and integration of care across a treatment journey. Policies and programs are designed in isolation from one another, even though patients access services across boundaries between programs. This has widespread impacts on people, providers and funders, and jeopardises the sustainability of the health system.
- C18. Responding to the challenges the Australian health system will face in the future demands a financing system that is proactive, value-based and focused on individual and community needs. The current system does not afford the necessary funding flexibility and governance arrangements to address these challenges, provide best patient care and support contemporary models of care.

- C19. The Parties agree that the Paying for Value and Outcomes reform will explore funding and payment mechanisms to create stronger incentives for providers to:
- a. focus on the outcomes that matter to patients, including through the utilisation of Patient Reported Measures;
 - b. improve patient equity, namely inequities in health care provision, access to health care, and health outcomes;
 - c. improve clinical outcomes, including the outcomes that matter to patients, and experiences of health care;
 - d. deliver best-practice clinical care; and
 - e. focus on the entire patient journey, not just individual parts of it.
- C20. The Parties agree that reform to funding and payment mechanisms should be sustainable and holistic, and aim to improve the extent to which funding is:
- a. needs based, with funding distributed to patient and population need; and
 - b. flexible with funding conditions giving providers the necessary discretion to provide care in the right place, at the right time, by the right workforce.
- C21. Further, the Parties agree the reform plan for Paying for Value and Outcomes may include, but not be limited to, the following activities and commitments:
- a. develop a National Health Funding and Payments Framework to guide and evaluate trials and inform future implementation of health system reform across all levels of government;
 - b. identify and support removal of legislative, regulatory and technical barriers to the implementation of innovative funding and payment approaches, at the national and State and Territory levels;
 - c. develop and progress trials of funding and payment reforms at a:
 - i. program level – options may include bundled payments, refinements to ABF, capitation models, and outcomes-based payments, among others; and
 - ii. system level – options may include blended funding models and pooling of payment streams across programs and providers; and
 - d. A common approach to evaluation of trials and knowledge sharing, to inform further decisions about scaling of trials and future reform directions.
- C22. Successful delivery of reform objectives will be supported by the exploration and trial of new and innovative approaches to public hospital funding under this Addendum, as outlined in clauses A96 to A101.

Joint planning and funding at a local level

- C23. The current health system in Australia is fragmented, making it difficult for people to get well-coordinated care. There is a complex split between the Commonwealth and State governments, and the not-for-profit and private sectors, regarding who is responsible for planning, funding and delivering different services.
- C24. While these mixed funding and accountability arrangements have benefits, they do not create strong incentives for providers to plan, work together and co-ordinate care for patients. Current models of commissioning and funding health care do not compensate or reward providers for planning, coordination, and integration of care across a treatment journey. Patients with chronic and complex conditions are particularly at risk of receiving fragmented and variable quality of care because they often use a wide range of health services.
- C25. The Parties recognise that they need to work together to better plan and co-ordinate health services at the local level, and that this will benefit them both as population outcomes improve. This can only be achieved if there is greater collaboration across care settings, clinicians are engaged and supported to adopt new practices, accountabilities are clear, and there is a joint commitment across all agencies and governments that span the continuum of care.
- C26. As part of this shared commitment, the Parties will:
- a. encourage local health organisations, such as Primary Health Networks, Local Hospital Networks, as well as primary and community health services, to collaborate when planning health services and making investment decisions;
 - b. develop commissioning arrangements that provide stronger incentives for local health organisations to co-ordinate care, pool funding and integrate health services; and
 - c. establish shared reporting and accountability arrangements to effectively measure the impact on population health outcomes, quality of health services and value at the local level.
- C27. Further, the Parties agree the reforms aim to:
- a. reorient the health system around individuals and communities and improve patient outcomes and experiences while considering the impacts on patients, carers and their families;
 - b. achieve better integrated patient-centred care that is evidence-based and incentivises innovation;
 - c. emphasise patient empowerment, particularly through co-design of services, collaboration with providers and expanded use of new and existing technologies; and
 - d. promote equitable access to high quality health care and reduce disadvantage for all Australians, including for Aboriginal and Torres Strait Islander people and those living in regional and remote areas.

- C28. The reform plan for Joint Planning and Funding at a Local Level will include, but not be limited to, the following activities and commitments:
- a. nationally agreed principles for local-level commissioning;
 - b. identifying and supporting removal of barriers to joint governance, needs assessment, service integration, evaluation and funding, at a national and State and Territory level;
 - c. progressively trialling, evaluating, refining and scaling up joint planning and funding arrangements of increasing levels of ambition;
 - d. addressing workforce matters, including capability gaps for effective health services commissioning, and exploration of innovative workforce models and potential new roles to support better care coordination; and
 - e. ongoing monitoring and evaluation of joint planning and funding arrangements, including the development of shared outcome measures to determine the effectiveness of jointly planned and funded services.

Empowering people through health literacy

- C29. Health literacy is a system issue. It involves interactions between individual consumers, communities, healthcare professionals, and healthcare organisations. Creating health literacy-friendly systems and organisations through a co-design approach will better equip and empower people to manage their own health, engage effectively with health services, and achieve better health outcomes. People with low health literacy are less well equipped to take appropriate action to prevent and manage disease and ill health. As a result, they may have higher rates of hospitalisation, emergency care and adverse outcomes.
- C30. The Parties recognise that a significant proportion of adult Australians have low health literacy and that supporting health literacy can help to address the social determinants of health. Low health literacy compounds the disadvantage already experienced by marginalised groups. As a result, the Parties recognise the need to prioritise disadvantaged groups in the design of health literacy interventions because this will help to reduce inequity in access to care and health outcomes.
- C31. The Parties agree the reforms will aim to:
- a. improve population health outcomes;
 - b. make the health system and organisations more health literacy-friendly, so it is easier for people to get appropriate health information, support and services;
 - c. empower people to become informed and active participants in their own health care;
 - d. increase the uptake of health promoting behaviours, particularly among population groups at high risk of ill health;
 - e. develop providers' capacity to engage consumers in co-designing health services around patients' needs; and
 - f. improve the efficiency, effectiveness and equity of health service delivery.

- C32. The Parties will provide strategic leadership for the health sector to raise awareness of health literacy needs and build capacity within the workforce to meet these needs. Patient reports of their health outcomes and care experiences will be measured systematically to drive a transition towards more person-centred care.
- C33. Government-funded information resources and digital platforms will be better aligned, culturally appropriate and evidence-based. Information on the performance of the health system and services will be more accessible. These resources will support people to manage their own health and actively engage with their health service providers in making decisions about their care.
- C34. Evidence of the effectiveness of health literacy initiatives will be shared between governments and with the health workforce, researchers and the community.

Prevention and wellbeing

- C35. The Parties recognise the benefits of supporting Australians to live healthier lives by reducing the proportion of people living with preventable chronic conditions and delaying the onset of these conditions. Reducing the burden of chronic disease and addressing the underlying drivers to ill health will significantly reduce avoidable hospital admissions and make our health system more sustainable.
- C36. The risk of a person developing a preventable illness or condition is affected by social, economic and environmental factors, as well as their lifestyle. Prevention needs to work at several levels, beginning with a healthy start to life and targeting approaches at critical stages throughout a person's life, as well as impacting on the broader environment to create healthier places where people spend their time. It should include a focus on population groups and areas with the greatest need.
- C37. Despite consensus on the need to intervene earlier to prevent the onset of poor health and wellbeing, investment has historically been targeted towards treating ill health. Currently, there are few incentives for the health workforce to build prevention into practice, and there are ongoing difficulties measuring impacts, outcomes, and returns on investment for preventive health activities.
- C38. The Parties acknowledge that all governments currently invest in primary prevention of disease in various ways, and that the Prevention and wellbeing reform will complement existing activities.
- C39. The Parties agree that the key objectives of the reform is to:
 - a. increase investment in primary prevention;
 - b. reduce the prevalence of chronic disease;
 - c. support coordinated, cross-sector investment including from non-government sectors;
 - d. address the underlying drivers of ill-health, including social, economic and environmental determinants;
 - e. develop sustainable, innovative mechanisms for financing preventive health activities, including the adoption of cohort-specific and risk-based approaches to planning and prioritisation; and

f. improve the sustainability of the health system.

C40. The Parties agree to the following actions:

- a. a national prevention monitoring and reporting framework, with a focus on shared priorities;
- b. a commitment to increase investment in primary prevention over time;
- c. developing innovative, fit-for-purpose financing mechanisms for scaling primary prevention initiatives;
- d. exploring evidence-based regulatory prevention measures; and
- e. reviewing and addressing health system barriers to prevention.

Enhanced health data

C41. The Parties recognise that timely access to data is critical to support shared patient-clinician decision making, improved service delivery, policy development and system planning.

C42. Parties acknowledge that enhanced health data is a critical enabler for all the long-term health reforms and commit to working together to harness data and analytics to drive meaningful improvements in the health system.

C43. The Parties are committed to achieving comprehensive health data access, usage and sharing, while at the same time maintaining data security and preserving individuals' privacy.

C44. The Parties agree the key objectives of the reforms are to achieve better patient outcomes and incentivise and support integrated patient centred care by:

- a. establishing a national standard approach to govern the creation, access and sharing of data from all Australian governments;
- b. providing data access to support shared patient-clinician decision making, improved service delivery and system planning;
- c. working together to better harness data, analytics and evidence in order to drive meaningful improvements in the health system; and
- d. progressing mechanisms and interoperable systems for secure and comprehensive integration of data across patient journeys, such as the National Integrated Health Services Information Analysis Asset, and a dynamic cyber security framework to ensure security and ethical management of personal health information.

C45. Further, in achieving comprehensive health data access, usage and sharing it will:

- a. facilitate bona fide research;
- b. protect individual privacy in line with relevant legislation, community expectations and values;

- c. make data available in a timely manner based on the purpose for which the data is intended to be used;
- d. collect data once for multiple uses;
- e. build capacity, capability and innovation in collecting and applying data; and
- f. allow all jurisdictions to identify priority reforms and timing of trials that best suit local needs and readiness.

C46. The Parties agree to the following national actions:

- a. scale up a national approach to data governance arrangements, structures and processes, to facilitate clear and efficient mechanisms for sharing and developing data in a sustainable, purpose-based and safe way;
- b. establish Commonwealth-State patient-level primary and community health care datasets to inform the development of quality indicators that support shared decision making and service planning across the primary, community and acute sectors;
- c. develop a health data workforce capability framework that defines roles and standards, identifies necessary skills, competencies and mechanisms to build capacity;
- d. develop a risk-based framework and standards to provide the capacity for the effective collection, sharing and security of data;
- e. develop and implement a consistent approach to the collection and use of Patient Reported Measures, to build national-level evidence and improve care across the health system; and
- f. review relevant legislation and regulations across Australia to provide recommendations on ways to support better data linkage while ensuring appropriate protections for patient privacy.

C47. The Parties agree to the following bilateral activities:

- a. share information about current data systems, processes and guidelines to help inform solutions for data sharing; and
- b. pilot projects for local implementation and feedback to all participants.

SCHEDULE D – TRANSPARENCY AND PERFORMANCE

- D1. While the Australian health system performs well, access to timely, fit-for-purpose information, which is needed to make informed decisions about health care is not consistently available. Expanding public reporting on quality, safety and value of health services will drive improvements in the health system and make providers more accountable for outcomes.
- D2. Health Ministers have agreed to the Australian Health Performance Framework (AHPF) which will provide a single framework to support system-wide reporting on Australia's health and health care performance, support research for policy and planning purposes, and inform the identification of priorities for improvement and development.
- D3. Past agreements have committed to improving public reporting on performance and outcomes and this Addendum will build on them.
- D4. All Parties will be accountable to the community for their progress towards achieving the outcomes outlined in the AHPF and articulated in this Addendum, as well as any prior commitments to performance indicators, public reporting and data provision.
- D5. The Parties agree that the following will be provided to COAG Health Council (CHC) for approval including:
- a. A consolidated set of whole of system performance indicators that are drawn from the AHPF (with priority given to reporting already agreed indicators). This will include:
 - i. A review of the performance indicators outlined in the National Healthcare Agreement 2012 (NHA) and other relevant health performance frameworks;
 - ii. A detailed plan for developing new performance indicators to measure progress and impact against the whole AHPF, including the impact on the health of other sectors that intersect with the health system; and
 - iii. Timeframes for regular public reporting and updating indicators ensuring information is current and relevant;
 - b. Revised performance benchmarks to demonstrate improvement in performance over time. This will replace the performance benchmarks in the NHA;
 - c. A mechanism of governance for the:
 - i. review and revision of indicator set utility and relevance to the AHPF;
 - ii. rationalisation of reporting by data providers, including moving over time to single provision, multiple use; and
 - iii. accurate analysis and interpretation of shared data; and
 - d. A proposed approach to measuring value in the health system that encompasses Commonwealth, State, private sector and individual funding sources and aligns with the definition in this Addendum.

- D6. Progress on work outlined in clause D5 will be reported to the Health Services Principal Committee in consultation with the Australian Institute of Health and Welfare (AIHW), the Australian Commission on Safety and Quality in Health Care (ACSQHC), the Independent Hospital Pricing Authority (IHPA), the Productivity Commission (PC), the Australian Digital Health Agency (ADHA), the National Aboriginal and Torres Strait Islander Health Standing Committee (NATSIHSC) and other bodies as required.
- D7. The Parties will work to harmonise reporting arrangements on health system performance information and data and rationalise where appropriate. This includes Parties agreeing to:
- a. a list of reports for inclusion as part of the reporting arrangements under the AHPF; and
 - b. ongoing monitoring of the list of AHPF reports.
- D8. Further to clause D5, the Parties agree to work collaboratively with relevant national agencies in accordance with their roles and responsibilities outlined in Schedule B to:
- a. Review and revise the National Health Information Agreement (consistent with the principles outlined in this Addendum) by April 2021;
 - b. Manage a central repository for the AHPF performance information and national reporting, leveraging the existing infrastructure and platforms;
 - c. Ensure fit for purpose public reporting of performance information is accessible, understandable and timely for stakeholders, based on the data provided by all sources in accordance with this Addendum; and
 - d. Develop and provide, in collaboration with relevant stakeholders, tiered, fit for purpose reporting at the lowest meaningful level of granularity, in line with best practice and subject to any applicable privacy legislation. This could include:
 - i. Individual providers and facilities, local (PHN, LHN), State/Territory, national and international;
 - ii. Priority population groups including Aboriginal and Torres Strait Islander populations;
 - iii. Comparisons across local (PHN, LHN), State/Territory regions and population groups;
 - iv. Funding sources;
 - v. Different health conditions;
 - vi. Demographic and socio-economic groups; and
 - vii. Public and private health care providers and funders.

- D9. The Parties agree that transparent performance reporting should be based on the following:
- a. flexibility to evolve over time to support the long term objectives of this Addendum;
 - b. ability to progressively expand to cover the AHPF domains focused on health system performance;
 - c. apply measures across the range of private sector and primary care settings;
 - d. providing timely and regular information to the public on the performance, safety and quality of the health system and health facilities;
 - e. provide data once through a single source with multiple use by national agencies and Commonwealth departments;
 - f. use agreed data supply pathways;
 - g. strong governance protocols which limit unauthorised access and protect privacy;
 - h. prioritise additional data sources for development and expansion over time; and
 - i. States and Territories remain responsible for jurisdictional reporting of performance information outside the scope of national reporting.
- D10. Whole of system reporting will include all facets of the health system including primary, secondary and tertiary services in the public, private and community settings:
- a. The Parties agree to align their individual performance frameworks with the AHPF to the greatest extent;
 - b. The Parties agree to develop and implement enhanced performance reporting across the whole care pathway including:
 - i. Health system outcomes including: health outcomes, clinical outcomes, safety and quality, workforce outcomes and health system sustainability;
 - ii. Patient-centred outcomes by embedding Patient Reported Measures and moving towards linkage with other data sets;
 - iii. Increased coverage and reporting of primary care activity;
 - iv. Specific consideration of the representation of Aboriginal and Torres Strait Islander peoples' experience including: the choice of outcomes; patient centred outcomes; the presentation and interpretation of reporting; and any other factors;
 - v. Increased coverage and reporting of private hospital sector activity and performance; and
 - vi. The interface between health and other sectors, such as the disability or aged

care sectors.

- D11. The Productivity Commission will continue its role of reporting the progress towards the COAG’s key commitments, including reviewing progress against a set of agreed national performance indicators defined through the AHPF.

SCHEDULE E – LOCAL GOVERNANCE

Local Hospital Networks

- E1. The Commonwealth and the States agree that the role of Local Hospital Networks is to decentralise public hospital management and increase local accountability to drive improvements in performance. Local Hospital Networks are accountable for treatment outcomes and responsive to patients' needs and make active decisions about the management of their own budget. They have the flexibility to shape local service delivery according to local needs.
- E2. Local Hospital Networks are required to engage with the local community and local clinicians, incorporating their views into the day-to-day operational planning of hospitals, particularly in the areas of safety and quality of patient care.
- E3. Local Hospital Networks are required to directly manage public hospital services and functions and may at the discretion of States also have responsibility for delivery of other health services. Local Hospital Networks are required to work with Primary Health Networks to integrate services and improve the health of local communities.
- E4. Local Hospital Networks are responsible for:
- a. managing their own budget, in accordance with State financial and audit requirements;
 - b. managing performance of functions and activities specified in Service Agreements;
 - c. receiving Commonwealth and State funding contributions for delivery of services as agreed under the Service Agreement entered into with the State government;
 - d. local implementation of national clinical standards to be agreed between the Commonwealth and States on the advice of the Australian Commission on Safety and Quality in Health Care (ACSQHC);
 - e. local clinical governance arrangements;
 - f. providing information to States at their request, for the purpose of enabling the relevant State to provide information and data to the national bodies and the Commonwealth;
 - g. maintaining accountability under, and subject to, State financial accountability and audit frameworks; and
 - h. collaborating with Primary Health Networks and private providers to meet the health needs of the community and minimise service duplication and fragmentation.
- E5. Local Hospital Networks are required to assist States through:
- a. contributing expertise, local knowledge and other relevant information to State-managed capital and service planning arrangements; and
 - b. the implementation and local planning of capital infrastructure.
- E6. Local Hospital Networks are required to engage with the following stakeholders to enable

their views to be considered when making decisions on service delivery at the local level, or service and capital planning at the State level:

- a. other Local Hospital Networks to collaborate on matters of mutual interest;
- b. local primary health care providers, Primary Health Networks and aged care services; and
- c. the local community and local clinicians, particularly in the area of safety and quality of patient care.

E7. The Local Hospital Network Service Agreement are required to include at a minimum:

- a. the number and broad mix of services to be provided by the Local Hospital Network, so as to inform the community of the expected outputs from the Local Hospital Network and allow the Administrator to calculate the Commonwealth's funding contribution (clause B42(a) refers);
- b. the quality and service standards that apply to services delivered by the Local Hospital Network, including the Performance and Accountability Framework (2011 NHRA) and Australian Health Performance Framework (Schedule D);
- c. the level of funding to be provided to the Local Hospital Networks under the Service Agreement, through ABF, reported on the basis of the national efficient price, and block funding; and
- d. the teaching, training and research functions to be undertaken at the Local Hospital Network level.

E8. Service Agreements are required to be publicly released by States within fourteen calendar days of finalisation or amendment and are required to then also be made available through relevant national bodies. States may agree additional matters with Local Hospital Networks (such as the delivery of additional programs).

E9. The Commonwealth is not a party to Local Hospital Network Service Agreements and has no role, directly or indirectly, in the negotiation or implementation of Local Hospital Network Service Agreements.

E10. States are accountable for financial management and audit of Local Hospital Networks and are required to ensure that stringent independent oversight and financial accountability is put in place.

E11. Local Hospital Networks are required to have separate bank accounts able to receive funding from the National Health Funding Pool independent of State treasuries or health departments and are required to be audited as separate entities.

E12. Local Hospital Networks are required to have a professional Governing Council and Chief Executive Officer, unless otherwise agreed by the Health Ministers of the Commonwealth and an individual jurisdiction. The professional Governing Council and Chief Executive Officer are responsible for:

- a. delivering agreed services and performance standards within an agreed budget, based on annual strategic and operating plans, to give effect to the Local Hospital Network Service Agreement;

- b. ensuring accountable and efficient provision of services and producing annual reports, subject to State financial accountability and audit frameworks;
- c. monitoring Local Hospital Network performance against the agreed performance monitoring measures in the Local Hospital Network Service Agreement, including the Performance and Accountability Framework (2011 NHRA) and Australian Health Performance Framework (Schedule D);
- d. improving local patient outcomes and responding to system-wide issues; and
- e. maintaining effective communication with the State and relevant local stakeholders, including clinicians and the community.

E13. Local Hospital Network Governing Councils are responsible for:

- a. negotiating and agreeing with the relevant State government a Local Hospital Network Service Agreement and any necessary adjustments; and
- b. developing a strategic plan for the Local Hospital Network, and implementing an operational plan to guide the delivery of the services, within the budget agreed under the Local Hospital Network Service Agreement.

E14. Local Hospital Network Governing Councils are required to comprise members with an appropriate mix of skills and expertise to oversee and provide guidance to large and complex organisations, including:

- a. health management, business management and financial management;
- b. clinical expertise, including expertise external to the Local Hospital Network wherever practicable;
- c. cross-membership with Primary Health Networks wherever possible;
- d. where appropriate, people from universities, clinical schools and research centres; and
- e. where appropriate, people with other skills and experience.

E15. The overall makeup of Local Hospital Network Governing Councils are required to be determined taking into account the need to ensure local community knowledge and understanding.

E16. Local Hospital Network Governing Councils are required to be recruited through a process conducted publicly, transparently and in accordance with due process principles, and are required to be remunerated at rates determined by the relevant State.

E17. Local Hospital Network Governing Council members are required to be appointed under State legislation by State Health Ministers. Each Local Hospital Network's Chief Executive Officer (CEO) is required to be appointed by the Governing Council, with the approval of the State Health Minister or their delegate, and are required to be accountable to the Governing Council.

E18. Local Hospital Network Governing Councils are required to establish a formal engagement protocol with local Primary Health Networks.

Local Hospital Network Structure

- E19. Local Hospital Networks are required to comprise single or small groups of public hospitals with a geographic or functional connection, large enough to operate efficiently and to provide a reasonable range of hospital services and small enough to enable the Local Hospital Networks to be effectively managed to deliver high quality services.
- E20. Types of Local Hospital Networks include:
- a. metropolitan Local Hospital Networks, which are required to comprise at least one hospital, but could comprise a small group of hospitals, and should be built around principal referral hospitals or specialist hospitals;
 - b. specialist Local Hospital Networks, which are required to have a functional focus without any particular geographic focus and are required to operate with whole-of-State coverage, for example specialist hospitals or the largest most complex tertiary hospitals; and
 - c. other Local Hospital Networks, bringing together an individual or groups of hospitals operated by third parties as public hospitals, including those operated by religious orders.
- E21. In regional Australia, a flexible approach is required to be adopted to determine the regional, rural and remote Local Hospital Network structure that best meets the needs of these communities and best takes into account the challenges of managing multiple small hospitals.
- E22. If over time States identify that significant changes are needed to roles and structures for Local Hospital Networks, they are required to work with Local Hospital Networks to deliver the adjustments necessary to respond to these changes, including the number and location of staff.
- E23. States are required to work cooperatively with the Commonwealth to ensure, wherever possible, common geographic boundaries with Primary Health Network boundaries, including where States introduce arrangements for cross-border Local Hospital Networks.
- E24. In respect of performance assessment, reporting and management of Local Hospital Networks:
- a. States, as system managers of the public hospital system, are required to agree and adopt the Performance and Accountability Framework (2011 NHRA) and Australian Health Performance Framework (Schedule D), and are required to be responsible for ensuring Local Hospital Network performance in accordance with this framework; and
 - b. States, as system managers of the public hospital system, are required to decide on the nature and timing of actions to remediate ongoing poor performance.

Primary Health Networks

- E25. Primary Health Networks will be the GP and primary health care partners of Local Hospital Networks, responsible for supporting and enabling better integrated and responsive local GP and primary health care services to meet the needs and priorities of patients and communities.

- E26. Primary Health Networks and State-funded health and community services will cooperate to achieve these objectives.
- E27. The strategic objectives for Primary Health Networks are:
- a. identifying the health needs of their local areas and development of relevant focused and responsive services;
 - b. commissioning health services to meet health needs in their region;
 - c. improving the patient journey through developing integrated and coordinated services;
 - d. providing support to clinicians and service providers to improve patient care;
 - e. facilitating the implementation of primary health care initiatives and programs; and
 - f. being efficient and accountable with strong governance and effective management.
- E28. Primary Health Networks have, among other functions, responsibility for assessing the health needs of the population in their region, for identifying gaps in GP and primary health care services and working with other funders and key stakeholders to put in place strategies to address these gaps.
- E29. Primary Health Networks are independent legal entities (not government bodies) with strong links to local communities, health professionals and service providers, including GPs, allied health professionals and Aboriginal and Torres Strait Islander Community Controlled Health Services. Primary Health Networks will reflect their local communities and health care services in their governance arrangements.
- E30. The Commonwealth and States will work together on system-wide policy and State-wide planning for GP and primary health care. The Commonwealth will consult with States and Primary Health Networks to ensure that:
- a. Primary Health Networks are taken into account in system-wide policy and State-wide planning for primary health care; and
 - b. plans required to be developed by Primary Health Networks take account of State-wide plans.
- E31. Primary Health Networks and Local Hospital Networks will be expected to share some common membership of governance bodies where possible. Primary Health Networks will be expected to work closely, and establish a formal engagement protocols, with Local Hospital Networks.
- E32. The Commonwealth will monitor performance for Primary Health Networks.
- E33. States will not establish duplicate GP or primary health care planning and integration organisations. To the extent that such organisations already exist, the Commonwealth and the relevant State will work together to agree a transition plan, including timing, for the organisation then to become part of Primary Health Network arrangements.
- E34. The Commonwealth and States will work together to create linkages and coordination mechanisms, where appropriate, between Primary Health Networks and other State

services that interact with the health system, for example services for children at risk, people with serious mental illness and homeless Australians.

- E35. The Commonwealth will work co-operatively with States to ensure, wherever possible, Primary Health Networks have common geographic boundaries with Local Hospital Networks. These boundaries may be reviewed over time by the Commonwealth in consultation with States.
- E36. Primary Health Networks will engage with the following stakeholders to enable their views to be considered when making decisions on service delivery at the local level, or service and capital planning at the State level:
- a. other Primary Health Networks to collaborate on matters of mutual interest;
 - b. Local Hospital Networks, particularly to improve planning and delivery of services to coordinate and integrate care for patients; and
 - c. the local community and local clinicians, particularly in the area of safety and quality of patient care.

Commonwealth and State engagement to support local care delivery

- E37. GP and primary health care services are integral to an effective and efficient Australian health system. The Commonwealth will renew its efforts to improve GP and primary health care services in the community to improve care for patients. The Commonwealth will take lead responsibility for the system management, funding and policy development of GP and primary health care with the objective of delivering a GP and primary health care system that meets the health care needs of Australians, keeps people healthy, prevents disease and reduces demand for hospital services.
- E38. The Commonwealth and the States will work together on system-wide policy and local, regional and State level planning and funding for GP and primary health care given the impact on the efficient use of hospitals and other State funded services, and because of the need for effective integration across Commonwealth and State-funded health care services at the local level to improve patients' outcomes through early intervention and better coordination of care.
- E39. Commonwealth and States will work together to trial and test better approaches to accountability and funding that supports more integrated service delivery for communities. States will work cooperatively with the Commonwealth in the implementation and ongoing operation of the Commonwealth's primary health care initiatives.

Reforms to primary care to reduce potentially avoidable hospital admissions

- E40. The Commonwealth will continue to invest in programs designed to minimise the impact of potentially preventable hospital admissions arising from shortcomings in areas within its own direct policy control including:
- a. integrating the planning, co-ordination and commissioning of services at a regional level through Primary Health Networks, with a specific focus on the interface between primary health care, and hospital services;
 - b. investments in national implementation of co-ordination of care models for persons

with complex, chronic conditions, and flexible funding models to better support persons with severe mental health conditions, consistent with the November 2015 response to the National Mental Health Commission Report - Contributing Lives, Thriving Communities;

- c. continued national rollout of My Health Records with legislative change to enable opt out provisions, with ongoing patient safety and efficiency benefits;
- d. implementation of the Community Pharmacy Agreement to enhance primary health care management of medications and avoidance of errors; and
- e. partnering with jurisdictions, where appropriate, in relation to primary health care, for example in remote and Aboriginal and Torres Strait Islander communities.

SCHEDULE F – INTERFACES BETWEEN HEALTH, DISABILITY AND AGED CARE SYSTEMS

- F1. Many Australians have increasingly complex care needs that require services from across the health, primary care, disability and aged care systems. This growing complexity requires better coordination between these systems to ensure positive outcomes for people through access to appropriate services, and reductions in avoidable hospital admissions, time spent in hospital and premature residential care admissions. Parties will develop meaningful and transparent mechanisms to monitor and report on system interface performance, and agree appropriate escalation pathways to ensure issues are identified and addressed proactively in a timely manner, to optimise consumer access and care outcomes.
- F2. The Parties recognise:
- a. that the disability, aged care, acute care, primary care and community health systems, including the Aboriginal and Torres Strait Islander Community Controlled Health sector, are part of a whole care and support system and are a collective responsibility;
 - b. all governments have a shared responsibility to improve people’s health outcomes, by supporting consumers, carers and their families to better navigate the health, primary care, aged care, and disability support systems, with the aim of optimising care and support and reducing avoidable hospital admissions;
 - c. the interoperability of the health, primary care, aged care and disability systems, their interfaces, and that policy changes in one system can have an impact on other systems particularly in resource constrained environments.
 - d. that people who regularly move between and interact with the health, aged care and/or disability systems may be more vulnerable, so it is important to have clear and effective mechanisms in place to effectively co-ordinate care across systems;
 - e. that the outcomes of people living with a disability can be improved by supporting their continued access to mainstream health services and the National Disability Insurance Scheme (NDIS), where eligible; and
 - f. that the outcomes for older people can be improved by continued co-ordination between hospital, aged care and mainstream health services, including primary care services.

Roles and responsibilities

- F3. The roles and responsibilities of the Parties where they relate to the interface between health, primary care, aged care and disability support systems, including community and residential aged care, and the NDIS should be read together with the NDIS Bilateral Agreements, the National Psychosocial Supports Measure, relevant legislation and supporting documents including the:
- a. *Aged Care Act 1997*;
 - b. *the Aged Care Safety and Quality Commission Act 2018*;
 - c. *the National Disability Insurance Scheme Act 2013*;

- d. the National Disability Agreement;
 - e. the National Disability Strategy;
 - f. the NDIS Rules; and
 - g. the 'Principles to Determine the Responsibilities of the NDIS and other Service Systems - Applied Principles and Tables of Support (APTOS)' agreed by COAG.
- F4. In addition to the role and functions of the Australian Commission on Safety and Quality in Health Care (ACSQHC) (see Schedule B), the roles and functions of other relevant bodies including the Aged Care Quality and Safety Commission and the NDIS Quality and Safeguards Commission should also be considered.
- F5. The Parties acknowledge the need to build on the activities set out in the 2017 Bilateral Agreements on Coordinated Care, which were designed to improve people's health outcomes and reduce avoidable demand for health services.
- F6. The Commonwealth is responsible for:
- a. policy and regulation of community and residential aged care delivered under Commonwealth-funded aged care programs for all people;
 - b. funding of community and residential aged care delivered under Commonwealth-funded aged care programs for people aged 65 years and over (50 years and over for Aboriginal and Torres Strait Islander people);
 - c. providing continuity of support, where required, for clients of Commonwealth programs that support people who are aged under 65 years with a disability but are not eligible for the NDIS;
 - d. regulating the provision of services under the NDIS via the NDIS Quality and Safeguards Commission, once established in each State; and
 - e. policy and funding to support timely and appropriate access to general practitioners regardless of where people live, through benefits paid for services listed on the Medicare Benefits Schedule (MBS).
- F7. States are responsible for:
- a. policy, funding and regulation of relevant disability supports and services for people aged under 65 years (and Aboriginal and Torres Strait Islander people aged under 50 years) with a disability who are not eligible for the NDIS;
 - b. continuing to fund and provide access to mainstream public hospital and State owned and run community health services, regardless of a person's NDIS participation;
 - c. funding of Commonwealth residential aged care or Home Care Packages for people aged under 65 years, except Indigenous Australians aged 50 years and over, who are not eligible for the NDIS; and
 - d. providing continuity of support, where required, for clients of State specialist disability programs who are found to be ineligible for the NDIS, to assist them to achieve similar outcomes.

- F8. The Parties will share responsibility for:
- a. providing continuity of care across the health, primary care, aged care, and disability systems to ensure smooth client transitions and reduce avoidable hospital admissions, and avoidable disability and aged care admissions; and
 - b. providing direction and strategic guidance through the Disability Reform Council on the NDIS, that funds disability supports and services for people who are eligible.
- F9. Where applicable, the Parties will share program responsibility for their respective community care and residential care services for Aboriginal and Torres Strait Islander clients aged 50 to 64 years, who will be eligible to receive services from an appropriate provider under programs of either level of government. There will be no 'wrong door' for Aboriginal and Torres Strait Islander people in this age group seeking community or residential care services. Where care services are provided under a State funded program to an Aboriginal or Torres Strait Islander person aged 50 years or older the Commonwealth will meet the cost of the service.

Interface between systems

- F10. This work builds on activities agreed in the Bilateral Agreements on Co-ordinated Care that aim to improve care coordination, particularly for people with chronic conditions and a disability, and transitions between residential aged care and primary and acute settings.
- F11. The Parties are committed to working across service systems to ensure legislative and regulatory changes, changes to service types, eligibility, and methods and mechanisms of service delivery avoid a negative impact on the interoperability of health, primary care, aged care and disability systems and people's wellbeing and outcomes, by:
- a. ensuring that changes with anticipated impacts on interfacing systems are managed in a timely and collaborative manner;
 - b. using a range of clearly defined, existing governance mechanisms (including relevant Ministers' forums) to manage, escalate and report on significant interface issues in a timely and sustainable way.
- F12. The Parties agree that the AIHW, in consultation with States, Territories and the Commonwealth, will develop health, primary care, aged care and disability interface performance indicators and an associated data collection and reporting for COAG Health Council (CHC) consideration by June 2021. The indicators will monitor the impact of interface performance on client outcomes (with a focus on priority population groups), in domains including, but not limited to:
- a. responsiveness of assessment and decision making processes;
 - b. equity of access to primary care, aged care, and disability care systems;
 - c. public hospital efficiency, including access to public hospital services, avoidable admissions, and appropriate discharge.
- F13. The Parties recognise that issues may arise at the interface between the health, primary care, aged care and disability systems from time to time. To appropriately identify and understand such issues, Parties agree to:

- a. monitor and report on the effect of any policy or significant service change in one system, on services in other systems;
- b. support the health, primary care, aged care and disability systems to operate together effectively;
- c. monitor and analyse interface performance using performance indicators and data developed and collected under clause F12 to identify new issues and manage known issues;
- d. proactively address identified service gaps in a timely manner that minimises risk to individuals; and
- e. measure effectiveness of system and interface improvement strategies.

F14. The following governance arrangements will apply for resolving system interface issues:

- a. The Australian Health Ministers' Advisory Council (AHMAC) will monitor interface issues that arise between the health system, and primary care or aged care systems, and make recommendations to CHC to resolve those issues. AHMAC will report to CHC on issues and resolution strategies and seek endorsement for any action that requires Ministerial approval. Aged Care Ministers will be included in any decisions relating to the aged care system.
- b. AHMAC and the NDIS Senior Officials Working Group will monitor interface issues that may arise between the health system and the NDIS. Either party can raise an issue to be resolved with outcomes or recommendations to be provided to the Disability Reform Council and/or CHC, as appropriate.
- c. Ministerial Councils will update COAG on any consequential decisions or activity.
- d. COAG will determine appropriate governance arrangements which are not addressed by the above arrangements.

F15. Parties agree to explore the impact of housing security, provision and assistance on people's health outcomes, and report to CHC by December 2021.

F16. The Parties will jointly:

- a. recognise that the principles agreed by COAG in the APTOS will be used to determine the funding and delivery responsibilities of the NDIS and that the interactions of the NDIS with other service systems will reinforce the obligations of other service delivery systems to improve the lives of people with disability, in line with the National Disability Strategy, noting the APTOS does not intend to place additional obligations on other systems;
- b. work together with the NDIA to improve outcomes for people with a disability;
- c. work towards the consistent application and interpretation of data across the systems to assist understanding of the linkages between data sets, establish sharing practices, and explore the viability of a disability identifier in health data;
- d. improve data sharing for serious incident/missed care across systems to provide early warning flags for all regulators; and

- e. work towards sustainability and improved coordination of health, primary health, aged care and disability services particularly in regional, rural and remote communities with progress to be reported to CHC and the Disability Reform Council.

SCHEDULE G – BUSINESS RULES

The following Business Rules are for service providers required to operate under the National Health Reform Agreement. These rules may be amended at any time with agreement in writing by all the parties or on behalf of the parties by the Commonwealth, State and Territory Health Ministers.

Public patient charges

- G1. Where an eligible person receives public hospital services as a public patient no charges will be raised, except for the following services provided to non-admitted patients and, in relation to (f) only, to admitted patients upon separation:
- a. dental services;
 - b. spectacles and hearing aids;
 - c. surgical supplies;
 - d. prostheses – however, this does not include the following classes of prostheses, which must be provided free of charge:
 - i. artificial limbs; and
 - ii. prostheses which are surgically implanted, either permanently or temporarily or are directly related to a clinically necessary surgical procedure;
 - e. external breast prostheses funded by the National External Breast Prostheses Reimbursement Program;
 - f. pharmaceuticals at a level consistent with the Pharmaceutical Benefits Scheme (PBS) statutory co-payments;
 - g. aids, appliances and home modifications; and
 - h. other services as agreed between the Commonwealth and States.
- G2. States can charge public patients requiring nursing care and accommodation as an end in itself after the 35th day of stay in hospital providing they no longer need hospital level treatment, with the total daily amount charged being no more than 87.5 per cent of the current daily rate of the single aged pension and the maximum daily rate of rental assistance.

Charges for patients other than public patients

- G3. Private patients, compensable patients and ineligible persons may be charged an amount for public hospital services as determined by the State.
- G4. Notwithstanding clause G3, pharmaceutical services to private patients, while they receive services as admitted patients, will be provided free of charge and cannot be claimed against the PBS.

Pharmaceutical Reform Arrangements

- G5. States which have signed bilateral agreements for Pharmaceutical Reform Arrangements may charge the PBS for pharmaceuticals for specific categories of patients as provided for

in the Arrangements.

Public health services

- G6. States and the Commonwealth will deliver public health services in accordance with the objectives, principles, roles and responsibilities, and any applicable standards, agreed in relevant national strategies, programs or initiatives.

Public patients' charter and complaints body

- G7. States agree to:
- a. continue the commitment under the previous health care agreements to preparing and distributing a Public Patients' Hospital Charter (the Charter), in appropriate community languages to users of public hospital services; and
 - b. maintaining complaints bodies independent of the public hospital system to resolve complaints made by eligible persons about the provision of public hospital services received by them.

Public Patients' Hospital Charter

- G8. States agree to:
- a. review and update the existing Charter to ensure its relevance to public hospital services. The review should be conducted with the Australian Commission on Safety and Quality in Health Care (ACSQHC);
 - b. develop the Charter in appropriate community languages and forms to ensure it is accessible to people with disabilities and from non-English speaking backgrounds;
 - c. develop and implement strategies for distributing the Charter to public hospital service users and carers; and
 - d. adhere to the Charter.
- G9. States agree to the following minimum standards:
- a. the Charter will be promoted and made publicly available whenever public hospital services are provided; and
 - b. the Charter will set out:
 - i. how the principles included in this Addendum are to apply to the provision of public hospital services in States;
 - ii. the process by which eligible persons can lodge complaints about the provision of public hospital services to them;
 - iii. that complaints may be referred to an independent complaints body;
 - iv. a statement of the rights and responsibilities of consumers and public hospitals in the provision of public hospital services in States and the mechanisms available for user participation in public hospital services; and

- v. a statement of consumers’ rights to elect to be treated as either public or private patients within States’ public hospitals, regardless of their private health insurance status.

Independent Complaints Body

- G10. States agree to maintain an independent complaints body to resolve complaints made by eligible persons about the provision of public hospital services to them.
- G11. States agree to the following minimum standards:
- a. the complaints body must be independent of bodies providing public hospital services and State health departments;
 - b. the complaints body must be given powers to investigate, conciliate and/or adjudicate on complaints received by it; and
 - c. the complaints body must be given the power to recommend systemic and specific improvements to the delivery of public hospital services.
- G12. The Commonwealth and the States agree that the powers of the complaints body will not interfere with or override the operation of registration boards or disciplinary bodies in States and that the exercise of powers by the complaints body will not affect the rights that a person may have under common law or statute law.
- G13. To assist in making recommendations and taking action to improve the quality of public hospital services, States agree to implement a consistent national approach, agreed with the ACSQHC or any successor, to collecting and reporting health complaints data to improve services for patients.

Patient arrangements

- G14. Election by eligible patients to receive admitted public hospital services as a public or private patient will be exercised in writing before, at the time of, or as soon as possible after admission and must be made in accordance with the minimum standards set out in this Addendum.
- G15. In particular, private patients have a choice of doctor and all patients will make an election based on informed financial consent.
- G16. Where care is directly related to an episode of admitted patient care, it should be provided free of charge as a public hospital service where the patient chooses to be treated as a public patient, regardless of whether it is provided at the hospital or in private rooms.
- G17. Services provided to public patients should not generate charges against the Commonwealth MBS:
- a. except where there is a third party payment arrangement with the hospital or the State, emergency department patients cannot be referred to an outpatient department to receive services from a medical specialist exercising a right of private practice under the terms of employment or a contract with a hospital which provides public hospital services;
 - b. referral pathways must not be controlled so as to deny access to free public hospital

services; and

- c. referral pathways must not be controlled so that a referral to a named specialist is a prerequisite for access to outpatient services.

G18. An eligible patient presenting at a public hospital emergency department will be treated as a public patient, before any clinical decision to admit. On admission, the patient will be given the choice to elect to be a public or private patient in accordance with the National Standards for Public Hospital Admitted Patient Election processes (unless a third party has entered into an arrangement with the hospital or the State to pay for such services). If it is clinically appropriate, the hospital may provide information about alternative service providers, but must provide free treatment if the patient chooses to be treated at the hospital as a public patient. However:

- a. a choice to receive services from an alternative service provider will not be made until the patient or legal guardian is fully informed of the consequences of that choice; and
- b. hospital employees will not direct patients or their legal guardians towards a particular choice.

G19. An eligible patient presenting at a public hospital outpatient department will be treated free of charge as a public patient unless:

- a. there is a third party payment arrangement with the hospital or the State or Territory to pay for such services; or
- b. the patient has been referred to a named medical specialist who is exercising a right of private practice and the patient chooses to be treated as a private patient.

G20. Where a patient chooses to be treated as a public patient, components of the public hospital service (such as pathology and diagnostic imaging) will be regarded as a part of the patient's treatment and will be provided free of charge.

G21. In those hospitals that rely on GPs for the provision of medical services (normally small rural hospitals), eligible patients may obtain non-admitted patient services as private patients where they request treatment by their own GP, either as part of continuing care or by prior arrangement with the doctor.

G22. States which have signed a Memorandum of Understanding with the Commonwealth for the COAG initiative "Improving Access to Primary Care Services in Rural and Remote Areas" may bulk bill the MBS for eligible persons requiring primary health care services who present to approved facilities.

G23. In accordance with this Addendum, public hospital admitted patient election processes for eligible persons should conform to the national standards set out in this schedule.

Data provision to private health insurers

G24. Hospitals will continue to provide data on privately insured patients treated in a public hospital to insurers, consistent with the agreed private patients claim form (clause G30).

G25. Consistent with the principle of single provision, multiple use, Local Hospital Networks and the AIHW will work towards providing data on privately insured patients treated in a public hospital to insurers as required under the Private Health Insurance (Health

Insurance Business) Rules made under the *Private Health Insurance Act 2007*.

- G26. The Commonwealth will consult with States on any changes to the Private Health Insurance (Health Insurance Business) Rules made under the *Private Health Insurance Act 2007* that impact on the practices of public hospitals. Any changes to data provision requirements to private health insurers should avoid creating undue additional administrative burden on public hospitals.

Certification documentation

- G27. Consistent with the Private Health Insurance (Health Insurance Business) Rules, private health insurers are not to:
- a. request certification documentation from public hospitals beyond those requirements prescribed in the National Private Patient Hospital Claim Form; or
 - b. delay or refuse payments of claims for eligible hospital treatments.
- G28. Where there is insufficient or incorrect information in certification documentation, private health insurers should, in the first instance, work with the public hospital providing the certification documentation and seek further information.
- G29. As regulators of private health insurers, the Commonwealth will review compliance with the minimum standards set out in this Addendum, the Private Health Insurance (Health Insurance Business) Rules and the *Private Health Insurance Act 2007* annually, report any relevant findings to the COAG Health Council (CHC), and publish the review.

Public hospital admitted patient election forms

- G30. States agree that while admitted patient election forms can be tailored to meet individual State or public hospital needs, as a minimum, all forms will include:
- a. a statement that all eligible persons have the choice to be treated as either public or private patients. A private patient is a person who elects to be treated as a private patient and elects to be responsible for paying fees of the type referred to in clause G1 of this Addendum;
 - b. a private patient may be treated by a doctor of his or her choice and may elect to occupy a bed in a single room. A person may make a valid private patient election in circumstances where only one doctor has private practice rights at the hospital. Further, single rooms are only available in some public hospitals, and cannot be made available if required by other patients for clinical reasons. Any patient who requests and receives single room accommodation must be admitted as a private patient (note: eligible veterans are subject to a separate agreement);
 - c. a statement that a patient with private health insurance can elect to be treated as a public patient;
 - d. a clear and unambiguous explanation of the consequences of public patient election. This explanation should include advice that admitted public patients (except for care and accommodation type patients as referred to in clause G2):
 - i. will not be charged for hospital accommodation, medical and diagnostic services, prostheses and most other relevant services; and

- ii. are treated by the doctor(s) nominated by the hospital;
- e. a clear and unambiguous explanation of the consequences of private patient election. This explanation should include advice that private patients:
 - i. will be charged at the prevailing hospital rates for hospital accommodation (whether a shared ward or a single room), medical and diagnostic services, prostheses and any other relevant services;
 - ii. may not be fully covered by their private health insurance for the fees charged for their treatment and that they should seek advice from their doctor(s), the hospital and their health fund regarding likely medical, accommodation and other costs and the extent to which these costs are covered; and
 - iii. are able to choose their doctor(s), providing the doctor(s) has private practice rights with the hospital;
- f. evidence that the form was completed by the patient or legally authorised representative before, at the time of, or as soon as practicable after, admission. This could be achieved by the witnessing and dating of the properly completed election form by a health employee;
- g. a statement that patient election status after admission can only be changed in the event of unforeseen circumstances. Examples of unforeseen circumstances include, but are not limited to, the following:
 - i. patients who are admitted for a particular procedure but are found to have complications requiring additional procedures;
 - ii. patients whose length of stay has been extended beyond those originally and reasonably planned by an appropriate health care professional; and
 - iii. patients whose social circumstances change while in hospital (for example, loss of job);
- h. in situations where a valid election is made, then changed at some later point in time because of unforeseen circumstances, the change in patient status is effective from the date of the change onwards, and should not be retrospectively backdated to the date of admission;
- i. it will not normally be sufficient for patients to change their status from private to public, merely because they have inadequate private health insurance cover, unless unforeseen circumstances such as those set out in this Schedule apply;
- j. a statement signed by the admitted patient or their legally authorised representative acknowledging that they have been fully informed of the consequences of their election, understand those consequences and have not been directed by a hospital employee to a particular decision;
- k. a statement signed by admitted patients or their legally authorised representatives who elect to be private, authorising the hospital to release a copy of their admitted patient election form to their private health insurance fund, if so requested by the fund. Patients should be advised that failure to sign such a statement may result in the refusal of their health fund to provide benefits; and

- i. where admitted patients or their legally authorised representatives, for whatever reason, do not make a valid election, or actual election, these patients will be treated as public patients and the hospital will choose the doctor until such time as a valid election is made. When a valid election is made, that election can be considered to be for the whole episode of care, commencing from admission.

Multiple and frequent admissions election forms

- G31. A State or hospital may develop a form suitable for individuals who require multiple or frequent admissions. The form should be for a specified period, not exceeding six months, and nominate the unit where the treatment will be provided. Further, the form should be consistent with the national standards and provide patients with the same information and choices as a single admission election form.

Other written material provided to patients

- G32. Any other written material provided to patients that refers to the admitted patient election process must be consistent with the information included in the admitted patient election form. It may be useful to include a cross reference to the admitted patient election form in any such written material.
- G33. All parties agree that written material provided to patients by public hospitals or private health insurers on the choice to elect to be treated privately will:
- a. be appropriate, robust and best support the consumer to make an informed choice; and
 - b. refrain from directing the patient to a particular choice.

Verbal advice provided to patients

- G34. Any verbal advice provided to admitted patients or their legally authorised representatives that refers to the admitted patient election process must be consistent with the information provided in the admitted patient election form.
- G35. Admitted patients or their legally authorised representatives should be referred to the admitted patient election form for a written explanation of the consequences of election.
- G36. To the maximum extent practicable, appropriately trained staff should be on hand at the time of election, to answer any questions admitted patients or their legally authorised representatives may have.
- G37. Verbal advice provided to patients by public hospitals or private health insurers on the choice to elect to be treated privately will:
- a. be appropriate, robust and best support the consumer to make an informed choice; and
 - b. refrain from directing the patient to a particular choice.
- G38. Through the provision of translation/interpreting services, hospitals should ensure, where appropriate, that admitted patients, or their legally authorised representatives, from non-English speaking backgrounds are not disadvantaged in the election process.

APPENDIX A – DEFINITIONS

- A. A reference in this Addendum to the *Health Insurance Act 1973* or the *National Health Act 1953* is a reference to the Acts as at 1 July 2020 or as amended thereafter.
- B. Words and phrases which are not defined in this Addendum or defined in the *Health Insurance Act 1973* are to be given their natural meaning.
- C. In this Addendum, unless otherwise specified, words and phrases are to be interpreted as follows.

Activity Based Funding (ABF)	Refers to a system for funding public hospital services provided to individual patients using national classifications, cost weights and nationally efficient prices developed by the Independent Hospital Pricing Authority.
ABF Service	Means a Public Hospital Service funded under ABF.
Administrator	Means the Administrator of the National Health Funding Pool, who is appointed in accordance with section 232 of the <i>National Health Reform Act 2011</i> , and performs the functions set out in Schedule B.
Admitted patient	Means “Admitted patient” as defined in the National Health Data Dictionary.
Australian Commission on Safety and Quality in Health Care	Means the authority performing the functions set out in Schedule B.
Australian Health Performance Framework	Means the framework established in accordance with Schedule D.
Avoidable Hospital Readmission	Means a clinical condition identified by the Australian Commission on Safety and Quality in Health Care for the purpose of clause A170 of Schedule A.
Block Funding	Means funding provided to support: <ul style="list-style-type: none"> • Public hospital functions other than patient services; and • Public patient services provided by facilities that are not appropriately funded through ABF.
Blended funding models	Means payments that use multiple mechanisms e.g. fee-for-service and pay-for-performance.
Bundled payment	Means a single payment for multiple services.
COAG	Refers to the Council of Australian Governments, being the peak intergovernmental forum in Australia, comprising the Prime Minister, State Premiers, Territory Chief Ministers and the President of the Australian Local Government Association (ALGA).

COAG Health Council	Means the forum established to facilitate provision of advice by Health Ministers to COAG.
Compensable patient	Means an eligible person who is: <ul style="list-style-type: none"> • receiving public hospital services for an injury, illness or disease; and • entitled to receive or has received a compensation payment in respect of an injury, illness or disease; or if the individual has died.
Commissioning	Means a continual and iterative cycle involving the development and implementation of services based on needs assessment, planning, co-design, funding, monitoring and evaluation. <p>Operational commissioning (or service commissioning) involves applying the design and governance principles of commissioning to a service, group of services or activities to create better service integration and community outcomes.</p> <p>Commissioning is undertaken at the regional level by organisations such as Local Hospital Networks, Primary Health Networks and the community health sector. A range of approaches can be used in commissioning of health care services. In the context of the National Health Reform Agreement, these could include co-commissioning arrangements between health agencies and agencies and organisations from other service sectors such as Human Services, Education, Justice), to develop joined-up and co-ordinated service responses to complex service needs. Joint commissioning arrangements, which often involve the use of a pooled or aligned budget, may also be used.</p>
Commonwealth Funding Entitlement	Means, in respect of a State, its Uncapped Commonwealth Funding Entitlement, adjusted for the imposition of the Soft Cap and any Redistribution Amount that may be payable. It may be expressed on an estimated basis prior to annual Reconciliation or a final basis after annual Reconciliation and Redistribution.
Complaints body	Means an independent entity established or commissioned to investigate complaints and/or grievances against providers of States' public hospital services.
Cultural safety	Means that health consumers are safest when health professionals have considered power relations, cultural differences and patients' rights. Part of this process

requires health professionals to examine their own realities, beliefs and attitudes.

Cultural safety is not defined by the health professional, but is defined by the health consumer’s experience—the individual’s experience of care they are given, ability to access services and to raise concerns.

The essential features of cultural safety are:

- a. An understanding of one’s culture
- b. An acknowledgment of difference, and a requirement that caregivers are actively mindful and respectful of difference(s)
- c. It is informed by the theory of power relations; any attempt to depoliticise cultural safety is to miss the point
- d. An appreciation of the historical context of colonisation, the practices of racism at individual and institutional levels, and their impact on First Nations people’s living and wellbeing, both in the present and past
- e. Its presence or absence is determined by the experience of the recipient of care and not defined by the caregiver.

[definition sourced from AHMAC’s *Cultural Respect Framework 2016-2026*]

Data Conditional Payment (DCP)	Means the mechanism described at clause A155 in Schedule A to provide an incentive for the prompt provision of hospital activity data to enable timely Reconciliation.
Default bed day rate	Means the rate set by the Commonwealth Minister under the <i>Private Health Insurance Act 2007</i> .
Eligible admitted private patient	Means an eligible patient who is admitted and chooses to be treated as a private patient, and excludes compensable patients and other patients funded by third parties.
Eligible person	Means, as defined in subsection 3(1) (6) (6A) and (7) of the <i>Health Insurance Act 1973</i> , excluding compensable patients.
Emergency department	Means admission level three or above emergency service under the Australian College for Emergency Medicine guidelines, or as otherwise recommended by the IHPA and agreed by the COAG Health Council.
Entitled veteran	Means a Department of Veterans’ Affairs patient referred to in the <i>Veterans’ Entitlements Act 1986</i> .

Federated approach (related to Health Technology Assessment)	Means an overarching centralised framework, within which the Commonwealth and each State and Territory keeps some internal autonomy.
HAC List	Means the Hospital Acquired Complication List maintained by the Australian Commission on Safety and Quality in Health Care, as amended from time to time.
Health Technology Assessment (HTA)	Means the systematic evaluation of the properties and effects of a health technology, addressing direct and intended effects, as well as its indirect and unintended consequences, and aimed mainly at informing decision making. Health technologies include tests, devices, medicines, vaccines, procedures, programs and systems.
High cost, highly specialised therapies	Means TGA approved medicines and biologicals delivered in public hospitals where the therapy and its conditions of use are recommended by MSAC or PBAC; and the average annual treatment cost at the commencement of funding exceeds \$200,000 per patient (including ancillary services) as determined by the MSAC or PBAC with input from the IHPA; and where the therapy is not otherwise funded through a Commonwealth program or the costs of the therapy would be appropriately funded through a component of an existing pricing classification.
Highly-specialised services	Means high cost, low volume services that require a highly skilled and specialised workforce and require a national population catchment to ensure quality and safety is maintained.
Hospital Acquired Complication (HAC)	Means a condition set out on the HAC List and approved by the COAG Health Council.
Implementation principles	Means the principles that should underpin National Health Reform as set out in clauses 17 to 19.
Independent Hospital Pricing Authority (IHPA)	Means the authority established under the <i>National Health Reform Act 2011</i> to perform the functions set out in Schedule B.
Individual health literacy	Means the skills, knowledge, motivation and capacity of a person to access, understand, appraise and apply information to make effective decisions about health and health care and take appropriate action.
Ineligible person	Means any person who is not an eligible person.
Informed financial consent	Means the provision of cost information to patients, (including any likely out-of-pocket expenses), by a doctor or other health service provider, preferably in writing, about a proposed treatment or admission to hospital.

Local Hospital Network	Means an organisation established in accordance with Schedule E and providing public hospital services.
Medicare Benefits Schedule (MBS)	Means the Commonwealth government’s scheme to provide medical benefits to Australians established under part II, IIA, IIB and IIC of the <i>Health Insurance Act 1973</i> together with relevant Regulations made under the Act.
Medicare Principles	Means the principles set out in clause 8 of this Addendum.
National efficient cost	Means the model that underpins funding for services that are not suitable for activity based funding, such as small rural hospitals. The national efficient cost determines the Commonwealth Government contribution to block funded hospitals.
National efficient price	Means the base price(s) which will be determined by the IHPA and applied to those services funded on the basis of activity for the purpose of determining the amount of Commonwealth funding to be provided to Local Hospital Networks. The IHPA may determine that there are different base prices for discrete categories of treatment, for example admitted care, sub-acute care, non-admitted emergency department care and outpatient care. In the event that there are multiple national efficient prices, the IHPA will determine which national efficient price applies.
National bodies	Means the functions and bodies established and existing from time to time for the purposes of the Addendum, including, without limitation, the Administrator, the National Health Funding Body, the Independent Hospital Pricing Authority and the Australian Commission on Safety and Quality in Health Care.
National Funding Cap	Means the limit in growth in Commonwealth funding for Public Hospital Services for all States of 6.5 per cent per annum and where the context so requires includes the operation of the Funding Cap as provided in this Addendum.
National Funding Model	Means the calculation, payment and reconciliation of Commonwealth national health reform funding entitlements for health services, by the Administrator of the National Health Funding Pool (Administrator) applying the agreed methodology, business rules and policies. This is calculated from activity based funding based on National Weighted Activity Units and the Independent Hospital Pricing Authority’s (IHPA) National

	Efficient Price determination, and block funding calculated from the IHPA's National Efficient Cost determination.
	The agreed methodology, business rules and policies include the activity based funding formula, the Administrator's Calculation of Commonwealth National Health Reform Funding and associated operational documents, IHPA's Pricing Framework and National Pricing Model specifications, classification systems, counting rules, data, coding and costing standards.
National Health Data Dictionary	Means the publication (in hard copy and/or the internet) containing the Australian National Standard of Data Definitions recommended for use in Australian health data collections; and the National Minimum Data Sets agreed for mandatory collection and reporting at a national level.
National Health Funding Body	Means the body established under the <i>National Health Reform Act 2011</i> to assist the Administrator in carrying out his or her functions under Commonwealth and State legislation, in accordance with Schedule B of this Addendum.
National Health Funding Pool	Means the pool established by enabling Commonwealth and State legislation in accordance with Schedule B of this Addendum.
Non-admitted patient services	Means services of the kind defined in the National Health Data Dictionary, under the data element "Non-Admitted Patient Service Type".
Outpatient department	Means any part of a hospital (excluding the emergency department) that provides non-admitted patient care.
Parties	Means the signatories to this Addendum, being the Commonwealth and each State and Territory.
Patient election status	Means the status of patients according to the National Standards for Public Hospital Admitted Patient Election Processes in Schedule G.
Patient Reported Measures	Means information collected about the experience of health services, and the outcomes of health services, as described by patients. <ul style="list-style-type: none"> • Patient-reported experience measures (PREMs) include patients' views and observations on matters such as the accessibility and physical environment of services and aspects of the patient–clinician interaction. • Patient-reported outcome measures (PROMs) are used to obtain information from patients on their

	health status such as overall health and wellbeing, the severity of symptoms such as pain, measures of daily functioning and psychological symptoms.
Pharmaceutical Benefits Scheme (PBS)	Means the Commonwealth government’s scheme to provide subsidised pharmaceuticals to Australians established under part VII of the <i>National Health Act 1953</i> (the Act) together with the National Health (Pharmaceutical Benefits) Regulation 1960 made under the Act.
Pharmaceutical Reform Arrangements	Means arrangements which provide for public hospitals that are Approved Hospital Authorities under Section 94 of the <i>National Health Act 1953</i> to supply pharmaceuticals funded by the PBS for specific categories of patients including: <ul style="list-style-type: none"> • admitted patients on separation; • non-admitted patients; and • same day admitted patients for a range of drugs made available by specific delivery arrangements under Section 100 of the <i>National Health Act 1953</i>.
Population health	Means activities aimed at benefiting a population, with an emphasis on prevention, protection and health promotion as distinct from treatment tailored to individuals with symptoms. Examples include the conduct of anti-smoking education campaigns, and initiatives to increase accessibility and promotion of healthier food and drink. Can also refer to the health of particular sub-populations, and comparisons of the health of different populations.
Private Health Insurance Rebate	Means the Commonwealth Government’s scheme to provide private health insurance rebates established under the <i>Private Health Insurance Act 2007</i> together with relevant Regulations and rules made under that Act.
Public Hospital Services	Means the services, functions and activities funded by the Commonwealth under this Addendum, including service subject to Activity Based Funding, Block Funding or public health activities.
Public patient	Means an eligible person who receives or elects to receive a public hospital service free of charge.
Public patients’ hospital charter	Means the document outlining how the principles of this Addendum are to be applied; the process by which eligible persons might lodge complaints about the provision of public hospital services; a statement of rights and responsibilities of consumers and public hospitals; and a statement of consumers’ rights to elect

	to be treated as either public or private patients.
Reconciliation	Means the Reconciliation of actual ABF Service delivery volume undertaken within a State to the estimate of ABF Service delivery volumes provided by a State in accordance with clauses A63 to A76 of Schedule A of this Addendum.
Redistribution	Means the allocation of remaining funding under the National Funding Cap to States whose Uncapped Commonwealth Funding Entitlement exceeded their respective Soft Funding Cap in accordance with clause A77 of Schedule A of this Addendum.
Redistribution Amount	Means an amount paid by the Commonwealth to a State that is entitled to additional funds as a result of the Redistribution.
Relevant financial year	Means a specific financial year for which data is submitted by the Parties so that the Administrator can calculate the Commonwealth funding and payments for that financial year.
Required Data	Means each of: <ul style="list-style-type: none"> a. the data specified as being required for Reconciliation in the data plan issued by the Administrator for the relevant financial year; b. data necessary to enable the Administrator to operate the pricing and funding models agreed by the Parties to calculate Safety and Quality Adjustments; c. data necessary to identify Sentinel Events; and d. the duly completed Statement of Assurance.
Risk/reward share payment	Means payments where the provider/s share in the financial risk and reward.
Safety and Quality Adjustment	Means a reduction in funding payable to a State by the Commonwealth for Public Hospital Services, funded either under ABF or Block Funding, following the occurrence of a HAC or an Avoidable Hospital Readmission in accordance with the pricing and funding models to be developed by the Parties for this purpose.
Sentinel Event	Means an event set out on the Sentinel Events List.
Sentinel Events List	Means events set out on the Australian Sentinel Events List maintained by the Australian Commission on Safety and Quality in Health Care and approved by the COAG Health Council.
Service Agreement	Means an agreement between a State and a Local Hospital Network consistent with this Addendum.

Soft Cap	Means the limit in growth in Commonwealth funding for Public Hospital Services in a State of 6.5 per cent per annum.
Statement of Assurance	Means the statement as to the completeness and accuracy of data submitted, issued in accordance with clauses B82 and B83 in Schedule B of this Addendum.
State managed fund(s)	Means a fund(s) or account(s) established by State legislation for the purpose of receiving funding for block grants, teaching, training and research.
States	Means States and Territories.
Uncapped Commonwealth Funding Entitlement	Means in respect of a State in a relevant financial year, its entitlement to Commonwealth funding for Public Hospital Services in that State under the Addendum, excluding the impact of the National Funding Cap or any relevant Soft Cap.
Value	Means maximising patient experience and outcomes, improving population health and high quality, evidence-based clinical care, relative to the cost of delivery. This definition of value-based health care involves the alignment of incentives for all stakeholders (including patients, families, providers and governments) in order to obtain the best possible health outcomes for all Australians.
Weighted services	Means services of a particular ABF category where each service may count as more or less than one service as determined by the cost weight determined by the IHPA to be applicable to that service.

APPENDIX B – GOVERNANCE PROCESS FOR HIGHLY SPECIALISED THERAPIES

- A. The Medical Services Advisory Committee (MSAC) and Pharmaceutical Benefits Advisory Committee (PBAC) Chairs, together with a COAG Health Council (CHC) representative will jointly decide on which committee should assess the application for a new drug or therapy, where the HCT is likely to be delivered in a public facility.
 - I. The rules for PBAC assessment are set out in the National Health Act 1953. Where the matter does not fall within the definition for consideration by PBAC it is assessed by MSAC.
 - II. The Chair of CHC will nominate one representative on behalf of all states and territories to participate in this meeting. This representative is to have the same clinical expertise as the MSAC and PBAC Chairs.
- B. For therapies that will be assessed by MSAC and delivered in a public hospital, the Commonwealth will write to states and territories advising them that an application has been received and invite them to make a submission to MSAC for consideration, noting that the states and territories will need to abide by the same confidentiality requirements as MSAC members.
 - I. The terms of reference of MSAC will be amended to ensure that MSAC is obliged to consider any submission from a state or territory where it is relevant to comparative safety, clinical effectiveness and/or cost-effectiveness of the therapy.
- C. For therapies that will be assessed by MSAC and delivered in a public hospital, states and territories will be invited to send a representative to observe the meeting where the application will be considered.
 - I. This will enable states and territories to ensure all submissions are considered and to have an early heads up that the MSAC has recommended a therapy for public funding.
- D. States and territories will be notified on the same day that the company agrees to the recommendations of MSAC.
 - I. This is usually 6-8 weeks after the MSAC recommendation, depending on the approach of the company.
- E. Once the company agrees to the recommendations of MSAC, the decision of MSAC is published on the public website.
 - I. States and territories will be notified before this occurs.
- F. States and territories decide when and where the therapy will be provided.

COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-39

This is the Annexure marked "DD-39" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

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Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.



NSW Health

Commissioning for Better Value Strategy 2021-24

Shifting our focus from outputs to outcomes

“NSW Health is committed to a strategic response to the challenges of our health system.

The needs of our patients, clinicians and communities are changing, and impacted by rising healthcare costs and new technologies. A value based healthcare approach strives to improve health outcomes that matter most to patients, patient and clinician experience, and service efficiency and effectiveness.



Value is defined by outcomes and experiences that matter most to the people receiving and delivering care, relative to the costs of achieving those outcomes.

Commissioning for Better Value (CBV) is one of the statewide programs accelerating NSW Health’s move to value based healthcare. The approach puts the patient at the centre of service design, with a focus on measuring and achieving outcomes. It relies on us working with our internal and external stakeholders to prioritise outcomes and collaborating to deliver these.

The lessons learnt from applying a commissioning approach over the past few years have informed the Commissioning for Better Value Strategy. The strategy outlines the direction for implementing Commissioning for Better Value across services that support patient care over the next three years.

Embedding Commissioning for Better Value in the health system will help deliver high-quality and equitable healthcare, ensure our resources are allocated optimally, and support innovation to deliver outcomes that matter to patients. This is an important part of building a health system for the future.

Thank you to all who contributed their time and input to the development of the strategy.”



**Dr Nigel Lyons, Deputy Secretary,
Health System Strategy and Planning,
NSW Health**

Commissioning for Better Value (CBV)

Strategy at a glance

NSW Health vision

A sustainable health system that delivers outcomes that matter to patients and the community, is personalised, invests in wellness and is digitally enabled.

Goal

To enhance NSW Health services that support patient care by shifting our focus from outputs to outcomes.

Objectives

Drive awareness and understanding of CBV in alignment with value based health care

Support partnerships and networks to build CBV capability

Embed value based healthcare in CBV across the system

Monitor implementation and evaluate the impact of CBV

by June 2023

by June 2024

Implementation plan

Embed

Established 'business as usual' norms, culture and partnerships in NSW health services.

2021-23

- Build capability in districts, pillars, networks and our external partners to apply CBV.
- Influence policy to embed CBV in NSW Health strategies, service statements and agreements, contracts, grants, business cases and reform initiatives.

Sustain

Best practice sustained that reinforces an outcomes focus in NSW health services.

2023-24

- Explore new funding models that support a commissioning approach.
- Review and renew CBV strategy.

Outcomes focus on improving



Health outcomes that matter to patients

Services define, implement and measure outcomes that matter to patients. This contributes to the delivery of high quality, timely and safe patient care.



Experience of receiving care

Patient experience is improved by service delivery which is accessible, high-quality, appropriate, timely and safe.



Experience of providing care

Clinician engagement in CBV is strengthened to optimise the experience of providing care. This contributes to improved patient outcomes.



Effectiveness and efficiency of care

Drawing on evidence-based data, service managers and clinicians are equipped to use CBV to empower innovation and improve services.

CBV is accelerating our move to value based healthcare

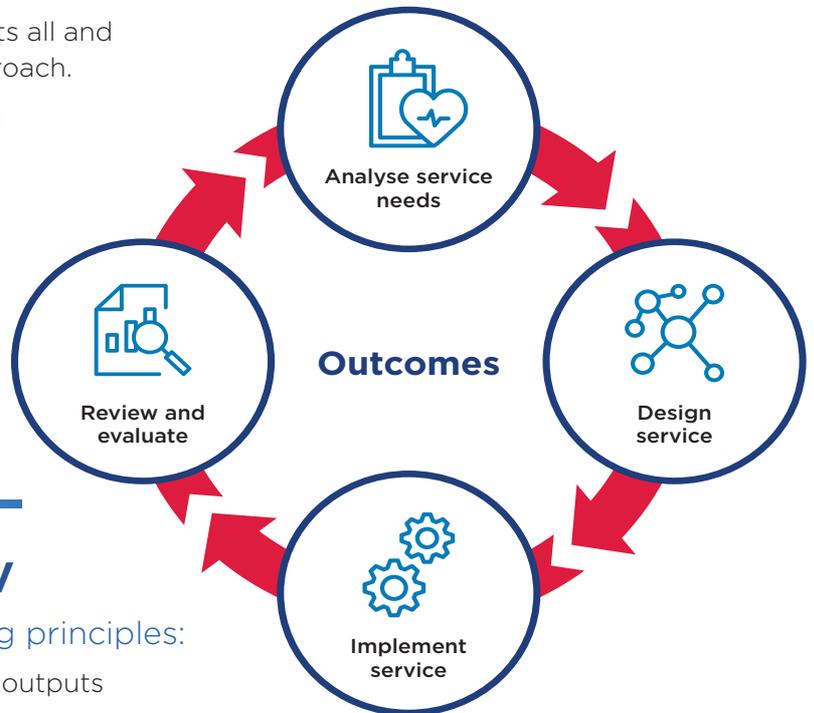
CBV provides a structure that puts the patient at the centre of service design, with a focus on measuring and achieving outcomes. Services that deliver improved outcomes for patients, better experiences for patients, clinicians and other end-users drive value within the health system.

Commissioning is about analysing service need and performance, developing models of care and delivering services based on this analysis. CBV helps shift the focus from outputs to outcomes designed around the person receiving care.

A commissioning approach is not a one-size fits all and not all projects may suit a commissioning approach.

A commissioning approach is commonly used:

- to develop and review service delivery policies, proposals and contracts
- as part of strategic planning and organisational redesign
- when the service contract or industry is affected by innovation or change.



Principles underpinning CBV

This strategy is guided by the following principles:

- services focus on outcomes rather than outputs
- patients are at the centre of service design
- service and outcomes are defined in collaboration with patients, their families and carers, communities, clinicians, service providers and other key stakeholders
- evidence and data is used to plan, implement, evaluate and continuously improve services
- service delivery models reflect local patient demographics, needs and preferences, as well as environmental sustainability and market capacity and capability
- robust governance and executive sponsorship guide the strategic direction.



Commissioning for Better Value is an outcomes-based approach that helps design, implement and manage services that support patient care.



Actions supporting implementation

We will collaborate with patients, clinicians, service managers and our external partners to implement the strategy.

Strategic Reform and Planning Branch at the NSW Ministry of Health sponsors this strategy. Governance and oversight lies with the Commissioning for Better Value Working Group which comprises members from local health districts, Ministry branches and other NSW Health organisations. An implementation plan accompanies the strategy to support delivery, mapping actions to identified responsibilities, time frames and evaluation.



Drive awareness and understanding of CBV in alignment with value based healthcare (VBHC)

- develop CBV information, resources and tools that support decision making
- use a variety of channels and leverage existing opportunities to promote CBV
- promote benefits of outcomes based commissioning



Support partnerships and networks to build CBV capability

- increase collaboration to facilitate partnerships
- promote knowledge sharing to enhance access to information and data
- strengthen commissioning capability through training and workshops
- provide strategic advice and support to assist NSW Health staff apply CBV in practice
- engage external partners such as service providers, markets and funders in outcomes-focused service delivery



Embed value based healthcare in commissioning across the system

- apply learnings from past and current projects
- support services to develop outcomes and measures for planning, design and review
- explore new commissioning projects and funding models to support innovation
- embed accountability for CBV into service statements and agreements
- maintain strong governance to provide strategic direction and executive sponsorship for CBV projects



Monitor implementation and evaluate the impact of CBV

- align CBV measurement with the broader VBHC evaluation
- track progress in achieving CBV outcomes
- complete an annual review of the CBV strategy with a focus on continuous improvement
- monitor CBV enquiries and developments in commissioning policy and practice

Monitoring and evaluation

A monitoring and evaluation plan will be developed to support this strategy. It will identify measures to monitor progress of the strategy and achievement of the CBV outcomes. The plan will be refined with advice from the Value Based Healthcare (VBHC) Monitoring and Evaluation Working Group which has been established to align and coordinate monitoring and evaluation activity across the statewide programs.

Some examples of intermediate measures of success may include:

- increased number and types of projects that use a CBV approach
- increased number of tenders and contracts that apply outcome measures
- increased adoption of co-design consultation processes
- increased CBV capability for districts, networks and pillars
- CBV is formalised in procurement policy and performance frameworks.

An annual review will be conducted to track performance, with a final review at the end of the strategy term.



We will apply a value based healthcare lens to commissioning, embed CBV practice and support change through a range of system-wide enablers.

CBV in practice

CBV helped Northern NSW Local Health District (NNSWLHD) shift the focus from outputs to outcomes for their medical imaging services. The district analysed service needs to design a medical imaging service that delivers the right services to the right places and focuses on the outcomes that matter most to patients. They used extensive consultation and co-design processes to ensure the feedback and perspectives of their stakeholders informed the design of medical imaging services for the district.

Transition to the new service began in October 2020. The district will monitor the service goals using key performance indicators (KPIs) informed by measurable outcomes. This will include annual patient and clinician experience surveys to identify continuous improvement opportunities.

"This opportunity was a true collaboration with genuine engagement of medical, nursing and technical staff throughout. We are now a few months into the transition to the new district-wide services, and our medical officers are providing positive feedback about the high quality of the services."

Wayne Jones
Chief Executive, NNSWLHD



Links to policies, strategies and initiatives

Several developments have occurred across NSW in recent years that drive the delivery of outcomes for the people of NSW.

Outcome budgeting facilitates the allocation of public resources with a focus on achieving outcomes.

NSW Human Services Outcomes Framework is a cross-agency approach to achieve better outcomes for the NSW population. The framework outlines seven wellbeing outcomes: safety, home, economic, health, education and skills, social and community, and empowerment.

Commissioning Policy provides a platform for NSW Government agencies to explore ways to create better service outcomes. It is a whole-of-government approach that sets out governing principles for commissioning.

NSW State Health Plan Toward 2021 provides the strategic framework that underpins plans, programs and policies across NSW Health to deliver the right care, in the right place, at the right time. Strategic direction for the next decade of care will progress NSW Health's vision for 'a sustainable health system that delivers outcomes that matter to patients, is personalised, invests in wellness and is digitally enabled'.

Elevating the Human Experience is a statewide strategy informed by patients, families, carers, volunteers and NSW Health staff. It focuses on what we can do together to create positive, personalised experiences.

The CBV Strategy supports value based healthcare together with other initiatives.

Value Based Healthcare (VBHC) is NSW Health's approach to delivering outcomes and experiences that matter to patients and the community. Programs accelerating our move to VBHC include:

Commissioning for Better Value
(CBV)

Applying an outcomes-based approach to help design, implement and manage services that support patient care.

Leading Better Value Care (LBVC)

Delivering effective clinical models of care with patient centred outcomes.

Collaborative Commissioning

Co-commissioning services in partnership with districts and external organisations, such as primary health networks, for services delivered in the community.

Integrated Care

Leading partnerships to deliver seamless care anywhere that coordinates services around a patient to improve their experiences of care and health outcomes.

To learn more and find out how to use
a commissioning approach visit:
www.health.nsw.gov.au/CBV

The Ministry of Health will collaborate with
NSW Health organisations including local health
districts, pillars and networks to deliver the
Commissioning for Better Value Strategy 2021-24.



Contact the CBV team for more information:
MOH-VBHC@health.nsw.gov.au

COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-40

This is the Annexure marked "DD-40" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

Predictors of inpatient rehabilitation after total knee replacement: an analysis of private hospital claims data

Chris Schilling¹, Catherine Keating², Anna Barker², Stephen F Wilson³, Dennis Petrie⁴

The known A variety of options for rehabilitation are available to patients who have undergone total knee replacements (TKRs).

The new The inpatient rehabilitation rate after TKRs in private hospitals increased between 2009 and 2016. Interhospital variation in rates persisted after adjusting for patient-related factors, suggesting that some inpatient rehabilitation is low value care. Provider-related factors were three times as important as patient factors for predicting inpatient rehabilitation.

The implications The use of inpatient rehabilitation after TKR can be substantially reduced to improve health care efficiency without any detriment to health outcomes.

The rate of total knee replacement (TKR) in Australia is among the highest in the world.¹ More than 50 000 TKRs were performed in Australia during 2016;² about 70% were delivered in private hospitals.³ Post-surgery rehabilitation is a core component of the care pathway for facilitating functional recovery after a TKR,⁴ including inpatient, home-based, community-based, and outpatient rehabilitation. It was recently reported that 43% of patients who underwent a TKR funded by Medibank Private (a large private health insurer in Australia) during 2014–16 were referred for inpatient rehabilitation.⁵ However, functional improvements in patients who received inpatient rehabilitation after TKR have not generally been superior in randomised controlled trials to those achieved with home- or community-based rehabilitation.^{6,7} In North America, rates of inpatient rehabilitation declined during the 2000s.^{8,9}

Inpatient rehabilitation referral rates in Australia during 2014–16 varied between surgeons from 0 to 100%,⁵ but the relevant data were not adjusted for patient characteristics that predict inpatient rehabilitation, such as age, comorbid conditions, living alone, and surgical complications.¹⁰ In Australia, routinely collected outcomes data that could be analysed to evaluate the benefits of rehabilitation are limited. The Australasian Rehabilitation Outcomes Centre (<https://ahsri.uow.edu.au/aroc/index.html>) records data for a functional measure after inpatient rehabilitation, but corresponding data for patients who undergo other forms of rehabilitation are not routinely collected. As an alternative approach, Duckett and colleagues¹¹ have promoted analysis of variation for similar patients at the hospital level; variation at this level that persists after adjusting for patient factors may indicate low value care.

Our study had three aims. The first was to investigate changes since 2009 in the rate of inpatient rehabilitation after TKR in Australia, and to quantify the degree to which any change might be explained by patient-related factors (demography, comorbid conditions,

Abstract

Objective: To investigate inpatient rehabilitation rates after private total knee replacements (TKRs) in Australia since 2009; to quantify the contributions of hospital-, surgeon- and patient-related factors to predicting inpatient rehabilitation.

Design: Retrospective cohort study; multivariate linear regression analysis of linked, de-identified Medibank administrative claims data and hospital casemix protocol data, adjusted for patient-related characteristics.

Setting, participants: 35 389 patients undergoing Medibank-funded TKRs in 170 private hospitals in Australia, 2009–2016.

Main outcome measures: Hospital inpatient rehabilitation rate; relative contributions of patient- and provider-related characteristics to variation in inpatient rehabilitation rates.

Results: The overall inpatient rehabilitation rate increased from 31% in 2009 to 45% in 2016, but varied between hospitals (range, 0–100%). The reduction in mean acute length of stay during this period explained about 15% of this increase, and about 30% was explained by patient-related factors; more than half of the increase was explained by neither reduced length of stay or patient-related factors. Patient-related characteristics explained little of the variation in rates between hospitals. Rates at 27% of hospitals lay above the 95% confidence limit for the mean inpatient rehabilitation rate in private hospitals (38%), both before and after adjusting for patient-related factors. Provider characteristics explained three times as much of the variation as patient characteristics (75% v 25%); hospital-related factors made the largest contribution to variation (47%).

Conclusion: Inpatient rehabilitation after TKR has increased in private health care during the past 8 years. Substantial variation in inpatient rehabilitation rates is not explained by patient-related factors, suggesting that some inpatient rehabilitation is low value care.

complications of surgery) or reducing the average acute length of stay in hospital (LOS). The second was to identify potentially low value care by quantifying hospital inpatient rehabilitation rates, adjusted for patient characteristics. Third, we quantified the relative contributions of hospital- and surgeon-related factors and of patient-related characteristics to variation in inpatient rehabilitation rates.

Methods

Dataset

We analysed de-identified Medibank administrative claims data and hospital casemix protocol data for 35 389 patients aged 40–89 years who had not previously undergone hip or knee replacement, who had received an acute primary, unilateral TKR during January

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✉ cschilling1@kpmg.com.au • doi: 10.5694/mja17.01231 • See Editorial, p. 207 • Published online 27/08/2018
Podcast with Chris Schilling available at <https://www.mja.com.au/podcasts>

2009 – December 2016. Patient information included age, sex, socio-economic status (Index of Relative Socio-economic Advantage and Disadvantage, IRSAD¹²), living alone, smoking, comorbid conditions (as evaluated with the Charlson comorbidity index¹³), and hospital claims during the 12 months preceding surgery. LOS data for the acute TKR procedure and the associated inpatient rehabilitation admission were also included. Provider information included unique identifiers for each of the 170 hospitals in which the surgery was performed and the 1254 surgeons who performed the TKRs (further details in the online Appendix, table 1). All patient-, surgeon-, and hospital-related data were de-identified prior to analysis.

Statistical analysis

All analyses were conducted in Stata 14.2 (StataCorp). Five linear probability regression models were generated (Box 1; online Appendix, table 2). The proportion of patients who underwent inpatient rehabilitation was the dependent variable in all models. Data were adjusted for patient and surgical complexity using the socio-demographic and surgical factors listed above. All adjusted rates were computed relative to the covariate means with the *margins, atmeans* Stata command.

Funnel plots of the outcome rate (hospital inpatient rehabilitation rate) against the sample volume or population (hospital TKR volume) highlighted variation between hospitals in inpatient rehabilitation rates. Two sets of hospital data were included in each funnel plot. The first set depicted the inpatient rehabilitation rate and TKR volume for each hospital during the study period. As the rate would be higher for hospitals that received relatively large proportions of patients more likely to require inpatient rehabilitation (eg, older patients; people with comorbid conditions), we also plotted hospital rates adjusted for patient-related factors by econometric modelling; that is, the estimated rate for each hospital had they received an average mix of patient types.

In each plot, 95% confidence intervals (CIs) around the mean inpatient rehabilitation rate were calculated, forming a funnel that narrows as TKR volume increases. At higher TKR volumes, it is less likely that variations are due to chance. As the overall mean inpatient rehabilitation rate for our private hospital dataset was not necessarily clinically optimal, CIs were also calculated for the post-TKR inpatient rehabilitation rate of 17% reported for a sample of public hospitals.¹⁴

The upper outlier count metric was defined as the number of hospitals with inpatient variation that placed them above the mean and beyond the 95% CI. Shapley decomposition of model 5 (Box 1) was computed with the REGO Stata module (<http://research.uni-leipzig.de/rego/>) to investigate the relative contribution of patient-, surgeon- and hospital-related factors to variation in rehabilitation destination. Multicollinearity between factors is discussed in the online Appendix.

Ethics approval

Ethics approval was granted by the Monash University Human Research Ethics Committee (project number, 9729).

Results

During 2009–2016, 35 389 people underwent Medibank-funded TKRs. Their mean age was 68.7 years (standard deviation [SD], 8.7 years); 20 721 (58.6%) were women; 20 667 (58.4%) were from metropolitan areas. The mean age of patients who underwent inpatient rehabilitation was higher than for those who did not (71.0 years [SD, 8.7] v 67.3 years [SD, 8.4]), the distribution of Charlson comorbidity scores was shifted to higher values, and larger proportions had had surgical complications (1.6% v 1.1%) or lived alone (7.6% v 1.1%) (Box 2).

Inpatient rehabilitation rate over time (models 1 and 2)

The inpatient rehabilitation rate increased from 31% in 2009 to 45% in 2016 (mean increase, 14 percentage points; 95% CI, 12–16 percentage points). Over the same period, the proportions of patients who were aged 70 or more, lived alone, or had comorbid conditions also increased. These latter changes accounted for almost one-third of the total increase in inpatient rehabilitation rate (Box 3).

Mean LOS for the acute surgery episode declined from 7.1 days (SD, 1.4 days) in 2009 to 5.4 days (SD, 1.0 days) in 2016 (mean decrease, 1.7 days; 95% CI, 1.5–1.8 days) (Box 2). The reduction in acute LOS during the study period accounted for almost 15% of the increase in inpatient rehabilitation rate (Box 3). The changes in patient-related factors and LOS together explained about half of the increase in inpatient rehabilitation rate. The association between LOS and inpatient rehabilitation is further discussed in the online Appendix.

Variation in rehabilitation practices (models 3–5)

The funnel plot of inpatient rehabilitation rates by hospital during 2009–2016 indicated there was significant variation between hospitals (Box 4, Box 5). An association between TKR volume and inpatient rehabilitation rate was not apparent; the five hospitals with the greatest volumes included two sites with inpatient rehabilitation rates below 20% and two with rates exceeding 60%. A few hospitals had zero inpatient rehabilitation rates, suggesting that they did not have rehabilitation facilities. Excluding these hospitals from supplementary analyses did not substantially change the overall results (data not shown).

Marked variation in hospital inpatient rehabilitation rates persisted after adjusting for patient-related factors; the average magnitude of the effect of adjustment on inpatient rehabilitation rates was 4 percentage points (Box 4, Box 5), suggesting that these patient-related factors did not explain a large proportion of inter-hospital variation.

1 The five linear probability regression models developed for our analysis

	Model and research question				
	1	2	3	4	5
	Change in rate over time		Interhospital variation, low value care		Contribution to variation
Explanatory variables					
Year	X	X			
Patient-related factors*		X		X	X
Hospital			X	X	X
Surgeon					X

* Sex, age group, location of residence (remoteness), socio-economic index for areas (SEIFA) decile, ever smoker, Charlson comorbidity index, claims during previous year, acute surgery cost, lives alone flag, intensive care unit and hospital-acquired clinical complication flags (details: table 1 in the online Appendix). ♦

2 Demographic information and other characteristics of 35 389 people who received Medibank-funded total knee replacements, 2009–2016

Patient characteristic	No inpatient rehabilitation	Inpatient rehabilitation	All patients		
			2009–2016	2009	2016
Total number of patients	21 946	13 443	35 389	3870	4362
Sex (men)	10 238 (46.7%)	4430 (33.0%)	14 668 (41.4%)	1557 (40.2%)	1836 (42.1%)
Age (years), mean (SD)	67.3 (8.4)	71.0 (8.7)	68.7 (8.7)	68.7 (8.8)	69.0 (8.7)
40–49	355 (1.6%)	111 (0.8%)	466 (1.3%)	52 (1.3%)	63 (1.4%)
50–59	3573 (16.3%)	1245 (9.3%)	4818 (13.6%)	550 (14.2%)	544 (12.5%)
60–69	9212 (42.0%)	4367 (32.5%)	13 579 (38.4%)	1444 (37.3%)	1645 (37.7%)
70–79	7107 (32.4%)	5271 (39.2%)	12 378 (35.0%)	1375 (35.5%)	1618 (37.1%)
80–89	1699 (7.7%)	2449 (18.2%)	4148 (11.7%)	449 (11.6%)	492 (11.3%)
Remoteness					
Metropolitan	10 958 (49.9%)	9709 (72.2%)	20 667 (58.4%)	2266 (58.6%)	2617 (60.0%)
Regional	2979 (13.6%)	1436 (10.7%)	4415 (12.5%)	525 (13.6%)	512 (11.7%)
Rural	7783 (35.5%)	2141 (15.9%)	9924 (28.0%)	1044 (27.0%)	1179 (27.0%)
Missing data	226 (1.0%)	157 (1.2%)	383 (1.1%)	35 (0.9%)	54 (1.2%)
Socio-economic status (IRSAD quintile)					
1 (most disadvantaged)	4978 (22.7%)	2147 (16.0%)	7125 (20.1%)	817 (21.1%)	813 (18.6%)
2	4588 (20.9%)	2317 (17.2%)	6905 (19.5%)	751 (19.4%)	838 (19.2%)
3	4588 (20.9%)	2449 (18.2%)	7037 (19.9%)	750 (19.4%)	881 (20.2%)
4	4148 (18.9%)	2904 (21.6%)	7052 (19.9%)	798 (20.6%)	909 (20.8%)
5 (least disadvantaged)	3419 (15.6%)	3488 (25.9%)	6907 (19.5%)	726 (18.8%)	874 (20.0%)
Ever smoker	225 (1.0%)	138 (1.0%)	363 (1.0%)	28 (0.7%)	47 (1.1%)
Charlson comorbidity index					
0	15 706 (71.6%)	8474 (63.0%)	24 180 (68.3%)	2750 (71.1%)	2776 (63.6%)
1	2431 (11.1%)	1850 (13.8%)	4281 (12.1%)	427 (11.0%)	570 (13.1%)
2 or more	3809 (17.4%)	3119 (23.2%)	6928 (19.6%)	693 (17.9%)	1016 (23.3%)
Previous year claim expenditure					
\$0	6087 (27.7%)	3162 (23.5%)	9249 (26.1%)	2236 (57.8%)	538 (12.3%)
\$1–\$9999	10 469 (47.7%)	5938 (44.2%)	16 407 (46.4%)	1407 (36.4%)	1861 (42.7%)
\$10 000 or more	5390 (24.6%)	4343 (32.3%)	9733 (27.5%)	227 (5.9%)	1963 (45.0%)
Lives alone	237 (1.1%)	1020 (7.6%)	1257 (3.6%)	106 (2.7%)	170 (3.9%)
Admitted to intensive care unit	638 (2.9%)	747 (5.6%)	1385 (3.9%)	102 (2.6%)	222 (5.1%)
Hospital-acquired conditions category	235 (1.1%)	214 (1.6%)	449 (1.3%)	43 (1.1%)	45 (1.0%)
Acute hospital LOS (days), mean (SD)	6.2 (1.4)	6.2 (1.2)	6.1 (1.2)	7.1 (1.4)	5.4 (1.0)
Inpatient rehabilitation count (SD)	NA	13 443 (38)	134 433 (38)	1202 (31)	1959 (45)
Inpatient rehabilitation LOS, mean (SD)	NA	11.2 (5.2)	11.2 (5.2)	11.7 (5.3)	10.7 (4.7)
Procedures per hospital, median (IQR)	—	—	106 (34–321)	—	—
Procedures per surgeon, median (IQR)	—	—	7 (1–36)	—	—

IQR = interquartile range; IRSAD = Index of Relative Socio-economic Advantage and Disadvantage; LOS = length of stay; NA = not applicable; SD = standard deviation. ♦

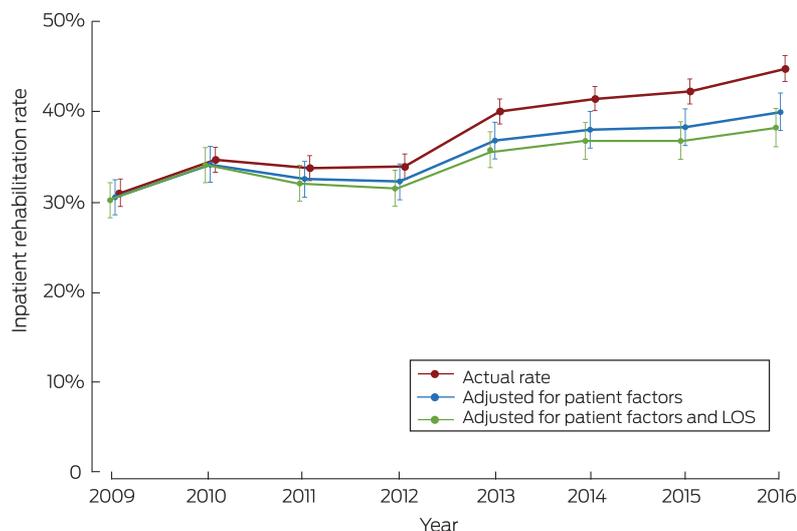
Actual inpatient rehabilitation rates for 46 of 170 hospitals (27%) were above the 95% CI for the mean private inpatient rehabilitation rate of 38%; after adjusting for patient-related factors, 44 hospitals remained outliers and two other hospitals became outliers (Box 4, Box 6). After adjusting for patient-related factors, inpatient rehabilitation rates for 79 of 170 hospitals (46%) were above the 95% CI for the mean public hospital inpatient rate of 17% (Box 5, Box 6). The adjusted R^2 (goodness-of-fit) values increased with the addition of patient- and surgeon-related factors, indicating that each explains some of the variation in inpatient rehabilitation rate;

however, more than half the variation was not explained by these factors.

Contributions to variation (model 5)

The Shapley decomposition results suggested that hospital-related factors (46.9%) made the largest contribution of the factors included to variation in inpatient rehabilitation rates; together with surgeon-related factors (28.5%), provider-related factors explained three times as much of the variation as patient-related factors (24.6%).

3 Inpatient rehabilitation rates for 35 389 people who received Medibank-funded total knee replacements, 2009–2016*

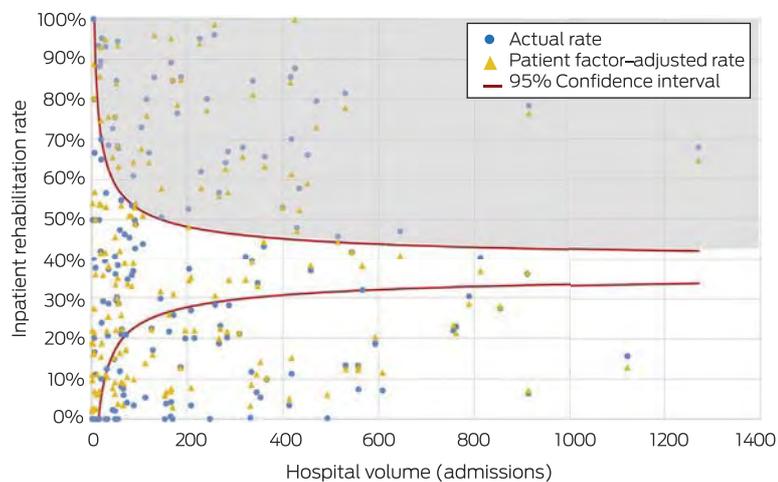


LOS = length of stay in hospital (acute admission). * Depicted are the actual rates, together with rates adjusted for patient-related factors or for patient-related factors and reduced LOS during the study period. ◆

Discussion

A recent *MJA* editorial noted that simply identifying variation in health is not enough to facilitate change without further careful analysis.¹⁵ In response, we analysed more than 35 000 admissions to private hospitals for TKRs in Australia during 2009–2016. We made three key findings. Firstly, inpatient rehabilitation rates increased from 31% to 45% during the study period, while mean acute surgery admission LOS declined and the complexity of the patients (aged 70 years or more, lived alone, or had comorbid conditions) increased. However, these changes explained only about half the increase in inpatient rehabilitation rate. Secondly, marked variation between private hospitals in inpatient rehabilitation rates persisted after adjusting for patient-related factors; the

4 Funnel plot of hospital inpatient rehabilitation rates after total knee replacement, Australia, 2009–2016, with 95% confidence interval around the mean private hospital rate (38%)



Each circle represents one hospital; each triangle indicates the inpatient rehabilitation rate after adjusting for patient-related factors. The shaded area indicates hospitals with inpatient rehabilitation rates above the upper 95% confidence limit. ◆

rates at more than one-quarter of hospitals significantly exceeded the mean private inpatient rehabilitation rate, and almost half the hospitals significantly exceeded the mean public hospital rate. Finally, provider-related factors (hospital- and surgeon-related) explained three times as much of the variation between hospitals as did patient characteristics (demographic, clinical and surgical attributes); hospital-related factors constituted the major driver category.

Comparison with previous reports

Patients require some form of rehabilitation after complex surgery such as TKR, but clinical evidence does not support the need for in-hospital rehabilitation. A recent analysis of 258 privately insured patients in 12 Australian hospitals found that care pathways incorporating inpatient rehabilitation were significantly more expensive for uncomplicated patients than those that did not (mean difference, \$9500; interquartile range, \$7000–\$11 497) but were not associated with improved patient-reported outcomes.¹⁶ Randomised controlled trials that evaluated inpatient rehabilitation^{6,7} and a systematic review by the Royal Australasian College of Surgeons¹⁷ also concluded that outcomes for patients who had outpatient or

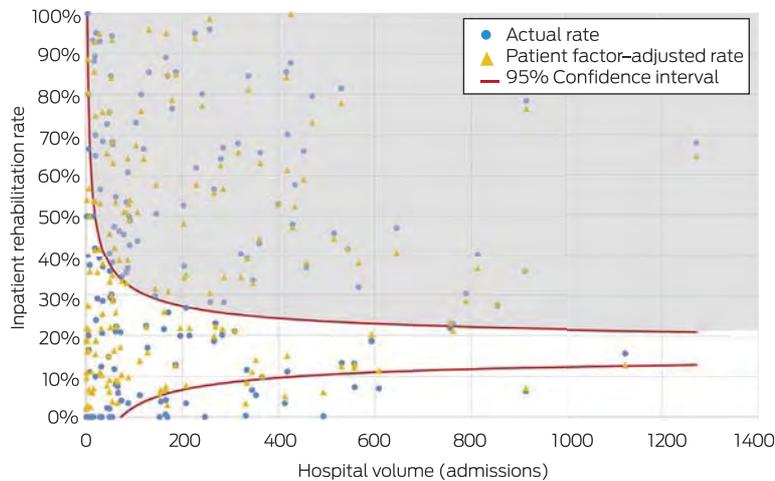
home-based care after TKR were comparable with those of patients who attended inpatient rehabilitation.¹⁸ Our study extends the evidence base for examining this question by analysing a large administrative dataset and investigating the drivers of inpatient rehabilitation in the private health care sector.

We found that the inpatient rehabilitation rate in Australian private hospitals increased by almost 50% between 2009 and 2016, contrasting with the reported substantial declines in inpatient rehabilitation rates overseas during the 2000s. Inpatient rehabilitation rates in the United States decreased from a peak of 35% in 2003 to 11% in 2009,⁸ with a mean rate during 2009–2014 of 15%;¹⁷ in Ontario, Canada, rates dropped from 25% in 2009–10 to less than 10% in 2012–13.⁹ Our analysis suggests that less than half of the increase in Australia can be explained by a higher proportion of complex patients and reduced acute surgery admission LOS; 50% of the increase was therefore unexplained. Improved techniques for TKR, including computer-assisted navigation¹⁹ and perioperative analgesia,²⁰ would be expected to reduce rather than increase the need for inpatient rehabilitation.

We found substantial variation between private hospitals in inpatient rehabilitation rates that was not explained by patient-related factors. Patients in hospitals with high rates of inpatient rehabilitation were similar to those in hospitals with low rates, eliminating patient complexity as the reason. When combined with clinical findings that inpatient rehabilitation provides no more clinical benefit for uncomplicated patients than home or community rehabilitation, our results provide compelling evidence that at least some of inpatient rehabilitation in hospitals with high rates is low value care.

We found that the most important determinant of whether a patient is admitted to inpatient rehabilitation was the hospital where the TKR procedure was undertaken. This factor was substantially more important than the clinical profile of the patient; that is,

5 Funnel plot of hospital inpatient rehabilitation rates after total knee replacement, Australia, 2009–2016, with 95% confidence interval around the mean public hospital rate (17%)



Each circle represents one hospital; each triangle indicates the inpatient rehabilitation rate after adjusting for patient-related factors. The shaded area indicates hospitals with inpatient rehabilitation rates above the upper 95% confidence limit. ◆

the same patient may enter different rehabilitation pathways according to the hospital in which they were operated. Potential systematic reasons for some private hospitals encouraging inpatient rehabilitation include the fact that it is often funded on a per diem basis, whereby the hospital receives an additional payment per rehabilitation day in addition to the initial TKR surgery payment. From a hospital perspective, offering a service that delivers benefits to patients for which it is well remunerated is consequently attractive. However, it is less so from the health system perspective: home- and community-based rehabilitation deliver similar outcomes at much lower cost. As noted in another recent *MJA* editorial,¹⁸ inpatient rehabilitation has become an industry, with hospitals offering new and undoubtedly excellent facilities, but at a cost that, for many patients, is not justified by better outcomes.

Implications for clinical practice

Our findings indicate that the proportion of patients who receive inpatient rehabilitation after a TKR can be reduced, improving

health care efficiency without harming health outcomes. There is no consensus regarding the ideal rate of inpatient rehabilitation, but the public health system rate in Australia of 17%, rates under 11% in the United States and Canada, and the clinical evidence discussed above suggest that the private inpatient rehabilitation rate in Australia of 45% is too high. Were it returned to the 2009 level (31%)—still higher than the cited comparison rates—net annual rehabilitation costs could be reduced by \$50 million (according to the incremental cost differences reported by Naylor and colleagues¹⁶) and almost 60 000 hospital bed-days made available for other patients.

Improving system performance

Clear clinical guidelines are an evidence-based means for improving system performance, but there are no relevant guidelines in Australia regarding best practice for rehabilitation after TKR.¹⁷ Adoption of a clinical protocol by one hospital improved the odds of rehabilitation in the home rather than inpatient rehabilitation by 45%.²⁰ Financial incentives and linking payments to outcomes are also widely promoted as methods for improving the cost-effectiveness of service delivery.²¹

Linking funding to patient outcomes, or at least to compliance with guidelines based on patient need, could help improve the use of inpatient rehabilitation. We also support recommendations that the Australian Commission on Safety and Quality in Health Care publish variation data at the hospital rather than the area level, and that outlier hospitals should be made aware of and encouraged to improve their relative performance.¹¹

Limitations of our study

Data for some patient-related factors that influence rehabilitation decisions were not available, including obesity, pre-operative physical and mental health (although comorbid conditions were analysed when data were available), functional performance, physical gait aid, and home environment. Nonetheless, the dataset included a wide variety of socio-economic and health factors that are typically correlated with these factors; for example, obesity is related to comorbid conditions such as diabetes and cardiovascular disease²² and socio-economic status.²³ It is therefore unlikely that the omitted patient factors would explain a substantial proportion of the interhospital variation in inpatient rehabilitation.

Large variations in inpatient rehabilitation rates after adjusting for patient-related factors suggest low value care. However, while the Australasian Rehabilitation Outcomes Centre collects data on a functional independence measure for some patients after inpatient rehabilitation, data on post-surgery outcomes for private TKR recipients that could provide more robust evidence of low value care are not routinely collected. We recommend that such information be collected, as it is in the United Kingdom.²⁴

Finally, as a large proportion of the variation in inpatient rehabilitation rates was not explained by the hospital-, surgeon- or patient-related factors we examined, investigation of further elements is required.

Conclusion

Rates of inpatient rehabilitation after TKR are increasing in Australia at a time when they are declining overseas. Clinical outcomes evidence has consistently indicated that inpatient rehabilitation is not superior to community- and home-based

6 Hospital inpatient rehabilitation rates after total knee replacement: upper outlier counts and adjusted R² values for models 3–5

	Model 3	Model 4	Model 5
	Unadjusted rates	Adjusted for patient-related factors	Adjusted for patient- and surgeon-related factors
Adjusted R ²	0.31	0.38	0.42
Upper outlier count*			
Private hospital mean (38%)	46 (27%)	46 (27%)	38 (22%)
Public hospital mean (17%)	80 (47%)	79 (46%)	83 (49%)

* Number of hospitals with an inpatient rehabilitation rate above the 95% confidence interval. ◆

rehabilitation, suggesting that health care system costs can be reduced without harming patient outcomes. Reducing low value care will require system-level changes to guidelines and incentives for hospitals, as hospital-related factors are the major driver of variation in inpatient rehabilitation practices.

Acknowledgements: Dennis Petrie is supported by Monash University and an Australian Research Council Discovery Early Career Researcher Award.

Competing interests: Catherine Keating and Anna Barker are employed by Medibank Private. Anna Barker receives salary support from Monash University. Chris Schilling is employed by KPMG and received consultancy fees from Medibank Private to undertake the analysis presented in this article. Stephen Wilson has previously received consultancy fees from Medibank Private in relation to development of rehabilitation in the home.

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COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-41

This is the Annexure marked "DD-41" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

Independent Hospital Pricing Authority

National Efficient Price Determination 2021–22

March 2021



IHPA

National Efficient Price Determination 2021–22

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Source: The Independent Hospital Pricing Authority

This determination is made by the Independent Hospital Pricing Authority under subsection 131(1) of the *National Health Reform Act 2011* (Cwlth).

Dated 24 February 2021



Shane Solomon

Mr Shane Solomon
Chair

Mr James Downie
Chief Executive Officer

SEAL OF INDEPENDENT HOSPITAL
PRICING AUTHORITY

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1. Overview

1.1 Independent Hospital Pricing Authority

The Independent Hospital Pricing Authority (IHPA) was established under the *National Health Reform Act 2011* (Cwlth) (the Act), and by virtue of section 131(1) of the Act is invested with the following functions relevant to this National Efficient Price Determination 2021–22 (Determination):

- (a) to determine the national efficient price for healthcare services provided by public hospitals where the services are funded on an activity basis
- (b) to determine the national efficient cost for healthcare services provided by public hospitals where the services are block-funded
- (c) to develop and specify classification systems for health care and other services provided by public hospitals
- (d) to determine adjustments to the national efficient price to reflect legitimate and unavoidable variations in the costs of delivering healthcare services
- (e) except where otherwise agreed between the Commonwealth and a state or territory – to determine the public hospital functions that are to be funded in the state or territory by the Commonwealth
- (f) to publish a report setting out the national efficient price for the coming year and any other information that would support the efficient funding of public hospitals.

This Determination is an output of the performance of those functions by the Pricing Authority.

In this document, ‘Pricing Authority’ refers to the governing members and ‘IHPA’ refers to the agency.

1.2 Data quality

In making this Determination, the Pricing Authority has relied on a number of different data sources.

Costing information used to determine the national efficient price (NEP) has been drawn from the National Hospital Cost Data Collection Round 23 (2018–19), as provided by states and territories.

Activity information used to determine the NEP has been drawn from a number of National Minimum Data Sets (NMDS) and National Best Endeavours Data Sets (NBEDS), including:

- Admitted patient care NMDS
- Admitted subacute and non-acute hospital care NBEDS
- Activity based funding: Mental health care NBEDS
- Non-admitted patient emergency department care NMDS
- Emergency service care NBEDS
- Non-admitted patient NBEDS
- Non-admitted patient care aggregate NBEDS.

IHPA continues to review and refine the classification systems used in the national pricing model.

The Hospital Casemix Protocol collection and Commonwealth pharmaceutical program payments data has also informed the removal of the costs of other Commonwealth programs that are not in-scope of the National Health Reform Agreement (NHRA).

1.3 Determination development

In performing the functions outlined above and preparing this Determination, the Pricing Authority has had regard, as required pursuant to sections 131(3) and 132 of the Act, to:

- (a) relevant expertise and best practice within Australia and internationally
- (b) submissions made at any time by the Commonwealth or a state or territory
- (c) the need to ensure:
 - (i) reasonable access to healthcare services
 - (ii) safety and quality in the provision of healthcare services
 - (iii) continuity and predictability in the cost of healthcare services
 - (iv) the effectiveness, efficiency and financial sustainability of the public hospital system
- (d) the range of public hospitals and the variables affecting the actual cost of providing healthcare services in each of those hospitals
- (e) relevant intergovernmental agreements (including the NHRA and the Addendum to the NHRA 2020–25 (the Addendum)).

In May 2020, all Australian governments signed the Addendum which amends the public hospital financing arrangements in the NHRA for the period from 1 July 2020 to 30 June 2025.

1.4 Terminology

Although the Pricing Authority aims to use plain English to make its documents accessible to a wide audience, the subject matter of this Determination requires the use of some specialist terms. For ease of reference, the meaning of those terms is set out in a [glossary](#) available on the IHPA website.

2. National Efficient Price 2021–22

2.1 The national efficient price

The national efficient price (NEP) is \$5,597 per national weighted activity unit 2021–22 (NWAU(21)).

2.2 Calculation of the NEP

The NEP is based on the average cost of public hospital activity in the 2018–19 financial year of \$5,167 per NWAU(21), indexed at a rate of 2.7 per cent per annum.

Consistent with clause A46(e) of the Addendum to the National Health Reform Agreement 2020–25, in calculating the NEP, the following Commonwealth funded programs have been removed prior to determining the underlying cost data of the 2018–19 reference cost:

- highly specialised drugs – section 100 funding (\$1,298.6 million in the 2018–19 financial year)
- pharmaceutical reform agreements – efficient funding of chemotherapy (section 100 funding) (\$452.9 million in the 2018–19 financial year)
- pharmaceutical reform agreements – Pharmaceutical Benefits Scheme (PBS) Access Program (\$292.3 million in the 2018–19 financial year).

Where blood expenditure has been reported in the National Hospital Cost Data Collection by states and territories this has also been removed, as Commonwealth funding for this program is provided directly to the National Blood Authority. In 2018–19 this amounted to \$294.0 million.

2.3 Price of an activity based funding activity

The price of an activity based funding (ABF) activity is calculated using the following formula, with adjustments applied as applicable:

Price of an admitted acute ABF activity =

$$\{[PW \times A_{Paed} \times (1 + A_{SPA} + A_{Ind} + A_{Res} + A_{RT} + A_{Dia}) \times (1 + A_{Treat}) + (A_{ICU} \times ICU \text{ hours})] - [(PW + A_{ICU} \times ICU \text{ hours}) \times A_{PPS} + LOS \times A_{Acc}] - PW \times A_{HAC} - PW_{AHR} \times R_{AHR}\} \times NEP$$

Price of an admitted subacute ABF activity =

$$\{[PW \times (1 + A_{Ind} + A_{Res} + A_{RT} + A_{Dia}) \times (1 + A_{Treat})] - [PW \times A_{PPS} + LOS \times A_{Acc}]\} \times NEP$$

Price of a non-admitted ABF activity =

$$\{PW \times A_{Paed} \times (1 + A_{Ind} + A_{Res} + A_{NMC}) \times (1 + A_{Treat})\} \times NEP$$

Price of an emergency department ABF activity =

$$\{PW \times (1 + A_{Ind} + A_{Res}) \times (1 + A_{Treat})\} \times NEP$$

Price of an emergency service ABF activity =

$$\{PW \times (1 + A_{Treat})\} \times NEP$$

Where:

A_{Paed}	means the paediatric adjustment
A_{SPA}	means the specialist psychiatric age adjustment
A_{Res}	means each or any patient residential remoteness area adjustment
A_{Ind}	means the Indigenous adjustment
A_{RT}	means the radiotherapy adjustment
A_{Dia}	means the dialysis adjustment
A_{Treat}	means each or any patient treatment remoteness area adjustment
A_{ICU}	means the intensive care unit adjustment
A_{PPS}	means the private patient service adjustment
A_{Acc}	means the private patient accommodation adjustment applicable to the state of hospitalisation and length of stay
A_{NMC}	means the multidisciplinary clinic adjustment
A_{HAC}	means the hospital acquired complications adjustment
R_{AHR}	means the avoidable hospital readmission risk adjustment factor
ICU hours	means the number of hours spent by a person within a specified intensive care unit
LOS	means the length of stay in hospital (in days)
NEP	means the National Efficient Price 2021–22
PW	means the price weight for an ABF activity as set out in Appendix H (for admitted acute), Appendix I (for admitted subacute and non-acute), Appendix J (for non-admitted), Appendix K (for emergency department) or Appendix L (for emergency services)
PW_{AHR}	means the price weight for an ABF activity of a linked avoidable hospital readmission

In the event that the application of the adjustments relating to private patients, hospital acquired complications, or avoidable hospital readmissions returns a negative NWAU(21) value for a particular episode, the NWAU(21) value is held to be zero – that is, negative NWAU(21) values are not permitted for any episodes under the national pricing model.

3. In-scope public hospital services

3.1 Overall scope

In accordance with section 131(f) of the *National Health Reform Act 2011* (Cwlth) and clauses A16–A24 of the Addendum to the National Health Reform Agreement 2020–25 (the Addendum), the scope of public hospital services eligible for Commonwealth funding under the agreement are:

- all admitted programs, including hospital-in-the-home programs and forensic mental health inpatient services
- all emergency department services
- non-admitted services as defined below.

3.2 Non-admitted services

The listing of in-scope non-admitted services is independent of the service setting in which they are provided (for example, at a hospital, in the community, in a person's home). This means that in-scope services can be provided on an outreach basis.

To be included as an in-scope non-admitted service, the service must meet the definition of a service event, which is:

‘an interaction between one or more healthcare provider(s) with one non-admitted patient, which must contain therapeutic/clinical content and result in a dated entry in the patient’s medical record.’

Consistent with clause A31 of the Addendum, the Pricing Authority will conduct analysis to determine if services are transferred from the community to public hospitals for the dominant purpose of making services eligible for Commonwealth funding.

There are two broad categories of in-scope, public hospital non-admitted services:

- A. specialist outpatient clinic services
- B. other non-admitted patient services.

Category A: Specialist outpatient clinic services – Tier 2 Non-Admitted Services Classification classes 10, 20 and 30

This comprises all clinics in the Tier 2 Non-Admitted Services Classification, classes 10, 20 and 30. However, the general practice and primary care (20.06) clinic is considered by the Pricing Authority as not eligible for Commonwealth funding as a public hospital service.

Category B: Other non-admitted patient services and non-medical specialist outpatient clinics – Tier 2 Non-Admitted Services Classification class 40

To be eligible for Commonwealth funding as an ‘other non-admitted patient service’ or a class 40 Tier 2 non-admitted service, a service must be:

- (a) directly related to an inpatient admission or an emergency department attendance; or
- (b) intended to substitute directly for an inpatient admission or emergency department attendance; or
- (c) expected to improve the health or better manage the symptoms of persons with physical or mental health conditions who have a history of frequent hospital attendance or admission.

Prior to preparing this Determination (2021–22), jurisdictions were invited to submit evidence for additional services to be included or excluded from the list based on the criteria above. Decisions by the Pricing Authority to include or exclude services from the list have been incorporated into the Determination.

The following clinics are considered by the Pricing Authority as not eligible for Commonwealth funding as a public hospital service under this category:

- Aged care assessment (40.02)
- Family planning (40.27)
- General counselling (40.33)
- Primary health care (40.08).

Interpretive guidelines for use

In line with the criteria for Category B, community mental health, physical chronic disease management and community based allied health programs considered in-scope will have all or most of the following attributes:

- be closely linked to the clinical services and clinical governance structures of a public hospital (for example integrated area mental health services, step-up/step-down mental health services and crisis assessment teams)
- target patients with severe disease profiles
- demonstrate regular and intensive contact with the target group (an average of eight or more service events per patient per annum)
- demonstrate the operation of formal discharge protocols within the program
- demonstrate either regular enrolled patient admission to hospital or regular active interventions which have the primary purpose to prevent hospital admission.

4. Price weights

4.1 Price weights

Price weights expressed as national weighted activity unit 2021–22 (NWAU(21)) are set out in **Appendices H to L** by classification.

4.2 Classification systems

The classification systems used are:

- Australian Refined Diagnosis Related Groups Classification Version 10.0
- Australian National Subacute and Non-Acute Patient Classification Version 4.0
- Tier 2 Non-Admitted Services Classification Version 7.0
- Australian Emergency Care Classification Version 1.0
- Urgency Disposition Groups Classification Version 1.3.

4.3 Shadow pricing

Clause A42 of the Addendum to the National Health Reform Agreement 2020–25 (the Addendum) stipulates that IHPA will use transitional arrangements when developing new activity based funding (ABF) classification systems or costing methodologies, including shadow pricing classification system changes and pricing based on a costing study, for two years or a period agreed with the Commonwealth and a majority of States to ensure robust data collection and reporting to accurately model the financial and counting impact of changes on the national funding model.

In accordance with the Addendum, for this National Efficient Price Determination 2021–22 (Determination) IHPA will shadow price the classification changes detailed in **Table 1**.

Table 1: Classification changes being shadow priced for this Determination

System change	Shadow pricing arrangements
Australian Mental Health Care Classification Version 1.0 for admitted mental health care services	<ul style="list-style-type: none"> • Second year of shadow pricing in 2021–22
Australian Mental Health Care Classification Version 1.0 for community mental health care services	<ul style="list-style-type: none"> • First year of shadow pricing in 2021–22
The '40.62 Multidisciplinary case conference - patient not present' clinic under the Tier 2 Non-Admitted Services Classification Version 7.0	<ul style="list-style-type: none"> • First year of shadow pricing in 2021–22

Shadow price weights expressed as NWAU(21) for the above classification changes and further information is available on the [IHPA website](#).

5. Adjustments

5.1 Adjustments

Adjustments to price weights, expressed as national weighted activity unit 2021–22 (NWAU(21)) are to be applied in the manner and in the order indicated by the formula for determining the NWAU(21) value (price) of an activity based funding (ABF) activity (refer to Chapter 2).

5.2 Precedence of adjustments

Adjustments have the following order of precedence for application:

- (a) paediatric adjustment; then
- (b) specialist psychiatric age adjustment; then
- (c) patient residential remoteness area adjustment; then
- (d) Indigenous adjustment; then
- (e) radiotherapy adjustment; then
- (f) dialysis adjustment; then
- (g) patient treatment remoteness area adjustment; then
- (h) intensive care unit (ICU) adjustment; then
- (i) private patient service adjustment; then
- (j) private patient accommodation adjustment; then
- (k) multidisciplinary clinic adjustment; then
- (l) hospital acquired complication (HAC) adjustment; then
- (m) avoidable hospital readmission risk adjustment factor.

Circumstances in which adjustments are to be applied are described in **Table 2**.

Table 2: Adjustments

Name	Context	Amount to be applied
Paediatric adjustment	<p>is in respect of a person who:</p> <ul style="list-style-type: none"> • is aged up to and including 17 years • is treated by a specialised children's hospital (Appendix E) as an admitted acute or non-admitted patient. 	Refer to column headed paediatric adjustment in the tables of admitted acute price weights (Appendix H) and non-admitted price weights (Appendix J)
Specialist psychiatric age adjustment (≤ 17 years, in major diagnostic category (MDC) 19 or 20)	is in respect of a person who is aged 17 years or less at the time of admission, with a mental health-related principal diagnosis (MDC 19 or 20) and has one or more total psychiatric care days recorded.	Admitted acute patient: 39 per cent (except patients admitted to a specialised children's hospital who will receive 15 per cent)
Specialist psychiatric age adjustment (≤ 17 years, not in MDC 19 or 20)	Where an ABF activity:	Admitted acute patient: 69 per cent (except patients admitted to a specialised children's hospital who will receive 58 per cent)
Specialist psychiatric age adjustment (> 17 years, not in MDC 19 or 20)	is in respect of a person who is aged over 17 at the time of admission, with a principal diagnosis which is not mental health-related (not in MDC 19 or 20) and has one or more total psychiatric care days recorded.	Admitted acute patient: 36 per cent
Patient residential remoteness area adjustment – outer regional area	is in respect of a person whose residential address is within an area that is classified as being outer regional.	Admitted acute, admitted subacute or non-admitted patient: 8 per cent

Name	Context	Amount to be applied
Patient residential remoteness area adjustment – remote area	is in respect of a person whose residential address is within an area that is classified as being remote.	Admitted acute, admitted subacute or non-admitted patient: 27 per cent Emergency department patient: 29 per cent
Patient residential remoteness area adjustment – very remote area	is in respect of a person whose residential address is within an area that is classified as being very remote.	Admitted acute, admitted subacute or non-admitted patient: 31 per cent Emergency department patient: 29 per cent
Indigenous adjustment	Where an ABF activity:	Admitted acute, admitted subacute, emergency department or non-admitted patient: 4 per cent
Radiotherapy adjustment	is in respect of an admitted acute or admitted subacute patient with a specified Australian Classification of Health Interventions (ACHI) Eleventh Edition radiotherapy intervention code assigned. ¹	Admitted acute or admitted subacute patient: 40 per cent
Dialysis adjustment	is in respect of an admitted acute or admitted subacute patient with a specified ACHI Eleventh Edition renal dialysis code who is not assigned to the Australian Refined Diagnosis Related Groups (AR-DRG) L61Z Haemodialysis or AR-DRG L68Z Peritoneal Dialysis. ¹	Admitted acute or admitted subacute patient: 28 per cent

¹ Refer to **Appendices B and C** for valid ACHI Eleventh Edition codes.

Name	Context	Amount to be applied
Patient treatment remoteness area adjustment – remote area	is in respect of a person who receives care in a hospital which is within an area that is classified as being remote.	Admitted acute, admitted subacute or non-admitted patient: 7 per cent Emergency department or emergency service patient: 5 per cent
Patient treatment remoteness area adjustment – very remote area	is in respect of a person who receives care in a hospital which is within an area that is classified as being very remote.	Admitted acute, admitted subacute or non-admitted patient: 19 per cent Emergency department or emergency service patient: 5 per cent
ICU adjustment	Where an ABF activity: (a) is not represented by a newborn/neonate AR-DRG identified as ‘bundled ICU’ in the tables of price weights (Appendix H); but (b) is in respect of a person who has spent time within a specified ICU. ²	0.0445 NWAU(21) per hour spent by that admitted acute patient within the specified ICU
Private patient service adjustment	is in respect of an eligible admitted private patient.	Admitted acute, admitted subacute or non-acute patient: refer to Appendix F for applicable adjustment

² Refer to **Appendix D**.

Name	Context	Amount to be applied
Private patient accommodation adjustment	is in respect of an eligible admitted private patient.	Admitted acute, admitted subacute or non-acute patient: refer to Appendix F for applicable adjustment
Multidisciplinary clinic adjustment	is in respect of a non-admitted service event where three or more healthcare providers (each of a different speciality) are present, as identified using the non-admitted multiple healthcare provider indicator.	Non-admitted patient: 46 per cent
HAC adjustment	is in respect of an admitted acute episode where one or more HAC is present. If more than one HAC is present, the larger of the HAC adjustments applies. Where an ABF activity:	Admitted acute episode with one or more HAC: refer to Appendix M for applicable adjustments
Avoidable hospital readmission risk adjustment factor	is in respect of an admitted acute episode where the patient was discharged from hospital and admitted again within a certain time interval and the readmission is clinically related to the index admission and had the potential to be avoided through improved clinical management and/or appropriate discharge planning in the index admission. The risk adjustment factor is applied to the price of the readmission episode, and the result is used to adjust the index episode.	Admitted acute episode identified as an avoidable hospital readmission: refer to Appendix N for applicable risk adjustment factors

6. Safety and quality

6.1 Sentinel events

In accordance with a ministerial direction issued to IHPA on 16 February 2017 under section 226 of the *National Health Reform Act 2011* (Cwlth) and consistent with the Addendum to the National Health Reform Agreement 2020–25 (the Addendum) signed by First Ministers in May 2020, any public hospital episodes that include a sentinel event will not be funded.

Definition

Sentinel events are a subset of adverse events that result in death or serious harm to patients.

In 2017, the Australian Commission on Safety and Quality in Health Care (the Commission) undertook a review of the Australian sentinel events list on behalf of the states, territories and the Commonwealth. The updated Australian sentinel events list (Version 2.0) was endorsed by Australian health ministers in December 2018.

Version 2.0 of the Australian sentinel events list will be used for pricing in 2021–22. Version 2.0 of the Australian sentinel events list, including further information on its development and specifications is available on the [Commission's website](#).

States and territories will be required to report these events to IHPA and the Administrator of the National Health Funding Pool. These episodes will be assigned zero national weighted activity unit 2021–22 (NWAU(21)).

6.2 Hospital acquired complications

In accordance with the Addendum, the funding level for admitted acute episodes will be reduced where a hospital acquired complication (HAC) is present. Separate adjustments have been determined for each HAC. Where an episode contains multiple HACs, the HAC with the largest adjustment determines the funding adjustment.

Definition

A HAC refers to a complication which is acquired in hospital for which clinical risk mitigation strategies may reduce (but not necessarily eliminate) the risk of that complication occurring. The list of HACs was determined by a joint working group of the Commission and IHPA.

The HACs are:

- Pressure injury
- Falls resulting in fracture or intracranial injury
- Healthcare associated infection
- Surgical complications requiring unplanned return to theatre
- Unplanned intensive care unit admission³

³ No funding adjustment for 'Unplanned intensive care unit admission' will be applied in 2021–22 as it cannot be identified in current datasets.

- Respiratory complications
- Venous thromboembolism
- Renal failure
- Gastrointestinal bleeding
- Medication complications
- Delirium
- Incontinence
- Endocrine complications
- Cardiac complications
- Third and fourth degree perineal laceration during delivery⁴
- Neonatal birth trauma⁴

Version 3.0 of the HAC list will be used for pricing in 2021–22. Further information on the HAC list including diagnosis codes used to identify each HAC is available on the [Commission's website](#).

The funding adjustment for HACs has been risk adjusted to take account of the increased predisposition of some patients to experiencing a HAC during their hospital stay and adjusts the reduction in funding accordingly.

Further information on the risk adjustment model for HACs, including the risk factors for each HAC group is contained in the [National Pricing Model Technical Specifications 2021–22](#) on the IHPA website.

The funding adjustments for HACs are at **Appendix M**.

6.3 Avoidable hospital readmissions

Under the Addendum, IHPA is required to develop a pricing model for avoidable hospital readmissions, for implementation by 1 July 2021, following approval from the Council of Australian Governments Health Council.

Definition

Unplanned hospital readmissions are a measure of potential issues with the quality, continuity and integration of care provided to patients during or subsequent to their initial hospital admission (the index admission). Reducing the number of avoidable hospital readmissions improves patient health outcomes and decreases avoidable demand for public hospital services.

The Commission was tasked with developing and maintaining a nationally consistent definition of avoidable hospital readmissions. The list of clinical conditions considered to be avoidable hospital readmissions was approved by the Australian Health Ministers' Advisory Council in June 2017.

⁴ No funding adjustment for 'Third degree perineal laceration during delivery' and 'Neonatal birth trauma' will be applied in 2021–22 due to small patient cohorts or other issues that have prevented development of a robust risk adjustment approach at this time.

The avoidable hospital readmission conditions are as follows:

- Pressure injury
- Infections
- Surgical complications
- Respiratory complications
- Venous thromboembolism
- Renal failure
- Gastrointestinal bleeding
- Medication complications
- Delirium
- Cardiac complications
- Other (constipation, nausea and vomiting)

Version 1.0 of the avoidable hospital readmissions list will be used for pricing in 2021–22. Further information on the list, including diagnosis codes used to identify each readmission condition, is available on the [Commission's website](#).

The funding adjustment for avoidable hospital readmissions has been risk adjusted to account for the increased predisposition of some patients to experiencing an avoidable hospital readmission during their hospital stay and adjusts the reduction in funding accordingly with use of a risk adjustment factor.

Further information on the risk adjustment model for avoidable hospital readmissions, including the risk factors for each readmission condition, is contained in the [National Pricing Model Technical Specifications 2021–22](#) on IHPA's website.

The risk adjustment factors for avoidable hospital readmissions are at **Appendix N**.

7. Pricing for private patients in public hospitals

7.1 Clauses

In May 2020, the Commonwealth and state and territory governments signed the Addendum to the National Health Reform Agreement 2020–25, which includes clauses A13, A43 and A44 with the intent to neutralise revenue at the hospital level for public and private patients.

The Administrator of the National Health Funding Pool (the Administrator) may make a further adjustment to the price of an admitted activity to account for private insurance benefits paid for activity in public hospitals that has not been accounted for by the combined adjustments in the national efficient price (NEP) and state or territory funding models.

In making such an adjustment, the NEP will not be increased to a value above the price as defined by the formulas in this Determination.

7.2 Definition

IHPA has developed a definition of financial neutrality (clause A13) and payment parity (clause A44) in terms of revenue per national weighted activity unit 2021–22 (NWAU(21)) (excluding private patient adjustments).

That is, the sum of revenue a local hospital network (LHN) receives for public patient NWAU(21) (Commonwealth and state or territory activity based funding (ABF) payments) should be equal to payments made for a LHN service for private patient NWAU(21) (Commonwealth and state or territory ABF payments, insurer payments and Medicare Benefit Schedule payments).

7.3 Implementation

The definition of private patient neutrality is back-cast and is to be incorporated in the Administrator's annual growth calculation.

Private patient revenue is reported through the Hospital Casemix Protocol (HCP) data. Until such time that HCP data is available to inform the Administrator's annual reconciliation, private patient neutrality clauses will be implemented through:

- a) The application of state based service adjustments for private patients published within this Determination
- b) Confirmation by states and territories of:
 - payments made to each LHN for private patients (aggregate)
 - payments made to each LHN for public patients (aggregate)
 - LHN private patient revenue targets.

The private funding neutrality adjustment will be calculated as an adjustment to the NEP for the purposes of calculating Commonwealth growth funding pertaining to private patient NWAU(21) equal to the following:

Private funding neutrality adjustment =

$$(\mathbf{CC}_{Pu} + \mathbf{SC}_{Pu}) / \mathbf{NWAU}_{Pu} - [(\mathbf{CC}_{Pr} + \mathbf{SC}_{Pr} + \mathbf{P}_{Pr}) / (\mathbf{NWAU}_{Pr} + \mathbf{TA}_{PPS} + \mathbf{TA}_{Acc})]$$

Where:

CC_{Pu}	means growth in the aggregate Commonwealth contribution for public patient activity
SC_{Pu}	means growth in the aggregate state or territory contribution for public patient activity
NWAU_{Pu}	means growth in the aggregate national weighted activity units for public patient activity
CC_{Pr}	means growth in the aggregate Commonwealth contribution for private patient activity
SC_{Pr}	means growth in the aggregate state or territory contribution for private patient activity
P_{Pr}	means growth in the aggregate private patient revenue from private health insurers and Medicare Benefits Schedule payments related to private patient activity
NWAU_{Pr}	means growth in the aggregate national weighted activity units for private patient activity
TA_{PPS}	means growth in the aggregate national weighted activity unit value for private patient service adjustments
TA_{Acc}	means growth in the aggregate national weighted activity unit value for private patient accommodation adjustments

In the event that the private funding neutrality adjustment is greater than zero, then the private funding neutrality adjustment will be equal to zero. In other words, the private funding neutrality adjustment can only be negative, and act as a discount to the NEP.

8. National pricing model technical specifications

8.1 Technical specifications

The detailed [National Pricing Model Technical Specifications](#) are available on the IHPA website.

9. Standards

The following standards apply to the use of activity based funding in the 2021–22 financial year.

9.1 Coding and classification

9.1.1 Admitted acute patients

The International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM), Australian Classification of Health Interventions (ACHI), Australian Coding Standards (ACS), collectively known as ICD-10-AM/ACHI/ACS Eleventh Edition.

Australian Refined Diagnosis Related Groups Classification Version 10.0.

9.1.2 Admitted subacute and non-acute patients

Australian National Subacute and Non-Acute Patient Classification Version 4.0.

9.1.3 Non-admitted patients

Tier 2 Non-Admitted Services Classification Version 7.0.

9.1.4 Emergency department patients

Australian Emergency Care Classification Version 1.0.

9.1.5 Emergency service patients

Urgency Disposition Groups Classification Version 1.3.

These reference standards are available on the [IHPA website](#).

9.2 Intensive care units

For the 2021–22 national efficient price, IHPA has determined which specified intensive care units (ICUs) are eligible to receive the ICU adjustment. This list is included at **Appendix D**.

9.3 Activity based funding dataset specifications

Full copies of these reference standards are available on the [IHPA website](#).

10. Back-casting

Clause A41 of the Addendum to the National Health Reform Agreement 2020–25 (the Addendum) outlines that where the Pricing Authority makes any significant changes to the activity based funding (ABF) classification systems or costing methodologies, the effect of such changes must be back-cast to the year prior to their implementation for the purpose of calculating Commonwealth funding estimates for each ABF service category.

In accordance with clauses A34(b) and A41 of the Addendum, the Pricing Authority has applied the methodological changes to the National Efficient Price (NEP) 2020–21 and determined the back-cast NEP 2020–21 for the purposes of determining Commonwealth growth funding estimated between 2020–21 and 2021–22 is \$5,450.

In accordance with clauses A34(c) and A41 of the Addendum, the Pricing Authority has applied the methodological changes to NEP 2020–21 and determined the back-casting volume multipliers for NEP 2020–21 as detailed in **Table 3**.

Table 3: Back-casting volume multipliers by service category and state and territory

State / territory	Admitted acute	Admitted subacute and non-acute	Emergency department	Non-admitted
NSW	0.9838	0.9939	1.0152	0.9615
Vic	0.9963	1.0025	1.0087	0.9973
Qld	1.0025	1.0026	1.0131	0.9908
SA	1.0036	1.0035	0.9970	0.9882
WA	1.0057	0.9910	1.0024	0.9925
Tas	0.9969	0.9986	1.0543	1.0053
NT	0.9983	1.0049	0.9996	0.9989
ACT	0.9963	1.0028	1.0035	0.9766

10.1 Need for further back-casting advice

The back-casting multipliers in **Table 3** are determined using the most recent activity data supplied by states and territories to IHPA. However, these back-casting multipliers may not be adequate where there are significant changes in the underlying data submitted by states and territories in 2021–22. Where this occurs, the Administrator of the National Health Funding Pool may request further back-casting advice from the Pricing Authority as part of the reconciliation process.

In 2021–22, the following changes may require additional back-casting measures:

- The introduction of the Australian Emergency Care Classification Version 1.0 from 1 July 2021
- The introduction of the Tier 2 Non-Admitted Services Classification Version 7.0 from 1 July 2021
- COVID-19 related activity that is not adequately captured in the NEP Determination for 2021–22.

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Appendix A – General List of In-Scope Public Hospital Services eligible for Commonwealth funding under the National Health Reform Agreement

In accordance with section 131(f) of the *National Health Reform Act 2011* (Cwth) and clauses A16–A24 of the Addendum to the National Health Reform Agreement (NHRA) 2020–25, the scope of public hospital services eligible for Commonwealth funding under the agreement are:

- all admitted programs, including hospital-in-the-home programs and forensic mental health inpatient services
- all emergency department services
- non-admitted services that meet the criteria for inclusion on the General List of In-Scope Public Hospital Services.

Category A: Specialist outpatient clinic services – Tier 2 Non-Admitted Services Classification classes 10, 20 and 30

The Pricing Authority has determined the following services as eligible for Commonwealth funding as a public hospital service under ‘Category A: Specialist outpatient clinic services’.

10. Procedure clinics

- 10.01 Hyperbaric medicine
- 10.02 Interventional imaging
- 10.03 Minor surgical
- 10.04 Dental
- 10.05 Angioplasty/angiography
- 10.06 Endoscopy - gastrointestinal
- 10.07 Endoscopy - urological/gynaecological
- 10.08 Endoscopy - orthopaedic
- 10.09 Endoscopy - respiratory/ear, nose and throat
- 10.10 Renal dialysis - hospital delivered
- 10.11 Chemotherapy treatment
- 10.12 Radiation therapy - treatment
- 10.13 Minor medical procedures
- 10.14 Pain management interventions
- 10.15 Renal dialysis - haemodialysis - home delivered
- 10.16 Renal dialysis - peritoneal dialysis - home delivered
- 10.17 Total parenteral nutrition - home delivered
- 10.18 Enteral nutrition - home delivered
- 10.19 Ventilation - home delivered
- 10.20 Radiation therapy - simulation and planning

10.21 COVID-19 vaccination

20. Medical consultation clinics

20.01 Transplants

20.02 Anaesthetics

20.03 Pain management

20.04 Developmental disabilities

20.05 General medicine

20.07 General surgery

20.08 Genetics

20.09 Geriatric medicine

20.10 Haematology

20.11 Paediatric medicine

20.12 Paediatric surgery

20.13 Palliative care

20.14 Epilepsy

20.15 Neurology

20.16 Neurosurgery

20.17 Ophthalmology

20.18 Ear, nose and throat

20.19 Respiratory

20.20 Respiratory - cystic fibrosis

20.21 Anti-coagulant screening and management

20.22 Cardiology

20.23 Cardiothoracic

20.24 Vascular surgery

20.25 Gastroenterology

20.26 Hepatobiliary

20.27 Craniofacial

20.28 Metabolic bone

20.29 Orthopaedics

20.30 Rheumatology

20.31 Spinal

20.32 Breast

20.33 Dermatology

20.34 Endocrinology

20.35 Nephrology

- 20.36 Urology
- 20.37 Assisted reproductive technology
- 20.38 Gynaecology
- 20.39 Gynaecological oncology
- 20.40 Obstetrics - management of pregnancy without complications
- 20.41 Immunology
- 20.42 Medical oncology - consultation
- 20.43 Radiation therapy - consultation
- 20.44 Infectious diseases
- 20.45 Psychiatry
- 20.46 Plastic and reconstructive surgery
- 20.47 Rehabilitation
- 20.48 Multidisciplinary burns clinic
- 20.49 Geriatric evaluation and management
- 20.50 Psychogeriatric
- 20.51 Sleep disorders
- 20.52 Addiction medicine
- 20.53 Obstetrics - management of complex pregnancy
- 20.54 Maternal fetal medicine
- 20.55 Telehealth - patient location
- 20.56 Multidisciplinary case conference - patient not present
- 20.57 COVID-19 response

30. Stand-alone diagnostic clinics

- 30.01 General imaging
- 30.02 Magnetic resonance imaging
- 30.03 Computerised tomography
- 30.04 Nuclear medicine
- 30.05 Pathology (microbiology, haematology, biochemistry)
- 30.06 Positron emission tomography
- 30.07 Mammography screening
- 30.08 Clinical measurement
- 30.09 COVID-19 response diagnostics

Category B: Other non-admitted patient services and non-medical specialist outpatient clinics – Tier 2 Non-Admitted Services Classification class 40

40. Allied health and/or clinical nurse specialist interventions clinics

- 40.03 Aids and appliances

- 40.04 Clinical pharmacy
- 40.05 Hydrotherapy
- 40.06 Occupational therapy
- 40.07 Pre-admission and pre-anaesthesia
- 40.09 Physiotherapy
- 40.10 Sexual health
- 40.11 Social work
- 40.12 Rehabilitation
- 40.13 Wound management
- 40.14 Neuropsychology
- 40.15 Optometry
- 40.16 Orthoptics
- 40.17 Audiology
- 40.18 Speech pathology
- 40.21 Cardiac rehabilitation
- 40.22 Stomal therapy
- 40.23 Nutrition/dietetics
- 40.24 Orthotics
- 40.25 Podiatry
- 40.28 Midwifery and maternity
- 40.29 Psychology
- 40.30 Alcohol and other drugs
- 40.31 Burns
- 40.32 Continence
- 40.34 Specialist mental health
- 40.35 Palliative care
- 40.36 Geriatric evaluation and management
- 40.37 Psychogeriatric
- 40.38 Infectious diseases
- 40.39 Neurology
- 40.40 Respiratory
- 40.41 Gastroenterology
- 40.42 Circulatory
- 40.43 Hepatobiliary
- 40.44 Orthopaedics
- 40.45 Dermatology

- 40.46 Endocrinology
- 40.47 Nephrology
- 40.48 Haematology and immunology
- 40.49 Gynaecology
- 40.50 Urology
- 40.51 Breast
- 40.52 Oncology
- 40.53 General medicine
- 40.54 General surgery
- 40.55 Paediatrics
- 40.56 Falls prevention
- 40.57 Cognition and memory
- 40.58 Hospital avoidance programs
- 40.59 Post-acute care
- 40.60 Pulmonary rehabilitation
- 40.61 Telehealth - patient location
- 40.62 Multidisciplinary case conference - patient not present
- 40.63 COVID-19 response
- 40.64 Chronic pain management

Other non-admitted public hospital services for 2021–22 (excluding mental health services)

1. Home and community-based chemotherapy services.
2. Chronic disease management/hospital avoidance program targeting:
 - 2.1 Renal impairment
 - 2.2 Respiratory disease
 - 2.3 Cardiovascular disease
 - 2.4 Oncology
 - 2.5 Stroke
 - 2.6 Cystic fibrosis ambulatory care
 - 2.7 Hepatitis C services
3. Early discharge program services including:
 - 3.1 Postnatal care early discharge programs
 - 3.2 Anti-coagulant post-acute hospital event
4. Falls prevention services targeting patients at high risk of falls
5. Hospital admission risk screening services targeting patients at high-risk of hospital admission
6. Home and community-based lymphoedema services

7. Home dialysis
8. Home and community-based palliative care services including palliative care day hospices
9. Intense home and community-based nutrition support services including:
 - 9.1 Home parenteral nutrition services
 - 9.2 Home-based patients on nasogastric or percutaneous endoscopic gastrostomy tube feeding
10. Home and community peri and postnatal assessment services
11. Post-acute care services including:
 - 11.1 48-hour follow-up services targeting Aboriginal/Torres Strait Islander patients recently discharged from hospital
 - 11.2 Stroke post-acute care programs
12. Home and community-based rehabilitation services including:
 - 12.1 Trauma rehabilitation services
 - 12.2 Pulmonary rehabilitation services
 - 12.3 Cardiac rehabilitation services
 - 12.4 Stroke rehabilitation services
13. Sexual assault services
14. Speech pathology services targeting immediate post discharge patients
15. Stomal therapy

Other non-admitted community-based mental health services for 2021–22

- | | |
|------|--|
| MH1 | Adult integrated specialised community mental health services |
| MH2 | Mental health crisis assessment and treatment (including telephone-based services) |
| MH3 | Dual diagnosis services for patients with comorbid conditions |
| MH4 | Home and community-based eating disorders programs |
| MH5 | Mental health hospital avoidance programs |
| MH6 | Ambulatory mental health care services |
| MH7 | Perinatal and infant mental health services |
| MH8 | Mental health step-up/step-down services |
| MH9 | Mental health telephone triage services |
| MH10 | Older persons community mental health services |
| MH11 | Child and adolescent community mental health services |

A17 List

Under clause A17 of the NHRA, IHPA has also determined a list of services that would not normally be considered a public hospital service (the A17 List) as defined by the General List of In-Scope Public Hospital Services Eligibility Policy, but which IHPA is satisfied was provided by a particular hospital in 2010. The services on this list are eligible for Commonwealth funding only at the local hospital network (LHN) indicated in the list.

State/ territory	LHN	Service type
NSW	Central Coast	Allergy
NSW	Central Coast	Child protection
NSW	Central Coast	Dementia
NSW	Central Coast	Dental - adult
NSW	Central Coast	Developmental disabilities
NSW	Central Coast	Diabetes
NSW	Central Coast	Sexual health
NSW	Far West	Aboriginal health
NSW	Far West	Drug and alcohol
NSW	Hunter New England	Aboriginal health
NSW	Hunter New England	Audiology
NSW	Hunter New England	Diabetes
NSW	Hunter New England	Drug and alcohol
NSW	Hunter New England	Occupational therapy
NSW	Hunter New England	Optometry
NSW	Hunter New England	Physiotherapy
NSW	Hunter New England	Podiatry
NSW	Hunter New England	Prosthetics
NSW	Hunter New England	Speech pathology
NSW	Illawarra Shoalhaven	Diabetes
NSW	Illawarra Shoalhaven	Nutrition/dietetics
NSW	Illawarra Shoalhaven	Occupational therapy - general
NSW	Illawarra Shoalhaven	Optometry
NSW	Illawarra Shoalhaven	Physiotherapy
NSW	Illawarra Shoalhaven	Podiatry
NSW	Illawarra Shoalhaven	Prosthetics
NSW	Illawarra Shoalhaven	Speech pathology
NSW	Justice Forensic MHSN	Optometry
NSW	Justice Forensic MHSN	Community forensic mental health

State/ territory	LHN	Service type
NSW	Mid North Coast	Aboriginal health
NSW	Mid North Coast	Occupational therapy - general
NSW	Mid North Coast	Optometry
NSW	Mid North Coast	Physiotherapy
NSW	Mid North Coast	Prosthetics
NSW	Murrumbidgee	Aboriginal health clinics
NSW	Murrumbidgee	Dental - adult
NSW	Murrumbidgee	Dental - child
NSW	Murrumbidgee	Diabetes
NSW	Murrumbidgee	Occupational therapy - general
NSW	Murrumbidgee	Optometry
NSW	Murrumbidgee	Physiotherapy
NSW	Murrumbidgee	Prosthetics
NSW	Murrumbidgee	Sexual health
NSW	Murrumbidgee	Speech pathology
NSW	Nepean Blue Mountains	Aboriginal health
NSW	Nepean Blue Mountains	Adolescent/youth health
NSW	Nepean Blue Mountains	Alcohol and drug - Hawkesbury
NSW	Nepean Blue Mountains	Diabetes
NSW	Nepean Blue Mountains	Early intervention
NSW	Nepean Blue Mountains	Maintenance care
NSW	Nepean Blue Mountains	Nutrition/dietetics
NSW	Nepean Blue Mountains	Occupational therapy
NSW	Nepean Blue Mountains	Occupational therapy - general
NSW	Nepean Blue Mountains	Optometry
NSW	Nepean Blue Mountains	Orthoptics
NSW	Nepean Blue Mountains	Physiotherapy
NSW	Nepean Blue Mountains	Podiatry
NSW	Nepean Blue Mountains	Prosthetics
NSW	Nepean Blue Mountains	Speech pathology
NSW	Northern NSW	Nutrition/dietetics
NSW	Northern NSW	Occupational therapy - general
NSW	Northern NSW	Optometry
NSW	Northern NSW	Physiotherapy
NSW	Northern NSW	Prosthetics

State/ territory	LHN	Service type
NSW	Northern NSW	Speech pathology
NSW	Northern Sydney	Audiology
NSW	Northern Sydney	Diabetes
NSW	Northern Sydney	Occupational therapy - general
NSW	Northern Sydney	Optometry
NSW	Northern Sydney	Orthoptics
NSW	Northern Sydney	Orthotics
NSW	Northern Sydney	Physiotherapy
NSW	Northern Sydney	Podiatry
NSW	Northern Sydney	Prosthetics
NSW	Northern Sydney	Speech pathology
NSW	St Vincent's SHN	Aboriginal health
NSW	St Vincent's SHN	Audiology
NSW	St Vincent's SHN	Diabetes
NSW	St Vincent's SHN	Neuropsychology
NSW	St Vincent's SHN	Nutrition/dietetics
NSW	St Vincent's SHN	Occupational therapy - general
NSW	St Vincent's SHN	Podiatry
NSW	St Vincent's SHN	Prosthetics
NSW	St Vincent's SHN	Physiotherapy
NSW	St Vincent's SHN	Speech pathology
NSW	South Eastern Sydney	Aboriginal health
NSW	South Eastern Sydney	Audiology
NSW	South Eastern Sydney	Diabetes
NSW	South Eastern Sydney	Nutrition/dietetics
NSW	South Eastern Sydney	Occupational therapy - general
NSW	South Eastern Sydney	Optometry
NSW	South Eastern Sydney	Orthoptics
NSW	South Eastern Sydney	Orthotics
NSW	South Eastern Sydney	Physiotherapy
NSW	South Eastern Sydney	Prosthetics
NSW	South Eastern Sydney	Speech pathology
NSW	South West Sydney	Aboriginal health
NSW	South West Sydney	Diabetes
NSW	South West Sydney	Drug and alcohol

State/ territory	LHN	Service type
NSW	South West Sydney	Nutrition/dietetics
NSW	South West Sydney	Occupational therapy - general
NSW	South West Sydney	Optometry
NSW	South West Sydney	Orthoptics
NSW	South West Sydney	Orthotics
NSW	South West Sydney	Physiotherapy
NSW	South West Sydney	Podiatry
NSW	South West Sydney	Prosthetics
NSW	South West Sydney	Speech pathology
NSW	Sydney Children's HN	Aboriginal health
NSW	Sydney Children's HN	Audiology
NSW	Sydney Children's HN	Diabetes
NSW	Sydney Children's HN	Newborn screening assessment
NSW	Sydney Children's HN	Nutrition/dietetics
NSW	Sydney Children's HN	Occupational therapy - general
NSW	Sydney Children's HN	Optometry
NSW	Sydney Children's HN	Orthoptics
NSW	Sydney Children's HN	Orthotics
NSW	Sydney Children's HN	Physiotherapy
NSW	Sydney Children's HN	Prosthetics
NSW	Sydney Children's HN	Speech pathology
NSW	Sydney	Aboriginal health
NSW	Sydney	Audiology
NSW	Sydney	Diabetes
NSW	Sydney	Nutrition/dietetics
NSW	Sydney	Occupational therapy - general
NSW	Sydney	Optometry
NSW	Sydney	Orthoptics
NSW	Sydney	Orthotics
NSW	Sydney	Physiotherapy
NSW	Sydney	Podiatry
NSW	Sydney	Prosthetics
NSW	Sydney	Speech pathology
NSW	Southern NSW	Diabetes
NSW	Southern NSW	Drug and alcohol

State/ territory	LHN	Service type
NSW	Southern NSW	Nutrition/dietetics
NSW	Southern NSW	Occupational therapy - general
NSW	Southern NSW	Optometry
NSW	Southern NSW	Physiotherapy
NSW	Southern NSW	Podiatry
NSW	Southern NSW	Prosthetics
NSW	Southern NSW	Speech pathology
NSW	Western NSW	Aboriginal health
NSW	Western NSW	Diabetes
NSW	Western NSW	Drug and alcohol
NSW	Western NSW	Nutrition/dietetics
NSW	Western NSW	Occupational therapy - general
NSW	Western NSW	Optometry
NSW	Western NSW	Physiotherapy
NSW	Western NSW	Podiatry
NSW	Western NSW	Prosthetics
NSW	Western NSW	Speech pathology
NSW	Western Sydney	Aboriginal health
NSW	Western Sydney	Diabetes
NSW	Western Sydney	Nutrition/dietetics
NSW	Western Sydney	Occupational therapy - general
NSW	Western Sydney	Optometry
NSW	Western Sydney	Orthoptics
NSW	Western Sydney	Physiotherapy
NSW	Western Sydney	Podiatry
NSW	Western Sydney	Prosthetics
NSW	Western Sydney	Speech pathology
Vic	Austin Health	Family planning clinics
Vic	Bendigo Health Care Group	Family planning clinics
Vic	Eastern Health	Family planning clinics
Vic	Mercy Public Hospitals Inc.	Family planning clinics
Vic	Mildura Base Hospital	Family planning clinics
Vic	North East Health Wangaratta	Family planning clinics
Vic	Peninsula Health	Family planning clinics
Vic	The Royal Children's Hospital	Ventilation services in the home

State/ territory	LHN	Service type
Vic	Southern Health	Family planning clinics
Vic	The Royal Women's Hospital	Family planning clinics
Vic	Western Health	Family planning clinics
Vic	All LHNs	Alcohol and drug services
Vic	All LHNs	Adult continuing care
Qld	Central West	Child health
Qld	Central West	Echo-cardiology
Qld	Central West	Physician
Qld	Central West	Women's health (Well Women program)
Qld	Metro South	Alternate site infusion service
Qld	Metro South	Mental health home visits
Qld	North West	Emergency services
SA	All LHNs	Home oxygen services

Other public hospital programs

The Pricing Authority has determined that the following program is eligible for Commonwealth funding as a public hospital service, subject to conditions:

State/ territory	LHN	Service type
Vic	Alfred Health Barwon Health Monash Health Northern Health Western Health	HealthLinks: Chronic Care

Conditions:

HealthLinks was conditionally approved for inclusion in 2018–19, which was then extended in 2020–21. IHPA has extended HealthLinks for a further 12 months (2021–22) subject to the following conditions for its continued inclusion:

- Specific patients are nominated
- IHPA is provided with an activity feed for the services received every three months in a data file
- The data is not in aggregate form
- The costs are either excluded from the National Hospital Cost Data Collection or provided separately
- The effectiveness of existing data is addressed, and the program methodology and evaluation is improved
- There is transparency in the patient's journey and funding flow
- The development of and move towards a funding model that is funded by means other than block funding.

Appendix B - List of radiotherapy codes

Table 4: Radiotherapy Australian Classification of Health Interventions Eleventh Edition codes

Intervention Codes	Description
15000-00	Radiation treatment, superficial, 1 field
15003-00	Radiation treatment, superficial, ≥ 2 fields
15100-00	Radiation treatment, orthovoltage, 1 field
15103-00	Radiation treatment, orthovoltage, ≥ 2 fields
15224-00	Radiation treatment, megavoltage, 1 field, single modality linear accelerator
15239-00	Radiation treatment, megavoltage, ≥ 2 fields, single modality linear accelerator
15254-00	Radiation treatment, megavoltage, 1 field, dual modality linear accelerator
15269-00	Radiation treatment, megavoltage, ≥ 2 fields, dual modality linear accelerator
15600-00	Stereotactic radiation treatment, single dose
15600-01	Stereotactic radiation treatment, fractionated
15600-02	Hemi body irradiation
15600-03	Total body irradiation
15600-04	Total skin irradiation
15303-00	Brachytherapy, intrauterine, low dose rate
15304-00	Brachytherapy, intrauterine, high dose rate
15311-00	Brachytherapy, intravaginal, low dose rate
15312-00	Brachytherapy, intravaginal, high dose rate
15319-00	Brachytherapy, combined intrauterine and intravaginal, low dose rate
15320-00	Brachytherapy, combined intrauterine and intravaginal, high dose rate
90764-00	Brachytherapy, intracavitary, low dose rate
90764-01	Brachytherapy, intracavitary, high dose rate
15327-00	Brachytherapy with implantation of removable single plane, low dose rate
15327-01	Brachytherapy with implantation of removable single plane, pulsed dose rate
15327-02	Brachytherapy with implantation of removable multiple planes or volume implant, low dose rate
15327-03	Brachytherapy with implantation of removable multiple planes or volume implant, pulsed dose rate
15327-04	Brachytherapy with implantation of permanent implant, < 10 sources
15327-05	Brachytherapy with implantation of permanent implant, ≥ 10 sources
15327-06	Brachytherapy with implantation of removable single plane, high dose rate
15327-07	Brachytherapy with implantation of removable multiple planes or volume implant, high dose rate
15338-00	Brachytherapy, prostate
15360-00	Brachytherapy, intravascular
15339-00	Removal of sealed radioactive source
15012-00	Brachytherapy, eye
90766-00	Brachytherapy using surface applicators, other sites
16003-00	Administration of a therapeutic dose of Yttrium 90
16009-00	Administration of a therapeutic dose of Iodine 131
16012-00	Administration of a therapeutic dose of Phosphorous 32
16015-00	Administration of a therapeutic dose of Strontium 89
16018-00	Administration of a therapeutic dose of 153 SM-Lexidronan
90960-00	Administration of a therapeutic dose of other unsealed radioisotope
15342-00	Construction and application of radioactive surface mould
15351-00	Construction and application of eye applicator
90765-00	Construction and fitting of immobilisation device, simple
90765-01	Construction and fitting of immobilisation device, intermediate
90765-02	Construction and fitting of immobilisation device, complex
90765-03	Construction and fitting of customised blocks
90765-04	Construction and fitting of treatment accessories
15500-00	Radiation field setting using simulator, simple
15503-00	Radiation field setting using simulator, intermediate
15506-00	Radiation field setting using simulator, complex
15506-01	Radiation field setting using dedicated CT scanner
15506-02	Radiation field setting for intensity modulated radiation therapy [IMRT]
15509-00	Radiation field setting using diagnostic x-ray unit
15550-00	Radiation field setting for three dimensional conformal radiation therapy [3DCRT]
15518-00	Dosimetry by CT interfacing computer, simple
15521-00	Dosimetry by CT interfacing computer, intermediate
15524-00	Dosimetry by CT interfacing computer, complex
15524-01	Dosimetry by CT interfacing computer for intensity modulated radiation therapy [IMRT]
15527-00	Dosimetry by non-CT interfacing computer, simple
15530-00	Dosimetry by non-CT interfacing computer, intermediate
15533-00	Dosimetry by non-CT interfacing computer, complex
15536-00	Brachytherapy planning, simple
15536-01	Brachytherapy planning, intermediate
15536-02	Brachytherapy planning, complex

Intervention Codes	Description
15539-00	Brachytherapy planning, prostate
15541-00	Brachytherapy planning, intravascular
15556-00	Dosimetry by CT interfacing computer for three dimensional conformal radiation therapy [3DCRT]
15556-01	Dosimetry by non-CT interfacing computer for three dimensional conformal radiation therapy [3DCRT]
37217-01	Implantation of fiducial markers
96256-00	Removal of brachytherapy applicator, prostate

Appendix C - List of dialysis codes

Table 5: Dialysis Australian Classification of Health Interventions Eleventh Edition codes

Intervention Codes	Description
13100-00	Haemodialysis
13100-01	Intermittent haemofiltration
13100-02	Continuous haemofiltration
13100-03	Intermittent haemodiafiltration
13100-04	Continuous haemodiafiltration
13100-05	Haemoperfusion
13100-06	Peritoneal dialysis, short term
13100-07	Intermittent peritoneal dialysis, long term
13100-08	Continuous peritoneal dialysis, long term

Appendix D - Specified intensive care units

Table 6: Specified intensive care units

State/Territory	Name
NSW	Bankstown-Lidcombe Hospital
NSW	Blacktown Hospital
NSW	Calvary Mater Newcastle
NSW	Campbelltown Hospital
NSW	Children's Hospital Westmead
NSW	Coffs Harbour Health Campus
NSW	Concord Repatriation General Hospital
NSW	Gosford Hospital
NSW	Hornsby Ku-Ring-Gai Hospital
NSW	John Hunter Hospital
NSW	Lismore Base Hospital
NSW	Liverpool Hospital
NSW	Nepean Hospital
NSW	Northern Beaches Hospital
NSW	Orange Base Hospital
NSW	Port Macquarie Base Hospital
NSW	Prince of Wales Hospital
NSW	Royal North Shore Hospital
NSW	Royal Prince Alfred Hospital
NSW	St George Hospital (NSW)
NSW	St Vincent's Hospital (Darlinghurst)
NSW	Sydney Children's Hospital
NSW	Tamworth Hospital
NSW	The Sutherland Hospital
NSW	The Tweed Hospital
NSW	Wagga Wagga Base Hospital
NSW	Westmead Hospital
NSW	Wollongong Hospital
VIC	Austin Health - Austin Hospital
VIC	Ballarat Health Services (Base Hospital)
VIC	Barwon Health - Geelong Hospital Campus
VIC	Bendigo Health Care Group - Bendigo Hospital
VIC	Box Hill Hospital
VIC	Dandenong Hospital
VIC	Frankston Hospital
VIC	Maroondah Hospital
VIC	Monash Medical Centre - Clayton Campus
VIC	Peter MacCallum Cancer Centre
VIC	Royal Melbourne Hospital - City Campus
VIC	St Vincent's Hospital (Melbourne) Ltd
VIC	Sunshine Hospital
VIC	The Alfred
VIC	The Northern Hospital
VIC	The Royal Children's Hospital
VIC	The Royal Women's Hospital
VIC	Western Hospital
QLD	Bundaberg Base Hospital
QLD	Caboolture Hospital
QLD	Cairns Base Hospital
QLD	Gold Coast University Hospital
QLD	Hervey Bay Hospital
QLD	Ipswich Hospital
QLD	Logan Hospital
QLD	Mackay Base Hospital
QLD	Mater Adult Hospital
QLD	Princess Alexandra Hospital
QLD	Queen Elizabeth II Jubilee Hospital
QLD	Queensland Children's Hospital
QLD	Redcliffe Hospital
QLD	Robina Hospital
QLD	Rockhampton Hospital
QLD	Royal Brisbane & Women's Hospital
QLD	Sunshine Coast Public University Hospital
QLD	The Prince Charles Hospital

State/Territory	Name
QLD	Toowoomba Hospital
QLD	Townsville University Hospital
SA	Flinders Medical Centre
SA	Lyell McEwin Hospital
SA	Royal Adelaide Hospital
SA	The Queen Elizabeth Hospital
SA	Women's and Children's Hospital
WA	Armadale Kelmscott Memorial Hospital
WA	Bunbury Hospital
WA	Fiona Stanley Hospital
WA	Joondalup Health Campus
WA	Perth Children's Hospital
WA	Rockingham General Hospital
WA	Royal Perth Hospital
WA	Sir Charles Gairdner Hospital
TAS	Launceston General Hospital
TAS	Royal Hobart Hospital
NT	Alice Springs Hospital
NT	Royal Darwin Hospital
ACT	Canberra Hospital and Health Services

Appendix E - Specialised children's hospitals

Table 7: Specialised children's hospitals

State/Territory	Name
NSW	Children's Hospital Westmead
NSW	John Hunter Hospital
NSW	Sydney Children's Hospital
VIC	Monash Medical Centre - Clayton Campus
VIC	The Royal Children's Hospital
QLD	Queensland Children's Hospital
QLD	Townsville University Hospital
SA	Women's and Children's Hospital
WA	Perth Children's Hospital

Appendix F - Private patient adjustments

Table 8: Private patient accommodation adjustment (admitted acute, subacute and non-acute patients)

State/Territory	Private Patient Accommodation Per Diem Price Weight	
	Same Day	Overnight
NSW	0.0512	0.0707
Vic	0.0502	0.0674
Qld	0.0524	0.0724
SA	0.0512	0.0707
WA	0.0583	0.0707
Tas	0.0499	0.0683
NT	0.0512	0.0707
ACT	0.0512	0.0707

Table 9: Private patient service adjustment (admitted acute patients)

AR-DRG V10.0	Description	Private Patient Service Adjustments									
		NSW	VIC	QLD	SA	WA	TAS	NT	ACT		
801A	GIs Unrelated to Principal Diagnosis, Major Complexity	20%	12%	6%	8%	9%	13%	13%	13%		
801B	GIs Unrelated to Principal Diagnosis, Intermediate Complexity	18%	16%	6%	8%	9%	14%	14%	14%		
801C	GIs Unrelated to Principal Diagnosis, Minor Complexity	31%	24%	6%	8%	9%	18%	18%	18%		
A13A	Ventilation >= 336 hours, Major Complexity	13%	13%	5%	5%	8%	10%	10%	10%		
A13B	Ventilation >= 336 hours, Minor Complexity	16%	13%	5%	5%	8%	9%	9%	9%		
A14A	Ventilation >= 96 hours & < 336 hours, Major Complexity	19%	14%	5%	5%	8%	14%	14%	14%		
A14B	Ventilation >= 96 hours & < 336 hours, Intermediate Complexity	16%	10%	4%	5%	8%	11%	11%	11%		
A14C	Ventilation >= 96 hours & < 336 hours, Minor Complexity	16%	15%	5%	5%	8%	13%	13%	13%		
A15A	Tracheostomy, Major Complexity	26%	19%	5%	5%	8%	15%	15%	15%		
A15B	Tracheostomy, Intermediate Complexity	26%	19%	5%	5%	8%	16%	16%	16%		
A15C	Tracheostomy, Minor Complexity	26%	19%	5%	5%	8%	15%	15%	15%		
A40Z	ECMO	16%	13%	5%	5%	8%	15%	15%	15%		
B01Z	Ventricular Shunt Revision	24%	18%	8%	8%	17%	18%	18%	18%		
B02A	Cranial Interventions, Major Complexity	24%	18%	9%	8%	21%	20%	19%	19%		
B02B	Cranial Interventions, Intermediate Complexity	30%	18%	10%	6%	16%	20%	19%	19%		
B02C	Cranial Interventions, Minor Complexity	33%	20%	8%	10%	26%	20%	22%	22%		
B03A	Spinal Interventions, Major Complexity	30%	26%	8%	8%	17%	20%	20%	20%		
B03B	Spinal Interventions, Intermediate Complexity	30%	26%	8%	8%	17%	20%	24%	24%		
B03C	Spinal Interventions, Minor Complexity	29%	26%	8%	8%	17%	20%	23%	23%		
B04A	Extracranial Vascular Interventions, Major Complexity	27%	16%	8%	8%	17%	20%	12%	12%		
B04B	Extracranial Vascular Interventions, Intermediate Complexity	27%	16%	8%	8%	17%	20%	19%	19%		
B04C	Extracranial Vascular Interventions, Minor Complexity	30%	16%	8%	8%	17%	20%	21%	21%		
B05Z	Carpal Tunnel Release	32%	23%	2%	26%	17%	20%	20%	20%		
B06A	Interventions for Cerebral Palsy, Muscular Dystrophy and Neuropathy, Major Comp	26%	17%	8%	8%	17%	20%	17%	17%		
B06B	Interventions for Cerebral Palsy, Muscular Dystrophy and Neuropathy, Interm Comp	25%	17%	8%	8%	17%	20%	14%	14%		

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AR-DRG V10.0	Description	Private Patient Service Adjustments									
		NSW	VIC	QLD	SA	WA	TAS	NT	ACT		
B06C	Interventions for Cerebral Palsy, Muscular Dystrophy and Neuropathy, Minor Comp	39%	17%	8%	8%	17%	20%	20%	20%	20%	
B07A	Cranial or Peripheral Nerve and Other Nervous System Interventions, Major Comp	17%	19%	6%	8%	17%	20%	14%	14%	14%	
B07B	Cranial or Peripheral Nerve and Other Nervous System Interventions, Minor Comp	23%	14%	5%	8%	17%	20%	14%	14%	14%	
B40Z	Plasmapheresis W Neurological Disease, Sameday	12%	19%	3%	8%	17%	20%	9%	9%	9%	
B41A	Telemetric EEG Monitoring, Major Complexity	7%	19%	3%	8%	17%	20%	11%	11%	11%	
B41B	Telemetric EEG Monitoring, Minor Complexity	10%	18%	2%	8%	17%	20%	10%	10%	10%	
B42A	Nervous System Disorders W Ventilator Support, Major Complexity	13%	18%	8%	8%	17%	20%	9%	9%	9%	
B42B	Nervous System Disorders W Ventilator Support, Intermediate Complexity	14%	18%	8%	8%	17%	20%	9%	9%	9%	
B42C	Nervous System Disorders W Ventilator Support, Minor Complexity	13%	18%	8%	8%	17%	20%	13%	13%	13%	
B62Z	Apheresis	16%	8%	4%	4%	6%	6%	8%	8%	5%	
B63A	Dementia and Other Chronic Disturbances of Cerebral Function, Major Complexity	9%	4%	1%	2%	4%	6%	8%	8%	5%	
B63B	Dementia and Other Chronic Disturbances of Cerebral Function, Minor Complexity	8%	3%	3%	2%	4%	6%	8%	8%	5%	
B64A	Delirium, Major Complexity	12%	7%	3%	5%	5%	6%	8%	8%	5%	
B64B	Delirium, Minor Complexity	15%	7%	4%	4%	5%	6%	8%	8%	5%	
B65Z	Cerebral Palsy	7%	6%	4%	4%	5%	6%	8%	8%	5%	
B66A	Nervous System Neoplasms, Major Complexity	12%	5%	4%	3%	5%	6%	8%	8%	5%	
B66B	Nervous System Neoplasms, Minor Complexity	17%	8%	6%	5%	5%	6%	8%	8%	5%	
B67A	Degenerative Nervous System Disorders, Major Complexity	10%	6%	3%	4%	4%	10%	8%	8%	2%	
B67B	Degenerative Nervous System Disorders, Intermediate Complexity	12%	6%	3%	4%	6%	10%	8%	8%	2%	
B67C	Degenerative Nervous System Disorders, Minor Complexity	17%	8%	8%	4%	2%	11%	8%	8%	1%	
B68A	Multiple Sclerosis and Cerebellar Ataxia, Major Complexity	13%	6%	5%	3%	4%	8%	8%	8%	11%	
B68B	Multiple Sclerosis and Cerebellar Ataxia, Minor Complexity	14%	3%	3%	3%	3%	8%	8%	8%	14%	
B69A	TIA and Precerebral Occlusion, Major Complexity	22%	11%	9%	7%	8%	6%	8%	8%	8%	
B69B	TIA and Precerebral Occlusion, Minor Complexity	32%	18%	6%	10%	8%	6%	8%	8%	8%	
B70A	Stroke and Other Cerebrovascular Disorders, Major Complexity	12%	7%	3%	4%	6%	5%	8%	8%	5%	
B70B	Stroke and Other Cerebrovascular Disorders, Intermediate Complexity	17%	9%	4%	6%	4%	5%	8%	8%	5%	
B70C	Stroke and Other Cerebrovascular Disorders, Minor Complexity	23%	11%	5%	6%	6%	7%	8%	8%	6%	
B70D	Stroke and Other Cerebrovascular Disorders, Transferred < 5 Days	30%	11%	6%	9%	6%	5%	8%	8%	5%	
B71A	Cranial and Peripheral Nerve Disorders, Major Complexity	14%	7%	4%	4%	3%	7%	3%	3%	4%	
B71B	Cranial and Peripheral Nerve Disorders, Minor Complexity	18%	9%	8%	4%	4%	10%	0%	0%	5%	
B72A	Nervous System Infection Except Viral Meningitis, Major Complexity	11%	6%	4%	4%	6%	6%	8%	8%	5%	
B72B	Nervous System Infection Except Viral Meningitis, Minor Complexity	12%	10%	4%	4%	6%	6%	8%	8%	5%	
B73A	Viral Meningitis, Major Complexity	17%	7%	5%	4%	6%	6%	8%	8%	5%	
B73B	Viral Meningitis, Minor Complexity	17%	7%	5%	4%	6%	6%	8%	8%	5%	
B74A	Nontraumatic Stupor and Coma, Major Complexity	14%	16%	7%	4%	6%	6%	8%	8%	5%	
B74B	Nontraumatic Stupor and Coma, Minor Complexity	22%	24%	7%	4%	6%	6%	8%	8%	5%	
B75Z	Febrile Convulsions	11%	12%	11%	4%	6%	6%	8%	8%	5%	
B76A	Seizures, Major Complexity	14%	8%	4%	7%	5%	6%	8%	8%	7%	
B76B	Seizures, Minor Complexity	19%	10%	4%	6%	7%	6%	8%	8%	7%	
B77A	Headaches, Major Complexity	20%	9%	5%	7%	7%	6%	8%	8%	10%	
B77B	Headaches, Minor Complexity	31%	15%	8%	8%	6%	6%	8%	8%	10%	
B78A	Intracranial Injuries, Major Complexity	14%	8%	3%	6%	6%	6%	8%	8%	5%	
B78B	Intracranial Injuries, Minor Complexity	17%	10%	3%	6%	6%	6%	8%	8%	5%	
B78C	Intracranial Injuries, Transferred < 5 Days	18%	9%	3%	6%	6%	6%	8%	8%	5%	
B79A	Skull Fractures, Major Complexity	17%	7%	4%	4%	6%	6%	8%	8%	5%	

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		NSW	VIC	QLD	SA	WA	TAS	NT	ACT		
B79B	Skull Fractures, Minor Complexity	18%	7%	4%	4%	6%	6%	8%	5%		
B80A	Other Head Injuries, Major Complexity	21%	13%	4%	3%	6%	6%	8%	5%		
B80B	Other Head Injuries, Minor Complexity	28%	27%	9%	3%	8%	6%	8%	5%		
B81A	Other Disorders of the Nervous System, Major Complexity	17%	9%	4%	3%	15%	7%	8%	9%		
B81B	Other Disorders of the Nervous System, Minor Complexity	21%	8%	5%	6%	7%	7%	8%	9%		
B82A	Chronic & Unspec Para/Quadriplegia, Major Complexity	9%	8%	2%	4%	6%	6%	8%	5%		
B82B	Chronic & Unspec Para/Quadriplegia, Intermediate Complexity	10%	8%	2%	4%	6%	6%	8%	5%		
B82C	Chronic & Unspec Para/Quadriplegia, Minor Complexity	10%	8%	2%	4%	6%	6%	8%	5%		
B83A	Acute Paraplegia and Quadriplegia and Spinal Cord Conditions, Major Complexity	12%	12%	4%	4%	6%	6%	8%	5%		
B83B	Acute Paraplegia and Quadriplegia and Spinal Cord Conditions, Interm Comp	15%	12%	4%	4%	6%	6%	8%	5%		
B83C	Acute Paraplegia and Quadriplegia and Spinal Cord Conditions, Minor Complexity	12%	12%	4%	4%	6%	6%	8%	5%		
C01Z	Interventions for Penetrating Eye Injury	41%	82%	13%	33%	18%	50%	23%	50%		
C02A	Enucleations and Orbital Interventions, Major Complexity	22%	82%	13%	33%	18%	14%	23%	14%		
C02B	Enucleations and Orbital Interventions, Minor Complexity	22%	82%	13%	33%	18%	20%	23%	20%		
C03A	Retinal Interventions, Major Complexity	74%	100%	18%	8%	18%	64%	23%	64%		
C03B	Retinal Interventions, Minor Complexity	58%	100%	10%	53%	21%	69%	23%	69%		
C04A	Major Corneal, Scleral and Conjunctival Interventions, Major Complexity	41%	79%	13%	33%	18%	14%	23%	14%		
C04B	Major Corneal, Scleral and Conjunctival Interventions, Minor Complexity	41%	82%	13%	33%	18%	63%	23%	63%		
C05Z	Dacryocystorhinostomy	41%	82%	13%	33%	18%	50%	23%	50%		
C10Z	Strabismus Interventions	30%	26%	13%	33%	18%	18%	23%	18%		
C11Z	Eyelid Interventions	23%	35%	13%	33%	18%	21%	23%	21%		
C12A	Other Corneal, Scleral and Conjunctival Interventions, Major Complexity	12%	42%	13%	33%	18%	14%	23%	14%		
C12B	Other Corneal, Scleral and Conjunctival Interventions, Minor Complexity	12%	40%	13%	33%	18%	26%	23%	26%		
C13Z	Lacrimal Interventions	41%	82%	13%	33%	18%	21%	23%	21%		
C14A	Other Eye Interventions, Major Complexity	13%	34%	13%	33%	18%	10%	23%	10%		
C14B	Other Eye Interventions, Minor Complexity	16%	34%	13%	33%	18%	20%	23%	20%		
C15A	Glaucoma and Complex Cataract Interventions, Major Complexity	36%	85%	13%	33%	18%	18%	23%	18%		
C15B	Glaucoma and Complex Cataract Interventions, Minor Complexity	43%	86%	13%	33%	18%	52%	23%	52%		
C16Z	Lens Interventions	47%	87%	33%	74%	31%	73%	23%	73%		
C60A	Acute and Major Eye Infections, Major Complexity	7%	10%	2%	3%	4%	4%	4%	5%		
C60B	Acute and Major Eye Infections, Minor Complexity	7%	10%	2%	3%	4%	4%	4%	5%		
C61A	Neurological and Vascular Disorders of the Eye, Major Complexity	21%	10%	6%	3%	4%	15%	15%	5%		
C61B	Neurological and Vascular Disorders of the Eye, Minor Complexity	28%	16%	4%	3%	4%	17%	17%	5%		
C62A	Hypohaema and Medically Managed Trauma to the Eye, Major Complexity	18%	9%	4%	3%	4%	10%	10%	5%		
C62B	Hypohaema and Medically Managed Trauma to the Eye, Minor Complexity	22%	21%	5%	3%	4%	16%	16%	5%		
C63A	Other Disorders of the Eye, Major Complexity	15%	7%	4%	3%	4%	9%	9%	5%		
C63B	Other Disorders of the Eye, Minor Complexity	15%	12%	6%	3%	2%	9%	9%	5%		
D01Z	Cochlear Implant	23%	26%	11%	20%	6%	15%	6%	70%		
D02A	Head and Neck Interventions, Major Complexity	19%	18%	11%	20%	6%	15%	6%	11%		
D02B	Head and Neck Interventions, Intermediate Complexity	19%	18%	11%	20%	6%	15%	6%	15%		
D02C	Head and Neck Interventions, Minor Complexity	19%	18%	11%	20%	6%	15%	6%	13%		
D03A	Surgical Repair for Cleft Lip and Palate Disorders, Major Complexity	17%	26%	11%	20%	6%	15%	6%	9%		
D03B	Surgical Repair for Cleft Lip and Palate Disorders, Minor Complexity	17%	26%	11%	20%	6%	15%	6%	10%		
D04A	Maxillo Surgery, Major Complexity	23%	18%	25%	20%	6%	15%	6%	17%		
D04B	Maxillo Surgery, Minor Complexity	25%	17%	22%	20%	6%	15%	6%	20%		

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		NSW	VIC	QLD	SA	WA	TAS	NT	ACT		
D05Z	Parotid Gland Interventions	23%	18%	11%	20%	6%	15%	6%	15%		
D06Z	Sinus and Complex Middle Ear Interventions	28%	34%	4%	20%	6%	15%	6%	20%		
D10Z	Nasal Interventions	22%	26%	7%	20%	6%	15%	6%	17%		
D11Z	Tonsillectomy and Adenoidectomy	13%	19%	5%	14%	3%	15%	6%	12%		
D12A	Other Ear, Nose, Mouth and Throat Interventions, Major Complexity	21%	24%	6%	15%	6%	15%	6%	11%		
D12B	Other Ear, Nose, Mouth and Throat Interventions, Minor Complexity	23%	26%	5%	16%	5%	15%	6%	18%		
D13Z	Myringotomy W Tube Insertion	18%	31%	6%	26%	6%	15%	6%	18%		
D14A	Mouth and Salivary Gland Interventions, Major Complexity	11%	10%	6%	10%	6%	15%	6%	7%		
D14B	Mouth and Salivary Gland Interventions, Minor Complexity	20%	17%	6%	10%	6%	15%	6%	15%		
D15Z	Mastoid Interventions	23%	26%	11%	20%	6%	15%	6%	17%		
D40Z	Dental Extractions and Restorations	10%	10%	6%	16%	2%	15%	6%	8%		
D60A	Ear, Nose, Mouth and Throat Malignancy, Major Complexity	12%	8%	4%	5%	5%	6%	3%	7%		
D60B	Ear, Nose, Mouth and Throat Malignancy, Minor Complexity	14%	12%	4%	5%	5%	6%	3%	7%		
D61A	Dysequilibrium, Major Complexity	22%	10%	4%	5%	6%	7%	8%	7%		
D61B	Dysequilibrium, Minor Complexity	29%	15%	7%	11%	7%	7%	8%	12%		
D62A	Epistaxis, Major Complexity	18%	4%	4%	4%	4%	6%	3%	7%		
D62B	Epistaxis, Minor Complexity	10%	8%	3%	4%	4%	6%	3%	7%		
D63A	Otitis Media and Upper Respiratory Infections, Major Complexity	14%	8%	4%	4%	6%	5%	2%	6%		
D63B	Otitis Media and Upper Respiratory Infections, Minor Complexity	13%	8%	5%	5%	3%	5%	2%	7%		
D64A	Laryngotracheitis and Epiglottitis, Major Complexity	12%	8%	3%	8%	5%	6%	3%	7%		
D64B	Laryngotracheitis and Epiglottitis, Minor Complexity	10%	10%	6%	8%	5%	6%	3%	7%		
D65A	Nasal Trauma and Deformity, Major Complexity	19%	14%	3%	5%	5%	6%	3%	7%		
D65B	Nasal Trauma and Deformity, Minor Complexity	28%	14%	4%	5%	5%	6%	3%	7%		
D66A	Other Ear, Nose, Mouth and Throat Disorders, Major Complexity	13%	8%	5%	7%	5%	6%	3%	7%		
D66B	Other Ear, Nose, Mouth and Throat Disorders, Minor Complexity	16%	17%	3%	9%	3%	6%	3%	7%		
D67A	Oral and Dental Disorders, Major Complexity	14%	5%	4%	5%	5%	14%	3%	7%		
D67B	Oral and Dental Disorders, Minor Complexity	20%	12%	6%	4%	6%	14%	3%	7%		
E01A	Major Chest Interventions, Major Complexity	17%	19%	9%	9%	8%	9%	6%	6%		
E01B	Major Chest Interventions, Intermediate Complexity	21%	21%	9%	9%	8%	9%	6%	6%		
E01C	Major Chest Interventions, Minor Complexity	22%	21%	11%	9%	8%	9%	6%	6%		
E02A	Other Respiratory System GIs, Major Complexity	17%	14%	6%	5%	6%	9%	6%	6%		
E02B	Other Respiratory System GIs, Intermediate Complexity	19%	22%	8%	5%	6%	9%	6%	6%		
E02C	Other Respiratory System GIs, Minor Complexity	12%	15%	9%	5%	6%	9%	6%	6%		
E03Z	Lung or Heart-Lung Transplant	14%	11%	5%	6%	8%	9%	6%	6%		
E40A	Respiratory System Disorders W Ventilator Support, Major Complexity	15%	9%	5%	6%	8%	9%	6%	6%		
E40B	Respiratory System Disorders W Ventilator Support, Minor Complexity	14%	9%	5%	6%	8%	9%	6%	6%		
E41A	Respiratory System Disorders W Non-Invasive Ventilation, Major Complexity	12%	7%	4%	4%	5%	7%	6%	6%		
E41B	Respiratory System Disorders W Non-Invasive Ventilation, Minor Complexity	11%	6%	3%	4%	3%	7%	6%	6%		
E42A	Bronchoscopy, Major Complexity	13%	10%	6%	6%	20%	18%	6%	6%		
E42B	Bronchoscopy, Intermediate Complexity	17%	13%	8%	6%	20%	18%	6%	6%		
E42C	Bronchoscopy, Minor Complexity	22%	19%	9%	6%	20%	21%	6%	6%		
E60A	Cystic Fibrosis, Major Complexity	6%	4%	2%	5%	5%	7%	1%	5%		
E60B	Cystic Fibrosis, Minor Complexity	5%	5%	2%	5%	5%	7%	1%	5%		
E61A	Pulmonary Embolism, Major Complexity	18%	10%	6%	7%	8%	7%	1%	5%		
E61B	Pulmonary Embolism, Minor Complexity	26%	14%	7%	6%	8%	7%	1%	5%		

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E62A	Respiratory Infections and Inflammations, Major Complexity	13%	7%	5%	4%	6%	6%	2%	6%	6%	
E62B	Respiratory Infections and Inflammations, Minor Complexity	14%	8%	5%	6%	5%	6%	1%	6%	6%	
E63A	Sleep Apnoea, Major Complexity	12%	10%	5%	5%	5%	7%	1%	5%	5%	
E63B	Sleep Apnoea, Minor Complexity	17%	36%	5%	5%	5%	7%	1%	5%	5%	
E64A	Pulmonary Oedema and Respiratory Failure, Major Complexity	13%	6%	4%	5%	5%	7%	1%	5%	5%	
E64B	Pulmonary Oedema and Respiratory Failure, Minor Complexity	17%	5%	4%	5%	5%	7%	1%	5%	5%	
E65A	Chronic Obstructive Airways Disease, Major Complexity	13%	7%	4%	4%	5%	6%	1%	4%	4%	
E65B	Chronic Obstructive Airways Disease, Minor Complexity	14%	8%	5%	6%	4%	5%	1%	4%	4%	
E66A	Major Chest Trauma, Major Complexity	15%	7%	3%	4%	5%	7%	1%	5%	5%	
E66B	Major Chest Trauma, Minor Complexity	20%	10%	5%	4%	5%	7%	1%	5%	5%	
E67A	Respiratory Signs and Symptoms, Major Complexity	21%	10%	8%	7%	3%	7%	1%	7%	7%	
E67B	Respiratory Signs and Symptoms, Minor Complexity	15%	11%	7%	8%	3%	7%	1%	8%	8%	
E68A	Pneumothorax, Major Complexity	16%	8%	6%	7%	5%	7%	1%	5%	5%	
E68B	Pneumothorax, Minor Complexity	15%	9%	5%	7%	5%	7%	1%	5%	5%	
E69A	Bronchitis and Asthma, Major Complexity	15%	7%	4%	5%	6%	2%	1%	6%	6%	
E69B	Bronchitis and Asthma, Minor Complexity	11%	9%	5%	5%	3%	3%	1%	6%	6%	
E70A	Whooping Cough and Acute Bronchitis, Major Complexity	9%	7%	2%	4%	3%	7%	1%	5%	5%	
E70B	Whooping Cough and Acute Bronchitis, Minor Complexity	6%	5%	4%	4%	3%	7%	1%	5%	5%	
E71A	Respiratory Neoplasms, Major Complexity	13%	8%	6%	7%	5%	12%	1%	4%	4%	
E71B	Respiratory Neoplasms, Minor Complexity	17%	13%	9%	6%	5%	12%	1%	4%	4%	
E72Z	Respiratory Problems Arising from Neonatal Period	14%	14%	5%	5%	5%	7%	1%	5%	5%	
E73A	Pleural Effusion, Major Complexity	18%	10%	8%	6%	5%	7%	1%	5%	5%	
E73B	Pleural Effusion, Intermediate Complexity	25%	13%	10%	6%	5%	7%	1%	5%	5%	
E73C	Pleural Effusion, Minor Complexity	25%	12%	11%	6%	5%	7%	1%	5%	5%	
E74A	Interstitial Lung Disease, Major Complexity	14%	6%	6%	4%	4%	7%	1%	5%	5%	
E74B	Interstitial Lung Disease, Minor Complexity	14%	11%	6%	4%	2%	7%	1%	5%	5%	
E75A	Other Respiratory System Disorders, Major Complexity	15%	7%	5%	4%	5%	8%	2%	6%	6%	
E75B	Other Respiratory System Disorders, Minor Complexity	17%	9%	7%	6%	5%	8%	2%	6%	6%	
E76A	Respiratory Tuberculosis, Major Complexity	14%	8%	5%	5%	5%	7%	1%	5%	5%	
E76B	Respiratory Tuberculosis, Minor Complexity	14%	8%	5%	5%	5%	7%	1%	5%	5%	
E77A	Bronchiectasis, Major Complexity	11%	5%	3%	5%	3%	7%	1%	5%	5%	
E77B	Bronchiectasis, Minor Complexity	13%	5%	4%	5%	3%	7%	1%	5%	5%	
F01A	Implantation and Replacement of AICD, Total System, Major Complexity	44%	68%	100%	37%	23%	31%	5%	36%	36%	
F01B	Implantation and Replacement of AICD, Total System, Minor Complexity	59%	100%	100%	37%	23%	31%	5%	36%	36%	
F02Z	Other AICD Interventions	32%	30%	21%	24%	23%	31%	5%	36%	36%	
F03A	Cardiac Valve Int W CPB Pump W Invasive Cardiac Investigation, Major Complexity	32%	30%	21%	24%	23%	31%	5%	36%	36%	
F03B	Cardiac Valve Int W CPB Pump W Invasive Cardiac Investigation, Minor Complexity	32%	30%	21%	24%	23%	31%	5%	36%	36%	
F04A	Cardiac Valve Interventions W CPB Pump W/O Invasive Cardiac Invest, Major Comp	27%	25%	17%	24%	23%	31%	5%	36%	36%	
F04B	Cardiac Valve Interventions W CPB Pump W/O Invasive Cardiac Invest, Interm Comp	27%	21%	17%	24%	23%	31%	5%	36%	36%	
F04C	Cardiac Valve Interventions W CPB Pump W/O Invasive Cardiac Invest, Minor Comp	27%	31%	17%	24%	23%	31%	5%	36%	36%	
F05A	Coronary Bypass W Invasive Cardiac Investigation, Major Complexity	25%	30%	21%	24%	23%	31%	5%	36%	36%	
F05B	Coronary Bypass W Invasive Cardiac Investigation, Minor Complexity	25%	30%	21%	24%	23%	31%	5%	36%	36%	
F06A	Coronary Bypass W/O Invasive Cardiac Investigation, Major Complexity	27%	15%	21%	24%	23%	31%	5%	36%	36%	
F06B	Coronary Bypass W/O Invasive Cardiac Investigation, Intermediate Complexity	27%	15%	21%	24%	23%	31%	5%	36%	36%	
F06C	Coronary Bypass W/O Invasive Cardiac Investigation, Minor Complexity	27%	15%	21%	24%	23%	31%	5%	36%	36%	

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F07A	Other Cardiothoracic/Vascular Interventions W CPB Pump, Major Complexity	29%	15%	21%	24%	23%	31%	5%	36%		
F07B	Other Cardiothoracic/Vascular Interventions W CPB Pump, Intermediate Complexity	29%	15%	21%	24%	23%	31%	5%	36%		
F07C	Other Cardiothoracic/Vascular Interventions W CPB Pump, Minor Complexity	29%	15%	21%	24%	23%	31%	5%	36%		
F08A	Major-Reconstructive Vascular Interventions W/O CPB Pump, Major Complexity	32%	24%	20%	15%	23%	31%	5%	36%		
F08B	Major-Reconstructive Vascular Interventions W/O CPB Pump, Interm Complexity	32%	24%	20%	15%	23%	31%	5%	36%		
F08C	Major-Reconstructive Vascular Interventions W/O CPB Pump, Minor Complexity	41%	24%	20%	15%	23%	31%	5%	36%		
F09A	Other Cardiothoracic Interventions W/O CPB Pump, Major Complexity	28%	30%	21%	24%	23%	31%	5%	36%		
F09B	Other Cardiothoracic Interventions W/O CPB Pump, Minor Complexity	27%	30%	21%	24%	23%	31%	5%	36%		
F10A	Interventional Coronary Procedures, Admitted for AMI, Major Complexity	34%	28%	18%	22%	31%	34%	5%	39%		
F10B	Interventional Coronary Procedures, Admitted for AMI, Minor Complexity	49%	38%	24%	36%	34%	41%	5%	44%		
F11A	Amputation, Except Upper Limb and Toe, for Circulatory Disorders, Major Comp	32%	30%	21%	24%	23%	31%	5%	36%		
F11B	Amputation, Except Upper Limb and Toe, for Circulatory Disorders, Minor Comp	32%	30%	21%	24%	23%	31%	5%	36%		
F12A	Implantation and Replacement of Pacemaker, Total System, Major Complexity	39%	53%	56%	32%	38%	31%	5%	36%		
F12B	Implantation and Replacement of Pacemaker, Total System, Minor Complexity	45%	73%	61%	50%	38%	31%	5%	36%		
F13A	Amputation, Upper Limb and Toe, for Circulatory Disorders, Major Complexity	21%	30%	21%	24%	23%	31%	5%	36%		
F13B	Amputation, Upper Limb and Toe, for Circulatory Disorders, Minor Complexity	21%	30%	21%	24%	23%	31%	5%	36%		
F14A	Vascular Interventions, Except Major Reconstruction, W/O CPB Pump, Major Comp	25%	19%	11%	11%	26%	31%	5%	36%		
F14B	Vascular Interventions, Except Major Reconstruction, W/O CPB Pump, Interm Comp	33%	29%	10%	11%	26%	31%	5%	36%		
F14C	Vascular Interventions, Except Major Reconstruction, W/O CPB Pump, Minor Comp	40%	27%	26%	12%	37%	31%	5%	36%		
F17A	Insertion and Replacement of Pacemaker Generator, Major Complexity	59%	90%	21%	24%	23%	31%	5%	36%		
F17B	Insertion and Replacement of Pacemaker Generator, Minor Complexity	58%	97%	21%	24%	23%	31%	5%	36%		
F18Z	Other Pacemaker Interventions	32%	30%	21%	24%	23%	31%	5%	36%		
F19A	Trans-Vascular Percutaneous Cardiac Intervention, Major Complexity	18%	28%	23%	24%	23%	31%	5%	36%		
F19B	Trans-Vascular Percutaneous Cardiac Intervention, Minor Complexity	24%	28%	23%	24%	23%	31%	5%	36%		
F20Z	Vein Ligation and Stripping	18%	26%	21%	24%	23%	31%	5%	36%		
F21A	Other Circulatory System GIs, Major Complexity	14%	10%	21%	24%	23%	31%	5%	36%		
F21B	Other Circulatory System GIs, Intermediate Complexity	10%	10%	21%	24%	23%	31%	5%	36%		
F21C	Other Circulatory System GIs, Minor Complexity	20%	10%	21%	24%	23%	31%	5%	36%		
F22Z	Insertion of Artificial Heart Device	32%	30%	21%	24%	23%	31%	5%	36%		
F23Z	Heart Transplant	32%	30%	21%	24%	23%	31%	5%	36%		
F24A	Interventional Coronary Procs, Not Adm for AMI, Major Comp	27%	27%	15%	44%	31%	31%	5%	36%		
F24B	Interventional Coronary Procs, Not Adm for AMI, Minor Comp	43%	36%	24%	50%	39%	31%	5%	36%		
F40A	Circulatory Disorders W Ventilator Support, Major Complexity	18%	30%	21%	24%	23%	31%	5%	36%		
F40B	Circulatory Disorders W Ventilator Support, Minor Complexity	18%	30%	21%	24%	23%	31%	5%	36%		
F41A	Circulatory Disorders, Adm for AMI W Invasive Cardiac Inves Int, Major Comp	23%	12%	8%	16%	15%	31%	5%	36%		
F41B	Circulatory Disorders, Adm for AMI W Invasive Cardiac Inves Int, Minor Comp	32%	17%	7%	18%	16%	31%	5%	36%		
F42A	Circulatory Dsrdis, Not Adm for AMI W Invasive Cardiac Inves Int, Major Comp	23%	16%	9%	7%	21%	15%	5%	23%		
F42B	Circulatory Dsrdis, Not Adm for AMI W Invasive Cardiac Inves Int, Minor Comp	36%	22%	10%	16%	28%	17%	5%	23%		
F43A	Circulatory Disorders W Non-Invasive Ventilation, Major Complexity	14%	9%	4%	24%	23%	31%	5%	36%		
F43B	Circulatory Disorders W Non-Invasive Ventilation, Minor Complexity	15%	6%	6%	24%	23%	31%	5%	36%		
F60A	Circulatory Dsrdis, Adm for AMI W/O Invas Card Inves Intervention	17%	9%	6%	10%	5%	8%	3%	9%		
F60B	Circulatory Dsrdis, Adm for AMI W/O Invas Card Inves Intervention, Transf < 5 Days	27%	13%	15%	11%	2%	8%	3%	9%		
F61A	Infective Endocarditis, Major Complexity	13%	10%	7%	7%	7%	8%	3%	9%		
F61B	Infective Endocarditis, Minor Complexity	14%	10%	7%	7%	7%	8%	3%	9%		
F62A	Heart Failure and Shock, Major Complexity	14%	7%	5%	4%	7%	5%	3%	6%		

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F62B	Heart Failure and Shock, Minor Complexity	15%	7%	4%	4%	5%	5%	3%	5%		
F62C	Heart Failure and Shock, Transferred < 5 Days	17%	8%	11%	9%	5%	5%	3%	6%		
F63A	Venous Thrombosis, Major Complexity	16%	12%	8%	7%	7%	8%	3%	9%		
F63B	Venous Thrombosis, Minor Complexity	24%	16%	15%	7%	7%	8%	3%	9%		
F64A	Skin Ulcers in Circulatory Disorders, Major Complexity	9%	6%	5%	4%	7%	8%	3%	9%		
F64B	Skin Ulcers in Circulatory Disorders, Intermediate Complexity	12%	6%	5%	4%	7%	8%	3%	9%		
F64C	Skin Ulcers in Circulatory Disorders, Minor Complexity	27%	14%	5%	4%	7%	8%	3%	9%		
F65A	Peripheral Vascular Disorders, Major Complexity	16%	8%	5%	6%	8%	8%	3%	9%		
F65B	Peripheral Vascular Disorders, Minor Complexity	27%	14%	8%	6%	9%	8%	3%	9%		
F66A	Coronary Atherosclerosis, Major Complexity	22%	15%	8%	6%	7%	8%	3%	9%		
F66B	Coronary Atherosclerosis, Minor Complexity	30%	20%	7%	9%	7%	8%	3%	9%		
F67A	Hypertension, Major Complexity	18%	9%	7%	7%	7%	8%	3%	9%		
F67B	Hypertension, Minor Complexity	24%	11%	6%	7%	7%	8%	3%	9%		
F68Z	Congenital Heart Disease	20%	10%	7%	7%	7%	8%	3%	9%		
F69A	Valvular Disorders, Major Complexity	23%	12%	7%	16%	7%	8%	3%	9%		
F69B	Valvular Disorders, Minor Complexity	31%	13%	9%	16%	7%	8%	3%	9%		
F72A	Unstable Angina, Major Complexity	19%	7%	11%	7%	6%	8%	3%	9%		
F72B	Unstable Angina, Minor Complexity	26%	11%	9%	11%	5%	8%	3%	9%		
F73A	Syncope and Collapse, Major Complexity	18%	7%	5%	5%	6%	10%	2%	19%		
F73B	Syncope and Collapse, Minor Complexity	28%	15%	8%	10%	10%	23%	2%	20%		
F74A	Chest Pain, Major Complexity	26%	13%	8%	10%	7%	7%	6%	13%		
F74B	Chest Pain, Minor Complexity	36%	23%	11%	15%	5%	6%	7%	14%		
F75A	Other Circulatory Disorders, Major Complexity	16%	9%	5%	6%	7%	8%	3%	7%		
F75B	Other Circulatory Disorders, Minor Complexity	23%	13%	8%	10%	9%	8%	3%	7%		
F76A	Arrhythmia, Cardiac Arrest and Conduction Disorders, Major Complexity	19%	9%	6%	7%	6%	7%	3%	8%		
F76B	Arrhythmia, Cardiac Arrest and Conduction Disorders, Minor Complexity	27%	12%	9%	17%	9%	11%	4%	16%		
G01A	Rectal Resection, Major Complexity	17%	16%	6%	10%	8%	11%	4%	9%		
G01B	Rectal Resection, Intermediate Complexity	20%	16%	6%	10%	8%	11%	4%	9%		
G01C	Rectal Resection, Minor Complexity	24%	17%	6%	10%	8%	11%	4%	9%		
G02A	Major Small and Large Bowel Interventions, Major Complexity	17%	14%	5%	6%	8%	11%	4%	9%		
G02B	Major Small and Large Bowel Interventions, Intermediate Complexity	19%	14%	6%	6%	8%	11%	4%	9%		
G02C	Major Small and Large Bowel Interventions, Minor Complexity	21%	16%	5%	7%	7%	11%	4%	9%		
G03A	Stomach, Oesophageal and Duodenal Interventions, Major Complexity	18%	17%	5%	7%	8%	11%	4%	9%		
G03B	Stomach, Oesophageal and Duodenal Interventions, Intermediate Complexity	21%	17%	5%	7%	8%	11%	4%	9%		
G03C	Stomach, Oesophageal and Duodenal Interventions, Minor Complexity	22%	18%	3%	7%	8%	11%	4%	9%		
G04A	Peritoneal Adhesiolysis, Major Complexity	15%	9%	5%	4%	6%	11%	4%	9%		
G04B	Peritoneal Adhesiolysis, Intermediate Complexity	16%	11%	4%	4%	6%	11%	4%	9%		
G04C	Peritoneal Adhesiolysis, Minor Complexity	20%	15%	5%	5%	6%	11%	4%	9%		
G05A	Minor Small and Large Bowel Interventions, Major Complexity	21%	17%	7%	10%	8%	11%	4%	9%		
G05B	Minor Small and Large Bowel Interventions, Minor Complexity	21%	17%	7%	10%	8%	11%	4%	9%		
G06Z	Pyelomyotomy	20%	17%	7%	10%	8%	11%	4%	9%		
G07A	Appendicectomy, Major Complexity	16%	10%	4%	4%	5%	9%	4%	9%		
G07B	Appendicectomy, Minor Complexity	18%	12%	4%	4%	6%	9%	4%	9%		
G10A	Hernia Interventions, Major Complexity	22%	12%	6%	11%	7%	11%	4%	9%		
G10B	Hernia Interventions, Minor Complexity	25%	21%	10%	14%	7%	11%	4%	9%		

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		NSW	VIC	QLD	SA	WA	TAS	NT	ACT		
G11A	Anal and Stomal Interventions, Major Complexity	18%	9%	6%	6%	7%	11%	4%	9%		
G11B	Anal and Stomal Interventions, Minor Complexity	20%	12%	5%	9%	7%	11%	4%	9%		
G12A	Other Digestive System GIs, Major Complexity	19%	15%	6%	11%	9%	11%	4%	9%		
G12B	Other Digestive System GIs, Intermediate Complexity	19%	14%	6%	11%	9%	11%	4%	9%		
G12C	Other Digestive System GIs, Minor Complexity	31%	17%	6%	11%	9%	11%	4%	9%		
G46A	Complex Endoscopy, Major Complexity	19%	12%	5%	4%	7%	11%	4%	9%		
G46B	Complex Endoscopy, Minor Complexity	32%	35%	21%	31%	12%	11%	4%	9%		
G47A	Gastroscopy, Major Complexity	17%	10%	6%	3%	7%	14%	5%	9%		
G47B	Gastroscopy, Intermediate Complexity	24%	16%	6%	3%	8%	14%	5%	9%		
G47C	Gastroscopy, Minor Complexity	29%	28%	16%	25%	10%	19%	5%	9%		
G48A	Colonoscopy, Major Complexity	19%	13%	7%	8%	8%	13%	4%	9%		
G48B	Colonoscopy, Minor Complexity	30%	36%	24%	47%	12%	13%	4%	9%		
G60A	Digestive Malignancy, Major Complexity	12%	7%	5%	5%	5%	8%	2%	7%		
G60B	Digestive Malignancy, Minor Complexity	17%	11%	4%	5%	5%	8%	2%	7%		
G61A	Gastrointestinal Haemorrhage, Major Complexity	18%	9%	6%	5%	6%	8%	2%	6%		
G61B	Gastrointestinal Haemorrhage, Minor Complexity	20%	10%	6%	5%	6%	8%	2%	6%		
G64Z	Inflammatory Bowel Disease	17%	6%	6%	11%	4%	8%	3%	16%		
G65A	Gastrointestinal Obstruction, Major Complexity	15%	8%	4%	4%	6%	8%	2%	7%		
G65B	Gastrointestinal Obstruction, Minor Complexity	21%	9%	5%	7%	7%	8%	2%	7%		
G66A	Abdominal Pain and Mesenteric Adenitis, Major Complexity	22%	9%	6%	7%	6%	6%	4%	8%		
G66B	Abdominal Pain and Mesenteric Adenitis, Minor Complexity	30%	15%	12%	8%	8%	6%	4%	8%		
G67A	Oesophagitis and Gastroenteritis, Major Complexity	17%	8%	5%	4%	6%	4%	1%	5%		
G67B	Oesophagitis and Gastroenteritis, Minor Complexity	23%	11%	7%	8%	5%	4%	1%	5%		
G70A	Other Digestive System Disorders, Major Complexity	16%	8%	5%	5%	5%	10%	2%	5%		
G70B	Other Digestive System Disorders, Intermediate Complexity	19%	8%	5%	5%	5%	8%	2%	5%		
G70C	Other Digestive System Disorders, Minor Complexity	23%	12%	9%	7%	5%	15%	3%	5%		
H01A	Pancreas, Liver and Shunt Interventions, Major Complexity	19%	17%	8%	6%	11%	17%	14%	14%		
H01B	Pancreas, Liver and Shunt Interventions, Intermediate Complexity	28%	18%	8%	6%	11%	17%	19%	19%		
H01C	Pancreas, Liver and Shunt Interventions, Minor Complexity	28%	20%	8%	6%	11%	17%	19%	19%		
H02A	Major Biliary Tract Interventions, Major Complexity	19%	14%	8%	6%	11%	17%	15%	15%		
H02B	Major Biliary Tract Interventions, Intermediate Complexity	18%	14%	8%	6%	11%	17%	13%	13%		
H02C	Major Biliary Tract Interventions, Minor Complexity	21%	17%	8%	6%	11%	17%	17%	17%		
H05A	Hepatobiliary Diagnostic Interventions, Major Complexity	24%	21%	6%	6%	11%	17%	15%	15%		
H05B	Hepatobiliary Diagnostic Interventions, Intermediate Complexity	24%	21%	6%	6%	11%	17%	17%	17%		
H05C	Hepatobiliary Diagnostic Interventions, Minor Complexity	30%	21%	6%	6%	11%	17%	23%	23%		
H06A	Other Hepatobiliary and Pancreas GIs, Major Complexity	26%	30%	6%	6%	11%	17%	13%	13%		
H06B	Other Hepatobiliary and Pancreas GIs, Intermediate Complexity	28%	30%	6%	6%	11%	17%	22%	22%		
H06C	Other Hepatobiliary and Pancreas GIs, Minor Complexity	34%	45%	6%	6%	11%	17%	35%	35%		
H07A	Open Cholecystectomy, Major Complexity	22%	15%	6%	6%	11%	17%	12%	12%		
H07B	Open Cholecystectomy, Intermediate Complexity	22%	15%	6%	6%	11%	17%	12%	12%		
H07C	Open Cholecystectomy, Minor Complexity	22%	15%	6%	6%	11%	17%	12%	12%		
H08A	Laparoscopic Cholecystectomy, Major Complexity	22%	16%	6%	4%	8%	17%	14%	14%		
H08B	Laparoscopic Cholecystectomy, Minor Complexity	25%	19%	6%	8%	8%	17%	16%	16%		
H09Z	Liver Transplant	22%	15%	6%	6%	11%	17%	5%	5%		
H60A	Cirrhosis and Alcoholic Hepatitis, Major Complexity	13%	10%	7%	7%	9%	17%	5%	6%		

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H60B	Cirrhosis and Alcoholic Hepatitis, Intermediate Complexity	16%	10%	7%	7%	9%	17%	5%	6%		
H60C	Cirrhosis and Alcoholic Hepatitis, Minor Complexity	18%	11%	7%	7%	9%	17%	5%	6%		
H61A	Malignancy of Hepatobiliary System and Pancreas, Major Complexity	17%	12%	8%	6%	10%	19%	5%	6%		
H61B	Malignancy of Hepatobiliary System and Pancreas, Minor Complexity	23%	15%	9%	11%	20%	19%	5%	6%		
H62A	Disorders of Pancreas, Except Malignancy, Major Complexity	16%	10%	6%	5%	8%	18%	5%	5%		
H62B	Disorders of Pancreas, Except Malignancy, Minor Complexity	20%	12%	6%	7%	7%	18%	5%	5%		
H63A	Other Disorders of Liver, Major Complexity	20%	10%	6%	9%	10%	17%	5%	6%		
H63B	Other Disorders of Liver, Intermediate Complexity	24%	13%	8%	9%	10%	17%	5%	6%		
H63C	Other Disorders of Liver, Minor Complexity	24%	23%	10%	9%	10%	17%	5%	6%		
H64A	Disorders of the Biliary Tract, Major Complexity	20%	14%	6%	5%	7%	19%	5%	7%		
H64B	Disorders of the Biliary Tract, Minor Complexity	25%	23%	9%	10%	9%	21%	5%	10%		
H65A	Bleeding Oesophageal Varices, Major Complexity	15%	14%	7%	7%	9%	17%	5%	6%		
H65B	Bleeding Oesophageal Varices, Intermediate Complexity	15%	14%	7%	7%	9%	17%	5%	6%		
H65C	Bleeding Oesophageal Varices, Minor Complexity	15%	14%	7%	7%	9%	17%	5%	6%		
I01A	Bilateral and Multiple Major Joint Interventions of Lower Limb, Major Complexity	27%	28%	12%	13%	15%	20%	14%	22%		
I01B	Bilateral and Multiple Major Joint Interventions of Lower Limb, Minor Complexity	27%	28%	12%	13%	15%	20%	14%	22%		
I02A	Microvascular Tissue Transfers or Skin Grafts, Excluding Hand, Major Complexity	15%	20%	12%	13%	15%	20%	14%	13%		
I02B	Microvascular Tissue Transfers or Skin Grafts, Excluding Hand, Intermediate Comp	15%	20%	12%	13%	15%	20%	14%	14%		
I02C	Microvascular Tissue Transfers or Skin Grafts, Excluding Hand, Minor Complexity	18%	20%	12%	13%	15%	20%	14%	12%		
I03A	Hip Replacement for Trauma, Major Complexity	25%	27%	14%	14%	24%	20%	14%	22%		
I03B	Hip Replacement for Trauma, Minor Complexity	31%	34%	14%	14%	24%	20%	14%	28%		
I04A	Knee Replacement, Major Complexity	35%	46%	30%	13%	15%	20%	14%	31%		
I04B	Knee Replacement, Minor Complexity	37%	50%	30%	13%	15%	20%	14%	41%		
I05A	Other Joint Replacement, Major Complexity	39%	28%	12%	13%	15%	20%	14%	32%		
I05B	Other Joint Replacement, Minor Complexity	35%	28%	12%	13%	15%	20%	14%	33%		
I06Z	Spinal Fusion for Deformity	27%	28%	12%	13%	15%	20%	14%	41%		
I07Z	Amputation	27%	28%	12%	13%	15%	20%	14%	22%		
I08A	Other Hip and Femur Interventions, Major Complexity	24%	19%	10%	10%	16%	20%	14%	17%		
I08B	Other Hip and Femur Interventions, Intermediate Complexity	25%	22%	8%	8%	16%	20%	14%	19%		
I08C	Other Hip and Femur Interventions, Minor Complexity	27%	23%	11%	13%	18%	20%	14%	22%		
I09A	Spinal Fusion, Major Complexity	38%	47%	12%	13%	15%	20%	14%	28%		
I09B	Spinal Fusion, Intermediate Complexity	38%	47%	12%	13%	15%	20%	14%	33%		
I09C	Spinal Fusion, Minor Complexity	42%	47%	12%	13%	15%	20%	14%	39%		
I10A	Other Back and Neck Interventions, Major Complexity	38%	28%	12%	13%	15%	20%	14%	22%		
I10B	Other Back and Neck Interventions, Minor Complexity	36%	28%	12%	13%	15%	20%	14%	24%		
I11Z	Limb Lengthening Interventions	27%	28%	12%	13%	15%	20%	14%	22%		
I12A	Misc Musculoskeletal Interventions for Infect/Inflam of Bone/Joint, Major Comp	17%	10%	5%	7%	6%	20%	14%	11%		
I12B	Misc Musculoskeletal Interventions for Infect/Inflam of Bone/Joint, Interm Comp	15%	10%	4%	7%	6%	20%	14%	10%		
I12C	Misc Musculoskeletal Interventions for Infect/Inflam of Bone/Joint, Minor Comp	17%	10%	3%	5%	4%	20%	14%	10%		
I13A	Humerus, Tibia, Fibula and Ankle Interventions, Major Complexity	24%	24%	14%	14%	15%	18%	14%	20%		
I13B	Humerus, Tibia, Fibula and Ankle Interventions, Intermediate Complexity	28%	26%	14%	13%	15%	18%	14%	22%		
I13C	Humerus, Tibia, Fibula and Ankle Interventions, Minor Complexity	28%	27%	11%	19%	15%	18%	14%	23%		
I15Z	Cranio-Facial Surgery	27%	28%	12%	13%	15%	20%	14%	21%		
I16Z	Other Shoulder Interventions	27%	29%	12%	13%	15%	20%	14%	22%		
I17A	Maxillo-Facial Surgery, Major Complexity	27%	28%	12%	13%	15%	20%	14%	15%		

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117B	Maxillo-Facial Surgery, Minor Complexity	27%	28%	12%	13%	15%	20%	14%	17%		
118A	Other Knee Interventions, Major Complexity	22%	14%	6%	30%	15%	20%	14%	17%		
118B	Other Knee Interventions, Minor Complexity	41%	36%	6%	44%	15%	20%	14%	30%		
119A	Other Elbow and Forearm Interventions, Major Complexity	29%	29%	11%	14%	20%	20%	14%	23%		
119B	Other Elbow and Forearm Interventions, Minor Complexity	38%	35%	14%	16%	23%	20%	14%	31%		
120A	Other Foot Interventions, Major Complexity	24%	26%	10%	10%	15%	20%	14%	16%		
120B	Other Foot Interventions, Minor Complexity	24%	29%	9%	10%	15%	20%	14%	19%		
121A	Local Excision and Removal of Internal Fixation Devices of Hip & Femur, Maj Comp	27%	28%	12%	13%	15%	20%	14%	8%		
121B	Local Excision and Removal of Internal Fixation Devices of Hip & Femur, Min Comp	27%	28%	12%	13%	15%	20%	14%	7%		
123A	Local Excision & Removal of Internal Fixation Device, Except Hip & Fmr, Maj Comp	22%	24%	5%	13%	8%	20%	14%	18%		
123B	Local Excision & Removal of Internal Fixation Device, Except Hip & Fmr, Min Comp	26%	14%	5%	13%	7%	20%	14%	14%		
124A	Arthroscopy, Major Complexity	27%	28%	12%	13%	15%	20%	14%	22%		
124B	Arthroscopy, Minor Complexity	27%	28%	12%	13%	15%	20%	14%	22%		
125A	Bone and Joint Diagnostic Interventions Including Biopsy, Major Complexity	16%	28%	12%	13%	15%	20%	14%	13%		
125B	Bone and Joint Diagnostic Interventions Including Biopsy, Minor Complexity	16%	28%	12%	13%	15%	20%	14%	13%		
127A	Soft Tissue Interventions, Major Complexity	17%	8%	5%	7%	8%	20%	14%	10%		
127B	Soft Tissue Interventions, Minor Complexity	22%	13%	5%	7%	9%	20%	14%	15%		
128A	Other Musculoskeletal Interventions, Major Complexity	23%	19%	8%	13%	19%	20%	14%	18%		
128B	Other Musculoskeletal Interventions, Intermediate Complexity	26%	21%	8%	13%	19%	20%	14%	21%		
128C	Other Musculoskeletal Interventions, Minor Complexity	28%	23%	6%	13%	17%	20%	14%	21%		
129Z	Knee Reconstructions, and Revisions of Reconstructions	34%	28%	12%	13%	15%	20%	14%	26%		
130Z	Hand Interventions	29%	25%	5%	8%	7%	20%	14%	19%		
131A	Revision of Hip Replacement, Major Complexity	24%	34%	12%	13%	15%	20%	14%	22%		
131B	Revision of Hip Replacement, Intermediate Complexity	29%	34%	12%	13%	15%	20%	14%	33%		
131C	Revision of Hip Replacement, Minor Complexity	29%	34%	12%	13%	15%	20%	14%	26%		
132A	Revision of Knee Replacement, Major Complexity	20%	28%	12%	13%	15%	20%	14%	16%		
132B	Revision of Knee Replacement, Minor Complexity	20%	28%	12%	13%	15%	20%	14%	20%		
133A	Hip Replacement for Non-Trauma, Major Complexity	41%	60%	12%	13%	15%	20%	14%	32%		
133B	Hip Replacement for Non-Trauma, Minor Complexity	43%	64%	12%	13%	15%	20%	14%	52%		
160Z	Femoral Shaft Fractures	7%	9%	6%	7%	5%	5%	4%	5%		
161Z	Distal Femoral Fractures	9%	9%	6%	7%	5%	5%	4%	5%		
163A	Sprains, Strains and Dislocations of Hip, Pelvis and Thigh, Major Complexity	11%	11%	7%	7%	5%	5%	4%	5%		
163B	Sprains, Strains and Dislocations of Hip, Pelvis and Thigh, Minor Complexity	17%	15%	8%	7%	5%	5%	4%	5%		
164A	Osteomyelitis, Major Complexity	15%	7%	4%	7%	10%	4%	4%	5%		
164B	Osteomyelitis, Minor Complexity	13%	5%	6%	7%	11%	4%	4%	5%		
165A	Musculoskeletal Malignant Neoplasms, Major Complexity	14%	6%	4%	5%	6%	5%	4%	5%		
165B	Musculoskeletal Malignant Neoplasms, Minor Complexity	15%	7%	5%	5%	6%	5%	4%	5%		
166A	Inflammatory Musculoskeletal Disorders, Major Complexity	17%	10%	5%	6%	3%	8%	8%	9%		
166B	Inflammatory Musculoskeletal Disorders, Minor Complexity	15%	7%	7%	6%	3%	10%	10%	9%		
167A	Septic Arthritis, Major Complexity	14%	9%	5%	7%	5%	5%	4%	5%		
167B	Septic Arthritis, Minor Complexity	14%	9%	5%	7%	5%	5%	4%	5%		
168A	Non-surgical Spinal Disorders, Major Complexity	15%	8%	4%	5%	4%	3%	4%	4%		
168B	Non-surgical Spinal Disorders, Minor Complexity	17%	11%	6%	6%	5%	3%	4%	4%		
169A	Bone Diseases and Arthropathies, Major Complexity	14%	8%	4%	5%	5%	5%	4%	5%		
169B	Bone Diseases and Arthropathies, Minor Complexity	16%	8%	5%	5%	4%	5%	4%	5%		

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I71A	Other Musculotendinous Disorders, Major Complexity	17%	9%	4%	5%	4%	3%	4%	5%
I71B	Other Musculotendinous Disorders, Minor Complexity	19%	12%	8%	5%	3%	3%	4%	5%
I72A	Specific Musculotendinous Disorders, Major Complexity	14%	5%	4%	5%	6%	5%	4%	5%
I72B	Specific Musculotendinous Disorders, Minor Complexity	14%	9%	5%	5%	8%	5%	4%	5%
I73A	Aftercare of Musculoskeletal Implants or Prostheses, Major Complexity	11%	7%	2%	7%	5%	5%	4%	5%
I73B	Aftercare of Musculoskeletal Implants or Prostheses, Minor Complexity	18%	10%	5%	7%	5%	5%	4%	5%
I74A	Injuries to Forearm, Wrist, Hand and Foot, Major Complexity	18%	9%	6%	14%	7%	5%	4%	5%
I74B	Injuries to Forearm, Wrist, Hand and Foot, Minor Complexity	35%	20%	9%	18%	8%	5%	4%	5%
I75A	Injuries to Shoulder, Arm, Elbow, Knee, Leg and Ankle, Major Complexity	14%	7%	6%	5%	7%	5%	4%	2%
I75B	Injuries to Shoulder, Arm, Elbow, Knee, Leg and Ankle, Intermediate Complexity	18%	12%	9%	10%	10%	5%	4%	2%
I75C	Injuries to Shoulder, Arm, Elbow, Knee, Leg and Ankle, Minor Complexity	23%	13%	10%	31%	3%	5%	4%	2%
I76A	Other Musculoskeletal Disorders, Major Complexity	15%	9%	3%	5%	5%	5%	4%	5%
I76B	Other Musculoskeletal Disorders, Minor Complexity	20%	13%	4%	15%	3%	5%	4%	5%
I77A	Fractures of Pelvis, Major Complexity	13%	8%	5%	5%	4%	5%	4%	5%
I77B	Fractures of Pelvis, Minor Complexity	15%	8%	4%	5%	4%	5%	4%	5%
I78A	Fractures of Neck of Femur, Major Complexity	12%	6%	6%	7%	5%	5%	4%	5%
I78B	Fractures of Neck of Femur, Minor Complexity	15%	9%	6%	7%	5%	5%	4%	5%
I79A	Pathological Fractures, Major Complexity	10%	8%	5%	7%	5%	5%	4%	5%
I79B	Pathological Fractures, Minor Complexity	15%	11%	5%	7%	5%	5%	4%	5%
I80Z	Femoral Fractures, Transferred to Acute Facility < 2 Days	48%	49%	50%	70%	5%	5%	4%	5%
J01A	Microvas Tiss Transf for Skin, Subcut Tiss & Breast Dsrds, Major Complexity	21%	33%	5%	7%	8%	11%	6%	23%
J01B	Microvas Tiss Transf for Skin, Subcut Tiss & Breast Dsrds, Minor Complexity	21%	36%	5%	7%	8%	11%	6%	24%
J06A	Major Interventions for Breast Disorders, Major Complexity	27%	23%	10%	7%	9%	11%	6%	16%
J06B	Major Interventions for Breast Disorders, Minor Complexity	28%	23%	10%	7%	10%	11%	6%	18%
J07Z	Minor Interventions for Breast Disorders	35%	25%	10%	7%	12%	11%	6%	22%
J08A	Other Skin Grafts and Debridement Interventions, Major Complexity	13%	7%	4%	5%	6%	11%	6%	8%
J08B	Other Skin Grafts and Debridement Interventions, Intermediate Complexity	17%	13%	3%	5%	6%	11%	6%	11%
J08C	Other Skin Grafts and Debridement Interventions, Minor Complexity	26%	20%	5%	5%	6%	11%	6%	18%
J09Z	Perianal and Perianal Interventions	25%	17%	5%	7%	8%	11%	6%	17%
J10A	Plastic Gls for Skin, Subcutaneous Tissue and Breast Disorders, Major Comp	31%	22%	6%	14%	4%	11%	6%	12%
J10B	Plastic Gls for Skin, Subcutaneous Tissue and Breast Disorders, Minor Comp	34%	25%	6%	21%	4%	11%	6%	20%
J11A	Other Skin, Subcutaneous Tissue and Breast Interventions, Major Complexity	21%	15%	4%	13%	5%	11%	6%	12%
J11B	Other Skin, Subcutaneous Tissue and Breast Interventions, Minor Complexity	27%	23%	6%	21%	7%	11%	6%	17%
J12A	Lower Limb Interventions W Ulcer or Cellulitis, Major Complexity	13%	6%	3%	7%	8%	11%	6%	9%
J12B	Lower Limb Interventions W Ulcer or Cellulitis, Minor Complexity	13%	8%	3%	7%	8%	11%	6%	9%
J13A	Lower Limb Interventions W/O Ulcer or Cellulitis, Major Complexity	12%	13%	4%	7%	8%	11%	6%	9%
J13B	Lower Limb Interventions W/O Ulcer or Cellulitis, Minor Complexity	16%	15%	4%	7%	8%	11%	6%	13%
J14Z	Major Breast Reconstructions	21%	19%	5%	7%	8%	11%	6%	15%
J60A	Skin Ulcers, Major Complexity	10%	5%	3%	3%	4%	8%	2%	6%
J60B	Skin Ulcers, Intermediate Complexity	10%	5%	3%	3%	4%	8%	2%	6%
J60C	Skin Ulcers, Minor Complexity	12%	1%	3%	1%	0%	8%	2%	6%
J62A	Malignant Breast Disorders, Major Complexity	15%	11%	5%	4%	4%	8%	2%	6%
J62B	Malignant Breast Disorders, Minor Complexity	14%	11%	5%	4%	4%	8%	2%	6%
J63Z	Non-Malignant Breast Disorders	14%	8%	4%	4%	4%	8%	2%	6%
J64A	Cellulitis, Major Complexity	13%	7%	4%	5%	4%	5%	1%	7%

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J64B	Ceilitis, Minor Complexity	12%	7%	4%	4%	3%	4%	3%	9%		
J65A	Trauma to Skin, Subcutaneous Tissue and Breast, Major Complexity	17%	7%	8%	3%	4%	8%	2%	6%		
J65B	Trauma to Skin, Subcutaneous Tissue and Breast, Minor Complexity	24%	14%	8%	7%	4%	8%	2%	6%		
J67A	Minor Skin Disorders, Major Complexity	9%	7%	5%	9%	5%	7%	2%	6%		
J67B	Minor Skin Disorders, Minor Complexity	19%	15%	8%	14%	4%	18%	2%	6%		
J68A	Major Skin Disorders, Minor Complexity	10%	8%	4%	5%	5%	8%	2%	6%		
J68B	Major Skin Disorders, Major Complexity	12%	7%	4%	6%	5%	8%	2%	6%		
J69A	Skin Malignancy, Major Complexity	18%	6%	3%	4%	4%	8%	2%	6%		
J69B	Skin Malignancy, Minor Complexity	18%	6%	3%	4%	4%	8%	2%	6%		
K01A	GIs for Diabetic Complications, Major Complexity	18%	9%	3%	3%	10%	12%	12%	12%		
K01B	GIs for Diabetic Complications, Intermediate Complexity	11%	9%	3%	3%	10%	7%	7%	7%		
K01C	GIs for Diabetic Complications, Minor Complexity	11%	7%	3%	3%	10%	9%	9%	9%		
K02Z	Pituitary Interventions	19%	17%	6%	5%	10%	28%	28%	28%		
K03Z	Adrenal Interventions	19%	17%	6%	5%	10%	14%	14%	14%		
K05A	Parathyroid Interventions, Major Complexity	19%	19%	6%	5%	10%	18%	18%	18%		
K05B	Parathyroid Interventions, Minor Complexity	19%	19%	6%	5%	10%	26%	26%	26%		
K06A	Thyroid Interventions, Major Complexity	25%	20%	6%	5%	10%	12%	12%	12%		
K06B	Thyroid Interventions, Minor Complexity	26%	21%	6%	5%	10%	19%	19%	19%		
K08Z	Thyroglossal Interventions	19%	17%	6%	5%	10%	14%	14%	14%		
K09A	Other Endocrine, Nutritional and Metabolic GIs, Major Complexity	21%	17%	6%	5%	10%	13%	13%	13%		
K09B	Other Endocrine, Nutritional and Metabolic GIs, Minor Complexity	21%	17%	6%	5%	10%	19%	19%	19%		
K10Z	Revisional and Open Bariatric Interventions	19%	17%	6%	5%	10%	14%	14%	14%		
K11A	Major Laparoscopic Bariatric Interventions, Major Complexity	19%	17%	6%	5%	10%	27%	27%	27%		
K11B	Major Laparoscopic Bariatric Interventions, Minor Complexity	19%	17%	6%	5%	10%	27%	27%	27%		
K12Z	Other Bariatric Interventions	19%	17%	6%	5%	10%	14%	14%	14%		
K13Z	Plastic GIs for Endocrine, Nutritional and Metabolic Disorders	19%	17%	6%	5%	10%	14%	14%	14%		
K40A	Endoscopic and Investigative Interventions for Metabolic Disorders, Major Comp	18%	17%	7%	5%	10%	11%	11%	11%		
K40B	Endoscopic and Investigative Interventions for Metabolic Disorders, Minor Comp	29%	22%	7%	5%	10%	24%	24%	24%		
K60A	Diabetes, Major Complexity	12%	7%	4%	4%	5%	19%	8%	6%		
K60B	Diabetes, Minor Complexity	14%	9%	4%	6%	5%	22%	10%	6%		
K61A	Severe Nutritional Disturbance, Major Complexity	11%	7%	5%	4%	5%	15%	5%	6%		
K61B	Severe Nutritional Disturbance, Minor Complexity	11%	7%	5%	4%	5%	15%	8%	6%		
K62A	Miscellaneous Metabolic Disorders, Major Complexity	13%	8%	5%	4%	5%	5%	9%	7%		
K62B	Miscellaneous Metabolic Disorders, Intermediate Complexity	16%	7%	4%	5%	6%	5%	10%	7%		
K62C	Miscellaneous Metabolic Disorders, Minor Complexity	15%	11%	5%	4%	5%	5%	11%	7%		
K63A	Inborn Errors of Metabolism, Major Complexity	14%	5%	3%	5%	4%	15%	8%	6%		
K63B	Inborn Errors of Metabolism, Minor Complexity	5%	3%	5%	1%	4%	15%	5%	6%		
K64A	Endocrine Disorders, Major Complexity	14%	7%	6%	3%	9%	15%	9%	4%		
K64B	Endocrine Disorders, Minor Complexity	14%	15%	7%	3%	7%	15%	11%	4%		
L02A	Operative Insertion of Peritoneal Catheter for Dialysis, Major Complexity	14%	14%	2%	7%	7%	15%	6%	6%		
L02B	Operative Insertion of Peritoneal Catheter for Dialysis, Minor Complexity	14%	14%	2%	7%	7%	15%	9%	9%		
L03A	Kidney, Ureter and Major Bladder Interventions for Neoplasm, Major Complexity	19%	20%	5%	7%	7%	15%	13%	13%		
L03B	Kidney, Ureter and Major Bladder Interventions for Neoplasm, Intermediate Comp	19%	20%	5%	7%	7%	15%	14%	14%		
L03C	Kidney, Ureter and Major Bladder Interventions for Neoplasm, Minor Complexity	21%	20%	5%	7%	7%	15%	18%	18%		
L04A	Kidney, Ureter and Major Bladder Interventions for Non-Neoplasm, Major Comp	17%	14%	5%	7%	7%	15%	12%	12%		

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L04B	Kidney, Ureter and Major Bladder Interventions for Non-Neoplasm, Interm Comp	19%	16%	5%	7%	7%	15%	13%	13%		
L04C	Kidney, Ureter and Major Bladder Interventions for Non-Neoplasm, Minor Comp	30%	18%	5%	8%	11%	15%	17%	17%		
L05A	Transurethral Prostatectomy for Urinary Disorder, Major Complexity	25%	13%	5%	7%	7%	15%	14%	14%		
L05B	Transurethral Prostatectomy for Urinary Disorder, Minor Complexity	25%	13%	5%	7%	7%	15%	17%	17%		
L06A	Minor Bladder Interventions, Major Complexity	20%	14%	5%	7%	7%	15%	10%	10%		
L06B	Minor Bladder Interventions, Intermediate Complexity	20%	14%	5%	7%	7%	15%	12%	12%		
L06C	Minor Bladder Interventions, Minor Complexity	18%	14%	5%	7%	7%	15%	12%	12%		
L07A	Other Transurethral Interventions, Major Complexity	25%	17%	6%	7%	7%	15%	14%	14%		
L07B	Other Transurethral Interventions, Minor Complexity	32%	22%	6%	10%	7%	15%	19%	19%		
L08Z	Urethral Interventions	14%	13%	5%	7%	7%	15%	11%	11%		
L09A	Other Interventions for Kidney and Urinary Tract Disorders, Major Complexity	18%	14%	7%	7%	7%	15%	12%	12%		
L09B	Other Interventions for Kidney and Urinary Tract Disorders, Interm Complexity	18%	14%	7%	7%	7%	15%	11%	11%		
L09C	Other Interventions for Kidney and Urinary Tract Disorders, Minor Complexity	26%	20%	7%	7%	7%	15%	18%	18%		
L10A	Kidney Transplant, Age <= 16 Years or Major Complexity	18%	9%	2%	7%	7%	15%	10%	10%		
L10B	Kidney Transplant, Age >= 17 Years and Minor Complexity	18%	10%	2%	7%	7%	15%	9%	9%		
L43A	Nephrolithiasis Interventions, Major Complexity	25%	10%	5%	9%	7%	15%	14%	14%		
L43B	Nephrolithiasis Interventions, Minor Complexity	31%	16%	9%	8%	7%	15%	20%	20%		
L44A	Cystourethroscopy for Urinary Disorder, Major Complexity	21%	10%	7%	11%	2%	15%	11%	11%		
L44B	Cystourethroscopy for Urinary Disorder, Minor Complexity	25%	15%	8%	16%	5%	15%	15%	15%		
L60A	Kidney Failure, Major Complexity	14%	8%	5%	5%	4%	17%	1%	8%		
L60B	Kidney Failure, Intermediate Complexity	15%	9%	5%	4%	4%	17%	1%	8%		
L60C	Kidney Failure, Minor Complexity	17%	9%	5%	6%	3%	17%	1%	8%		
L61Z	Haemodialysis	16%	10%	10%	13%	1%	19%	21%	14%		
L62A	Kidney and Urinary Tract Neoplasms, Major Complexity	20%	13%	8%	7%	7%	17%	8%	11%		
L62B	Kidney and Urinary Tract Neoplasms, Intermediate Complexity	21%	23%	8%	7%	7%	17%	8%	11%		
L62C	Kidney and Urinary Tract Neoplasms, Minor Complexity	20%	20%	8%	7%	7%	17%	8%	11%		
L63A	Kidney and Urinary Tract Infections, Major Complexity	15%	8%	4%	4%	6%	4%	2%	6%		
L63B	Kidney and Urinary Tract Infections, Minor Complexity	16%	9%	6%	7%	5%	4%	2%	6%		
L64A	Urinary Stones and Obstruction, Major Complexity	33%	15%	13%	15%	7%	17%	8%	11%		
L64B	Urinary Stones and Obstruction, Minor Complexity	45%	23%	20%	18%	11%	17%	8%	11%		
L65A	Kidney and Urinary Tract Signs and Symptoms, Major Complexity	14%	8%	6%	4%	6%	17%	8%	11%		
L65B	Kidney and Urinary Tract Signs and Symptoms, Minor Complexity	17%	10%	8%	6%	5%	17%	8%	11%		
L66Z	Urethral Structure	16%	10%	8%	7%	4%	17%	8%	11%		
L67A	Other Kidney and Urinary Tract Disorders, Major Complexity	16%	8%	9%	4%	4%	9%	8%	11%		
L67B	Other Kidney and Urinary Tract Disorders, Intermediate Complexity	17%	9%	5%	6%	6%	10%	8%	11%		
L67C	Other Kidney and Urinary Tract Disorders, Minor Complexity	15%	18%	7%	6%	13%	8%	8%	11%		
L68Z	Peritoneal Dialysis	10%	10%	9%	7%	4%	17%	8%	11%		
M01A	Major Male Pelvic Interventions, Major Complexity	21%	21%	8%	9%	9%	16%	16%	16%		
M01B	Major Male Pelvic Interventions, Minor Complexity	21%	21%	8%	9%	9%	17%	17%	17%		
M02A	Transurethral Prostatectomy for Reproductive System Disorder, Major Complexity	24%	19%	8%	9%	9%	15%	15%	15%		
M02B	Transurethral Prostatectomy for Reproductive System Disorder, Minor Complexity	25%	19%	8%	9%	9%	18%	18%	18%		
M03A	Penis Interventions, Major Complexity	21%	20%	8%	9%	9%	16%	16%	16%		
M03B	Penis Interventions, Minor Complexity	21%	22%	8%	9%	9%	18%	18%	18%		
M04Z	Testes Interventions	20%	15%	8%	9%	7%	14%	14%	14%		
M05Z	Circumcision	16%	12%	8%	9%	9%	12%	12%	12%		

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M06A	Other Male Reproductive System GIs, Major Complexity	21%	38%	8%	9%	9%	24%	24%	24%		
M06B	Other Male Reproductive System GIs, Minor Complexity	21%	42%	8%	9%	9%	30%	30%	30%		
M40Z	Cystourethroscopy for Male Reproductive System Disorder, Sameday	21%	31%	8%	9%	9%	28%	28%	28%		
M60A	Male Reproductive System Malignancy, Major Complexity	12%	9%	6%	14%	3%	9%	9%	9%		
M60B	Male Reproductive System Malignancy, Minor Complexity	20%	66%	5%	14%	3%	40%	40%	40%		
M61A	Benign Prostatic Hypertrophy, Major Complexity	16%	23%	6%	14%	3%	12%	12%	12%		
M61B	Benign Prostatic Hypertrophy, Minor Complexity	16%	23%	6%	14%	3%	16%	16%	16%		
M62A	Male Reproductive System Inflammation, Major Complexity	16%	7%	5%	14%	3%	10%	10%	10%		
M62B	Male Reproductive System Inflammation, Minor Complexity	15%	7%	4%	14%	3%	10%	10%	10%		
M63Z	Male Sterilisation Interventions	23%	20%	6%	83%	2%	16%	16%	16%		
M64A	Other Male Reproductive System Disorders, Major Complexity	19%	15%	7%	14%	3%	12%	12%	12%		
M64B	Other Male Reproductive System Disorders, Minor Complexity	19%	19%	8%	14%	3%	14%	14%	14%		
N01Z	Pelvic Evisceration and Radical Vulvectomy	17%	17%	4%	11%	5%	12%	12%	12%		
N04A	Hysterectomy for Non-Malignancy, Major Complexity	13%	14%	2%	11%	5%	10%	4%	10%		
N04B	Hysterectomy for Non-Malignancy, Minor Complexity	17%	14%	2%	11%	5%	11%	4%	11%		
N05A	Oophorectomy and Complex Fallopian Tube Int for Non-Malignancy, Maj Comp	18%	15%	4%	11%	5%	11%	4%	11%		
N05B	Oophorectomy and Complex Fallopian Tube Int for Non-Malignancy, Min Comp	17%	15%	4%	11%	5%	13%	4%	13%		
N06A	Female Reproductive System Reconstructive Interventions, Major Complexity	17%	16%	4%	11%	5%	14%	4%	14%		
N06B	Female Reproductive System Reconstructive Interventions, Minor Complexity	18%	17%	4%	11%	5%	15%	4%	15%		
N07A	Other Uterus and Adnexa Interventions for Non-Malignancy, Major Complexity	19%	15%	4%	12%	8%	13%	4%	13%		
N07B	Other Uterus and Adnexa Interventions for Non-Malignancy, Minor Complexity	22%	23%	5%	19%	3%	17%	4%	17%		
N08Z	Endoscopic and Laparoscopic Interventions, Female Reproductive System	21%	21%	4%	11%	5%	14%	4%	14%		
N09A	Other Vagina, Cervix and Vulva Interventions, Major Complexity	14%	16%	7%	11%	3%	10%	4%	10%		
N09B	Other Vagina, Cervix and Vulva Interventions, Minor Complexity	15%	19%	8%	16%	2%	13%	4%	13%		
N10Z	Diagnostic Curettage and Diagnostic Hysteroscopy	20%	21%	6%	10%	3%	14%	4%	14%		
N11A	Other Female Reproductive System GIs, Major Complexity	17%	7%	4%	11%	5%	6%	4%	6%		
N11B	Other Female Reproductive System GIs, Minor Complexity	17%	7%	4%	11%	5%	6%	4%	6%		
N12A	Uterus and Adnexa Interventions for Malignancy, Major Complexity	13%	17%	4%	11%	5%	12%	4%	12%		
N12B	Uterus and Adnexa Interventions for Malignancy, Intermediate Complexity	13%	17%	4%	11%	5%	13%	4%	13%		
N12C	Uterus and Adnexa Interventions for Malignancy, Minor Complexity	12%	17%	4%	11%	5%	12%	4%	12%		
N60A	Female Reproductive System Malignancy, Major Complexity	14%	8%	6%	6%	5%	12%	10%	10%		
N60B	Female Reproductive System Malignancy, Minor Complexity	9%	7%	6%	6%	5%	12%	7%	7%		
N61A	Female Reproductive System Infections, Major Complexity	17%	6%	6%	6%	5%	12%	12%	12%		
N61B	Female Reproductive System Infections, Minor Complexity	14%	6%	6%	6%	5%	12%	9%	9%		
N62A	Menstrual and Other Female Reproductive System Disorders, Major Complexity	17%	9%	5%	7%	6%	21%	12%	12%		
N62B	Menstrual and Other Female Reproductive System Disorders, Minor Complexity	17%	14%	8%	5%	4%	19%	13%	13%		
O01A	Caesarean Delivery, Major Complexity	14%	14%	5%	7%	6%	16%	10%	14%		
O01B	Caesarean Delivery, Intermediate Complexity	16%	15%	5%	10%	6%	16%	13%	14%		
O01C	Caesarean Delivery, Minor Complexity	20%	17%	8%	14%	5%	20%	16%	14%		
O02A	Vaginal Delivery W GIs, Major Complexity	14%	15%	5%	10%	6%	15%	10%	14%		
O02B	Vaginal Delivery W GIs, Minor Complexity	11%	15%	7%	10%	6%	15%	9%	14%		
O03Z	Ectopic Pregnancy	16%	8%	4%	10%	6%	15%	10%	14%		
O04A	Postpartum and Post Abortion W GIs, Major Complexity	20%	15%	6%	10%	6%	15%	14%	14%		
O04B	Postpartum and Post Abortion W GIs, Minor Complexity	24%	15%	6%	10%	6%	15%	15%	14%		
O05Z	Abortion W GIs	19%	17%	7%	12%	5%	15%	14%	14%		

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O60A	Vaginal Delivery, Major Complexity	12%	16%	3%	8%	10%	10%	10%	10%	33%	
O60B	Vaginal Delivery, Intermediate Complexity	14%	17%	5%	15%	10%	12%	13%	13%	33%	
O60C	Vaginal Delivery, Minor Complexity	15%	19%	7%	19%	10%	10%	15%	15%	33%	
O61A	Postpartum and Post Abortion W/O GIs, Major Complexity	12%	11%	5%	11%	8%	10%	8%	25%		
O61B	Postpartum and Post Abortion W/O GIs, Minor Complexity	12%	10%	3%	8%	8%	10%	9%	25%		
O63A	Abortion W/O GIs, Major Complexity	22%	19%	6%	12%	8%	10%	14%	25%		
O63B	Abortion W/O GIs, Minor Complexity	27%	20%	9%	12%	8%	10%	18%	25%		
O66A	Antenatal and Other Obstetric Admissions, Major Complexity	8%	6%	4%	3%	4%	10%	6%	4%		
O66B	Antenatal and Other Obstetric Admissions, Intermediate Complexity	9%	5%	5%	4%	4%	10%	7%	4%		
O66C	Antenatal and Other Obstetric Admissions, Minor Complexity	15%	9%	5%	5%	3%	10%	9%	4%		
P01Z	Neonate W Sig GI/Vent >= 96 hrs, Died or Transfer to Acute Facility <5 Days	10%	12%	8%	6%	9%	9%	9%	9%		
P02Z	Cardiothoracic and Vascular Interventions for Neonates	10%	12%	8%	6%	9%	9%	9%	9%		
P03A	Neonate, AdmWt 1000-1499g W Significant GI/Vent >= 96 hrs, Major Complexity	7%	12%	8%	6%	10%	10%	10%	10%		
P03B	Neonate, AdmWt 1000-1499g W Significant GI/Vent >= 96 hrs, Minor Complexity	7%	12%	8%	6%	7%	7%	7%	7%		
P04A	Neonate, AdmWt 1500-1999g W Significant GI/Vent >= 96 hrs, Major Complexity	10%	12%	8%	6%	9%	9%	9%	9%		
P04B	Neonate, AdmWt 1500-1999g W Significant GI/Vent >= 96 hrs, Minor Complexity	10%	12%	8%	6%	9%	9%	9%	9%		
P05A	Neonate, AdmWt 2000-2499g W Significant GI/Vent >= 96 hrs, Major Complexity	10%	12%	8%	6%	11%	11%	11%	11%		
P05B	Neonate, AdmWt 2000-2499g W Significant GI/Vent >= 96 hrs, Minor Complexity	10%	12%	8%	6%	11%	11%	11%	11%		
P06A	Neonate, AdmWt >= 2500g W Significant GI/Vent >= 96 hrs, Major Complexity	9%	12%	8%	6%	10%	10%	10%	10%		
P06B	Neonate, AdmWt >= 2500g W Significant GI/Vent >= 96 hrs, Minor Complexity	9%	12%	8%	6%	9%	9%	9%	9%		
P07Z	Neonate, AdmWt < 750g W Significant GIs	10%	12%	8%	6%	9%	9%	9%	9%		
P08Z	Neonate, AdmWt 750-999g W Significant GIs	10%	12%	8%	6%	9%	9%	9%	9%		
P60A	Neonate W/O Sig GI/Vent=>96hrs, Died/Transfer Acute Facility <5 Days, Maj Comp	12%	12%	11%	8%	9%	12%	12%	12%		
P60B	Neonate W/O Sig GI/Vent=>96hrs, Died/Transfer Acute Facility <5 Days, Min Comp	11%	12%	11%	8%	9%	11%	11%	11%		
P61Z	Neonate, AdmWt <750g W/O Significant GI procedure	10%	9%	11%	8%	9%	9%	9%	9%		
P62A	Neonate, AdmWt 750-999g W/O Significant GIs, Major Complexity	10%	9%	11%	8%	9%	10%	10%	10%		
P62B	Neonate, AdmWt 750-999g W/O Significant GIs, Minor Complexity	10%	9%	11%	8%	9%	10%	10%	10%		
P63A	Neonate, AdmWt 1000-1249g W/O Significant GI/Vent >= 96 hrs, Major Complexity	10%	9%	11%	8%	9%	9%	9%	9%		
P63B	Neonate, AdmWt 1000-1249g W/O Significant GI/Vent >= 96 hrs, Minor Complexity	10%	9%	11%	8%	9%	9%	9%	9%		
P64A	Neonate, AdmWt 1250-1499g W/O Significant GI/Vent >= 96 hrs, Major Complexity	10%	9%	11%	8%	9%	7%	7%	7%		
P64B	Neonate, AdmWt 1250-1499g W/O Significant GI/Vent >= 96 hrs, Minor Complexity	10%	9%	11%	8%	9%	7%	7%	7%		
P65A	Neonate, AdmWt 1500-1999g W/O Significant GI/Vent >= 96 hrs, Extreme Comp	9%	7%	11%	8%	9%	5%	5%	5%		
P65B	Neonate, AdmWt 1500-1999g W/O Significant GI/Vent >= 96 hrs, Major Complexity	9%	7%	11%	8%	9%	8%	8%	8%		
P65C	Neonate, AdmWt 1500-1999g W/O Significant GI/Vent >= 96 hrs, Intermediate Comp	9%	7%	11%	8%	9%	9%	9%	9%		
P65D	Neonate, AdmWt 1500-1999g W/O Significant GI/Vent >= 96 hrs, Minor Complexity	8%	7%	11%	8%	9%	10%	10%	10%		
P66A	Neonate, AdmWt 2000-2499g W/O Significant GI/Vent >= 96 hrs, Extreme Comp	8%	8%	14%	8%	9%	11%	11%	11%		
P66B	Neonate, AdmWt 2000-2499g W/O Significant GI/Vent >= 96 hrs, Major Complexity	11%	8%	14%	8%	9%	8%	8%	8%		
P66C	Neonate, AdmWt 2000-2499g W/O Significant GI/Vent >= 96 hrs, Intermediate Comp	8%	8%	14%	8%	9%	6%	6%	6%		
P66D	Neonate, AdmWt 2000-2499g W/O Significant GI/Vent >= 96 hrs, Minor Complexity	6%	8%	14%	8%	9%	7%	7%	7%		
P67A	Neonate, AdmWt >= 2500g W/O Sig GI/Vent >= 96 hrs, < 37 Comp Wks Gest, Ext Comp	7%	8%	11%	8%	9%	17%	17%	17%		
P67B	Neonate, AdmWt >= 2500g W/O Sig GI/Vent >= 96 hrs, < 37 Comp Wks Gest, Maj Comp	7%	8%	11%	8%	9%	11%	11%	11%		
P67C	Neonate, AdmWt >= 2500g W/O Sig GI/Vent >= 96 hrs, < 37 Comp Wks Gest, Int Comp	7%	8%	11%	8%	9%	5%	5%	5%		
P67D	Neonate, AdmWt >= 2500g W/O Sig GI/Vent >= 96 hrs, < 37 Comp Wks Gest, Min Comp	7%	8%	11%	8%	9%	9%	9%	9%		
P68A	Neonate, AdmWt >= 2500g W/O Sig GI/Vent >= 96 hrs, >= 37 Comp Wks Gest, Ext Comp	12%	9%	9%	7%	10%	10%	10%	10%		
P68B	Neonate, AdmWt >= 2500g W/O Sig GI/Vent >= 96 hrs, >= 37 Comp Wks Gest, Maj Comp	11%	10%	9%	7%	10%	9%	9%	9%		

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P88C	Neonate, AdmWt >= 2500g W/O Sig GI/Vent >= 96 hrs, >= 37 Comp Wks Gest, Int Comp	10%	12%	11%	7%	10%	10%	10%	10%	10%	10%	10%
P88D	Neonate, AdmWt >= 2500g W/O Sig GI/Vent >= 96 hrs, >= 37 Comp Wks Gest, Min Comp	10%	15%	13%	8%	10%	10%	12%	12%	12%	12%	12%
Q01Z	Splenectomy	20%	16%	10%	15%	10%	15%	15%	15%	15%	15%	15%
Q02A	Blood and Immune System Disorders W Other GIs, Major Complexity	17%	16%	10%	12%	10%	12%	12%	12%	12%	12%	12%
Q02B	Blood and Immune System Disorders W Other GIs, Minor Complexity	23%	18%	10%	19%	10%	19%	19%	19%	19%	19%	19%
Q60A	Reticuloendothelial and Immunity Disorders, Major Complexity	13%	8%	6%	5%	7%	7%	7%	7%	3%	3%	5%
Q60B	Reticuloendothelial and Immunity Disorders, Minor Complexity	14%	14%	7%	9%	3%	9%	7%	7%	3%	3%	10%
Q61A	Red Blood Cell Disorders, Major Complexity	20%	10%	6%	7%	9%	7%	10%	10%	5%	5%	8%
Q61B	Red Blood Cell Disorders, Intermediate Complexity	22%	15%	11%	15%	10%	10%	10%	10%	5%	5%	10%
Q61C	Red Blood Cell Disorders, Minor Complexity	20%	17%	8%	14%	5%	14%	7%	7%	9%	9%	8%
Q62A	Coagulation Disorders, Major Complexity	18%	11%	6%	5%	8%	5%	9%	9%	3%	3%	7%
Q62B	Coagulation Disorders, Minor Complexity	17%	14%	8%	5%	8%	5%	9%	9%	3%	3%	7%
R01A	Lymphoma and Leukaemia W Major GIs, Major Complexity	21%	10%	6%	6%	8%	6%	14%	14%	14%	14%	14%
R01B	Lymphoma and Leukaemia W Major GIs, Minor Complexity	21%	10%	6%	6%	8%	6%	14%	14%	18%	18%	18%
R02A	Other Neoplastic Disorders W Major GIs, Major Complexity	27%	15%	6%	6%	8%	6%	14%	14%	16%	16%	16%
R02B	Other Neoplastic Disorders W Major GIs, Intermediate Complexity	27%	15%	6%	6%	8%	6%	14%	14%	13%	13%	13%
R02C	Other Neoplastic Disorders W Major GIs, Minor Complexity	27%	15%	6%	6%	8%	6%	14%	14%	22%	22%	22%
R03A	Lymphoma and Leukaemia W Other GIs, Major Complexity	18%	13%	11%	6%	8%	6%	14%	14%	12%	12%	12%
R03B	Lymphoma and Leukaemia W Other GIs, Intermediate Complexity	22%	13%	11%	6%	8%	6%	14%	14%	14%	14%	14%
R03C	Lymphoma and Leukaemia W Other GIs, Minor Complexity	23%	18%	11%	6%	8%	6%	14%	14%	18%	18%	18%
R04A	Other Neoplastic Disorders W Other GIs, Major Complexity	21%	18%	9%	6%	8%	6%	14%	14%	15%	15%	15%
R04B	Other Neoplastic Disorders W Other GIs, Minor Complexity	20%	20%	9%	6%	8%	6%	14%	14%	17%	17%	17%
R05A	Allogeneic Bone Marrow Transplant, Age <= 18 Years or Major Complexity	8%	7%	5%	6%	8%	6%	14%	14%	7%	7%	7%
R05B	Allogeneic Bone Marrow Transplant, Age >= 17 Years and Minor Complexity	6%	7%	5%	6%	8%	6%	14%	14%	6%	6%	6%
R06A	Autologous Bone Marrow Transplant, Major Complexity	10%	6%	6%	6%	8%	6%	14%	14%	8%	8%	8%
R06B	Autologous Bone Marrow Transplant, Intermediate Complexity	8%	6%	6%	6%	8%	6%	14%	14%	6%	6%	6%
R06C	Autologous Bone Marrow Transplant, Minor Complexity	6%	4%	6%	6%	8%	6%	14%	14%	5%	5%	5%
R60A	Acute Leukaemia, Major Complexity	13%	8%	9%	5%	9%	5%	8%	8%	5%	5%	6%
R60B	Acute Leukaemia, Intermediate Complexity	13%	9%	8%	3%	8%	3%	8%	8%	5%	5%	6%
R60C	Acute Leukaemia, Minor Complexity	15%	10%	13%	5%	15%	5%	8%	8%	5%	5%	6%
R61A	Lymphoma and Non-Acute Leukaemia, Major Complexity	13%	9%	6%	3%	11%	3%	7%	7%	5%	5%	5%
R61B	Lymphoma and Non-Acute Leukaemia, Intermediate Complexity	13%	11%	8%	6%	9%	6%	7%	7%	5%	5%	5%
R61C	Lymphoma and Non-Acute Leukaemia, Minor Complexity	14%	15%	10%	11%	7%	11%	5%	5%	5%	5%	5%
R62A	Other Neoplastic Disorders, Major Complexity	13%	6%	6%	5%	4%	5%	11%	11%	5%	5%	6%
R62B	Other Neoplastic Disorders, Intermediate Complexity	17%	3%	6%	5%	4%	5%	11%	11%	5%	5%	6%
R62C	Other Neoplastic Disorders, Minor Complexity	17%	16%	6%	5%	4%	5%	11%	11%	5%	5%	6%
R63Z	Chemotherapy	13%	9%	6%	5%	2%	5%	15%	15%	5%	5%	6%
T01A	Infectious and Parasitic Diseases W GIs, Major Complexity	14%	11%	5%	6%	7%	6%	11%	11%	11%	11%	11%
T01B	Infectious and Parasitic Diseases W GIs, Intermediate Complexity	14%	11%	5%	6%	7%	6%	11%	11%	11%	11%	11%
T01C	Infectious and Parasitic Diseases W GIs, Minor Complexity	16%	10%	3%	6%	7%	6%	11%	11%	11%	11%	11%
T40Z	Infectious and Parasitic Diseases W Ventilator Support	14%	11%	5%	6%	7%	6%	10%	10%	10%	10%	10%
T60A	Septicaemia, Major Complexity	14%	10%	6%	5%	8%	5%	7%	7%	4%	4%	6%
T60B	Septicaemia, Intermediate Complexity	15%	9%	5%	5%	6%	5%	7%	7%	4%	4%	6%
T60C	Septicaemia, Minor Complexity	15%	8%	5%	6%	7%	6%	6%	6%	4%	4%	6%
T61A	Postoperative Infections, Major Complexity	13%	5%	6%	6%	4%	6%	7%	7%	4%	4%	6%

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		NSW	VIC	QLD	SA	WA	TAS	NT	ACT		
T61B	Postoperative Infections, Minor Complexity	12%	8%	4%	6%	3%	7%	4%	6%		
T62A	Fever of Unknown Origin, Major Complexity	17%	9%	6%	6%	9%	7%	4%	6%		
T62B	Fever of Unknown Origin, Minor Complexity	17%	9%	7%	5%	12%	7%	4%	6%		
T63A	Viral Illnesses, Major Complexity	14%	7%	7%	5%	6%	7%	4%	6%		
T63B	Viral Illnesses, Minor Complexity	15%	11%	5%	5%	5%	7%	4%	6%		
T64A	Other Infectious and Parasitic Diseases, Major Complexity	10%	7%	5%	5%	7%	7%	4%	6%		
T64B	Other Infectious and Parasitic Diseases, Intermediate Complexity	14%	7%	4%	5%	7%	7%	4%	6%		
T64C	Other Infectious and Parasitic Diseases, Minor Complexity	15%	9%	6%	5%	7%	7%	4%	6%		
U40Z	Mental Health Treatment W/ECT, Sameday	18%	16%	4%	12%	12%	15%	12%	12%		
U60Z	Mental Health Treatment W/O ECT, Sameday	31%	24%	8%	1%	2%	14%	14%	3%		
U61A	Schizophrenia Disorders, Major Complexity	4%	1%	1%	1%	2%	3%	3%	3%		
U61B	Schizophrenia Disorders, Minor Complexity	5%	1%	1%	1%	2%	3%	3%	3%		
U62A	Paranoia and Acute Psychotic Disorders, Major Complexity	3%	2%	2%	1%	2%	3%	3%	3%		
U62B	Paranoia and Acute Psychotic Disorders, Minor Complexity	2%	1%	2%	1%	2%	2%	2%	3%		
U63A	Major Affective Disorders, Major Complexity	9%	3%	1%	1%	1%	5%	5%	3%		
U63B	Major Affective Disorders, Minor Complexity	5%	2%	1%	1%	1%	3%	3%	3%		
U64A	Other Affective and Somatoform Disorders, Major Complexity	7%	2%	1%	1%	1%	5%	5%	3%		
U64B	Other Affective and Somatoform Disorders, Minor Complexity	2%	1%	1%	1%	1%	2%	2%	3%		
U65A	Anxiety Disorders, Major Complexity	5%	5%	2%	2%	2%	4%	4%	3%		
U65B	Anxiety Disorders, Minor Complexity	8%	5%	3%	2%	2%	6%	6%	3%		
U66A	Eating and Obsessive-Compulsive Disorders, Major Complexity	4%	2%	2%	1%	2%	3%	3%	3%		
U66B	Eating and Obsessive-Compulsive Disorders, Minor Complexity	4%	2%	1%	1%	2%	2%	2%	3%		
U67A	Personality Disorders and Acute Reactions, Major Complexity	5%	3%	1%	2%	1%	4%	4%	3%		
U67B	Personality Disorders and Acute Reactions, Minor Complexity	4%	1%	1%	2%	1%	2%	2%	3%		
U68A	Childhood Mental Disorders, Major Complexity	2%	2%	1%	1%	2%	1%	1%	3%		
U68B	Childhood Mental Disorders, Minor Complexity	2%	2%	1%	1%	2%	1%	1%	3%		
V60A	Alcohol Intoxication and Withdrawal, Major Complexity	14%	3%	4%	5%	7%	8%	8%	8%		
V60B	Alcohol Intoxication and Withdrawal, Minor Complexity	15%	8%	4%	5%	7%	9%	9%	9%		
V61A	Drug Intoxication and Withdrawal, Major Complexity	3%	1%	1%	5%	5%	2%	2%	2%		
V61B	Drug Intoxication and Withdrawal, Minor Complexity	4%	1%	1%	5%	5%	3%	3%	3%		
V62A	Alcohol Use and Dependence, Major Complexity	7%	5%	4%	5%	5%	6%	6%	6%		
V62B	Alcohol Use and Dependence, Minor Complexity	6%	3%	3%	5%	5%	5%	5%	5%		
V63Z	Opioid Use and Dependence	7%	4%	4%	5%	5%	6%	6%	6%		
V64A	Other Drug Use and Dependence, Major Complexity	9%	4%	4%	5%	5%	9%	9%	9%		
V64B	Other Drug Use and Dependence, Minor Complexity	9%	4%	4%	5%	5%	9%	9%	9%		
W01A	Vent, Trac & Cran Interventions for Mult Sig Trauma, Major Complexity	20%	15%	4%	4%	6%	11%	3%	11%		
W01B	Vent, Trac & Cran Interventions for Mult Sig Trauma, Intermediate Complexity	20%	15%	4%	4%	6%	11%	3%	11%		
W01C	Vent, Trac & Cran Interventions for Mult Sig Trauma, Minor Complexity	20%	15%	4%	4%	6%	11%	3%	11%		
W02A	Hip, Femur and Lower Limb Interventions for Multiple Sig Trauma, Major Comp	28%	15%	4%	4%	6%	11%	3%	20%		
W02B	Hip, Femur and Lower Limb Interventions for Multiple Sig Trauma, Minor Comp	29%	15%	4%	4%	6%	11%	3%	21%		
W03Z	Abdominal Interventions for Multiple Significant Trauma	20%	15%	4%	4%	6%	11%	3%	13%		
W04A	Multiple Significant Trauma W Other GIs, Major Complexity	20%	15%	4%	4%	6%	11%	3%	18%		
W04B	Multiple Significant Trauma W Other GIs, Minor Complexity	20%	15%	4%	4%	6%	11%	3%	22%		
W60Z	Multiple Sig Trauma, Transferred to Acute Facility <5 Days	16%	9%	5%	5%	5%	7%	3%	6%		
W61A	Multiple Significant Trauma W/O GIs, Major Complexity	13%	10%	4%	5%	5%	7%	3%	6%		

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		NSW	VIC	QLD	SA	WA	TAS	NT	ACT		
W61B	Multiple Significant Trauma W/O GIs, Minor Complexity	17%	8%	5%	5%	5%	7%	3%	6%		
X02A	Microvascular Tissue Transfer and Skin Grafts for Injuries to Hand, Major Comp	33%	25%	4%	4%	6%	11%	3%	19%		
X02B	Microvascular Tissue Transfer and Skin Grafts for Injuries to Hand, Minor Comp	36%	25%	4%	4%	6%	11%	3%	25%		
X04A	Other Interventions for Injuries to Lower Limb, Major Complexity	19%	11%	2%	4%	6%	11%	3%	9%		
X04B	Other Interventions for Injuries to Lower Limb, Minor Complexity	19%	13%	1%	4%	6%	11%	3%	14%		
X05A	Other Interventions for Injuries to Hand, Major Complexity	22%	19%	1%	6%	4%	11%	3%	13%		
X05B	Other Interventions for Injuries to Hand, Minor Complexity	25%	19%	1%	6%	4%	11%	3%	17%		
X06A	Other Interventions for Other Injuries, Major Complexity	19%	13%	7%	3%	4%	11%	3%	13%		
X06B	Other Interventions for Other Injuries, Intermediate Complexity	18%	13%	3%	3%	4%	11%	3%	12%		
X06C	Other Interventions for Other Injuries, Minor Complexity	19%	12%	2%	2%	4%	11%	3%	11%		
X07A	Skin Grafts for Injuries Excluding Hand, Major Complexity	13%	12%	4%	4%	6%	11%	3%	8%		
X07B	Skin Grafts for Injuries Excluding Hand, Intermediate Complexity	11%	12%	4%	4%	6%	11%	3%	9%		
X07C	Skin Grafts for Injuries Excluding Hand, Minor Complexity	14%	13%	4%	4%	6%	11%	3%	10%		
X40A	Injuries, Poisoning and Toxic Effects of Drugs W Ventilator Support, Major Comp	13%	15%	4%	4%	6%	11%	3%	9%		
X40B	Injuries, Poisoning and Toxic Effects of Drugs W Ventilator Support, Minor Comp	13%	15%	4%	4%	6%	11%	3%	9%		
X60A	Injuries, Major Complexity	16%	8%	3%	3%	3%	7%	2%	8%		
X60B	Injuries, Minor Complexity	23%	12%	8%	5%	4%	7%	2%	7%		
X61A	Allergic Reactions, Major Complexity	18%	8%	3%	8%	7%	7%	3%	6%		
X61B	Allergic Reactions, Minor Complexity	13%	17%	7%	8%	4%	7%	3%	6%		
X62A	Poisoning/Toxic Effects of Drugs and Other Substances, Major Complexity	12%	7%	3%	4%	3%	7%	3%	4%		
X62B	Poisoning/Toxic Effects of Drugs and Other Substances, Minor Complexity	11%	12%	4%	7%	5%	7%	3%	4%		
X63A	Sequelae of Treatment, Major Complexity	17%	8%	10%	6%	6%	10%	5%	6%		
X63B	Sequelae of Treatment, Minor Complexity	14%	8%	4%	5%	5%	10%	5%	6%		
X64A	Other Injuries, Poisonings and Toxic Effects, Major Complexity	13%	10%	6%	5%	5%	7%	3%	6%		
X64B	Other Injuries, Poisonings and Toxic Effects, Intermediate Complexity	18%	10%	4%	5%	5%	7%	3%	6%		
X64C	Other Injuries, Poisonings and Toxic Effects, Minor Complexity	29%	12%	12%	5%	5%	7%	3%	6%		
Y01Z	Vent >= 96 hrs or Trach for Burns or GIs for Severe Full Thickness Burns	7%	9%	3%	2%	2%	5%	5%	5%		
Y02A	Skin Grafts for Other Burns, Major Complexity	7%	9%	3%	2%	2%	3%	3%	3%		
Y02B	Skin Grafts for Other Burns, Intermediate Complexity	7%	9%	3%	2%	2%	5%	5%	5%		
Y02C	Skin Grafts for Other Burns, Minor Complexity	14%	9%	3%	2%	2%	5%	5%	5%		
Y03A	Other GIs for Other Burns, Major Complexity	6%	9%	3%	2%	2%	4%	4%	4%		
Y03B	Other GIs for Other Burns, Minor Complexity	6%	9%	3%	2%	2%	8%	8%	8%		
Y60Z	Burns, Transferred to Acute Facility < 5 Days	5%	10%	3%	4%	4%	4%	4%	4%		
Y61Z	Severe Burns	5%	10%	3%	4%	4%	4%	4%	4%		
Y62A	Other Burns, Major Complexity	5%	11%	4%	6%	6%	6%	6%	6%		
Y62B	Other Burns, Minor Complexity	5%	11%	2%	3%	3%	3%	3%	3%		
Z01A	Other Contacts W Health Services W GIs, Major Complexity	30%	27%	8%	31%	13%	19%	6%	19%		
Z01B	Other Contacts W Health Services W GIs, Minor Complexity	40%	32%	8%	31%	13%	28%	6%	28%		
Z40Z	Other Contacts W Health Services W Endoscopy	38%	37%	26%	40%	11%	32%	6%	32%		
Z61A	Signs and Symptoms, Major Complexity	16%	6%	5%	4%	6%	53%	5%	5%		
Z61B	Signs and Symptoms, Minor Complexity	24%	11%	8%	8%	4%	53%	5%	5%		
Z63A	Other Follow Up After Surgery or Medical Care, Major Complexity	9%	4%	3%	4%	8%	53%	5%	5%		
Z63B	Other Follow Up After Surgery or Medical Care, Minor Complexity	28%	5%	5%	4%	8%	53%	5%	5%		
Z64A	Other Factors Influencing Health Status, Major Complexity	11%	10%	6%	16%	5%	80%	5%	5%		
Z64B	Other Factors Influencing Health Status, Minor Complexity	19%	59%	12%	21%	11%	100%	5%	8%		

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AR-DRG V10.0	Description	Private Patient Service Adjustments									
		NSW	VIC	QLD	SA	WA	TAS	NT	ACT		
Z65Z	Congenital Anomalies and Problems Arising from Neonatal Period	17%	24%	8%	9%	8%	53%	5%	5%		
Z66Z	Sleep Disorders	17%	24%	8%	9%	8%	53%	5%	5%		

Table 10: Private patient service adjustment (admitted subacute and non-acute patients)

Care Type	Private Patient Service Adjustments							
	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
Rehabilitation	6.1%	3.0%	1.3%	2.4%	3.3%	3.9%	3.9%	1.8%
Palliative Care	5.0%	2.3%	1.1%	2.4%	3.5%	3.5%	3.5%	3.5%
GEM	4.6%	2.8%	1.7%	2.2%	4.5%	2.7%	2.7%	2.7%
Psychogeriatric Care	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%
Maintenance	3.0%	1.6%	0.8%	0.8%	1.6%	1.6%	1.6%	1.8%

Appendix G - Provisional weights for very long stay patients

These price weights are used to calculate national weighted activity unit (NWAU) for patients who are not discharged at 30 June 2022 and have a length of stay of 200 days or more.

The Administrator of the National Health Funding Pool will advise the business rules that will apply for reporting this activity.

Table 11: Price weights for very long stay patients

Care Type	NWAU/day
Admitted acute	0.2702
Admitted subacute and non-acute	0.2079

Appendix H - Price weights for admitted acute patients - AR-DRG V10.0

The admitted acute price weights are available as an Excel spreadsheet on the IHPA website.

Table 12: Admitted acute price weights - Australian Refined Diagnosis Related Groups (AR-DRG) Classification Version 10.0

AR-DRG V10.0	Description	Same-Day Payment List	Bundled ICU	ALOS (days, excluding designated SD and unbundled ICU)	Inlier Bounds		Paediatric Adjustment	Price Weights			
					Lower Bound	Upper Bound		Short-Stay Outlier Base	Short-Stay Outlier Per Diem	Long-Stay Outlier Per Diem	
801A	GIs Unrelated to Principal Diagnosis, Major Complexity			22.0	13	33	155%	0.8501	0.5845	8.4481	0.2555
801B	GIs Unrelated to Principal Diagnosis, Intermediate Complexity			8.5	3	27	100%	0.5868	1.1221	3.9530	0.2597
801C	GIs Unrelated to Principal Diagnosis, Minor Complexity			3.0	1	8	107%		1.3240	1.3240	0.3206
A13A	Ventilation >= 336 hours, Major Complexity			37.7	10	99	146%	2.9903	2.9747	32.7369	0.3910
A13B	Ventilation >= 336 hours, Minor Complexity			16.9	4	44	129%	1.2446	4.4294	18.9622	0.3857
A14A	Ventilation >= 96 hours & < 336 hours, Major Complexity			22.8	8	73	122%	2.3953	1.9718	18.1700	0.3728
A14B	Ventilation >= 96 hours & < 336 hours, Intermediate Complexity			11.8	4	37	117%	1.0764	2.3545	10.4943	0.3554
A14C	Ventilation >= 96 hours & < 336 hours, Minor Complexity			6.3	2	20	100%	0.3450	2.9851	6.3152	0.3722
A15A	Tracheostomy, Major Complexity			29.9	9	89	100%	5.4918	1.4782	18.7953	0.3802
A15B	Tracheostomy, Intermediate Complexity			18.2	6	56	100%	1.7823	1.6800	11.8621	0.3845
A15C	Tracheostomy, Minor Complexity			11.7	3	35	100%	0.6334	2.3478	7.6770	0.4263
A40Z	ECMO			11.4	4	39	200%	2.0113	4.0406	18.1737	0.5047
B01Z	Ventricular Shunt Revision			5.4	2	21	100%	0.7951	1.1942	3.1836	0.3103
B02A	Cranial Interventions, Major Complexity			17.9	5	52	135%	1.6668	1.8750	11.0416	0.3370
B02B	Cranial Interventions, Intermediate Complexity			9.0	3	27	114%	1.4623	1.5927	6.2404	0.2842
B02C	Cranial Interventions, Minor Complexity			5.5	1	17	95%			3.9735	0.2720
B03A	Spinal Interventions, Major Complexity			20.2	6	58	100%	3.0168	1.3240	10.9607	0.3130
B03B	Spinal Interventions, Intermediate Complexity			8.5	2	26	92%	2.6047	1.4454	5.4956	0.3091
B03C	Spinal Interventions, Minor Complexity			3.2	1	10	112%			2.6788	0.3150
B04A	Extracranial Vascular Interventions, Major Complexity			11.5	3	35	100%	1.2783	1.5853	6.0342	0.2857
B04B	Extracranial Vascular Interventions, Intermediate Complexity			6.7	2	20	100%	1.0388	1.6261	4.2910	0.2585
B04C	Extracranial Vascular Interventions, Minor Complexity			3.2	1	10	100%			2.6019	0.3033
B05Z	Carpal Tunnel Release			1.0	1	3	100%			0.4511	0.1439
B06A	Interventions for Cerebral Palsy, Muscular Dystrophy and Neuropathy, Major Comp			15.0	4	40	80%	1.0138	1.4915	6.9798	0.2692
B06B	Interventions for Cerebral Palsy, Muscular Dystrophy and Neuropathy, Inter Comp	YES		4.7	1	16	87%	0.8779		2.7574	0.2952
B06C	Interventions for Cerebral Palsy, Muscular Dystrophy and Neuropathy, Minor Comp	YES		2.4	1	8	149%	0.6888		1.6598	0.2407
B07A	Cranial or Peripheral Nerve and Other Nervous System Interventions, Major Comp			9.0	3	27	148%	0.8795	1.0032	3.8891	0.2426
B07B	Cranial or Peripheral Nerve and Other Nervous System Interventions, Minor Comp			1.6	1	5	122%			1.0091	0.3013
B40Z	Plasmapheresis W Neurological Disease, Same Day			1.0	1	1	100%			0.1795	
B41A	Telemetric EEG Monitoring, Major Complexity			6.5	1	17	121%			2.0291	0.3401
B41B	Telemetric EEG Monitoring, Minor Complexity			3.4	1	11	80%			1.5834	0.3214
B42A	Nervous System Disorders W Ventilator Support, Major Complexity			11.9	4	36	123%	0.0864	1.5445	6.2645	0.3249
B42B	Nervous System Disorders W Ventilator Support, Intermediate Complexity			5.1	1	17	155%			2.8349	0.3625
B42C	Nervous System Disorders W Ventilator Support, Minor Complexity			2.1	1	7	100%			1.6684	0.3187
B6ZZ	Apheresis			1.0	1	3	100%			0.3471	0.2707
B63A	Dementia and Other Chronic Disturbances of Cerebral Function, Major Complexity			14.1	4	44	100%	0.0000	0.8565	3.4261	0.2203
B63B	Dementia and Other Chronic Disturbances of Cerebral Function, Minor Complexity			6.3	2	20	100%	0.0000	0.7802	1.5604	0.1869

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AR-DRG V10.0	Description	Same-Day Payment List	Bundled ICU	ALOS (days excluding designated SD and unbundled ICU)	Inlier Bounds		Paediatric Adjustment	Price Weights			
					Lower Bound	Upper Bound		Same Day	Short-Stay Outlier Base	Short-Stay Outlier Per Diem	Inlier	Long-Stay Outlier Per Diem
B64A	Delirium, Major Complexity			9.0	2	27	100%	0.0000	1.1365	2.2730	0.2376
B64B	Delirium, Minor Complexity	YES		4.1	1	12	100%	0.1107		1.0182	0.2333
B65Z	Cerebral Palsy			1.5	1	4	156%			0.3715	0.2611
B66A	Nervous System Neoplasms, Major Complexity			10.1	3	30	139%	0.0000	1.0104	3.0311	0.2423
B66B	Nervous System Neoplasms, Minor Complexity	YES		4.7	1	14	147%	0.3832		1.2316	0.2262
B67A	Degenerative Nervous System Disorders, Major Complexity			11.3	3	34	163%	0.0000	1.0452	3.1357	0.2479
B67B	Degenerative Nervous System Disorders, Intermediate Complexity	YES		4.9	1	16	200%	0.8087		1.0747	0.1957
B67C	Degenerative Nervous System Disorders, Minor Complexity			1.2	1	4	200%			0.1950	0.1393
B68A	Multiple Sclerosis and Cerebellar Ataxia, Major Complexity	YES		7.0	2	20	172%	0.3780	0.8891	1.7782	0.2415
B68B	Multiple Sclerosis and Cerebellar Ataxia, Minor Complexity			1.1	1	3	147%			0.3294	0.1434
B69A	TIA and Precerebral Occlusion, Major Complexity			4.8	1	15	100%			1.3147	0.2317
B69B	TIA and Precerebral Occlusion, Minor Complexity			1.8	1	5	100%			0.4519	0.2531
B70A	Stroke and Other Cerebrovascular Disorders, Major Complexity			13.0	4	39	100%	0.0000	0.9876	3.9505	0.2630
B70B	Stroke and Other Cerebrovascular Disorders, Intermediate Complexity			6.4	2	19	100%	0.0000	1.0134	2.0269	0.2607
B70C	Stroke and Other Cerebrovascular Disorders, Minor Complexity	YES		3.9	1	12	195%	0.2312		1.1542	0.2614
B70D	Stroke and Other Cerebrovascular Disorders, Transferred < 5 Days			1.9	1	4	100%			0.6917	0.2776
B71A	Cranial and Peripheral Nerve Disorders, Major Complexity	YES		5.8	1	17	179%	0.1859		1.4675	0.2550
B71B	Cranial and Peripheral Nerve Disorders, Minor Complexity			1.2	1	3	200%			0.1795	0.1215
B72A	Nervous System Infection Except Viral Meningitis, Major Complexity			10.6	3	30	129%	0.0000	1.2045	3.6135	0.2790
B72B	Nervous System Infection Except Viral Meningitis, Minor Complexity			3.0	1	9	200%			0.5622	0.2239
B73A	Viral Meningitis, Major Complexity			4.9	1	13	110%			1.4290	0.2589
B73B	Viral Meningitis, Minor Complexity			2.4	1	7	135%			0.6575	0.2721
B74A	Nontraumatic Stupor and Coma, Major Complexity			4.8	1	13	120%			1.2514	0.2383
B74B	Nontraumatic Stupor and Coma, Minor Complexity			1.6	1	5	143%			0.3292	0.2404
B75Z	Febrile Convulsions			1.2	1	4	100%			0.2932	0.2272
B76A	Seizures, Major Complexity	YES		4.6	1	13	138%	0.2144		1.2987	0.2882
B76B	Seizures, Minor Complexity			1.5	1	4	164%			0.3347	0.2422
B77A	Headaches, Major Complexity	YES		3.0	1	9	146%	0.1183		0.7910	0.2509
B77B	Headaches, Minor Complexity			1.2	1	4	168%			0.1861	0.1221
B78A	Intracranial Injuries, Major Complexity			9.6	3	29	100%	0.0000	0.9648	2.8944	0.2511
B78B	Intracranial Injuries, Minor Complexity			3.2	1	10	126%			0.8457	0.2659
B78C	Intracranial Injuries, Transferred < 5 Days			1.6	1	4	100%			0.5731	0.2700
B79A	Skull Fractures, Major Complexity			5.1	1	15	134%			1.3809	0.2592
B79B	Skull Fractures, Minor Complexity			1.6	1	5	156%			0.4065	0.2521
B80A	Other Head Injuries, Major Complexity	YES		3.6	1	11	100%	0.1358		0.8578	0.2100
B80B	Other Head Injuries, Minor Complexity			1.1	1	3	80%			0.1541	0.1132
B81A	Other Disorders of the Nervous System, Major Complexity	YES		8.3	2	24	144%	0.5002	0.0000	1.0622	0.2363
B81B	Other Disorders of the Nervous System, Minor Complexity	YES		3.2	1	10	180%	0.1781		0.7856	0.2202
B82A	Chronic & Unspec Para/Quadriplegia, Major Complexity			13.5	4	42	100%	0.0000	1.0608	4.2433	0.2836
B82B	Chronic & Unspec Para/Quadriplegia, Intermediate Complexity			5.2	1	17	100%			1.4110	0.2464
B82C	Chronic & Unspec Para/Quadriplegia, Minor Complexity			2.8	1	8	100%			0.7283	0.2588
B83A	Acute Paraplegia and Quadriplegia and Spinal Cord Conditions, Major Complexity			17.1	10	24	100%	0.0000	0.5472	5.4724	0.2892
B83B	Acute Paraplegia and Quadriplegia and Spinal Cord Conditions, Inter Comp			6.7	2	19	100%	0.0000	1.0469	2.0938	0.2587
B83C	Acute Paraplegia and Quadriplegia and Spinal Cord Conditions, Minor Complexity			3.1	1	10	100%			0.9054	0.2962

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					Lower Bound	Upper Bound		Same Day	Short-Stay Outlier Base	Short-Stay Outlier Per Diem	Inlier
C01Z	Interventions for Penetrating Eye Injury			2.6	1	7	153%			1.5977	0.3967
C02A	Enucleations and Orbital Interventions, Major Complexity			6.3	2	19	122%		0.7064	1.3643	0.2804
C02B	Enucleations and Orbital Interventions, Minor Complexity			1.5	1	5	112%			1.3132	0.3297
C03A	Retinal Interventions, Major Complexity			1.4	1	4	148%			0.9441	0.3202
C03B	Retinal Interventions, Minor Complexity			1.0	1	3	200%			0.2602	0.1338
C04A	Major Corneal, Scleral and Conjunctival Interventions, Major Complexity			5.5	1	17	100%			2.5175	0.2963
C04B	Major Corneal, Scleral and Conjunctival Interventions, Minor Complexity			1.3	1	4	100%			1.3573	0.3197
C05Z	Dacryocystorhinostomy			1.1	1	3	110%			0.9675	0.3500
C10Z	Strabismus Interventions			1.0	1	3	128%			0.8196	0.3124
C11Z	Eyelid Interventions			1.1	1	6	121%			0.6975	0.2406
C12A	Other Corneal, Scleral and Conjunctival Interventions, Major Complexity			4.1	1	11	100%			1.5026	0.2463
C12B	Other Corneal, Scleral and Conjunctival Interventions, Minor Complexity			1.0	1	3	156%			0.6183	0.2452
C13Z	Lacrimal Interventions			1.1	1	3	100%			0.5021	0.2341
C14A	Other Eye Interventions, Major Complexity			5.5	1	15	100%			1.5174	0.2622
C14B	Other Eye Interventions, Minor Complexity			1.3	1	4	130%			0.4891	0.2334
C15A	Glaucoma and Complex Cataract Interventions, Major Complexity			5.1	1	15	100%			2.0308	0.2744
C15B	Glaucoma and Complex Cataract Interventions, Minor Complexity			1.2	1	3	184%			0.7364	0.2546
C16Z	Lens Interventions			1.0	1	4	200%			0.5442	0.2276
C60A	Acute and Major Eye Infections, Major Complexity			7.2	2	21	87%		0.0000	1.1426	0.2798
C60B	Acute and Major Eye Infections, Minor Complexity			3.0	1	9	130%			0.8146	0.2973
C61A	Neurological and Vascular Disorders of the Eye, Major Complexity	YES		4.0	1	11	145%	0.2808		1.1221	0.2536
C61B	Neurological and Vascular Disorders of the Eye, Minor Complexity	YES		2.5	1	7	193%	0.1576		0.6978	0.2675
C62A	Hypohaema and Medically Managed Trauma to the Eye, Major Complexity	YES		4.0	1	12	136%	0.1583		1.0429	0.2337
C62B	Hypohaema and Medically Managed Trauma to the Eye, Minor Complexity			1.1	1	4	187%			0.1887	0.1322
C63A	Other Disorders of the Eye, Major Complexity	YES		4.3	1	13	137%	0.3502		1.1575	0.2310
C63B	Other Disorders of the Eye, Minor Complexity	YES		2.2	1	7	176%	0.1576		0.5777	0.2568
D01Z	Cochlear Implant			1.1	1	3	119%			6.6403	0.9509
D02A	Head and Neck Interventions, Major Complexity			11.4	3	34	100%		1.7342	1.9042	0.4229
D02B	Head and Neck Interventions, Intermediate Complexity			4.9	1	14	100%			3.8333	0.5432
D02C	Head and Neck Interventions, Minor Complexity			2.2	1	7	113%			1.8398	0.3979
D03A	Surgical Repair for Cleft Lip and Palate Disorders, Major Complexity			2.6	1	7	100%			2.5303	0.3706
D03B	Surgical Repair for Cleft Lip and Palate Disorders, Minor Complexity			1.7	1	5	121%			1.4498	0.4180
D04A	Maxillo Surgery, Major Complexity			4.1	1	12	91%			3.3260	0.4340
D04B	Maxillo Surgery, Minor Complexity			1.8	1	5	108%			1.8836	0.4478
D05Z	Parotid Gland Interventions			2.3	1	7	100%			2.3379	0.4084
D06Z	Sinus and Complex Middle Ear Interventions			1.2	1	4	100%			1.3500	0.4407
D10Z	Nasal Interventions			1.0	1	3	87%			1.0064	0.3707
D11Z	Tonsillectomy and Adenoidectomy			1.1	1	3	112%			0.7383	0.3706
D12A	Other Ear, Nose, Mouth and Throat Interventions, Major Complexity	YES		5.1	1	16	122%	0.7957		2.2360	0.2759
D12B	Other Ear, Nose, Mouth and Throat Interventions, Minor Complexity			1.2	1	4	111%			0.7998	0.2670
D13Z	Myringotomy W Tube Insertion			1.2	1	3	119%			0.4589	0.1668
D14A	Mouth and Salivary Gland Interventions, Major Complexity			2.3	1	7	94%			1.3170	0.3390
D14B	Mouth and Salivary Gland Interventions, Minor Complexity			1.2	1	4	112%			0.6599	0.2326
D15Z	Mastoid Interventions			1.9	1	6	107%			2.3584	0.3195

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D40Z	Dental Extractions and Restorations			1.1	1	3	100%			0.7431	0.1910
D60A	Ear, Nose, Mouth and Throat Malignancy, Major Complexity			9.2	2	25	100%	0.2142	1.4123	3.0389	0.2578
D60B	Ear, Nose, Mouth and Throat Malignancy, Minor Complexity	YES		2.3	1	7	100%	0.3671		0.9486	0.2435
D61A	Dysequilibrium, Major Complexity	YES		3.3	1	10	100%	0.1018		0.8129	0.2180
D61B	Dysequilibrium, Minor Complexity			1.3	1	4	156%			0.2333	0.1721
D62A	Epistaxis, Major Complexity			3.3	1	11	100%			0.8777	0.2765
D62B	Epistaxis, Minor Complexity			1.3	1	4	120%			0.2602	0.1807
D63A	Otitis Media and Upper Respiratory Infections, Major Complexity	YES		3.0	1	10	119%	0.1140		0.8114	0.2464
D63B	Otitis Media and Upper Respiratory Infections, Minor Complexity			1.3	1	4	112%			0.2544	0.1907
D64A	Laryngotracheitis and Epiglottitis, Major Complexity			1.6	1	5	122%			0.5343	0.3000
D64B	Laryngotracheitis and Epiglottitis, Minor Complexity			1.1	1	3	85%			0.2075	0.1588
D65A	Nasal Trauma and Deformity, Major Complexity			3.0	1	9	100%			0.6932	0.2179
D65B	Nasal Trauma and Deformity, Minor Complexity			1.1	1	3	127%			0.2573	0.1377
D66A	Other Ear, Nose, Mouth and Throat Disorders, Major Complexity	YES		3.8	1	11	118%	0.2767		0.9692	0.2399
D66B	Other Ear, Nose, Mouth and Throat Disorders, Minor Complexity			1.1	1	3	152%			0.2370	0.1280
D67A	Oral and Dental Disorders, Major Complexity	YES		3.9	1	12	122%	0.1905		1.0597	0.2549
D67B	Oral and Dental Disorders, Minor Complexity			1.2	1	4	134%			0.2489	0.1323
E01A	Major Chest Interventions, Major Complexity			16.2	11	26	112%		1.5001	0.5674	7.7414
E01B	Major Chest Interventions, Intermediate Complexity			9.4	3	29	100%		1.1217	1.1771	4.6530
E01C	Major Chest Interventions, Minor Complexity			5.9	2	18	114%		0.6539	1.3299	3.3137
E02A	Other Respiratory System Dis. Major Complexity			11.7	4	38	141%		0.6127	1.0833	4.9458
E02B	Other Respiratory System Dis. Intermediate Complexity	YES		3.3	1	10	85%	0.7028		1.8362	0.2718
E02C	Other Respiratory System Dis. Minor Complexity			1.1	1	3	100%			0.8457	0.3284
E03Z	Lung or Heart-Lung Transplant			22.0	10	98	100%		5.3717	1.8536	23.9073
E40A	Respiratory System Disorders W Ventilator Support, Major Complexity			8.8	2	27	88%		0.1092	2.4996	5.1085
E40B	Respiratory System Disorders W Ventilator Support, Minor Complexity			4.4	1	13	88%			2.7763	0.3483
E41A	Respiratory System Disorders W Non-Invasive Ventilation, Major Complexity			10.8	3	33	100%		0.0368	1.3368	4.0471
E41B	Respiratory System Disorders W Non-Invasive Ventilation, Minor Complexity			5.7	1	17	80%			2.0431	0.2839
E42A	Bronchoscopy, Major Complexity			11.8	3	34	150%		0.3055	1.2801	4.1457
E42B	Bronchoscopy, Intermediate Complexity	YES		5.9	1	18	119%	0.5520		2.0815	0.2660
E42C	Bronchoscopy, Minor Complexity	YES		3.2	1	10	138%	0.4656		1.3029	0.2321
E60A	Cystic Fibrosis, Major Complexity			13.7	4	41	147%		0.0792	1.2343	5.0163
E60B	Cystic Fibrosis, Minor Complexity			9.5	3	28	129%		0.0000	1.1840	0.2455
E61A	Pulmonary Embolism, Major Complexity			6.1	2	18	100%		0.0000	0.9198	1.8397
E61B	Pulmonary Embolism, Minor Complexity	YES		2.9	1	9	100%	0.1715		0.7577	0.1880
E62A	Respiratory Infections and Inflammations, Major Complexity			5.7	1	18	100%			1.5141	0.2490
E62B	Respiratory Infections and Inflammations, Minor Complexity	YES		2.9	1	9	80%	0.1167		0.7741	0.2280
E63A	Sleep Apnoea, Major Complexity			1.9	1	5	135%			0.4178	0.2866
E63B	Sleep Apnoea, Minor Complexity			1.0	1	3	129%			0.2350	0.1306
E64A	Pulmonary Oedema and Respiratory Failure, Major Complexity			6.2	2	19	100%		0.0000	0.9881	0.2321
E64B	Pulmonary Oedema and Respiratory Failure, Minor Complexity			2.4	1	8	100%			0.6874	0.2541
E65A	Chronic Obstructive Airways Disease, Major Complexity			5.7	1	17	100%			1.4698	0.2369
E65B	Chronic Obstructive Airways Disease, Minor Complexity			2.7	1	8	100%			0.6495	0.2306
E66A	Major Chest Trauma, Major Complexity			6.5	2	20	100%		0.0000	0.9225	1.8451

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E66B	Major Chest Trauma, Minor Complexity			2.4	1	7	100%				0.5975	0.2557
E67A	Respiratory Signs and Symptoms, Major Complexity	YES		3.4	1	10	84%	0.2468			0.8840	0.2380
E67B	Respiratory Signs and Symptoms, Minor Complexity			1.2	1	4	84%				0.2411	0.1869
E68A	Pneumothorax, Major Complexity			5.6	1	16	100%				1.6102	0.2741
E68B	Pneumothorax, Minor Complexity			2.4	1	7	138%				0.6272	0.2618
E69A	Bronchitis and Asthma, Major Complexity			2.9	1	9	110%				0.7556	0.2430
E69B	Bronchitis and Asthma, Minor Complexity			1.3	1	4	80%				0.2875	0.2111
E70A	Whooping Cough and Acute Bronchiolitis, Major Complexity			2.7	1	8	100%				1.0099	0.3743
E70B	Whooping Cough and Acute Bronchiolitis, Minor Complexity			1.6	1	6	80%				0.5272	0.3282
E71A	Respiratory Neoplasms, Major Complexity			8.6	2	25	100%	0.0000	1.2271	2.4543	0.2513	
E71B	Respiratory Neoplasms, Minor Complexity	YES		4.1	1	12	159%	0.3169			1.0642	0.2293
E72Z	Respiratory Problems Arising from Neonatal Period			1.5	1	5	100%				0.4203	0.2808
E73A	Pleural Effusion, Major Complexity			8.8	2	26	100%	0.0000	1.2339	2.4678	0.2497	
E73B	Pleural Effusion, Intermediate Complexity	YES		4.4	1	14	100%	0.1774			1.1957	0.2377
E73C	Pleural Effusion, Minor Complexity	YES		3.1	1	9	100%	0.1742			0.7813	0.2280
E74A	Interstitial Lung Disease, Major Complexity			6.5	2	19	100%	0.0000	0.8736	1.7472	0.2289	
E74B	Interstitial Lung Disease, Minor Complexity	YES		3.7	1	11	128%	0.2597			0.9325	0.2098
E75A	Other Respiratory System Disorders, Major Complexity	YES		4.1	1	12	132%	0.1538			1.0596	0.2438
E75B	Other Respiratory System Disorders, Minor Complexity			1.4	1	4	81%				0.3012	0.2221
E76A	Respiratory Tuberculosis, Major Complexity			21.6	7	65	100%		0.0000	0.7774	5.4420	0.2416
E76B	Respiratory Tuberculosis, Minor Complexity			7.2	2	22	100%		0.0000	0.9146	1.8291	0.1954
E77A	Bronchiectasis, Major Complexity			8.4	2	24	200%		0.0000	1.1252	2.2504	0.2287
E77B	Bronchiectasis, Minor Complexity			4.5	1	13	194%				1.0184	0.1963
F01A	Implantation and Replacement of AICD, Total System, Major Complexity			10.8	3	30	100%		3.0612	1.5141	7.6035	0.2657
F01B	Implantation and Replacement of AICD, Total System, Minor Complexity	YES		2.6	1	8	100%	2.7649			3.8440	0.2991
F02Z	Other AICD Interventions			4.3	1	12	100%				2.6162	0.3104
F03A	Cardiac Valve Int W/ CPB Pump W/ Invasive Cardiac Investigation, Major Complexity			22.7	8	74	100%		4.4266	1.1216	13.3998	0.2898
F03B	Cardiac Valve Int W/ CPB Pump W/ Invasive Cardiac Investigation, Minor Complexity			10.5	3	33	100%		5.7990	1.1157	9.1459	0.2059
F04A	Cardiac Valve Interventions W/ CPB Pump W/O Invasive Cardiac Invest, Major Comp			16.4	5	52	122%		4.5389	1.5317	12.1984	0.2908
F04B	Cardiac Valve Interventions W/ CPB Pump W/O Invasive Cardiac Invest, Interm Comp			8.5	2	25	100%		4.5511	1.7909	8.1330	0.3182
F04C	Cardiac Valve Interventions W/ CPB Pump W/O Invasive Cardiac Invest, Minor Comp			5.5	1	18	100%				6.4327	0.2367
F05A	Coronary Bypass W/ Invasive Cardiac Investigation, Major Complexity			16.7	5	52	100%		3.2972	1.3213	9.9037	0.3231
F05B	Coronary Bypass W/ Invasive Cardiac Investigation, Minor Complexity			12.0	4	36	100%		2.6062	1.2585	7.6402	0.3002
F06A	Coronary Bypass W/O Invasive Cardiac Investigation, Major Complexity			11.7	4	37	100%		2.6846	1.3408	8.0480	0.3049
F06B	Coronary Bypass W/O Invasive Cardiac Investigation, Intermediate Complexity			7.9	2	24	100%		1.8340	2.1360	6.1060	0.3005
F06C	Coronary Bypass W/O Invasive Cardiac Investigation, Minor Complexity			6.6	2	19	100%		1.8347	1.7663	5.3674	0.2697
F07A	Other Cardiothoracic/Vascular Interventions W/ CPB Pump, Major Complexity			13.2	4	39	110%		2.3211	2.1316	10.8473	0.4366
F07B	Other Cardiothoracic/Vascular Interventions W/ CPB Pump, Intermediate Complexity			7.3	2	23	100%		2.4437	2.5127	7.4691	0.4026
F07C	Other Cardiothoracic/Vascular Interventions W/ CPB Pump, Minor Complexity			5.8	1	17	92%				5.4903	0.3347
F08A	Major Reconstructive Vascular Interventions W/O CPB Pump, Major Complexity			16.3	5	51	100%		3.7246	1.2853	10.1511	0.2727
F08B	Major Reconstructive Vascular Interventions W/O CPB Pump, Interm Complexity			8.2	2	24	100%		2.4996	1.8065	6.1126	0.2481
F08C	Major Reconstructive Vascular Interventions W/O CPB Pump, Minor Complexity			4.4	1	14	100%				3.9335	0.2704
F09A	Other Cardiothoracic Interventions W/O CPB Pump, Major Complexity			8.9	2	25	110%		1.5984	1.8532	5.3048	0.2987
F09B	Other Cardiothoracic Interventions W/O CPB Pump, Minor Complexity			3.0	1	9	100%				2.4175	0.3820

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AR-DRG V10.0	Description	Same-Day Payment List	Bundled ICU	ALOS (days) excluding designated SD and unbundled ICU)	Inlier Bounds		Paediatric Adjustment	Price Weights			
					Lower Bound	Upper Bound		Short-Stay Outlier Base	Short-Stay Outlier Per Diem	Inlier	Long-Stay Outlier Per Diem
F10A	Interventional Coronary Procedures, Admitted for AMI, Major Complexity			6.8	2	21	100%	0.8474	1.3811	3.6096	0.3106
F10B	Interventional Coronary Procedures, Admitted for AMI, Minor Complexity			3.1	1	9	100%			1.9824	0.2982
F11A	Amputation, Except Upper Limb and Toe, for Circulatory Disorders, Major Comp			33.9	10	91	100%	1.5022	1.2184	13.6865	0.3234
F11B	Amputation, Except Upper Limb and Toe, for Circulatory Disorders, Minor Comp			17.1	6	55	100%	1.1058	0.9613	6.8733	0.3069
F12A	Implantation and Replacement of Pacemaker, Total System, Major Complexity			7.1	2	21	100%	1.3873	1.2089	3.8051	0.2719
F12B	Implantation and Replacement of Pacemaker, Total System, Minor Complexity	YES		2.6	1	8	100%	1.4723		2.0319	0.2483
F13A	Amputation, Upper Limb and Toe, for Circulatory Disorders, Major Complexity			17.6	5	51	100%	0.7466	1.2188	6.8408	0.3005
F13B	Amputation, Upper Limb and Toe, for Circulatory Disorders, Minor Complexity			7.6	2	24	100%	0.4296	1.2948	3.0193	0.2837
F14A	Vascular Interventions, Except Major Reconstruction, W/O CFB Pump, Major Comp			11.7	4	36	167%	1.2119	1.1859	5.9556	0.2970
F14B	Vascular Interventions, Except Major Reconstruction, W/O CFB Pump, Interm Comp			3.9	1	12	126%			2.5393	0.2782
F14C	Vascular Interventions, Except Major Reconstruction, W/O CFB Pump, Minor Comp			1.7	1	5	121%			1.4167	0.3022
F17A	Insertion and Replacement of Pacemaker Generator, Major Complexity			4.1	1	11	100%			2.2193	0.3081
F17B	Insertion and Replacement of Pacemaker Generator, Minor Complexity			1.1	1	3	100%			1.2177	0.1946
F18Z	Other Pacemaker Interventions			5.2	1	13	100%			2.3302	0.3180
F19A	Trans-Vascular Percutaneous Cardiac Intervention, Major Complexity			7.8	2	25	100%	1.9544	1.6538	5.2621	0.2285
F19B	Trans-Vascular Percutaneous Cardiac Intervention, Minor Complexity			1.6	1	5	140%			2.1992	0.1966
F20Z	Vein Ligation and Stripping			1.2	1	4	125%			0.9209	0.3092
F21A	Other Circulatory System GIs, Major Complexity			19.5	6	61	100%	0.5940	0.9904	6.5365	0.2545
F21B	Other Circulatory System GIs, Intermediate Complexity			9.1	3	29	100%	0.4559	0.9462	3.2945	0.2280
F21C	Other Circulatory System GIs, Minor Complexity	YES		3.9	1	11	100%	0.7351		1.7883	0.2171
F22Z	Insertion of Artificial Heart Device			36.9	14	132	100%	25.6226	2.5261	60.9874	0.7024
F23Z	Heart Transplant			20.2	13	121	100%	4.5536	1.4420	23.2999	0.4269
F24A	Interventional Coronary Proc, Not Adm for AMI, Major Comp			6.3	1	18	100%			3.2847	0.2912
F24B	Interventional Coronary Proc, Not Adm for AMI, Minor Comp			1.6	1	5	198%			1.6051	0.3030
F40A	Circulatory Disorders W Ventilator Support, Major Complexity			8.3	3	28	100%	0.1313	1.7736	5.4519	0.3293
F40B	Circulatory Disorders W Ventilator Support, Minor Complexity			2.8	1	7	100%			1.7792	0.3177
F41A	Circulatory Disorders, Adm for AMI W Invasive Cardiac Inves Int, Major Comp			7.3	2	21	100%	0.4063	1.2132	2.8327	0.2778
F41B	Circulatory Disorders, Adm for AMI W Invasive Cardiac Inves Int, Minor Comp	YES		3.6	1	11	100%	0.7758		1.6012	0.2760
F42A	Circulatory Disorders, Not Adm for AMI W Invasive Cardiac Inves Int, Major Comp			6.0	1	18	122%			2.1876	0.2617
F42B	Circulatory Disorders, Not Adm for AMI W Invasive Cardiac Inves Int, Minor Comp	YES		2.8	1	8	200%	0.5432		1.2293	0.2407
F43A	Circulatory Disorders W Non-Invasive Ventilation, Major Complexity			13.2	4	39	100%	0.1021	1.2180	4.9741	0.2743
F43B	Circulatory Disorders W Non-Invasive Ventilation, Minor Complexity			7.3	2	22	100%	0.0533	1.2500	2.5532	0.2595
F60A	Circulatory Dsrct, Adm for AMI W/O Invas Card Inves Intervention			4.5	1	14	100%			1.2939	0.2583
F60B	Circulatory Dsrct, Adm for AMI W/O Invas Card Inves Intervention, Transf < 5 Days			1.5	1	4	100%			0.5476	0.2642
F61A	Infective Endocarditis, Major Complexity			19.8	6	60	100%	0.0000	0.9968	5.9809	0.2167
F61B	Infective Endocarditis, Minor Complexity			10.2	3	31	100%	0.0000	0.8452	2.5356	0.1362
F62A	Heart Failure and Shock, Major Complexity			8.3	2	25	100%	0.0000	1.1205	2.2411	0.2383
F62B	Heart Failure and Shock, Minor Complexity			3.8	1	11	100%			0.9108	0.2220
F62C	Heart Failure and Shock, Transferred < 5 Days			1.6	1	4	100%			0.4394	0.2453
F63A	Venous Thrombosis, Major Complexity	YES		4.8	1	15	100%	0.1441		1.1311	0.2050
F63B	Venous Thrombosis, Minor Complexity	YES		3.3	1	8	100%	0.1114		0.5209	0.1394
F64A	Skin Ulcers in Circulatory Disorders, Major Complexity			9.7	3	28	100%	0.0000	0.8413	2.5238	0.2197
F64B	Skin Ulcers in Circulatory Disorders, Intermediate Complexity	YES		5.6	1	18	100%	0.1639		1.3442	0.1913
F64C	Skin Ulcers in Circulatory Disorders, Minor Complexity	YES		4.2	1	13	100%	0.1833		0.9859	0.1889

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					Lower Bound	Upper Bound		Same Day	Short-Stay Outlier Base	Short-Stay Outlier Per Diem	Inlier	Long-Stay Outlier Per Diem
F65A	Peripheral Vascular Disorders, Major Complexity	YES		6.2	2	20	150%	0.3526	0.0000	0.9543	1.9086	0.2287
F65B	Peripheral Vascular Disorders, Minor Complexity	YES		2.9	1	9	140%	0.2824			0.8505	0.1925
F66A	Coronary Atherosclerosis, Major Complexity			4.1	1	12	100%				1.1125	0.2492
F66B	Coronary Atherosclerosis, Minor Complexity			1.4	1	4	100%				0.3164	0.2411
F67A	Hypertension, Major Complexity	YES		4.2	1	13	144%	0.1480			1.1311	0.2512
F67B	Hypertension, Minor Complexity			1.4	1	4	144%				0.2439	0.1725
F68Z	Congenital Heart Disease			1.7	1	5	195%				0.4905	0.1978
F69A	Valvular Disorders, Major Complexity	YES		5.2	1	16	200%	0.2744			1.4193	0.2598
F69B	Valvular Disorders, Minor Complexity			1.2	1	3	200%				0.1904	0.1426
F72A	Unstable Angina, Major Complexity	YES		3.8	1	11	100%	0.1868			1.0673	0.2427
F72B	Unstable Angina, Minor Complexity			1.6	1	5	100%				0.3909	0.2711
F73A	Syncope and Collapse, Major Complexity			4.4	1	13	84%				1.0800	0.2304
F73B	Syncope and Collapse, Minor Complexity			1.4	1	4	112%				0.3060	0.2281
F74A	Chest Pain, Major Complexity			1.9	1	6	200%				0.4299	0.2519
F74B	Chest Pain, Minor Complexity			1.1	1	3	148%				0.1408	0.0964
F75A	Other Circulatory Disorders, Major Complexity			6.4	2	19	182%		0.0000	1.0256	2.0513	0.2332
F75B	Other Circulatory Disorders, Minor Complexity	YES		2.5	1	8	200%	0.2202			0.6990	0.2156
F76A	Arrhythmia, Cardiac Arrest and Conduction Disorders, Major Complexity	YES		4.0	1	12	195%	0.1910			1.1068	0.2425
F76B	Arrhythmia, Cardiac Arrest and Conduction Disorders, Minor Complexity			1.4	1	4	200%				0.3180	0.2387
G01A	Rectal Resection, Major Complexity			22.1	7	66	100%		2.5946	1.0976	10.2778	0.3027
G01B	Rectal Resection, Intermediate Complexity			11.7	4	36	100%		2.0229	1.0742	6.3199	0.2451
G01C	Rectal Resection, Minor Complexity			7.1	2	22	100%		1.9103	1.3692	4.6487	0.2705
G02A	Major Small and Large Bowel Interventions, Major Complexity			20.7	7	65	160%		1.8746	1.0695	9.3611	0.2968
G02B	Major Small and Large Bowel Interventions, Intermediate Complexity			9.5	3	30	115%		1.4136	1.1333	4.8136	0.2881
G02C	Major Small and Large Bowel Interventions, Minor Complexity			5.4	1	16	108%				2.9983	0.3176
G03A	Stomach, Oesophageal and Duodenal Interventions, Major Complexity			16.4	5	51	100%		1.8751	1.4588	9.1690	0.3123
G03B	Stomach, Oesophageal and Duodenal Interventions, Intermediate Complexity			7.0	2	22	100%		1.1636	1.4930	4.1496	0.3300
G03C	Stomach, Oesophageal and Duodenal Interventions, Minor Complexity			2.9	1	9	131%				2.1177	0.3188
G04A	Peritoneal Adhesiolysis, Major Complexity			13.4	4	42	150%		1.1933	1.1531	5.8058	0.2989
G04B	Peritoneal Adhesiolysis, Intermediate Complexity			6.2	2	20	142%		0.8751	1.0679	3.0109	0.3018
G04C	Peritoneal Adhesiolysis, Minor Complexity			2.7	1	8	125%				1.7016	0.3338
G05A	Minor Small and Large Bowel Interventions, Major Complexity			10.8	3	30	100%		0.8083	1.1135	4.1486	0.2716
G05B	Minor Small and Large Bowel Interventions, Minor Complexity			3.7	1	11	80%				2.0049	0.3300
G06Z	Pyloromyotomy			3.4	1	11	100%				1.9176	0.3810
G07A	Appendicectomy, Major Complexity			4.7	1	14	138%				2.1959	0.3237
G07B	Appendicectomy, Minor Complexity			2.1	1	6	120%				1.2583	0.3271
G10A	Hernia Interventions, Major Complexity			3.8	1	12	85%				2.1141	0.3163
G10B	Hernia Interventions, Minor Complexity			1.3	1	4	80%				1.0989	0.3270
G11A	Anal and Stomal Interventions, Major Complexity			4.5	1	13	170%				1.5341	0.2804
G11B	Anal and Stomal Interventions, Minor Complexity			1.5	1	4	112%				0.6712	0.2550
G12A	Other Digestive System GIs, Major Complexity			17.2	6	55	100%		0.6047	1.0313	6.7927	0.2667
G12B	Other Digestive System GIs, Intermediate Complexity			7.0	2	22	134%		1.0745	0.8123	2.6992	0.2166
G12C	Other Digestive System GIs, Minor Complexity	YES		3.4	1	11	131%		0.6691		1.5448	0.2258
G46A	Complex Endoscopy, Major Complexity	YES		7.1	2	21	170%		0.5166	1.0684	2.4545	0.2835

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					Lower Bound	Upper Bound		Same Day	Short-Stay Outlier Base	Short-Stay Outlier Per Diem	Long-Stay Outlier Per Diem
G46B	Complex Endoscopy, Minor Complexity			1.1	1	3	158%			0.4671	0.3096
G47A	Gastroscopy, Major Complexity			6.2	2	18	162%	0.2559	0.9070	2.0698	0.2670
G47B	Gastroscopy, Intermediate Complexity	YES		2.4	1	8	112%	0.3997		0.9026	0.2304
G47C	Gastroscopy, Minor Complexity			1.1	1	3	146%			0.3332	0.2608
G48A	Colonoscopy, Major Complexity	YES		5.7	1	18	168%	0.4053		1.7928	0.2669
G48B	Colonoscopy, Minor Complexity			1.1	1	3	193%			0.4007	0.1498
G60A	Digestive Malignancy, Major Complexity			7.1	2	21	100%	0.0918	0.9308	1.9533	0.2278
G60B	Digestive Malignancy, Minor Complexity	YES		2.7	1	9	100%	0.2316		0.6465	0.2277
G61A	Gastrointestinal Haemorrhage, Major Complexity			4.1	1	13	127%			1.0276	0.2463
G61B	Gastrointestinal Haemorrhage, Minor Complexity			1.7	1	5	117%			0.3672	0.2503
G64Z	Inflammatory Bowel Disease	YES		3.8	1	11	117%	0.1849		0.8959	0.2474
G65A	Gastrointestinal Obstruction, Major Complexity			5.7	1	17	106%			1.4858	0.2583
G65B	Gastrointestinal Obstruction, Minor Complexity			2.5	1	8	100%			0.6202	0.2386
G66A	Abdominal Pain and Mesenteric Adenitis, Major Complexity	YES		2.6	1	8	109%	0.1186		0.6266	0.2351
G66B	Abdominal Pain and Mesenteric Adenitis, Minor Complexity			1.2	1	4	120%			0.1963	0.1502
G67A	Oesophagitis and Gastroenteritis, Major Complexity			3.2	1	9	100%			0.8035	0.2584
G67B	Oesophagitis and Gastroenteritis, Minor Complexity			1.3	1	4	100%			0.2232	0.1668
G70A	Other Digestive System Disorders, Major Complexity			5.6	1	17	149%			1.3870	0.2475
G70B	Other Digestive System Disorders, Intermediate Complexity	YES		2.9	1	9	157%	0.1577		0.7290	0.2286
G70C	Other Digestive System Disorders, Minor Complexity			1.3	1	4	141%			0.2494	0.1835
H01A	Pancreas, Liver and Shunt Interventions, Major Complexity			25.6	7	70	100%	2.9715	1.3693	12.5568	0.2881
H01B	Pancreas, Liver and Shunt Interventions, Intermediate Complexity			9.6	3	28	100%	1.2185	1.5542	5.8811	0.2568
H01C	Pancreas, Liver and Shunt Interventions, Minor Complexity			3.9	1	11	100%			2.4418	0.4152
H02A	Major Biliary Tract Interventions, Major Complexity			20.3	6	62	100%	1.1361	1.2667	8.7365	0.3587
H02B	Major Biliary Tract Interventions, Intermediate Complexity			10.8	3	34	100%	0.9362	1.2874	4.7984	0.2692
H02C	Major Biliary Tract Interventions, Minor Complexity			5.4	1	15	100%			2.2289	0.2769
H05A	Hepatobiliary Diagnostic Interventions, Major Complexity			11.2	3	34	100%	0.8430	1.3644	4.9362	0.2799
H05B	Hepatobiliary Diagnostic Interventions, Intermediate Complexity			4.6	1	14	100%			2.0259	0.3066
H05C	Hepatobiliary Diagnostic Interventions, Minor Complexity			1.5	1	5	100%			0.7145	0.3322
H06A	Other Hepatobiliary and Pancreas GIs, Major Complexity			20.7	6	54	100%	0.5902	1.1045	7.2175	0.2688
H06B	Other Hepatobiliary and Pancreas GIs, Intermediate Complexity			8.2	2	26	100%	0.4421	1.2691	2.9803	0.2034
H06C	Other Hepatobiliary and Pancreas GIs, Minor Complexity			1.5	1	5	100%			1.3237	0.2793
H07A	Open Cholecystectomy, Major Complexity			12.6	4	37	100%	1.5513	1.0992	5.9483	0.3096
H07B	Open Cholecystectomy, Intermediate Complexity			7.0	2	20	100%	1.2436	1.2551	3.7538	0.2870
H07C	Open Cholecystectomy, Minor Complexity			4.3	1	13	100%			2.6092	0.2870
H08A	Laparoscopic Cholecystectomy, Major Complexity			5.7	1	18	100%			2.8758	0.2980
H08B	Laparoscopic Cholecystectomy, Minor Complexity			2.1	1	6	128%			1.5659	0.2852
H09Z	Liver Transplant			22.3	6	63	152%	5.3977	3.2380	24.8255	0.6032
H60A	Cirrhosis and Alcoholic Hepatitis, Major Complexity			13.7	4	42	100%	0.0000	1.0652	4.3409	0.2650
H60B	Cirrhosis and Alcoholic Hepatitis, Intermediate Complexity			6.4	2	19	100%	0.0000	0.9659	1.9318	0.2498
H60C	Cirrhosis and Alcoholic Hepatitis, Minor Complexity	YES		3.4	1	10	100%	0.2521		0.9224	0.2337
H61A	Malignancy of Hepatobiliary System and Pancreas, Major Complexity			8.4	2	26	100%	0.1552	1.2092	2.5736	0.2631
H61B	Malignancy of Hepatobiliary System and Pancreas, Minor Complexity	YES		3.9	1	12	144%	0.3722		1.0572	0.2455
H62A	Disorders of Pancreas, Except Malignancy, Major Complexity			7.0	2	21	174%	0.0000	1.0675	2.1349	0.2741

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					Lower Bound	Upper Bound			Short-Stay Outlier Base	Short-Stay Outlier Per Diem	Inlier	Long-Stay Outlier Per Diem
H62B	Disorders of Pancreas, Except Malignancy, Minor Complexity	YES		3.0	1	9	163%	0.2707			0.7956	0.2362
H63A	Other Disorders of Liver, Major Complexity			6.9	2	21	146%		0.0000	1.0653	2.1306	0.2520
H63B	Other Disorders of Liver, Intermediate Complexity	YES		3.5	1	10	141%	0.2784			0.9480	0.2144
H63C	Other Disorders of Liver, Minor Complexity			1.2	1	4	151%				0.3494	0.2709
H64A	Disorders of the Biliary Tract, Major Complexity			6.0	1	18	136%				1.7543	0.2630
H64B	Disorders of the Biliary Tract, Minor Complexity			2.7	1	8	176%	0.2954			0.7801	0.2440
H65A	Bleeding Oesophageal Varices, Major Complexity	YES		8.7	3	27	100%		0.3698	1.1106	3.7018	0.2663
H65B	Bleeding Oesophageal Varices, Intermediate Complexity			4.4	1	13	100%				1.8192	0.2733
H65C	Bleeding Oesophageal Varices, Minor Complexity			2.6	1	8	100%				1.0592	0.3293
I01A	Bilateral and Multiple Major Joint Interventions of Lower Limb, Major Complexity			23.0	16	36	100%		3.9238	0.5770	13.1553	0.2751
I01B	Bilateral and Multiple Major Joint Interventions of Lower Limb, Minor Complexity			5.6	1	17	100%				5.6549	0.2280
I02A	Microvascular Tissue Transfers or Skin Grafts, Excluding Hand, Major Complexity			35.4	22	50	100%		3.7733	0.5988	16.9477	0.2950
I02B	Microvascular Tissue Transfers or Skin Grafts, Excluding Hand, Intermediate Comp			20.3	7	64	100%		1.5113	1.2673	10.3821	0.3361
I02C	Microvascular Tissue Transfers or Skin Grafts, Excluding Hand, Minor Complexity			7.6	2	23	106%		0.4386	1.9676	4.3738	0.3078
I03A	Hip Replacement for Trauma, Major Complexity			12.7	4	39	100%		1.9864	0.9719	5.8740	0.2638
I03B	Hip Replacement for Trauma, Minor Complexity			7.2	2	22	100%		1.9132	1.0230	3.9591	0.2281
I04A	Knee Replacement, Major Complexity			6.8	2	21	100%		1.6812	1.3525	4.3863	0.2633
I04B	Knee Replacement, Minor Complexity			4.1	1	13	100%				3.4643	0.2055
I05A	Other Joint Replacement, Major Complexity			7.6	2	23	100%		2.7109	1.3302	5.3714	0.2887
I05B	Other Joint Replacement, Minor Complexity			2.7	1	8	100%				3.6450	0.2847
I06Z	Spinal Fusion for Deformity			7.4	2	26	100%		4.4039	3.1971	10.7980	0.4399
I07Z	Amputation			19.9	8	73	100%		1.0729	0.9263	8.4835	0.2814
I08A	Other Hip and Femur Interventions, Major Complexity			14.9	5	45	100%		1.5950	0.9345	6.2676	0.2504
I08B	Other Hip and Femur Interventions, Intermediate Complexity			8.7	2	27	100%		1.1377	1.4068	3.9514	0.2468
I08C	Other Hip and Femur Interventions, Minor Complexity			5.7	1	17	100%				2.7593	0.2317
I09A	Spinal Fusion, Major Complexity			18.3	6	56	100%		4.7224	1.0864	11.2409	0.2961
I09B	Spinal Fusion, Intermediate Complexity			7.3	2	24	100%		3.1561	1.7088	6.5738	0.3292
I09C	Spinal Fusion, Minor Complexity			3.9	1	12	100%				4.6722	0.4096
I10A	Other Back and Neck Interventions, Major Complexity			9.2	2	27	100%		1.2148	1.6969	4.6086	0.2795
I10B	Other Back and Neck Interventions, Minor Complexity			2.8	1	9	100%				2.2118	0.2698
I11Z	Limb Lengthening Interventions			4.2	1	13	192%				3.6267	0.3990
I12A	Misc Musculoskeletal Interventions for Infect/Inflam of Bone/Joint, Major Comp			23.7	7	68	108%		0.7675	0.9652	7.6642	0.2238
I12B	Misc Musculoskeletal Interventions for Infect/Inflam of Bone/Joint, Interm Comp			13.4	4	42	100%		0.6776	0.9344	4.4153	0.1782
I12C	Misc Musculoskeletal Interventions for Infect/Inflam of Bone/Joint, Minor Comp			5.8	1	17	132%				1.8549	0.1825
I13A	Humerus, Tibia, Fibula and Ankle Interventions, Major Complexity			10.7	3	32	100%		1.2498	1.2508	5.0022	0.2639
I13B	Humerus, Tibia, Fibula and Ankle Interventions, Intermediate Complexity			4.8	1	15	100%				2.7428	0.2973
I13C	Humerus, Tibia, Fibula and Ankle Interventions, Minor Complexity			2.3	1	7	80%				1.7709	0.3246
I15Z	Cranio-Facial Surgery			5.1	1	14	156%				3.4706	0.2662
I16Z	Other Shoulder Interventions			1.3	1	4	109%				1.6261	0.4538
I17A	Maxillo-Facial Surgery, Major Complexity			3.5	1	12	100%				2.9908	0.3686
I17B	Maxillo-Facial Surgery, Minor Complexity			1.4	1	5	107%				1.5027	0.4277
I18A	Other Knee Interventions, Major Complexity	YES		3.8	1	11	107%	0.7791			1.8407	0.2265
I18B	Other Knee Interventions, Minor Complexity			1.1	1	3	165%				0.7700	0.2320
I19A	Other Elbow and Forearm Interventions, Major Complexity			3.8	1	12	90%				2.4759	0.2821

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					Lower Bound	Upper Bound		Same Day	Short-Stay Outlier Base	Short-Stay Outlier Per Diem	Inlier
I19B	Other Elbow and Forearm Interventions, Minor Complexity			1.5	1	5	95%			1.5429	0.3149
I20A	Other Foot Interventions, Major Complexity			4.9	1	15	113%			2.4643	0.2461
I20B	Other Foot Interventions, Minor Complexity			1.5	1	5	94%			1.2959	0.2973
I21A	Local Excision and Removal of Internal Fixation Devices of Hip & Femur, Maj Comp			3.5	1	10	88%			1.8300	0.3191
I21B	Local Excision and Removal of Internal Fixation Devices of Hip & Femur, Min Comp			1.1	1	3	108%			1.0033	0.3694
I23A	Local Excision & Removal of Internal Fixation Device, Except Hip & Fmr, Maj Comp	YES		2.3	1	8	115%	0.6980		1.6352	0.2690
I23B	Local Excision & Removal of Internal Fixation Device, Except Hip & Fmr, Min Comp			1.0	1	3	106%			0.6028	0.1773
I24A	Arthroscopy, Major Complexity			3.5	1	11	100%			1.5464	0.2618
I24B	Arthroscopy, Minor Complexity			1.3	1	3	100%			0.7236	0.2526
I25A	Bone and Joint Diagnostic Interventions Including Biopsy, Major Complexity			11.3	3	35	105%		0.2745	1.3196	0.2360
I25B	Bone and Joint Diagnostic Interventions Including Biopsy, Minor Complexity	YES		4.8	1	13	129%	0.4963		1.7268	0.2314
I27A	Soft Tissue Interventions, Major Complexity			10.2	3	30	100%		0.6880	1.1676	0.2628
I27B	Soft Tissue Interventions, Minor Complexity	YES		2.2	1	7	110%	0.6340		1.3283	0.2617
I28A	Other Musculoskeletal Interventions, Major Complexity			10.7	3	34	100%		0.8038	1.1618	0.2424
I28B	Other Musculoskeletal Interventions, Intermediate Complexity			4.6	1	13	120%			2.1543	0.2164
I28C	Other Musculoskeletal Interventions, Minor Complexity			1.6	1	5	111%			1.2185	0.2694
I29Z	Knee Reconstructions, and Revisions of Reconstructions			1.2	1	4	120%			1.7539	0.4831
I30Z	Hand Interventions			1.2	1	4	100%			0.8584	0.2334
I31A	Revision of Hip Replacement, Major Complexity			20.2	7	65	100%		3.2909	0.8876	9.5043
I31B	Revision of Hip Replacement, Intermediate Complexity			9.9	3	31	100%		3.0211	0.9932	6.0006
I31C	Revision of Hip Replacement, Minor Complexity			6.8	2	19	100%		2.3400	1.1639	4.6677
I32A	Revision of Knee Replacement, Major Complexity			19.1	6	57	100%		3.7262	0.8404	8.7887
I32B	Revision of Knee Replacement, Minor Complexity			7.6	2	24	100%		2.3802	1.4388	5.2579
I33A	Hip Replacement for Non-Trauma, Major Complexity			7.2	2	23	100%		2.3420	1.1946	4.7313
I33B	Hip Replacement for Non-Trauma, Minor Complexity			3.8	1	12	100%			3.5226	0.2102
I60Z	Femoral Shaft Fractures			6.0	2	20	100%		0.2823	0.9976	2.2775
I61Z	Distal Femoral Fractures			6.7	1	17	100%			1.4108	0.2206
I63A	Sprains, Strains and Dislocations of Hip, Pelvis and Thigh, Major Complexity			4.8	1	14	100%			1.2195	0.2392
I63B	Sprains, Strains and Dislocations of Hip, Pelvis and Thigh, Minor Complexity			1.4	1	4	129%			0.3052	0.2207
I64A	Osteomyelitis, Major Complexity			14.4	4	42	100%		0.0000	0.9029	3.6116
I64B	Osteomyelitis, Minor Complexity			6.0	2	19	111%		0.0000	0.6754	1.3507
I65A	Musculoskeletal Malignant Neoplasms, Major Complexity			9.7	3	31	94%		0.0000	1.0713	3.2138
I65B	Musculoskeletal Malignant Neoplasms, Minor Complexity			4.1	1	12	119%			1.2096	0.2489
I66A	Inflammatory Musculoskeletal Disorders, Major Complexity			6.9	2	22	109%		0.0000	1.1912	2.3824
I66B	Inflammatory Musculoskeletal Disorders, Minor Complexity			1.3	1	4	132%			0.2998	0.2174
I67A	Septic Arthritis, Major Complexity			12.9	3	36	100%		0.0000	1.1584	3.4753
I67B	Septic Arthritis, Minor Complexity			5.2	1	15	125%			0.8256	0.1367
I68A	Non-surgical Spinal Disorders, Major Complexity			5.5	1	17	100%			1.3419	0.2339
I68B	Non-surgical Spinal Disorders, Minor Complexity			1.6	1	5	147%			0.3104	0.2173
I69A	Bone Diseases and Arthropathies, Major Complexity			5.1	1	15	80%			1.2273	0.2264
I69B	Bone Diseases and Arthropathies, Minor Complexity			1.7	1	5	139%			0.3124	0.2201
I71A	Other Musculotendinous Disorders, Major Complexity			4.3	1	13	86%			1.0557	0.2528
I71B	Other Musculotendinous Disorders, Minor Complexity			1.4	1	4	146%			0.2625	0.1814
I72A	Specific Musculotendinous Disorders, Major Complexity			6.1	1	18	108%			1.4124	0.2444

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I72B	Specific Musculoskeletal Disorders, Minor Complexity			1.9	1	5	119%			0.3532	0.2226
I73A	Aftercare of Musculoskeletal Implants or Prostheses, Major Complexity			9.5	3	28	100%	0.0000	0.7410	2.2230	0.1409
I73B	Aftercare of Musculoskeletal Implants or Prostheses, Minor Complexity			3.0	1	9	111%			0.5150	0.1093
I74A	Injuries to Forearm, Wrist, Hand and Foot, Major Complexity			3.4	1	10	84%			0.7150	0.2238
I74B	Injuries to Forearm, Wrist, Hand and Foot, Minor Complexity			1.1	1	3	145%			0.2783	0.1634
I75A	Injuries to Shoulder, Arm, Elbow, Knee, Leg and Ankle, Major Complexity			7.7	2	24	100%	0.0000	0.9921	1.9841	0.2033
I75B	Injuries to Shoulder, Arm, Elbow, Knee, Leg and Ankle, Intermediate Complexity			2.2	1	7	135%			0.4908	0.2260
I75C	Injuries to Shoulder, Arm, Elbow, Knee, Leg and Ankle, Minor Complexity			1.3	1	4	140%			0.2396	0.1729
I76A	Other Musculoskeletal Disorders, Major Complexity			5.6	1	17	80%			1.4260	0.2328
I76B	Other Musculoskeletal Disorders, Minor Complexity			1.5	1	4	133%			0.3012	0.2165
I77A	Fractures of Pelvis, Major Complexity			8.9	2	26	100%	0.0000	1.1265	2.2531	0.2231
I77B	Fractures of Pelvis, Minor Complexity			3.5	1	10	100%			0.7639	0.2163
I78A	Fractures of Neck of Femur, Major Complexity			9.1	3	29	100%	0.0000	0.7450	2.2351	0.2051
I78B	Fractures of Neck of Femur, Minor Complexity			4.1	1	13	100%			0.9133	0.2125
I79A	Pathological Fractures, Major Complexity			9.8	3	29	100%	0.0000	0.9649	2.8946	0.2526
I79B	Pathological Fractures, Minor Complexity			4.2	1	13	80%			1.0627	0.2492
I80Z	Femoral Fractures, Transferred to Acute Facility < 2 Days			1.0	1	1	100%			0.2508	0.2006
J01A	Microvas Tiss Transf for Skin, Subcut Tiss & Breast Dsrds, Major Complexity			15.4	6	55	100%	5.1781	0.9524	10.8927	0.3134
J01B	Microvas Tiss Transf for Skin, Subcut Tiss & Breast Dsrds, Minor Complexity			7.7	2	23	100%	3.0722	1.9681	7.0083	0.2060
J06A	Major Interventions for Breast Disorders, Major Complexity			6.3	2	19	100%	1.0855	1.1005	3.2864	0.1810
J06B	Major Interventions for Breast Disorders, Minor Complexity			2.9	1	9	100%			2.0215	0.1986
J07Z	Minor Interventions for Breast Disorders			1.1	1	3	100%			1.0240	0.4000
J08A	Other Skin Grafts and Debridement Interventions, Major Complexity			13.1	4	44	100%	0.5810	1.0303	4.7021	0.2574
J08B	Other Skin Grafts and Debridement Interventions, Intermediate Complexity	YES		4.0	1	12	119%	0.7411		1.5500	0.2026
J08C	Other Skin Grafts and Debridement Interventions, Minor Complexity	YES		2.4	1	8	124%	0.6039		1.2333	0.2106
J09Z	Perianal and Peritonal Interventions			2.2	1	7	127%			0.7951	0.1220
J10A	Plastic GIs for Skin, Subcutaneous Tissue and Breast Disorders, Major Comp	YES		3.9	1	12	110%	0.7159		2.0240	0.2708
J10B	Plastic GIs for Skin, Subcutaneous Tissue and Breast Disorders, Minor Comp			1.1	1	3	100%			0.6523	0.1960
J11A	Other Skin, Subcutaneous Tissue and Breast Interventions, Major Complexity	YES		4.1	1	12	100%	0.5633		1.4280	0.2328
J11B	Other Skin, Subcutaneous Tissue and Breast Interventions, Minor Complexity			1.0	1	3	100%			0.4736	0.1576
J12A	Lower Limb Interventions W Ulcer or Cellulitis, Major Complexity			15.7	5	49	100%	0.3227	0.9593	5.1194	0.2591
J12B	Lower Limb Interventions W Ulcer or Cellulitis, Minor Complexity			5.5	1	17	92%			1.6358	0.2443
J13A	Lower Limb Interventions W/O Ulcer or Cellulitis, Major Complexity	YES		8.1	2	26	100%	0.8347	0.6740	1.2315	3.1370
J13B	Lower Limb Interventions W/O Ulcer or Cellulitis, Minor Complexity	YES		3.9	1	12	100%	0.5902		1.5121	0.2154
J14Z	Major Breast Reconstructions			6.4	2	19	100%		0.8924	2.2618	5.4159
J60A	Skin Ulcers, Major Complexity			9.7	3	28	100%	0.0000	0.7986	2.3957	0.2038
J60B	Skin Ulcers, Intermediate Complexity	YES		5.9	1	15	100%	0.1884		1.0102	0.1482
J60C	Skin Ulcers, Minor Complexity	YES		4.4	1	14	100%	0.1549		0.7377	0.1305
J62A	Malignant Breast Disorders, Major Complexity			8.7	2	26	100%	0.0000	1.2346	2.4692	0.2490
J62B	Malignant Breast Disorders, Minor Complexity	YES		5.5	1	16	100%	0.2053		1.0980	0.1949
J63Z	Non-Malignant Breast Disorders	YES		2.9	1	9	105%	0.2167		0.7672	0.2059
J64A	Cellulitis, Major Complexity			5.3	1	16	92%			1.3050	0.2132
J64B	Cellulitis, Minor Complexity	YES		2.8	1	9	127%	0.1755		0.6624	0.1359
J65A	Trauma to Skin, Subcutaneous Tissue and Breast, Major Complexity	YES		5.4	1	16	100%	0.1519		1.3112	0.2222

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J65B	Trauma to Skin, Subcutaneous Tissue and Breast, Minor Complexity			1.3	1	4	130%			0.2324	0.1678
J67A	Minor Skin Disorders, Major Complexity	YES		4.4	1	13	114%	0.2507		1.1356	0.2411
J67B	Minor Skin Disorders, Minor Complexity			1.3	1	4	118%			0.2923	0.2230
J68A	Major Skin Disorders, Major Complexity	YES		5.7	1	18	89%	0.2060		1.6881	0.2695
J68B	Major Skin Disorders, Minor Complexity	YES		3.0	1	9	126%	0.1889		0.7889	0.2542
J69A	Skin Malignancy, Major Complexity			7.7	2	23	100%	0.0000	1.0978	2.1956	0.2045
J69B	Skin Malignancy, Minor Complexity	YES		4.3	1	13	100%	0.1889		0.8838	0.1930
K01A	GIs for Diabetic Complications, Major Complexity			26.8	8	80	100%	0.5228	1.0664	9.0542	0.2549
K01B	GIs for Diabetic Complications, Intermediate Complexity			13.6	4	45	100%	0.2875	1.0225	4.3775	0.2156
K01C	GIs for Diabetic Complications, Minor Complexity			4.8	1	14	100%			1.2541	0.2295
K02Z	Pituitary Interventions			6.7	2	21	100%	1.3917	1.4643	4.3203	0.3966
K03Z	Adrenal Interventions			4.4	1	13	100%			3.1440	0.4096
K05A	Parathyroid Interventions, Major Complexity			4.0	1	13	100%			2.5310	0.3409
K05B	Parathyroid Interventions, Minor Complexity			1.3	1	4	100%			1.3087	0.3735
K06A	Thyroid Interventions, Major Complexity			4.0	1	12	100%			3.2883	0.4287
K06B	Thyroid Interventions, Minor Complexity			1.6	1	5	100%			1.7881	0.4500
K08Z	Thyroglossal Interventions			1.3	1	4	106%			1.3070	0.4202
K09A	Other Endocrine, Nutritional and Metabolic GIs, Major Complexity			12.7	4	44	149%		0.5943	5.5755	0.2461
K09B	Other Endocrine, Nutritional and Metabolic GIs, Minor Complexity			4.7	1	13	100%			2.1947	0.2950
K10Z	Revisional and Open Bariatric Interventions			5.2	3	30	100%		1.5541	0.6711	0.3106
K11A	Major Laparoscopic Bariatric Interventions, Major Complexity			3.3	1	9	100%			2.8266	0.3625
K11B	Major Laparoscopic Bariatric Interventions, Minor Complexity			2.3	1	7	100%			2.1439	0.4123
K12Z	Other Bariatric Interventions			1.5	1	7	100%			1.5681	0.4214
K13Z	Plastic GIs for Endocrine, Nutritional and Metabolic Disorders			4.9	1	12	100%			2.4662	0.3191
K40A	Endoscopic and Investigative Interventions for Metabolic Disorders, Major Comp			10.5	3	30	100%	0.2560	1.2447	3.9901	0.2683
K40B	Endoscopic and Investigative Interventions for Metabolic Disorders, Minor Comp			1.1	1	3	195%			0.4060	0.3083
K60A	Diabetes, Major Complexity			5.7	1	17	155%			1.6783	0.2392
K60B	Diabetes, Minor Complexity	YES		3.2	1	9	200%	0.1301		0.8475	0.2069
K61A	Severe Nutritional Disturbance, Major Complexity			13.0	4	43	128%		0.0000	1.0338	0.2658
K61B	Severe Nutritional Disturbance, Minor Complexity			6.1	2	19	100%		0.0000	0.9525	0.2722
K62A	Miscellaneous Metabolic Disorders, Major Complexity			6.1	2	19	138%		0.0000	0.9441	0.2487
K62B	Miscellaneous Metabolic Disorders, Intermediate Complexity	YES		3.2	1	10	139%	0.1430		0.8723	0.2414
K62C	Miscellaneous Metabolic Disorders, Minor Complexity			1.3	1	4	174%			0.2204	0.1514
K63A	Inborn Errors of Metabolism, Major Complexity			4.7	1	16	128%			1.4311	0.3252
K63B	Inborn Errors of Metabolism, Minor Complexity			1.1	1	3	136%			0.2731	0.2038
K64A	Endocrine Disorders, Major Complexity			4.4	1	13	170%			1.3270	0.2485
K64B	Endocrine Disorders, Minor Complexity	YES		2.6	1	8	200%	0.1731		0.6906	0.2450
L02A	Operative Insertion of Peritoneal Catheter for Dialysis, Major Complexity			9.2	2	26	100%	0.6461	1.7184	4.0828	0.2773
L02B	Operative Insertion of Peritoneal Catheter for Dialysis, Minor Complexity			1.5	1	4	100%			0.9906	0.3177
L03A	Kidney, Ureter and Major Bladder Interventions for Neoplasm, Major Complexity			13.3	4	43	100%	2.0872	1.5001	8.0876	0.3331
L03B	Kidney, Ureter and Major Bladder Interventions for Neoplasm, Intermediate Comp			5.7	1	18	100%			4.3116	0.3768
L03C	Kidney, Ureter and Major Bladder Interventions for Neoplasm, Minor Complexity			3.2	1	10	100%			2.8341	0.5340
L04A	Kidney, Ureter and Major Bladder Interventions for Non-Neoplasm, Major Comp			11.2	3	34	106%	0.8091	1.3833	4.9589	0.3071
L04B	Kidney, Ureter and Major Bladder Interventions for Non-Neoplasm, Interm Comp	YES		3.8	1	12	113%	0.8103		2.1642	0.2605

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L04C	Kidney, Ureter and Major Bladder Interventions for Non-Neoplasm, Minor Comp			1.3	1	4	180%			1.0174	0.3449
L05A	Transurethral Prostatectomy for Urinary Disorder, Major Complexity			7.2	2	21	100%	0.5832	1.0416	2.6664	0.2430
L05B	Transurethral Prostatectomy for Urinary Disorder, Minor Complexity			2.3	1	7	100%			1.2793	0.2233
L06A	Minor Bladder Interventions, Major Complexity			11.9	3	34	100%	0.6646	1.4155	4.9111	0.2796
L06B	Minor Bladder Interventions, Intermediate Complexity			3.8	1	13	100%			1.8833	0.2516
L06C	Minor Bladder Interventions, Minor Complexity	YES		2.1	1	6	100%	0.5821		1.1122	0.2308
L07A	Other Transurethral Interventions, Major Complexity			4.6	1	15	100%			2.0556	0.2766
L07B	Other Transurethral Interventions, Minor Complexity			1.3	1	4	149%			0.8183	0.3033
L08Z	Urethral Interventions	YES		2.2	1	6	116%	0.5259		1.5794	0.3979
L09A	Other Interventions for Kidney and Urinary Tract Disorders, Major Complexity			18.1	5	52	100%	0.7496	1.1803	6.6511	0.2722
L09B	Other Interventions for Kidney and Urinary Tract Disorders, Interm Complexity			4.4	1	13	100%			2.2073	0.2780
L09C	Other Interventions for Kidney and Urinary Tract Disorders, Minor Complexity			1.3	1	4	80%			1.1149	0.3097
L10A	Kidney Transplant, Age <= 16 Years or Major Complexity			11.6	3	35	119%		2.4946	10.4375	0.4683
L10B	Kidney Transplant, Age >= 17 Years and Minor Complexity			7.4	2	23	100%	2.2334	2.7503	7.7339	0.3790
L43A	Nephrolithiasis Interventions, Major Complexity			3.0	1	10	100%			1.2526	0.2571
L43B	Nephrolithiasis Interventions, Minor Complexity			1.4	1	4	122%			0.7301	0.2578
L44A	Cystourethroscopy for Urinary Disorder, Major Complexity			1.8	1	5	141%			0.5663	0.2847
L44B	Cystourethroscopy for Urinary Disorder, Minor Complexity			1.0	1	3	200%			0.2345	0.0919
L60A	Kidney Failure, Major Complexity			11.2	3	34	100%	0.0000	1.2188	3.6563	0.2694
L60B	Kidney Failure, Intermediate Complexity			5.7	1	17	156%			1.6070	0.2560
L60C	Kidney Failure, Minor Complexity	YES		3.1	1	10	186%	0.4336		0.8091	0.2337
L61Z	Haemodialysis			1.0	1	3	200%			0.1040	0.0832
L62A	Kidney and Urinary Tract Neoplasms, Major Complexity			7.4	2	22	145%		0.0000	1.1464	0.2589
L62B	Kidney and Urinary Tract Neoplasms, Intermediate Complexity			1.8	1	6	159%			0.5491	0.2400
L62C	Kidney and Urinary Tract Neoplasms, Minor Complexity			1.1	1	3	100%			0.2274	0.1741
L63A	Kidney and Urinary Tract Infections, Major Complexity			4.7	1	14	114%			1.1870	0.2350
L63B	Kidney and Urinary Tract Infections, Minor Complexity	YES		2.3	1	7	129%	0.1245		0.5698	0.2147
L64A	Urinary Stones and Obstruction, Major Complexity	YES		2.1	1	6	100%	0.1450		0.5545	0.2346
L64B	Urinary Stones and Obstruction, Minor Complexity			1.1	1	3	200%			0.1542	0.1209
L65A	Kidney and Urinary Tract Signs and Symptoms, Major Complexity	YES		5.8	1	17	120%	0.2390		1.5106	0.2422
L65B	Kidney and Urinary Tract Signs and Symptoms, Minor Complexity	YES		2.2	1	6	160%	0.1354		0.5335	0.2338
L66Z	Urethral Stricture			1.4	1	4	100%			0.3361	0.1654
L67A	Other Kidney and Urinary Tract Disorders, Major Complexity	YES		6.6	2	20	160%	0.3475	0.0000	1.9161	0.2429
L67B	Other Kidney and Urinary Tract Disorders, Intermediate Complexity	YES		3.0	1	9	148%	0.2941		0.8094	0.2081
L67C	Other Kidney and Urinary Tract Disorders, Minor Complexity			1.1	1	3	172%			0.1872	0.1404
L68Z	Peritoneal Dialysis			1.0	1	3	200%			0.1581	0.0989
M01A	Major Male Pelvic Interventions, Major Complexity			5.7	2	21	100%		2.4575	1.0939	0.2981
M01B	Major Male Pelvic Interventions, Minor Complexity			2.8	1	9	100%			3.3150	0.1503
M02A	Transurethral Prostatectomy for Reproductive System Disorder, Major Complexity			6.3	1	18	100%			2.4453	0.2594
M02B	Transurethral Prostatectomy for Reproductive System Disorder, Minor Complexity			2.3	1	7	100%			1.3534	0.2590
M03A	Penis Interventions, Major Complexity			3.1	1	9	81%			1.9229	0.3511
M03B	Penis Interventions, Minor Complexity			1.2	1	4	118%			0.9024	0.2961
M04Z	Testes Interventions			1.2	1	4	89%			0.8805	0.3068
M05Z	Circumcision			1.0	1	3	94%			0.6882	0.2235

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AR-DRG V10.0	Description	Same-Day Payment List	Bundled ICU	ALOS (days excluding designated SD and unbundled ICU)	Inlier Bounds		Paediatric Adjustment	Price Weights		
					Lower Bound	Upper Bound		Same Day	Short-Stay Outlier Base	Short-Stay Outlier Per Diem
M06A	Other Male Reproductive System GIs, Major Complexity			6.9	2	24	100%	0.8094	1.4265	0.3123
M06B	Other Male Reproductive System GIs, Minor Complexity			1.4	1	4	83%			1.3202
M40Z	Cystourethroscopy for Male Reproductive System Disorder, Same-day			1.0	1	1	100%			0.3034
M60A	Male Reproductive System Malignancy, Major Complexity			6.4	2	18	100%	0.1050	0.8908	1.8865
M60B	Male Reproductive System Malignancy, Minor Complexity			1.1	1	4	100%			0.4437
M61A	Benign Prostatic Hypertrophy, Major Complexity			3.8	1	11	100%			0.9667
M61B	Benign Prostatic Hypertrophy, Minor Complexity			1.2	1	4	100%			0.4067
M62A	Male Reproductive System Inflammation, Major Complexity			5.4	1	15	100%			1.2477
M62B	Male Reproductive System Inflammation, Minor Complexity			2.5	1	7	128%	0.1326		0.5743
M63Z	Male Sterilisation Interventions	YES		1.0	1	3	100%			0.4801
M64A	Other Male Reproductive System Disorders, Major Complexity			2.2	1	6	100%			0.5820
M64B	Other Male Reproductive System Disorders, Minor Complexity			1.1	1	3	122%			0.2802
N01Z	Pelvic Evisceration and Radical Vuvectomy			8.9	2	27	100%	1.3009	1.9806	5.2620
N04A	Hysterectomy for Non-Malignancy, Major Complexity			3.9	1	12	100%			3.1152
N04B	Hysterectomy for Non-Malignancy, Minor Complexity			2.3	1	7	100%			2.1704
N05A	Oophorectomy and Complex Fallopian Tube Int for Non-Malignancy, Maj Comp			3.6	1	11	100%			2.6937
N05B	Oophorectomy and Complex Fallopian Tube Int for Non-Malignancy, Min Comp			1.5	1	5	100%			1.5182
N06A	Female Reproductive System Reconstructive Interventions, Major Complexity			3.7	1	11	100%			2.4913
N06B	Female Reproductive System Reconstructive Interventions, Minor Complexity			1.9	1	6	100%			1.4599
N07A	Other Uterus and Adnexa Interventions for Non-Malignancy, Major Complexity			1.4	1	4	116%			1.2483
N07B	Other Uterus and Adnexa Interventions for Non-Malignancy, Minor Complexity			1.0	1	3	100%			0.6110
N08Z	Endoscopic and Laparoscopic Interventions, Female Reproductive System			1.3	1	4	135%			0.9776
N09A	Other Vagina, Cervix and Vulva Interventions, Major Complexity			2.3	1	7	146%			1.0853
N09B	Other Vagina, Cervix and Vulva Interventions, Minor Complexity			1.0	1	3	136%			0.4803
N10Z	Diagnostic Curettage and Diagnostic Hysteroscopy			1.1	1	3	100%			0.4939
N11A	Other Female Reproductive System GIs, Major Complexity			6.1	1	17	100%			2.4226
N11B	Other Female Reproductive System GIs, Minor Complexity			1.0	1	3	100%			0.4198
N12A	Uterus and Adnexa Interventions for Malignancy, Major Complexity			8.4	2	27	100%	1.2225	1.9519	5.1264
N12B	Uterus and Adnexa Interventions for Malignancy, Intermediate Complexity			3.8	1	12	100%			3.0251
N12C	Uterus and Adnexa Interventions for Malignancy, Minor Complexity			2.2	1	7	100%			2.1679
N60A	Female Reproductive System Malignancy, Major Complexity			10.1	3	30	100%	0.0000	1.0367	3.1102
N60B	Female Reproductive System Malignancy, Minor Complexity			2.7	1	9	184%			0.7491
N61A	Female Reproductive System Infections, Major Complexity			3.6	1	10	100%			0.9694
N61B	Female Reproductive System Infections, Minor Complexity			1.6	1	5	126%			0.3617
N62A	Menstrual and Other Female Reproductive System Disorders, Major Complexity			2.0	1	6	133%			0.5226
N62B	Menstrual and Other Female Reproductive System Disorders, Minor Complexity			1.2	1	3	162%			0.2290
O01A	Caesarean Delivery, Major Complexity			6.5	2	20	100%	0.8308	1.1618	3.1545
O01B	Caesarean Delivery, Intermediate Complexity			4.1	1	13	100%			2.2945
O01C	Caesarean Delivery, Minor Complexity			3.0	1	9	100%			1.8819
O02A	Vaginal Delivery W GIs, Major Complexity			4.0	1	12	100%			2.4427
O02B	Vaginal Delivery W GIs, Minor Complexity			2.8	1	9	100%			1.7695
O03Z	Ectopic Pregnancy			1.7	1	5	100%			1.1034
O04A	Postpartum and Post Abortion W GIs, Major Complexity			4.4	1	14	100%			2.0589
O04B	Postpartum and Post Abortion W GIs, Minor Complexity			1.6	1	5	100%			0.8227

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					Lower Bound	Upper Bound		Same Day	Short-Stay Outlier Base	Short-Stay Outlier Per Diem	Long-Stay Outlier Per Diem
O05Z	Abortion W Gls			1.1	1	3	100%			0.5424	0.2202
O60A	Vaginal Delivery, Major Complexity			3.7	1	11	100%			1.7499	0.2925
O60B	Vaginal Delivery, Intermediate Complexity			2.4	1	7	122%			1.2100	0.3303
O60C	Vaginal Delivery, Minor Complexity			1.8	1	5	100%			0.8918	0.3479
O61A	Pospartum and Post Abortion W/O Gls, Major Complexity	YES		4.7	1	16	100%	0.2100		1.3456	0.2454
O61B	Pospartum and Post Abortion W/O Gls, Minor Complexity	YES		2.2	1	7	100%	0.1463		0.6533	0.2442
O63A	Abortion W/O Gls, Major Complexity			1.4	1	4	100%			0.5597	0.3883
O63B	Abortion W/O Gls, Minor Complexity			1.1	1	3	100%			0.2128	0.1609
O66A	Antenatal and Other Obstetric Admissions, Major Complexity	YES		3.2	1	10	100%	0.1925		0.9247	0.2191
O66B	Antenatal and Other Obstetric Admissions, Intermediate Complexity			1.3	1	4	110%			0.3235	0.2248
O66C	Antenatal and Other Obstetric Admissions, Minor Complexity			1.1	1	3	130%			0.1644	0.1267
P01Z	Neonate W Sig GI/Vent >= 96 hrs, Died or Transfer to Acute Facility <5 Days	YES	YES	1.7	1	4	100%			2.1738	
P02Z	Cardiothoracic and Vascular Interventions for Neonates	YES	YES	35.1	11	102	100%		2.8234	2.4401	29.6646
P03A	Neonate, AdmWt 1000-1499g W Significant GI/Vent >= 96 hrs, Major Complexity	YES	YES	63.1	20	188	100%		0.0922	1.4146	28.3852
P03B	Neonate, AdmWt 1000-1499g W Significant GI/Vent >= 96 hrs, Minor Complexity	YES	YES	37.8	13	119	100%		0.0551	1.2865	16.7796
P04A	Neonate, AdmWt 1500-1999g W Significant GI/Vent >= 96 hrs, Major Complexity	YES	YES	52.5	17	156	100%		0.2835	1.3985	24.0584
P04B	Neonate, AdmWt 1500-1999g W Significant GI/Vent >= 96 hrs, Minor Complexity	YES	YES	27.6	8	80	100%		0.1474	1.3797	11.1849
P05A	Neonate, AdmWt 2000-2499g W Significant GI/Vent >= 96 hrs, Major Complexity	YES	YES	44.4	15	142	100%		0.5831	1.6365	25.1304
P05B	Neonate, AdmWt 2000-2499g W Significant GI/Vent >= 96 hrs, Minor Complexity	YES	YES	19.7	5	52	100%		0.3687	1.5925	8.3314
P06A	Neonate, AdmWt >= 2500g W Significant GI/Vent >= 96 hrs, Major Complexity	YES	YES	33.3	21	49	100%		0.6665	0.9063	19.6990
P06B	Neonate, AdmWt >= 2500g W Significant GI/Vent >= 96 hrs, Minor Complexity	YES	YES	11.8	7	18	100%		0.3903	0.8173	6.1111
P07Z	Neonate, AdmWt < 750g W Significant Gls	YES	YES	125.1	39	358	100%		0.3361	1.6388	64.2512
P08Z	Neonate, AdmWt 750-999g W Significant Gls	YES	YES	77.5	32	297	100%	0.3400	0.9974	1.5865	51.7656
P60A	Neonate W/O Sig GI/Vent >= 96 hrs, Died/Transfer Acute Facility <5 Days, Maj Comp	YES	YES	2.6	1	4	100%			1.4823	
P60B	Neonate W/O Sig GI/Vent >= 96 hrs, Died/Transfer Acute Facility <5 Days, Min Comp	YES	YES	1.6	1	4	100%			0.7700	
P61Z	Neonate, AdmWt <750g W/O Significant GI procedure	YES	YES	75.2	27	249	100%		0.0000	1.7300	46.7107
P62A	Neonate, AdmWt 750-999g W/O Significant Gls, Major Complexity	YES	YES	79.5	27	244	100%		0.0000	1.4567	39.3307
P62B	Neonate, AdmWt 750-999g W/O Significant Gls, Minor Complexity	YES	YES	50.4	17	157	100%		0.0000	1.4724	25.0309
P63A	Neonate, AdmWt 1000-1249g W/O Significant GI/Vent >= 96 hrs, Major Complexity	YES	YES	32.7	11	105	100%		0.0000	1.0175	11.1920
P63B	Neonate, AdmWt 1000-1249g W/O Significant GI/Vent >= 96 hrs, Minor Complexity	YES	YES	7.2	3	32	100%		0.0000	1.2863	3.8650
P64A	Neonate, AdmWt 1250-1499g W/O Significant GI/Vent >= 96 hrs, Major Complexity	YES	YES	29.4	10	94	100%		0.0000	0.9892	9.8920
P64B	Neonate, AdmWt 1250-1499g W/O Significant GI/Vent >= 96 hrs, Minor Complexity	YES	YES	21.2	6	59	100%		0.0000	1.1388	6.8328
P65A	Neonate, AdmWt 1500-1999g W/O Significant GI/Vent >= 96 hrs, Extreme Comp	YES	YES	29.8	9	85	100%		0.0000	1.0815	9.7337
P65B	Neonate, AdmWt 1500-1999g W/O Significant GI/Vent >= 96 hrs, Major Complexity	YES	YES	23.4	7	70	100%		0.0000	1.0947	7.6632
P65C	Neonate, AdmWt 1500-1999g W/O Significant GI/Vent >= 96 hrs, Intermediate Comp	YES	YES	18.6	6	56	100%		0.0000	0.9656	5.7933
P65D	Neonate, AdmWt 1500-1999g W/O Significant GI/Vent >= 96 hrs, Minor Complexity	YES	YES	14.8	4	42	100%		0.0000	1.1582	4.6326
P66A	Neonate, AdmWt 2000-2499g W/O Significant GI/Vent >= 96 hrs, Extreme Comp	YES	YES	17.3	5	49	100%		0.0000	1.1304	5.6520
P66B	Neonate, AdmWt 2000-2499g W/O Significant GI/Vent >= 96 hrs, Major Complexity	YES	YES	10.8	3	32	100%		0.0000	1.1687	3.5061
P66C	Neonate, AdmWt 2000-2499g W/O Significant GI/Vent >= 96 hrs, Intermediate Comp	YES	YES	7.0	2	21	100%		0.0000	1.1726	2.3451
P66D	Neonate, AdmWt 2000-2499g W/O Significant GI/Vent >= 96 hrs, Minor Complexity	YES	YES	3.8	1	11	100%		0.0000	1.1726	2.3451
P67A	Neonate, AdmWt >= 2500g W/O Sig GI/Vent >= 96 hrs, < 37 Comp Wks Gest, Extr Comp	YES	YES	14.2	9	21	100%		0.0000	0.5865	5.2786
P67B	Neonate, AdmWt >= 2500g W/O Sig GI/Vent >= 96 hrs, < 37 Comp Wks Gest, Maj Comp	YES	YES	9.0	2	26	100%		0.0000	1.5724	3.1449
P67C	Neonate, AdmWt >= 2500g W/O Sig GI/Vent >= 96 hrs, < 37 Comp Wks Gest, Int Comp	YES	YES	7.5	2	23	100%		0.0000	1.2710	2.5420
P67D	Neonate, AdmWt >= 2500g W/O Sig GI/Vent >= 96 hrs, < 37 Comp Wks Gest, Min Comp	YES	YES	4.7	1	15	100%		0.0000	1.5656	0.2749

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P68A	Neonate, AdmWt >= 2500g W/O Sig GI/Vent >= 96 hrs, >= 37 Comp Wks Gest, Ext Comp		YES	7.4	2	22	100%	0.0000	1.4221	1.4221	0.3298
P68B	Neonate, AdmWt >= 2500g W/O Sig GI/Vent >= 96 hrs, >= 37 Comp Wks Gest, Maj Comp		YES	3.5	1	11	100%				0.2906
P68C	Neonate, AdmWt >= 2500g W/O Sig GI/Vent >= 96 hrs, >= 37 Comp Wks Gest, Int Comp		YES	2.6	1	8	100%				0.2872
P68D	Neonate, AdmWt >= 2500g W/O Sig GI/Vent >= 96 hrs, >= 37 Comp Wks Gest, Min Comp		YES	2.0	1	6	100%				0.2681
Q01Z	Splenectomy			6.4	2	19	100%	1.1686	1.2684	1.2684	0.3639
Q02A	Blood and Immune System Disorders W Other GIs, Major Complexity			11.7	4	36	113%	0.4846	1.1019	1.1019	0.2946
Q02B	Blood and Immune System Disorders W Other GIs, Minor Complexity	YES		3.7	1	10	114%	0.6034		1.6666	0.2433
Q60A	Reticuloendothelial and Immunity Disorders, Major Complexity	YES		5.9	1	17	142%	0.2449			1.7310
Q60B	Reticuloendothelial and Immunity Disorders, Minor Complexity			1.1	1	3	178%				0.1467
Q61A	Red Blood Cell Disorders, Major Complexity	YES		5.0	1	15	116%	0.3531			1.3654
Q61B	Red Blood Cell Disorders, Intermediate Complexity			1.3	1	4	123%				0.1853
Q61C	Red Blood Cell Disorders, Minor Complexity			1.1	1	3	180%				0.1044
Q62A	Coagulation Disorders, Major Complexity	YES		6.5	2	19	105%	0.2188	0.9549	0.9549	0.2679
Q62B	Coagulation Disorders, Minor Complexity	YES		2.7	1	8	124%	0.1897			0.1660
R01A	Lymphoma and Leukaemia W Major GIs, Major Complexity			25.5	8	78	100%	1.1305	1.3659	1.3659	0.3972
R01B	Lymphoma and Leukaemia W Major GIs, Minor Complexity			6.4	2	18	100%	0.3801	1.6432	1.6432	0.3157
R02A	Other Neoplastic Disorders W Major GIs, Major Complexity			13.0	4	38	100%	1.5818	1.4016	1.4016	0.2783
R02B	Other Neoplastic Disorders W Major GIs, Intermediate Complexity			6.6	2	19	100%	0.7313	1.7004	1.7004	0.2861
R02C	Other Neoplastic Disorders W Major GIs, Minor Complexity			3.7	1	12	100%		2.0284	2.0284	0.2144
R03A	Lymphoma and Leukaemia W Other GIs, Major Complexity			29.2	17	44	158%	0.3699	0.6459	0.6459	0.3431
R03B	Lymphoma and Leukaemia W Other GIs, Intermediate Complexity			9.0	3	30	129%	0.4306	1.1603	1.1603	0.2685
R03C	Lymphoma and Leukaemia W Other GIs, Minor Complexity	YES		5.1	1	15	159%	0.5985			0.2616
R04A	Other Neoplastic Disorders W Other GIs, Major Complexity			8.4	3	27	100%	0.7308	1.1865	1.1865	0.2665
R04B	Other Neoplastic Disorders W Other GIs, Minor Complexity	YES		3.6	1	12	113%	0.6283			0.2640
R05A	Allogeneic Bone Marrow Transplant, Age <= 16 Years or Major Complexity			39.6	26	59	173%	0.0301	0.7351	0.7351	0.4648
R05B	Allogeneic Bone Marrow Transplant, Age >= 17 Years and Minor Complexity			23.3	8	73	100%	0.0239	1.3677	1.3677	0.3725
R06A	Autologous Bone Marrow Transplant, Major Complexity			25.6	8	75	192%	0.0682	1.2485	1.2485	0.4015
R06B	Autologous Bone Marrow Transplant, Intermediate Complexity			18.4	6	56	100%	0.0159	1.1490	1.1490	0.3666
R06C	Autologous Bone Marrow Transplant, Minor Complexity			9.5	3	32	100%	0.0000	1.5282	1.5282	0.2961
R60A	Acute Leukaemia, Major Complexity			17.8	6	55	106%	0.0000	1.4219	1.4219	0.3474
R60B	Acute Leukaemia, Intermediate Complexity	YES		6.9	2	22	100%	0.3554	1.3150	1.3150	0.3038
R60C	Acute Leukaemia, Minor Complexity	YES		5.0	1	15	199%	0.2393			0.1943
R61A	Lymphoma and Non-Acute Leukaemia, Major Complexity			10.4	3	30	165%	0.0000	1.1897	1.1897	0.2983
R61B	Lymphoma and Non-Acute Leukaemia, Intermediate Complexity	YES		4.2	1	13	157%	0.2720			0.2670
R61C	Lymphoma and Non-Acute Leukaemia, Minor Complexity			1.2	1	3	200%				0.1815
R62A	Other Neoplastic Disorders, Major Complexity			8.9	2	26	134%	0.0902	1.3441	1.3441	0.2594
R62B	Other Neoplastic Disorders, Intermediate Complexity	YES		4.4	1	16	90%	1.0411			0.2432
R62C	Other Neoplastic Disorders, Minor Complexity	YES		3.9	1	11	137%	0.3625			0.1813
R63Z	Chemotherapy			1.0	1	1	132%				0.2629
T01A	Infectious and Parasitic Diseases W GIs, Major Complexity			28.3	9	84	140%	0.9087	1.1173	1.1173	0.2838
T01B	Infectious and Parasitic Diseases W GIs, Intermediate Complexity			15.0	5	46	134%	0.5870	0.9795	0.9795	0.2309
T01C	Infectious and Parasitic Diseases W GIs, Minor Complexity			7.3	2	23	100%	0.4012	1.0810	1.0810	0.2251
T40Z	Infectious and Parasitic Diseases W Ventilator Support			8.3	2	25	100%	0.0411	2.5484	2.5484	0.3156
T60A	Septicaemia, Major Complexity			13.1	4	39	142%	0.0000	1.0685	1.0685	0.2471

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T60B	Septicaemia, Intermediate Complexity			7.1	2	21	121%	0.0000	1.0345	0.2237
T60C	Septicaemia, Minor Complexity			4.0	1	12	117%		1.0427	0.2249
T61A	Postoperative Infections, Major Complexity			6.5	2	20	133%	0.0000	0.8104	0.1850
T61B	Postoperative Infections, Minor Complexity			3.2	1	10	149%		0.6139	0.1502
T62A	Fever of Unknown Origin, Major Complexity			5.2	1	15	100%		1.4888	0.2786
T62B	Fever of Unknown Origin, Minor Complexity			2.0	1	6	80%		0.4804	0.2704
T63A	Viral Illnesses, Major Complexity			3.9	1	13	106%		1.0821	0.2873
T63B	Viral Illnesses, Minor Complexity			1.3	1	4	100%			0.2057
T64A	Other Infectious and Parasitic Diseases, Major Complexity			17.2	5	53	114%	0.0000	1.1751	0.2695
T64B	Other Infectious and Parasitic Diseases, Intermediate Complexity			8.7	2	27	117%	0.0000	1.1523	0.1963
T64C	Other Infectious and Parasitic Diseases, Minor Complexity	YES		5.3	1	16	119%	0.2405		1.1641
U40Z	Mental Health Treatment W/ECT, Sameday			1.0	1	1	100%			0.2341
U60Z	Mental Health Treatment W/O ECT, Sameday			1.0	1	1	200%			0.1199
U61A	Schizophrenia Disorders, Major Complexity			42.3	26	60	100%	0.0000	0.4044	10.5151
U61B	Schizophrenia Disorders, Minor Complexity			18.0	12	28	155%	0.0000	0.4292	5.1507
U62A	Paranoia and Acute Psychotic Disorders, Major Complexity			22.5	15	34	180%	0.0000	0.4259	6.3885
U62B	Paranoia and Acute Psychotic Disorders, Minor Complexity			10.5	7	16	190%	0.0000	0.4545	3.1814
U63A	Major Affective Disorders, Major Complexity			27.2	18	41	179%	0.0000	0.4331	7.7963
U63B	Major Affective Disorders, Minor Complexity			12.3	8	19	161%	0.0000	0.4654	3.7233
U64A	Other Affective and Somatoform Disorders, Major Complexity			12.7	8	19	168%	0.0000	0.4387	3.5097
U64B	Other Affective and Somatoform Disorders, Minor Complexity			5.7	3	8	190%	0.0000	0.5220	1.5660
U65A	Anxiety Disorders, Major Complexity			8.3	5	13	163%	0.0000	0.5009	2.5046
U65B	Anxiety Disorders, Minor Complexity			3.5	2	5	192%	0.0000	0.4759	0.9518
U66A	Eating and Obsessive-Compulsive Disorders, Major Complexity			22.7	15	34	123%	0.0000	0.5129	7.6929
U66B	Eating and Obsessive-Compulsive Disorders, Minor Complexity			12.6	8	20	131%	0.0000	0.5557	4.4454
U67A	Personality Disorders and Acute Reactions, Major Complexity			11.6	7	17	172%	0.0000	0.4856	3.3991
U67B	Personality Disorders and Acute Reactions, Minor Complexity			5.0	3	7	184%	0.0000	0.4930	1.4791
U68A	Childhood Mental Disorders, Major Complexity			13.1	9	22	132%	0.0000	0.5918	5.3259
U68B	Childhood Mental Disorders, Minor Complexity			6.7	4	9	146%	0.0000	0.5892	2.3566
V60A	Alcohol Intoxication and Withdrawal, Major Complexity			3.4	2	5	100%	0.0000	0.5015	1.0030
V60B	Alcohol Intoxication and Withdrawal, Minor Complexity			1.4	1	2	80%			0.2343
V61A	Drug Intoxication and Withdrawal, Major Complexity			8.2	5	12	200%	0.0000	0.4968	2.4839
V61B	Drug Intoxication and Withdrawal, Minor Complexity			3.8	2	6	200%	0.0000	0.5449	1.0898
V62A	Alcohol Use and Dependence, Major Complexity			8.8	5	13	100%	0.0000	0.4433	2.2167
V62B	Alcohol Use and Dependence, Minor Complexity			4.2	2	6	100%	0.0000	0.5078	1.0156
V63Z	Opioid Use and Dependence			5.2	3	8	100%	0.0000	0.4886	1.4659
V64A	Other Drug Use and Dependence, Major Complexity			6.9	4	10	100%	0.0000	0.4619	1.8475
V64B	Other Drug Use and Dependence, Minor Complexity			3.6	2	6	100%	0.0000	0.5103	1.0206
W01A	Vent, Trac & Cran Interventions for Mult Sig Trauma, Major Complexity			25.9	8	81	100%	4.0324	2.3870	23.1286
W01B	Vent, Trac & Cran Interventions for Mult Sig Trauma, Intermediate Complexity			14.9	4	42	100%	6.2460	1.8586	13.6805
W01C	Vent, Trac & Cran Interventions for Mult Sig Trauma, Minor Complexity			9.0	3	28	100%	1.3103	2.4774	8.7424
W02A	Hip, Femur and Lower Limb Interventions for Multiple Sig Trauma, Major Comp			16.9	6	55	100%	1.9676	1.3535	10.0884
W02B	Hip, Femur and Lower Limb Interventions for Multiple Sig Trauma, Minor Comp			9.3	3	28	100%	1.4361	1.0792	4.6738
W03Z	Abdominal Interventions for Multiple Significant Trauma			8.9	3	30	100%	1.4020	1.3736	5.5229

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AR-DRG V10.0	Description	Same-Day Payment List	Bundled ICU	ALOS (days) excluding designated SD and unbundled ICU)	Inlier Bounds		Paediatric Adjustment	Price Weights				
					Lower Bound	Upper Bound		Short-Stay Outlier Base	Short-Stay Outlier Per Diem	Inlier	Long-Stay Outlier Per Diem	
W04A	Multiple Significant Trauma W Other GIs, Major Complexity			16.0	11	25	100%		2.3828	0.6423	9.4480	0.3454
W04B	Multiple Significant Trauma W Other GIs, Minor Complexity			7.8	2	24	100%		1.0165	1.8392	4.6948	0.3899
W60Z	Multiple Sig Trauma, Transferred to Acute Facility <5 Days			1.6	1	4	100%				1.2061	
W61A	Multiple Significant Trauma W/O GIs, Major Complexity			9.6	3	28	132%		0.0000	1.0060	3.0181	0.2439
W61B	Multiple Significant Trauma W/O GIs, Minor Complexity			4.6	1	15	129%				1.3600	0.2530
X02A	Microvascular Tissue Transfer and Skin Grafts for Injuries to Hand, Major Comp			6.5	4	9	100%		0.8586	0.8605	4.3007	0.4395
X02B	Microvascular Tissue Transfer and Skin Grafts for Injuries to Hand, Minor Comp			1.6	1	5	117%				1.0288	0.5446
X04A	Other Interventions for Injuries to Lower Limb, Major Complexity			10.7	3	33	100%		0.8123	1.1496	4.2612	0.2583
X04B	Other Interventions for Injuries to Lower Limb, Minor Complexity	YES		2.4	1	7	100%	0.5337			1.0755	0.2680
X05A	Other Interventions for Injuries to Hand, Major Complexity			2.9	1	9	107%				1.5148	0.3002
X05B	Other Interventions for Injuries to Hand, Minor Complexity			1.3	1	4	100%				0.6017	0.1999
X06A	Other Interventions for Other Injuries, Major Complexity			10.8	3	33	146%		0.7293	1.1404	4.1507	0.2286
X06B	Other Interventions for Other Injuries, Intermediate Complexity			3.6	1	11	100%				1.4542	0.2338
X06C	Other Interventions for Other Injuries, Minor Complexity			1.7	1	5	100%				0.7936	0.2773
X07A	Skin Grafts for Injuries Excluding Hand, Major Complexity			20.0	13	31	100%		0.8447	0.5512	8.0107	0.2973
X07B	Skin Grafts for Injuries Excluding Hand, Intermediate Complexity			8.7	2	27	100%		0.4663	1.3880	3.2422	0.2498
X07C	Skin Grafts for Injuries Excluding Hand, Minor Complexity			4.0	1	12	100%				1.6127	0.2607
X40A	Injuries, Poisoning and Toxic Effects of Drugs W Ventilator Support, Major Comp			5.0	1	16	100%				2.8776	0.3003
X40B	Injuries, Poisoning and Toxic Effects of Drugs W Ventilator Support, Minor Comp			2.4	1	7	100%				1.5652	0.3293
X60A	Injuries, Major Complexity	YES		4.2	1	13	100%	0.1764			1.0063	0.2111
X60B	Injuries, Minor Complexity			1.2	1	4	140%				0.2148	0.1604
X61A	Allergic Reactions, Major Complexity			1.7	1	5	111%				0.4267	0.2430
X61B	Allergic Reactions, Minor Complexity			1.0	1	3	86%				0.1299	0.0900
X62A	Poisoning/Toxic Effects of Drugs and Other Substances, Major Complexity	YES		4.1	1	12	146%	0.1721			1.1721	0.2555
X62B	Poisoning/Toxic Effects of Drugs and Other Substances, Minor Complexity			1.3	1	4	100%				0.2749	0.2010
X63A	Sequelae of Treatment, Major Complexity	YES		5.3	1	16	129%	0.2045			1.2696	0.2046
X63B	Sequelae of Treatment, Minor Complexity			1.8	1	5	109%				0.3714	0.1954
X64A	Other Injuries, Poisonings and Toxic Effects, Major Complexity			5.3	1	15	106%				1.2735	0.2254
X64B	Other Injuries, Poisonings and Toxic Effects, Intermediate Complexity			1.7	1	5	126%				0.3293	0.2301
X64C	Other Injuries, Poisonings and Toxic Effects, Minor Complexity			1.1	1	3	119%				0.1722	0.1280
Y01Z	Vent >= 96 hrs or Trach for Burns or GIs for Severe Full Thickness Burns			29.7	18	164	100%		2.1150	1.8574	35.5481	0.6656
Y02A	Skin Grafts for Other Burns, Major Complexity			19.1	5	53	126%		0.7047	1.7303	9.3560	0.4624
Y02B	Skin Grafts for Other Burns, Intermediate Complexity			7.6	2	23	109%		0.4567	1.8134	4.0834	0.3554
Y02C	Skin Grafts for Other Burns, Minor Complexity			3.0	1	9	106%				1.4665	0.4467
Y03A	Other GIs for Other Burns, Major Complexity			4.5	1	13	106%				1.7926	0.3550
Y03B	Other GIs for Other Burns, Minor Complexity			1.6	1	5	100%				0.7894	0.4170
Y60Z	Burns, Transferred to Acute Facility < 5 Days			1.3	1	4	100%				0.6109	0.3199
Y61Z	Severe Burns			4.1	1	10	152%				0.8803	0.2302
Y62A	Other Burns, Major Complexity	YES		5.2	1	14	124%	0.2002			1.5875	0.2892
Y62B	Other Burns, Minor Complexity	YES		2.4	1	7	168%	0.1539			0.6820	0.3013
Z01A	Other Contacts W Health Services W GIs, Major Complexity			6.7	2	22	124%		0.5269	1.2814	3.0898	0.2036
Z01B	Other Contacts W Health Services W GIs, Minor Complexity			1.2	1	4	121%				0.6890	0.2254
Z40Z	Other Contacts W Health Services W Endoscopy			1.0	1	3	179%				0.2918	0.1165
Z61A	Signs and Symptoms, Major Complexity	YES		6.0	1	18	128%	0.1546			1.3785	0.2188

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AR-DRG V10.0	Description	Same-Day Payment List	Bundled ICU	ALOS (days, excluding designated SD and unbundled ICU)	Inlier Bounds		Paediatric Adjustment	Price Weights			
					Lower Bound	Upper Bound		Short-Stay Outlier Base	Short-Stay Outlier Per Diem	Long-Stay Outlier Per Diem	
Z61B	Signs and Symptoms, Minor Complexity			1.6	1	5	106%			0.3037	0.2237
Z63A	Other Follow Up After Surgery or Medical Care, Major Complexity			8.2	2	25	100%	0.0000	0.9361	1.8722	0.1925
Z63B	Other Follow Up After Surgery or Medical Care, Minor Complexity			3.5	1	11	85%			0.6926	0.1669
Z64A	Other Factors Influencing Health Status, Major Complexity	YES		6.4	2	21	127%	0.2337	0.0000	0.8271	0.1972
Z64B	Other Factors Influencing Health Status, Minor Complexity	YES		3.0	1	10	124%	0.2081		0.6217	0.1890
Z65Z	Congenital Anomalies and Problems Arising from Neonatal Period			2.6	1	12	116%			0.6388	0.3177
Z66Z	Sleep Disorders			2.3	1	8	125%			0.3101	0.1633

Appendix I - Price weights for admitted subacute and non-acute patients - AN-SNAP V4.0

The admitted subacute and non-acute price weights are available as an Excel spreadsheet on the IHPA website.

Table 13: Admitted subacute and non-acute price weights - Australian National Subacute and Non-Acute Patient (AN-SNAP) Classification Version 4.0

AN-SNAP V4.0	Care Type	Episode Type	Description	Same-Day Class	ALOS (days)	Inlier bounds		Price Weights		
						Lower bound	Upper bound	Same day	Short-Stay Outlier Per Diem	Inlier	Long-Stay Outlier Per Diem
4AZ1	Rehabilitation	Admitted Adult Rehabilitation	Weighted FIM motor score 13-18, Brain, Spine, MMT, Age >= 49		52.1	34	72	0.4178	14.2059	0.2814
4AZ2	Rehabilitation	Admitted Adult Rehabilitation	Weighted FIM motor score 13-18, Brain, Spine, MMT, Age <= 48		73.7	44	87	0.4536	19.9577	0.3220
4AZ3	Rehabilitation	Admitted Adult Rehabilitation	Weighted FIM motor score 13-18, All other impairments, Age >= 65		26.7	19	42	0.3524	6.6959	0.2205
4AZ4	Rehabilitation	Admitted Adult Rehabilitation	Weighted FIM motor score 13-18, All other impairments, Age <= 64		40.9	27	61	0.3925	10.5964	0.2575
4AA1	Rehabilitation	Admitted Adult Rehabilitation	Stroke, weighted FIM motor 51-91, FIM cognition 29-35		13.1	8	20	0.3651	2.9207	0.2142
4AA2	Rehabilitation	Admitted Adult Rehabilitation	Stroke, weighted FIM motor 51-91, FIM cognition 19-28		16.6	11	26	0.3516	3.8677	0.2026
4AA3	Rehabilitation	Admitted Adult Rehabilitation	Stroke, weighted FIM motor 51-91, FIM cognition 5-18		21.7	14	34	0.3633	5.0864	0.2015
4AA4	Rehabilitation	Admitted Adult Rehabilitation	Stroke, weighted FIM motor 36-50, Age >= 68		23.0	15	35	0.3493	5.2391	0.2062
4AA5	Rehabilitation	Admitted Adult Rehabilitation	Stroke, weighted FIM motor 36-50, Age <= 67		31.0	19	44	0.3840	7.2961	0.2445
4AA6	Rehabilitation	Admitted Adult Rehabilitation	Stroke, weighted FIM motor 19-35, Age >= 68		32.1	22	49	0.3510	7.7215	0.2127
4AA7	Rehabilitation	Admitted Adult Rehabilitation	Stroke, weighted FIM motor 19-35, Age <= 67		45.4	31	65	0.3615	11.2060	0.2447
4AB1	Rehabilitation	Admitted Adult Rehabilitation	Brain dysfunction, weighted FIM motor 71-91, FIM cognition 26-35		11.4	7	17	0.3738	2.6165	0.2225
4AB2	Rehabilitation	Admitted Adult Rehabilitation	Brain dysfunction, weighted FIM motor 71-91, FIM cognition 5-25		21.7	13	31	0.4009	5.2118	0.2235
4AB3	Rehabilitation	Admitted Adult Rehabilitation	Brain dysfunction, weighted FIM motor 41-70, FIM cognition 26-35		15.8	11	26	0.3353	3.6687	0.2250
4AB4	Rehabilitation	Admitted Adult Rehabilitation	Brain dysfunction, weighted FIM motor 41-70, FIM cognition 17-25		19.2	12	29	0.3812	4.5743	0.2403
4AB5	Rehabilitation	Admitted Adult Rehabilitation	Brain dysfunction, weighted FIM motor 41-70, FIM cognition 5-16		31.2	21	49	0.3892	8.1722	0.2656
4AB6	Rehabilitation	Admitted Adult Rehabilitation	Brain dysfunction, weighted FIM motor 29-40		30.6	21	48	0.3495	7.3387	0.2489
4AB7	Rehabilitation	Admitted Adult Rehabilitation	Brain dysfunction, weighted FIM motor 19-28		42.0	26	60	0.3980	10.3484	0.2696
4AC1	Rehabilitation	Admitted Adult Rehabilitation	Neurological conditions, weighted FIM motor 62-91		13.6	9	21	0.3233	2.9097	0.2110
4AC2	Rehabilitation	Admitted Adult Rehabilitation	Neurological conditions, weighted FIM motor 43-61		18.5	12	29	0.3297	3.9570	0.1932
4AC3	Rehabilitation	Admitted Adult Rehabilitation	Neurological conditions, weighted FIM motor 19-42		27.1	17	41	0.3385	5.7549	0.1919
4AD1	Rehabilitation	Admitted Adult Rehabilitation	Spinal cord dysfunction, Age >= 50, weighted FIM motor 42-91		28.8	17	41	0.3770	6.4097	0.2712
4AD2	Rehabilitation	Admitted Adult Rehabilitation	Spinal cord dysfunction, Age >= 50, weighted FIM motor 19-41		45.7	32	69	0.3893	12.4581	0.2831
4AD3	Rehabilitation	Admitted Adult Rehabilitation	Spinal cord dysfunction, Age <= 49, weighted FIM motor 34-91		32.7	21	56	0.4645	9.7555	0.2817
4AD4	Rehabilitation	Admitted Adult Rehabilitation	Spinal cord dysfunction, Age <= 49, weighted FIM motor 19-33		56.6	41	82	0.4031	16.5276	0.2658
4AE1	Rehabilitation	Admitted Adult Rehabilitation	Amputation of limb, Age >= 54, weighted FIM motor 68-91		21.3	8	20	0.3691	2.9529	0.1491
4AE2	Rehabilitation	Admitted Adult Rehabilitation	Amputation of limb, Age >= 54, weighted FIM motor 31-67		22.7	15	36	0.3599	5.3978	0.2084
4AE3	Rehabilitation	Admitted Adult Rehabilitation	Amputation of limb, Age >= 54, weighted FIM motor 19-30		32.3	21	49	0.3393	7.1247	0.2020
4AE4	Rehabilitation	Admitted Adult Rehabilitation	Amputation of limb, Age <= 53, weighted FIM motor 19-91		25.5	15	36	0.3810	5.7145	0.2104
4AH1	Rehabilitation	Admitted Adult Rehabilitation	Orthopaedic conditions, fractures, weighted FIM motor 49-91, FIM cognition 33-35		13.7	9	21	0.3131	2.8178	0.1862
4AH2	Rehabilitation	Admitted Adult Rehabilitation	Orthopaedic conditions, fractures, weighted FIM motor 49-91, FIM cognition 5-32		15.8	10	24	0.3231	3.2315	0.1856
4AH3	Rehabilitation	Admitted Adult Rehabilitation	Orthopaedic conditions, fractures, weighted FIM motor 38-48		19.3	13	29	0.3123	4.0597	0.1850
4AH4	Rehabilitation	Admitted Adult Rehabilitation	Orthopaedic conditions, fractures, weighted FIM motor 19-37		21.9	14	33	0.3331	4.6638	0.1979
4A21	Rehabilitation	Admitted Adult Rehabilitation	Orthopaedic conditions, all other (including replacements), weighted FIM motor 68-91		8.8	7	14	0.2609	1.8262	0.1668
4A22	Rehabilitation	Admitted Adult Rehabilitation	Orthopaedic conditions, all other (including replacements), weighted FIM motor 50-67		11.7	7	18	0.3311	2.3180	0.1784
4A23	Rehabilitation	Admitted Adult Rehabilitation	Orthopaedic conditions, all other (including replacements), weighted FIM motor 19-49		17.4	11	26	0.3254	3.5792	0.1911

AN-SNAP V4.0	Care Type	Episode Type	Description	Same-Day Class	ALOS (days)	Inlier bounds		Price Weights			
						Lower bound	Upper bound	Same day	Short-Stay Outlier Per Diem	Inlier	Long-Stay Outlier Per Diem
4A31	Rehabilitation	Admitted Adult Rehabilitation	Cardiac, Pain syndromes, Pulmonary, weighted FIM motor 72-91		10.6	7	16		0.2916	2.0412	0.1887
4A32	Rehabilitation	Admitted Adult Rehabilitation	Cardiac, Pain syndromes, Pulmonary, weighted FIM motor 55-71		12.5	8	20		0.3013	2.4106	0.1793
4A33	Rehabilitation	Admitted Adult Rehabilitation	Cardiac, Pain syndromes, Pulmonary, weighted FIM motor 34-54		15.3	10	23		0.3062	3.0625	0.1855
4A34	Rehabilitation	Admitted Adult Rehabilitation	Cardiac, Pain syndromes, Pulmonary, weighted FIM motor 19-33		19.5	12	29		0.3332	3.9987	0.1890
4AP1	Rehabilitation	Admitted Adult Rehabilitation	Major Multiple Trauma, weighted FIM motor 19-91		25.8	17	39		0.4068	6.9152	0.2996
4AR1	Rehabilitation	Admitted Adult Rehabilitation	Reconditioning, weighted FIM motor 67-91		11.7	7	18		0.3280	2.2959	0.1850
4AR2	Rehabilitation	Admitted Adult Rehabilitation	Reconditioning, weighted FIM motor 50-66, FIM cognition 26-35		14.1	9	22		0.3340	3.0060	0.1940
4AR3	Rehabilitation	Admitted Adult Rehabilitation	Reconditioning, weighted FIM motor 50-66, FIM cognition 5-25		15.2	10	24		0.3228	3.2275	0.1907
4AR4	Rehabilitation	Admitted Adult Rehabilitation	Reconditioning, weighted FIM motor 34-49, FIM cognition 31-35		18.5	12	27		0.3421	4.1051	0.2053
4AR5	Rehabilitation	Admitted Adult Rehabilitation	Reconditioning, weighted FIM motor 34-49, FIM cognition 5-30		18.1	11	28		0.3524	3.8768	0.1942
4AR6	Rehabilitation	Admitted Adult Rehabilitation	Reconditioning, weighted FIM motor 19-33		22.6	14	33		0.3533	4.9461	0.2127
4A91	Rehabilitation	Admitted Adult Rehabilitation	All other impairments, weighted FIM motor 55-91		13.5	8	21		0.3543	2.8943	0.1861
4A92	Rehabilitation	Admitted Adult Rehabilitation	All other impairments, weighted FIM motor 33-54		16.8	11	27		0.3674	4.0414	0.2185
4A93	Rehabilitation	Admitted Adult Rehabilitation	All other impairments, weighted FIM motor 19-32		26.4	17	40		0.3960	6.7317	0.2424
4J01	Rehabilitation	Admitted Adult Rehabilitation	Adult Same-Day Rehabilitation	YES	1.0			0.1372			
4F01	Rehabilitation	Admitted Paediatric Rehabilitation	Rehabilitation, Age <= 3		18.6	14	33		0.8478	11.8697	0.5946
4F02	Rehabilitation	Admitted Paediatric Rehabilitation	Rehabilitation, Age >= 4, Spinal cord dysfunction		41.6	29	64		0.6719	19.4848	0.3265
4F03	Rehabilitation	Admitted Paediatric Rehabilitation	Rehabilitation, Age >= 4, Brain dysfunction		25.2	19	44		0.7189	13.6589	0.4044
4F04	Rehabilitation	Admitted Paediatric Rehabilitation	Rehabilitation, Age >= 4, Neurological conditions		14.9	10	24		0.6911	6.9109	0.4082
4F05	Rehabilitation	Admitted Paediatric Rehabilitation	Rehabilitation, Age >= 4, All other impairments		23.3	11	27		0.6874	7.5610	0.4202
4O01	Rehabilitation	Admitted Paediatric Rehabilitation	Paediatric Same-Day Rehabilitation	YES	1.0			0.5182			
4BS1	Palliative Care	Admitted Adult Palliative Care	Stable phase, RUG-ADL 4-5		6.5	4	10		0.4081	1.6326	0.2245
4BS2	Palliative Care	Admitted Adult Palliative Care	Stable phase, RUG-ADL 6-16		7.3	5	12		0.3853	1.9263	0.2287
4BS3	Palliative Care	Admitted Adult Palliative Care	Stable phase, RUG-ADL 17-18		7.4	5	12		0.3711	1.8557	0.2292
4BU1	Palliative Care	Admitted Adult Palliative Care	Unstable phase, First Phase in Episode, RUG-ADL 4-13		3.9	2	6		0.3873	0.7747	0.2490
4BU2	Palliative Care	Admitted Adult Palliative Care	Unstable phase, First Phase in Episode, RUG-ADL 14-18		3.0	1	5		0.4599	0.4599	0.2735
4BU3	Palliative Care	Admitted Adult Palliative Care	Unstable phase, Not first Phase in Episode, RUG-ADL 4-5		2.3	1	4		0.4589	0.4589	0.2484
4BU4	Palliative Care	Admitted Adult Palliative Care	Unstable phase, Not first Phase in Episode, RUG-ADL 6-18		2.4	1	4		0.4626	0.4626	0.2323
4BD1	Palliative Care	Admitted Adult Palliative Care	Deteriorating phase, RUG-ADL 4-14		6.1	3	9		0.4600	1.3800	0.2442
4BD2	Palliative Care	Admitted Adult Palliative Care	Deteriorating phase, RUG-ADL 15-18, Age >= 75		4.3	2	7		0.4589	0.9177	0.2381
4BD3	Palliative Care	Admitted Adult Palliative Care	Deteriorating phase, RUG-ADL 15-18, Age 55-74		4.6	2	7		0.4880	0.9760	0.2581
4BD4	Palliative Care	Admitted Adult Palliative Care	Deteriorating phase, RUG-ADL 15-18, Age <= 54		5.4	3	9		0.4512	1.3535	0.2475
4BT1	Palliative Care	Admitted Adult Palliative Care	Terminal phase		2.6	1	4		0.5465	0.5465	0.2713
4K01	Palliative Care	Admitted Adult Palliative Care	Adult Same-Day Palliative Care	YES	1.0			0.1517			
4G01	Palliative Care	Admitted Paediatric Palliative Care	Palliative Care, Not Terminal phase, Age < 1 year		12.2	5	14		0.7264	3.6318	0.4444
4G02	Palliative Care	Admitted Paediatric Palliative Care	Palliative Care, Stable phase, Age >= 1 year		5.6	4	10		0.6887	2.7547	0.4323
4G03	Palliative Care	Admitted Paediatric Palliative Care	Palliative Care, Unstable or Deteriorating phase, Age >= 1 year		6.5	4	11		0.7591	3.0365	0.4336
4G04	Palliative Care	Admitted Paediatric Palliative Care	Palliative Care, Terminal phase		5.5	3	9		0.7399	2.2198	0.4579
4P01	Palliative Care	Admitted Paediatric Palliative Care	Paediatric Same-Day Palliative Care	YES	1.0			0.4172			
4CH1	GEM	Admitted GEM	FIM motor 57-91 with Delirium or Dementia		18.0	11	27		0.3125	3.4374	0.1834
4CH2	GEM	Admitted GEM	FIM motor 57-91 without Delirium or Dementia		12.5	8	20		0.3014	2.4108	0.1520
4CM1	GEM	Admitted GEM	FIM motor 18-56 with Delirium or Dementia		20.5	13	31		0.3165	4.1148	0.1763
4CM2	GEM	Admitted GEM	FIM motor 18-56 without Delirium or Dementia		17.4	11	27		0.3084	3.3920	0.1631
4CL1	GEM	Admitted GEM	FIM motor 13-17 with Delirium or Dementia		22.5	14	33		0.3163	4.4277	0.1693

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AN-SNAP V4.0	Care Type	Episode Type	Description	Same-Day Class	ALOS (days)	Inlier bounds		Price Weights			
						Lower bound	Upper bound	Same day	Short-Stay Outlier Per Diem	Inlier	Long-Stay Outlier Per Diem
4CL2	GEM	Admitted GEM	FIM motor 13-17 without Delirium or Dementia		20.7	14	31		0.2943	4.1204	0.1687
4L01	GEM	Admitted GEM	Same-Day GEM	YES	1.0			0.1423			
4DS1	Psychogeriatric Care	Admitted Psychogeriatric	HoNOS 65+ Overactive behaviour 3-4, LOS <= 91		21.0	13	32		0.4111	5.3444	0.2589
4DS2	Psychogeriatric Care	Admitted Psychogeriatric	HoNOS 65+ Overactive behaviour 1-2, HoNOS 65+ ADL 4, LOS <= 91		25.1	22	51		0.4265	9.3837	0.3126
4DS3	Psychogeriatric Care	Admitted Psychogeriatric	HoNOS 65+ Overactive behaviour 1-2, HoNOS 65+ ADL 0-3, LOS <= 91		26.1	16	38		0.4730	7.5677	0.3035
4DS4	Psychogeriatric Care	Admitted Psychogeriatric	HoNOS 65+ Overactive behaviour 0, HoNOS 65+ total 18-48, LOS <= 91		25.4	15	36		0.4689	7.0328	0.2841
4DS5	Psychogeriatric Care	Admitted Psychogeriatric	HoNOS 65+ Overactive behaviour 0, HoNOS 65+ total 0-17, LOS <= 91		23.3	15	35		0.4767	7.1500	0.3066
4DL1	Psychogeriatric Care	Admitted Psychogeriatric	Long term care		149.2	119	200		0.3186	37.9120	0.2856
4M01	Psychogeriatric Care	Admitted Psychogeriatric	Same-Day Psychogeriatric Care	YES	1.0			0.1794			
4ES1	Maintenance	Admitted Non-Acute	Age >= 60, RUG-ADL 4-11, LOS <= 91		11.9	7	18		0.3396	2.3771	0.1977
4ES2	Maintenance	Admitted Non-Acute	Age >= 60, RUG-ADL 12-15, LOS <= 91		12.7	8	20		0.3267	2.6139	0.1864
4ES3	Maintenance	Admitted Non-Acute	Age >= 60, RUG-ADL 16-18, LOS <= 91		13.6	8	21		0.3478	2.7823	0.2018
4ES4	Maintenance	Admitted Non-Acute	Age 18-59, LOS <= 91		15.1	10	24		0.3968	3.9682	0.2264
4ES5	Maintenance	Admitted Non-Acute	Age <= 17, LOS <= 91		10.4	6	16		0.6324	3.7942	0.4075
4EL1	Maintenance	Admitted Non-Acute	Long term care		176.5	117	197		0.2886	31.4274	0.2088

Appendix J - Price weights for non-admitted patients - Tier 2 V7.0

The non-admitted price weights are available as an Excel spreadsheet on the IHPA website.

Table 14: Non-admitted price weights - Tier 2 Non-admitted Services Classification Version 7.0

Tier 2 Clinic V7.0	Description	Price Weight	Paediatric Adjustment
10.01	Hyperbaric medicine	0.0808	100%
10.02	Interventional imaging	0.4332	100%
10.03	Minor surgical	0.0700	100%
10.04	Dental	0.0632	91%
10.05	Angioplasty/angiography	0.2717	100%
10.06	Endoscopy – gastrointestinal	0.4248	81%
10.07	Endoscopy – urological/gynaecological	0.0616	93%
10.08	Endoscopy – orthopaedic	0.0427	100%
10.09	Endoscopy – respiratory/ear, nose and throat (ENT)	0.0417	100%
10.10	Renal dialysis – hospital delivered	0.0517	100%
10.11	Chemotherapy treatment	0.0758	200%
10.12	Radiation therapy – treatment	0.0705	100%
10.13	Minor medical procedures	0.0954	110%
10.14	Pain management interventions	0.1082	100%
10.15 ⁵	Renal dialysis – haemodialysis – home delivered	0.9267	100%
10.16 ⁵	Renal dialysis – peritoneal dialysis – home delivered	0.9550	100%
10.17 ⁵	Total parenteral nutrition – home delivered	2.1894	100%
10.18 ⁵	Enteral nutrition – home delivered	0.0629	100%
10.19	Ventilation – home delivered	Block funded	N/A
10.20	Radiation therapy – simulation and planning	0.1125	100%
10.21 ⁶	COVID-19 vaccination	Not priced	N/A
20.01	Transplants	0.0731	191%
20.02	Anaesthetics	0.0804	100%
20.03	Pain management	0.0874	141%
20.04	Developmental disabilities	0.0821	144%
20.05	General medicine	0.0547	89%
20.06	General practice and primary care	Out of scope	N/A
20.07	General surgery	0.0475	91%
20.08	Genetics	0.1717	112%
20.09	Geriatric medicine	0.0799	100%
20.10	Haematology	0.0604	100%
20.11	Paediatric medicine	0.0682	117%
20.12	Paediatric surgery	0.0423	144%
20.13	Palliative care	0.0701	164%
20.14	Epilepsy	0.0495	200%
20.15	Neurology	0.0605	136%
20.16	Neurosurgery	0.0668	110%
20.17	Ophthalmology	0.0369	110%
20.18	Ear, nose and throat (ENT)	0.0431	94%
20.19	Respiratory	0.0603	151%
20.20	Respiratory – cystic fibrosis	0.1442	100%
20.21	Anti-coagulant Screening and Management	0.0377	100%
20.22	Cardiology	0.0554	131%
20.23	Cardiothoracic	0.0787	162%
20.24	Vascular surgery	0.0577	166%
20.25	Gastroenterology	0.0721	110%
20.26	Hepatobiliary	0.0922	100%
20.27	Craniofacial	0.0453	110%
20.28	Metabolic bone	0.0549	175%
20.29	Orthopaedics	0.0413	119%
20.30	Rheumatology	0.0580	133%
20.31	Spinal	0.0778	171%
20.32	Breast	0.0746	100%
20.33	Dermatology	0.0403	127%
20.34	Endocrinology	0.0507	150%
20.35	Nephrology	0.0638	142%
20.36	Urology	0.0505	89%
20.37	Assisted reproductive technology	0.0789	100%
20.38	Gynaecology	0.0534	123%
20.39	Gynaecological oncology	0.0826	100%
20.40	Obstetrics – management of pregnancy without complications	0.0414	164%
20.41	Immunology	0.0642	95%
20.42	Medical oncology – consultation	0.0677	158%
20.43	Radiation therapy – consultation	0.0576	100%
20.44	Infectious diseases	0.0903	80%
20.45	Psychiatry	0.0588	105%
20.46	Plastic and reconstructive surgery	0.0392	111%

Tier 2 Clinic V7.0	Description	Price Weight	Paediatric Adjustment
20.47	Rehabilitation	0.0415	100%
20.48	Multidisciplinary burns clinic	0.0594	100%
20.49	Geriatric evaluation and management (GEM)	0.0864	127%
20.50	Psychogeriatric	0.0581	100%
20.51	Sleep disorders	0.0715	122%
20.52	Addiction medicine	0.0382	200%
20.53	Obstetrics – management of complex pregnancy	0.0446	100%
20.54	Maternal fetal medicine	0.0585	88%
20.55	Telehealth – patient location	0.0181	100%
20.56	Multidisciplinary case conference - patient not present	0.0360	186%
20.57 ⁷	COVID-19 response	0.0903	80%
30.01 ⁸	General imaging	Not priced	N/A
30.02 ⁸	Magnetic resonance imaging (MRI)	Not priced	N/A
30.03 ⁸	Computerised tomography (CT)	Not priced	N/A
30.04 ⁸	Nuclear medicine	Not priced	N/A
30.05 ⁸	Pathology (microbiology, haematology, biochemistry)	Not priced	N/A
30.06 ⁸	Positron emission tomography (PET)	Not priced	N/A
30.07 ⁸	Mammography screening	Not priced	N/A
30.08 ⁸	Clinical measurement	Not priced	N/A
30.09 ⁸	COVID-19 response diagnostics	Not priced	N/A
40.02	Aged care assessment	Out of scope	N/A
40.03	Aids and appliances	0.0421	80%
40.04	Clinical pharmacy	0.0369	200%
40.05	Hydrotherapy	0.0344	100%
40.06	Occupational therapy	0.0341	128%
40.07	Pre-admission and pre-anaesthesia	0.0446	106%
40.08	Primary health care	Out of scope	N/A
40.09	Physiotherapy	0.0259	132%
40.10	Sexual health	0.0281	100%
40.11	Social work	0.0447	113%
40.12	Rehabilitation	0.0425	171%
40.13	Wound management	0.0351	85%
40.14	Neuropsychology	0.1036	135%
40.15	Optometry	0.0266	154%
40.16	Orthoptics	0.0274	80%
40.17	Audiology	0.0436	110%
40.18	Speech pathology	0.0423	143%
40.21	Cardiac rehabilitation	0.0396	143%
40.22	Stomal therapy	0.0481	85%
40.23	Nutrition/dietetics	0.0323	100%
40.24	Orthotics	0.0725	80%
40.25	Podiatry	0.0362	91%
40.27	Family planning	Out of scope	N/A
40.28	Midwifery and maternity	0.0339	100%
40.29	Psychology	0.0517	108%
40.30	Alcohol and other drugs	0.0275	100%
40.31	Burns	0.0346	93%
40.32	Continence	0.0348	110%
40.33	General counselling	Out of scope	N/A
40.34	Specialist mental health	Block funded	N/A
40.35	Palliative care	0.0430	119%
40.36	Geriatric evaluation and management (GEM)	0.0464	100%
40.37	Psychogeriatric	0.0166	100%
40.38	Infectious diseases	0.0506	87%
40.39	Neurology	0.0490	100%
40.40	Respiratory	0.0428	154%
40.41	Gastroenterology	0.0397	100%
40.42	Circulatory	0.0532	110%
40.43	Hepatobiliary	0.0927	91%
40.44	Orthopaedics	0.0293	148%
40.45	Dermatology	0.0409	80%
40.46	Endocrinology	0.0368	106%
40.47	Nephrology	0.0562	100%
40.48	Haematology and immunology	0.0622	80%
40.49	Gynaecology	0.0455	100%
40.50	Urology	0.0493	87%
40.51	Breast	0.0406	100%
40.52	Oncology	0.0403	187%
40.53	General medicine	0.0437	114%
40.54	General surgery	0.0326	100%
40.55	Paediatrics	0.0439	80%
40.56	Falls prevention	0.0368	100%
40.57	Cognition and memory	0.0544	100%

Tier 2 Clinic V7.0	Description	Price Weight	Paediatric Adjustment
40.58	Hospital avoidance programs	0.0469	110%
40.59	Post-acute care	0.0354	117%
40.60	Pulmonary rehabilitation	0.0359	200%
40.61	Telehealth – patient location	0.0086	100%
40.62 ⁹	Multidisciplinary case conference - patient not present	Not priced	N/A
40.63 ⁷	COVID-19 response	0.0506	87%
40.64	Chronic pain management	0.0595	100%

⁵ The price weight for clinics 10.15, 10.16, 10.17, and 10.18 are priced on a per calendar month basis - see the national efficient price and national efficient cost online glossary for further information.

⁶ COVID-19 vaccination is not priced by IHPA but funded under a separate agreement between the Commonwealth and the states and territories.

⁷ The price weights of COVID-19 response clinics are pegged to those of Infectious disease clinics pending the availability of further data.

⁸ These services are not priced as they are bundled to the originating service.

⁹ This service is shadow priced for the NEP21 Determination. The shadow price weight and paediatric adjustment for this service are available on IHPA's website.

Appendix K - Price weights for emergency department patients - AECC V1.0

The emergency department price weights are available as an Excel spreadsheet on the IHPA website.

Table 15: Emergency department price weights - AECC Version 1.0

AECC v1.0	Description	Price Weight
E0001Z	Not attended by a healthcare professional	0.0359
E0002Z	Planned return visit	0.0809
E0003Z	Dead on arrival	0.0535
E0110A	Dementia and other chronic brain syndromes Complexity level A	0.2404
E0110B	Dementia and other chronic brain syndromes Complexity level B	0.1851
E0120A	Delirium Complexity level A	0.3023
E0120B	Delirium Complexity level B	0.2283
E0130A	Stroke and other cerebrovascular disorders Complexity level A	0.3666
E0130B	Stroke and other cerebrovascular disorders Complexity level B	0.2651
E0140Z	TIA and precerebral occlusion	0.2481
E0150A	Seizures Complexity level A	0.3280
E0150B	Seizures Complexity level B	0.1785
E0150C	Seizures Complexity level C	0.1237
E0160A	Convulsions Complexity level A	0.2415
E0160B	Convulsions Complexity level B	0.1487
E0170A	Headaches Complexity level A	0.1776
E0170B	Headaches Complexity level B	0.1129
E0190A	Nervous system and neurological disorders Complexity level A	0.2601
E0190B	Nervous system and neurological disorders Complexity level B	0.2039
E0190C	Nervous system and neurological disorders Complexity level C	0.1046
E0290A	Eye disorders Complexity level A	0.1547
E0290B	Eye disorders Complexity level B	0.0872
E0290C	Eye disorders Complexity level C	0.0633
E0310A	Ear, nose, mouth and throat disorders Complexity level A	0.1443
E0310B	Ear, nose, mouth and throat disorders Complexity level B	0.0980
E0310C	Ear, nose, mouth and throat disorders Complexity level C	0.0669
E0320A	Disorders of the teeth and supporting structures Complexity level A	0.1640
E0320B	Disorders of the teeth and supporting structures Complexity level B	0.1061
E0320C	Disorders of the teeth and supporting structures Complexity level C	0.0704
E0410A	Major respiratory conditions Complexity level A	0.3158
E0410B	Major respiratory conditions Complexity level B	0.2569
E0410C	Major respiratory conditions Complexity level C	0.2066
E0420A	Chronic obstructive airways disease Complexity level A	0.2831
E0420B	Chronic obstructive airways disease Complexity level B	0.2173
E0420C	Chronic obstructive airways disease Complexity level C	0.1392
E0430A	Asthma Complexity level A	0.2494
E0430B	Asthma Complexity level B	0.1537
E0430C	Asthma Complexity level C	0.0971
E0440A	Upper respiratory tract infections Complexity level A	0.1515
E0440B	Upper respiratory tract infections Complexity level B	0.0876
E0450A	Lower respiratory tract infections Complexity level A	0.2460
E0450B	Lower respiratory tract infections Complexity level B	0.1772
E0450C	Lower respiratory tract infections Complexity level C	0.1029
E0490A	Respiratory disorders, other Complexity level A	0.2554
E0490B	Respiratory disorders, other Complexity level B	0.2060
E0490C	Respiratory disorders, other Complexity level C	0.1492
E0490D	Respiratory disorders, other Complexity level D	0.0889
E0510Z	Acute coronary syndromes	0.2174
E0520A	Arrhythmia and cardiac arrest Complexity level A	0.2254
E0520B	Arrhythmia and cardiac arrest Complexity level B	0.1588
E0530A	Heart failure and shock Complexity level A	0.2504
E0530B	Heart failure and shock Complexity level B	0.2088
E0540A	Chest pain Complexity level A	0.1951
E0540B	Chest pain Complexity level B	0.1668
E0540C	Chest pain Complexity level C	0.1170
E0590A	Circulatory disorders, other Complexity level A	0.2750
E0590B	Circulatory disorders, other Complexity level B	0.1770
E0590C	Circulatory disorders, other Complexity level C	0.1109
E0610A	Gastrointestinal haemorrhage Complexity level A	0.2486
E0610B	Gastrointestinal haemorrhage Complexity level B	0.1702
E0620Z	Gastrointestinal obstruction	0.2525
E0630A	Peritonitis and gastrointestinal perforation Complexity level A	0.2298
E0630B	Peritonitis and gastrointestinal perforation Complexity level B	0.1764
E0640A	Oesophagitis and gastroenteritis Complexity level A	0.1821

AECC v1.0	Description	Price Weight
E0640B	Oesophagitis and gastroenteritis Complexity level B	0.1307
E0640C	Oesophagitis and gastroenteritis Complexity level C	0.0952
E0650A	Abdominal pain Complexity level A	0.2006
E0650B	Abdominal pain Complexity level B	0.1490
E0650C	Abdominal pain Complexity level C	0.1047
E0690A	Digestive system disorders, other Complexity level A	0.2211
E0690B	Digestive system disorders, other Complexity level B	0.1835
E0690C	Digestive system disorders, other Complexity level C	0.1397
E0690D	Digestive system disorders, other Complexity level D	0.0944
E0710A	Liver disorders Complexity level A	0.2543
E0710B	Liver disorders Complexity level B	0.1660
E0720A	Gall bladder, bile duct and pancreas disorders Complexity level A	0.2335
E0720B	Gall bladder, bile duct and pancreas disorders Complexity level B	0.1906
E0720C	Gall bladder, bile duct and pancreas disorders Complexity level C	0.1333
E0890A	Musculoskeletal and musculetendinous disorders Complexity level A	0.1914
E0890B	Musculoskeletal and musculetendinous disorders Complexity level B	0.1550
E0890C	Musculoskeletal and musculetendinous disorders Complexity level C	0.1249
E0890D	Musculoskeletal and musculetendinous disorders Complexity level D	0.0863
E0910A	Skin and subcutaneous tissue infections Complexity level A	0.1820
E0910B	Skin and subcutaneous tissue infections Complexity level B	0.1260
E0910C	Skin and subcutaneous tissue infections Complexity level C	0.0831
E0990A	Skin disorders, other Complexity level A	0.1592
E0990B	Skin disorders, other Complexity level B	0.1085
E0990C	Skin disorders, other Complexity level C	0.0745
E1010A	Diabetes Complexity level A	0.2589
E1010B	Diabetes Complexity level B	0.2232
E1010C	Diabetes Complexity level C	0.1398
E1090A	Metabolic and nutritional disorders, other Complexity level A	0.2274
E1090B	Metabolic and nutritional disorders, other Complexity level B	0.1788
E1090C	Metabolic and nutritional disorders, other Complexity level C	0.1327
E1110A	Kidney failure Complexity level A	0.2660
E1110B	Kidney failure Complexity level B	0.2341
E1110C	Kidney failure Complexity level C	0.1843
E1120A	Urinary stones and obstruction Complexity level A	0.1947
E1120B	Urinary stones and obstruction Complexity level B	0.1580
E1130A	Kidney and urinary tract infections Complexity level A	0.2123
E1130B	Kidney and urinary tract infections Complexity level B	0.1442
E1130C	Kidney and urinary tract infections Complexity level C	0.0895
E1190A	Kidney and urinary tract disorders, other Complexity level A	0.1832
E1190B	Kidney and urinary tract disorders, other Complexity level B	0.1238
E1290A	Male genitourinary disorders Complexity level A	0.1546
E1290B	Male genitourinary disorders Complexity level B	0.1067
E1390A	Gynaecological disorders Complexity level A	0.1688
E1390B	Gynaecological disorders Complexity level B	0.1111
E1410A	Postpartum and post abortion conditions Complexity level A	0.1670
E1410B	Postpartum and post abortion conditions Complexity level B	0.1011
E1420A	Antenatal and other obstetric conditions Complexity level A	0.1268
E1420B	Antenatal and other obstetric conditions Complexity level B	0.0781
E1590Z	Perinatal disorder	0.1286
E1610A	Immune system disorders Complexity level A	0.2491
E1610B	Immune system disorders Complexity level B	0.1288
E1620Z	Red blood cell disorders	0.1981
E1630A	Haemostasis disorders Complexity level A	0.2076
E1630B	Haemostasis disorders Complexity level B	0.1255
E1790A	Neoplasms Complexity level A	0.2688
E1790B	Neoplasms Complexity level B	0.2120
E1790C	Neoplasms Complexity level C	0.1026
E1810Z	Septicaemia	0.2861
E1820A	Viral illnesses Complexity level A	0.1799
E1820B	Viral illnesses Complexity level B	0.1398
E1820C	Viral illnesses Complexity level C	0.0852
E1830A	Fever of unknown origin Complexity level A	0.2667
E1830B	Fever of unknown origin Complexity level B	0.1941
E1830C	Fever of unknown origin Complexity level C	0.1140
E1890A	Infectious and parasitic diseases, other Complexity level A	0.2149
E1890B	Infectious and parasitic diseases, other Complexity level B	0.0926
E1910A	Alcohol and drug related mental and behavioural disorders Complexity level A	0.2413
E1910B	Alcohol and drug related mental and behavioural disorders Complexity level B	0.1711
E1910C	Alcohol and drug related mental and behavioural disorders Complexity level C	0.1231
E1920A	Psychoses Complexity level A	0.3343

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AECC v1.0	Description	Price Weight
E1920B	Psychoses Complexity level B	0.2619
E1920C	Psychoses Complexity level C	0.1604
E1990A	Mental, behavioural and neurodevelopment disorders, other Complexity level A	0.2316
E1990B	Mental, behavioural and neurodevelopment disorders, other Complexity level B	0.1632
E1990C	Mental, behavioural and neurodevelopment disorders, other Complexity level C	0.1128
E2010A	Head, intracranial, spine, internal organ and other complex injuries Complexity level A	0.4195
E2010B	Head, intracranial, spine, internal organ and other complex injuries Complexity level B	0.3263
E2010C	Head, intracranial, spine, internal organ and other complex injuries Complexity level C	0.1829
E2010D	Head, intracranial, spine, internal organ and other complex injuries Complexity level D	0.0915
E2020A	Pelvic and femoral fractures Complexity level A	0.2859
E2020B	Pelvic and femoral fractures Complexity level B	0.2201
E2025A	Fractures, dislocations and ligament injuries Complexity level A	0.2606
E2025B	Fractures, dislocations and ligament injuries Complexity level B	0.1436
E2025C	Fractures, dislocations and ligament injuries Complexity level C	0.0845
E2030A	Injuries, other Complexity level A	0.2434
E2030B	Injuries, other Complexity level B	0.1634
E2030C	Injuries, other Complexity level C	0.1128
E2030D	Injuries, other Complexity level D	0.0754
E2040A	Finger, toe and superficial injuries Complexity level A	0.2418
E2040B	Finger, toe and superficial injuries Complexity level B	0.1415
E2040C	Finger, toe and superficial injuries Complexity level C	0.0801
E2050A	Burns Complexity level A	0.2875
E2050B	Burns Complexity level B	0.1545
E2050C	Burns Complexity level C	0.0852
E2060A	Poisoning Complexity level A	0.2750
E2060B	Poisoning Complexity level B	0.1876
E2060C	Poisoning Complexity level C	0.1022
E2070A	Allergic reactions Complexity level A	0.1457
E2070B	Allergic reactions Complexity level B	0.0884
E2080A	Complications of surgical and medical care Complexity level A	0.1718
E2080B	Complications of surgical and medical care Complexity level B	0.0957
E5010A	Pain syndrome Complexity level A	0.1665
E5010B	Pain syndrome Complexity level B	0.0895
E5090A	Symptoms, other Complexity level A	0.2256
E5090B	Symptoms, other Complexity level B	0.1742
E5090C	Symptoms, other Complexity level C	0.0976
E6010A	Forensic examination Complexity level A	0.2316
E6010B	Forensic examination Complexity level B	0.1394
E6010C	Forensic examination Complexity level C	0.0633
E6020A	Abuse and neglect Complexity level A	0.2385
E6020B	Abuse and neglect Complexity level B	0.1343
E6090A	Other factors influencing health status Complexity level A	0.1575
E6090B	Other factors influencing health status Complexity level B	0.0665

Appendix L - Price weights for emergency service patients - UDG V1.3

The emergency service price weights are available as an Excel spreadsheet on the IHPA website.

Table 16: Emergency service price weights - Urgency Disposition Groups (UDG) Classification Version 1.3

UDG V1.3	Description	Price Weight
1	Adm_T1	0.3544
2	Adm_T2	0.2372
3	Adm_T3	0.1926
4	Adm_T4	0.1512
5	Adm_T5	0.1100
6	N-A_T1	0.3481
7	N-A_T2	0.1794
8	N-A_T3	0.1273
9	N-A_T4	0.0875
10	N-A_T5	0.0641
11	Did Not Wait	0.0352
12	Dead on Arrival w any Triage w any MDB	0.0524
13	Transfer presentation	0.2856
14	Died in emergency department	0.3052
15	Adm_Return visit, planned w any Triage	0.1337
16	N-A Return visit, planned – Triage 1, 2, 3	0.1150
17	N-A Return visit, planned – Triage 4,5	0.0686

Appendix M - Funding adjustments for hospital acquired complications

The adjustments for hospital acquired complications (HACs) are available as an Excel spreadsheet on the IHPA website.

Table 17: Funding adjustments for HACs

Complication	Complexity Group		
	Low	Moderate	High
1. Pressure injury	9.8%	1.2%	0.9%
2. Falls resulting in fracture or intracranial injury	3.7%	2.2%	1.1%
3. Healthcare-associated infection	7.4%	2.1%	1.7%
4. Surgical complications requiring unplanned return to theatre	10.3%	6.1%	4.9%
5. Unplanned intensive care unit admission ¹⁰	Nil	Nil	Nil
6. Respiratory complications	12.0%	7.3%	3.3%
7. Venous thromboembolism	8.5%	6.3%	4.6%
8. Renal failure	15.9%	4.2%	3.3%
9. Gastrointestinal bleeding	7.9%	6.7%	5.3%
10. Medication complications	8.3%	3.2%	0.9%
11. Delirium	8.5%	6.0%	4.4%
12. Incontinence	5.1%	3.9%	3.0%
13. Endocrine complications	7.4%	6.6%	5.2%
14. Cardiac complications	10.2%	7.7%	5.2%
15.1. Third degree perineal laceration during delivery ¹⁰	Nil	Nil	Nil
15.2. Fourth degree perineal laceration during delivery	31.6%	25.0%	25.0%
16. Neonatal birth trauma ¹⁰	Nil	Nil	Nil

¹⁰ No funding adjustment for 'Unplanned intensive care unit admission' (5), 'Third degree perineal laceration during delivery' (15.1) or 'Neonatal birth trauma' (16) will be applied in 2021–22 due to small patient cohorts or other issues which have prevented development of a robust risk adjustment approach at this time.

Appendix N - Risk adjustment factors for avoidable hospital readmissions

If an admitted acute patient experiences an avoidable hospital readmission in the same jurisdiction as their initial admission (index episode) then the efficient price of the index episode is reduced. The magnitude of the reduction is the product of the efficient price of the readmission episode and a risk adjustment factor.

To calculate the risk adjustment factor each patient is assigned to a 'Low', 'Moderate' or 'High' complexity group based on the presence of a prescribed set of risk factors for their readmission category. The risk adjustment factor for each complexity group and readmission category is shown in Table 18.

The risk adjustment factors for avoidable hospital readmissions by complexity group, as well as the list of risk factors for each readmission category, are available as Excel spreadsheets on the IHPA website.

Table 18: Risk adjustment factors for avoidable hospital readmissions within the same jurisdiction

Readmission Category	Complexity Group		
	Low	Moderate	High
1. Pressure injury	100%	44.0%	28.2%
2. Infections	100%	59.5%	50.0%
3. Surgical complications	100%	26.6%	25.5%
4. Respiratory complications	100%	51.9%	44.1%
5. Venous thromboembolism	100%	71.1%	65.6%
6. Renal failure	100%	48.0%	40.5%
7. Gastrointestinal bleeding	100%	37.3%	24.7%
8. Medication complications	100%	34.9%	26.1%
9. Delirium	100%	43.2%	37.2%
10. Cardiac complications	100%	48.2%	43.0%
11. Constipation	100%	45.5%	35.3%
12. Nausea and vomiting	100%	61.9%	45.9%

Independent Hospital Pricing Authority

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IHPA

COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

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Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-42

This is the Annexure marked "DD-42" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

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Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.



Private Health Insurance – expanding home and community based mental health and rehabilitation care

This Budget will make home and community-based care for rehabilitation services more accessible through private health insurance (PHI). Home and community care will be expanded, allowing patients to recover and rehabilitate in their own homes – if that is their preference and is clinically appropriate – with the support of their doctor.

A rehabilitation plan will be developed by an appropriate doctor, which explicitly considers home and community care options, in consultation with the patient.

This measure will also expand insurer options for funding of non-MBS mental health care services from general treatment and hospital treatment policies.

Why is this important?

Most patients prefer to recover and rehabilitate in their comfort of their own homes, if it is safe to do so. This is often a more cost-effective option than in-hospital care. Expanding community care will allow patients to recover at home and increase capacity in hospitals.

Consultations with the sector aim to ensure consumers with PHI can have access to greater range of mental health and rehabilitation services.

Who will benefit?

Australians with PHI will benefit from being able to recover – supported – in their own homes.

For mental health services, consumers will have access to a wider range of non-MBS and non-hospital services, including early intervention services.

How much will this cost?

The Department of Health will commence detailed consultation with the sector on these initiatives, with the goal of implementing these reforms from 1 April 2021.

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ANNEXURE CERTIFICATE

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Media Release

The Hon Martin Foley MP

Minister for Health
Minister for Ambulance Services
Minister for Equality



Saturday, 14 November 2020

BETTER AT HOME – MORE SUPPORT TO RECOVER AT HOME

The Andrews Labor Government will give more patients the opportunity to recover from illness or surgery at home in the comfort and familiarity of family and friends, as part of the new Better at Home initiative.

The Victorian Budget 2020/21 will spend \$120.9 million over three years on the program to meet growing demand for healthcare through increased delivery of hospital services in patients' homes.

This investment will include \$102.6 million to provide a range of different types of care at home, including clinic appointments, chemotherapy, post-surgical care and rehabilitation – making a real difference to people's lives.

Virtual care technology will be boosted through a \$12.5 million investment to sustain the high rates of telehealth we have achieved during the pandemic, and support the development of innovative new models of 21st century care.

A further \$5.8 million will help health services to engage the clinical workforce in this transformation of care in Victoria, through training, support, and clinical redesign which will provide more options to receive care at home.

Through Better at Home, up to 50,000 chemotherapy appointments could be delivered in living rooms across Victoria, or 50,000 days Victorians previously spent in hospital recovering or undertaking rehabilitation can be done from the comfort of home – freeing up around 160 hospital beds.

The initiative will also improve quality of care, enabling patients to choose to recover in a familiar environment, rather than in hospital if they prefer.

Clinical evidence shows patients achieve better outcomes at home, where they avoid the physical deterioration, sleep disruption and social isolation associated with hospital stays.

The growth of telehealth during the coronavirus pandemic will also benefit from the Better at Home initiative, with more consultations able to be done with recovering patients through electronic channels.

Through the initiative funding will be available for health services to design and implement shared service models for home-based and virtual care, enabling them to upscale and specialise quickly.

Quotes attributable to Minister for Health Martin Foley

"The coronavirus pandemic has been extremely hard on Victorians, but we've also seen it inspire some innovative, more effective ways of caring for people – we want to ensure these programs remain available to Victorians."

"Expanding the Better at Home program will mean many patients, particularly in regional Victoria will have better outcomes because they can recover or do their rehab in the comfort and familiar surroundings of their own home"

"Through this initiative Hospitals and health services will be equipped with even more telehealth facilities, allowing patients to receive the very best care from the comfort of their home and without having to travel."

Tuesday, 3 May 2022

DELIVERING WORLD CLASS CARE FOR VICTORIANS AT HOME

Thousands more Victorians will now get access to our best clinicians, allied health professionals and nurses from the comfort of their own homes thanks to a massive funding boost in the *Victorian Budget 2022/23*.

Premier Daniel Andrews and Minister for Health Martin Foley today joined some of Victoria's best nurses to announce a \$698 million package to expand the *Better at Home* program.

We saw how much difference it made to thousands of Victorians who were able to get treatment and support at home during the pandemic - that's why the program is going to become a permanent option for patients under the Andrews Labor Government.

The investment will expand the program to help more than 15,000 Victorians access home-based care each year, in addition to telehealth check-ups.

It allows Victorians to access experienced nurses, clinicians and allied health professionals at home, surrounded by their loved ones as part of a more convenient and tailored experience.

The package will extend the *Hospital in the Home* beds that were established throughout the pandemic, increasing capacity to 358 virtual beds - providing ongoing care at home for Victorians so they don't need to go to hospital for treatment.

This investment is the equivalent of running a major hospital like Footscray Hospital and will enable health services to perform more elective surgeries and reduce how long patients stay in hospital.

A further \$3.6 million will also be invested to continue the delivery of the *Transitional Care Program* – a program which helps patients with a disability safely transition out of a hospital bed and into community-based accommodation while they are awaiting their NDIS package to be approved.

Around \$2.1 million will be invested in a pilot Aboriginal virtual specialist clinic, giving Aboriginal Victorians access to culturally appropriate health care and clinicians in rural and regional areas.

Quotes attributable to Premier Daniel Andrews

"Ensuring more Victorians can access Better at Home not only means better outcomes and more comfortable health care for Victorians but it'll help take the pressure of our hardworking frontline nurses, paramedics and doctors."

"I know from my own experience just how helpful getting care at home can be. It makes treatment and recovery so much easier when you're able to get personalised care brought directly to you."

Quotes attributable to Minister for Health Martin Foley

"The pandemic has been extremely hard, but we've also seen it inspire some better ways of caring for people, including Better at Home – which is why embedding it in our health system so more Victorians can use it is so important."

"These initiatives will ensure the best care for Victorians from the comfort of their own home and will mean our hospitals can take care of more elective surgery patients and treat our sickest patients faster."

COMMONWEALTH OF AUSTRALIA

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Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-44

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Before me:

AR

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Signature of witness

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An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

"I had no idea what I was in for with this operation, having not been in hospital for over 20 years. The Clinical Partners program was marvellous and made me feel very confident going into the procedure. I could not thank you enough for the support"

"Thanks HH and the girls in the clinical partners team for arranging everything for me when I was in hospital. Big thank you for the physiotherapist from Ethos, they were absolutely marvellous. I don't want to have any future surgeries, but if I do I will definitely be coming back to you girls. Appreciative of the phone calls that were made whilst I was in hospital, everything couldn't have worked out better. When Ethos went to my home, he was so kind and really gave me clear expectations of my recovery and his assistance was so helpful. I really couldn't ask for anything more."

"Lovely to talk with you too Billi and wonderful to know I have support people walking (pardon the pun!) this journey beside me."

"Thank you Billi so much for going through everything today with me and for your professionalism with what you do"

"I can't speak more highly of the care I have been given for my procedure. I have not been in hospital in 41 years and as a wife of a husband that has had health issues I am not used to being looked after. Everyone has been so wonderful. The last time I was in hospital I almost died so going into hospital brings back lots of bad memories, I know it will be okay this time because everyone is looking after me."

"I do not think I would be this far ahead without the Clinical Partners or the CSP programs. I have absolutely loved having my physio at home, who has been so encouraging. The clinical partners program is the way to go. The home physio has been very honest and let me know I was behind in my rehab, which is what I needed to hear. Suffering from social anxiety, and hating big crowds, meant that staying in hospital for 2 weeks was not an option for me. I wanted to return to my home (retirement village), where I feel I have recovered better than I ever would in hospital."

'I'm really pleased to have you by my side for my upcoming surgery. Thank you!'

'I have been an nib member for 48 years, and am so thankful for Aalia's call to check in and see how I was going 2 days after surgery. With the care and kindness shown to throughout her surgery and recovery, why would I ever go to another fund.'

'I was so worried that my husband had to have an anaesthetic, worried about costs, and concerned about his recovery. I am so relieved to know there would not be any out-of-pocket charges (other

than his hospital excess) and thrilled to know that you would be calling me again to support me and my husband.'

'It is very much appreciated and reassuring to know you are available if and when I have questions (am sure I will have a few in the coming weeks!).'

'Hey Aalia, just wanted to thank you once again for your call today. The information you provided and depth of support that is in place makes me feel very much encouraged about a positive outcome.'

'I was so anxious going into the procedure the support I was provided put me at ease. I appreciated being contacted along the way and not having any out of pocket charges, such a huge relief for me and his wife.'

I am very thankful to have been referred to CP.'

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ANNEXURE CERTIFICATE

DD-45

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Before me:

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Signature of witness

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The Fourth Australian Atlas of Healthcare Variation

2021



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Foreword

In Australia, we are fortunate to have one of the best healthcare systems in the world. The response to the COVID-19 pandemic has highlighted the dedication and expertise of our health workers, along with leadership and cooperation among our institutions and governing bodies.

Although the pandemic has dominated the health news and placed extra demands on the system, the longstanding challenges we face in health have not gone away. It is more important than ever to be strategic about our approach to the issues raised in this *Fourth Australian Atlas of Healthcare Variation*.

We must focus our resources on those with clinical need, and investigate variation to identify and minimise low-value care. Where we see high rates of preventable hospitalisations, clearly we must do better. In many cases, such as heart failure and chronic obstructive pulmonary disease, there is good evidence about what works to improve the care for people with these conditions. It is time to implement evidence-based care.

I thank our partner in producing this Atlas, the Australian Institute of Health and Welfare. I also thank the many individuals and institutions that have provided invaluable feedback on the data and commentaries: state, territory and Commonwealth health departments; policy makers; clinicians; clinical colleges and societies; and consumer representative organisations.

The healthcare variation data in the Atlas series help us to see patterns that we can't see from our localised perspectives and alerts us to problem areas. Please make use of the wealth of information in this Atlas to improve healthcare delivery.



**Professor Villis Marshall ac
Chair**

Australian Commission on Safety
and Quality in Health Care

28 April 2021



Overview

The *Australian Atlas of Healthcare Variation* series explores the extent to which use of health care in Australia varies depending on where people live, how their care is funded and their level of socioeconomic disadvantage. Where possible, it looks at how use of health care by Aboriginal and Torres Strait Islander people compares with use by other Australians; how health care use in urban regions compares to rural and remote regions of Australia; and how health care use for private hospital procedures compares to health care use for public hospital procedures. It uses maps and graphs of variations in care, derived from information routinely gathered by the health system, to show how use of health care differs according to these factors.

The aim is to prompt further investigation into whether the observed variation reflects a response to differences in people's healthcare needs or in the informed choices they make about their treatment options. Variation for these reasons is desirable and a hallmark of a sophisticated healthcare system. But when variation in the use of health services is due to other factors – such as the provision of patient care that is not supported by evidence, uncertainty about the intervention's place in therapy, or differences in access to care or in appropriateness of care – it is unwarranted variation and represents an opportunity for the health system to improve.

Overview

Improvements to the health system involve increasing awareness of, and access to, treatment options that produce better outcomes for consumers, and reducing the use of investigations or treatments with little or uncertain benefit. They can take many forms, from policy reform through to a person-centred system that includes patients in shared decision making. Where improvements are imperative and/or there are obvious groups or sectors of the health system to lead them, the Commission makes recommendations.

In this Atlas

This *Fourth Australian Atlas of Healthcare Variation* (the Atlas) examines variation in 17 healthcare items according to where consumers live, and it tracks changes over time for nine of these items. Some items were selected for re-examination in this Atlas because there have been interventions that would be expected to affect the rates or patterns of use. In other cases, we have re-examined items that were shown to have less than optimal use in the first analysis, but little has been done to improve patient outcomes.

The interpretation of data in this Atlas, and discussions of what can be done to improve care, have benefited from thorough consultation by the Australian Commission on Safety and Quality in Health Care (the Commission). Clinicians, policy makers, medicines use experts, researchers and consumer representative organisations have helped us identify the likely drivers of variation and the changes that are needed to prevent unwarranted variation. The Commission is grateful for these insights.

This Atlas has been produced in partnership with the Australian Institute of Health and Welfare (AIHW), who have contributed enormous expertise in their analysis and understanding of the data and data sources. Commonwealth, state and territory health departments have also been pivotal partners in providing data, and in working with the Commission to interpret findings and find potential avenues for improvements in healthcare delivery.

What has the Atlas series taught us?

Where we see variation, it must be investigated and explained. Does it reflect differences in consumer needs or preferences, or is it unwarranted? The Atlas data assists us to identify potentially unwarranted variation and reveals signs that suggest healthcare delivery is not optimal:

1. High rates of healthcare interventions that have a risk of harm and uncertain or no benefit, suggesting a need for decisive action
2. High rates of admission for potentially preventable conditions or complications of chronic illness that may be due to a lack of integrated care and variable implementation of evidence-based care
3. Low rates of investigation or treatment in groups with the highest burden of disease, indicating that barriers to appropriate access should be investigated and dealt with
4. Markedly higher rates of interventions, or repeat interventions, in some areas, without an obvious reason, raising concern about the degree of benefit gained, potential harms, and opportunity costs to the health system.

What can we do?

Education and training are important, but not sufficient for reducing unwarranted variation in healthcare delivery. The implementation of shared decision making as routine practice to ensure informed consent, system and regulatory changes, and appropriate distribution of resources, are needed if we are to achieve meaningful change.

The current remuneration system for healthcare providers in Australia rewards quantity rather than quality. We need different and complementary payment approaches that better recognise and support high-quality care. And to underpin such change, we need to improve how we measure appropriateness of care; for example, with greater use of clinical quality registries.

What is appropriate care?

Appropriate care means offering patients care that optimises benefits and minimises harms, and is based on the best available evidence. At a health system level, it also needs to take into account whether the people with the greatest clinical need are getting care.

A lack of evidence contributes to variation in use of some health interventions, such as spinal fusion. Increasing the evidence base must be a priority in these situations by, for example, mandating contributions to a clinical quality registry.

The commentaries in this Atlas present a variety of specific strategies for reducing unwarranted variation in the patient care items examined, as shown in the examples below.

Cease payment for non-medically indicated early planned births

This fourth Atlas includes a report on gestational age at planned caesarean section or induction of labour without a medical or obstetric indication. This follows a report in the third Atlas about gestational age at planned caesarean section without a medical or obstetric indication. Short-term adverse effects from planned caesarean section before 39 weeks' gestation are well-established, and more recent research has suggested concerning long-term developmental effects for children born before 39 weeks, such as poorer educational outcomes.¹⁻⁶ For this reason, the Commission examined the topic in the third Atlas and again in this Atlas, despite data limitations that must be considered when interpreting the findings.

As reported in Chapter 1, in the seven reporting states and territories, 43–56% of the planned caesarean sections performed at less than 39 weeks' gestation, did not have a documented obstetric or medical indication. Despite the likely overestimation in these figures because of data limitations (see 'Important notes about the data...' on page 49), these high estimated rates are a call to action.

Given that the short-term adverse effects from planned caesarean section before 39 weeks' gestation are well-established, and despite multiple clinical policy responses the practice continues, a financial lever is needed in Australia to prevent unnecessary harm from early planned births. This should include ceasing MBS benefits and private insurance payments, as well as changes to state, territory and hospital admission policies, to prevent non-medically indicated planned births before 39 weeks and improve neonatal outcomes.

Integrated care to reduce potentially preventable hospitalisations

Potentially preventable hospitalisations include hospitalisations that may have been prevented by provision of disease-based, evidenced-based practice with appropriate intervention earlier in the disease. More than 330,000 potentially preventable hospitalisations in Australia in 2017–18 were due to the five conditions examined in Chapter 2: chronic obstructive pulmonary disease (COPD), kidney infections and urinary tract infections, heart failure, cellulitis, and diabetes complications.⁷ Substantial variation was observed between the highest and lowest local area rates for each condition: from about 18 times as high for COPD to about six times as high for heart failure.

The high hospitalisation rates and substantial variation reported in this chapter show that recommended care is not always provided for people with chronic conditions. Despite major efforts to coordinate care for people with chronic diseases, fragmented care remains the major contributor to suboptimal outcomes for many patients.

Overview

A fundamental shift of healthcare investment to a better integrated primary care system must be made to improve health outcomes. Critically, health systems also need to become better at applying evidence-based interventions to reduce the progression of chronic disease and improve consumers' quality of life.

Trials of integrated care models have shown that people with advanced chronic diseases are routinely receiving suboptimal care. For example, potentially preventable hospitalisations were reduced by 37% among people with chronic disease who were enrolled in or who had attended the rapid access and stabilisation service in an integrated care model in Western Sydney.⁸ The model focuses on people with type 2 diabetes, COPD, and coronary artery disease or congestive heart failure. The Western Sydney Primary Health Network and Western Sydney Local Health District shared governance of the project. However, the separate funding of hospital and general practice care means only partial integration of care can be achieved.⁸ A single funding system for the health district, incorporating community, primary and hospital care, may achieve the best outcomes for people with chronic conditions.⁸

The Commission is working with the Independent Hospital Pricing Authority to design funding models for reducing potentially preventable hospitalisations, consistent with the long-term health reforms set out in the National Health Reform Agreement Addendum 2020–25.⁹ These reforms will be evidence based and will prioritise consumer outcomes. This work will build on the activities set out in the 2017 Bilateral Agreements on Coordinated Care between the Commonwealth and states and territories.

Audit and review to improve use of spinal fusion

Most people with chronic low back pain related to degenerative disorders do not have nerve-related symptoms. The role of spinal fusion in these circumstances is very limited and controversial.¹⁰ The *Fourth Australian Atlas of Healthcare Variation* found marked differences in rates of lumbar spinal fusion.

In 2015–2018, the rate of hospitalisation for lumbar spinal fusion was 12.4 times as high in the area with the highest rate compared with the area with the lowest rate, raising concern that the procedure is being used outside the guidelines in the areas with higher rates. The substantial variation in rates of lumbar spinal fusion, a procedure recommended in few circumstances, suggests an urgent need for peer review of clinical variation at a local level, as well as high-quality evidence about who may benefit from this surgery and the degree of benefit.

Patients offered spinal fusion surgery for low back pain should be fully informed of the potential benefits and risks for them. They must be given clear information about the likely outcomes, the gaps in evidence and other treatment outcomes so they can give fully informed consent for the procedure.

Health services should include clinical audit as a credentialing requirement for surgeons who perform lumbar spinal surgery. Priority should be given to improving access to services that provide multidisciplinary review and non-surgical treatments for chronic low back pain.

Reducing supply-driven gastroscopy

Chapter 5 examines rates of repeat colonoscopy and repeat gastroscopy within a shorter time frame than recommended in most situations. Rates were higher in major cities compared with remote areas, and in areas of socioeconomic advantage. Given the few good reasons for performing these repeated procedures, and the lack of correlation with prevalence of disease, the findings suggests overuse of the procedures in these areas.

Access to clinicians may influence the likelihood of people seeking care and affect the rates of repeat colonoscopy and repeat gastroscopy. Open access units that do not require consultant assessment of the appropriateness of requests, as well as greater remuneration for providing a service rather than a consultation, may also lead to variation and over-servicing in some areas.

Where supplier-induced demand is found to be a contributor to unwarranted variation, regulatory approaches are needed. For example, limiting provider numbers in some cases could improve appropriateness of care. Relevant clinical craft groups should also provide leadership about best practice to reduce over-servicing.

Informed consent

In all health care, consumers should be informed of the benefits and risks to them, and of appropriate alternatives. This is crucial when the intervention involves uncertain or little benefit. Ensuring women and their partners are informed of the benefits and risks is a powerful strategy for reducing harm from early planned birth without a medical or obstetric indication.

Giving young adults with gastroesophageal reflux symptoms information about the natural course of the disease, and how lifestyle modifications can help, will reduce inappropriate referral for gastroscopy (see Chapter 5). Improved consumer awareness of the appropriate timing of proton pump inhibitor dosing will also improve the effectiveness of treatment and reduce the need for higher doses or long-term use. Tools such as the AIHW cancer summary data tool¹¹ can support data-driven discussions with consumers on the rates of cancer in various age groups. Discussing the very low rate of gastroesophageal cancer in younger adults may reduce inappropriate requests for gastroscopy and repeat gastroscopy in this group (see Chapter 5).

Supporting self-management

Consultations for procedures such as colonoscopy are an opportunity to arm the consumer with strategies to reduce their subsequent risk – for example, by reducing the lifestyle-related risk factors for bowel cancer. At a population level, the frequency of bowel cancer could be significantly reduced with successful modification of the key population-attributable risks – that is, addressing diet (21.8%), physical inactivity (16.5%), excess weight (12.5%), smoking (7.4%) and alcohol use (5.5%).¹²

In chronic illness, self-management has a major bearing on the prevention of complications. It is the patients themselves who need to take their diabetes medications every day, quit smoking or do the exercises to manage their back pain. Educating people with chronic illness about self-management, and supporting them to be active and effective partners in their health care, has the potential to greatly improve health outcomes.

Overview

Improving equity in health care

A concerning pattern of inequity has emerged from all four Atlases. For example, the much higher rates of otitis media in Aboriginal and Torres Strait Islander children than in other Australian children are not matched by appropriately higher rates of myringotomy (see Chapter 3).

Conversely, where the patterns in the Atlas do follow known differences in the burden of disease, they highlight the need to improve prevention of chronic disease by addressing risk factors, and the need to improve prevention of serious complications in people who have developed disease. People living in areas of socioeconomic disadvantage have higher rates of chronic conditions such as diabetes, heart disease and chronic COPD.¹³ The Atlas series has made many recommendations for improving health care for underserved groups with specific conditions, but models of care and prevention need to better target health inequities in a systematic way.

A lack of community-based health services and long distances to travel contribute to the high hospitalisation rates for patients from remote and some regional areas. Anecdotally, a greater availability of beds in some small rural hospitals may also lead to a lower threshold for admitting patients. Services must be redesigned to increase the availability of health care close to home for people living in non-metropolitan areas.

Socioeconomic disadvantage may contribute to hospitalisations through a variety of mediators, such as greater disease severity, multiple comorbidities and poor health literacy.¹⁴ Long-term strategies are needed to address the social determinants of health. Complex social determinants also underlie the disparities in health between Aboriginal and Torres Strait Islander people and other Australians.^{15,16} To reduce health inequities, improvements in social factors are required – for example, in education, employment and living conditions.¹⁵

Misalignment of mainstream health services with Aboriginal and Torres Strait Islander culture is a barrier to accessing health care.¹⁷ Increasing access

to culturally safe health care will involve continuing to develop partnerships with the Aboriginal Community Controlled Health Service sector, increasing the Aboriginal and Torres Strait Islander health workforce, and improving cultural awareness and competency of mainstream health services.

Following evidence-based practice

For many of the conditions discussed in this Atlas, we have evidence of what works to improve outcomes for consumers, and we have evidence-based best practice spelt out in guidelines. Despite having this information available, the implementation is lacking – this constitutes inappropriate care.

For example, results of a recent Australian study found only 13% of heart failure patients received excellent care according to guidelines.¹⁸ Another Australian study also showed shortfalls in rates of prescribing recommended medicines for patients admitted to hospital for heart failure.¹⁹ Pulmonary rehabilitation is another example – it can reduce COPD-related hospitalisations by 36–56%^{20,21} and is recommended by guidelines.²² However, estimates of the use of pulmonary rehabilitation have ranged from less than 5% to 10% of people in Australia with COPD.²³ In each example, multiple factors contribute to the problem, and multi-pronged approaches are needed to support best practice.

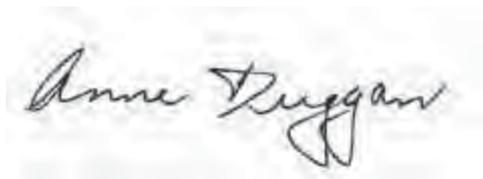
More effective prevention strategies

The need for many of the interventions analysed in the Atlas could be reduced by better prevention. For example, addressing lifestyle-related risk factors such as obesity and smoking could prevent a considerable proportion of chronic diseases and bowel cancers.¹³ A substantial reduction in risk factors could deliver significant benefits in terms of reduced burden of disease, as well as reduced expenditure on investigations and treatment for these diseases. Reducing unnecessary healthcare interventions has several further benefits, including reducing the associated carbon emissions, which will in turn benefit health at a societal level.

Conclusion

The Atlas series has highlighted many challenges and inequities in health care. It has also suggested reasons for variation, as well as realistic and specific recommendations for change. And it has shown how analysis and presentation of routinely collected data can promote action by organisations and clinical groups to investigate and improve appropriateness of care and the value Australians receive from their healthcare system. Many case studies in the Atlas show how innovative solutions, such as integrated care for people with chronic conditions, can improve health outcomes. Implementing successful interventions on a larger scale requires effective diffusion mechanisms, as well as funding reform.²⁴

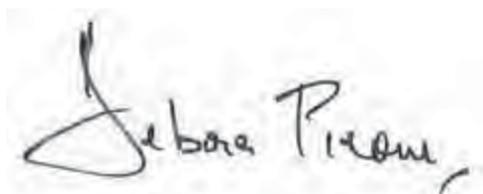
The maps and commentary in the four *Australian Atlases of Healthcare Variation* reveal many opportunities to deliver better health care in this country, by investigating and addressing both underuse and overuse of services, and by implementing targeted strategies to prevent chronic disease. Providing education and training is important, but not enough. We must make major system changes at all levels to achieve real progress.



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28 April 2021



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28 April 2021

Why measure variation in healthcare use?

Getting the best outcomes for patients and reducing harm is the goal of the Atlas. Where we see substantial variation in use of a particular treatment, it is an alarm bell that should make us stop and investigate whether appropriate care is being delivered.

Variation in itself is not necessarily bad, and it can be good if it reflects health services responding to differences in patient preferences or underlying needs. When a difference in the use of health services does not reflect these factors, it is unwanted variation and represents an opportunity for the health system to improve.

Rates of an intervention that are substantially higher or lower in some areas can highlight:

- Clinical practice that is not supported by evidence-based guidelines
- Inequity of access to evidence-based care, and the need to deliver services more fairly
- Uncertainty about the intervention's place in therapy, and the need for better data on its benefits and harms
- Gaps in evidence accessible to clinicians, and the need for clinical care standards
- Inadequate system supports for appropriate care, and the need for changes in training or financial incentives.

Looking at how healthcare use varies between people living in different areas, between people with and without socioeconomic disadvantage, and between Aboriginal and Torres Strait Islander people and other Australians can show who in our community is missing out. Fundamental changes to address the underlying determinants of ill health, as well as better service delivery for those with existing disease, are needed where these inequities are found.

Overview

Responses to the Atlas series

The overall goal of the Atlas series is to improve the appropriateness of care. At a local level, the data can be used to make judgements and drive improvement in health care. At a national level, the Commission publishes recommendations for action using levers across the entire health system to effect change. Some of the most powerful levers recommended in the Atlas series have been aligning payments for health care with best-practice guidelines, developing clinical care standards, and incorporating the examination of healthcare variation into the National Safety and Quality Health Service Standards.

The Atlas series has prompted action across the health system to address variation in healthcare. Case studies highlighting responses to the Atlas reports on knee arthroscopy and psychotropic medicines are shown below. More example initiatives are described in the third Atlas, Chapter 6.

Case study: knee arthroscopy

Knee arthroscopy is a surgical procedure for examining the inside of the knee joint and, if necessary, repairing it. Arthroscopic procedures are not effective for treating knee osteoarthritis.²⁵ In older patients with knee pain caused by osteoarthritis or degenerative meniscal changes, arthroscopic procedures provide only minor pain relief, which is offset by an increased risk of harm.²⁶ In 2015, the first Atlas reported that there were more than 33,000 hospitalisations for knee arthroscopy in people aged 55 years and over in Australia in 2012–13.²⁸ The rate of hospitalisation was seven times higher in the area with the highest rate compared with the area with the lowest rate.²⁸

The Commission released the Osteoarthritis of the Knee Clinical Care Standard in light of the variation reported in the first Atlas and referred the findings to the MBS Review Taskforce, which subsequently recommended removal of funding for knee arthroscopy for degenerative changes.²⁸ The rate of knee arthroscopy in people over 55 years of age in Australia fell by 40% from 2015 to 2019.²⁹ Many drivers are likely to have contributed to this reduction, in addition to the Atlas.

Case study: state response to high rates of psychotropic medicine use

The first Atlas showed that several areas of Tasmania were among the highest users in Australia of anxiety and depression medicines.²⁷ Differences in rates of anxiety and depression in the population did not account for these high rates. Primary Health Tasmania undertook a comprehensive needs assessment to gain a deeper understanding of the Atlas findings, and to see how optimal treatment of anxiety and depression could best be supported.

Primary Health Tasmania, together with the Tasmanian Health Service and the Department of Health and Human Services, took a multi-pronged approach to improving the quality of clinical care. Quality improvement initiatives included auditing practice data, conversations with clinicians in target areas, providing peer support to improve practice, developing deprescribing resources and training clinicians in their use, and developing Tasmanian Health Pathways for mental health. The team assessed the availability of mental health services in different areas of Tasmania, and improved access where gaps were found. The team improved access to face-to-face social work and psychology supports, promoted consumer self-management tools for depression and anxiety, and increased the use of GP Mental Health Treatment Plans.

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Key findings and recommendations

When variation in healthcare use reflects differences in the clinical needs or preferences of the people receiving care, it is warranted and means that the healthcare system is appropriately responding to population need. But some of the patterns of care in this Atlas, and the high rates of use of some treatments, suggest that greater attention needs to be paid to matching health care to people's needs to ensure appropriate care.

This Fourth Australian Atlas of Healthcare Variation shows that there is an opportunity to improve healthcare delivery to ensure that the best care is available to everybody, regardless of where they live. The Atlas also shows that we need to do better with data availability so that we can gain a comprehensive picture of the patterns of healthcare use in Australia and improve the value obtained from our healthcare system. This section presents the key findings from the Atlas, and the Australian Commission on Safety and Quality in Health Care (the Commission)'s recommendations for action. The Commission consulted widely, but is solely responsible for making the recommendations; as such, the recommendations may not reflect the views of all contributors to the Atlas.

Key findings and recommendations

1. Early planned births

Planned birth by caesarean section or induction (a medical treatment to start labour) is an important intervention in maternity care. However, the timing of birth should be carefully considered to ensure the best outcome for the mother and her baby.

When planning for birth by caesarean section or induction of labour, waiting until at least 39 weeks gestation results in better short- and long-term outcomes for the baby, unless there are medical or obstetric reasons for earlier birth. Short-term risks, such as respiratory problems and admission to neonatal intensive care, are higher for babies born at early term (by caesarean section or induction of labour) rather than full term.¹⁻⁴ There is also some evidence of longer-term risks in children born before 39 weeks gestation (either vaginally or by caesarean section) compared with those born at full term, such as cognitive deficits and a higher risk of attention deficit hyperactivity disorder (ADHD).⁵

Despite a number of data limitations (see page 49), the estimates presented in this chapter suggest that the percentage of caesarean sections performed before 39 weeks without a medical or obstetric indication may be substantial, and action is needed to reduce these rates.

Strategies to reduce rates of early planned birth without a medical or obstetric indication before 39 weeks gestation include:

- Changing policies of state and territory governments, hospitals and insurers to stop booking of early planned births without a medical or obstetric indication
- Giving parents information about the risks and benefits of early planned birth, and support for shared decision making
- Giving clinicians information about the risks and benefits of early planned birth
- Collecting data on the reason for early planned birth.

Gestational age	Range of state and territory rates* for caesarean sections without a medical or obstetric indication, as a percentage of all caesarean sections at these gestational ages, 2017
<37 weeks	13.3–19.3%
<38 weeks	24.8–32.7%
<39 weeks	42.8–56.1%

* Excludes Northern Territory

Gestational age	Range of state and territory rates* for induction of labour without a medical or obstetric indication, as a percentage of all inductions at this gestational age
<39 weeks	0.2–6.0%

* Excludes New South Wales and the Northern Territory

Recommendations

- 1a. It is recommended that pregnancies continue until at least 39 weeks gestation unless there is a medical or obstetric reason justifying earlier intervention.

- 1b. Health service organisations with maternity services, and clinicians, to implement systems to obtain informed patient consent that includes the provision of comparative information for prospective parents on the short- and long-term risks of early planned birth without a medical or obstetric indication.

- 1c. Health service organisations with maternity services to establish policies to cease booking planned births without a medical or obstetric indication before 39 weeks from July 2022 and to review adherence to these policies.

- 1d. Medicare Benefits Schedule payment for planned births before 39 weeks without a medical or obstetric indication to cease from July 2022.

- 1e. Health service organisations with maternity services, and clinicians, to ensure that care is consistent with The Whole Nine Months⁶ campaign.

- 1f. The Australian Institute of Health and Welfare (AIHW) to prioritise the development of the indicator on early caesarean section without a medical or obstetric indication in the National Core Maternity Indicators, including the need for a data element on the reason for early birth.

- 1g. All state and territory health departments to ensure consistent, routine collection and reporting of data on gestational age for planned births without a medical or obstetric indication to improve the quality of data collections. This should include reporting of gestational age in days to allow more in-depth understanding of the distribution of births occurring before 39 weeks.

- 1h. Health service organisations with maternity services to:

 - i. Report early planned births without a medical or obstetric indication as part of mandatory reporting of National Core Maternity Indicators

 - ii. Conduct audits of records documenting the communication of information to prospective parents about the risks of early planned births without a medical or obstetric indication, and provide the results back to clinicians to act upon, in line with Action 1.28 of the National Safety and Quality Health Service Standards

 - iii. Incorporate individual clinicians audit data as part of re-credentialing processes

 - iv. Report on agreed key performance indicators, trends and adverse events on early planned births without a medical or obstetric indication to the governing body.

- 1i. Short- and long-term risks arising from early planned birth without a medical or obstetric indication are avoidable. The Commission to include early caesarean section without a medical or obstetric indication in the national list of hospital-acquired complications.

Key findings and recommendations

2. Chronic disease and infection: potentially preventable hospitalisations

Potentially preventable hospitalisations are an indicator in the National Healthcare Agreement, and include hospitalisations that may have been prevented by appropriate management earlier in the disease. The rate of potentially preventable hospitalisations in a local area is likely to reflect sociodemographic factors as well as the quality of early disease management.⁷

More than 330,000 potentially preventable hospitalisations in Australia in 2017–18 were due to the five conditions examined in this chapter: chronic obstructive pulmonary disease (COPD), kidney infections and urinary tract infections (UTIs), heart failure, cellulitis, and diabetes complications.⁸ After standardising to remove age and sex differences between populations, substantial variation was observed between local areas (Statistical Area Level 3 – SA3) in the rates of hospitalisation for each condition. Variation was greatest for COPD (the highest rate was about 18 times higher than the lowest), cellulitis (about 16 times) and diabetes complications (about 12 times). For all the conditions examined, hospitalisation rates were higher among Aboriginal and Torres Strait Islander people, people living in areas of socioeconomic disadvantage, and those living in remote areas.

The high hospitalisation rates and substantial variation reported in this chapter show that recommended care is not always provided for people with chronic conditions. Even with the significant funding provided through Medicare to better coordinate primary care for people with chronic diseases, fragmented health care contributes to suboptimal management.

Likely contributors to variation include a higher proportion in some areas of patients with the most complex chronic disease, for whom hospitalisation may be inevitable. Poor access to health services in the community is also related to higher rates of potentially preventable hospitalisations. Ability to access health services is determined not only by clinician supply, but also by costs, transport and sufficient health literacy to know when to seek care.

Healthcare investment must be redirected to create a better-integrated primary care system to reduce potentially preventable hospitalisations. Critically, health systems also need to become better at reducing the progression of chronic disease and improving patients' quality of life.

Data item	Range across local areas* per 100,000	Times difference	Times difference excluding top and bottom 10%	Number during 2017–18
2.1 Chronic obstructive pulmonary disease (COPD)	56 – 1,013	18.1	3.3	77,754
2.2 Heart failure	91 – 531	5.8	2.0	62,554
2.3 Diabetes complications	64 – 782	12.2	2.9	50,273
2.4 Kidney infections and urinary tract infections	141 – 893	6.3	2.3	76,854
2.5 Cellulitis	90 – 1,393	15.5	2.9	68,663

* Statistical Area Level 3

Recommendations

2a. Consistent with the commitments made under the National Health Reform Agreement and building on the activities set out in the 2017 Bilateral Agreement on Coordinated Care, Local Hospital Networks, Primary Health Networks and the Aboriginal Community Controlled Health Service sector to implement the following principles in developing chronic disease management programs consistent with the National Strategic Framework for Chronic Conditions:

- i. Patients, families and carers as partners in care, where patients are activated to maximise their knowledge, skills and confidence to manage their health, aided by technology and with the support of a healthcare team
- ii. A risk stratification approach that supports identification of patients with high coordination and multiple provider needs, to ensure personalisation of service provision
- iii. Flexible service delivery and team-based care that supports integrated patient care across the continuum of the health system through shared information and care planning
- iv. A commitment to care that is of high quality and safe, including care planning and clinical decisions that are guided by evidence-based patient healthcare pathways, appropriate to the patient's needs
- v. Data collection and sharing by patients and their healthcare teams to measure patient health outcomes and improve performance.

2b. The Commission, the Independent Hospital Pricing Authority and the Administrator of the National Health Funding Pool to identify and develop alternative approaches to funding for chronic disease and infection that could be applied to the National Health Reform Agreement Pricing and Funding model so that pricing and funding are aligned with best-practice guidelines.

The alternative models could include bundled payments, capitation payments or regionally coordinated service responses.

COPD

2c. Local Hospital Networks, Primary Health Networks and the Aboriginal Community Controlled Health Service sector to implement appropriate care for the management of people with chronic obstructive pulmonary disease (COPD) using the *COPD-X Plan: Australian and New Zealand guidelines for the management of chronic obstructive pulmonary disease 2020*⁹ as the routine model of care.

Heart failure

2d. Local Hospital Networks, Primary Health Networks and the Aboriginal Community Controlled Health Service sector to implement process improvement for the effective management of people with heart failure, including:

- i. Multidisciplinary care across the acute and primary care sectors
- ii. A combination of strategies, including non-pharmacological approaches such as physical activity programs and fluid or dietary management, and pharmacotherapy.

Diabetes

2e. Local Hospital Networks, Primary Health Networks and the Aboriginal Community Controlled Health Service sector to promote appropriate care for the management of people with diabetes aligned with:

- i. *The Management of Type 2 Diabetes: A handbook for general practice (2020)*
- ii. The Australian National Diabetes Strategy 2016–2020.

Key findings and recommendations

3. Ear, nose and throat surgery for children and young people

Tonsillectomy

Tonsillectomy is used to treat recurrent throat infections (tonsillitis) and obstructive sleep apnoea (OSA), but there are uncertainties about its benefits. It is one of the most common surgical procedures performed in children in Australia – at a rate higher than in New Zealand or the United Kingdom.

After standardising to remove age and sex differences between populations, the Atlas found that, in 2017–18, the rate of hospitalisation for tonsillectomy in children and young people was six times higher in the local area with the highest rate than in the area with the lowest. It also found that the rate of tonsillectomy hospitalisations increased by 3% between 2012–13 and 2017–18.

There is a need for more information to ensure evidence-based care is provided to children with recurrent tonsillitis or OSA. Further developing the Australian Society of Otolaryngology Head and Neck Surgery Ear, Nose and Throat data registry could add to the knowledge base about outcomes for specific patient groups and provide information for effective peer review of tonsillectomy.

Myringotomy

Myringotomy is another common surgical procedure performed in young children. It is used to treat otitis media, an infection of the middle ear that can cause hearing loss.

Myringotomy (with insertion of grommets) is recommended for children who have otitis media with effusion (fluid) and documented hearing loss in both ears for more than three months.

Otitis media is the key cause of hearing loss in Aboriginal and Torres Strait Islander children, who are at risk of earlier, more severe and longer-lasting middle ear disease than other children. The Atlas examined rates in Aboriginal and Torres Strait Islander children for the first time.

The Atlas found that, in 2017–18, the rate of hospitalisation for myringotomy in children and young people was about eight times higher in the local area with the highest rate than in the area with the lowest. Although the rate for Aboriginal and Torres Strait Islander children was 6% higher than the rate for other children, it was lower than would be expected if surgery rates matched the prevalence of otitis media in Aboriginal and Torres Strait Islander children.

A comprehensive approach combining prevention, early treatment and coordinated management is urgently required to reduce rates of otitis media in Aboriginal and Torres Strait Islander children.

Data item	Range across local areas* per 100,000	Times difference	Times difference excluding top and bottom 10%	Number during 2017–18
3.1 Tonsillectomy hospitalisations, 17 years and under	305 – 1,836	6.0	2.2	42,509
3.2 Myringotomy hospitalisations, 17 years and under	198 – 1,607	8.1	2.3	34,755

* Statistical Area Level 3

Recommendations

Tonsillectomy

3a. The Australian and New Zealand Society of Paediatric Otorhinolaryngology to work with relevant clinical colleges to develop clinical guidelines on tonsillectomy in children, and subsequent to this the Commission to develop a clinical care standard with safety and quality indicators.

3b. Health service organisations to:

- i. Conduct audits of indications for tonsillectomy and tonsillectomy rates to monitor variation and provide the results back to clinicians to act upon in line with Action 1.28 of the National Safety and Quality Health Service (NSQHS) Standards

 - ii. Incorporate individual clinician's audit data as part of recredentialing processes.
-

Myringotomy

3c. State and territory health departments and health service organisations to set benchmarks for access to paediatric audiology services.

3d. The Australian Government Department of Health to develop and implement two national ear and hearing health performance indicators for Aboriginal and Torres Strait Islander children consistent with the recommendations of the National Aboriginal and Torres Strait Islander Hearing Health Advisory Panel:

- i. Measure the proportion of Aboriginal and Torres Strait Islander children who received an annual ear and hearing health check and the proportion of these who were found to have ear and/or hearing health conditions

 - ii. Measure the proportion of Aboriginal and Torres Strait Islander children who received audiology services and the proportion of those diagnosed with hearing loss.
-

3e. The Australian Government Department of Health, as part of the Roadmap for Hearing Health, to publish data on progress against the integrated national approach to undertaking ear health checks of children aged 0–6, with the goal of every Aboriginal and Torres Strait Islander child having regular ear health checks.

3f. Health service organisations to:

- i. Conduct audits of myringotomy and myringotomy rates to monitor variation and provide the results back to clinicians to act upon in line with Action 1.28 of the NSQHS Standards

 - ii. Incorporate individual clinician's audit data as part of recredentialing processes.
-

Key findings and recommendations

4. Lumbar spinal surgery

Lumbar spinal surgery refers to surgery in the lumbar spine or lower back. It is sometimes used to treat degenerative spinal disorders, which is the focus of this chapter. Two common lumbar spinal procedures are fusion and decompression. The Atlas excludes use of spinal surgery for treating infection, tumours or injury.

Degenerative spinal disorders are a diverse group of conditions that can cause chronic low back pain, leg pain and disability. Lumbar spinal surgery is generally only considered for certain degenerative spinal disorders if non-surgical options have not worked. There are limited data on patient outcomes, due in part to difficulties in conducting high-quality randomised controlled trials of these types of surgery.

Spinal fusion

Spinal fusion surgery involves joining two or more vertebrae using a bone graft. It has a role in treating a small minority of people who have degenerative spinal disorders that include nerve-related problems. Most people with chronic low back pain related to degenerative disorders do not have nerve-related symptoms. The role of spinal fusion in these circumstances is limited and controversial.

After standardising to remove age and sex differences between populations, the Atlas found that, in 2015–2018, the rate of hospitalisation for lumbar spinal fusion was about 12 times higher in the local area with the highest rate than in the area with the lowest. There was a 4% fall in the national rate of lumbar spinal fusion, and a 25% fall in the rate of lumbar spinal fusion excluding decompression, between 2012–2015 and 2015–2018.

Spinal decompression

Spinal decompression aims to increase the amount of the space in the spinal canal to relieve pressure on nerves and blood vessels. After standardising to remove age and sex differences between populations, the Atlas found that in, 2015–2018, the rate of hospitalisation for lumbar spinal decompression was about eight times higher in the local area with the highest rate than in the area with the lowest. The national rate of lumbar spinal decompression fell by 6% between 2012–2015 and 2015–2018.

Addressing variation

Priority should be given to examining and improving access to services that provide multidisciplinary review and non-surgical treatments for chronic low back pain. The Australian Spine Registry should be developed to support data collection on all patient outcomes. Surgeons should contribute data on all consenting patients, and regularly audit and review patient outcome data with their peers.

Data item	Range across local areas* per 100,000	Times difference	Times difference excluding top and bottom 10%	Number during 2015–18
4.1 Lumbar spinal fusion, 18 years and over	7 – 87	12.4	2.7	14,608
4.2 Lumbar spinal decompression excluding fusion, 18 years and over	27 – 209	7.7	2.1	43,185

* Statistical Area Level 3

Recommendations

4a. Health service organisations and Primary Health Networks to implement evidence-based pathways for the management of low back pain consistent with the care described in the Low Back Pain Clinical Care Standard (planned for publication in late 2021).

4b. Health service organisations where lumbar spinal surgery is conducted to implement evidence-based guidelines; for example, the National Institute for Health and Care Excellence guidelines: *Low Back Pain and Sciatica in Over 16s: Assessment and management*.

4c. The Royal Australasian College of Surgeons to require surgeons performing lumbar spinal surgery to participate in the Australian Spine Registry as part of mandatory continuing professional development requirements.

4d. The Commission to work with relevant specialist organisations to develop a list of key safety and quality indicators for the management of specified spinal conditions, which can be used by members for audit of their practice.

4e. Health service organisations to:

i. Develop and implement scope of clinical practice models for surgeons undertaking spinal surgery

ii. Audit spinal surgery and provide the results back to clinicians to act upon in line with Action 1.28 of the National Safety and Quality Health Service (NSQHS) Standards

iii. Incorporate individual spinal surgeons' audit data as part of re-credentialing processes

iv. Report key performance indicators, trends and adverse events in spinal surgery to their governing body, consistent with the NSQHS Standards.

4f. Primary Health Networks to implement a nationally agreed health pathway for management of low back pain, including imaging and referral indications, based on the Commission's Low Back Pain Clinical Care Standard (planned for publication in late 2021).

Key findings and recommendations

5. Gastrointestinal investigations

Gastroscopy 18-54 years

Gastroscopy is used to investigate, treat or monitor conditions of the upper part of the gastrointestinal (GI) tract. Most conditions that affect the upper GI tract and require gastroscopy are uncommon in people aged under 55 years.

After standardising to remove age and sex differences between populations, the Atlas found that, in 2018–19, the rate of Medicare Benefits Schedule (MBS)–subsidised services for gastroscopy for people aged 18–54 years was almost 11 times higher in the local area with the highest rate than in the area with the lowest. Rates were markedly higher in major cities than elsewhere. Almost two-thirds of gastroscopy services were performed on the same day as a colonoscopy for the same person.

Repeat gastroscopy, all ages

Few people who have an initial gastroscopy require another within three years. Repeat gastroscopy is used mainly to monitor conditions that can increase the risk of upper GI cancer or bleeding in high-risk groups.

The Atlas found that, in 2018–19, the rate of MBS-subsidised services for repeat gastroscopy performed within two years and 10 months of an earlier gastroscopy was almost 15 times higher in the local area with the highest rate than in the area with the lowest. Rates were markedly higher in major cities and also increased in with socioeconomic advantage.

Development and application of national guidance on the appropriate use of gastroscopy is needed. These should include guidance on when it is appropriate to repeat the procedure. Interventions to educate clinicians and consumers that the risk of upper GI cancer is low for most people, especially those aged under 55 years, are required.

Repeat colonoscopy, all ages

Repeat colonoscopy is used mainly to monitor for bowel cancer in people at increased risk of developing it. The timing of repeat colonoscopy is based on bowel cancer risk. A limited number of people who have an initial colonoscopy require another within three years.

After standardising to remove age and sex differences between populations, the Atlas found that, in 2018–19, the rate of MBS-subsidised services for repeat colonoscopy performed within two years and 10 months of an earlier colonoscopy was almost 20 times higher in the local area with the highest rate than in the area with the lowest. Rates were markedly higher in major cities and increased with socioeconomic advantage.

A concerted focus by clinicians, medical colleges and health service organisations to drive implementation of the national surveillance guidelines and the *Colonoscopy Clinical Care Standard* could reduce the frequency of inappropriate repeat colonoscopies.

Data item	Range across local areas* per 100,000	Times difference	Times difference excluding top and bottom 10%	Number during 2018–19
5.1 Gastroscopy MBS services, 18–54 years	218 – 2,348	10.8	2.9	154,338
5.2 Repeat colonoscopy MBS services, all ages	62 – 1,236	19.9	2.7	147,875
5.3 Repeat gastroscopy MBS services, all ages	61 – 908	14.9	3.1	87,933

* Statistical Area Level 3

Recommendations

- 5a. State and territory health departments to develop and implement evidence-based triage criteria for the prioritisation and allocation of patients to gastroscopy, colonoscopy, and gastroscopy performed with colonoscopy.
-
- 5b. Health service organisations to:
- i. Audit clinicians performing endoscopy services and provide the results back to clinicians to act upon, in line with Action 1.28 of the National Safety and Quality Health Service (NSQHS) Standards

 - ii. Incorporate individual clinicians' audit data as part of re-credentialing processes

 - iii. Report key performance indicators, trends and adverse events in endoscopy to the governing body, consistent with the NSQHS Standards.
-
- 5c. The Gastroenterological Society of Australia to develop a position statement on the appropriate use and timing of gastroscopy, and of gastroscopy performed with colonoscopy, for gastroenterologists and general practitioners.
-

Key findings and recommendations

6. Medicines use in older people

Polypharmacy, 75 years and over

Polypharmacy is the concurrent use of multiple medicines. It is common in older people, because they are more likely to have chronic diseases that require management with medicines. Although polypharmacy may be appropriate for some older people, it can increase the risk of harm from medicines.

After standardising to remove age and sex differences between populations, the Atlas found that, in 2018–19, the rate of people aged 75 years and over dispensed five or more medicines was about six times higher in the local area with the highest rate than in the area with the lowest. Almost 40% of people aged 75 years and over were dispensed five or more medicines. Rates of polypharmacy were higher in major cities than elsewhere, and rates increased with socioeconomic disadvantage, except in remote areas.

Medication management reviews, 75 years and over

Residential Medication Management Review (RMMR) and Home Medicines Review (HMR) are two types of medicine reviews available to people living in aged care facilities or at home. The reviews aim to help people to get the maximum benefit from their medicines and prevent medicines-related harm.

After standardising to remove age and sex differences between populations, the Atlas found that, in 2018–19, the rate of people aged 75 years and over who had at least one Medicare Benefits Schedule–subsidised service for an RMMR or HMR was almost 12 times higher in the local area with the highest rate than in the area with the lowest rate. About 5.4% of people had a review. Similar to the pattern with polypharmacy, rates were higher in major cities and increased with socioeconomic disadvantage.

Interventions for identifying people at risk of harm from polypharmacy, such as frail people and those with multiple morbidities, are needed. System changes are needed to improve access to RMMR and HMR services for these at-risk groups. Initiatives to improve uptake of pharmacist recommendations may improve the effectiveness of the review services.

Proton pump inhibitor medicine dispensing, 75 years and over

Proton pump inhibitor (PPI) medicines are effective in managing gastro-oesophageal reflux disease. They are commonly used in older people, often at higher doses or long term, without reassessment of need. Older people may be especially susceptible to harms from long-term use.

After standardising to remove age and sex differences between populations, the Atlas found that, in 2018–19, the rate of dispensing of PPI medicines to people aged 75 years and over was about six times higher in the local area with the highest rate than in the area with the lowest. Almost half people aged 75 years and over had at least one prescription dispensed for a PPI medicine.

Targeted interventions that prompt clinicians to regularly review the need for PPI medicines in older people are needed.

Data item	Range across local areas* per 100,000	Times difference	Times difference excluding top and bottom 10%	Number during 2018–19
6.1 Polypharmacy, 75 years and over	11,206 – 72,059	6.4	1.4	690,516
6.2 Medication management reviews, 75 years and over	1,618 – 19,006	11.7	2.0	96,533
6.3 Proton pump inhibitor medicines dispensing, 75 years and over	131,393 – 777,098	5.9	1.4	7,114,281

* Statistical Area Level 3

Recommendations

6a. The Commission, in collaboration with the Australian Government Department of Health, the Aged Care Quality and Safety Commission, NPS MedicineWise and relevant groups, to develop nationally consistent:

i. Guidance for people taking multiple medicines

ii. Guidance about the communication of reports to medical practitioners from Residential Medication Management Reviews and Home Medicines Reviews

iii. Measures for aged care homes to compare the percentage of residents who have received Residential Medication Management Reviews and the percentage of pharmacists' recommendations, in line with the Commonwealth's development of the National Aged Care Mandatory Quality Indicator Program

iv. Guidance for the establishment, governance, composition and operation of Medication Advisory Committees within aged care homes.

6b. The Australian Government Department of Health to investigate ways of collecting patient-level data on the supply of Pharmaceutical Benefits Scheme medicines through the S100 Remote Area Aboriginal Health Services Program to gather accurate information about the use of medicines in rural and remote Aboriginal communities.

Key findings and recommendations

General recommendations

Responsibilities of governing bodies

7a. Governing bodies to prioritise review of audit data, consistent with Action 1.28 of the National Safety and Quality Health Service (NSQHS) Standards for the following topics:

- i. Early birth
- ii. Tonsillectomy and myringotomy
- iii. Lumbar spinal surgery
- iv. Gastroscopy and colonoscopy.

Diagnosis and appropriateness of care

7b. Health service organisations to promote documentation in the healthcare record of a patient's diagnosis, or provisional diagnosis, in relation to their investigation and management. This can be used to improve the appropriateness of care, and should be communicated to the patient to increase their understanding of their care.

Clinical quality and appropriateness indicators

7c. The Commission to identify priority areas for development of nationally agreed, specialty-specific clinical quality and appropriateness indicators, and work with clinical colleges, professional societies and jurisdictions to develop these.

Clinical audit

7d. Clinical colleges and professional societies to mandate clinical audit, using agreed specialty-specific indicators where these exist, as a requirement of continuing professional development.

Registries

7e. Clinical quality registries:

- i. As part of their governance framework, all clinical quality registries to include sets of indicators for quality and appropriateness of care, to be used for clinical audits at a health service organisation and clinician level
- ii. To provide health service organisations and clinicians with regular reports showing their data for these indicators and how their data compares with data from other services
- iii. To develop and publish their indicator sets in METeOR (National Metadata Online Registry).

7f. Health service organisations to:

- i. Require clinicians to participate in data collection and quality improvement activities of relevant clinical quality registries, with the aim of improving patient outcomes
- ii. Ensure that data and analyses from clinical quality registries are used efficiently in clinical peer review meetings; that records are kept of these meetings, including the clinicians who have attended them and any actions that are being taken to improve care as a result of the discussions; and that the results are reported to and reviewed by the organisation's governing body as part of the clinical governance framework.

Health pathways

7g. The Australian Government Department of Health to develop guidance for Primary Health Networks about the development of nationally consistent Health Pathways, aligned with the Commission's clinical care standards.

Health workforce

7h. The Australian Government Department of Health's health workforce unit to:

- i. Map the specialist medical workforce by geographical area
- ii. Quantify the supply of newly trained specialists entering the workforce, by geographical area
- iii. Work with clinical colleges to understand projected specialty workforces
- iv. Map the current workforce by clinical specialty (including nursing, midwifery and allied health) relevant to priority clinical conditions to identify where there are areas of over and undersupply. Mapping the workforce for non-surgical management of back pain (e.g. physiotherapy, chronic pain management) should be a priority
- v. Develop strategies to prevent oversupply in particular geographical areas, with the objective of building capacity in rural and remote areas (rather than fly-in-fly-out arrangements) and reducing the personal and financial cost of population exposure to low value care driven by oversupply.

Patient Reported Outcome Measures

7i. The Commission to recommend validated Patient reported outcome measures (PROMs) for:

- i. Pregnancy and childbirth
- ii. Low back pain.

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About the Atlas

Who has developed the Atlas?

The Australian Commission on Safety and Quality in Health Care (the Commission), in collaboration with the Australian Institute of Health and Welfare (AIHW), has led the development of the fourth Atlas.

Development has involved broad consultation with:

- The Australian Government Department of Health
- State and territory health departments and agencies
- Professional colleges and specialist societies
- Clinicians
- Healthcare organisations.

An oversight and advisory structure, including a state and territory advisory group (Jurisdictional Advisory Group) and a Primary Care Expert Advisory Group, has ensured wide-ranging input into the development of the fourth Atlas. For each chapter, a Topic Expert Group of lead clinicians and academic experts from across Australia was established. The Topic Expert Groups provided advice at key stages of development, including the interpretation of the Atlas findings. Members of the advisory groups were required to sign a confidentiality agreement and declare conflicts of interest before release of the preliminary data. The AIHW conducted the data extraction and analysis, produced the maps, graphs and tables, and provided expertise in interpreting the data.

How was it developed?

The Atlas examines a selection of procedures, investigations, treatments and hospitalisations in a range of clinical areas. A large number of clinical items were nominated and considered for inclusion, but many were not suitable because of poor data quality or small numbers, which limited the capacity to analyse and present the data. The final selection of clinical items reflects the following criteria:

- High levels of current or projected use
- Significant current or projected disease burden
- Significant potential for harm
- High use of health system resources
- Interest in the topic and clinical engagement to support review and action
- Availability of suitable data
- Important to monitor changes over time and compare with previous Atlas reports

The clinical items that met these criteria were reviewed by the Jurisdictional Advisory Group, the Primary Care Expert Advisory Group, and the Commission's executive. Following confirmation of clinical items for analysis, Topic Expert Groups were established around specific clinical themes. The Topic Expert Groups were consulted on prioritisation of the clinical items for analysis and on development of the data specifications, where possible. Following analysis of the data for each clinical item, the Jurisdictional Advisory Group, the Primary Care Expert Advisory Group and the Topic Expert Groups reviewed the results.

The expert groups also provided content for, and reviewed, the clinical commentaries. Their suggestions and the Commission's reviews of the literature were used as the basis for commentary on the possible reasons for healthcare variation and strategies for addressing variation. The clinical commentaries were also reviewed by:

- AIHW
- Medicine use experts

- The National Aboriginal and Torres Strait Islander Health Standing Committee
- Relevant clinical colleges.

More than 150 clinicians, researchers, policy experts and consumer representative organisations have examined and provided input on the clinical commentaries and data visualisations.

What does the Atlas measure?

The data in the Atlas show the rates for featured procedures, investigations, treatments or hospitalisations in each geographic area. To calculate rates, the number of interventions that occurred in an area is divided by the population of that area. Rates are age and sex standardised. Rates are based on the patient's place of usual residence and not the location of the hospital, clinic or pharmacy where the service was provided.

Why are the data age standardised and sex standardised?

The data in the Atlas have been age standardised (that is, controlled for age) so that fair comparisons can be made between areas that have different age structures. Without age standardisation, it would be difficult to know whether higher rates of an intervention in an area with a large number of retirees, for example, were due only to the older age of the local population. The data are also sex standardised, so that having a larger proportion of males or females in an area does not influence the findings. The early planned births (caesarean or induction) indicators are not age standardised because of small numbers.

Age standardisation involves calculating the rate in each area as if the area had a standard proportion of older and younger people. Sex standardisation involves calculating the rate in each area as if the area had a standard proportion of males and females. The resulting age- and sex-standardised rates can then be compared for all areas, knowing that differences in age and sex structure of the population have been accounted for.

About the Atlas

Magnitude of variation

The magnitude of variation (or ‘times difference’) shows how large the difference is between the lowest and highest rates of each intervention, and is expressed as a ratio of the highest to the lowest rates. For example, if the lowest rate was 10 per 100,000 people and the highest rate was 20 per 100,000 people, the magnitude of variation is two-fold.

Australian rate

Rates for an intervention may appear higher or lower than the Australian rate; in most cases, the most appropriate rate is difficult to define and not necessarily the Australian rate. Depending on the intervention, a higher or lower rate may be clinically appropriate. It is difficult to conclude what proportion of the variation is unwarranted or to comment on the relative performance of health services and clinicians in one area compared with another. An Australian rate is provided to encourage investigation into the reasons for any variation seen at local, regional, or state and territory levels.

About the data

The Atlas provides information on clinical items grouped into six clinical themes, covering procedures, investigations, treatments or hospitalisations.

The introduction to each chapter provides an overview of the clinical items; international comparisons, where possible; national and state or territory initiatives to improve care; and key findings and recommendations. Specific data limitations are also outlined. Clinical commentary is presented alongside each item, outlining the context, magnitude of variation, and possible reasons for the variation.

The fourth Atlas uses data sourced from four national health datasets:

- Medicare Benefits Schedule (MBS)
- National Hospital Morbidity Database (NHMD)
- National Perinatal Data Collection (NPDC)
- Pharmaceutical Benefits Scheme (PBS).

The years of data shown for each clinical item depend on the source and the most recently available data:

- MBS items are analysed for services provided in 2018–19
- NHMD items are analysed for hospitalisations in
 - 2014–15 to 2017–18 for potentially preventable hospitalisations
 - 2012–13 to 2014–15 and 2015–16 to 2017–18 for lumbar spinal surgery items, which are analysed for three combined years because of small numbers
 - 2012–13, 2015–16 and 2017–18 for ear, nose and throat surgery items
- The NPDC item is analysed for early planned births (caesarean or induction) in 2017
- PBS items are analysed for prescriptions dispensed in 2018–19.

Data were rerun for selected hospitalisation indicators from previous Atlases to allow robust comparison of rates over time through time-series analyses. Due to changes in data specifications and updates to NHMD datasets, some fourth Atlas results may differ from those reported in previous Atlases.

For MBS and PBS items, the Medicare enrolment postcode is used as a proxy for the patient residence because it corresponds to most people’s usual residence. For NHMD items, the rates are determined by the person’s usual place of residence as recorded at the time of hospital admission. For the NPDC item, the rates are based on the mother’s place of residence.

The Atlas presents age- and sex-standardised rates per 100,000 people for all items, except for the NPDC items, which are presented as a percentage. NPDC data are not standardised, as a result of small numbers.

Rates are age and sex standardised to the Australian population using the Australian Bureau of Statistics (ABS) Estimated Resident Populations (ERPs). The standard population is ERP at 30 June 2001. The denominator population estimates are based on ERPs, and are either at 30 June or 31 December, depending on data sources.

Population estimates as at 31 December in the relevant year were used as the denominator for indicators based on NHMD data for 2012–13 to 2017–18. For example, population estimates as at 31 December 2017 were used for 2017–18. Population estimates as at 31 December were calculated as the average of the 30 June population estimates before and after the relevant December.

Where three years of data were combined, the denominator was the sum of the population estimates as at 31 December for each year.

Population estimates as at 30 June 2018 were used as the denominator for indicators based on MBS and PBS data for 2018–19.

The geographic local areas used are ABS standard geographical regions known as the Statistical Areas Level 3 (SA3). SA3s provide a standardised regional breakdown to assist in analysing data at the local level. SA3s generally have populations between 30,000 and 130,000 people. To enable comparisons, local areas are also grouped by Primary Health Network, state and territory, and by remoteness and socioeconomic status.

Primary Health Networks connect health services across a specific geographic area so that patients, particularly those needing coordinated care, have access to a range of services.

Remoteness is calculated according to the ABS Australian Statistical Geography Standard (ASGS) 2016 using Statistical Area Level 1 (SA1) to remoteness concordance. SA1 population was concorded to SA3, and the remoteness category

with the highest percentage of SA3 population was allocated to the SA3. The remote and very remote categories were combined into one, giving a total of four remoteness categories (Major Cities, Inner Regional, Outer Regional, Remote).

The socioeconomic quintiles are based on the ABS 2016 Index of Relative Socio-Economic Disadvantage at the SA1 level. The quintile with the highest number of SA1s was allocated to the SA3. Some quintiles were combined within a remoteness category to ensure sufficient numbers of SA3s for comparison purposes.

Defined daily dose (DDD) is a measurement unit of assumed average maintenance dose per day for a medicine used for its main indication in adults, created by the World Health Organization. The DDD does not necessarily correspond to the recommended or average prescribed daily dose.

Use of DDDs allows comparisons of medicine dispensing independent of price, preparation and quantity per prescription. Expressing medicine dispensing in DDDs per thousand people per day (DDDs/1,000/day) allows the aggregation of data for medicines that have different daily doses.

The data specifications for each item can be accessed on the AIHW Metadata Online Registry (METeOR) at meteor.aihw.gov.au

Data limitations

The clinical items describe variation in health service provision. It is not currently possible to conclude what proportion of the variation is unwarranted, or to comment on the relative performance of health services and clinicians in one area compared with another. The data are provided to encourage and promote further analysis and discussion about variation at local, regional, and state and territory levels.

About the Atlas

Some data have been suppressed for the following reasons:

- To protect confidentiality of a patient – for example, when the number of prescriptions and the population are very small; this could potentially lead to identifying a patient
- To protect confidentiality of a service provider or a business entity in the MBS data – for example, when the services are predominantly provided by one or two providers
- To account for low numbers of events or very small populations – these rates are more susceptible to random fluctuations
- To preserve confidentiality – data suppressed in isolation may be calculable from the presented totals unless accompanied by other data suppressions to prevent back-calculation.

Suppressed SA3 data are included for larger area analysis.

Data for Aboriginal and Torres Strait Islander people

Data according to Aboriginal and Torres Strait Islander status have been provided for NHMD and NPDC items only. Analysis was not undertaken by Aboriginal and Torres Strait Islander status for the MBS and PBS data because this information is not available.

Analyses in this report have not been adjusted to account for the under-identification of Aboriginal and Torres Strait Islander people in NHMD and NPDC datasets. Data by Aboriginal and Torres Strait Islander status should be interpreted with caution because hospitalisations for Aboriginal and Torres Strait Islander patients are under-enumerated, and there is variation in the under-enumeration among states and territories.

Maps and graphs

Data for each of the items in the Atlas are displayed as maps and graphs to show variation in rates by geographic location of patient residence.

On the maps, age- and sex-standardised rates in each of the geographic areas are ranked from lowest to highest and then split into 10 categories (deciles). These are displayed with colour gradients, where darker colours represent higher rates and lighter colours represent lower rates. Separate maps show the greater capital city areas in more detail.

Standard figures are provided for NHMD, MBS and PBS items where data are available. Each figure presents a different analysis:

- Numbers and rates by local area, listing the areas with the lowest and highest rates
- Numbers and rates by state and territory
- Rates by remoteness and socioeconomic status
- Times difference and rates by local area across years (time series analysis), where applicable

NHMD items have two more standard figures where data are available:

- Rates by state and territory, by Aboriginal and Torres Strait Islander status
- Percentages and rates by state and territory, by patient funding status.

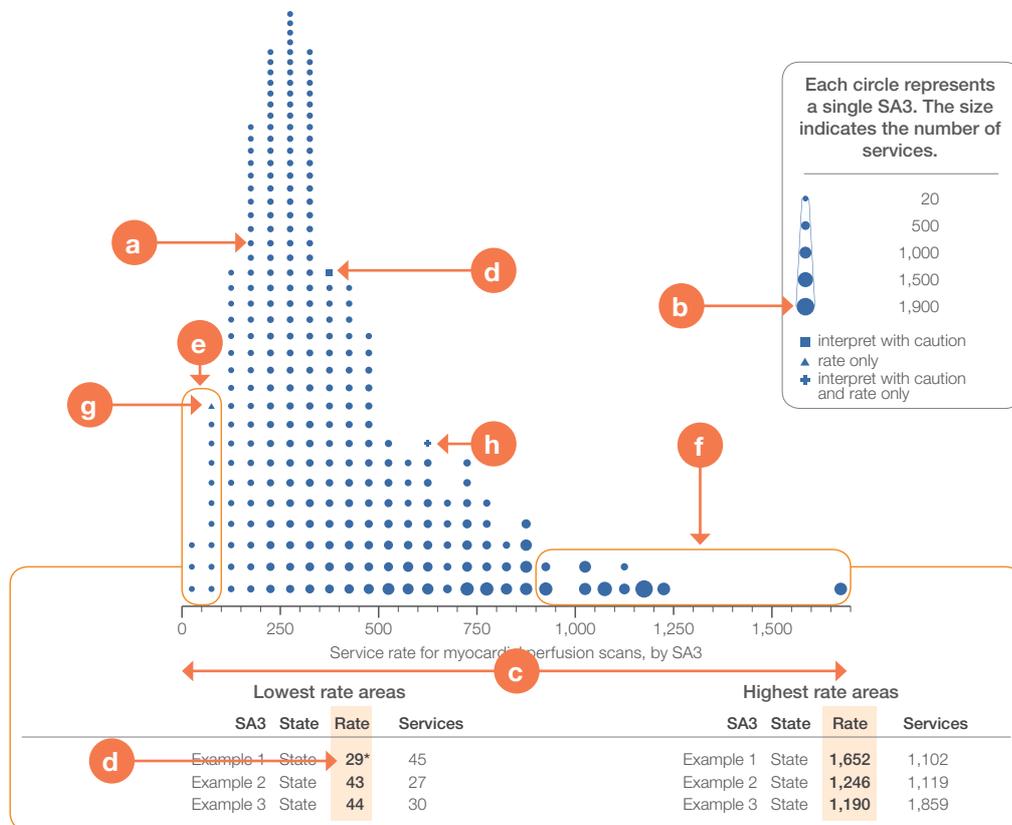
Standard figures for NPDC items are percentages by state and territory where data are available. Each figure presents a different analysis.

Further information on interpreting the figures for the print version of the fourth Atlas is provided on pages 33–36.

Additional figures are available for the online interactive Atlas at safetyandquality.gov.au/atlas

How to interpret our data visualisations

Histogram



a **What does the circle represent?**
Each circle represents an SA3. SA3s are geographical areas defined by the ABS that provide a standardised regional breakdown of Australia. SA3s generally have populations between 30,000 and 130,000 people.

b **Circle size**
The size of a circle indicates the number of events in that SA3. A large circle represents an SA3 with a greater number of events than SA3s with a smaller circle. Each histogram is accompanied by a legend to indicate scale.

c **Horizontal axis**
The horizontal axis shows the age- and sex-standardised rate. Rates are age and sex standardised to allow comparisons between populations with different age and sex structures.

d **Squares and asterisks**
Squares and asterisks indicate rates that are considered more volatile and should be interpreted with caution.

e **Lowest rates**
SA3s in the box are SA3s with the lowest age- and sex-standardised rates in Australia. The names, rates and numbers of events for these SA3s are listed in the table below the histogram.

f **Highest rates**
SA3s in the box are SA3s with the highest age- and sex-standardised rates in Australia. The names, rates and numbers of events for these SA3s are listed in the table below the histogram.

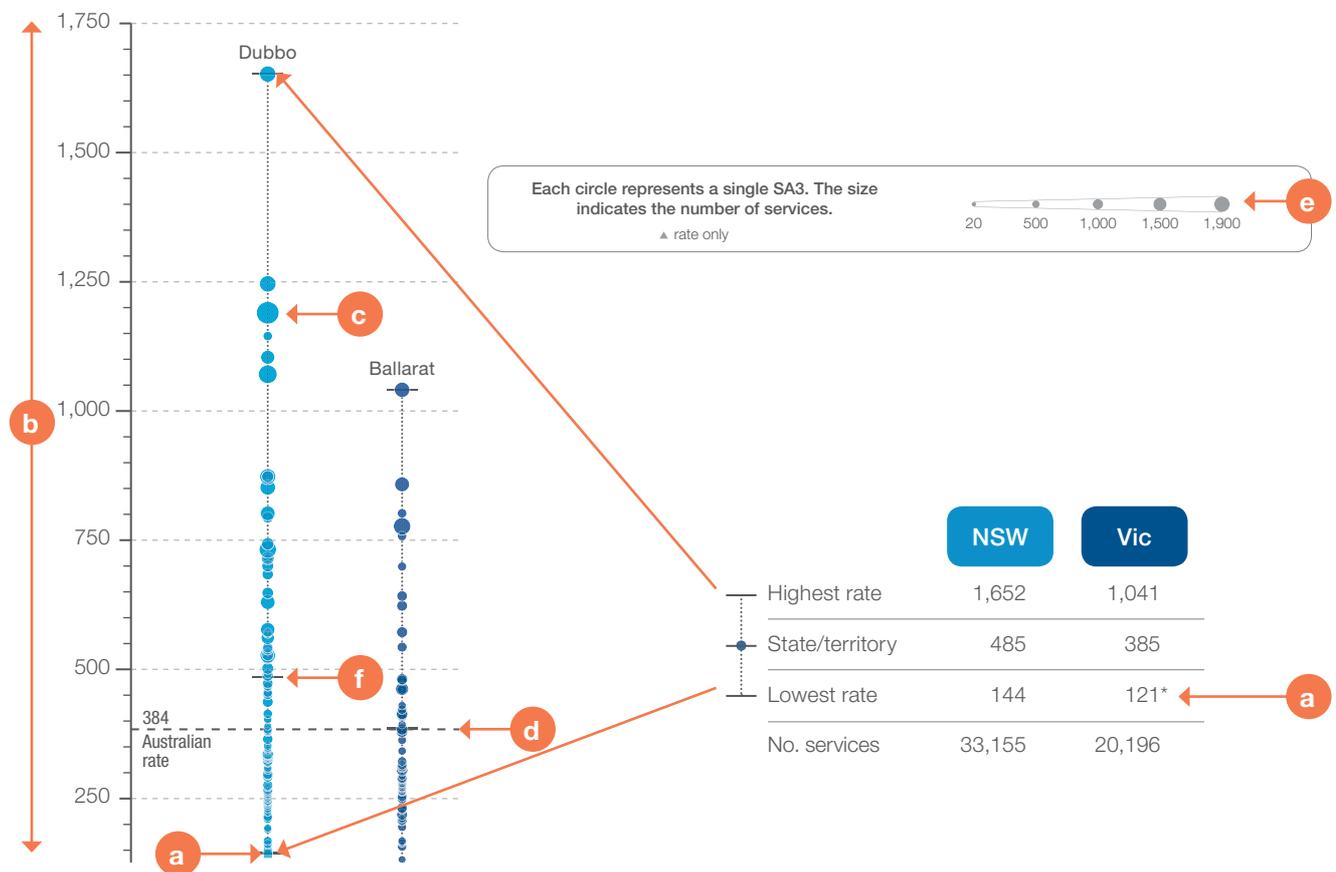
g **What does a triangle represent?**
Each triangle represents an SA3 where only the rate is published. The number of events is not published for confidentiality reasons.

h **What does a cross represent?**
Each cross represents an SA3 where the rate should be interpreted with caution, and the number of events is not published for confidentiality reasons.

About the Atlas

How to interpret our data visualisations

State and territory graphic



a Squares and asterisks
Squares and asterisks indicate rates that are considered more volatile and should be interpreted with caution.

b Vertical axis
The vertical axis shows the age- and sex-standardised rate. Rates are age and sex standardised to allow comparisons between populations with different age and sex structures.

c What does the circle represent?
Each circle represents an SA3. SA3s are geographical areas defined by the ABS that provide a standardised regional breakdown of Australia. SA3s generally have populations between 30,000 and 130,000 people.

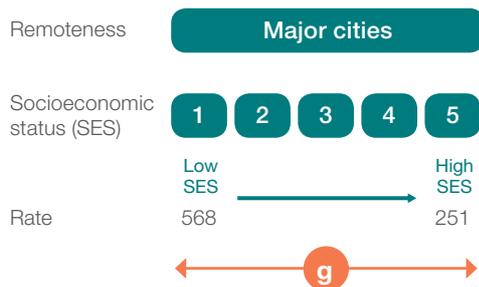
d Australian rate line
This line indicates the age- and sex-standardised rate for Australia.

e Circle size
The size of a circle indicates the number of events in that SA3. A large circle represents an SA3 with a greater number of events than SA3s with a smaller circle. Each graphic is accompanied by a legend to indicate scale.

f State and Territory rates
This line indicates the age- and sex-standardised rate for a state or territory.

How to interpret our data visualisations

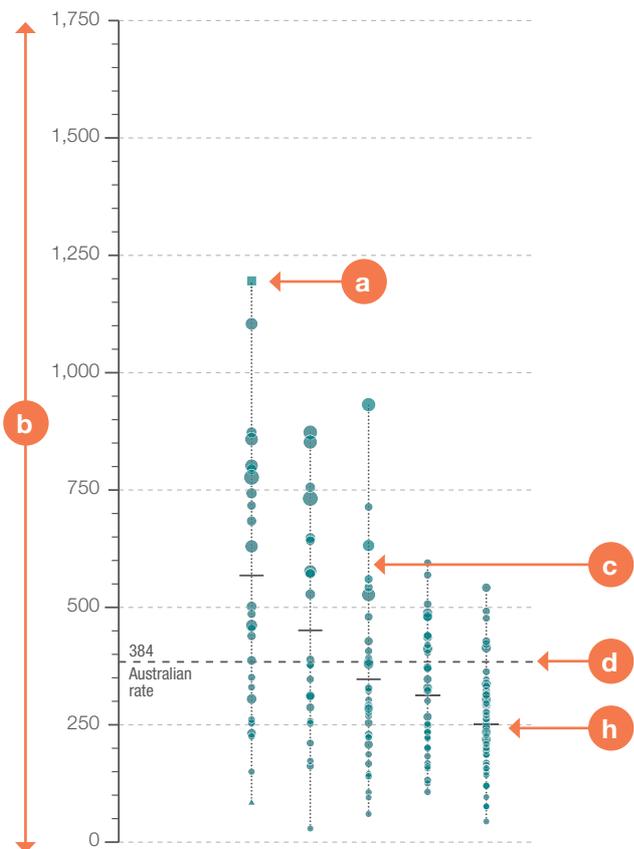
Remoteness and socioeconomic status graphic



g

Remoteness and socioeconomic status

Each SA3 is assigned a remoteness category and a socioeconomic status (SES) category, using remoteness and SES defined by the ABS. The lowest SES category has the most overall disadvantage, and the highest SES category has the least overall disadvantage. Some SES categories are combined in remoteness categories, except in major cities, to ensure sufficient numbers of SA3s for comparison. In this example, the remoteness and SES rate is higher with greater socioeconomic disadvantage.



h

Remoteness and SES

This line indicates the age- and sex-standardised rate for a combination of remoteness and SES.

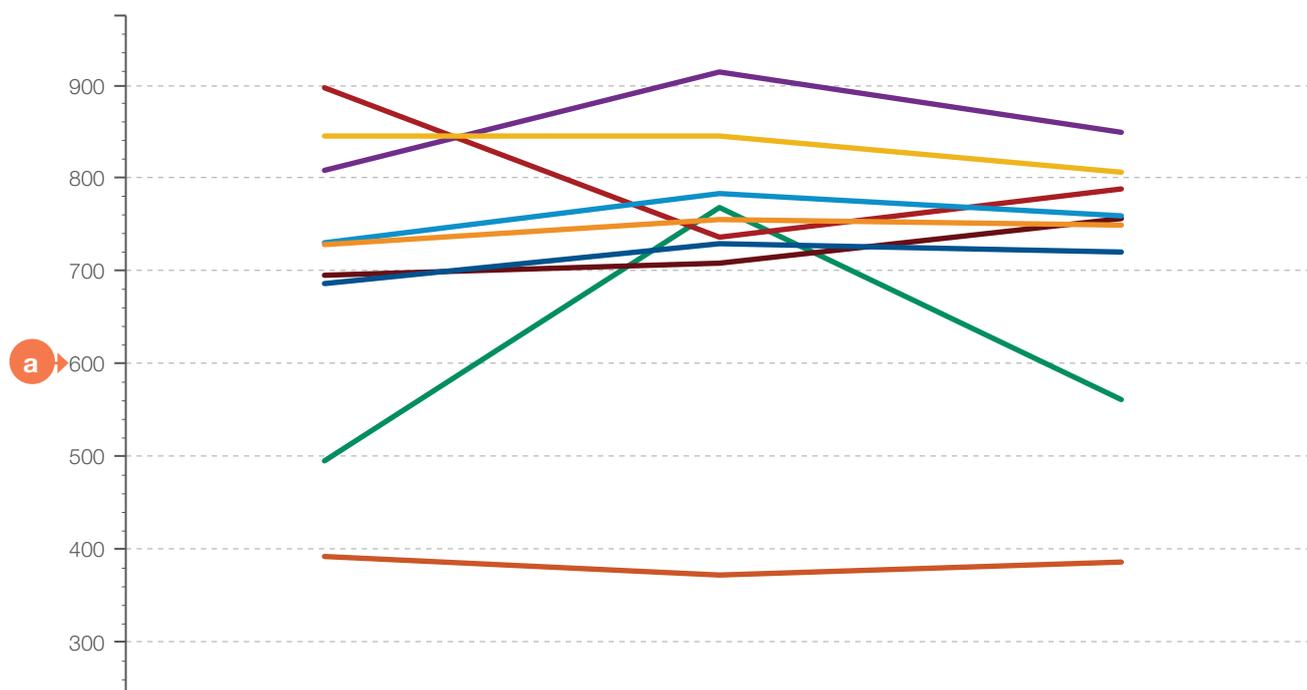
About the Atlas

How to interpret our data visualisations

Rates across years line graph

- a Vertical axis**
The vertical axis shows the age- and sex-standardised rate. Rates are age and sex standardised to allow comparisons between populations with different age and sex structures.
- b Australian rate**
The Australian age- and sex-standardised rate.
- c Highest rate**
The highest rate is the highest age- and sex-standardised rate of all SA3 rates.
- d Lowest rate**
The lowest rate is the lowest age- and sex-standardised rate of all SA3 rates.
- e Magnitude of variation**
The magnitude of variation is the times difference between the highest and lowest SA3 rates in Australia. Rates published with caution are excluded from the calculation.
- f Magnitude of variation without top and bottom 10%**
The magnitude of variation is the times difference between the highest and lowest SA3 rates after excluding the highest and lowest 10% of SA3 rates.

	2012-13	2015-16	2017-18
Highest SA3 rate	2,414	1,753	1,836 c
Australian rate	729	756	750 b
Lowest SA3 rate	218	258	305 d
Magnitude of variation	11.1	6.8	6.0 e
Magnitude of variation without top & bottom 10% SA3	2.3	2.3	2.2 f

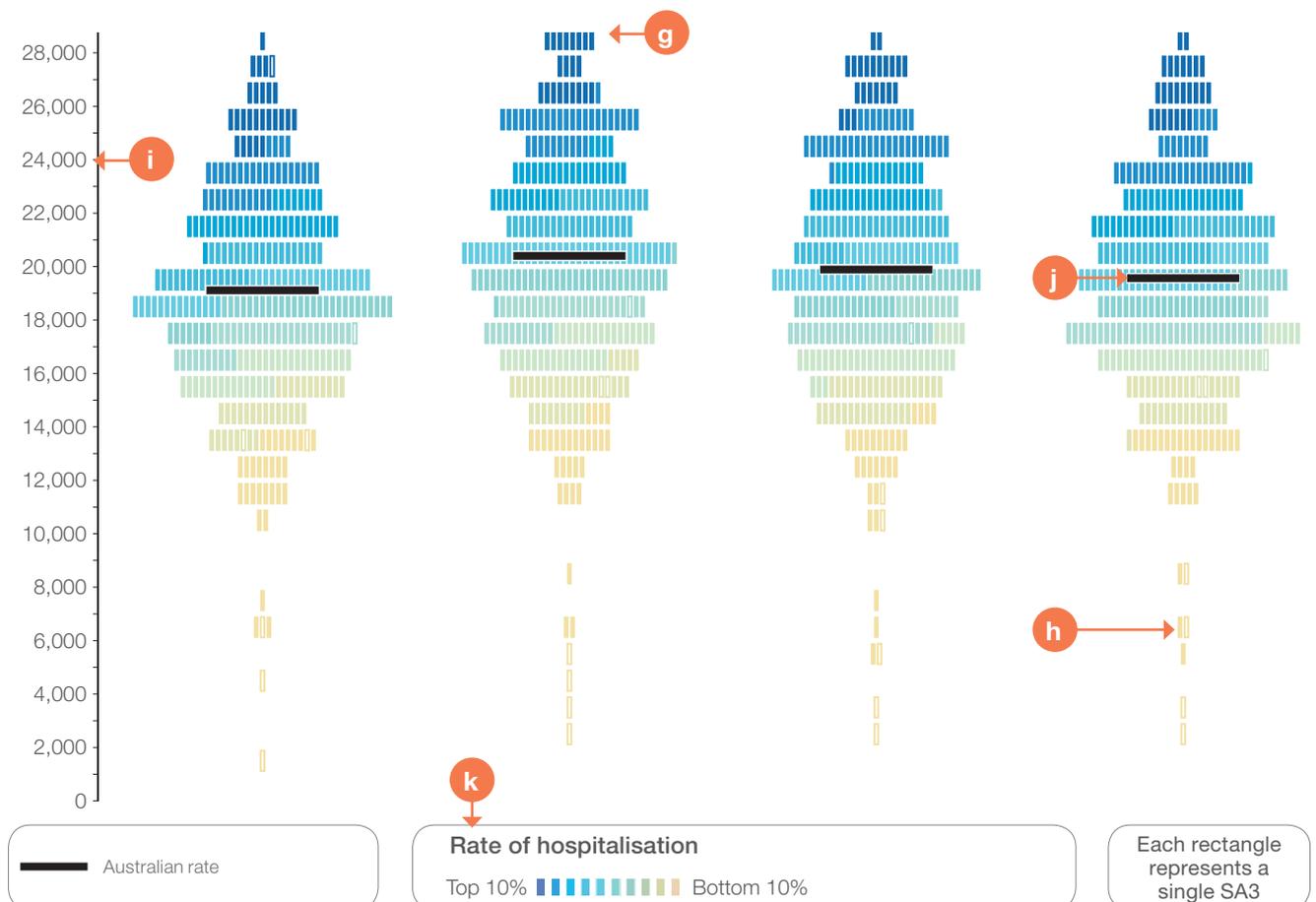


How to interpret our data visualisations

Rates across years graphic (interactive Atlas only)

This fully interactive graph is available at safetyandquality.gov.au/atlas

- g** **What does each diamond represent?**
Each diamond shows the rates for all SA3s in Australia for a given year.
 - h** **What does the rectangle represent?**
Each rectangle represents an SA3. SA3s are geographical areas defined by the ABS that provide a standardised regional breakdown of Australia. SA3s generally have populations between 30,000 and 130,000 people.
 - i** **Vertical axis**
The vertical axis shows the age- and sex-standardised rate. Rates are age and sex standardised to allow comparisons between populations with different age and sex structures.
 - j** **Australian rate**
This line indicates the Australian age- and sex-standardised rate.
 - k** **Rate of hospitalisation**
SA3s are not presented for those suppressed due to a small number of hospitalisations and/or population in an area. Darker colour of a rectangle represents an SA3 with a higher rate, and light colour represents an SA3 with a lower rate.
- Notes are displayed for SA3 rates that are considered more volatile than other published rates and needs to be interpreted with caution.





Chapter 1

Early planned births

At a glance



Planned birth by caesarean section or induction (a medical treatment to start labour) is an important intervention in maternity care. However, the timing of birth should be carefully considered to ensure the best outcome for the mother and her baby.

When planning for birth by caesarean section or induction of labour, waiting until at least 39 weeks gestation results in better short- and long-term outcomes for the baby, unless there are medical or obstetric reasons for earlier birth. Short-term risks, such as respiratory problems and the need for intensive care, are higher for babies born at early term (by caesarean section or induction of labour) than at full term. Longer-term risks in children born before 39 weeks gestation (either vaginally or by caesarean section) compared with those born at full term include cognitive deficits and a higher risk of attention deficit hyperactivity disorder.

In 2017, the ranges of state and territory rates for caesarean sections without a medical or obstetric indication, as percentages of all caesarean sections at these gestational ages, were*:

- <37 weeks, 13.3–19.3%
- <38 weeks, 24.8–32.7%
- <39 weeks, 42.8–56.1%.

Despite a number of data limitations (see page 49),[†] the estimates presented in this chapter suggest that the percentage of caesarean sections performed before 39 weeks without a medical or obstetric indication may be substantial, and action is needed to reduce these rates.

Strategies to reduce rates of planned birth without a medical or obstetric indication before 39 weeks gestation include:

- Changing policies of state and territory governments, hospitals and insurers to block booking of early planned births without a medical or obstetric indication
- Giving parents information about the risks and benefits of early planned birth, and support for shared decision making
- Giving clinicians information about the risks and benefits of early planned birth
- Collecting data on the reasons for early planned birth.

* Excludes Northern Territory.

Recommendations

The Commission consulted widely, but is solely responsible for making the recommendations; as such, the recommendations may not reflect the views of all contributors to the Atlas.

- 1a. It is recommended that pregnancies continue until at least 39 weeks gestation unless there is a medical or obstetric reason justifying earlier intervention.

- 1b. Health service organisations with maternity services, and clinicians, to implement systems to obtain informed patient consent that includes the provision of comparative information for prospective parents on the short- and long-term risks of early planned birth without a medical or obstetric indication.

- 1c. Health service organisations with maternity services to establish policies to cease booking planned births without a medical or obstetric indication before 39 weeks from July 2022 and to review adherence to these policies.

- 1d. Medicare Benefits Schedule payment for planned births before 39 weeks without a medical or obstetric indication to cease from July 2022.

- 1e. Health service organisations with maternity services, and clinicians, to ensure that care is consistent with The Whole Nine Months campaign.

- 1f. The Australian Institute of Health and Welfare (AIHW) to prioritise the development of the indicator on early caesarean section without a medical or obstetric indication in the National Core Maternity Indicators, including the need for a data element on the reason for early birth.

- 1g. All state and territory health departments to ensure consistent, routine collection and reporting of data on gestational age for planned births without a medical or obstetric indication to improve the quality of data collections. This should include reporting of gestational age in days to allow more in-depth understanding of the distribution of births occurring before 39 weeks.

1h. Health service organisations with maternity services to:

- i. Report early planned births without a medical or obstetric indication as part of mandatory reporting of National Core Maternity Indicators

 - ii. Conduct audits of records documenting the communication of information to prospective parents about the risks of early planned births without a medical or obstetric indication, and provide the results back to clinicians to act upon, in line with Action 1.28 of the National Safety and Quality Health Service Standards

 - iii. Incorporate individual clinicians' audit data as part of re-credentialing processes

 - iv. Report on agreed key performance indicators, trends and adverse events on early planned births without a medical or obstetric indication to the governing body.

- 1i. Short- and long-term risks arising from early planned birth without a medical or obstetric indication are avoidable. The Commission to include early caesarean section without a medical or obstetric indication in the national list of hospital-acquired complications.

1.1 Early planned births without medical or obstetric indication

Why is this important?

When planning for birth by caesarean section or induction of labour, waiting until at least 39 weeks gestation results in better short- and long-term outcomes for the baby, unless there are medical or obstetric reasons for earlier birth. Short-term risks, such as respiratory problems and the need for neonatal intensive care, are higher for babies born at early term (by caesarean section or induction of labour) than at full term.¹⁻⁴ There is some evidence of longer-term risks in children born before 39 weeks gestation (either vaginally or by caesarean section) compared with those born at full term, including cognitive deficits and a higher risk of attention deficit hyperactivity disorder (ADHD).⁵

What did we find?

In 2017, the ranges of state and territory rates for caesarean sections without a medical or obstetric indication, as a percentage of all caesarean sections at these gestational ages, were*:

- <37 weeks, 13.3–19.3%
- <38 weeks, 24.8–32.7%
- <39 weeks, 42.8–56.1%.

Rates of induction of labour without a medical or obstetric indication at gestational age of <39 weeks were also examined: in contrast to caesarean section, these percentages were very low, ranging from 0.2% to 6% in 2017 in six reporting states and territories.

What can be done?

Strategies to reduce rates of early planned birth[†] without medical or obstetric indication before 39 weeks gestation include:

- Revision of the Medical Benefits Schedule (MBS) to cease payments for early term planned births without a medical or obstetric indication
- State and territory governments, hospitals and insurers to cease allowing early planned births without a medical or obstetric indication
- Giving parents information about the risks (and benefits, in some cases) of early planned birth, and support for shared decision making
- Giving clinicians information about the risks and benefits of early planned birth
- Improving data collection and monitoring to highlight where progress is being made and where more work is needed
- Reporting to the public at the hospital level to improve transparency and accountability.

* Excludes Northern Territory. Note: the reason for caesarean section and the reason for early birth are not necessarily related; data on medical or obstetric reasons for early birth are not collected.

† Birth without established labour is interpreted as planned birth in this report.

Early planned births without medical or obstetric indication

Context

Planned birth by caesarean section or induction (a medical treatment to start labour) can be an important intervention in maternity care. However, the timing of birth should be carefully considered to ensure the best outcome for the mother and her baby.

Where there are certain medical or obstetric complications, such as pre-eclampsia or fetal growth restriction, early planned birth may be necessary because the risks of waiting until 39 weeks gestation outweigh the benefits.⁶ But if there are no complications, waiting until at least 39 weeks is optimal for the baby because the last few weeks of pregnancy are important for the baby's development, including brain and lung maturation.^{4,5}

Parents may not be aware that waiting until at least 39 weeks is best for their baby if there are no medical or obstetric reasons for earlier birth.⁷ Educational campaigns on this issue have emphasised the effects of early birth on brain maturity and the need for admission to a special care nursery if the baby is born early (Figure 1.1).

Redefining 'full term'

Until recently, birth between 37 and 41 weeks gestation was considered full term, and neonatal outcomes were generally thought to be the same during this period.⁸ Evidence of poorer outcomes for babies born before 39 weeks prompted a re-evaluation of this definition. From 2010, the descriptor 'early term' began to be used for 37–38 weeks gestation, and 'full term' for 39–40 weeks gestation.⁸

Risks of early-term birth

Short-term risks

Observational studies have shown an increase in short-term risks, such as respiratory problems and the need for neonatal intensive care, for babies born at early term (37–38 weeks) rather than full term (39–41 weeks). These risks are higher following planned birth by either caesarean section or induction of labour.¹⁻⁴ Even after fetal lung maturity has been confirmed, babies born by early planned birth without a medical or obstetric indication have significantly worse respiratory outcomes, and poorer overall neonatal outcomes, than full-term babies.⁹

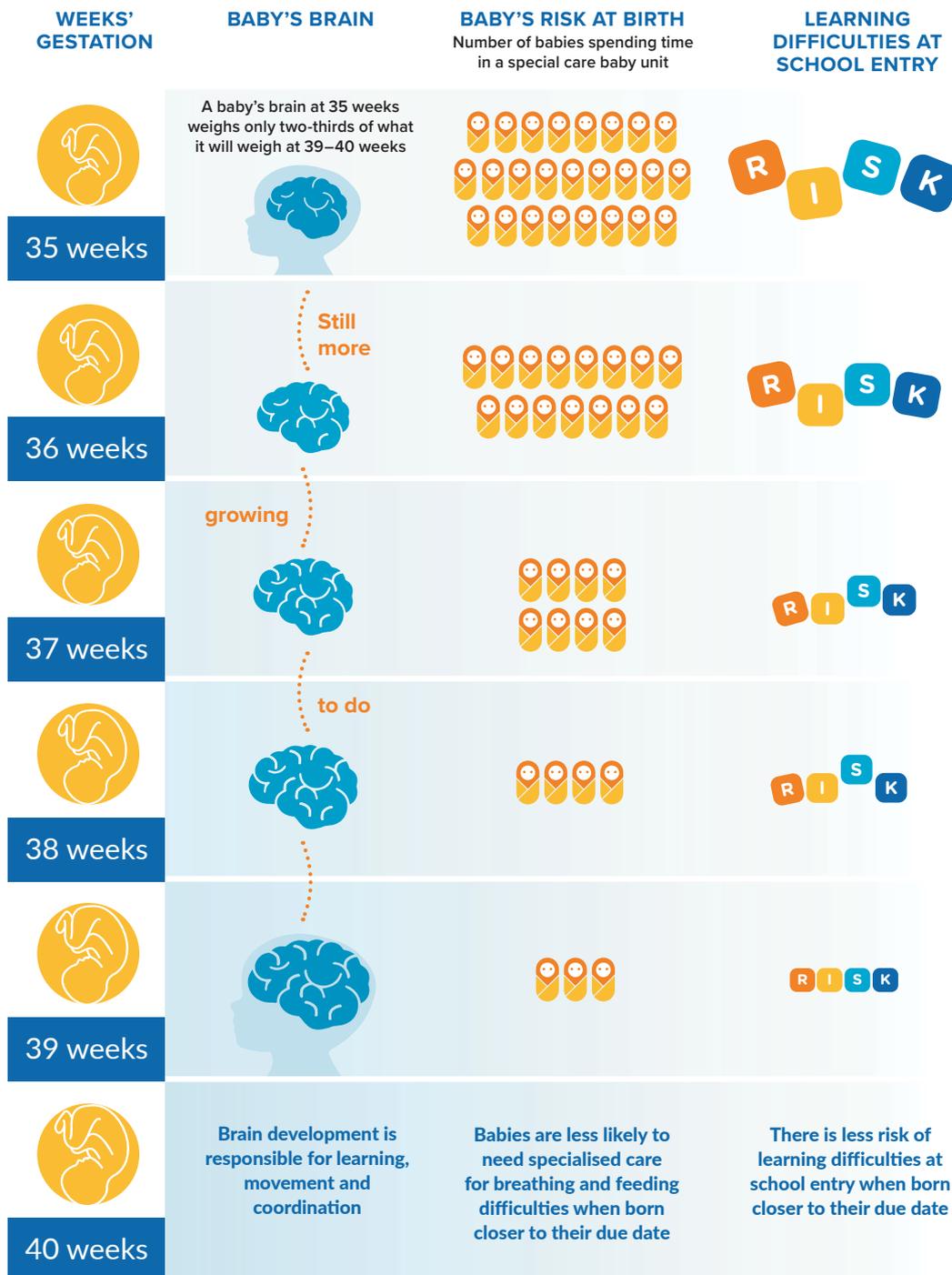
The risks of hypoglycaemia, jaundice and the need for neonatal intensive care unit for babies born by elective caesarean section decrease linearly from 37 weeks to 41 weeks gestation.⁴ That is, the earlier the planned birth in this period, the greater these risks.⁴ For example, among babies born by elective caesarean section, serious respiratory morbidity requiring neonatal intensive care occurred in 1.2% of those born at 37–38 weeks, compared with 0.5% of those born at 39–40 weeks, in an Australian study.¹⁰ Other potential consequences include negative psychological effects on parents from having their baby hospitalised in a neonatal intensive care unit.¹¹

The risk of neonatal death after elective caesarean section, although small, reaches the lowest point at 39 weeks, and then increases again.⁴ The risks of neonatal sepsis and of needing hospitalisation for five days or more also have a U-shaped course, with the lowest risk at 39 weeks.⁴

The risk of needing hospitalisation for infection in the first five years of life is higher among children born by planned caesarean section performed at 37–38 weeks gestation rather than at 39 weeks gestation.¹²

Figure 1.1: Every week counts towards the end of pregnancy*

EVERY WEEK COUNTS TOWARDS THE END OF PREGNANCY



* Reproduced with permission from Women and Babies Research, The Kolling Institute. Every Week Counts – version 1, 2019. Sydney: University of Sydney. everyweekcounts.com.au

Early planned births without medical or obstetric indication

Long-term risks

More recently, evidence has grown of an increased risk of effects on brain development from early-term birth. Compared with children born at 39–40 weeks, those born at 37–38 weeks (either vaginally or by caesarean section) have up to a 30% higher risk of ADHD and a 10–40% higher risk of cognitive problems.⁵ This evidence is based on observational studies, and includes spontaneous early births.

In some cases, poorer developmental outcomes may be explained by the obstetric factors that prompted the earlier birth. Studies that accounted for these factors still found poorer outcomes with birth at early term rather than full term.^{13,14} This suggests that harm is associated with the earlier timing, rather than the factors that prompted it.^{13,14} For example, a United States study of 128,050 children in third grade at school found that those born at early term (either vaginally or by caesarean section) had significantly poorer performance in maths than those born at full term.¹³ This effect remained even after accounting for the effect of obstetric factors such as caesarean birth, birth weight and maternal age, as well as socioeconomic disadvantage.¹³

Although developmental risks are greater for babies born before 37 weeks gestation, the greater frequency of births at 37 or 38 weeks gestation means that these births have larger implications at a population level.^{15,16} For example, children born at 37–39 weeks (either vaginally or by caesarean section) accounted for 5.5% of cases of special educational needs, compared with children born preterm (less than 37 weeks gestation), who accounted for 3.6% of cases, in a study of Scottish schoolchildren.¹⁶

Aboriginal and Torres Strait Islander children born at early term have a higher risk of developmental vulnerability than other Australian children born at the same gestational age.¹⁷ This is largely accounted for by the socioeconomic disadvantage experienced by Aboriginal and Torres Strait Islander people.¹⁷

Risks of waiting until 39 weeks

Stillbirth

The benefits of waiting until 39 weeks for birth must be weighed against the risk of stillbirth (Figure 1.2).¹⁸ The risk of stillbirth in Australia is 0.5 per 1,000 babies in utero at 36–39 weeks, rising to 0.8 per 1,000 at 40–41 weeks, and then rising more steeply to 2.3 per 1,000 at 42 weeks or more.¹⁹

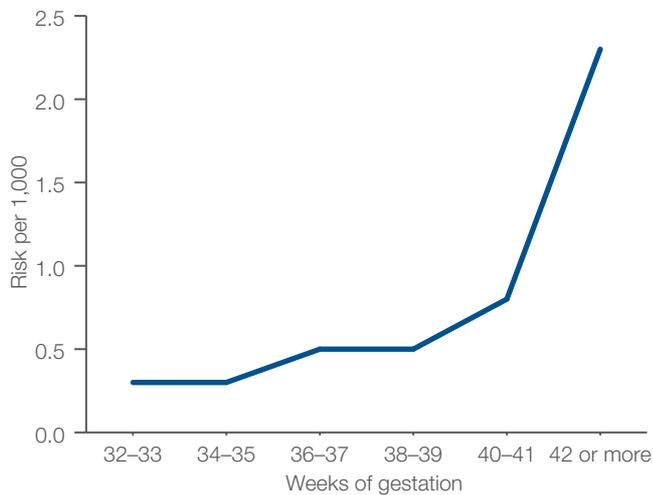
Identifying which babies are at risk and would benefit from earlier birth is challenging. Consequently, a large number of babies who would have benefited from longer gestation may need to be born early to prevent one stillbirth. The effects on neurodevelopmental outcomes from these early births are important and have been estimated.¹⁸ Although such estimates are complex and difficult to apply to decision-making for individuals, the risk of stillbirth and the risk of developmental problems appear to be at a minimum at 39–41 weeks for women and babies without known complications.

The assessment of risk versus benefit is likely to be different between ethnic groups. For example, the rate of stillbirth in south Asian- and African-born women is higher than in Australian-born women after 37 weeks gestation.²⁰

Risk of spontaneous labour

Another common concern about waiting until 39 weeks gestation for a planned caesarean section is the risk of the mother going into spontaneous labour beforehand, and possibly requiring an emergency caesarean section.²¹ This is a particular concern for women who live far from 24-hour emergency obstetric services. Emergency caesarean section is associated with higher risks of complications and higher costs.^{22,23} If caesarean section is planned for 39 weeks gestation, an estimated 13–25% of women will end up having a caesarean section after labour has started, compared with 8–11% if it is planned for 38 weeks gestation.²¹

Figure 1.2: Risk of stillbirth per 1,000 fetuses remaining in utero, by gestational age, Australia, 2015 and 2016



Source: *Stillbirths and Neonatal Deaths in Australia 2015 and 2016: In brief*.¹⁹

Guidelines for timing of planned birth

Several Australian states and territories have initiatives in place to reduce preterm and early-term births. These include guidance to avoid caesarean section and induction before 39 weeks gestation without a medical or obstetric indication – for example, The Whole Nine Months’ in Western Australia and Every Week Counts in New South Wales.^{24,25}

Guidelines for timing of planned caesarean section

Waiting until 39 weeks gestation for a planned caesarean section, if there are no medical or obstetric reasons for earlier birth, is now recommended by some Australian states and territories and several international organisations, including the American College of Obstetricians and Gynecologists, and the United Kingdom (UK) National Institute for Health and Care Excellence.²⁶⁻²⁸ A position statement from the Royal Australian and New Zealand College of

Obstetricians and Gynaecologists (RANZCOG) states: ‘On balance, weighing up the risk of respiratory morbidity following elective caesarean section and the risk of labouring prior to caesarean section, it is recommended that elective caesarean section in women without additional risks should be carried out at approximately 39 weeks gestation’.^{6,29}

Guidelines for timing of induction of labour without a medical or obstetric indication

Some international guidelines give recommendations on the timing of non-medically indicated induction of labour. For example, United States guidelines state that non-medically indicated inductions should not occur before 39 weeks gestation.²⁷ UK guidelines state that ‘Induction of labour should not routinely be offered on maternal request alone. However, under exceptional circumstances (for example, if the woman’s partner is soon to be posted abroad with the armed forces), induction may be considered at or after 40 weeks’.³⁰

No national Australian guidelines were found on the lower limit of gestational age for induction without a medical or obstetric indication.

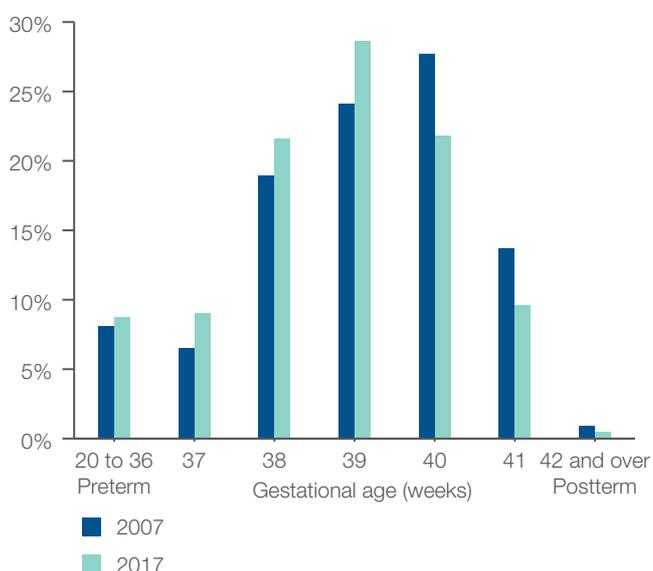
Early planned births without medical or obstetric indication

Trends in Australia

Gestational age at birth

Of all babies born each year in Australia, the proportion born at early term (37 or 38 weeks gestation) has increased in recent years. Between 2007 and 2017, the proportion of all babies born at 37, 38 or 39 weeks gestation increased, while the proportion born at 40 or 41 weeks gestation decreased (Figure 1.3).³¹

Figure 1.3: Percentage of babies, by gestational age in weeks, Australia, 2007 and 2017



Note: Pre-term births may include a small number of births of less than 20 weeks gestation.
Source: *Australia's Mothers and Babies 2017: In brief*.³¹

Caesarean section

Rates of caesarean section overall have risen steadily in Australia since the early 1990s. In 2017, 35% of births in Australia were by caesarean section, compared with 31% in 2007 and 18% in 1990.^{31,32} Australia's rate is higher than the average for countries in the Organisation for Economic Co-operation and Development (34 per 100 live births and 28 per 100 live births, respectively, in 2017).³³

Planned early-term caesarean section

Few Australian data are available on trends in the proportion of caesarean sections that are planned and occur at early term. In New South Wales, the proportion of all singleton births that were prelabour caesarean sections almost doubled between 1994 and 2009, increasing from 9.1% to 17.1%.³⁴ Another New South Wales study showed that, between 2001 and 2009, the rate of planned caesarean section at 38 weeks gestation increased from 4.3% to 5.4%, and at 39 weeks gestation from 4.2% to 7.1%.³⁵ The proportion of all caesarean sections or inductions reported with established medical or obstetric indications, such as maternal hypertension or fetal distress, decreased between 2001 and 2009, while the proportion increased for conditions in which evidence is equivocal (for example, diabetes mellitus).³⁵

Induction of labour

Rates of induction of labour have increased in Australia in recent years. Between 2007 and 2017, the percentage of mothers who had an induced labour increased from 25% to 33%.³¹ Diabetes and prolonged pregnancy are the most common reasons for induction.³¹

Patterns of gestational age at induction have also changed. In New South Wales, between 1994 and 2009, the rate of inductions at 40 weeks gestation decreased, and rates of induction at 37–39 weeks increased.³⁴

Rates of induction at early term (37–38 weeks) vary substantially between hospitals in New South Wales (3.3–13.9%). Early-term inductions are more common among women from the highest socioeconomic status areas than among those from the lowest socioeconomic status areas (24.1% compared with 15.2%).³⁶

Gestational diabetes

Gestational diabetes increases the risk of complications, including gestational hypertension, pre-eclampsia and having a baby that is large for gestational age.^{37–39} Among women who have a vaginal birth, the rate of shoulder dystocia and third- or fourth-degree perineal tears is higher for mothers with gestational diabetes than for those without diabetes.³⁸

The rate of gestational diabetes increased from 5.2% to 15.1% in Australia between 2000–01 and 2016–17.⁴⁰ A change in recommended diagnostic criteria in 2014 is likely to be responsible for part of this substantial rise.⁴¹ Other factors that are likely to have contributed to the increase in gestational diabetes include:

- Increased rates of obesity
- Increased age at child-bearing
- Immigration of women from ethnicities with higher rates of gestational diabetes, such as Asian, Indian, Torres Strait Islander, Pacific islander, Maori, Middle Eastern and non-white South African women.⁴²

Women diagnosed with gestational diabetes are more likely to have a planned birth than women without diabetes. They are also more likely to have a caesarean section than women without diabetes (40.4% and 33.0%, respectively, in Australia in 2014–15)⁴³ and more likely to have an induction than women without diabetes (44.4% and 27.2%, respectively, in 2014–15).⁴⁴

Planned birth by caesarean section or induction may be recommended as a result of conditions that develop because of gestational diabetes (for example, gestational hypertension) or conditions that are more common among mothers with gestational diabetes (for example, pre-existing hypertension).^{39,45} Caesarean section may be recommended to prevent shoulder dystocia and brachial plexus palsy, depending on the estimated weight of the baby.⁴⁶ Recommendations in Australian local guidelines for timing of birth for women with gestational diabetes vary.^{47,48}

Early planned births without medical or obstetric indication

Previous Atlas findings on early planned caesarean section

The *Third Australian Atlas of Healthcare Variation* included a special report on early planned caesarean section without a medical or obstetric indication. Although data collection by states and territories for this indicator was in its early stages, and was not yet complete enough to allow the usual maps and graphs presented for other Atlas topics, a combination of factors prompted the Australian Commission on Safety and Quality in Health Care to publish the available data:

- Growing evidence of long-term impacts on brain development in children who had a planned birth before 39 weeks gestation
- Increased risks of short-term adverse effects in babies born before 39 weeks, such as respiratory problems and the need for intensive care
- The large number of children affected in Australia and the potential to prevent substantial unnecessary adverse effects in the future.

What were the findings in the third Atlas?

The third Atlas reported that, in 2015, the percentage of planned caesarean sections performed at less than 39 weeks gestation without an obstetric or medical indication ranged from 42% to 60% in the four states and territories with data that could be presented.⁴⁹ The percentage of planned caesarean sections performed at less than 37 weeks gestation without an obstetric or medical indication ranged from 10% to 22% in the four states and territories with data that could be presented.

Rates were generally higher for patients with private accommodation status (private patients) than for patients with public accommodation status (public patients) for planned caesareans performed before 37 or 39 weeks. For example, in 2015, in the four states and territories with published data, the percentage of caesarean sections at less than 39 weeks gestation without an obstetric or medical indication was 51.6% for public patients, compared with 60.1% for private patients.⁴⁹

Why are we revisiting this topic?

This update includes an additional year of data (births in 2017) and provides a more complete picture of planned early births with the following additions:

- Publishable contributions from an additional three states and territories, allowing data from seven of the eight states and territories of Australia to be presented
- Data on planned caesarean section at less than 38 weeks, in addition to less than 37 and less than 39 weeks, as presented in the third Atlas; this shows the proportion of planned births that are carried out more than a week earlier than many guidelines recommend
- Data on inductions of labour without a medical or obstetric indication, as a proportion of all inductions for any reason, at less than 37, less than 38 and less than 39 weeks.

Important notes on the data used in this report

The draft National Core Maternity Indicator 18 – ‘Caesarean sections <39 completed weeks (273 days) without obstetric or medical indication’ used in this report was developed by the Expert Commentary Group responsible for the National Core Maternity Indicators to benchmark practice and to reduce neonatal respiratory morbidity by minimising early births. The indicator has not yet been endorsed by the National Health Data and Information Standards Committee and is not routinely reported. The potential to reduce avoidable harm prompted the Commission to publish data for this indicator.

A number of limitations with this indicator should be noted.

Birth without established labour is interpreted as planned birth in this report.

Data on the reason for early planned birth (by any method) are not available at the national level. Therefore, as a proxy measure, this indicator uses data collected on the main reason for caesarean section. The main reason for caesarean section may be unrelated to the reason for early birth. For example, there are a number of medical or obstetric reasons for early birth that will not appear as a reason for caesarean section, including pre-eclampsia and stillbirth. The induction indicator uses reason for induction as a proxy measure for early planned birth.

Differences exist between states and territories in definitions and methods used for collection of data on the main reasons for caesarean section and for induction. For this reason, data are not comparable across states and territories.

Some state and territory health departments found in their review of data that recording of the main reason for caesarean section was not always updated as the clinical situation evolved. For example, medical or obstetric indications for early birth, such as fetal compromise, were not always recorded as the main

indication for early caesarean section if a caesarean section had already been planned for other reasons. Similarly, clinical events such as pre-labour rupture of membranes may lead to an unplanned early caesarean section, but these were not always recorded if the caesarean section had already been planned for other reasons. This means that the count of planned caesarean sections performed before 39 weeks without medical or obstetric indication is an overestimate for some states. This may also apply to the recording of the reason for induction of labour. South Australia was unable to collect data for the main reason for caesarean section according to revised specifications introduced from 1 July 2015. Data were mapped by the Australian Institute of Health and Welfare (AIHW) to the revised specifications, where possible.

Data on the main indication for caesarean section are published at the state and territory level in the supplementary tables for the AIHW report *Australia's Mothers and Babies*.³¹ It is anticipated that, as clinicians start to use the data for quality improvement purposes, all states and territories will be able to report according to the specifications.

Caesarean section without medical or obstetric indication

The numerator for this indicator is caesarean sections ‘without medical or obstetric indication’ where the caesarean section occurred in the absence of labour and at less than 39 completed weeks for the following reasons:

- Maternal choice in the absence of any obstetric, medical, surgical or psychological indication
- Previous caesarean section
- Previous severe perineal trauma
- Previous shoulder dystocia.

Although these may be indications for planned caesarean section, they were not considered reasons for early planned caesarean section – that is, before 39 weeks.

Early planned births without medical or obstetric indication

The listed reasons included in the data element 'Main indication for caesarean section' in the perinatal data collection were used in the development of the indicator for this report. For the purposes of this report, all indications in the data element, except the four listed above, were considered medical or obstetric indications for early planned caesarean section.

The denominator is the total number of women who gave birth by caesarean section at less than 39 completed weeks gestation and where there was no established labour.

Induction of labour without medical or obstetric indication

The numerator for this indicator is induction of labour 'without medical or obstetric indication' at less than 39 completed weeks gestation for the following reasons:

- Administrative or geographical indication
- Maternal choice in the absence of any obstetric, medical, fetal, administrative or geographical indication.

The denominator is the total number of women who gave birth following induction of labour at less than 39 completed weeks gestation.

Data source and subanalyses

Data are sourced from the National Perinatal Data Collection, which includes births that occur in hospitals, birth centres and the community (such as home births), for patients with public or private elected accommodation status. Because of small numbers, data are reported only at the state and territory level. Reporting by smaller geographical area, remoteness and socioeconomic disadvantage is not possible.

Data availability

Data were available for publication for seven states and territories for the caesarean section indicator. Nationally, there were 37,709 caesarean sections before 39 weeks gestation without established labour (denominator of this indicator) in 2017. Of these, 37,182 caesarean sections (98.6%) were from the seven reporting states and territories; 527 (1.4%) were from the remaining territory and are not included in the analysis.

Data were available for publication for six states and territories for the induction of labour indicator. Nationally, there were 37,278 inductions before 39 weeks gestation without established labour (denominator for this indicator) in 2017. Of these, 26,992 inductions (72.4%) were from the six reporting states and territories; 10,286 (27.6%) were from other states and territories and are not included in the analysis.

What do the data show?

Early planned birth without a medical or obstetric indication

Caesarean section without a medical or obstetric indication

In 2017, the ranges of state and territory rates for caesarean sections without a medical or obstetric indication, as a percentage of all caesarean sections at these gestational ages, were (Figure 1.4)*:

- <37 weeks, 13.3–19.3%
- <38 weeks, 24.8–32.7%
- <39 weeks, 42.8–56.1%.

* Excludes the Northern Territory
Birth without established labour is interpreted as planned birth in this report.

Figure 1.4: Caesarean sections at <37, <38 or <39 weeks without a medical or obstetric indication, as a percentage of all caesarean sections at these gestational ages, by state and territory of usual residence, 2017^{a-g}



The data for Figure 1.4 are available at safetyandquality.gov.au/atlas

Notes:

- (a) Because of differences in definitions used and methods of data collection, these data are not comparable across states and territories.
- (b) Data include women who gave birth by caesarean section with no established labour only.
- (c) 'Without obstetric or medical indication' includes the following reasons for caesarean section: previous caesarean section; previous severe perineal trauma; previous shoulder dystocia; and maternal choice in the absence of any obstetric, medical, surgical or psychological indications. Although these may be indications for planned caesarean section, they were not considered reasons for planned caesarean section before 39 weeks. See page 49 for more information on obstetric and medical indications.
- (d) Clinical indications for early delivery, such as fetal compromise, were not always recorded as the main indication for caesarean section when the decision to deliver by caesarean section was pre-planned in the antenatal period.
- (e) South Australia was unable to collect data for this item according to revised specifications introduced from 1 July 2015. Data have been mapped to the new specifications, where possible.
- (f) Data for the Northern Territory were not published.
- (g) For Tasmania, the majority of private hospitals were unable to collect data for this item according to revised specifications introduced from 1 July 2015. Data have been mapped to the new specifications where possible. Care must be taken when interpreting these numbers.

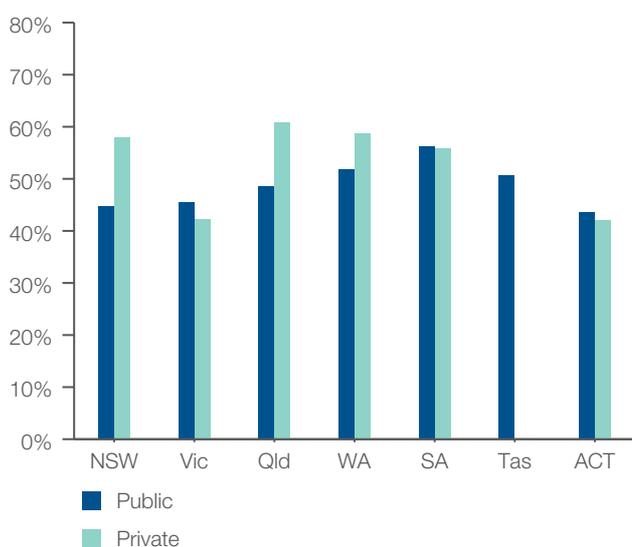
Source: AIHW analysis of National Perinatal Data Collection.

Early planned births without medical or obstetric indication

Analysis by funding status

Rates of caesarean section at less than 39 weeks without a medical or obstetric indication were higher for private patients than for public patients in New South Wales, Queensland and Western Australia (Figure 1.5). The rates for public and private patients were similar in both South Australia and the Australian Capital Territory.

Figure 1.5: Women who gave birth by caesarean section at less than 39 completed weeks gestation without medical or obstetric indication, by state and territory of usual residence and admitted patient elected accommodation status, 2017^{a-i}



The data for Figure 1.5 are available at safetyandquality.gov.au/atlas

Analysis by Aboriginal and Torres Strait Islander status

Data on rates of caesarean section at less than 39 weeks gestation without a medical or obstetric indication for Aboriginal and Torres Strait Islander women were available for publication from four states. Data were available from three other states and territories but could not be published for confidentiality reasons due to small numbers.

The percentages of caesarean sections performed at less than 39 weeks gestation without an obstetric or medical indication in the states with published data were lower among Aboriginal and Torres Strait Islander women than among other Australian women (Figure 1.6). The difference was 2 to 4 percentage points in each state.

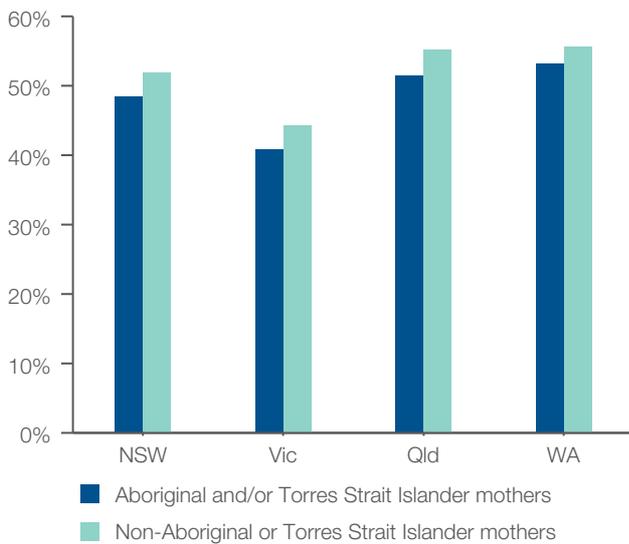
The denominators are low for this category (for example, for one state, the denominator is 110), so caution should be used in judging whether differences are significant.

Notes:

- Because of differences in definitions used and methods of data collection, these data are not comparable across states and territories.
- Data include women who gave birth by caesarean section with no established labour only.
- 'Without obstetric or medical indication' includes the following reasons for caesarean section: previous caesarean section; previous severe perineal trauma; previous shoulder dystocia; and maternal choice in the absence of any obstetric, medical, surgical or psychological indications. Although these may be indications for planned caesarean section, they were not considered reasons for planned caesarean section before 39 weeks. See page 49 for more information on obstetric and medical indications.
- Clinical indications for early delivery, such as fetal compromise, were not always recorded as the main indication for caesarean section when the decision to deliver by caesarean section was pre-planned in the antenatal period.
- For Western Australia, some private hospitals admit public women; hence, the number of women who elected private status might be lower than the number of women admitted to private hospitals. Care must be taken when interpreting these numbers.
- South Australia was unable to collect data for this item according to revised specifications introduced from 1 July 2015. Data have been mapped to the new specifications, where possible.
- For Tasmania, the majority of private hospitals were unable to collect data for this item according to revised specifications introduced from 1 July 2015; this may affect women with an admitted patient elected accommodation status of both public and private. Data have been mapped to the new specifications where possible. Data for public hospitals were collected according to the new specifications. Care must be taken when interpreting these numbers.
- Data for the Northern Territory were not published.
- Excludes women who gave birth in birth centres attached to hospitals.

Source: AIHW analysis of National Perinatal Data Collection.

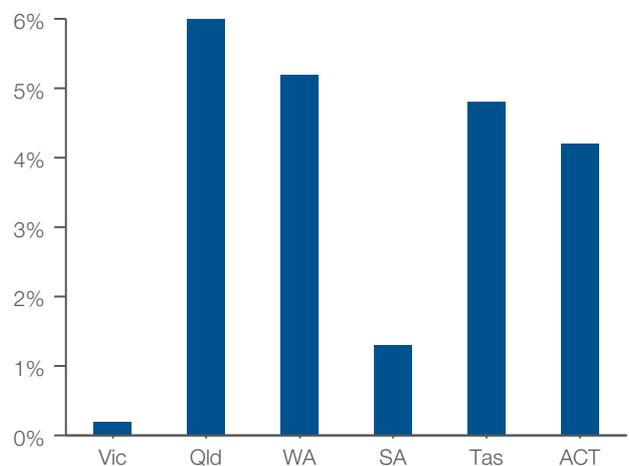
Figure 1.6: Women who gave birth by caesarean section at less than 39 weeks gestation without medical or obstetric indication, by state of usual residence and Aboriginal and Torres Strait Islander status, 2017^{a-g}



Induction of labour without a medical or obstetric indication

State and territory rates for induction of labour at less than 39 weeks gestation without a medical or obstetric indication ranged from 0.2% to 6.0% (excludes New South Wales and the Northern Territory; Figure 1.7).

Figure 1.7: Inductions at less than 39 weeks without a medical or obstetric indication, as a percentage of all inductions at less than 39 weeks, by state and territory of usual residence, 2017^{a-g}



The data for Figures 1.6 and 1.7 are available at safetyandquality.gov.au/atlas

Notes:

- Because of differences in definitions used and methods of data collection, these data are not comparable across jurisdictions.
- Data include women who gave birth by caesarean section with no established labour only.
- 'Without obstetric or medical indication' includes the following reasons for caesarean section: previous caesarean section; previous severe perineal trauma; previous shoulder dystocia; and maternal choice in the absence of any obstetric, medical, surgical or psychological indications. Although these may be indications for planned caesarean section, they were not considered reasons for planned caesarean section before 39 weeks. See page 49 for more information on obstetric and medical indications.
- Clinical indications for early delivery, such as fetal compromise, were not always recorded as the main indication for caesarean section when the decision to deliver by caesarean section was pre-planned in the antenatal period.
- Data for South Australia, Tasmania and the Australian Capital Territory are not published for confidentiality reasons due to small numbers (less than 5) of Aboriginal and Torres Strait Islander women.
- Data for the Northern Territory were not published.
- In 2017, 4.5% of women who gave birth in Australia identified as Aboriginal and/or Torres Strait Islander.³¹

Source: AIHW analysis of National Perinatal Data Collection.

Notes:

- Includes women who had induced labour and gave birth vaginally (including non-instrumental, forceps and vacuum extraction); or induced labour and gave birth by caesarean section.
- 'Without obstetric or medical indication' includes the following reasons for induction of labour: administrative or geographical indication; and maternal choice in the absence of any obstetric, medical, fetal, administrative or geographical indication.
- Because of differences in definitions used and methods of data collection, these data are not comparable across states and territories.
- Data not provided for New South Wales, because data for reason for induction of labour could not be collected according to revised specifications introduced from 1 July 2015.
- South Australia was unable to collect data for reason for induction of labour according to revised specifications introduced from 1 July 2015. Data have been mapped to the new specifications, where possible.
- Data for the Northern Territory were not published.
- For Tasmania, the majority of private hospitals were unable to collect data for this item according to revised specifications introduced from 1 July 2015. Data have been mapped to the new specifications where possible. Care must be taken when interpreting these numbers.

Source: AIHW analysis of National Perinatal Data Collection.

Early planned births without medical or obstetric indication

Analyses by remoteness and socioeconomic status

Small numbers made analyses by remoteness and socioeconomic status difficult to interpret. Data are available at safetyandquality.gov.au/atlas

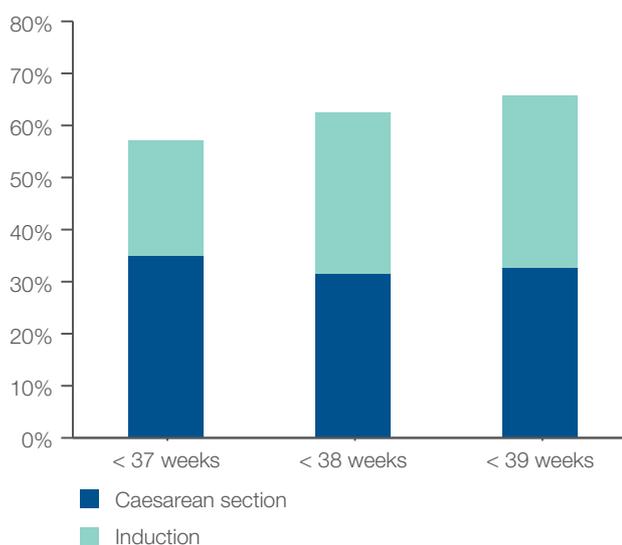
Early planned births, for any reason

Data presented in the previous section related to planned births without a medical or obstetric indication. The data in this section show planned births for any reason – that is, caesarean section or induction with or without a medical or obstetric indication.

The rates of women who gave birth by caesarean section (without labour) or following induction, as a percentage of all births at these gestational ages, for six states and territories were (Figure 1.8)*:

- <37 weeks, 57.1%
- <38 weeks, 62.7%
- <39 weeks, 65.7%.

Figure 1.8: Women who gave birth by caesarean section or who had labour induced, for any reason, as a percentage of all women giving birth at each gestational age, six states and territories, by gestational age, 2017^{a-d}



The data for Figure 1.8 are available at safetyandquality.gov.au/atlas

* Excludes New South Wales and the Northern Territory.

Notes:

- Excludes New South Wales and the Northern Territory. Data were not provided for New South Wales, because data for reason for induction of labour could not be collected according to revised specifications introduced from 1 July 2015. Data for the Northern Territory were not published.
- Caesarean section data include women who had no established labour and gave birth by caesarean section. Induction data include women who had induced labour and gave birth vaginally (including non-instrumental, forceps and vacuum extraction); or induced labour and gave birth by caesarean section.
- Data exclude Australian non-residents, residents of external territories and records where state or territory of residence was not stated.
- In the case of multiple births, gestational age and method of birth are based on the first-born baby.

Source: AIHW analysis of National Perinatal Data Collection.

Interpretation

Despite data limitations (see ‘Important notes on the data used in this report’), the estimates presented in this chapter suggest that the percentage of caesarean sections performed before 39 weeks without a medical or obstetric indication may be substantial, and action is needed to reduce these rates. See ‘Planned early caesarean section without a medical or obstetric indication’, below.

In the case of inductions of labour, almost all were performed with a medical or obstetric indication, but the number of babies in this group is large and the indications are not universally agreed. Further debate, and weighing of the risks and benefits could shed light on whether reducing the rate of inductions before 39 weeks could produce better outcomes for children overall. See ‘Influences on induction rates’ (page 56).

Planned early caesarean section without a medical or obstetric indication

Approximately half of the planned caesarean sections performed before 39 weeks did not have a stated medical or obstetric indication in 2017. This translates into a large number of children who may have an increased risk of adverse outcomes.

The availability of publishable data improved between 2015 and 2017, increasing from four to seven states and territories, which is an encouraging development.

Planned early caesarean section at less than 38 weeks

The third Atlas noted that the gestational age recommended in the RANZCOG position statement differed from the cut-off age used in the data item (‘approximately 39 weeks’ and ‘39 weeks’, respectively), which would have affected the interpretation of findings.⁶ For example, planned births at 38 weeks and 6 days gestation are appropriate

according to the RANZCOG position statement, but were counted in the numerator of the third Atlas data.⁶ In the fourth Atlas, additional analyses with less than 38 weeks and less than 37 weeks as the cut-off gestation period have been included, to clarify the proportion of planned caesarean sections that occurred well before the RANZCOG recommended minimum gestational age of approximately 39 weeks.

The percentage of planned caesarean sections without obstetric or medical indication occurring before 37 weeks gestation (13.3–19.3%) and before 38 weeks gestation (24.8–32.7%) shows that a substantial number are occurring well before the RANZCOG recommendation of approximately 39 weeks gestation.⁵⁰

Public versus private funding

The relationship between elected public or private accommodation status and rate of early planned caesarean section varied considerably among states and territories.

Aboriginal and Torres Strait Islander women

In 2017, 29% of Aboriginal and Torres Strait Islander women gave birth by caesarean section, compared with 35% of all women giving birth in Australia.³¹

The rates of early-term caesarean section without a medical or obstetric indication were lower among Aboriginal and Torres Strait Islander women than among other Australian women in the four reporting states. The difference was between 2 and 4 percentage points in each of the four states. Analysis by remoteness was not possible with the available data, but the rate of early planned birth among Aboriginal and Torres Strait Islander women living in remote areas may be greater because of the need to travel to a major centre.

Early planned births without medical or obstetric indication

Potential reasons for variation

The reported rates of early planned births could be influenced by a number of factors, such as variation in:

- Data factors (see 'Important notes on the data used in this report' (page 49))
- Clinician and organisational factors
 - failure to implement best-practice guidelines
 - MBS item descriptor and private health insurance payment do not reflect best practice
 - culture within individual hospitals and individual clinicians⁵¹
 - method for calculating estimated due date, which may give differing estimates
 - opinion on what constitutes a valid medical or obstetric indication for early planned birth
 - accountability for the decision to schedule an early planned birth⁵²
 - quality of information provided to enable shared decision making and informed consent
 - operating theatre capacity
- Health system factors
 - proportion of smaller units in each state or territory – limited capacity may increase rates of early planned birth
 - implementation of stillbirth prevention initiatives⁵³
 - access to midwife-led care
 - state and territory training requirements for general practitioners (GPs) providing antenatal shared care – mandatory training and refresher courses may increase awareness of risks of early planned birth
- Demographic and consumer factors
 - social factors – for example, timing to ensure that the partner is present for the birth in areas with military bases or fly-in-fly-out workers

- rates of private health insurance – early planned birth rates are higher among private patients in some states and territories; lower rates of early planned birth among Aboriginal and Torres Strait Islander women may reflect lower rates of private health insurance in this population
- maternal obesity
- proportion of pregnancies resulting from assisted reproduction technologies
- rates of induction of labour without a medical or obstetric indication before 39 weeks – a proportion become caesarean section births.

Influences on induction rates

Hospital factors appear to play a substantial role in decision-making about induction.³⁶ A New South Wales study found large variation in induction rates overall, and in early-term induction rates, between hospitals, even after accounting for differences in casemix (for example, rates of diabetes or hypertension).³⁶ Overall, half of the variation in hospital rates of induction at 37–38 weeks could be explained: 7% was explained by patient factors, and 43% by hospital factors.³⁶ Hospital factors included annual number of births, neonatal care facilities, region, and obstetric training provided. Culture within hospitals also appears to play a substantial role in influencing rates of induction.³⁶

A qualitative study of decision-making about induction in New South Wales hospitals found the following⁵²:

- Obstetricians in hospitals with high rates of induction tended to have less accountability for the decision to induce labour
- A common decision point that determined whether an induction went ahead was the acceptance of the booking in the hospital – if the bookings were taken by a senior midwife who had the authority to question the decision, the hospital was more likely to have a lower rate of induction
- Variations in decisions about induction were based on obstetricians' perceptions of risk in the pregnancy

- Where obstetricians within the same hospital had substantially different approaches to induction, induction rates tended to be higher – if a hospital had one obstetrician with a greater tendency to induce labour than their colleagues, women were able to ‘doctor shop’ within the hospital and have the induction that the previous obstetrician had refused.

Inconsistencies in guideline recommendations about indications and timing could contribute to variation in rates of induction.⁵⁴ Guidelines are most consistent on the following indications for induction:

- Prolonged pregnancy
- Decreased fetal movements and oligohydramnios, although recommendations on timing are absent or inconsistent.⁵⁴

There is little consensus on the validity or timing of induction for:

- Gestational diabetes
- Fetal macrosomia
- Elevated maternal body mass index
- Maternal age
- Ethnicity.

A lack of high-quality evidence to drive recommendations in guidelines is likely to contribute to variation in the level of consensus.⁵⁴

Distance from metropolitan areas

The need to avoid an emergency caesarean section is greater in settings without rapid, 24-hour access to an operating theatre. Rates of caesarean section before 39 weeks gestation may be higher in some nonmetropolitan areas for this reason.

Policy and guideline differences

Differences in the gestational age used as the cut-off for this indicator (‘less than 39 completed weeks’) versus that recommended in the RANZCOG position statement (‘approximately 39 weeks’) may have inflated rates reported for this item.⁶

For example, births at 38 weeks and 6 days gestation are appropriate according to the RANZCOG position statement, but are included in some of the data in this analysis.⁶

Reducing rates of early planned birth

The high rates reported for planned caesarean sections without an obstetric or medical indication occurring before 39 weeks, 38 weeks and 37 weeks gestation highlight the need for a concerted effort to address this issue.

Multifaceted approaches

The Western Australian Preterm Birth Prevention Initiative to reduce the rate of preterm births and non-medically indicated early-term births was implemented from 2014.⁵⁵ The initiative includes education materials and workshops for health professionals, as well as a consumer education campaign. The rate of preterm birth (20–37 weeks) was significantly reduced over the three years evaluated in tertiary centres.⁵⁵ The greatest reduction in preterm birth (from 16.1% in 2013 to 12.8% in 2017) was seen in pregnancies classified as low risk at the first attendance, and in established tertiary centres.⁵⁵ In non-tertiary centres, preterm birth was reduced in the first year, but not in the subsequent two years. No benefit was seen in the private sector. The rate of stillbirth did not change significantly after the program was implemented.⁵⁵ The Australian Preterm Birth Alliance grew out of the Western Australian experience, and is now adapting similar prevention strategies for implementation across Australia.⁵⁶

Many organisations in the United States have worked to reduce rates of preterm birth and birth before 39 weeks gestation without a medical or obstetric indication, and large improvements have been seen in recent years.⁵⁷ Strategies have included publishing data, undertaking public awareness campaigns, educating clinicians and prohibiting bookings for births before full term.

Early planned births without medical or obstetric indication

A multifaceted approach is also needed in Australia. This could include:

- Providing parents with information about fetal development, and the risks (and benefits, in some cases) of early-term births
- Providing support for shared and informed decision making
- Implementing hard-stop policies in hospitals (see 'Clinician education and hospital policies')
- Providing information to clinicians about the risks and benefits of early-term births, and advice about how to have conversations with parents about the issue
- Collecting data on reasons for early birth
- Using the Robson classification system to assess caesarean section practices over time at a hospital level
- Ensuring that hospital-level public reporting includes planned births without a medical or obstetric indication before 39 weeks
- Supporting case load midwifery models of care
- Including balance measures to minimise unnecessary early births prompted by initiatives to reduce stillbirth
- Supporting local initiatives to reduce early planned birth without a medical or obstetric indication
- Supporting further research to determine the risk of outcomes by gestational age, and maternal and fetal characteristics (for example, ethnicity, fetal size).

Women's knowledge, shared decision making and informed consent

Gaps in women's knowledge about the optimal timing of birth were shown in Australian research that reported that more than half of the pregnant women surveyed believed that 37–38 weeks gestation was the earliest time for safe birth.⁷ Women support education initiatives and decision aids as strategies to improve shared decision making about planned caesarean section.⁵⁸ Providing education to parents about difference in outcomes, particularly effects on

long-term child development, between early-term and full-term births could be a powerful strategy to reduce early planned birth where there are no medical or obstetric indications. Making this information available at the beginning of pregnancy and again halfway through would provide time for women to consider it before discussions about the timing of planned birth, if this was being contemplated. Decision aids show promise as a strategy to improve shared decision making about planned caesarean section, and are viewed positively by both women and clinicians.⁵⁸

Greater engagement with consumers is needed to support woman-centred maternity care. Meaningful collaboration with consumers in policy development and at an organisational level is needed to ensure that health service planning and delivery reflect consumer values and priorities.

Clinician education and hospital policies

Providing information for clinicians about the most recent evidence for optimal timing of planned birth, and how to have conversations with parents about the issue, may be useful. However, combining education with changes to hospital policies is more effective for reducing early planned birth that is not medically indicated.⁵⁹ This was shown in a United States study of three different approaches to reducing elective early-term births (inductions and caesarean sections):

- Education only – physicians were given literature and recommendations against performing purely elective births at less than 39 weeks gestation
- Education plus a 'soft-stop' approach – compliance with a policy of not scheduling purely elective births at less than 39 weeks gestation was left up to individual physicians, but all exceptions to the policy were referred to a local peer review committee
- Education plus a 'hard-stop' approach – purely elective planned births at less than 39 weeks gestation were prohibited, and the policy was enforced by hospital staff who were empowered to refuse to schedule such births.⁵⁹

During the two-year study period, the hard-stop policy was associated with the largest drop in elective births before 39 weeks (from 8.2% to 1.7%).⁵⁹ The soft-stop approach was associated with a smaller drop (from 8.4% to 3.3%).⁵⁹ Clinician education alone was less effective in changing practice, with a drop in rates from 10.9% to 6.0%.⁵⁹ Note that the data used in the study are not directly comparable with those in this report because of different denominators. For all groups combined, the rate of admissions to neonatal intensive care units fell during the study (from 8.9% to 7.5%).⁵⁹

An education campaign on optimal timing for planned birth, specifically focusing on Australian GPs, could be worthwhile, as GPs sometimes undertake shared care with obstetricians.

Increasing flexibility of access to operating theatres

In some cases, a lack of capacity in theatre lists allocated for planned caesarean section once a woman has reached 39 weeks gestation may lead to theatre bookings at an earlier gestation. Hospital policies to increase flexibility of access to operating theatres may reduce rates of planned caesarean section before 39 weeks.

Balance measures with stillbirth prevention programs

Initiatives that reduce the risk of stillbirth can come at the cost of increasing intervention in normal pregnancies, due to the lack of specificity of techniques for identifying fetuses at greatest risk.⁶⁰ This can result in increases in early planned births. Potential harms (such as early planned births), as well as benefits, of initiatives to reduce the rate of stillbirth need to be measured so that the overall impact on children at a population level can be seen and considered.

Improving detection and management of fetal growth restriction and reduced fetal movements is part of the Safer Baby Bundle, an initiative implemented in New South Wales, Queensland and Victoria to reduce the risk of stillbirth.⁶¹ These changes in practice could

increase early planned birth in healthy pregnancies, as well as those at risk of stillbirth. The Safer Baby Bundle includes messages about the need to consider the adverse consequences of planned birth before 39 weeks, but these may be overshadowed by the influence of measures to avoid stillbirth.

The risk of unintended consequences was shown in a large UK trial of a program that aimed to reduce stillbirth.⁶² Data from 409,175 pregnancies showed significant increases in rates of caesarean section and inductions, without any reduction in rates of stillbirth.⁶² The program aimed to increase women's awareness of the need for prompt reporting of reduced fetal movements, and involved standardised management, including timely planned birth.⁶²

This pattern has also been seen in Victoria in management of suspected fetal growth restriction, which is the strongest contributor to stillbirth. The number of babies born early as a result of suspected fetal growth restriction almost quadrupled between 2000 and 2017 in Victoria.⁶⁰ This increase coincided with introduction of public reporting of a hospital performance indicator of babies born severely small-for-gestational-age.⁶⁰ Births of severely small-for-gestational-age babies decreased, and the stillbirth rate fell by 3.3 per 1,000 births. However, among babies delivered because they were suspected small-for-gestational-age, the percentage with birthweights in the top 10th centile increased from 41% to 53% over the same period. In addition, admissions to a neonatal intensive care unit for babies born early for being suspected small-for-gestational-age but with a birthweight in the top 10th centile increased from 0.8% to 2.0%.⁶⁰

More accurate methods of detecting fetal growth restriction are urgently needed to reduce the harm associated with increased early intervention to reduce the risk of stillbirth. In the interim, the balance measures included in the ongoing evaluation of the Safer Baby Bundle that record harms associated with early planned births will be important for clinicians and policymakers to consider.⁵³

Early planned births without medical or obstetric indication

Hospital monitoring and public reporting of local rates

Ensuring that hospital-level public reporting includes data on planned births before 39 weeks without a medical or obstetric indication would allow women to make more informed choices. Quality improvement activities by hospitals, obstetricians and neonatologists could also provide insights into local rates of planned birth without a medical or obstetric indication before 39 weeks gestation. For example, local monitoring of clinical variation, as required by Action 1.28 of the Clinical Governance for Health Service Organisations Standard in the National Safety and Quality Health Service Standards (second edition)⁶³, could include monitoring of variation between the local rate and the state or territory rate, variation between practitioners, and deviation from evidence-based guidelines.

Midwifery continuity of care

Collaboration between midwives, obstetricians and GPs is a key element of providing safe and high-quality maternity care.⁶⁴ In Australia, a range of models of care exist for low-risk pregnant women. Continuity-of-care models that include case load midwifery have been found to be effective in reducing the rate of caesarean section in women at low risk from vaginal birth, with no change in perinatal deaths. In midwifery continuity-of-care models, antenatal care and care during labour are provided by the same midwife or small group of midwives (for example, one to three midwives), who work in collaboration with obstetricians.

In the COSMOS trial of more than 2,300 low-risk women at a Victorian maternity hospital (2007–2010), case load midwifery care, compared with standard care, reduced the rate of caesarean section (19.4% versus 24.9%).⁶⁵ The difference was primarily related to a fall in unplanned caesareans.⁶⁵ Case load midwifery may not be as effective in reducing the risk of caesarean section in women at higher risk. In the M@NGO trial of more than 1,700 pregnant women of

any risk level, case load care did not affect the overall caesarean rate, but the rate of pre-labour caesarean section was lower with case load care than with standard care (8% compared with 11%).⁶⁶ Neonatal outcomes did not differ between the two groups.⁶⁶

Improving data collection and monitoring

Collecting data on the reason for early planned birth would clarify the proportion of these births that did not have a medical or obstetric indication in Australia. This would allow efforts to be targeted where they are most needed, and show whether interventions are having an effect.

Additional data improvements could include:

- Reporting of gestational age in days to allow a better understanding of the distribution of births occurring before 39 weeks (currently a voluntary data item)
- Hospital monitoring and public reporting of local rates
- Inclusion of early planned caesarean section and early inductions without a medical or obstetric indication as hospital-acquired complications.

In the United States, planned early-term birth without a medical indication is a national perinatal quality benchmark monitored by the National Quality Forum and the Joint Commission.⁶⁷ Consumers in the United States also have access to published rates of early elective births for many hospitals.^{57,67}

Reducing early-term and preterm birth in Aboriginal and Torres Strait Islander women

Aboriginal and Torres Strait Islander mothers require access to culturally secure models of maternity care, provided by a culturally competent health system.⁶⁸ This care should be based on woman-centred principles, including continuity of care and carer; it should be integrated with culturally safe mainstream services, and committed to employment of Aboriginal and Torres Strait Islander people in a variety of roles.⁶⁸

A number of maternity indicators among Aboriginal and Torres Strait Islander mothers have shown improvements in recent years. For example, among Aboriginal and Torres Strait Islander mothers:

- The percentage who attended antenatal care in the first trimester increased from 50% in 2012 to 63% in 2017
- The proportion who reported smoking during pregnancy decreased from 52% in 2009 to 44% in 2017.³¹

Preterm birth (before 37 weeks) may be a substantially larger contributor to adverse outcomes among Aboriginal and Torres Strait Islander children than early-term planned birth, and a larger contributor than in other Australian children. In 2016–17, 14% of babies born to Aboriginal and Torres Strait Islander mothers were preterm, compared with 8.4% of babies born to other Australian mothers.⁶⁹

The Birthing in Our Community maternity service in Brisbane has demonstrated a halving of the preterm birth rate among Aboriginal and Torres Strait Islander mothers using the service.⁷⁰ The service was co-designed by two Aboriginal Community Controlled Health Organisations and a tertiary maternity hospital with the aim of reducing preterm birth. The service design included principles of⁷⁰:

- Increasing Aboriginal and Torres Strait Islander governance of, and workforce in, maternity services
- Midwifery continuity of care
- An integrated approach to supportive family services
- A community-based hub.

The rate of preterm birth was compared in records of women who gave birth to an Aboriginal or Torres Strait Islander baby between 2013 and 2017, 345 of whom attended the new service and 345 of whom received standard care. The rate of preterm birth was 7.5% in the Birth in Our Community service, and 13.9% for mothers receiving standard care.⁷⁰

The service redesign was based on the RISE framework that was developed to increase the effectiveness and cultural acceptability of services for Aboriginal and Torres Strait Islander people⁷¹:

- Redesign the health service
- Invest in the workforce
- Strengthen families
- Embed Aboriginal and Torres Strait Islander community governance and control.

Further testing of this framework may show improvements in other outcomes, including reducing early planned births, among Aboriginal and Torres Strait Islander mothers.

Early planned births without medical or obstetric indication

Resources

- Western Australian Preterm Birth Prevention Initiative
- The whole nine months consumer and health professional resources, thewholeninemonths.com.au²⁴
- Women and Babies Research, The Kolling Institute. Every Week Counts – consumer and health professional resources, everyweekcounts.com.au. version 1, 2019. Sydney: The University of Sydney²⁵
- Australian Preterm Birth Prevention Alliance statement on balancing the risks and benefits of early planned birth, and joint decision making⁷²
- Antenatal care for Aboriginal and Torres Strait Islander women⁷³
- Birthing on Noongar Boodjar (Cultural Security & Aboriginal Birthing Women) project recommendations⁶⁸
- Reducing preterm birth amongst Aboriginal and Torres Strait Islander babies: a prospective cohort study⁷⁰
- *Safer Baby Bundle – Working Together to Reduce Stillbirth: Handbook and resource guide*⁶¹
- *Position Statement: Improving decision-making about the time of birth for women with risk factors for stillbirth*⁷⁴
- *Playbook for the Successful Elimination of Early Elective Deliveries*⁷⁵
- *Elimination of Non-medically Indicated (Elective) Deliveries Before 39 Weeks Gestational Age*⁷⁶
- *WHO Statement on Caesarean Section Rates*⁷⁷

Australian initiatives

The information in this chapter will complement work already under way to reduce rates of non-medically indicated early caesarean section and induction in Australia. At a national level, this work includes:

- Australian Preterm Birth Prevention Alliance Initiative: The Whole Nine Months⁵⁶
- Safer Baby Bundle handbook and resource guide, Centre of Research Excellence in Stillbirth⁶¹
- Woman-centred care: strategic directions for Australian maternity services⁷²
- RANZCOG statement on timing of elective caesarean section at term⁶
- RANZCOG statement on caesarean delivery on maternal request⁵⁰
- National Agreement on Closing the Gap, Outcome 2: Aboriginal and Torres Strait Islander children are born healthy and strong⁷³
- Birthing on Country Project; Congress of Aboriginal and Torres Strait Islander Nurses and Midwives, Australian College of Midwives, CRANApplus.

Many state and territory initiatives are also in place, including:

- Policy of booking all elective caesarean sections for 39 weeks unless there is an obstetric or medical indication for earlier delivery, Australian Capital Territory (ACT)
- Canberra hospital and health services clinical guideline: induction of labour, ACT⁷⁴
- The Whole Nine Months program, ACT
- Guideline on timing of elective or pre-labour caesarean section, New South Wales²⁸
- Women and Babies Research, The Kolling Institute. Every Week Counts – consumer and health professional resources, everyweekcounts.com.au. version 1, 2019. Sydney: The University of Sydney²⁵

- NSW Health translational research project grant for 'Are we there yet? Optimising timing of planned birth to improve newborn outcomes and reduce health service costs'
- Queensland clinical guidelines: vaginal birth after caesarean section⁸¹
- Scoping to improve maternal and child continuity of care, Queensland
- Birthing in Our Community, Queensland⁷¹
- Waijungbah Jarjums, a service that connects Aboriginal and Torres Strait Islander parents with an Aboriginal and Torres Strait Islander midwife, Gold Coast, Queensland
- Queensland community maternity hubs, such as Logan Hospital and Logan Together
- Perinatal practice guidelines for caesarean section, South Australia⁸²
- Preterm birth prevention initiative, Tasmania
- Planning for birth after caesarean, Victoria⁸³
- Maternity eHandbook: induction of labour, Victoria⁸⁴
- Publication of early-term birth data, Victorian Consultative Council on Obstetric and Paediatric Mortality and Morbidity
- Birthing on Noongar Boodjar (Cultural Security and Aboriginal Birthing Women) project, Western Australia⁶⁸
- Preterm birth prevention initiative: The Whole Nine Months, Western Australia (now expanded nationally).⁵⁵

Early planned births without medical or obstetric indication

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Chapter 2

Chronic disease and infection: potentially preventable hospitalisations

At a glance



Potentially preventable hospitalisations are an indicator in the National Healthcare Agreement, and include hospitalisations that may have been prevented by appropriate management earlier in the disease. Rates of potentially preventable hospitalisations are likely to reflect sociodemographic factors as well as the quality of early disease management.

More than 330,000 potentially preventable hospitalisations in Australia in 2017–18 were due to the conditions examined in this chapter: chronic obstructive pulmonary disease (COPD), kidney infections and urinary tract infections, heart failure, cellulitis, and diabetes. After standardising to remove age and sex differences, substantial variation was seen between local areas (Statistical Area 3 – SA3) in the rates of hospitalisation. Variation was greatest for COPD (the highest rate was about 18 times higher than the lowest), cellulitis (about 16 times) and diabetes complications (about 12 times). For all the conditions, hospitalisation rates were higher among Aboriginal and Torres Strait Islander people, people living in areas of socioeconomic disadvantage, and those living in remote areas.

The high hospitalisation rates and substantial variation show that recommended care is not always provided for people with chronic conditions. Despite the considerable funding provided through Medicare to better coordinate primary care for people with chronic diseases, health care can be fragmented and less than ideal.

Other likely contributors to variation include a higher proportion in some areas of patients with the most complex chronic disease, for whom hospitalisation may be inevitable. Poor access to health services in the community is also related to higher rates of potentially preventable hospitalisations.

Our health system must become better at reducing the progression of chronic disease and improving patients' quality of life. Several case studies in this chapter show how innovative solutions can improve health outcomes, such as integrated care for people with chronic conditions. Implementing successful interventions on a larger scale requires effective diffusion mechanisms, as well as funding reform.

Patients live with their chronic disease all day, every day. They must be put at the centre of prevention and management.

Recommendations

The Commission consulted widely, but is solely responsible for making the recommendations; as such, the recommendations may not reflect the views of all contributors to the Atlas.

2a. Consistent with the commitments made under the National Health Reform Agreement and building on the activities set out in the 2017 Bilateral Agreement on Coordinated Care, Local Hospital Networks, Primary Health Networks and the Aboriginal Community Controlled Health Service sector to implement the following principles in developing chronic disease management programs consistent with the National Strategic Framework for Chronic Conditions:

- i. Patients, families and carers as partners in care, where patients are activated to maximise their knowledge, skills and confidence to manage their health, aided by technology and with the support of a healthcare team
- ii. A risk stratification approach that supports identification of patients with high coordination and multiple provider needs, to ensure personalisation of service provision
- iii. Flexible service delivery and team-based care that supports integrated patient care across the continuum of the health system through shared information and care planning
- iv. A commitment to care that is of high quality and safe, including care planning and clinical decisions that are guided by evidence-based patient healthcare pathways, appropriate to the patient's needs
- v. Data collection and sharing by patients and their healthcare teams to measure patient health outcomes and improve performance.

2b. The Commission, the Independent Hospital Pricing Authority and the Administrator of the National Health Funding Pool to identify and develop alternative approaches to funding for chronic disease and infection that could be

applied to the National Health Reform Agreement Pricing and Funding model so that pricing and funding are aligned with best-practice guidelines. The alternative models could include bundled payments, capitation payments or regionally coordinated service responses.

COPD

2c. Local Hospital Networks, Primary Health Networks and the Aboriginal Community Controlled Health Service sector to implement appropriate care for the management of people with chronic obstructive pulmonary disease (COPD) using the *COPD-X Plan: Australian and New Zealand guidelines for the management of chronic obstructive pulmonary disease 2020* as the routine model of care.

Heart failure

2d. Local Hospital Networks, Primary Health Networks and the Aboriginal Community Controlled Health Service sector to implement process improvement for the effective management of people with heart failure, including:

- i. Multidisciplinary care across the acute and primary care sectors
- ii. A combination of strategies, including non-pharmacological approaches such as physical activity programs and fluid or dietary management, and pharmacotherapy.

Diabetes

2e. Local Hospital Networks, Primary Health Networks and the Aboriginal Community Controlled Health Service sector to promote appropriate care for the management of people with diabetes aligned with:

- i. *The Management of Type 2 Diabetes: A handbook for general practice* (2020)
- ii. The Australian National Diabetes Strategy 2016–2020.

2.1 Chronic obstructive pulmonary disease (COPD)

Why is this important?

Chronic obstructive pulmonary disease (COPD) is a serious, chronic lung disease that impairs quality of life and shortens lives. Approximately 8% of people in Australia aged 40 years and over and 29% of those aged 75 years and over have at least moderate symptoms of COPD.¹ COPD accounts for a substantial number of hospital bed days every year in Australia – for example, 392,434 bed days in 2017–18. Better health care can sometimes keep people with COPD well enough to reduce their need for hospitalisation.

What did we find?

Between 2014–15 and 2017–18, the rate of COPD hospitalisations per 100,000 people nationally increased by 8%. In 2017–18, the rate of hospitalisations for COPD was **18.1 times as high** in the area with the highest rate compared with the area with the lowest rate.

In 2017–18, the rate for Aboriginal and Torres Strait Islander people was 4.8 times as high as the rate for other Australians. Rates were also higher in remote areas and in socioeconomically disadvantaged areas than elsewhere.

What can be done?

The high rate of hospitalisations for COPD reported in this chapter is unacceptable, and we must implement the strategies we know can improve the health of people with this condition. This is particularly important for the groups with higher rates of hospitalisation for COPD: Aboriginal and Torres Strait Islander peoples, and those living outside metropolitan areas or in socioeconomically disadvantage areas.

Pulmonary rehabilitation – that is, health professional-led programs of exercises and education strategies to improve breathing and function – can reduce hospitalisations among people with COPD by 36–56%.^{2,3} Priority should be given to improving access to culturally safe pulmonary rehabilitation programs for Aboriginal and Torres Strait Islander people with COPD, and people living in remote areas of Australia. There should also be a focus on improving data collection and reporting for pulmonary rehabilitation programs to help health services and general practices monitor their effectiveness in improving patient outcomes. Pharmacist interventions, including providing education about medicines and lifestyle, and influenza vaccination are other interventions that can reduce hospitalisations for people with COPD.⁴

Smoking cessation can improve lung function in people with COPD.⁵ Reducing smoking rates is key to reducing hospitalisations for COPD.

Chronic obstructive pulmonary disease (COPD)

Context

COPD is a chronic lung disease that often impairs quality of life and reduces life expectancy.^{6,7} The term COPD encompasses chronic bronchitis and emphysema. Symptoms of COPD include shortness of breath with little or no exertion, as well as coughing, sputum production and wheezing. Patients with COPD may require hospitalisation for severe exacerbations, which are often caused by infections of the respiratory tract.

Evidence-based care for people with COPD may reduce the need for hospitalisation by reducing exacerbations.⁴

In 2017–18, COPD accounted for 392,434 hospital bed days in Australia, second only to heart failure for potentially preventable hospitalisations due to chronic diseases (412,693 bed days).⁸ Approximately 7% of Australians aged 65 years and over have COPD.⁹ It is more common in older people: approximately 8% of people in Australia aged 40 years and over and 29% of those aged 75 years and over have at least moderate symptoms of COPD.¹ The rate of hospitalisations for COPD was 235 per 100,000 in Canada, compared to 332 per 100,000 in Australia, for people aged 15 years and over in 2016.¹⁰

Smoking is the most common cause of COPD. There is typically a lag of decades between starting regular smoking and the appearance of symptoms.⁴ Genetic factors, chronic asthma, environmental exposures (for example, to occupational fumes and dust, indoor and outdoor air pollution), pulmonary tuberculosis and failure to achieve maximal lung growth during development are also associated with an increased risk of COPD.⁶ These additional risk factors may contribute to the markedly different rates of decline in lung function in people with COPD, despite similar smoking exposure.¹¹ Approximately 30–40% of people with COPD continue to smoke, and people with COPD often find it more difficult to quit than other smokers.¹² People with COPD also have a higher risk of lung cancer.¹³

Interventions to reduce exacerbations of COPD and hospitalisations include inhaled medicines.⁴ Vaccination against influenza has been estimated to reduce, by approximately 37%, the risk of exacerbations, hospitalisations and death in people with COPD.¹⁴ Pulmonary rehabilitation is recommended to improve exercise capacity and quality of life, and reduce hospitalisations and length of hospital stay for COPD.^{3,15–18} Further details of recommended management are in the COPD-X guidelines.⁴

Who is at greater risk?

Rates of smoking, or a history of smoking, are high in regional and remote areas, and among people with socioeconomic disadvantage. Higher smoking rates among disadvantaged groups are associated with a complex interaction between social, economic, physiological, commercial and cultural factors.¹⁹ Many of these factors originate in childhood and accumulate through an individual's lifetime.¹⁹

COPD and Aboriginal and Torres Strait Islander people

Aboriginal and Torres Strait Islander people have approximately 2.5 times the prevalence of COPD as other Australians.²⁰ COPD was the most common cause of potentially preventable hospitalisations among Aboriginal and Torres Strait Islander people in 2017–18, and the second most common cause among other Australians.⁸

A lack of culturally safe services for Aboriginal and Torres Strait Islander people may be a barrier to accessing health care effectively.²¹ This may contribute to poorer medication management, continued smoking and lower influenza vaccination rates, with resulting higher hospitalisation rates. Smoking rates among Aboriginal and Torres Strait Islander people have fallen in the past decade, but remain higher than in the Australian population as a whole.^{9,22}

About the data

Data are sourced from the National Hospital Morbidity Database, and include admitted patients in both public and private hospitals, as well as hospital care in the home.

Rates are based on the number of hospitalisations for COPD per 100,000 people of all ages in 2017–18.

Because a record is included for each hospitalisation for the condition, rather than for each patient, patients hospitalised more than once in the financial year will be counted more than once.

The analysis and maps are based on the usual residential address of the patient and not the location of the hospital.

Rates are age and sex standardised to allow comparisons between populations with different age and sex structures.

Data quality issues – for example, the extent of identification of Aboriginal and Torres Strait Islander status in datasets – could influence variations seen.

What do the data show?

Magnitude of variation

In 2017–18, there were 77,754 hospitalisations for COPD, representing 260 hospitalisations per 100,000 people of all ages (the Australian rate).

The number of hospitalisations for COPD across 328* local areas (Statistical Area Level 3 – SA3) ranged from 56 to 1,013 per 100,000 people. The rate was **18.1 times as high** in the area with the highest rate compared with the area with the lowest rate. The number of hospitalisations varied across states and territories, from 218 per 100,000 people in the Australian Capital Territory to 693 in the Northern Territory (Figures 2.2–2.5).

After the highest and lowest 10% of results were excluded and 264 SA3s remained, the number of hospitalisations per 100,000 people was 3.3 times as high in the area with the highest rate compared with the area with the lowest rate.

Analysis by remoteness and socioeconomic status

Rates of hospitalisation for COPD were substantially higher in remote areas than in other areas. Hospitalisation rates also increased with socioeconomic disadvantage, regardless of remoteness category (Figure 2.6).

* There are 340 SA3s. For this item, data were suppressed for 12 SA3s due to a small number of hospitalisations and/or population in an area.

Notes:

Some SA3 rates are more volatile than others. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia.

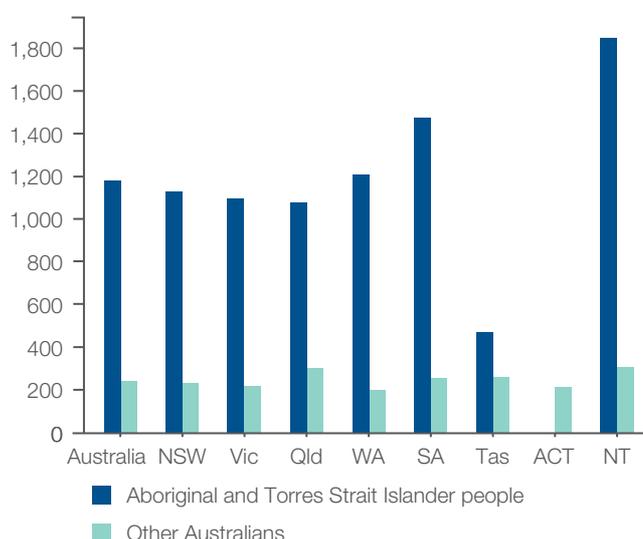
For further detail about the methods used, please refer to the Technical Supplement.

Chronic obstructive pulmonary disease (COPD)

Analysis by Aboriginal and Torres Strait Islander status

The rate of hospitalisations for Aboriginal and Torres Strait Islander people (1,178 per 100,000 people) was 4.8 times as high as the rate for other Australians (243 per 100,000 people) (Figure 2.1).

Figure 2.1: Number of potentially preventable hospitalisations – COPD per 100,000 people of all ages, age and sex standardised, by state and territory of patient residence, by Aboriginal and Torres Strait Islander status, 2017–18



The data for Figure 2.1, and the data and graphs for Analysis by Primary Health Network are available at safetyandquality.gov.au/atlas

Trends over time

Between 2014–15 and 2017–18, the rate of COPD hospitalisations per 100,000 people nationally increased by 8% (Figure 2.7).

For Aboriginal and Torres Strait Islander people, the rate of COPD hospitalisations per 100,000 people nationally increased by 16% between 2014–15 and 2017–18 (Figure 2.8).

Interpretation

Potential reasons for the variation include differences in:

- Demographic and consumer factors
 - prevalence of COPD and comorbidities
 - rates of smoking, which are influenced by socioeconomic disadvantage, psychological distress, Aboriginal and Torres Strait Islander status, and remoteness
 - rates of respiratory infections
 - patients' health literacy and ability to self-manage exacerbations
 - patients' ability to afford medicines
 - patients' social supports, frailty and comorbidities
 - air quality and occupational exposures (for example, to fumes and dust)
 - the proportion of people from non-English speaking backgrounds – the risk of hospitalisations for COPD is higher in these groups⁶
- Clinician factors
 - concordance with evidence-based guidelines by clinicians and service providers^{23–25}
 - clinician focus on smoking cessation
 - diagnostic error

Notes:

Data for ACT (Aboriginal and Torres Strait Islander people) have been suppressed. Data by Aboriginal and Torres Strait Islander status should be interpreted with caution as hospitalisations for Aboriginal and Torres Strait Islander patients are under-enumerated, with variation among states and territories. Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

- Health system factors
 - access to community pulmonary rehabilitation and multidisciplinary care
 - access to secondary prevention programs
 - rates of influenza and pneumococcal vaccination
 - primary care services that are affordable, culturally appropriate and accessible
 - emergency department admission policies (that is, admitting all COPD patients, or discharging some patients where there are sufficient community resources).

Variations between areas may not directly reflect the practices of the clinicians who are based in those areas. Area boundaries reflect where people live rather than where they obtain their health care. Patients who live in metropolitan, regional and rural areas may all travel outside their local area to receive care.

Smoking rates

The pattern of COPD hospitalisations mirrors the pattern of smoking in different population groups. The rate of smoking among Aboriginal and Torres Strait Islander people is 41%, which is approximately triple the rate for the Australian population as a whole.²⁶ Rates of smoking are higher among people living in outer remote and remote areas of Australia (19%) than among those living in inner regional areas (15%) or major cities (13%).⁹

Rates of smoking are higher in areas of greatest socioeconomic disadvantage. In areas of most disadvantage (first quintile), 22% of adults are current daily smokers, compared with 7% in the least disadvantaged areas (fifth quintile).⁹

System factors

System factors likely to influence hospitalisation rates for COPD include access to multidisciplinary respiratory specialty care (which is particularly lacking in regional and remote areas), integrated care and telehealth. Hospital management of common

comorbidities in people with COPD also plays an important role, as does good discharge planning to reduce readmissions.

Primary care

Lack of concordance with best practice in primary care can contribute to variation in hospitalisation through differences in advice to patients on how to manage exacerbations, education on inhaler technique, rates of influenza and pneumonia vaccination, and recommendations for pulmonary rehabilitation.^{23,25,27}

Reducing COPD hospitalisations

The high rate of hospitalisations for COPD reported in this chapter is unacceptable, and we must implement the strategies we know can improve the health of people with this condition. This is particularly important for the groups with higher rates of hospitalisation for COPD: Aboriginal and Torres Strait Islander peoples, and those living outside metropolitan areas or in socioeconomically disadvantage areas.

Reducing smoking rates is also key to reducing COPD rates and hospitalisations. This is particularly true for groups with high smoking rates, such as Aboriginal and Torres Strait Islander people, people at socioeconomic disadvantage, and people living in regional or remote areas.⁹ Increasing influenza vaccination rates could also reduce hospitalisations among people with COPD.¹⁴

Systems to support early diagnosis and management of COPD, and integrated services, could reduce the need for some COPD hospitalisations.²⁸ Increases in access to spirometry, smoking cessation supports and education on appropriate inhaler use have also been identified as priorities for supporting people with COPD.²⁸ Pharmacist interventions, pulmonary rehabilitation and telehealth (including remote monitoring) may reduce hospitalisations among people with COPD.

Chronic obstructive pulmonary disease (COPD)

Pulmonary rehabilitation

Pulmonary rehabilitation is a program of exercises and education strategies delivered by health professionals to improve breathing and function. A review of randomised controlled trials of pulmonary rehabilitation found that COPD-related hospitalisations were reduced by 36% in patients undertaking pulmonary rehabilitation.² Another review found that, among patients undertaking pulmonary rehabilitation after being hospitalised for an exacerbation of symptoms, the risk of readmission for any reason was reduced by 56%.³

Estimates of the use of pulmonary rehabilitation by people with COPD in Australia have ranged from less than 5% to 10%.²⁹ Uptake of pulmonary rehabilitation by Aboriginal and Torres Strait Islander people with COPD is lower than for other Australians.³⁰ One reason for the low uptake by Australian COPD patients is difficulty in accessing services.^{17,18,31} For example, access has been limited by the small number of services, restriction of services to hospital settings in many cases, and difficulties with transport and comorbidities.^{32,33} Depression and a lack of perceived benefit also prevent some people with COPD from attending pulmonary rehabilitation.³³ Access to pulmonary rehabilitation in rural and remote areas is particularly challenging.

Providing pulmonary rehabilitation in community settings with easy access to transport has shown positive results in improving attendance and reducing hospitalisations.^{17,18} A training program for health professionals in rural and remote areas in providing pulmonary rehabilitation has been trialled successfully and improved access in these areas.¹⁷ Access to culturally sensitive pulmonary rehabilitation programs will be important if these programs are to benefit Aboriginal and Torres Strait Islander people with COPD (see 'Case study: Pulmonary rehabilitation for Aboriginal and Torres Strait Islander people' on this page). Improving health literacy and self-management is particularly important for people with COPD who do not have access to pulmonary rehabilitation.

Home-based pulmonary rehabilitation may be useful for engaging people with COPD who are unable to access traditional models. A home-based pulmonary rehabilitation program, which included one home visit and seven once-weekly phone calls from a physiotherapist, was shown to have outcomes at least as beneficial as traditional centre-based programs.³⁴

Case study: Pulmonary rehabilitation for Aboriginal and Torres Strait Islander people

Aboriginal and Torres Strait Islander people with COPD have lower rates of participation in pulmonary rehabilitation than the Australian population as a whole, but a program in Hobart and Launceston, Tasmania, has succeeded in engaging patients and improving outcomes. The program combined cardiac and pulmonary rehabilitation and prevention. It was open to Aboriginal and Torres Strait Islander people with COPD, heart failure, ischaemic heart disease or at least two cardiovascular risk factors (for example, smoking, obesity, hypertension).³⁰

Dyspnoea, fatigue and mental health scores improved significantly after the eight-week program, which comprised two exercise sessions and one self-management education session per week in 2013.³⁰ The program encouraged participation by providing a variety of exercise types and transport, if required; 79% of the 92 participants attended at least half of the sessions. Aboriginal health workers recruited and supported participants, and liaised between the Aboriginal health service and external clinicians. Co-location with the Aboriginal health service and leadership by Aboriginal and Torres Strait Islander health workers were thought to be key factors in the program's success.³⁰

Reducing COPD hospitalisations among Aboriginal and Torres Strait Islander people

Complex social determinants underlie the disparities in health, and in risk factors such as smoking rates, between Aboriginal and Torres Strait Islander people and other Australians.^{35,36} Impacts of colonisation, including racism and intergenerational trauma, contribute to these determinants. To address health inequities, improvements in social factors are required – for example, in education, employment and living conditions.³⁵ In addition, the logistical and financial barriers to accessing timely and effective health care for Aboriginal and Torres Strait Islander people who live in remote areas need to be addressed.³⁵

Smoking rates among Aboriginal and Torres Strait Islander people aged 15 years and over fell from 45% in 2008 to 37% in 2018–19, although there was no significant change in remote areas.²² Further reductions in smoking and COPD rates are most likely to be achieved with multifaceted interventions that incorporate Aboriginal and Torres Strait Islander leadership, partnership and engagement.³⁷

Cultural safety and culturally appropriate care

Barriers to Aboriginal and Torres Strait Islander people accessing chronic disease care include cost, lack of transport, fear and distrust of services, and lack of culturally safe services.³⁸ Cultural safety means that health consumers are safest when health professionals have considered power relations, cultural differences and consumers' rights.²¹

Expanding use of spirometry

Early diagnosis may prevent progressive functional deterioration in COPD.⁴ Spirometry is essential for the diagnosis of COPD, and opportunistic screening of symptomatic smokers and ex-smokers in general practice could facilitate early diagnosis and management.⁴ Barriers to providing spirometry include equipment costs and insufficient remuneration, according to a survey of Australian general practitioners (GPs).³⁹

Primary Health Network support

Primary Health Networks (PHNs) support general practices managing people with COPD by providing education for clinicians and consumers, quality improvement support, data extraction and analysis, and resources such as cycle-of-care plans. In some areas, PHNs support integrated care models for chronic diseases, including COPD – for example, nurse-led respiratory disease management clinics and integrated care programs for chronic diseases.^{40,41}

Integrated care

An integrated care model for people with chronic diseases, such as COPD and diabetes, in Western Sydney included:

- Care facilitators – nurses who linked hospital, GP and allied health care; supported self-management and smoking cessation; and oversaw annual cycles of care and vaccinations
- Specialist rapid access and stabilisation services – pathways other than the emergency department to fast access to specialist care, and better transition back to primary care
- GP support line – answered by specialists to provide immediate advice on management of patients
- IT systems – including a web-based portal for healthcare provider information.⁴¹

Preliminary analysis showed that potentially preventable hospitalisations were reduced by 37% among chronic disease patients who were enrolled in, or who had attended, the rapid access and stabilisation service.⁴¹

Chronic obstructive pulmonary disease (COPD)

Pharmacist interventions

Interventions by pharmacists, either alone or as part of a multidisciplinary team, can reduce hospital admissions by 50% among people with COPD.⁴²

Interventions, conducted in outpatient clinics and/or community pharmacies, include:

- Education and counselling about medicines and lifestyle
- Assessment of medicines adherence, or medicines review
- Reminder systems, through either phone contact or home visits
- Smoking cessation programs
- Feedback to healthcare professionals.

Nutrition

Dietitians and nutritionists have a central role in managing excess weight, as well as unwanted weight loss, in people with COPD.⁴ Obesity in people with COPD is associated with carbon dioxide retention, sleep apnoea and other health problems.⁴ Excessive weight loss is a common problem in people with end-stage COPD. Nutritional supplementation can promote significant weight gain in people with COPD, improving respiratory muscle strength, walking ability and quality of life, especially in people who are malnourished.⁴³

Telehealth

Telehealth for people with COPD includes a wide range of interventions, from simple telephone support to remote monitoring of symptoms. Some meta-analyses have shown significant reductions in hospitalisations (for example, a reduction of 54% over 12 months, compared with usual care).⁴⁴ The effectiveness of different models varies widely, and identifying the common components of successful programs would help guide the future use of telehealth.

Palliative care

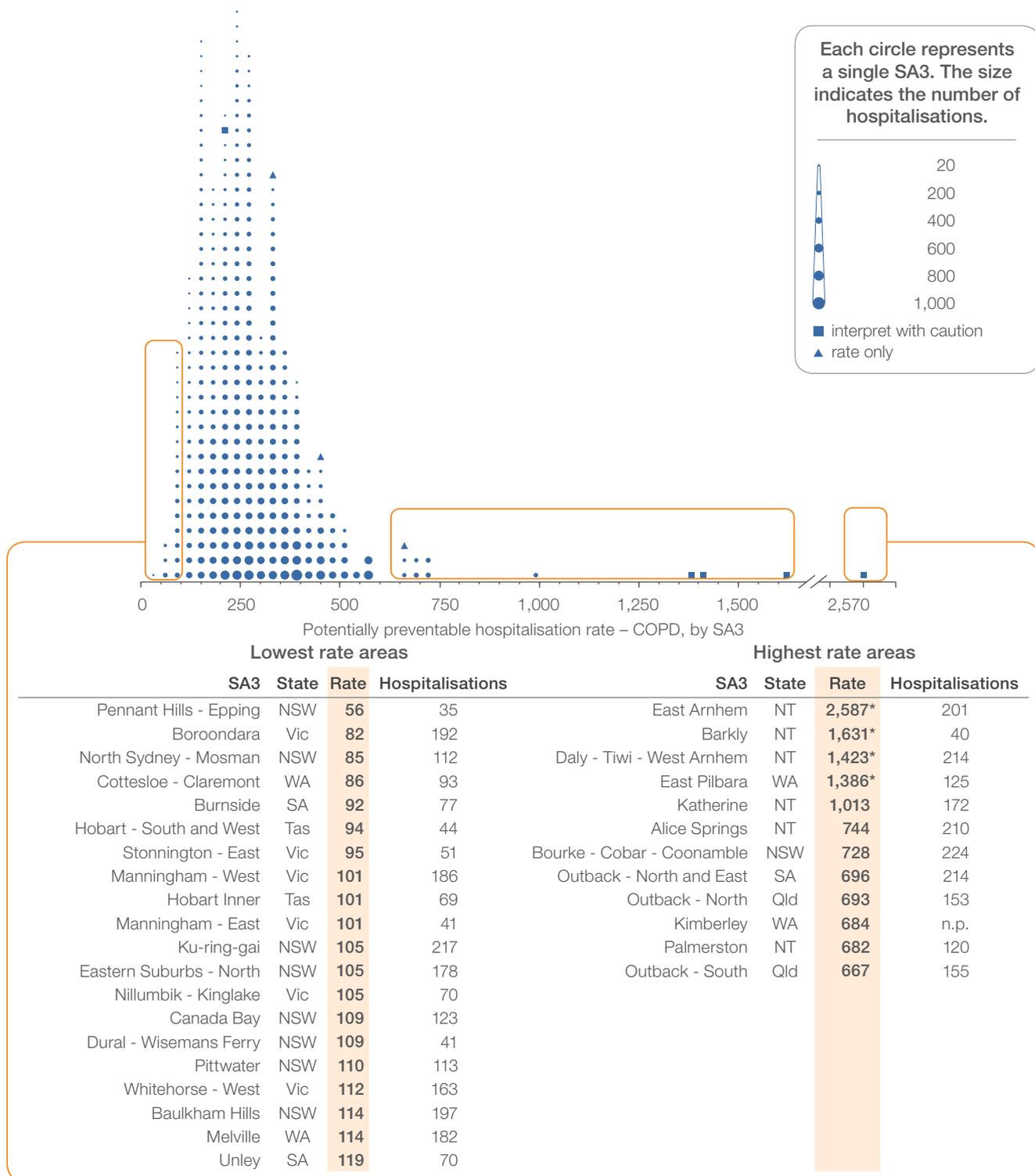
People with COPD experience distressing symptoms, such as breathlessness, anxiety and insomnia, which are often poorly controlled and under-treated in advanced disease.⁴ Early access to palliative care is recommended for people with persisting symptoms of COPD. Symptom palliation should be implemented early, and concurrently with active treatment.⁴

To avoid under-treatment of distressing symptoms of COPD, referral to palliative care should not rely on clinicians' estimates of prognosis but rather on the person's symptoms.⁴⁵ Management of distressing symptoms may be improved by introducing new models of integrated respiratory and palliative care that routinely offer all people with advanced COPD both disease-directed treatment and palliative care, as well as access to specialist palliative care.⁴⁵

A recent Australian study reported that only 5% of people who died in hospital from COPD had a written advance care directive before the admission.⁴⁵ Discussion of advance care directives may be useful for ensuring that the person's wishes regarding active treatment are considered early and documented.

Rates by local area

Figure 2.2: Number of potentially preventable hospitalisations – COPD per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18



Notes:

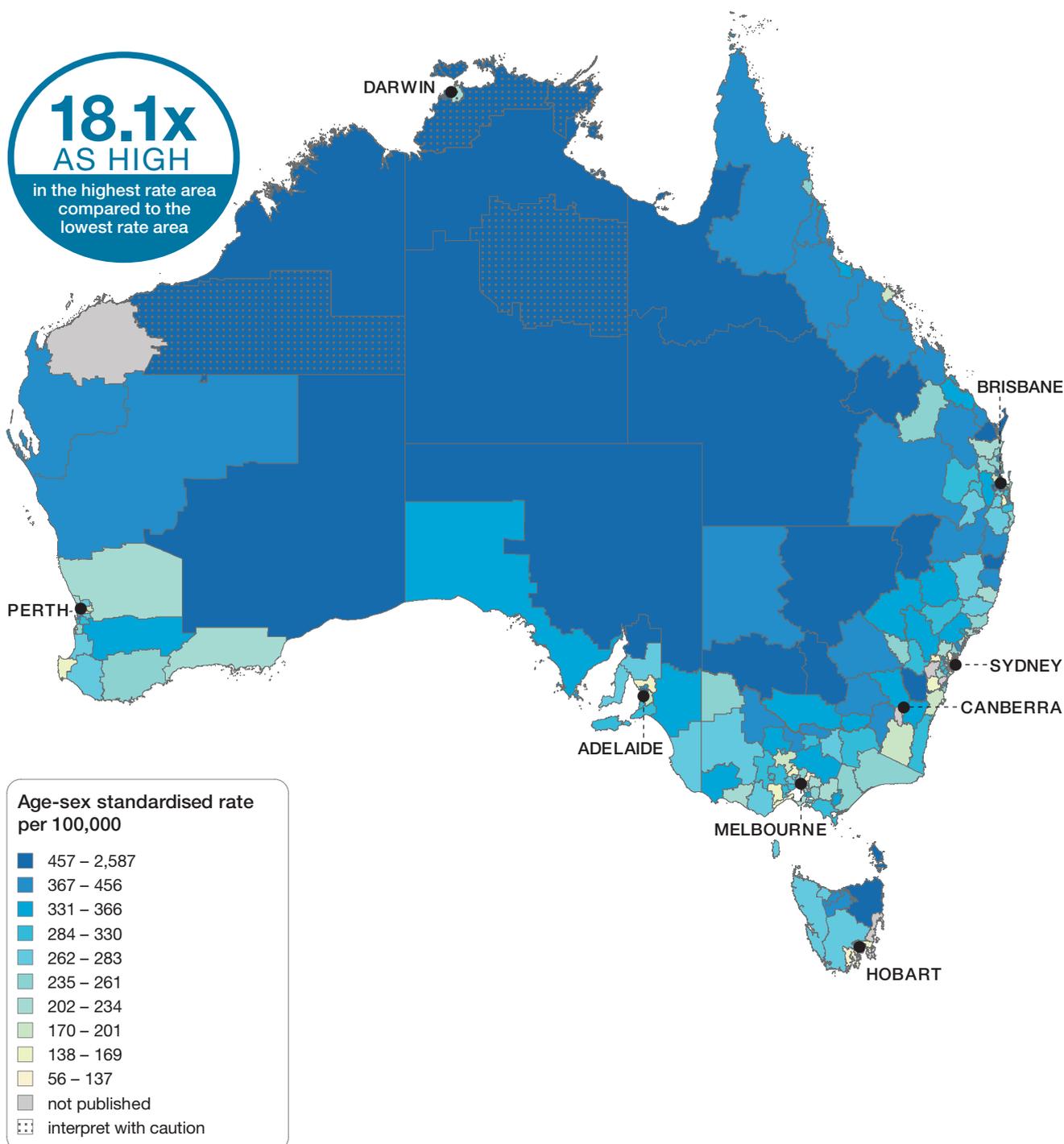
Squares (■) and asterisks (*) indicate rates that are more volatile than other rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of hospitalisations are not published (n.p.) for confidentiality reasons. Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Chronic obstructive pulmonary disease (COPD)

Rates across Australia

Figure 2.3: Number of potentially preventable hospitalisations – COPD per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18



Notes:

Dotted areas indicate rates that are considered more volatile than other published rates and should be interpreted with caution. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia.

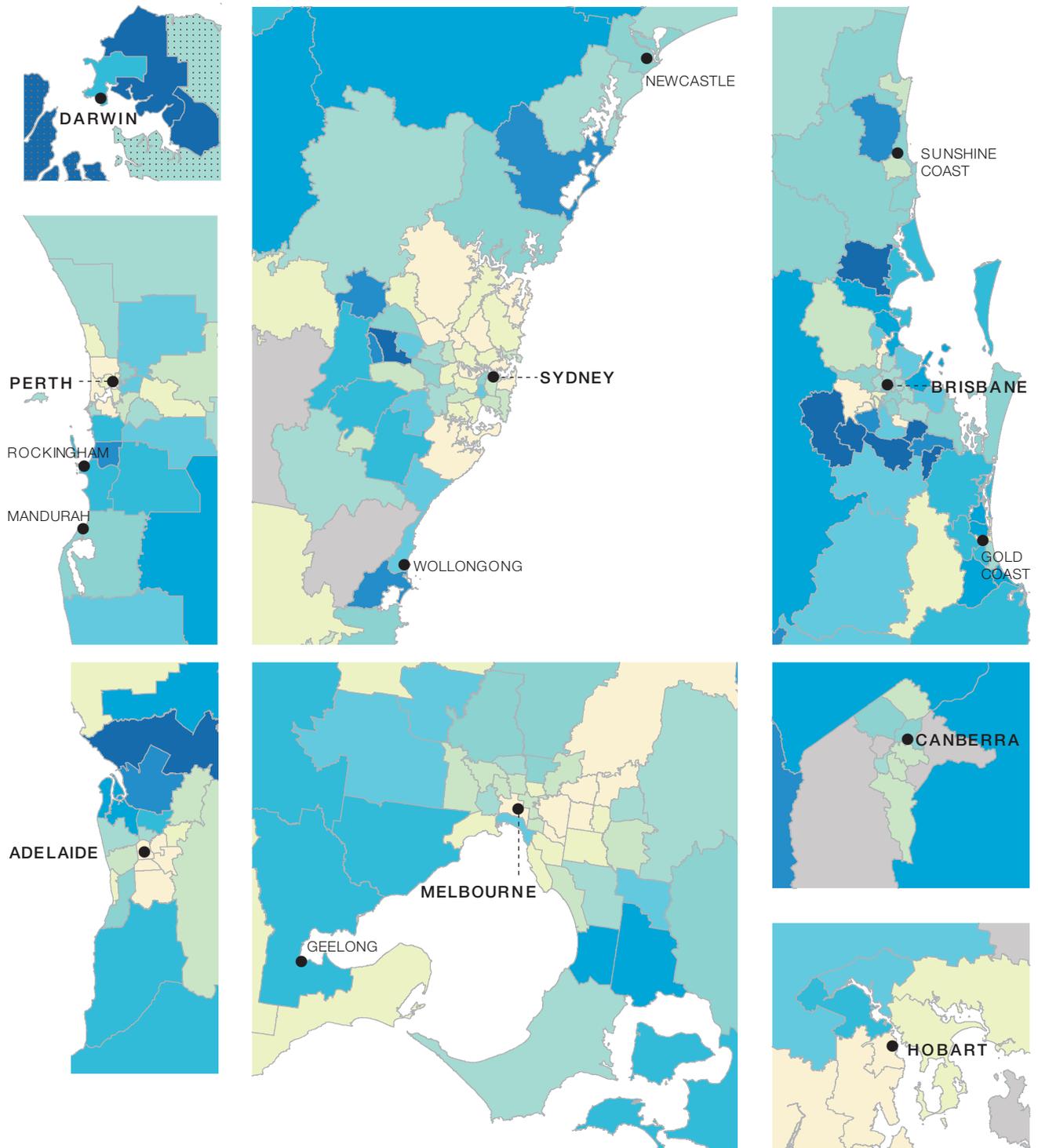
Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018.

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Rates across capital city areas

Figure 2.4: Number of potentially preventable hospitalisations – COPD per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18



Notes:

Dotted areas indicate rates that are considered more volatile than other published rates and should be interpreted with caution.

Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018.

For further detail about the methods used, please refer to the Technical Supplement.

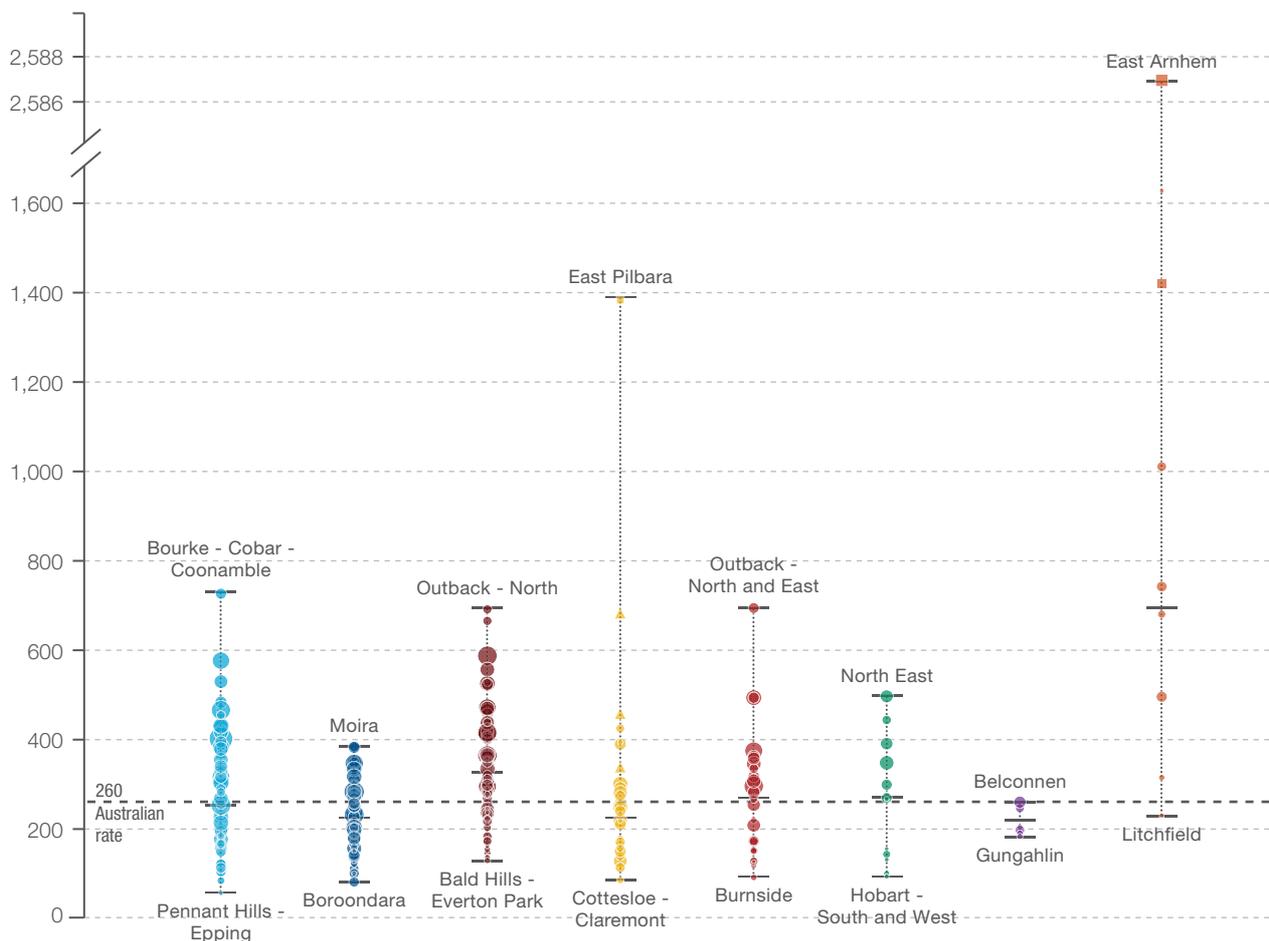
Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Chronic obstructive pulmonary disease (COPD)

Rates by state and territory

Figure 2.5: Number of potentially preventable hospitalisations – COPD per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Highest rate	728	386	693	1,386*	696	498	261	2,587*
State/territory	250	223	323	225	268	270	218	693
Lowest rate	56	82	130	86	92	94	184	231*
No. hospitalisations	24,509	17,041	18,869	6,499	6,384	2,065	916	1,299



Each circle represents a single SA3. The size indicates the number of hospitalisations.

▲ rate only ■ interpret with caution

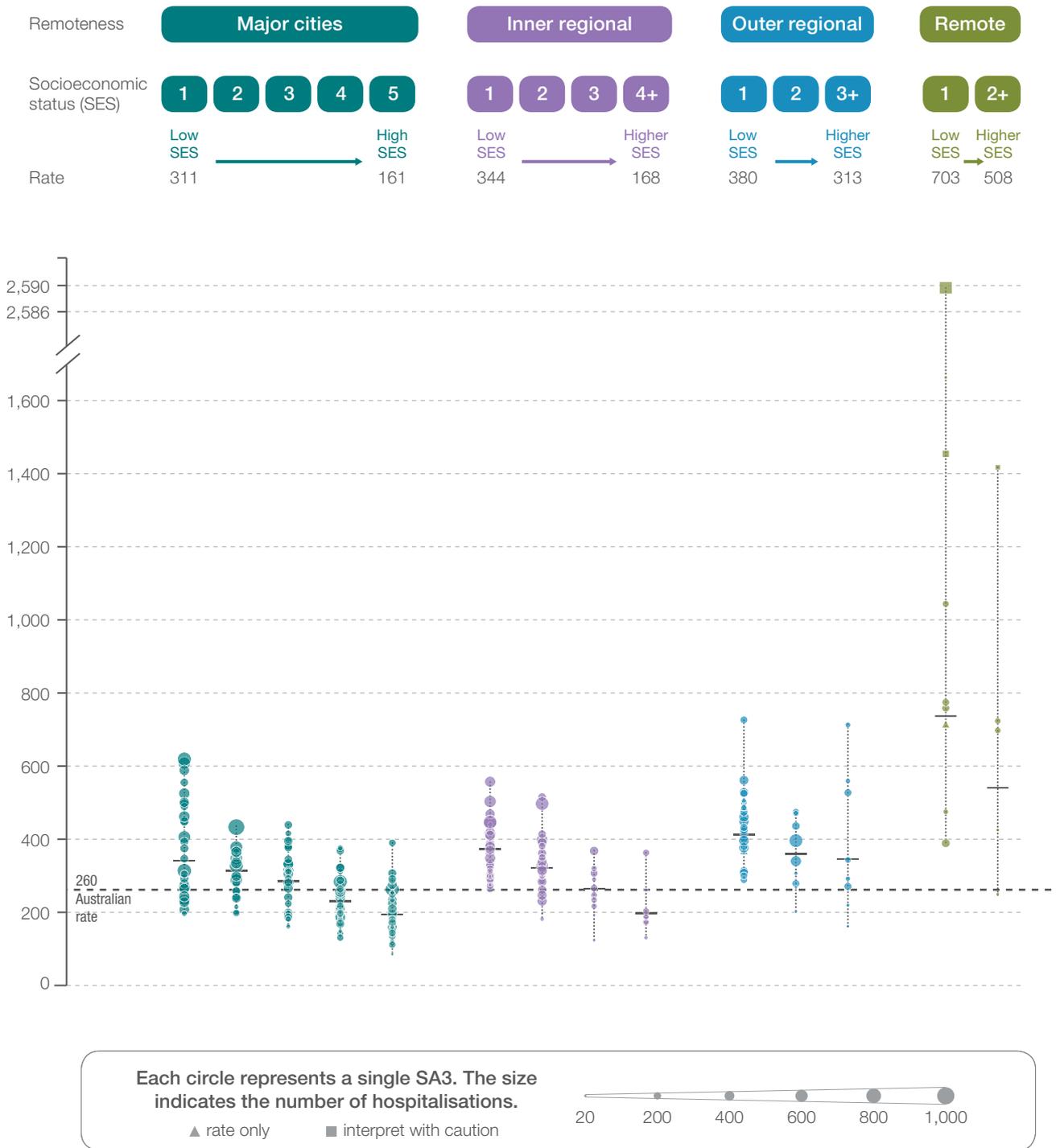
Notes:

Squares (■) and asterisks (*) indicate rates that are more volatile than other rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of hospitalisations are not published for confidentiality reasons. Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Rates by remoteness and socioeconomic status

Figure 2.6: Number of potentially preventable hospitalisations – COPD per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18



Notes:

Squares (■) indicate rates that are more volatile than other rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of hospitalisations are not published for confidentiality reasons. Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018. For further detail about the methods used, please refer to the Technical Supplement.

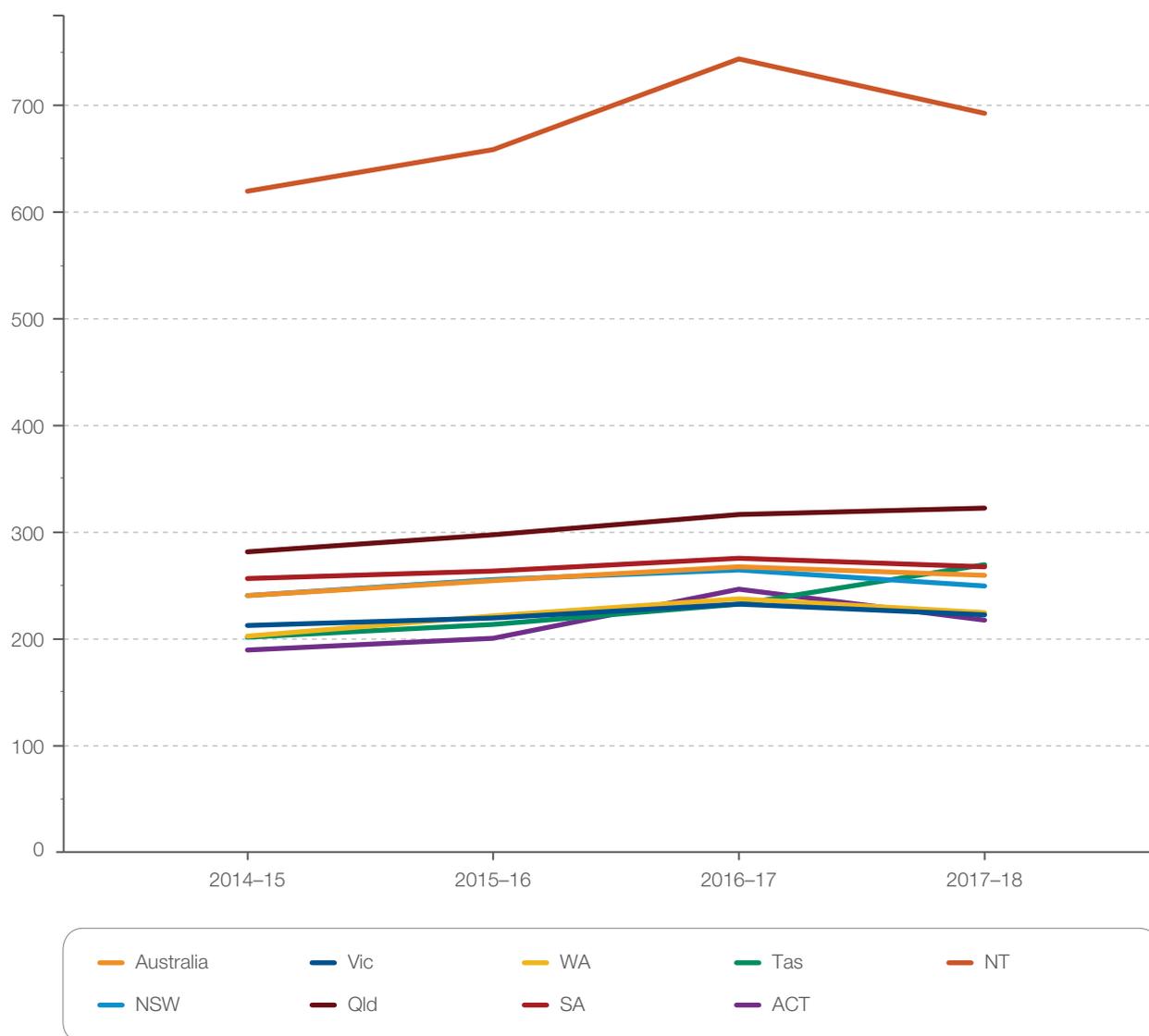
Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Chronic obstructive pulmonary disease (COPD)

Rates across years

Figure 2.7: Number of potentially preventable hospitalisations – COPD per 100,000 people of all ages, age and sex standardised, by state and territory of patient residence, 2014–15 to 2017–18

	2014–15	2015–16	2016–17	2017–18
Highest SA3 rate	2,080*	2,556*	3,289*	2,587*
Australian rate	241	255	268	260
Lowest SA3 rate	64	77	75	56
Magnitude of variation	15.7	11.7	12.8	18.1
Magnitude of variation without top & bottom 10% SA3	3.3	3.0	3.6	3.3



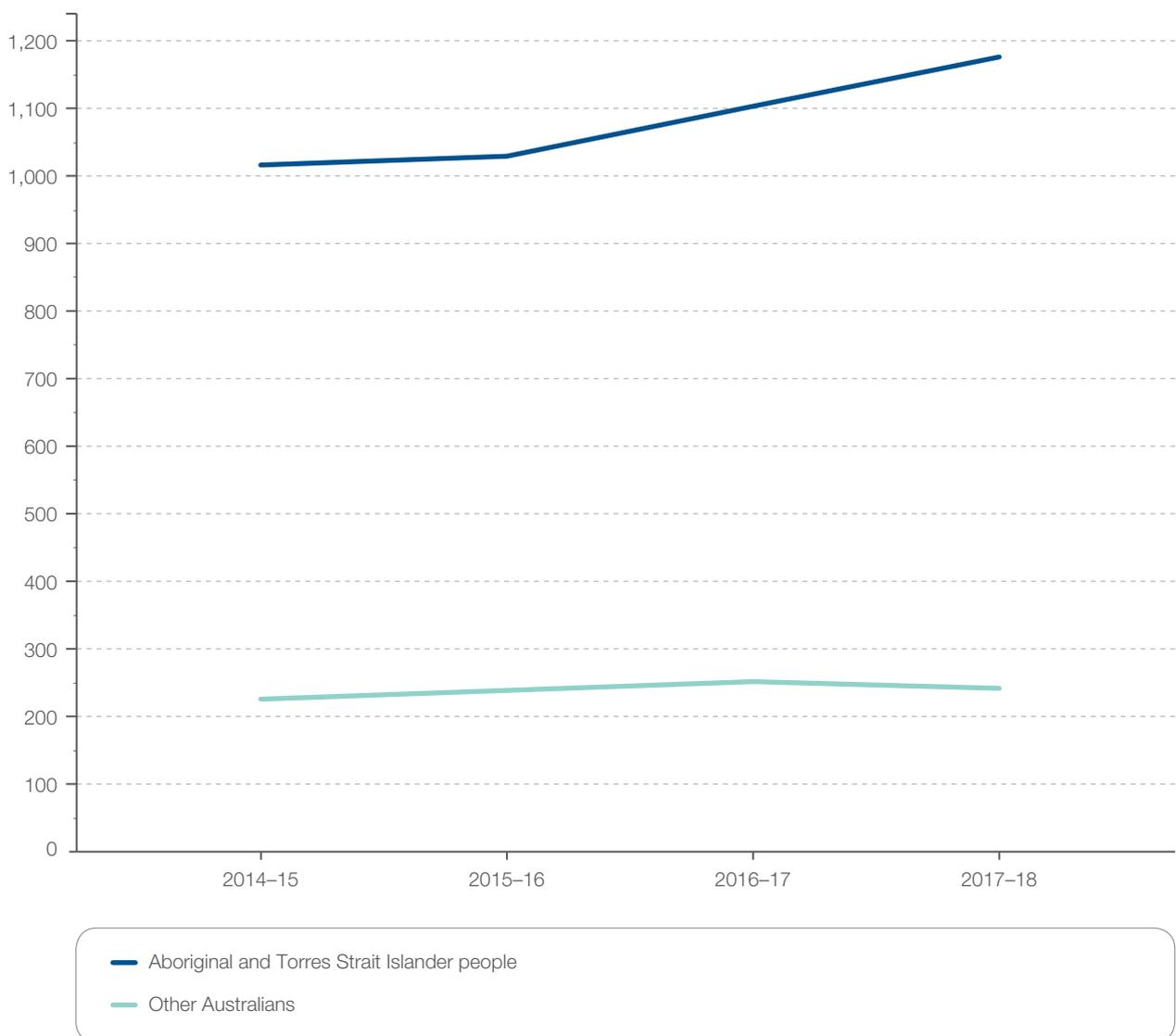
Notes:

The asterisks (*) indicate rates that are considered more volatile than others, and should be interpreted with caution. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia. Population estimates as at 31 December of the relevant year are calculated as the average of the 30 June populations before and after the relevant December. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2014 to 2018.

Rates for Aboriginal and Torres Strait Islander people across years

Figure 2.8: Number of potentially preventable hospitalisations – COPD per 100,000 people of all ages, age and sex standardised, by Aboriginal and Torres Strait Islander status, 2014–15 to 2017–18



Notes:

Data by Aboriginal and Torres Strait Islander status should be interpreted with caution as hospitalisations for Aboriginal and Torres Strait Islander people are under-enumerated, with variation among states and territories. Population estimates as at 31 December of the relevant year are calculated as the average of the 30 June populations before and after the relevant December. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2014 to 2018.

Chronic obstructive pulmonary disease (COPD)

Resources

- *The COPD-X Plan: Australian and New Zealand guidelines for the management of chronic obstructive pulmonary disease*⁴
- Pulmonary Rehabilitation Toolkit, Australian Lung Foundation and Australian Physiotherapy Association, pulmonaryrehab.com.au
- *Therapeutic Guidelines: Respiratory*, Chronic obstructive pulmonary disease (COPD) exacerbations (in eTG complete)
- Pharmacological therapies for chronic obstructive pulmonary disease in Australia, NPS MedicineWise, nps.org.au/radar/articles/pharmacological-therapies-for-chronic-obstructive-pulmonary-disease-in-australia
- Information and assistance for smokers to quit, quitnow.gov.au
- COPD flipchart and action plan for Aboriginal and Torres Strait Islander people, Queensland Health, Indigenous Respiratory Outreach Care program, Menzies School of Health and Lung Foundation

Australian initiatives

The information in this chapter will complement work already underway to prevent COPD and improve its management in Australia. At a national level, this work includes:

- National Tobacco Campaign
- National Strategic Action Plan for Lung Conditions
- Tackling Indigenous Smoking program
- Lung Foundation Australia education and support programs
- Lung Foundation Australia's Breathe Easy, Walk Easy training program for rural and remote healthcare providers.

Many state and territory initiatives are also in place, including:

- State- and territory-based tobacco control strategies
- Quitline, including Aboriginal and Torres Strait Islander counsellors
- Leading Better Value Care COPD program, New South Wales (NSW)
- Smoking Cessation Framework, NSW
- A Strategic Framework for Aboriginal Tobacco Resistance and Control in NSW
- Reports on hospital readmission rates for COPD, NSW Bureau of Health Information
- Delivering Connected Care for Complex Patients with Multiple Chronic Needs, Tasmania
- Hospital Admissions Risk Program, Victoria
- Improving Care for Aboriginal and Torres Strait Islander Patients program, Victoria
- Quit Victoria
- Aboriginal Tobacco Control Project, Western Australia
- *Respiratory Health Policy Position for the Procurement of Community Based Services*, Western Australia.²⁸

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2.2 Heart failure

Why is this important?

Heart failure affects about 1–2% of people in Australia. People with heart failure often have multiple hospitalisations, and have a mortality rate of 50–75% within five years of diagnosis.¹ In 2017–18, heart failure accounted for 412,693 hospital bed days.² Hospital care is appropriate when the condition is severe, but well-coordinated care in the community can keep people with heart failure well enough to reduce their need for hospitalisation.

What did we find?

Between 2014–15 and 2017–18, the rate of heart failure hospitalisations per 100,000 people nationally increased by 4%. In 2017–18, the rate of hospitalisations for heart failure was **5.8 times as high** in the area with the highest rate compared with the area with the lowest rate. The rate for Aboriginal and Torres Strait Islander people was 2.3 times as high as that for other Australians, but decreased by 4% between 2014–15 and 2017–18.

What can be done?

Reducing hospitalisations for heart failure will take a combination of approaches:

- Primary prevention
- Consumer enablement
- More effective use of medicines
- Greater use of exercise and cardiac rehabilitation programs
- Better care in the community, including improved integration with hospital care and greater access to multidisciplinary care.

Major system changes that support widespread implementation of these changes are needed to reduce hospitalisations for heart failure. For example, system redesign to ensure outpatient clinic review within 30 days of an admission may have a marked effect on mortality. Better integration of care in the community with acute hospital care can improve outcomes for people with heart failure. Specific interventions, such as medication management and rehabilitation programs, can also reduce hospitalisations for heart failure.

Heart failure is not a new problem, and the health system must do better to manage it. Priority should be given to improving care for groups with higher rates of hospitalisation for heart failure, such as Aboriginal and Torres Strait Islander people and those living outside metropolitan areas or in socioeconomically disadvantaged areas.

Heart failure

Context

Chronic heart failure is a condition that occurs when the heart becomes weaker and/or less effective at pumping blood around the body. Symptoms of chronic heart failure include fluid accumulation in the body and breathlessness.

Ejection fraction is a measure of the volume of blood the heart pushes out with each heart beat. The major categories of heart failure are heart failure with reduced ejection fraction and heart failure with preserved ejection fraction.

The most common cause of heart failure is underlying heart disease due to impaired coronary blood supply, usually accompanied by a history of myocardial infarction (heart attack).³ Other causes include hypertension and valvular heart disease.³ Risk factors for these conditions and heart failure include age, family history, smoking, obesity and diabetes.³ Reducing these modifiable risk factors could reduce the prevalence of heart failure.

People with heart failure have high rates of hospitalisation to manage acute episodes of decompensation (severe symptoms), and have a mortality rate of 50–75% within five years of diagnosis.¹ In 2017–18, heart failure accounted for 412,693 hospital bed days.² The rate of hospitalisations for heart failure was 227 per 100,000 in Australia, compared to 164 per 100,000 in Canada, in people aged 15 years and over in 2016.⁴

The most common events that lead to hospitalisation are infection, non-adherence to fluid restrictions and non-adherence to medicines.⁵ People admitted to hospital with acute decompensation of chronic heart failure often have comorbidities with shared risk factors, such as renal disease, diabetes and pulmonary disease.⁵

Prevalence

The prevalence of heart failure in Australia is estimated at 1–2%. The prevalence of heart failure rises steeply with age, and the rate of hospitalisations for heart failure is approximately 20 times higher among people aged 75–79 years than among those aged 45–49 years.² There may be substantial numbers of people with undiagnosed heart failure in Australia.¹

National data on long-term trends in the prevalence of heart failure are not available. A Western Australian study reported that the incidence of first hospitalisations for heart failure decreased steadily between 1990 and 2005 – from 191 to 103 per 100,000 in men, and from 130 to 75 per 100,000 in women.⁶ However, hospitalisations for heart failure increased by 15% over this period, partly due to the ageing population and improved survival among people with heart failure.⁶

Rates of heart failure are higher in rural and remote areas than in metropolitan areas of Australia.¹ A combination of factors is likely to contribute to this:

- Social determinants such as education, income and employment
- Risk factors such as smoking
- Lack of access to health care or health professionals.⁷

Heart failure in Aboriginal and Torres Strait Islander people

Rates are higher among Aboriginal and Torres Strait Islander people.¹ Estimates of heart failure prevalence among Aboriginal and Torres Strait Islander people range from 1% to 5.3%.¹

Timely diagnosis of heart disease and heart failure is one of the priority areas in the Better Cardiac Care Measures for Aboriginal and Torres Strait Islander People initiative of the Australian Health Ministers' Advisory Council.⁸ The number and proportion of Aboriginal and Torres Strait Islander people, compared with other Australians, who received one or more relevant cardiac-related Medicare Benefits Schedule (MBS) diagnostic services in the previous 12 months is reported as a measure of timely diagnosis. This measure showed some improvement between 2004–05 and 2017–18, when MBS claims for cardiac-related diagnostic items rose from 7% to 11% for Aboriginal and Torres Strait Islander people and from 7% to 9% for other Australians.⁸

Management

Better health care can keep people with heart failure well enough to reduce their need for hospitalisation. However, for people with chronic progressive diseases such as heart failure with exacerbating features, hospital presentation is appropriate when the patient is decompensating.

Best-practice management of people with chronic heart failure involves evidence-based, multidisciplinary care.⁹ Effective management involves a combination of strategies, which may include:

- Non-pharmacological approaches, such as physical activity programs, and consumer and carer education about self-management of heart failure¹⁰
- Pharmacotherapy, including diuretics, beta-blockers, angiotensin-converting enzyme (ACE) inhibitors or angiotensin receptor blockers, mineralocorticoid receptor antagonists and angiotensin neprilysin receptor inhibitors (a newer type of medicine)¹⁰; note that recommended therapy differs between heart failure with reduced ejection fraction and heart failure with preserved ejection fraction
- Surgical procedures and supportive devices – for example, coronary artery bypass graft surgery, cardiac resynchronisation therapy with or without insertion of an implantable cardiac defibrillator, and heart transplant.¹⁰

About the data

All hospitalisations with a principal diagnosis of heart failure (with reduced or preserved ejection fraction) are included.

Data are sourced from the National Hospital Morbidity Database, and include admitted patients in both public and private hospitals, as well as hospital care in the home.

Rates are based on the number of hospitalisations for heart failure per 100,000 people of all ages in 2017–18.

Because a record is included for each hospitalisation for the condition, rather than for each patient, patients hospitalised for the condition more than once in the financial year will be counted more than once.

The analysis and maps are based on the residential address of the patient and not the location of the hospital.

Rates are age and sex standardised to allow comparisons between populations with different age and sex structures.

Data quality issues – for example, the extent of identification of Aboriginal and Torres Strait Islander status in datasets – could influence variations seen.

Heart failure

What do the data show?

Magnitude of variation

In 2017–18, there were 62,554 hospitalisations for heart failure, representing 201 hospitalisations per 100,000 people of all ages (the Australian rate).

The number of hospitalisations for heart failure across 325* local areas (Statistical Area Level 3 – SA3) ranged from 91 to 531 per 100,000 people. The rate was **5.8 times as high** in the area with the highest rate compared with the area with the lowest rate. The number of hospitalisations varied across states and territories, from 172 per 100,000 people in Tasmania to 324 in the Northern Territory (Figures 2.10–2.13).

After the highest and lowest 10% of results were excluded and 260 SA3s remained, the number of hospitalisations per 100,000 people was 2.0 times as high in the area with the highest rate compared with the area with the lowest rate.

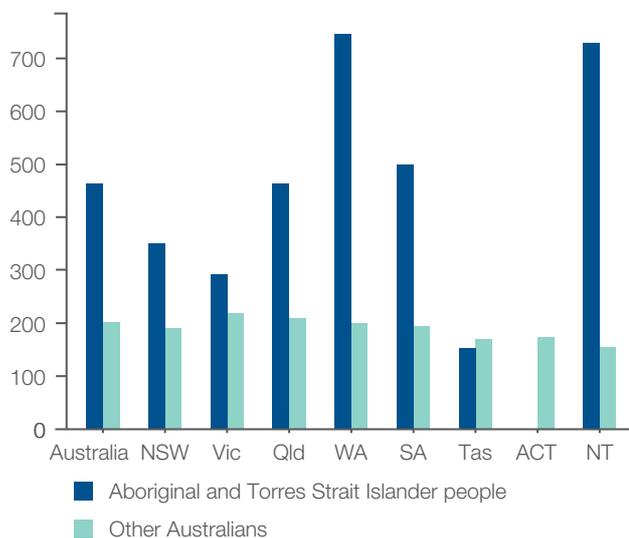
Analysis by remoteness and socioeconomic status

Rates of hospitalisation for heart failure were substantially higher in remote areas than in other areas. Hospital admission rates also increased with socioeconomic disadvantage in major cities, and inner regional and remote areas (Figure 2.14).

Analysis by Aboriginal and Torres Strait Islander status

The rate for Aboriginal and Torres Strait Islander people (462 per 100,000 people) was 2.3 times as high as the rate for other Australians (201 per 100,000 people) (Figure 2.9).

Figure 2.9: Number of potentially preventable hospitalisations – Heart failure per 100,000 people of all ages, age and sex standardised, by state and territory of patient residence, by Aboriginal and Torres Strait Islander status, 2017–18†



The data for Figure 2.9, and the data and graphs for analysis by Primary Health Network are available at safetyandquality.gov.au/atlas

* There are 340 SA3s. For this item, rates were suppressed for 15 SA3s due to a small number of hospitalisations and/or population in an area.

Notes:

Some SA3 rates are more volatile than others. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia.

† Data for ACT (Aboriginal and Torres Strait Islander people) have been suppressed. Data by Aboriginal and Torres Strait Islander status should be interpreted with caution as hospitalisations for Aboriginal and Torres Strait Islander patients are under-enumerated, with variation among states and territories. Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018.

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Trends over time

Between 2014–15 and 2017–18, the rate of heart failure hospitalisations per 100,000 people nationally increased by 4% (Figure 2.15).*

For Aboriginal and Torres Strait Islander people, the rate of heart failure hospitalisations per 100,000 people nationally decreased by 4% between 2014–15 and 2017–18 (Figure 2.16).

Interpretation

Potential reasons for the variation include differences in:

- Clinician factors:
 - non-concordance with management guidelines
 - diagnostic error
 - failure to refer to heart failure multidisciplinary programs that include education, psychosocial support, exercise training and optimal pharmacotherapy¹¹
- Health system factors:
 - access to post-discharge, multidisciplinary disease management programs (either hospital or community based)
 - access to review within 7–14 days of discharge to avert readmission¹⁰
 - quality of both hospital and community care, which can be affected by suboptimal communication between clinicians
 - quality, efficiency and effectiveness of primary health care
 - availability of health care that is compatible with Aboriginal and Torres Strait Islander culture¹²
- access to dialysis for Aboriginal and Torres Strait Islander people; in areas with large Aboriginal and Torres Strait Islander populations requiring dialysis for kidney disease, inadequate access to dialysis may worsen heart failure and contribute to hospitalisation numbers
- availability of primary care clinicians to increase primary and secondary prevention
- availability of services that are appropriate to the local population's health literacy levels
- Demographic and consumer factors:
 - socioeconomic disadvantage, as heart failure appears to be more prevalent among people living in lower socioeconomic areas²
 - prevalence of risk factors for heart failure, such as coronary heart disease, rheumatic fever and rheumatic heart disease, diabetes, hypertension, smoking, obesity and obesogenic environments, kidney disease and psychological distress
 - severity of heart failure and comorbidities
 - health literacy about medicines, concordance with medication regimens, ability to afford medicines.

Variations between areas may not directly reflect the practices of the clinicians who are based in those areas. Area boundaries reflect where people live rather than where they obtain their health care. Patients who live in metropolitan, regional and rural areas may all travel outside their local area to receive care.

Note:

* Since June 2017, emergency department-only episodes in New South Wales have not been counted as hospitalisations, and this will affect the time trends described above.

Heart failure

Non-concordance with guidelines

Translation of clinical guidelines into practice is poor, according to results of a recent Victorian study: only 13% of heart failure patients received an outpatient review and heart failure home visit review, and were prescribed medicines according to guidelines, within 30 days of discharge.¹³ Rates of guideline-concordant management after discharge were lower in regional areas than in metropolitan areas.¹³

Rates of prescription of ACE inhibitors and beta-blockers among patients admitted to hospital for heart failure also showed shortfalls compared with recommended use in a study in New South Wales (NSW) and the Australian Capital Territory (ACT), suggesting that uptake of evidence-based guidelines can be improved.⁵

Readmissions

Readmissions make a substantial contribution to hospitalisations for people with heart failure. The rate of readmission within 30 days, for any cause, among people with heart failure in Australia is approximately 24%.¹⁴ Factors that increase the risk of readmission for heart failure include male gender, socioeconomic disadvantage, numerous comorbidities and being admitted from an aged care setting.¹⁵ A recent study of hospitalisations with acute heart failure in NSW and the ACT found that 11% of patients were residents of aged care homes.⁵

Addressing variation

Rates of hospitalisation for heart failure in Australia have increased since publication of the *Second Australian Atlas of Healthcare Variation* in 2017. Heart failure is not a new problem, and the health system must do better to care for people with this condition.

There are pockets of excellence in managing heart failure, but major system changes are needed if we are to make meaningful progress in this area. And it is vital that we do make progress, to improve the quality of life, outcomes and experience for people with heart failure.

Reducing hospitalisations for heart failure will take a combination of approaches:

- Primary prevention
- Better care in the community, including improved integration with hospital care
- Consumer enablement
- More effective use of medicines
- Greater use of exercise and cardiac rehabilitation programs.

Primary prevention

Reducing the prevalence of risk factors for heart failure, such as hypertension, diabetes, smoking and obesity, is fundamental to reducing the prevalence of, and hospitalisations for, heart failure.¹⁶

Primary care

General practitioners (GPs) have a vital role in the community management of people with heart failure. Barriers to effective primary care for heart failure patients, and potential solutions, were identified in focus groups of GPs and practice nurses from five general practices in Sydney.¹⁷ Suggested improvements to support effective delivery of heart failure management included:

- Thorough, accurate discharge summaries from hospitals, with clear medication instructions at an appropriate level for the health literacy of the patient

- Closer contact between GPs and hospital specialists and clinical nurse consultants
- More consistent coding of heart failure, because the use of alternative terms can result in the diagnosis not being flagged and some patients being unaware of their diagnosis
- Appropriate Medicare rebates for practice nurse consultations in chronic disease management
- A Medicare rebate for outpatient testing of B-type natriuretic peptide levels, which is often useful in confirming the diagnosis of heart failure.¹⁷

Other strategies to support GP care of people with heart failure include community rapid response initiatives. For example, in Tasmania, people are referred to the Community Rapid Response Service by their GP. A nurse practitioner, community nurses, GP and other health professionals, as required, plan care together with the person referred.¹⁸ Care is delivered to the person in their home or other community setting such as an aged care home.¹⁸ Health conditions treated include exacerbations of chronic conditions such as heart failure.¹⁸

Transition to community care

The first few weeks after hospital discharge are a high-risk period for people with heart failure, but early follow-up can reduce the risk of readmission and death. Australian guidelines advise starting discharge planning early during hospitalisation for heart failure, including review within 7–14 days of discharge, an early outpatient clinic appointment and community services, as needed.¹⁰

A recent study from Victoria found that the readmission rate was 24%, and the mortality rate was 9%, within 30 days of discharge after hospitalisation for heart failure.¹⁴ Having an outpatient appointment within 30 days of discharge reduced the mortality risk by 81%.¹⁴ The referral rate at discharge was 63% for an outpatient clinic appointment, but, at 30 days post-discharge, 26% of patients with a referral were waiting for an appointment date.¹⁴ The average time to an outpatient clinic visit was 27 days.¹⁴ Rates of review in an outpatient clinic, and of referral to heart failure programs, were lower for people living in rural areas compared with metropolitan areas.¹⁴

The authors of the study suggested that system redesign is warranted to ensure rapid referrals and post-discharge review within the transitional period. This includes streamlining hospital systems to facilitate rapid follow-up and community support in this high-risk period.¹⁴

Integrated care

Better integration of care in the community with acute hospital care may improve outcomes for people with heart failure. See page 75 for a description of an integrated care model in western Sydney that reported a 37% reduction in potentially preventable hospitalisations among chronic disease patients in a preliminary evaluation.¹⁹

Consumer enablement

Ongoing self-management for heart failure is required to slow progression of the disease. Self-management includes taking prescribed medicines, modifying sodium intake and undertaking physical exercise. Consumer activation is a measure of the extent of consumers' involvement in their own health care, and is correlated with better self-management in people with heart failure.²⁰ Australian guidelines recommend that education for people with heart failure, and their carers, starts soon after diagnosis and is tailored to the person's level of health literacy.¹⁰ The National Heart Foundation website has heart failure resources for people with either low health literacy or higher health literacy.

The person's overall health, literacy and cognition are likely to affect their degree of success with self-management. A holistic approach is needed to improve outcomes in people with heart failure and cognition problems.²¹

Heart failure

Improving use of medicines

Current prescribing of medicines for heart failure with reduced ejection fraction is suboptimal, according to recent Victorian data showing that only 42% of eligible patients were prescribed the recommended triple therapy medication.¹³ Lack of prescriber confidence or awareness of gold-standard pharmacotherapy in heart failure is likely to contribute to this low rate, along with perceived difficulty in prescribing for elderly people and those with multimorbidity.¹³ Strategies to improve prescribing for heart failure have focused on monotherapy, but the study authors suggested that the focus should now be expanded to consider triple therapy in heart failure with reduced ejection fraction.¹³

Pharmacist-based interventions

Pharmacist interventions in transitions of care to improve medicines use by heart failure patients can reduce the risk of 30-day all-cause hospital readmission by 54%, compared with standard discharge processes.²² Pharmacist interventions in the transition of care process include:

- Medication reconciliation
- Patient education
- Follow-up
- Monitoring of medication adherence.²²

Another systematic review examined the impact of multidisciplinary interventions involving a pharmacist on all-cause hospitalisations over longer periods among people with heart failure. The review reported a 24% reduction in all-cause hospitalisations, which were measured over a period of six weeks to 55 months.²³ The interventions included:

- Discharge counselling
- Home visits
- Liaison with GPs
- Telephone follow-up
- Education on medicines, lifestyle changes and self-care.²³

Nurse-led titration clinics

Use of beta-adrenergic blocking agents, ACE inhibitors and angiotensin receptor blockers can reduce hospital readmissions and improve survival in people with heart failure with reduced ejection fraction. However, insufficient dosage is a common problem in primary care. Nurse-led titration clinics to optimise dosage of these medicines may reduce the risk of all-cause hospitalisations by 20% and all-cause mortality by 34% compared with usual primary care.²⁴ Interventions include:

- Patients attending a clinic primarily for the titration of beta-blockers, ACE inhibitors and angiotensin receptor blockers, based on a predetermined protocol, by a senior heart failure nurse
- Consumer and carer education about heart failure, management of heart failure at home, medicines and self-management
- Monitoring of medication adherence
- Patient assessment and symptom monitoring
- Liaison with GPs and community nurses.²⁴

Exercise and cardiac rehabilitation

Exercise and cardiac rehabilitation (which may include patient education and psychosocial support) may reduce heart failure hospitalisations by 41–43%, and all-cause hospitalisations by 23–30%.^{25,26} Barriers to providing cardiac rehabilitation in Australia include low referral rates, limited funding and geographic isolation.^{27,28}

A lack of knowledge about the benefits and safety of heart failure rehabilitation programs may contribute to low referral rates by medical professionals.²⁸ Poor transition from acute hospital care to community follow-up may also contribute to breakdown of the referral process.²⁸

Improving heart failure outcomes for Aboriginal and Torres Strait Islander people

Prevention

Complex social determinants underlie the disparities in health, including in heart failure rates and outcomes, between Aboriginal and Torres Strait Islander people and other Australians.^{29,30} Impacts of colonisation, including racism and intergenerational trauma, contribute to these determinants. To address health inequities, improvements in social factors are required – for example, in education, employment and living conditions.²⁹ In addition, the logistical and financial barriers to accessing timely and effective health care for Aboriginal and Torres Strait Islander people who live in remote areas must be addressed.²⁹

Rheumatic heart disease, which develops after acute rheumatic fever, can lead to heart failure.³¹ Approximately 90% of people living with rheumatic heart disease are Aboriginal and/or Torres Strait Islander people, and, of these, nearly 60% were under 25 years of age when diagnosed, according to 2018 data from four states and territories.³² Among people with rheumatic heart disease, 19% developed heart failure within 10 years of diagnosis, in a Northern Territory study.³¹ Acute rheumatic fever and rheumatic heart disease are preventable diseases, and improved living conditions reduce the risk.³³

Management

Earlier detection and management of cardiac conditions is likely to reduce the risk of heart failure among Aboriginal and Torres Strait Islander people, and cardiovascular disease assessments are now recommended from 18 years of age in these groups.³⁴ Other suggested strategies to improve heart failure management among Aboriginal and Torres Strait Islander people include:

- Increasing access to heart failure multidisciplinary disease management programs that include education, psychosocial support, exercise training and optimal pharmacotherapy¹¹
- Ensuring appropriate and timely follow-up of patients after discharge

- Incorporating family-based and outreach programs into models of care¹¹
- Improving prevention, early diagnosis and treatment of rheumatic fever³⁵
- Preventing progression of kidney disease
- Improving access to dialysis for Aboriginal and Torres Strait Islander communities.

Cardiac or heart failure rehabilitation programs are most likely to be successful if they are run collaboratively with local Aboriginal and Torres Strait Islander people, because developing community trust and working with local people are important for participation (see Case study: Work it Out – chronic disease management program for Aboriginal and Torres Strait Islander people' on page 96). Services that provide coordinated, holistic care and assist with navigating the health system would also benefit Aboriginal and Torres Strait Islander people with heart failure.

Cultural safety and culturally appropriate care

Misalignment of mainstream health services with Aboriginal and Torres Strait Islander culture is a barrier to accessing health care.³⁶ Increasing access to culturally safe health care will involve developing partnerships with the Aboriginal Community Controlled Health Service sector, increasing the Aboriginal and Torres Strait Islander health workforce, and improving cultural awareness and competency of mainstream health services.

Heart failure

Case study: Work it Out – chronic disease management program for Aboriginal and Torres Strait Islander people

Work it Out is a combined education and exercise program for chronic disease management for urban Aboriginal and Torres Strait Islander people.^{37,38} The program was designed, and is monitored, by an Aboriginal community controlled health organisation to be flexible and culturally accommodating. The program has been running since 2011, with Aboriginal and Torres Strait Islander participants who have, or are at risk of, cardiovascular disease. It is now running in 15 urban and regional city locations in south-east Queensland.

An Aboriginal health worker or other Aboriginal and Torres Strait Islander staff member is usually present, and works closely with an exercise physiologist and participants at each session. Sessions consist of a 45-minute ‘yarning’ (education) session, followed by an hour-long exercise program tailored to individual participants’ chronic conditions. The program runs for 12 weeks, and has flexible entry and exit points to allow for family and community responsibilities. Participants can attend two or more sessions per week.

Over the four-year study period, 1,007 patients were referred to the program, and 406 participants who completed an initial assessment and one or more 12-weekly review assessments were included in the analysis. The participants had an average of six chronic conditions, and 68% were obese. Results were assessed after participants attended between one and 11 cycles of the program, and baseline assessments were compared with participants’ last assessments.

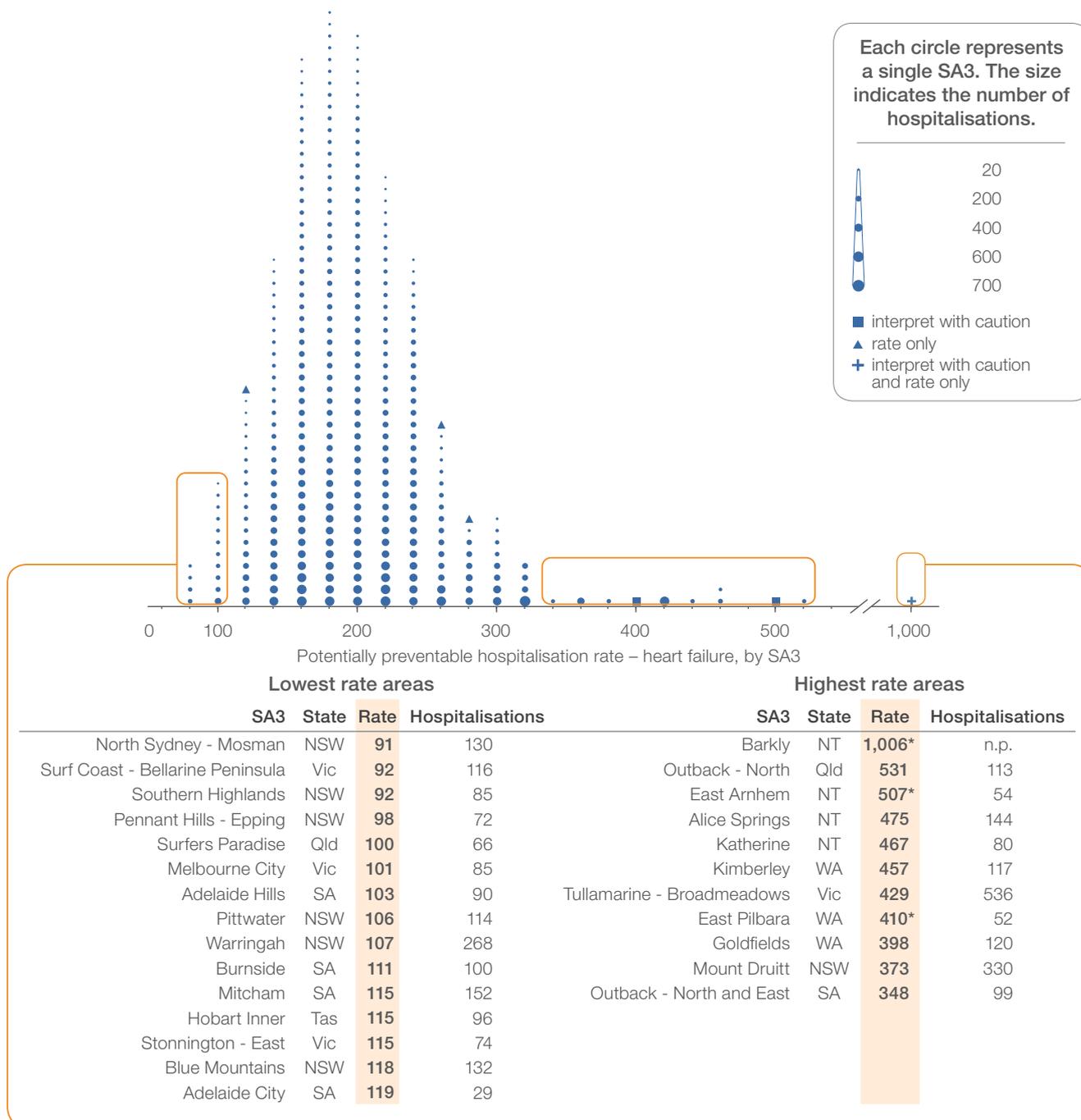
Participants achieved significant improvements in functional exercise capacity: six-minute walk distance increased by an average of 77 m. Reductions in waist and hip circumference were not significant in the group as a whole, but participants in the top tertile for waist circumference lost an average of 5.1 cm, and those in the top tertile for hip circumference lost an average of 3.2 cm.

More than half the participants attended the program for two or more 12-week cycles. Greater benefits were seen in those who attended for more than one cycle of the program. The improvement in functional exercise capacity is likely to have important clinical significance in improving health and reducing mortality risk among the participants, including those with heart failure, the authors commented.

Aboriginal staff were identified as an important factor in the success of the program: ‘I have been to other exercise places before where they are all white, and wear leotards, and no one talks to you ... I felt so uncomfortable ... whereas we can come here, not worrying how we are looking, and we still feel good.’³⁹

Rates by local area

Figure 2.10: Number of potentially preventable hospitalisations – heart failure per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18



Notes:

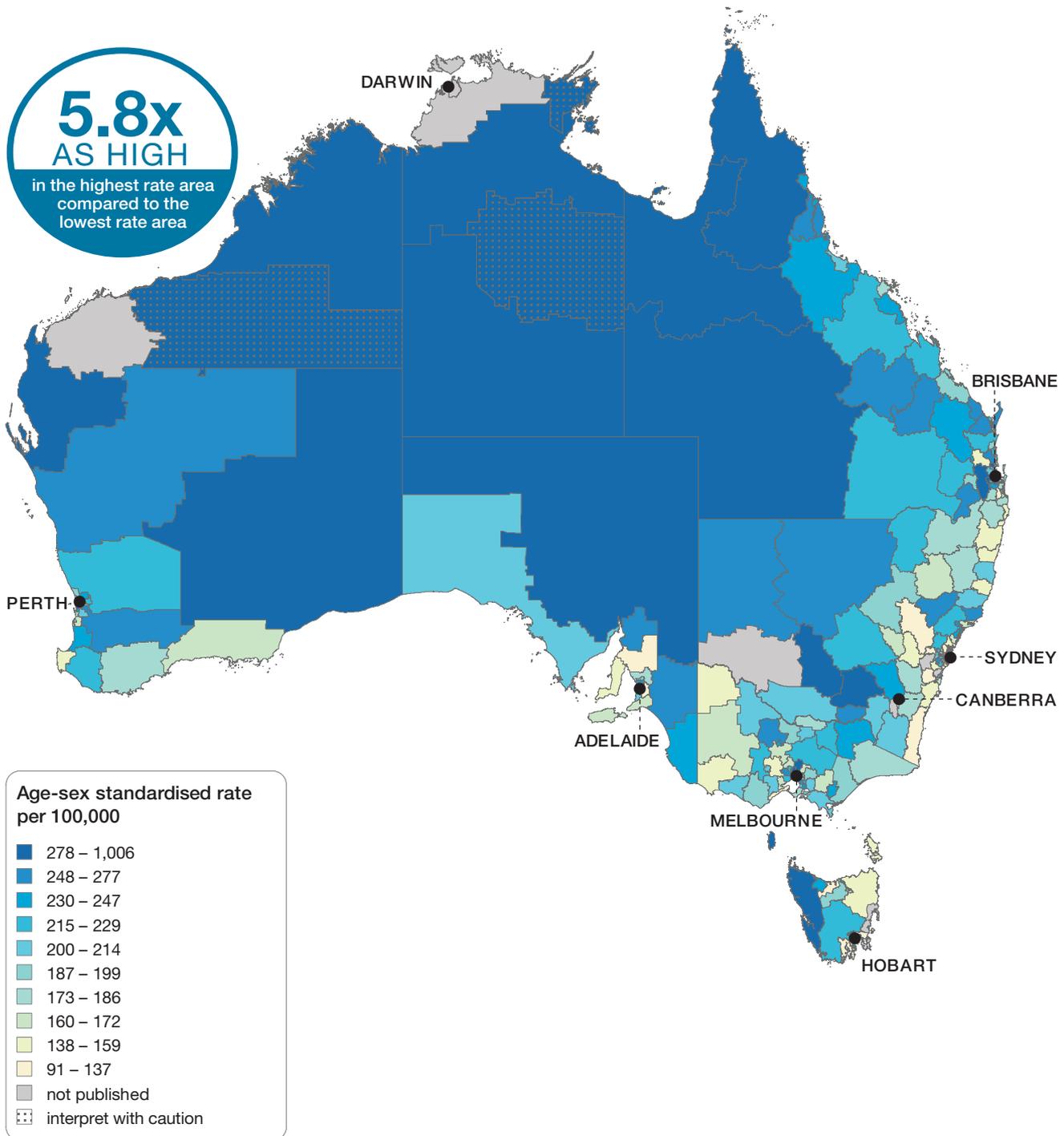
Squares (■) and asterisks (*) indicate rates that are more volatile than other rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of hospitalisations are not published (n.p.) for confidentiality reasons. Crosses (✚) indicate SA3s where rates should be interpreted with caution. The numbers of hospitalisations are not published (n.p.) for confidentiality reasons. Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Heart failure

Rates across Australia

Figure 2.11: Number of potentially preventable hospitalisations – heart failure per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18



Notes:

Dotted areas indicate rates that are considered more volatile than other published rates and should be interpreted with caution. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia.

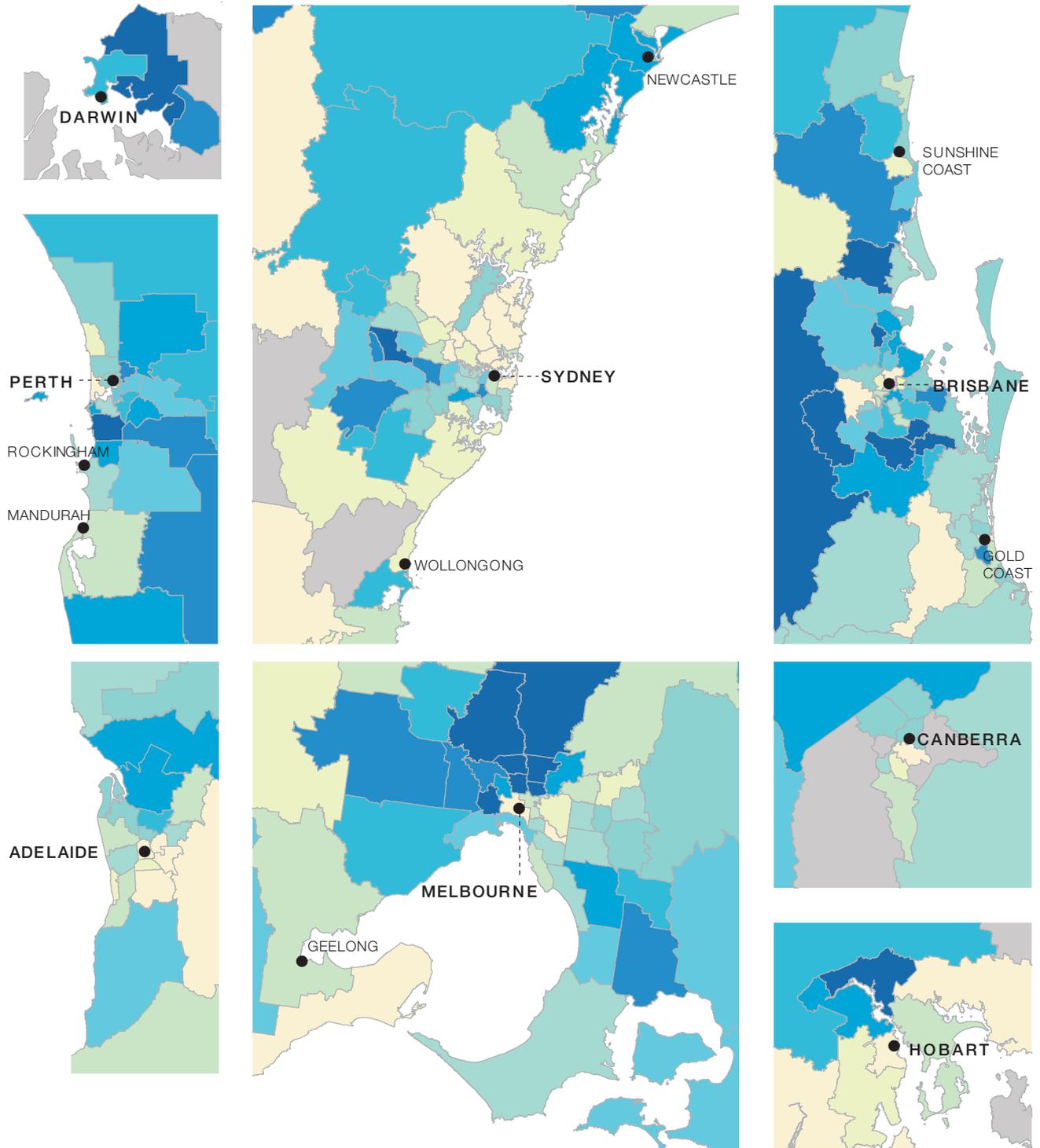
Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018.

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Rates across capital city areas

Figure 2.12: Number of potentially preventable hospitalisations – heart failure per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18



Notes:

Dotted areas indicate rates that are considered more volatile than other published rates and should be interpreted with caution.

Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018.

For further detail about the methods used, please refer to the Technical Supplement.

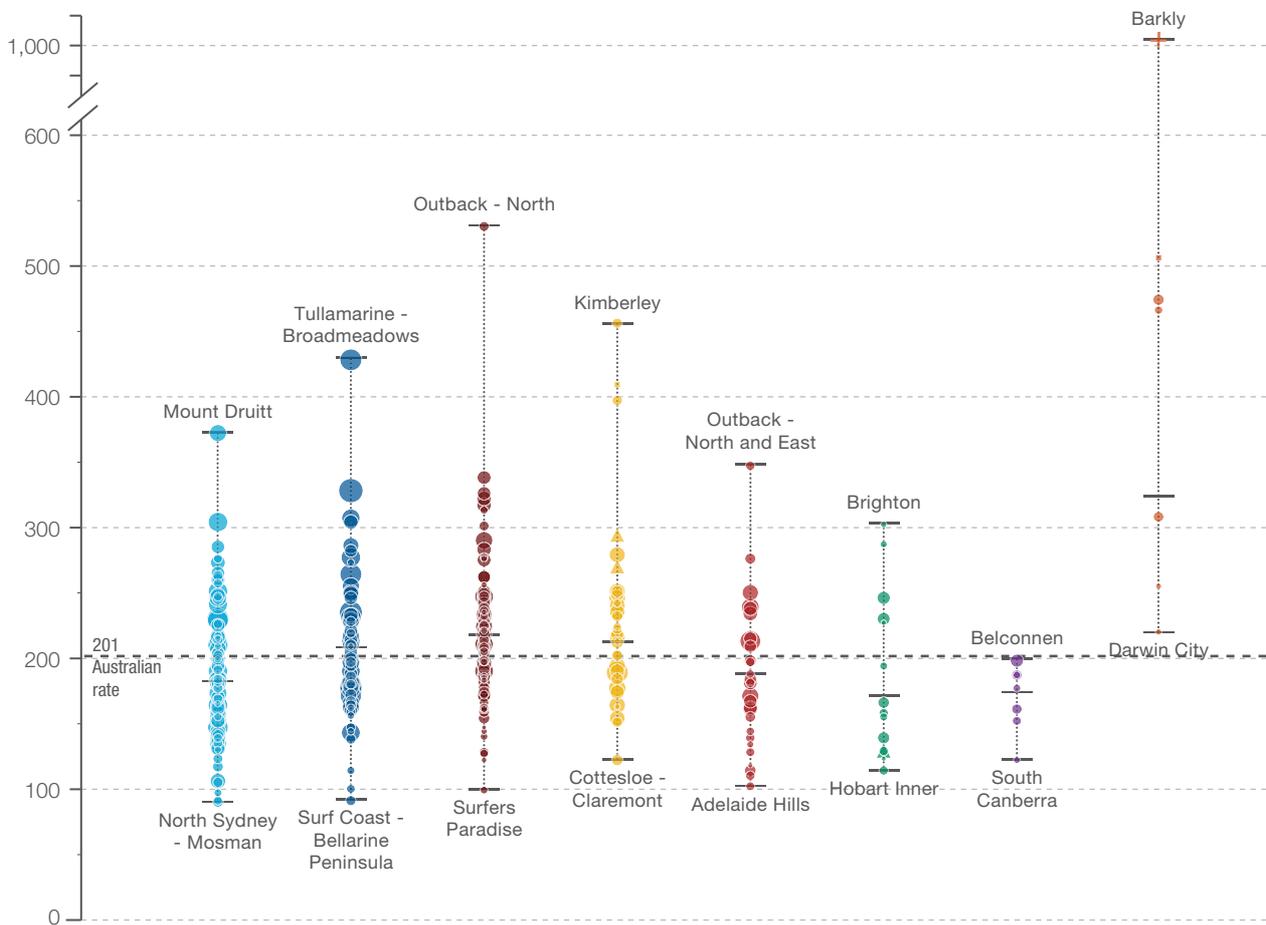
Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Heart failure

Rates by state and territory

Figure 2.13: Number of potentially preventable hospitalisations – heart failure per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Highest rate	373	429	531	457	348	303	199	1,006*
State/territory	183	208	218	213	188	172	174	324
Lowest rate	91	92	100	123	103	115	123	221
No. hospitalisations	19,112	16,763	12,782	6,212	4,856	1,344	726	574



Each circle represents a single SA3. The size indicates the number of hospitalisations.

- ▲ rate only
- interpret with caution
- + interpret with caution and rate only



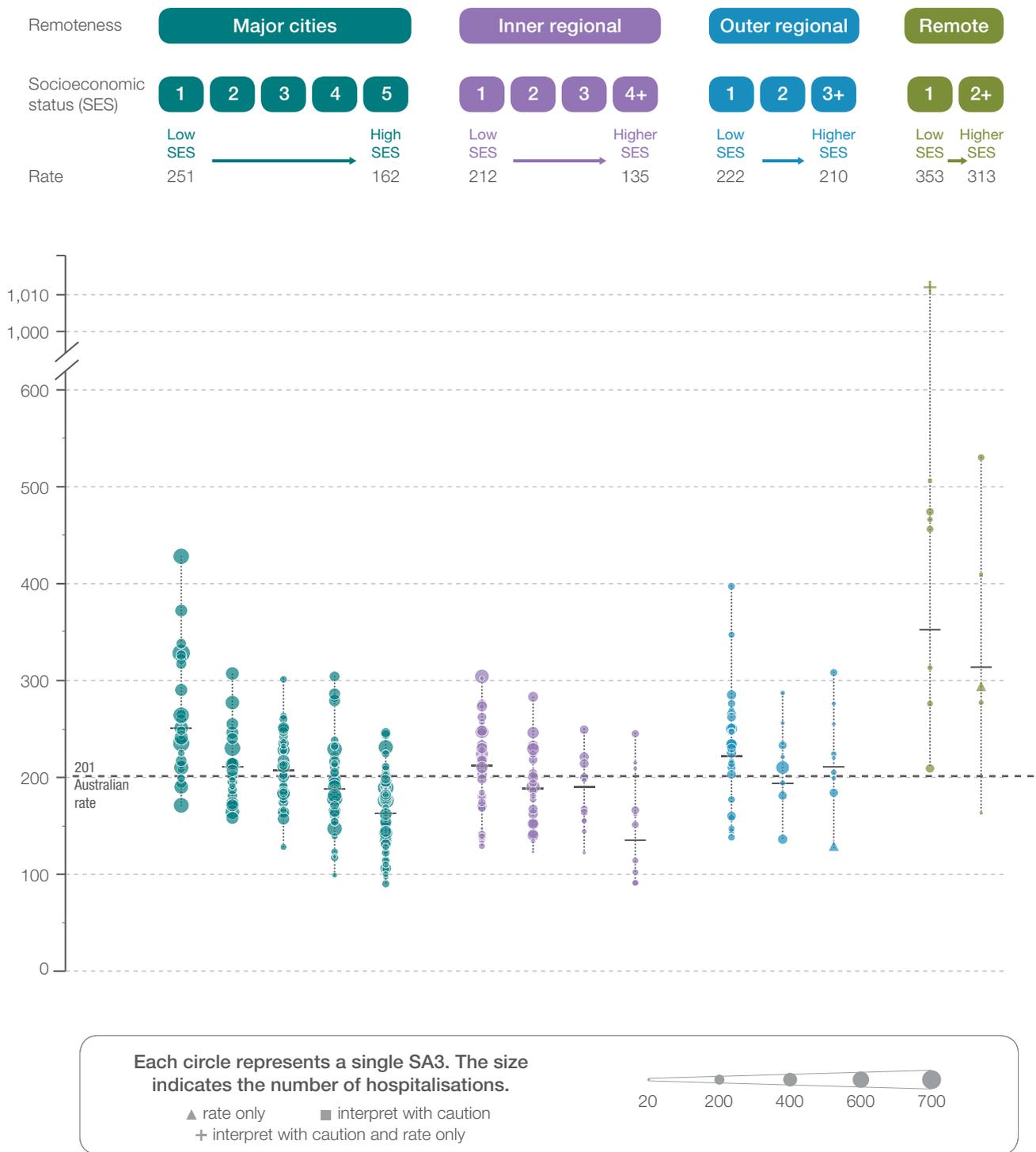
Notes:

Squares (■) and asterisks (*) indicate rates that are more volatile than other rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of hospitalisations are not published for confidentiality reasons. Crosses (+) indicate SA3s where rates should be interpreted with caution. The numbers of hospitalisations are not published for confidentiality reasons. Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Rates by remoteness and socioeconomic status

Figure 2.14: Number of potentially preventable hospitalisations – heart failure per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18



Notes:

Squares (■) indicate rates that are more volatile than other rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of hospitalisations are not published for confidentiality reasons. Crosses (+) indicate SA3s where rates should be interpreted with caution. The numbers of hospitalisations are not published for confidentiality reasons. Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018. For further detail about the methods used, please refer to the Technical Supplement.

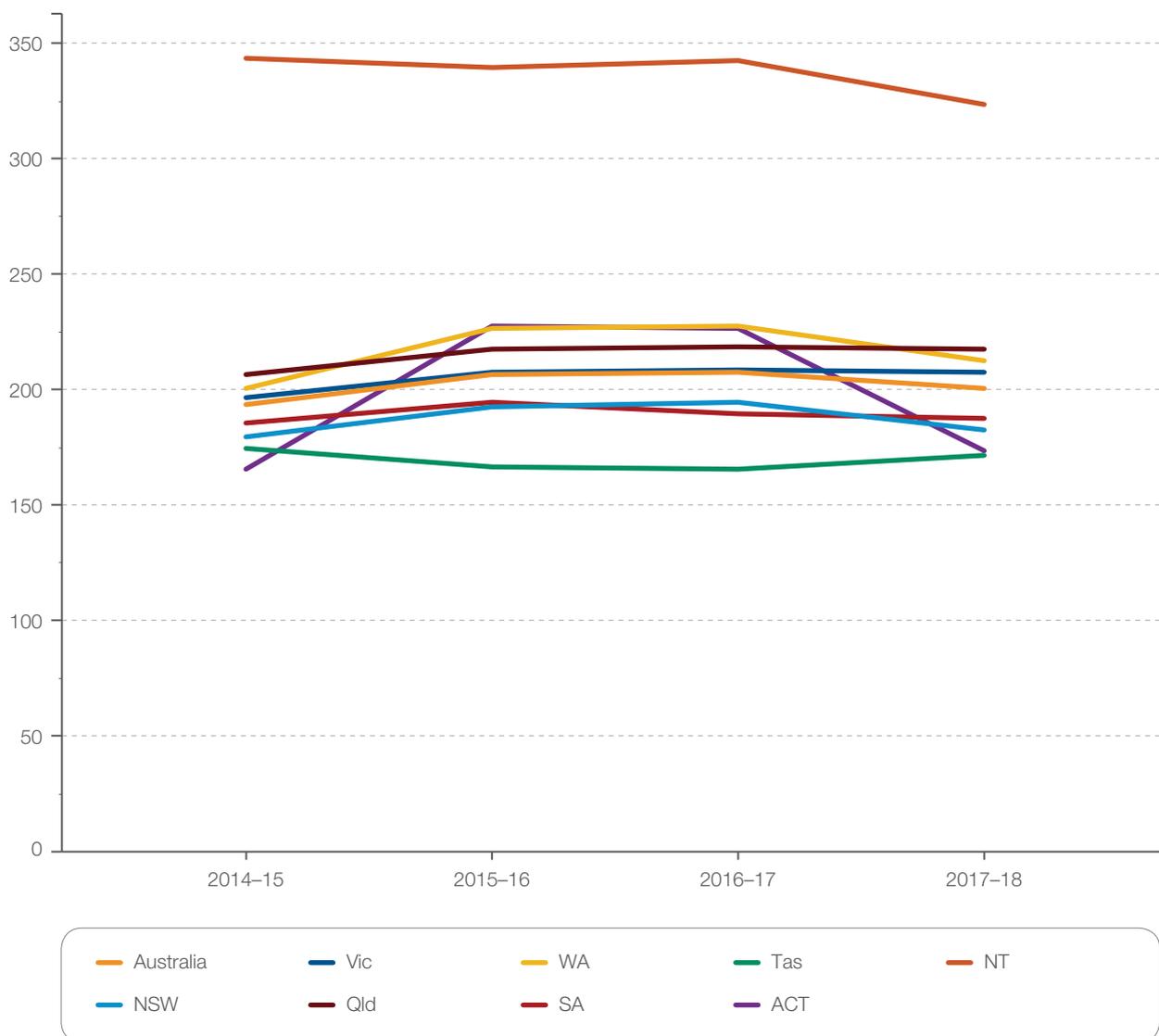
Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Heart failure

Rates across years

Figure 2.15: Number of potentially preventable hospitalisations – heart failure per 100,000 people of all ages, age and sex standardised, by state and territory of patient residence, 2014–15 to 2017–18

	2014–15	2015–16	2016–17	2017–18
Highest SA3 rate	1,084*	1,104*	562*	1,006*
Australian rate	194	207	208	201
Lowest SA3 rate	86	94	85	91
Magnitude of variation	7.5	6.1	5.6	5.8
Magnitude of variation without top & bottom 10% SA3	2.1	2.0	2.1	2.0



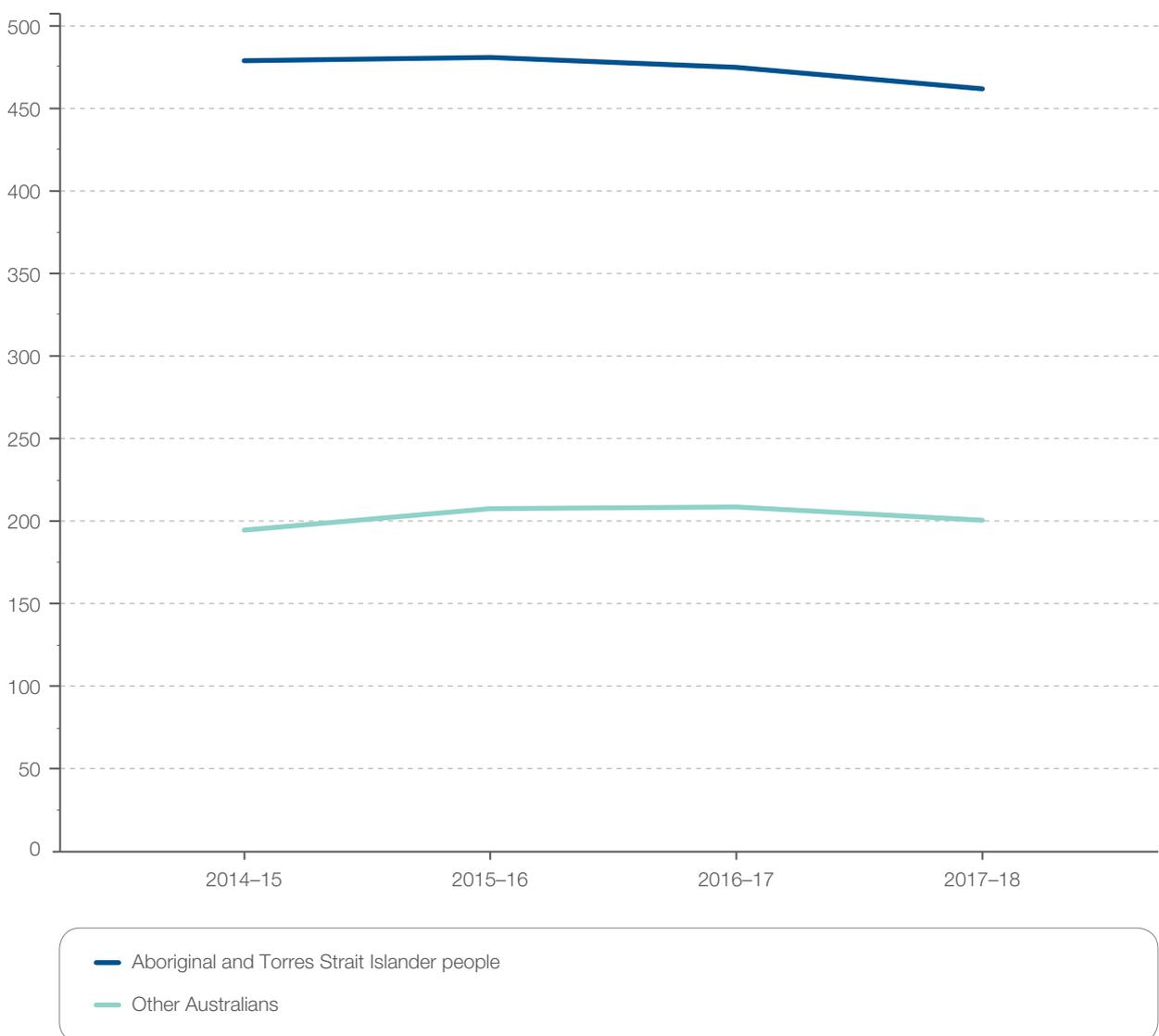
Notes:

The asterisks (*) indicate rates that are considered more volatile than others, and should be interpreted with caution. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia. Population estimates as at 31 December of the relevant year are calculated as the average of the 30 June populations before and after the relevant December. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2014 to 2018.

Rates for Aboriginal and Torres Strait Islander people across years

Figure 2.16: Number of potentially preventable hospitalisations – heart failure per 100,000 people of all ages, age and sex standardised, by Aboriginal and Torres Strait Islander status, 2014–15 to 2017–18



Notes:

Data by Aboriginal and Torres Strait Islander status should be interpreted with caution as hospitalisations for Aboriginal and Torres Strait Islander people are under-enumerated, with variation among states and territories. Population estimates as at 31 December of the relevant year are calculated as the average of the 30 June populations before and after the relevant December. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2014 to 2018.

Heart failure

Resources

- NSW Clinical Service Framework for Chronic Heart Failure
- *Primary Health Tasmania Needs Assessment: Health intelligence report*⁴⁰
- Improving cardiovascular outcomes among Aboriginal Australians: lessons from research for primary care⁴¹ (includes a management toolkit)
- Heart Online, clinician resources for cardiac rehabilitation and heart failure management, including access to evidence-based guidelines, templates, protocols, calculators, patient resources and videos (heartonline.org.au/)
- *National Heart Foundation of Australia and Cardiac Society of Australia and New Zealand: Guidelines for the prevention, detection, and management of heart failure in Australia 2018*¹⁰
- Improving Health Outcomes for Aboriginal and Torres Strait Islander Peoples with Acute Coronary Syndrome: A practical toolkit for quality improvement⁴²
- NPS MedicineWise – Heart failure: taking an active role – Clinical resources and tools, and information for consumers⁴³
- Recommendations arising from the inaugural Cardiac Society of Australia and New Zealand conference on Indigenous cardiovascular health³⁵

Available at
heartfoundation.org.au:

- Consumer resources for people with heart failure, including resources specific to Aboriginal and Torres Strait Islander Australians, translated resources, videos, and resources for people with low and higher health literacy
- *Heart Failure Guidelines: A concise summary for the GP*
- *Pharmacological Management of Chronic Heart Failure with Reduced Left Ventricular Ejection Fraction* (clinical fact sheet)
- *Diagnosis and Classification of Heart Failure* (clinical fact sheet).

Australian initiatives

The information in this chapter will complement work already underway to reduce the rate of hospitalisations for heart failure in Australia. At a national level, this work includes:

- NPS MedicineWise – Heart failure: taking an active role – Clinical resources and tools, and information for consumers⁴³
- The Heart Foundation's Heart Failure Toolkit – a targeted approach to reducing heart failure readmissions
- Essential Service Standards for Equitable National Cardiovascular Care (ESSENCE) for Aboriginal and Torres Strait Islander people
- Rheumatic fever strategy.

Many state and territory initiatives are also in place to reduce the rate of hospitalisations for heart failure, including:

- Heart Failure Care Initiative – Development of Model of Care and Outcomes Framework, Capital Health Network, Australian Capital Territory
- Northern Territory Heart Failure Initiative – Clinical Audit
- Queensland Heart Failure Services
- Telephone-based lifestyle coaching (My Health for Life, Get Healthy, COACH), Queensland
- Wellness Initiative, supporting consumers to participate in telephone-based lifestyle coaching programs before surgical procedures, Queensland
- Heart failure guides in HealthPathways, Tasmanian Cardiac Network
- Heart failure education program, Tasmanian Cardiac Network
- Delivering Connected Care for Complex Patients with Multiple Chronic Needs, Tasmania
- Community Rapid Response Service, Tasmania¹⁸
- *Primary Health Tasmania Needs Assessment: Health intelligence report*⁴⁰
- Heart Health: Improved Services and Better Outcomes for Victorians policy

- Reducing heart failure admissions program. Heart Foundation Victoria; Victorian Government
- HealthLinks: Chronic Care, Victoria
- PROMETHEUS (Patient Reported Outcome Measure Education Transitions Heart failure Expertise Unifying Systems), pilot implementation of the Heart Foundation Heart Failure Toolkit, Victorian Cardiac Clinical Network
- Reports on hospital readmission rates for heart failure, NSW Bureau of Health Information
- Bettering Aboriginal Heart Health in Western Australia project
- 1 Deadly Step program, NSW Health and the Australian Rugby League
- State and territory cardiac networks.

Heart failure

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2.3 Diabetes complications

Why is this important?

Approximately 6% of adults in Australia had diabetes in 2017–18.¹ The prevalence of diabetes in adults has almost doubled since 2001, although there was little change between 2014–15 and 2017–18.¹ Long-term complications of diabetes include stroke, heart disease, kidney disease, eye disease, nerve problems and foot ulcers.² Diabetes complications accounted for 276,965 hospital bed days and 7% of all potentially preventable hospitalisations in Australia in 2017–18.³

What did we find?

Between 2014–15 and 2017–18, the rate of hospitalisations for diabetes complications nationally increased by 7%.

In 2017–18, the rate was **12.2 times as high** in the area with the highest rate compared with the area with the lowest rate. Rates of hospitalisations for diabetes complications were markedly higher in remote areas than in other areas. Rates increased with socioeconomic disadvantage in major cities, and outer regional and remote areas. The rate for Aboriginal and Torres Strait Islander people was 3.7 times as high as the rate for other Australians.

What can be done?

Successful interventions for reducing hospitalisations for diabetes complications include supporting self-management; for example, a six-week structured program of education on self-management for people with diabetes reported an 88% reduction in hospitalisations.⁴ A model of integrated care in Australia has reduced hospitalisations for diabetes complications by 47% in an early evaluation.⁵ Telehealth program types and outcomes vary widely, but can reduce haemoglobin A1c (HbA1c) levels by approximately half⁶, and some have led to reported reductions in hospitalisations.⁷ HbA1c levels give an indication of average blood glucose levels and are used to estimate how well a person's diabetes is being managed.

Long-term interventions to address the social determinants of health may also reduce the rate of diabetes and its complications in Australia.

Diabetes complications

Context

Approximately 6% of adults in Australia had diabetes in 2017–18.¹ The prevalence in adults has almost doubled since 2001, although there was little change between 2014–15 and 2017–18.¹ Long-term complications of diabetes include stroke, heart disease, kidney disease, eye disease, nerve problems and foot ulcers.² Short-term complications include diabetic ketoacidosis.

Diabetes complications accounted for 276,965 hospital bed days and 7% of all potentially preventable hospitalisations in Australia in 2017–18.³ The rate of hospitalisations for diabetes was 144 per 100,000 in Australia, and 93 per 100,000 in Canada, in people aged 15 years and over, in 2016.⁸

Of hospitalisations with a principal diagnosis of diabetes, type 2 diabetes accounts for most (64%), followed by type 1 diabetes (29%), gestational diabetes (5%) and other or unspecified diabetes (1%).⁹

Risk factors for type 2 diabetes

Risk factors for developing type 2 diabetes include physical inactivity, excess weight, poor diet and a genetic predisposition.¹ Aboriginal and Torres Strait Islander people are almost 3 times as likely to have diabetes as are other Australians, as a result of higher rates of risk factors for type 2 diabetes.^{1,10}

Socioeconomic disadvantage strongly increases the risk: in 2011–12, adults in the lowest socioeconomic group had twice the rate of diabetes as those in the highest socioeconomic group (8% and 4%, respectively).¹¹ People who live in outer regional or remote areas of Australia have higher rates of diabetes than those in major cities or inner regional areas (7% and approximately 5%, respectively).¹²

Preventing complications

Hospitalisation is appropriate for certain complications of diabetes, such as kidney and foot damage, which are likely to require hospitalisation for effective treatment.¹³ Some of these hospitalisations are considered potentially preventable because optimal management of blood glucose levels reduces the risk of diabetes complications.

Access to comprehensive, systematic care and follow-up reduces complications and preventable hospitalisations among people with diabetes.^{14,15} For example, hospitalisation and lower-extremity amputation may be avoided by regular care in a high-risk foot clinic that includes vascular, orthopaedic, endocrine and podiatry services.¹⁶

About the data

All hospitalisations with a principal diagnosis of type 1, type 2 and unspecified diabetes are included.

Data are sourced from the National Hospital Morbidity Database, and include admitted patients in both public and private hospitals, including hospital care in the home.

Rates are based on the number of hospitalisations for diabetes complications per 100,000 people of all ages in 2017–18.

Because a record is included for each hospitalisation for the condition, rather than for each patient, patients hospitalised for the condition more than once in the financial year will be counted more than once.

The analysis and graphs are based on the usual residential address of the patient and not the location of the hospital.

Rates are age and sex standardised to allow comparisons between populations with different age and sex structures.

Data quality issues – for example, the extent of identification of Aboriginal and Torres Strait Islander status in datasets – could influence variations seen.

What do the data show?

Magnitude of variation

In 2017–18, there were 50,273 hospitalisations for diabetes complications, representing 184 hospitalisations per 100,000 people of all ages (the Australian rate).

The number of hospitalisations for diabetes complications across 325* local areas (Statistical Area Level 3 – SA3) ranged from 64 to 782 per 100,000 people. The rate was **12.2 times as high** in the area with the highest rate compared with the area with the lowest rate. The number of hospitalisations varied across states and territories, from 147 per 100,000 people in New South Wales to 277 in the Northern Territory (Figures 2.18–2.21).

After the highest and lowest 10% of results were excluded and 261 SA3s remained, the number of hospitalisations per 100,000 people was 2.9 times as high in the area with the highest rate compared with the area with the lowest rate.

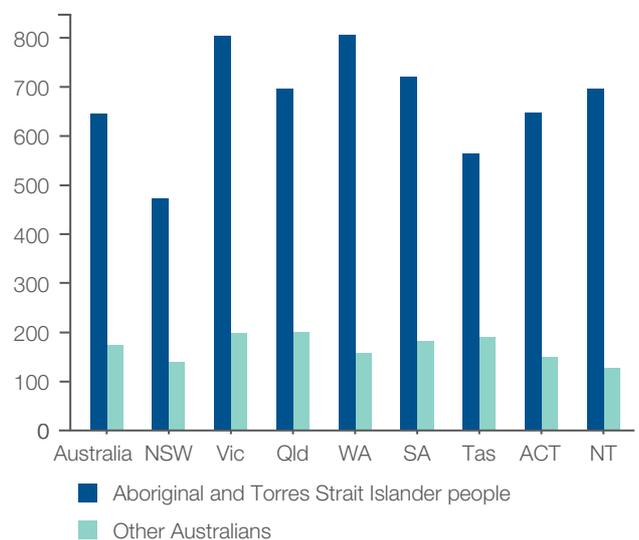
Analysis by remoteness and socioeconomic status

Rates of hospitalisations for diabetes complications were markedly higher in remote areas than in other areas. Rates increased with socioeconomic disadvantage in major cities, and outer regional and remote areas (Figure 2.22).

Analysis by Aboriginal and Torres Strait Islander status

The rate for Aboriginal and Torres Strait Islander people (647 per 100,000 people) was 3.7 times as high as the rate for other Australians (173 per 100,000 people) (Figure 2.17).

Figure 2.17: Number of potentially preventable hospitalisations – Diabetes complications per 100,000 people of all ages, age and sex standardised, by state and territory of patient residence, by Aboriginal and Torres Strait Islander status, 2017–18†



The data for Figure 2.17, and the data and graphs for analysis by Primary Health Network are available at safetyandquality.gov.au/atlas

* There are 340 SA3s. For this item, data were suppressed for 15 SA3s due to a small number of hospitalisations and/or population in an area.

Notes:

Some SA3 rates are more volatile than others. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia.

† Data by Aboriginal and Torres Strait Islander status should be interpreted with caution as hospitalisations for Aboriginal and Torres Strait Islander patients are under-enumerated, with variation among states and territories.

Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018.

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Diabetes complications

Trends over time

Between 2014–15 and 2017–18, the rate of hospitalisations for diabetes complications per 100,000 people nationally increased by 7% (Figure 2.23).

For Aboriginal and Torres Strait Islander people, the rate of hospitalisations for diabetes complications per 100,000 people nationally increased by 8% between 2014–15 and 2017–18 (Figure 2.24).

Interpretation

The reported variation in the rate of hospitalisations for diabetes complications could be influenced by a number of factors, such as variation in:

- The prevalence of diabetes and risk factors for type 2 diabetes
- The level of concordance with guidelines by clinicians
- Access to integrated hospital and primary care
- Availability of out-of-hospital models of care, which may be lower outside major cities
- Systems for recall, referral and follow-up of people with diabetes
- Implementation of preventive health strategies
- The availability of allied health care and services for complications (for example, clinics for foot, eye and kidney complications)
- The availability of diabetes educators and access to support for diabetes self-management
- The level of consumer enablement
- Prevalence of mental health disorders that affect the ability to self-care, and use of antipsychotic medicines that increase the risk of obesity

- The frequency of preventive checks in primary care
- Socioeconomic disadvantage, health literacy and access to healthy food
- The ability to self-manage diabetes, including access to refrigeration for insulin
- The prevalence of risk factors for complications, including smoking, suboptimal management of blood glucose levels and dialysis (which can contribute to suboptimal management of blood glucose levels)¹⁷
- Clustering of populations with higher prevalence of type 2 diabetes, such as Aboriginal and Torres Strait Islander people, people born in the Pacific islands, and people born in southern and central Asia^{2,18}
- Clustering of people with diabetes in aged care homes
- Access to healthcare services that provide culturally appropriate care
- The availability of Aboriginal and Torres Strait Islander staff for diabetes prevention and management
- The availability of health staff in remote areas
- Resourcing of primary care services relative to the local prevalence of diabetes
- Diagnostic error.

Because a record is included for each hospitalisation for the condition, rather than for the patient, patients hospitalised more than once for the condition or transferred between hospitals in the financial year will be counted more than once. This may increase the apparent rates of hospitalisations for people from outer regional or remote areas, who are more likely to be transferred to a major hospital.

Variations between areas may not directly reflect the practices of the clinicians who are based in these areas. Area boundaries reflect where people live, rather than where they obtain their health care. Patients may travel outside their local area to receive care.

Socioeconomic and demographic factors

Socioeconomic and demographic factors have a strong influence on rates of potentially preventable hospitalisations for chronic conditions, and are a greater influence than availability of primary care.¹⁹ In some areas, the socioeconomic profile may have changed over the course of the time series.

Variation in health care and self-care

Quality of health care and self-care among people with diabetes varies. For example, people with diabetes in Australia receive care that corresponds to best-practice guidelines in approximately 63% of encounters with healthcare providers, according to data from 2009–10.²⁰ Levels of self-care and outcomes among people with type 2 diabetes improve with increasing levels of education and income.²¹

Change in New South Wales coding

National figures based on hospital admission data are strongly influenced by estimates from New South Wales (NSW), because this state accounts for around one-third of the total Australian population. Administrative changes to admission practices in NSW emergency departments occurred in July 2017: since then, only more severe cases (usually managed by emergency management units in emergency departments) have been included in hospital admission data. This resulted in an overall drop in hospital episodes (of around 3–5%), which may have an impact on trend analyses.

Reducing hospitalisations for people with diabetes

The increase in diabetes hospitalisations between 2014–15 and 2017–18 in the population overall, and in Aboriginal and Torres Strait Islander people, is concerning and should be addressed using a variety of strategies. These could be aimed at reducing rates of type 2 diabetes and improving management of all types of diabetes.

Integrated care models

Effective management of diabetes requires multidisciplinary, coordinated care.²² The team of clinicians providing care may include general practitioners (GPs), medical specialists, nurses and allied health professionals. Although some people with diabetes are fortunate enough to receive this care, the current Australian health system does not provide the optimal supports for integrated team care.²³

Health services are often fragmented, with poor communication between providers, and between community and hospital services.²² For example, in some cases, the acute reason for hospitalisation may be managed without addressing the underlying suboptimal diabetes management. Partnerships between primary care providers – including Aboriginal Community Controlled Health Services (ACCHSs) – and specialists in the community, allied health professionals and hospitals are needed to provide better integrated care.

The majority of systematic reviews of integrated care for people with diabetes have shown a reduction in hospitalisations and improvements in management of blood glucose levels.²⁴ The term ‘integrated care’ covers a wide variety of models, and studies to clarify which models and components of care have the greatest impact would be valuable for guiding future implementation.²⁴ The differences between models, and in the type of outcomes measured, make it difficult to estimate the impact of the integrated care approach.

Diabetes complications

Models of care that integrate different specialties and primary care have been implemented with success in Australia – for example:

- An integrated primary and secondary care service in the community (see ‘Case study’ on this page)
- An outreach model for remote Aboriginal and Torres Strait Islander communities (see ‘Case study: Outreach integrated care for remote Aboriginal and Torres Strait Islander communities’ on page 115)²⁵
- Integrated primary and tertiary care for women with diabetes in pregnancy in the Northern Territory (see page 119).²⁶

Case study: Integrated primary and secondary care clinic for diabetes

A multidisciplinary, integrated primary and secondary care diabetes service has approximately halved the rate of hospitalisations due to diabetes complications in an early evaluation.⁵ The success of this model is particularly encouraging, given that the users of the service had complex type 2 diabetes and were from socioeconomically disadvantaged areas.

The clinical team was made up of an endocrinologist, two or three GPs with advanced training in managing diabetes, a diabetes educator, a podiatrist, and other allied health professionals, as required. A trial of the model compared outcomes in 182 consumers who lived in the service catchment area in South Brisbane and 145 consumers who received usual care at a hospital outpatient clinic. Consumers attending the integrated service were less educated and had a significantly higher baseline HbA1c level than the control group (8.6% and 7.9%, respectively). Despite these differences, the average number of hospitalisations with a diabetes complication as the principal diagnosis was 47% lower in the intervention group than in the usual care group in the two years after the trial began. Eye and foot complications were the most common reason for hospitalisation.

The model of care has been expanded to a second site, and a randomised controlled trial found that blood glucose levels among consumers at the two sites were similar to those achieved in a hospital-based outpatient clinic.²⁷ Integrating primary and secondary care to develop the skills of the primary care team during consumer management is also being done in other ways – for example, through case conferences conducted by a specialist and involving the consumer, GP and practice nurse. Another recent Australian initiative based on this model has shown significant improvements in management of blood glucose levels and blood pressure.²⁰

Case study: Outreach integrated care for remote Aboriginal and Torres Strait Islander communities

People living in remote Aboriginal and Torres Strait Islander communities of Australia have a critical need for accessible and culturally appropriate diabetes care, as well as the benefits of integrated specialist and primary care. Rates of diabetes and its complications are disproportionately high in these remote communities.

To address these challenges, an outreach specialist service was created in partnership with remote Aboriginal and Torres Strait Islander communities, and the local primary healthcare services in the Northern Territory.²⁵ The outreach team comprised diabetes nurse educators and endocrinologists. Each community clinic was visited three or four times a year by a diabetes nurse educator and twice yearly by an endocrinologist. People with suboptimal blood glucose levels and with complications were prioritised for care.

The outreach team reviewed consumers at each visit and provided management recommendations for the consumers, local doctors, Aboriginal health workers and remote area nurses. Care plans were made collaboratively between the outreach team and the local primary healthcare team, who then implemented the plans. The outreach team also strengthened the capacity of local primary healthcare providers through education sessions in diabetes management, as well as clinical support between visits.

An evaluation was conducted in three remote communities that had diabetes rates between 28% and 60% among adults.²⁵ By 12 months, the consumers' average HbA1c level was significantly reduced, and 63% of consumers had achieved a reduction in HbA1c.

According to the study authors, equitable partnerships between service providers and communities are crucial for ensuring that communities have the opportunity to help shape the way care is delivered, so that it is acceptable to consumers.²⁵

Diabetes complications

Telehealth

A range of telehealth strategies are effective in improving management of blood glucose levels in people with type 2 diabetes, and can be significantly more effective than usual care.⁶ For example, a one-year telephone self-management program for people with diabetes in the United States reduced hospitalisations by 10%.⁷ Telehealth can decrease hospitalisations among adults with diabetes, but the type of intervention, and the results, vary widely.²⁸

Teleconsultation (two-way communication between consumers and clinicians, or between clinicians) is the most effective type of telehealth for type 2 diabetes.⁶ Supplementing outreach clinics for remote communities with telehealth consultations would reduce overall costs associated with delivery of specialist diabetes services, and reduce time away from usual activities for both consumers and clinicians.²⁹

Telehealth is being used effectively in some parts of Australia.³⁰ Examples of telehealth for diabetes care include the Royal Flying Doctor Service in Victoria, which has provided an endocrinology telehealth program since 2013 via a customised videoconference platform, and the Diabetes Telehealth Service for Regional WA (see the 'Case study' on this page).

Telehealth has the potential for much wider use to improve access to health care in regional and remote areas, and for people with mobility problems or young children. Barriers to uptake of telehealth in regional and remote areas of Australia include³¹:

- Lack of adequate internet access in some areas
- Consumers not being aware of, or not knowing how to access, telehealth
- Cultural safety of telehealth services for Aboriginal and Torres Strait Islander people
- Lack of access to clinicians providing telehealth services
- Lack of Medicare item numbers for telehealth
- Lack of resourcing at the consumer end and the primary care end.

Case study: Diabetes Telehealth Service for Regional WA

The Diabetes Telehealth Service for Regional WA is a publicly funded, community-based, diabetes educator-led telehealth service for all types of diabetes. It promotes a hybrid, shared care approach connecting people with local face-to-face options, where possible. The service also offers access to a virtual endocrinology clinic for diabetes consumers, which their GPs or practice nurses can attend.

Kimberley Aboriginal Medical Services and Diabetes WA are currently collaborating to explore a model aiming to improve the cultural security of the Diabetes Telehealth Service for Regional WA, to increase community engagement. Diabetes WA is also collaborating with Royal Perth Hospital to enable more timely access to a multidisciplinary diabetes team via the Diabetes Telehealth Service for Regional WA for consumers on their waitlist with less complex needs.

Consumer enablement

Diabetes requires intensive self-management to prevent complications, and structured diabetes education has significant potential to improve outcomes for people with diabetes.³²⁻³⁴ Structured diabetes education is evidence based, suits the needs of the person, has specific learning objectives and a structured curriculum, and is delivered by trained educators.³⁵ Structured education for people with type 2 diabetes addresses risk factors for complications, such as dietary habits, foot care and smoking.³⁴

Reduction in hospitalisations has been reported; for example, a randomised controlled trial reported an 88% reduction in hospitalisations among people with type 2 diabetes who attended education sessions, compared with the control group.⁴ The intervention consisted of a six-week program of 2.5-hour weekly classroom training sessions on diabetes self-management.⁴ Structured education for people with type 1 diabetes also reduces the frequency of severe hypoglycaemic events.³⁶

The Diabetes Education and Self-Management for Ongoing and Newly Diagnosed (DESMOND) program is a structured group education program based on a philosophy of consumer empowerment. A trial of the DESMOND program in 26 locations across regional Western Australia (WA) reported a significant increase in consumer activation, which is a measure of the extent of consumer involvement in their health care.³⁷ Consumer activation can be used as a reliable tool for improving type 2 diabetes self-management and clinical outcomes.³⁸ A high degree of activation may be needed to self-refer to a DESMOND program, and strategies to involve less-activated consumers are needed.³⁷ This might include increasing referrals from primary care providers to DESMOND programs.³⁷

Advances in medical treatment

Newer medicines for lowering blood glucose, sodium–glucose cotransporter-2 (SGLT-2) inhibitors and glucagon-like peptide-1 (GLP-1) analogues can reduce the risk of cardiovascular and renal complications in people with type 2 diabetes.^{39,40} SGLT-2 medicines may reduce heart failure hospitalisations by 30% in people with type 2 diabetes, compared with those taking placebo or other diabetes medicines.⁴¹

SGLT-2 and GLP-1 analogue medicines are now recommended by guidelines for consumers with diabetes who have, or are at high risk of, heart disease or chronic kidney disease.^{42–44}

Preventing diabetic eye and kidney disease

Diabetic retinopathy is a leading cause of blindness in Australians aged 20–74 years. Early detection and management can prevent severe vision loss and blindness in almost all cases.² Screening for diabetic retinopathy has been shown to be effective in preventing blindness in rural and urban Australian settings, and preventive eye care is highly cost-effective.⁴⁵ Rural and remote populations have successfully been screened via telehealth.⁴⁵ National diabetic retinopathy screening programs in other countries have shown impressive reductions in blindness among people with diabetes, and the feasibility of a similar program in Australia merits examination.⁴⁵

Earlier diagnosis of diabetes

Point-of-care testing for HbA1c has been suggested as a strategy to facilitate earlier diagnosis of diabetes – obtaining a fasting blood sugar level or undertaking an oral glucose tolerance test can present a barrier to diagnosis for many consumers.⁴⁶ Women who have had gestational diabetes are 7 times as likely to develop type 2 diabetes as other women, and follow-up of these women is often poor.⁴⁷ Among Australian women with gestational diabetes, Aboriginal and Torres Strait Islander women are 4 times as likely as other women to develop type 2 diabetes.⁴⁸ Improving detection and follow-up of diabetes in pregnancy could reduce complications in both the mother and the child.

Improving care for inpatients with diabetes

The estimated prevalence of diabetes among hospital inpatients in Australian studies is approximately 30%, and outcomes for this group are poorer than for those without diabetes.^{49–51} Optimising care in hospital early in the admission could improve outcomes, and prevent or delay readmissions for future complications.⁵⁰ Aboriginal liaison officers and other Aboriginal and Torres Strait Islander hospital staff play an important role in supporting the consumer journey in hospital and at discharge.

In surgical patients, diabetes significantly increases the risk of six-month mortality, major complications, admission to intensive care and length of stay.⁴⁹ Suboptimal blood glucose levels before surgery appear to be an important contributor, and triaging consumers with diabetes (particularly those with suboptimal blood glucose levels) to pathways of care dedicated to higher-risk consumers may improve outcomes from surgery.⁴⁹

Diabetes complications

Preventing type 2 diabetes

Preventing type 2 diabetes is key to reducing hospitalisations for diabetes complications in the future. Strategies to address the social determinants of health are needed to reduce the high rates of type 2 diabetes in areas of socioeconomic disadvantage. These determinants include education levels, employment, income levels and access to nutritious food.⁵² Multifaceted approaches are needed to create environments that support healthy lifestyles, such as urban planning for active transport and policies to promote healthy eating.

Population health programs, such as lifestyle coaching services, can be effective in reducing risk factors for type 2 diabetes (see 'Case study' on this page). Type 1 diabetes is not preventable, but optimal blood glucose levels can prevent complications.

Case study: Telephone-based lifestyle coaching

The Get Healthy Information and Coaching Service is a free telephone-based intervention that aims to reduce risk factors for several chronic conditions. One component is aimed at decreasing excess weight among high-risk groups in New South Wales. The program includes a module tailored for adults at risk of developing type 2 diabetes.⁵³

The program was successful in engaging high-risk groups; 42% of participants were from the two lowest socioeconomic brackets, and 43% lived outside major cities. After six months, participants had lost an average of 3.4 kg, and nearly one-third of participants lost at least 5% of their body weight.⁵³ Participants also significantly increased their healthy eating and physical activity behaviours.

The Get Healthy Information and Coaching Service includes a tailored service for Aboriginal and Torres Strait Islander people. Participants in the Aboriginal Program also lost an average of 4 kg, and significantly increased their physical activity and improved healthy eating behaviours.⁵⁴

Improving care for Aboriginal and Torres Strait Islander people

Complex social determinants underlie the disparities in health, including diabetes rates and outcomes, between Aboriginal and Torres Strait Islander people and other Australians.^{55,56} To address health inequities, improvements in social factors are required – for example, in education, employment and living conditions.⁵⁵

In addition, the logistical and financial barriers to accessing timely and effective health care for Aboriginal and Torres Strait Islander people who live in remote areas need to be addressed.⁵⁵ Logistical barriers include time delays in laboratory analysis of samples for glucose testing. Glucose breakdown in samples while in transit to laboratory analysis was estimated to result in a 62% under-diagnosis of gestational diabetes in women in regional, rural and remote areas of WA.⁵⁷ ACCHS clinics in the Kimberley have implemented an alternative protocol for sample collection, using different collection tubes, to overcome this problem.

Cultural safety and culturally appropriate care

Misalignment of mainstream health services with Aboriginal and Torres Strait Islander culture is a barrier to accessing health care.⁵⁸ Culturally safe care can improve clinical diabetes outcomes and consumer satisfaction among Aboriginal and Torres Strait Islander people.⁵⁹

Holistic, integrated and multidisciplinary models of care

Models of care that have shown early success for Aboriginal and Torres Strait Islander people with diabetes include home-based outreach case management that provides holistic, multidisciplinary care. A program for Aboriginal and Torres Strait Islander people with complex chronic conditions, including diabetes, has incorporated these principles using a participatory approach, in which consumers set their own health and wellbeing goals.⁶⁰

This exploratory study, using home-based, outreach case management of chronic disease, was developed and implemented in an urban Aboriginal and Torres Strait Islander primary healthcare service in Brisbane. The initial in-home assessment included a discussion about social, health and economic issues that would affect the consumer's ability to achieve their goals. The case manager coordinated services and case conferences with health professionals. Having care delivered in their own homes was important to consumers, as it increased their sense of safety

and receiving comprehensive care, and minimised inconvenience and cost of travel.⁶⁰ Case managers worked in a culturally appropriate manner, contributing to a mutually respectful relationship.⁶⁰ After 12 months, 73% of consumers had good, very good or excellent self-rated health status, compared with 33% at baseline.⁶⁰ Significant increases were also seen in appointments with medical specialists and allied health professionals. Significant improvements were seen in blood pressure, but not in HbA1c or excess weight levels.⁶⁰

In the Fitzroy Valley of the Kimberley region, WA, preventive management of diabetes in Aboriginal and Torres Strait Islander people has been improved through partnerships between the Aboriginal medical service, the local hospital, the population health unit and the community health centre. This has enabled primary care services in the area to be integrated, and health services to be reoriented from predominantly acute, reactive care to more preventive activities and primary care. Activities include health promotion days for screening and education, and team outreach clinics for developing self-management plans with consumers. An increase by a factor of almost 10 in the proportion of eligible consumers having a diabetes annual cycle of care was seen after the culturally appropriate, integrated model of care was introduced, according to data from 2010.⁶¹

The Northern Territory Diabetes in Pregnancy Partnership includes an enhanced model of care, as well as a clinical register and longitudinal birth cohort.²⁶ The goals of the model of care include:

- Early testing of women
- Integration of primary and tertiary care for women with diabetes in pregnancy
- Improved communication between service providers
- Development of integrated care plans within existing IT systems
- Provision of care according to current guidelines.²⁶

Diabetes complications

Health professionals involved in focus groups to evaluate the model said that it had improved contact between clinicians, resulting in more coordinated care.²⁶ For example, workshops and regional meetings increased understanding of roles, and engagement of clinicians in developing referral pathways resulted in increased uptake of referral pathways and care plans.²⁶ Increased access to specialist services through telehealth and allied health outreach visits also increased local health professionals' knowledge.²⁶ Persisting barriers to integration identified by the focus groups included workforce shortages and difficulties integrating the IT systems between government, non-government and ACCHS sectors.²⁶

Food and nutrition

Access to traditional foods for Aboriginal and Torres Strait Islander people has been disrupted by colonisation, and improving nutrition could reduce the burden of type 2 diabetes in these populations. Positive effects on nutrition and chronic disease indicators can be achieved by incorporating nutrition and breastfeeding advice into maternal and child health services, and through multifaceted community nutrition programs.⁶² The most important factor in determining the success of such programs is Aboriginal and Torres Strait Islander involvement in, or control of, the program.⁶²

Eye care

Annual eye screening, clearly defined pathways of care and timely management are key to improving eye health in Aboriginal and Torres Strait Islander people with diabetes.⁶³ The Roadmap to Close the Gap for Vision includes a range of strategies, some of which have been implemented, to increase the accessibility and uptake of eye-care services by Aboriginal and Torres Strait Islander people.¹⁸

Foot care

A mobile outreach service that provides foot care and diabetes education in Perth, WA, has been well received by the Aboriginal and Torres Strait Islander community. The service addresses social issues as well as clinical care, and consumers are managed in partnership with their GPs. This model has achieved high attendance levels. Its outcomes are currently being evaluated.⁶⁴ Greater resourcing of high-risk foot services in remote Australia, including outreach services, could reduce the burden of diabetic foot complications in these areas.

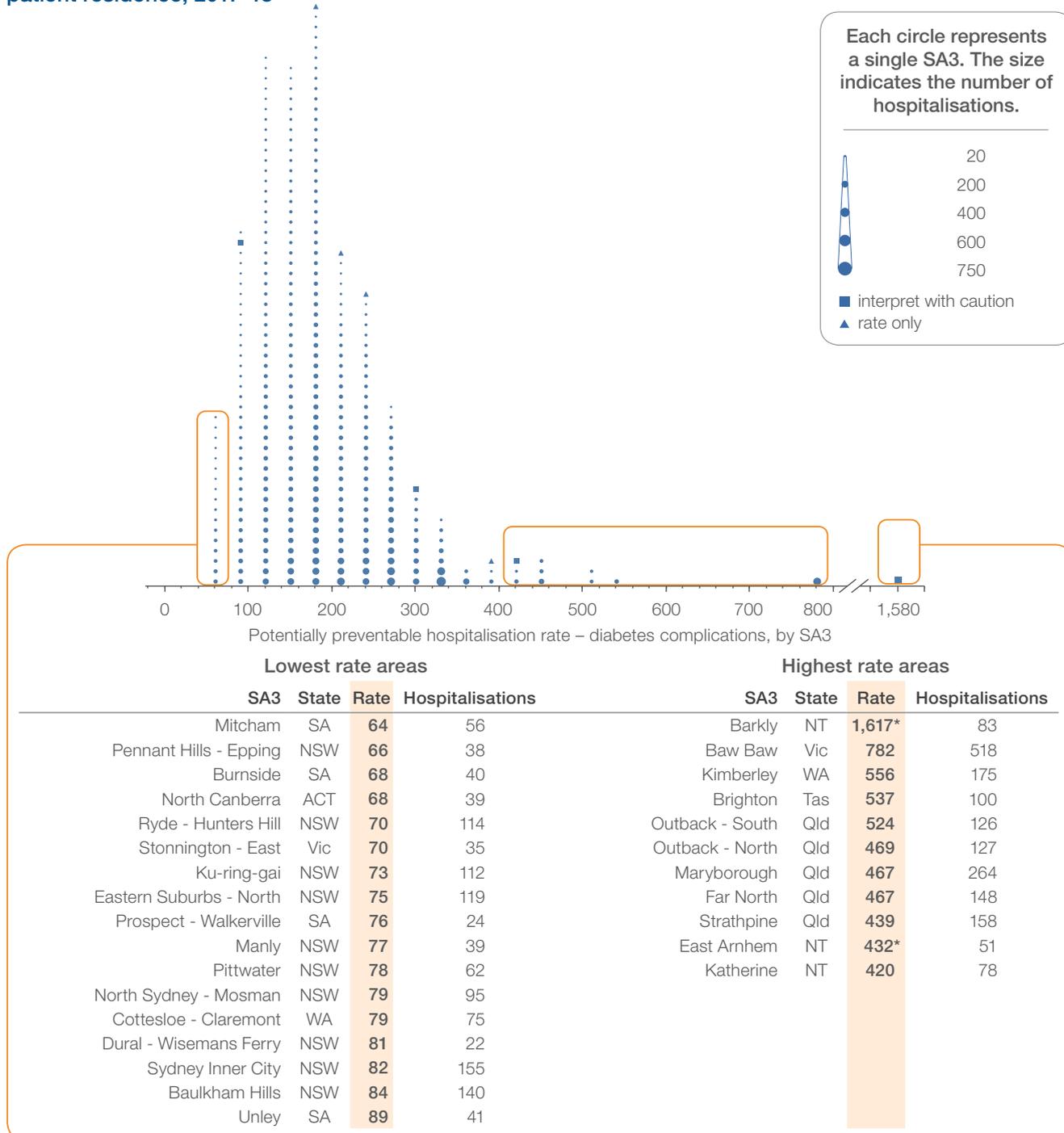
Medical-grade footwear and orthotics can help prevent diabetic foot complications, but are difficult to access for people in many rural and remote areas. Providing appropriate footwear for Aboriginal and Torres Strait Islander people with diabetes in remote areas could prevent a substantial number of foot complications.⁶⁵

End-stage kidney disease

Diabetes is the leading cause of end-stage kidney disease in Australia. The rate of end-stage kidney disease in Aboriginal and Torres Strait Islander people is more than 6 times higher than in other Australians.⁶⁶ Targeted chronic kidney disease programs appear to be effective in improving outcomes for Aboriginal and Torres Strait Islander people with chronic kidney disease.⁶⁷ Early detection of diabetes is also key to preventing long-term kidney damage.

Rates by local area

Figure 2.18: Number of potentially preventable hospitalisations – diabetes complications per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18



Notes:

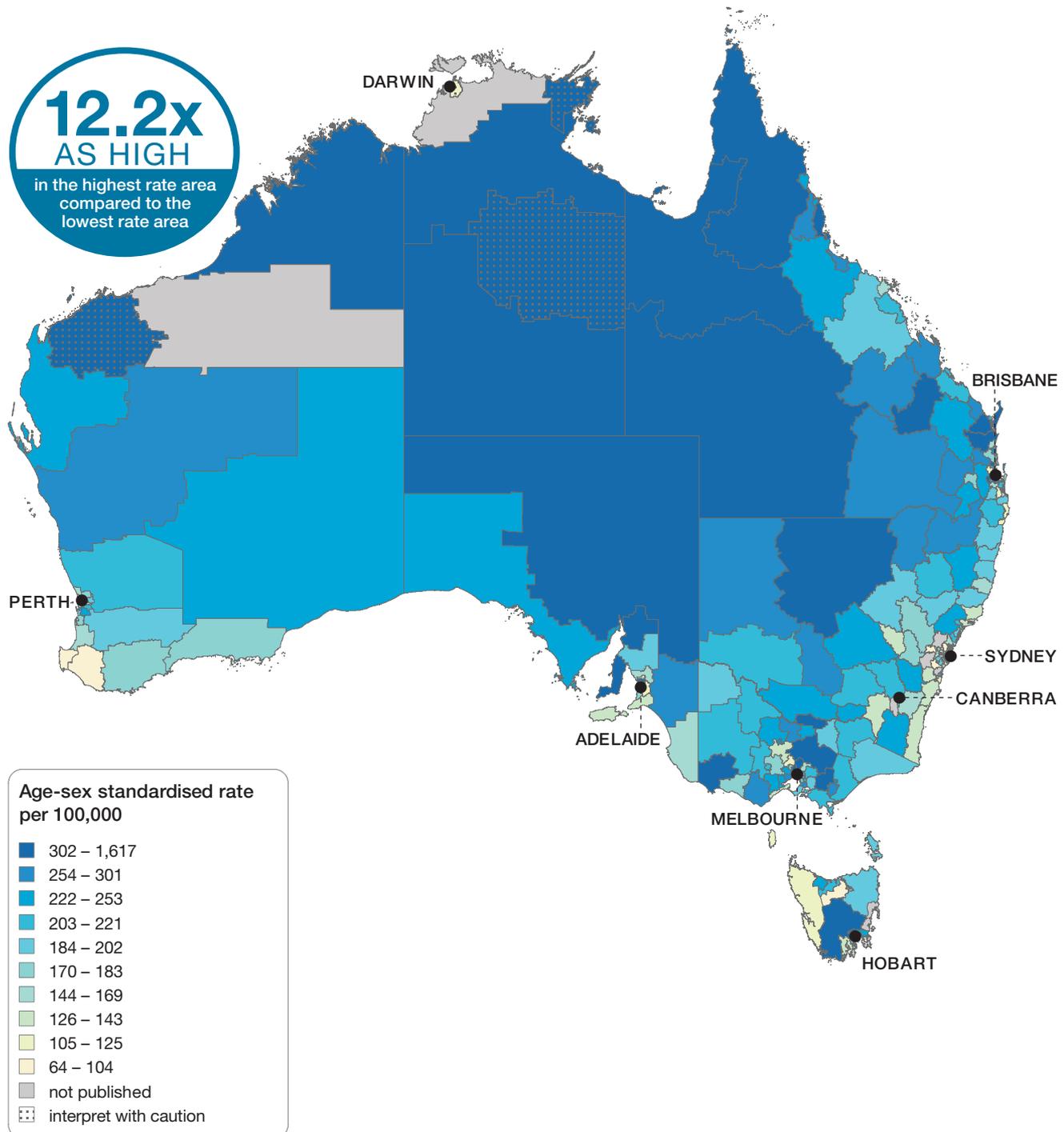
Squares (■) and asterisks (*) indicate rates that are more volatile than other rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of hospitalisations are not published for confidentiality reasons. Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

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Rates across Australia

Figure 2.19: Number of potentially preventable hospitalisations – diabetes complications per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18



Notes:

Dotted areas indicate rates that are considered more volatile than other published rates and should be interpreted with caution. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia.

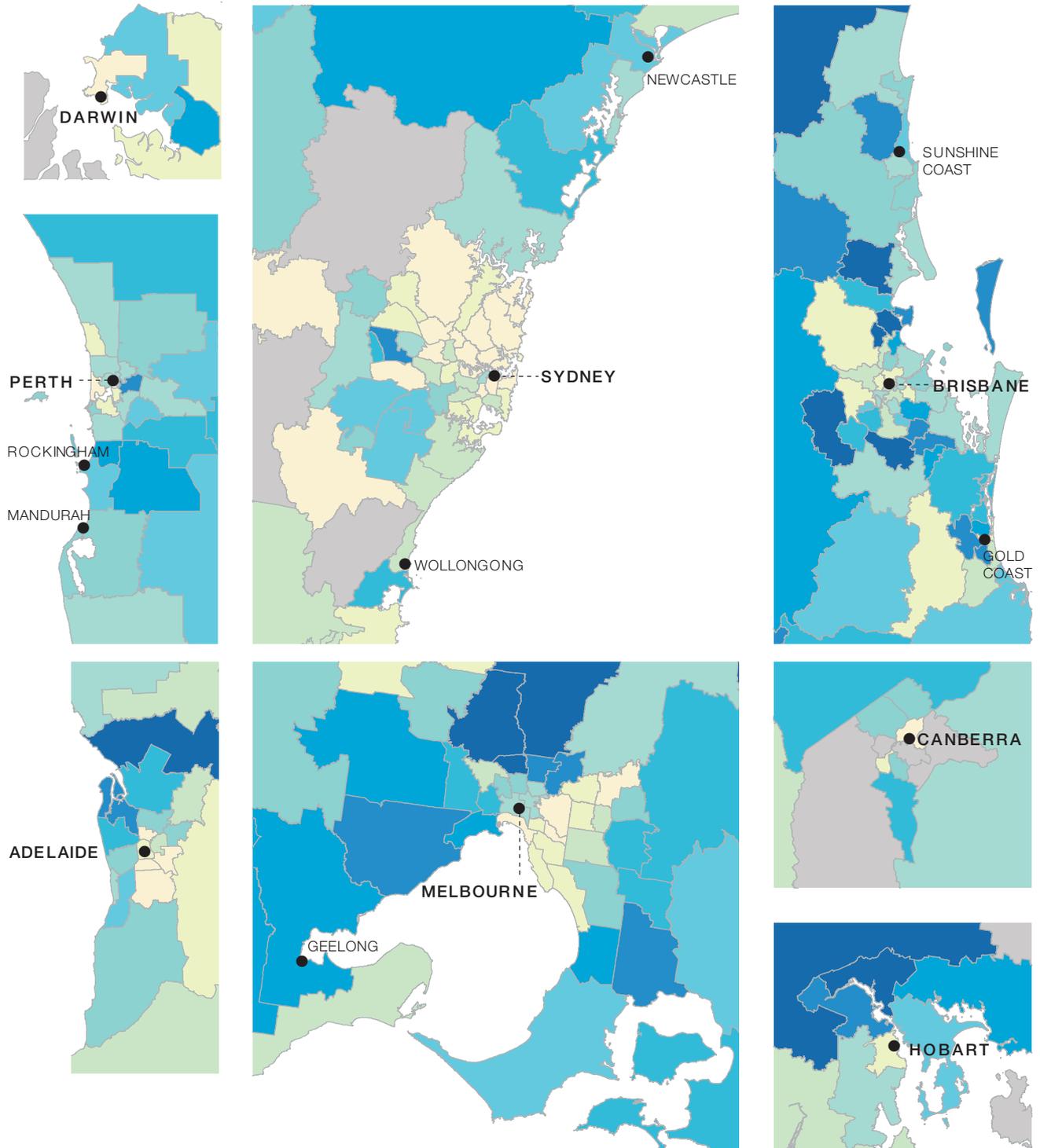
Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018.

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Rates across capital city areas

Figure 2.20: Number of potentially preventable hospitalisations – diabetes complications per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18



Notes:

Dotted areas indicate rates that are considered more volatile than other published rates and should be interpreted with caution. Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018. For further detail about the methods used, please refer to the Technical Supplement.

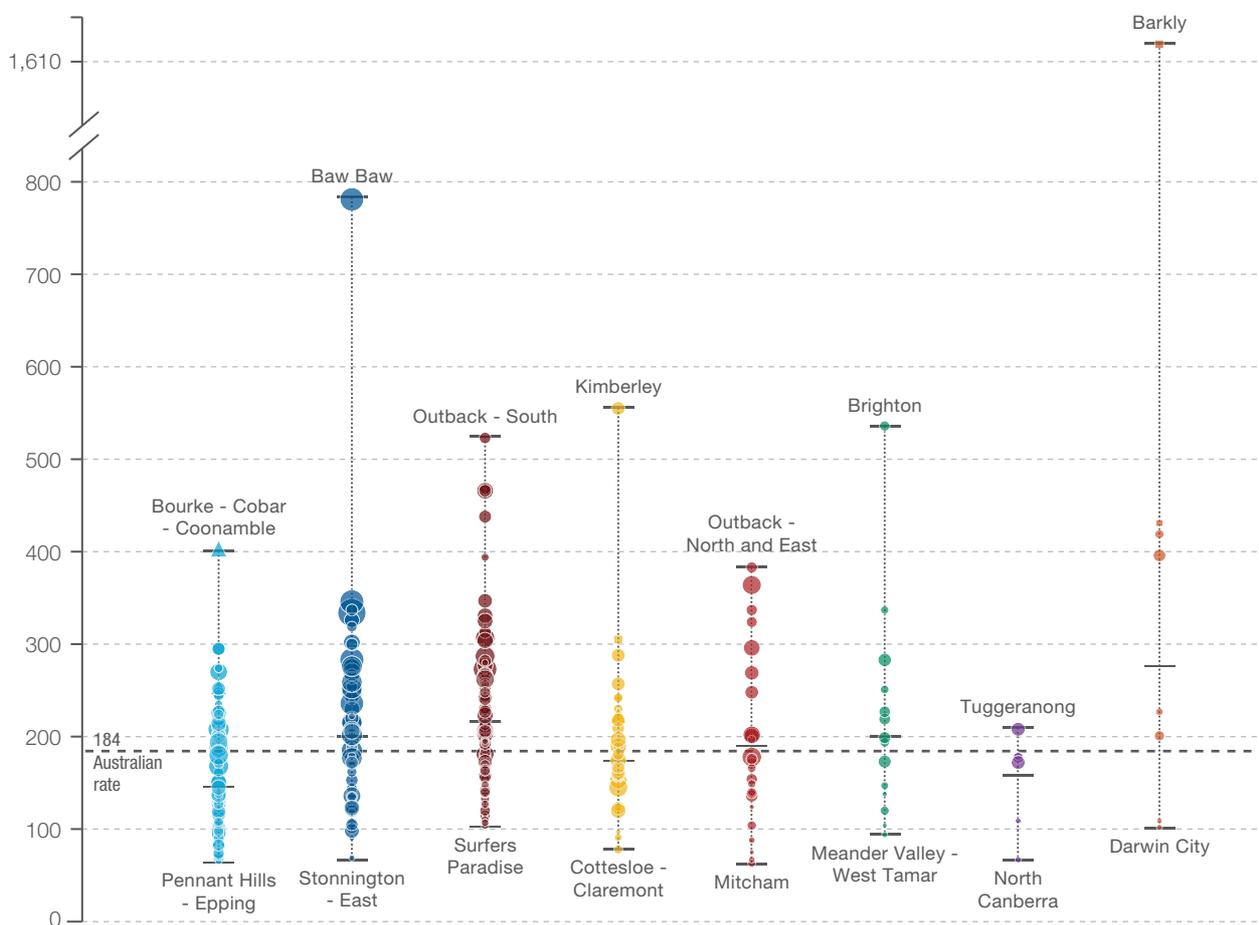
Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Diabetes complications

Rates by state and territory

Figure 2.21: Number of potentially preventable hospitalisations – diabetes complications per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18

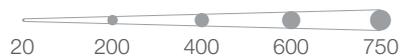
	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Highest rate	404	782	524	556	384	537	209	1,617*
State/territory	147	200	217	175	190	201	159	277
Lowest rate	66	70	105	79	64	95	68	103
No. hospitalisations	13,134	14,004	11,696	4,803	3,850	1,270	649	617



Each circle represents a single SA3. The size indicates the number of hospitalisations.

▲ rate only

■ interpret with caution



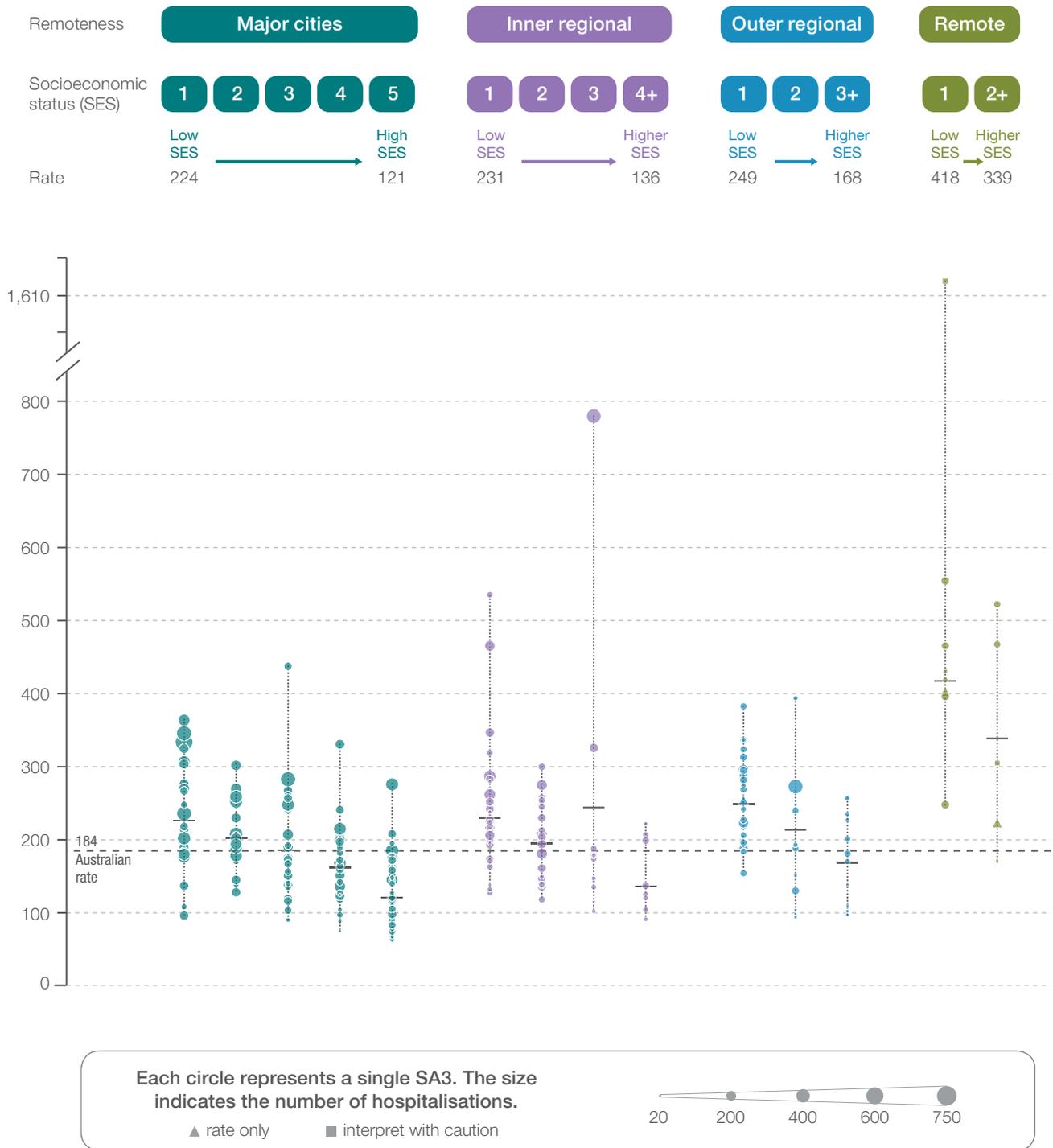
Notes:

Squares (■) and asterisks (*) indicate rates that are more volatile than other rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of hospitalisations are not published for confidentiality reasons. Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Rates by remoteness and socioeconomic status

Figure 2.22: Number of potentially preventable hospitalisations – diabetes complications per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18



Notes:
 Squares (■) indicate rates that are more volatile than other rates and should be interpreted with caution.
 Triangles (▲) indicate SA3s where only rates are published. The numbers of hospitalisations are not published for confidentiality reasons.
 Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018.
 For further detail about the methods used, please refer to the Technical Supplement.

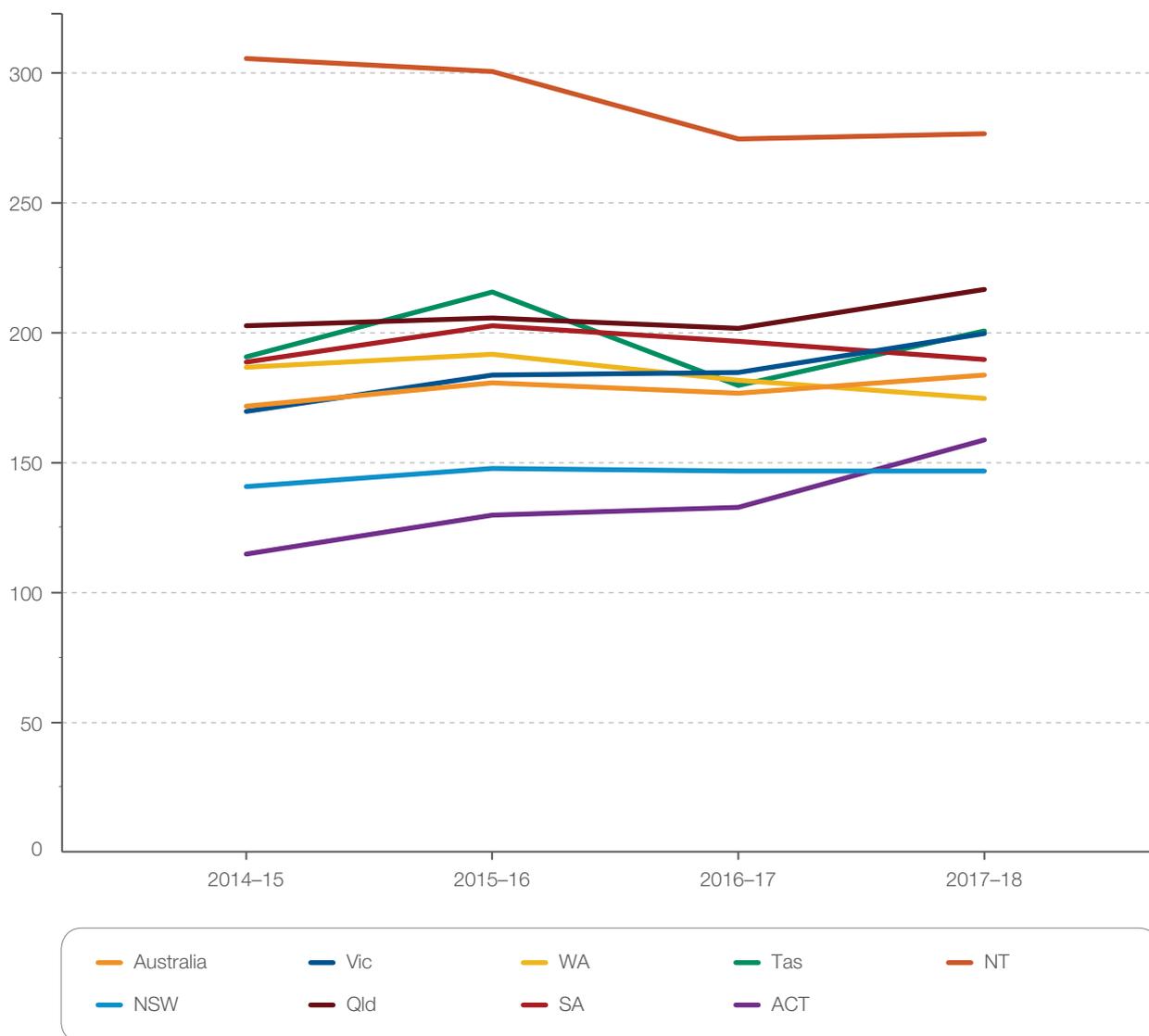
Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Diabetes complications

Rates across years

Figure 2.23: Number of potentially preventable hospitalisations – diabetes complications per 100,000 people of all ages, age and sex standardised, by state and territory of patient residence, 2014–15 to 2017–18

	2014–15	2015–16	2016–17	2017–18
Highest SA3 rate	2,034*	1,600*	681	1,617*
Australian rate	172	181	177	184
Lowest SA3 rate	52	51	46	64
Magnitude of variation	11.8	12.7	14.8	12.2
Magnitude of variation without top & bottom 10% SA3	2.8	2.8	2.8	2.9



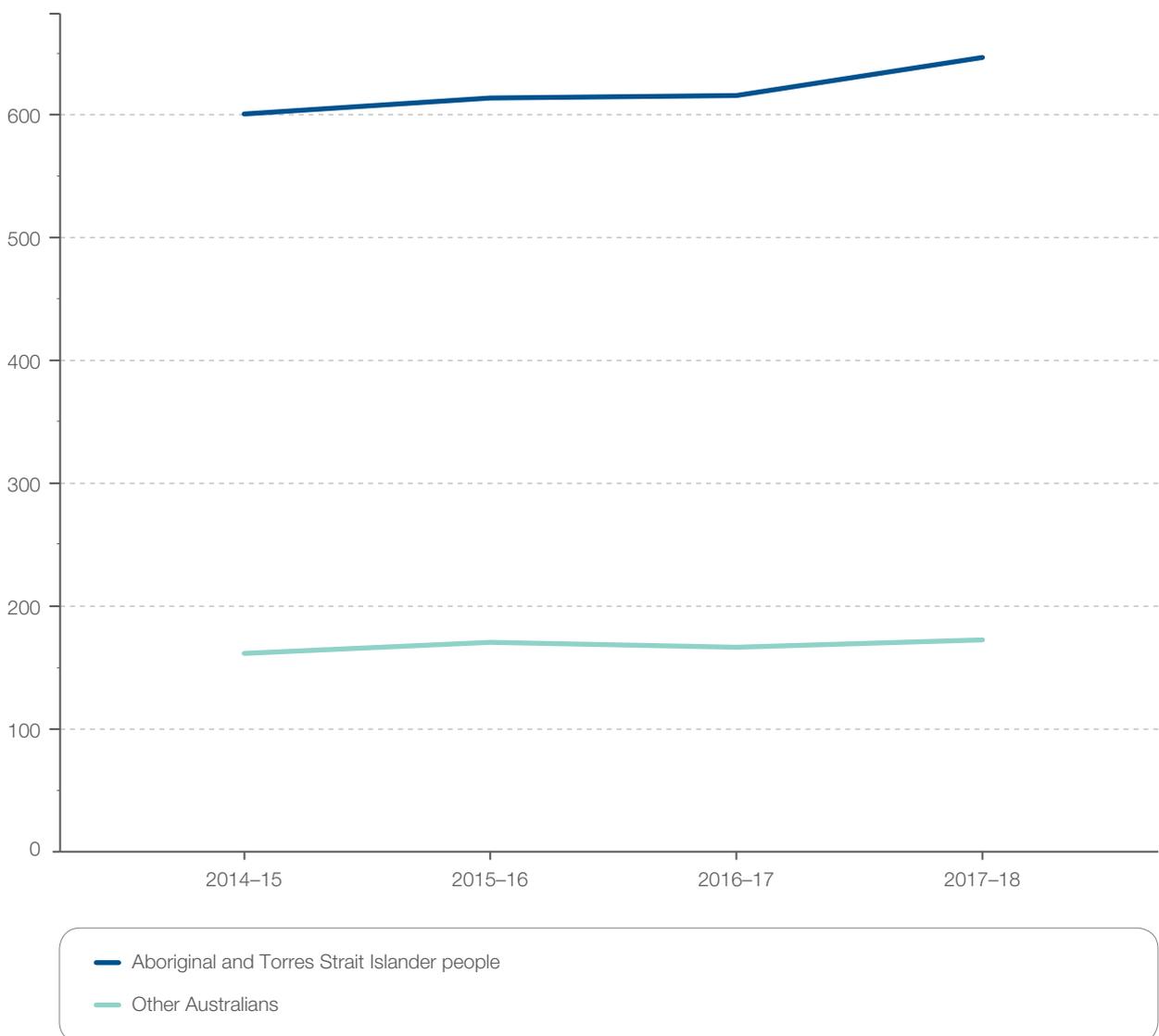
Notes:

The asterisks (*) indicate rates that are considered more volatile than others, and should be interpreted with caution. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia. Population estimates as at 31 December of the relevant year are calculated as the average of the 30 June populations before and after the relevant December. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2014 to 2018.

Rates for Aboriginal and Torres Strait Islander people across years

Figure 2.24: Number of potentially preventable hospitalisations – diabetes complications per 100,000 people of all ages, age and sex standardised, by Aboriginal and Torres Strait Islander status, 2014–15 to 2017–18



Notes:

Data by Aboriginal and Torres Strait Islander status should be interpreted with caution as hospitalisations for Aboriginal and Torres Strait Islander people are under-enumerated, with variation among states and territories. Population estimates as at 31 December of the relevant year are calculated as the average of the 30 June populations before and after the relevant December. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2014 to 2018.

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Resources

- American Diabetes Association. Standards of medical care in diabetes – 2020⁴³
- Type 2 diabetes treatment algorithm⁴⁴
- High risk foot: geographical inequities, importance of different diagnosis groups, forecast hospitalisations and access to services⁶⁸
- Screening, assessment and management of type 2 diabetes mellitus in children and adolescents: Australasian Paediatric Endocrine Group guidelines⁶⁹
- The Royal Australian College of General Practitioners. *Management of type 2 diabetes: A handbook for general practice*. East Melbourne, Vic: RACGP, 2020
- University of Melbourne, Indigenous Eye Health Unit. Check Today, See Tomorrow resource kit. Melbourne: University of Melbourne; 2015
- International Society for Pediatric and Adolescent Diabetes. *ISPAD Clinical Practice Consensus Guidelines 2014*. Berlin: ISPAD; 2014
- *Guidelines on the Prevention and Management of Diabetic Foot Disease*⁷⁰
- UK National Institute for Health and Care Excellence (NICE) guidelines:
 - *Type 2 Diabetes in Adults: Management*, 2016
 - *Diabetes (Type 1 and Type 2) in Children and Young People: Diagnosis and management*, 2016
 - *Type 1 Diabetes in Adults: Diagnosis and management*, 2016
 - *Diabetes in Pregnancy: Management from preconception to the postnatal period*

Australian initiatives

The information in this chapter will complement work already underway to prevent diabetes and improve its management in Australia. At a national level, this work includes:

- Australian National Diabetes Audit
- National Association of Diabetes Centres (NADC) Models of Care toolkit
- NADC *Collaborative Interdisciplinary Diabetes High Risk Foot Services Standards*
- Wellbeing framework for Aboriginal and Torres Strait Islander people living with chronic disease
- KeepSight program
- Australian National Diabetes Strategy 2016–2020
- National Diabetes Services Scheme, including support programs and expansion to subsidise new technologies.

Many state and territory initiatives are also in place, including:

- Move for Diabetes, Australian Capital Territory and NSW
- Diabetes Taskforce, NSW Agency for Clinical Innovation
- Get Healthy Information and Coaching Service, NSW
- Western Sydney Diabetes project, NSW
- Hunter Alliance program, NSW
- Aunty Jean's Good Health Team program, NSW
- NSW Integrated Care trials
- Diabetes across the Lifecourse: Northern Australia Partnership
- Education services for heart disease and diabetes, Northern Territory (NT) and far north Queensland

- Improving Health Outcomes in the Tropical North (HOT North); NT, Queensland and WA
- Structured systems approach to improving health promotion practice for chronic disease prevention in Aboriginal and Torres Strait Islander communities, NT
- HealthLAB project, NT
- Diabetes in Pregnancy Partnership, NT
- Better Living Diabetes Program, Queensland
- Diabetes Queensland Aboriginal and Torres Strait Islander Online Peer Support Program, Queensland
- Improving diabetes care and management in Torres Strait remote primary healthcare settings, Queensland
- Model of Care for People with Diabetes, Darling Downs, Queensland
- Queensland Beacon clinics for integrated diabetes care
- Diabetes Service, Country Health SA, South Australia
- South Australian Aboriginal Diabetes Strategy
- South Australian Health and Medical Research Council Aboriginal and Torres Strait Islander diabetes foot complication prevention program, including the Kimberley Foot Initiative
- COACH Program, Tasmania
- Delivering Connected Care for Complex Patients with Multiple Chronic Needs, Tasmania
- LIFE! program, Victoria
- Combined renal and diabetes integrated care clinics, Victoria
- Royal Flying Doctor Service telehealth endocrinology services, Victoria
- Aboriginal Health Promotion and Chronic Care partnership initiative, Victoria
- Improving Care for Aboriginal and Torres Strait Islander Patients, Victoria
- Hospital Admission Risk Program (HARP), Victoria
- Framework for Action on Diabetes and Diabetes Service Standards, WA
- My Healthy Balance, WA
- Moorditj Djena – Strong Feet, WA
- Diabetes Telehealth Service, WA
- Let's Prevent – diabetes and cardiovascular disease prevention program, WA
- Get on Track Challenge – workplace-based physical activity and nutrition initiative, WA
- Diabetes Education and Self-Management for Ongoing and Newly Diagnosed (DESMOND) for Aboriginal and Torres Strait Islander people, WA
- *High Risk Foot: Geographical inequities, importance of different diagnosis groups, forecast hospitalisations, and access to services, WA.*⁶⁸

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2.4 Kidney infections and urinary tract infections

Why is this important?

Kidney infections and urinary tract infections (UTIs) were the second most common cause of potentially preventable hospitalisations in 2017–18 in Australia.¹ Hospitalisation for UTI often results in the inappropriate use of broad-spectrum antimicrobials, contributing to increased antimicrobial resistance in bacteria.²

What did we find?

The rate of hospitalisations for kidney infections and UTIs in 2017–18:

- Varied across states and territories, from 212 per 100,000 people in Tasmania to 559 per 100,000 people in the Northern Territory
- Was higher in remote areas, and increased with socioeconomic disadvantage in inner regional and remote areas
- Was twice as high among Aboriginal and Torres Strait Islander people as among other Australians, nationally (although rates in Tasmania were similar in the two groups).

Between 2014–15 and 2017–18, the rate of hospitalisations for kidney infections and UTIs:

- Decreased in the Australian population as a whole by 1%
- Increased by 3.6% among Aboriginal and Torres Strait Islander people.

What can be done?

The ageing population, and misdiagnosis of asymptomatic bacteriuria as UTI in older people, are likely contributors to the high rates of hospitalisation. Early diagnosis and appropriate antibiotic treatment of UTIs in the community could reduce patient morbidity and the need for hospitalisation. Reducing the misdiagnosis of asymptomatic bacteriuria as UTI could reduce unnecessary hospitalisation of elderly patients, particularly from aged care homes. More accurate diagnosis could also reduce delays in treatment for the true cause of symptoms incorrectly ascribed to UTI.

Implementation of evidence-based guidelines for assessment and treatment of residents of aged care homes with suspected UTI will reduce the inappropriate exposure of these residents to antibiotics, the development of multidrug-resistant organisms and the development of UTIs with antibiotic-resistant organisms (which are more likely to require hospitalisation). Ensuring that people who need a catheter on an ongoing basis or intermittent self-catheterisation have access to community continence services, and are provided with education and resources before discharge, could reduce the incidence of UTIs in this group and the need for readmission.

Kidney infections and urinary tract infections

Context

UTIs are common in the community, accounting for 1.2% of all problems managed in Australian general practice consultations.³ Kidney infections and UTIs were the second most common cause of potentially preventable hospitalisations in Australia in 2017–18.⁴

Few international rates of hospitalisation for kidney infection and urinary tract infection are available for comparison. Available data suggest kidney infections and UTIs also account for substantial numbers of hospitalisations in other countries. In England, kidney infections and UTIs are the second most common cause of emergency hospital admissions for ambulatory care sensitive conditions.⁵ In Ireland, kidney infections and urinary tract infections accounted for 2.6% of all publicly-funded hospital bed days in 2016.⁶

People over 65 years of age had approximately six times the rate of hospitalisation for kidney infections and UTIs, compared to younger people, in Australia in 2017–18.⁴ Other countries with ageing populations are also experiencing high numbers of hospitalisations for kidney infections and UTIs among older people; for example, in Ireland people aged 65 years and over accounted for 78% of hospital bed days for kidney infections and UTIs in 2016.⁶

Symptoms of uncomplicated cystitis (infection of the bladder or lower urinary tract) include dysuria, and urinary urgency and frequency.⁷ Symptoms of a pyelonephritis (kidney/upper urinary tract infection) include fever, flank pain and costovertebral angle tenderness.⁷ Asymptomatic bacteriuria is not considered an infection, and should only be treated in particular circumstances (see 'Asymptomatic bacteriuria' on this page).⁷

Hospital care is required to manage severe kidney infection or UTI with sepsis, persistently high fever, pain, marked physical weakness, or inability to take oral medications or fluid.⁸ Hospital care is also warranted when urinary tract obstruction is suspected.⁸ Among people hospitalised for UTI, diabetes significantly increases the risk of death.⁹

People with diabetes also have poorer outcomes from pyelonephritis, and have a significantly higher rate of treatment failure than people without diabetes.¹⁰

UTI with multidrug-resistant organisms is a growing problem, and increases the need for hospital treatment. Inappropriate use of antimicrobials for UTIs adds to the spread of antimicrobial resistance (see page 141).

Asymptomatic bacteriuria

The presence of bacteria in an appropriately collected urine specimen from a person without symptoms of UTI is termed asymptomatic bacteriuria.¹¹ It is common, and most patients with asymptomatic bacteriuria experience no adverse consequences and do not benefit from antimicrobial therapy.¹¹ Antimicrobials are often prescribed inappropriately for treatment and prophylaxis of asymptomatic bacteriuria in Australian residents of aged care homes (see 'Over-diagnosis of UTI' on page 139).¹¹

Treatment for asymptomatic bacteriuria is recommended only in pregnancy and before invasive urological procedures.¹¹ Pregnant women should be screened and, if necessary, treated for asymptomatic bacteriuria because it may increase the risk of preterm birth, low birthweight and pyelonephritis.¹²

Risk factors for kidney infections and UTIs include:

- Female gender⁷
- Diabetes¹³
- Bladder dysfunction⁷
- Sexual activity⁷
- Use of spermicides
- Urinary catheterisation
- Decline in functional status in elderly institutionalised women.⁷

See page 141 for further discussion of risk factors.

Kidney infections and UTIs among Aboriginal and Torres Strait Islander people

Aboriginal and Torres Strait Islander people, particularly women, have much higher rates of kidney infections and UTIs than other Australians. Screening, treatment and follow-up of these infections among Aboriginal and Torres Strait Islander people is often inadequate.¹⁴ This can have serious consequences, including poorer pregnancy outcomes, acute kidney injury and chronic kidney disease.¹⁵⁻¹⁷

Severe UTIs are highly prevalent among Aboriginal and Torres Strait Islander people living in remote communities.¹⁸ Recent research in Aboriginal and Torres Strait Islander communities in north Queensland has shown that an extremely high background rate of community-acquired kidney infections and UTIs, and a high prevalence of type 2 diabetes, lead to excess hospitalisation for these infections.¹⁸ UTI was the second most common cause of hospitalisation for infection, and cellulitis was the most common cause, in this study.¹⁸

UTI can contribute to acute kidney injury, which, if untreated, increases the risk of chronic kidney disease and end-stage renal disease.^{15,16} The rate of end-stage renal disease in Aboriginal and Torres Strait Islander people is 7 times as high as that in other Australians.¹ Chronic kidney disease was responsible for 2% of the Aboriginal and Torres Strait Islander burden of disease in 2011.¹⁹

Factors contributing to poor health, including kidney infections and UTIs, among Aboriginal and Torres Strait Islander people are complex. They include a combination of broad historical, social, cultural and economic factors, as well as biomedical risk factors.²⁰ For example, traditional active lifestyles and healthy diets of Aboriginal and Torres Strait Islander people have been affected by displacement and colonisation by European settlers.²⁰

Kidney infections and UTIs among older people

The rate of hospitalisations for kidney infections and UTIs is about 5 times higher for people over 65 years of age than for younger adults in Australia.⁴ Frail, elderly people with functional decline leading to diminished ability to manage their hygiene needs are particularly susceptible to UTIs and the effects of these infections, and minor exacerbations can necessitate hospital admission. However, misdiagnosis of UTI is common in elderly people (see 'Over-diagnosis of UTI' on page 139).

About the data

All hospitalisations with a principal diagnoses of urinary tract infection are included.

Data are sourced from the National Hospital Morbidity Database and include admitted patients in both public and private hospitals, as well as Hospital in the Home care.

Rates are based on the number of hospitalisations for kidney infections and/or UTIs per 100,000 people of all ages in 2017–18.

Because a record is included for each hospitalisation for the conditions, rather than for each patient, patients hospitalised for the conditions more than once in the financial year will be counted more than once.

The analysis and maps are based on the usual residential address of the patient and not the location of the hospital.

Rates are age and sex standardised to allow comparisons between populations with different age and sex structures.

Data quality issues – for example, the extent of identification of Aboriginal and Torres Strait Islander status in datasets – could influence the variation seen.

Kidney infections and urinary tract infections

What do the data show?

Magnitude of variation

In 2017–18, there were 76,854 hospitalisations for kidney infections and UTIs, representing 281 hospitalisations per 100,000 people of all ages (the Australian rate).

The number of hospitalisations for kidney infections and UTIs across 326* local areas (Statistical Area Level 3 – SA3) ranged from 141 to 893 per 100,000 people. The rate was **6.3 times as high** in the area with the highest rate compared with the area with the lowest rate. The number of hospitalisations varied across states and territories, from 212 per 100,000 people in Tasmania to 559 in the Northern Territory (Figures 2.27–2.30).

After the highest and lowest 10% of results were excluded and 261 SA3s remained, the number of hospitalisations per 100,000 people was 2.3 times as high in the area with the highest rate compared with the area with the lowest rate.

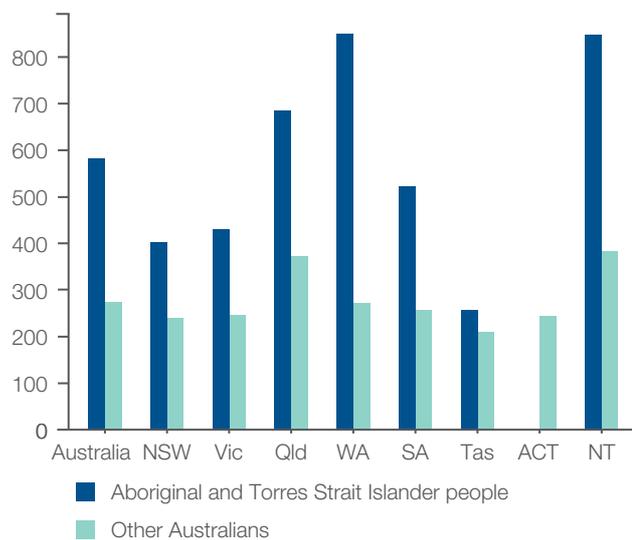
Analysis by remoteness and socioeconomic status

Rates of hospitalisations for kidney infections and UTIs were substantially higher in remote areas than in other areas. Hospitalisation rates also increased with socioeconomic disadvantage in inner regional and remote areas (Figure 2.31).

Analysis by Aboriginal and Torres Strait Islander status

The rate for Aboriginal and Torres Strait Islander people (581 per 100,000 people) was 2.1 times as high as the rate for other Australians (274 per 100,000 people) (Figure 2.25). However, rates in Tasmania were similar in the two groups.

Figure 2.25: Number of potentially preventable hospitalisations – kidney and urinary tract infections per 100,000 people of all ages, age and sex standardised, by state and territory of patient residence, by Aboriginal and Torres Strait Islander status, 2017–18†



The data for Figure 2.25, and the data and graphs for Analysis by PHN are available at safetyandquality.gov.au/atlas

* There are 340 SA3s. For this item, data were suppressed for 14 SA3s due to a small number of hospitalisations and/or population in an area.

Notes:

Some SA3 rates are more volatile than others. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia.

† Data for ACT (Aboriginal and Torres Strait Islander people) have been suppressed. Data by Aboriginal and Torres Strait Islander status should be interpreted with caution as hospitalisations for Aboriginal and Torres Strait Islander patients are under-enumerated, with variation among states and territories.

Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018.

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Trends over time

Between 2014–15 and 2017–18, the rate of hospitalisations for kidney infections and UTIs per 100,000 people decreased by 1% in the population as a whole (Figure 2.32).

Since June 2017, emergency department–only episodes in New South Wales have not been counted as hospitalisations, and this will affect the time trends described above.

For Aboriginal and Torres Strait Islander people, the rate of hospitalisations for kidney infections and UTIs per 100,000 people nationally increased by 3.6% between 2014–15 and 2017–18 (Figure 2.33).

Interpretation

Potential reasons for the variation include geographical differences in

- Demographic and consumer factors
 - clustering of populations with a high risk of UTIs, such as residents of aged care homes²¹, people with type 2 diabetes and people with socioeconomic disadvantage
 - populations with poor diabetes control
 - access to medicines, including affordability
 - incidence of infection with multidrug-resistant extended-spectrum β -lactamase-producing bacteria
 - rates of urological procedures, such as stent insertion
- Clinician factors
 - diagnostic error, leading to over- or under-diagnosis
 - adherence to evidence-based guidelines, including choice of antimicrobial and length of treatment
- Health system factors
 - use of emergency department short-stay units, where a patient stay is counted as a hospitalisation rather than an emergency department–only visit
 - implementation of hospital avoidance schemes
 - access to primary care, including availability, acceptability and affordability
 - access to community services
 - access to information about self-management at an appropriate health literacy level and in languages other than English
 - access to, and availability of, culturally appropriate health care for Aboriginal and Torres Strait Islander people
 - antimicrobial stewardship interventions.

Kidney infections and urinary tract infections

Variations between areas may not directly reflect the practices of the clinicians who are based in these areas. Area boundaries reflect where people live rather than where they obtain their health care. Patients who live in metropolitan, regional and rural areas may all travel outside their local areas to receive care.

Access to primary care is likely to affect hospitalisation rates for kidney infections and UTIs. Barriers to access include distance, lack of transport, cost, and a lack of health services that provide culturally appropriate care for Aboriginal and Torres Strait Islander people, and people from other culturally and linguistically diverse backgrounds.

Low health literacy is also a barrier to seeking care and managing treatment effectively. Inability of people with cognitive impairment, such as some residents of aged care homes, to communicate symptoms may contribute to delays in obtaining care.

Addressing variation

UTI treatment with broad-spectrum antimicrobial agents contributes to bacterial resistance, making the management of subsequent UTIs more difficult.² Antimicrobials remain the recommended treatment for UTIs, but including other prevention measures could reduce the incidence of UTIs, the use of antimicrobials and the development of resistance.² Prevention should follow this order:

- Counselling about reducing modifiable risk factors (see below)
- Non-antimicrobial measures
- Antimicrobial prophylaxis.²

Identification and management of risk factors such as vaginal infections, use of spermicides and atrophic vaginitis due to oestrogen deficiency could reduce the rate of UTIs and the need for antimicrobials.² Increasing access to health care for people with anatomical abnormalities of the urinary tract could also reduce the rate of UTIs among this group of patients.

Over-diagnosis of UTI

Although elderly people are at higher risk of UTIs, over-diagnosis of UTIs is also common in this group.²² Our ageing population, and misdiagnosis of asymptomatic bacteriuria as UTI in older people, are likely contributors to the high rates of hospitalisation reported in this chapter. An incorrect diagnosis of UTI in an elderly person has several negative consequences, including not identifying or treating the actual cause of their symptoms and increasing the risk of subsequent infection with antimicrobial-resistant organisms after treatment with an unnecessary antimicrobial. Difficulties in accurate diagnosis of UTIs in older people include:

- High rates of asymptomatic bacteriuria, which can lead to a positive urine dipstick result and misinterpretation as a UTI
- Lack of a fast, accurate test that distinguishes asymptomatic bacteriuria from active infection
- Comorbidities, such as cognitive impairment, that impede assessment.²³

Review of patient notes in a United Kingdom (UK) hospital study found that 43% of patients over 75 years of age who were given a diagnosis of UTI did not meet diagnostic criteria.²² Of the patients incorrectly diagnosed with UTI, 37% had asymptomatic bacteriuria.²² Guidelines recommend against treating asymptomatic bacteriuria, except in pregnancy and before some urological procedures.¹² Asymptomatic bacteriuria affects approximately 19% of women and 9% of men over 80 years of age²⁴, and can lead to a positive urine dipstick result in the absence of a UTI. A positive urinalysis result is not a reliable method for identifying UTI in elderly emergency department patients.²⁵

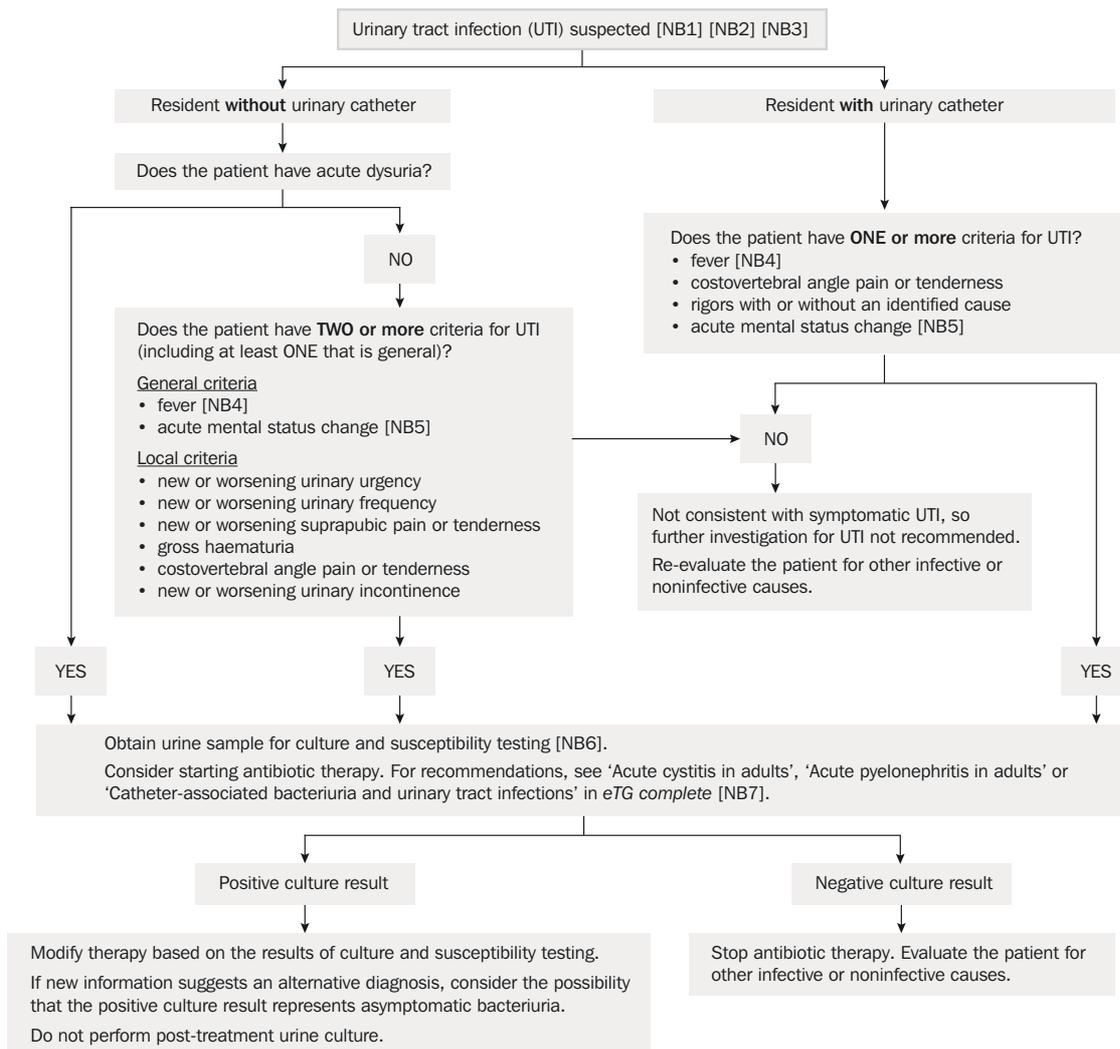
Time pressure in hospital emergency departments may contribute to over-diagnosis of UTIs in elderly people. UK emergency department staff interviewed for a qualitative study said that quickly diagnosing UTI by urine testing was a method of securing hospital admission.²⁶ One staff member commented that she needed ‘to find a cause to admit somebody to hospital when we think they are not right to go home, we’ve only got so much time to make the decision ... so that’s what I’m going to come up with’.²⁶

Reducing over-diagnosis in elderly people

Strategies to reduce over-diagnosis of UTIs in elderly people include selective use of urine testing in emergency departments, and only after considering the probability of UTI based on history and examination.²³ Ensuring midstream clean-catch urine collection, or using an in/out catheter if necessary, will increase the accuracy of urine tests, as will removal of a long-term indwelling catheter and insertion of a fresh catheter before collecting urine samples.²³ Following Australian guidelines on assessment and treatment of residents of aged care homes with suspected UTI could also increase diagnostic accuracy in this group (see Figure 2.26 on page 140).^{11,23}

Kidney infections and urinary tract infections

Figure 2.26: Flowchart on assessment and treatment of aged-care facility residents with suspected urinary tract infection¹²



NB1: Do not investigate or treat cloudy or malodorous urine in aged-care facility residents who do not have other signs or symptoms of UTI.
 NB2: Consider whether an alternative diagnosis is likely. Consider both infective (e.g. pneumonia) and non-infective (e.g. medication-related adverse events) causes.
 NB3: Establish whether an advance care plan is in place as it may influence assessment and management (e.g. whether investigations are performed or antibiotics are given).
 NB4: Fever is defined as a temperature higher than 38°C or an increase of more than 1.5°C above baseline temperature.
 NB5: Acute mental status changes include new change in level of consciousness, periods of altered perception, disorganised speech and lethargy.
 NB6: If the resident has an indwelling urinary catheter, see eTG complete for a guide to collecting urine samples in patients with indwelling urinary catheters.
 NB7: The duration of therapy does not need to be modified for this patient group and should always be stated on the prescription.

Reproduced with permission from Urinary tract infection in aged-care facility residents [published 2019 Apr]. In: eTG complete [digital]. Melbourne: Therapeutic Guidelines Limited; 2020. tgldcp.tg.org.au/searchAction?appendedInputButtons=Urinary%20tract%20infection%20in%20aged-care%20facility%20residents

Healthcare-associated UTIs

UTIs are a common healthcare-associated infection. Many are associated with indwelling urinary catheters.²⁷ Note that a UTI acquired during a hospital admission for another reason would not be counted in the data presented in this chapter, but a readmission to manage the UTI would be counted. In Australia in 2017–18, there were 5,362 unplanned readmissions for UTI within 28 days of discharge from a public hospital (excluding Western Australia).²⁸ This figure includes unplanned readmissions after initial admission for any reason, and includes readmissions to the same hospital only.

Approximately 1.7% of patients who were hospitalised for more than two days acquired a UTI, according to a study of eight Australian hospitals.²⁷ The estimated extra length of stay due to these healthcare-associated UTIs was four days.²⁷

Contributing factors that must be considered include whether indwelling urethral catheterisation is necessary, duration of the indwelling catheter, and how the catheter is inserted.⁷ Intermittent clean catheterisation should be considered in many people in both inpatient and outpatient settings to prevent catheter-associated UTIs. Reducing the proportion of patients with an indwelling catheter will reduce the incidence of UTIs and the likelihood of re-presentation to hospital with that UTI because of diagnostic failure or inadequate treatment before discharge.

Impact of antimicrobial-resistant bacteria

Increasing incidence of multidrug-resistant extended-spectrum β -lactamase-producing bacteria in Australia will contribute to increasing rates of hospitalisation for UTIs that do not respond to initial treatment, and longer hospital stays due to more complex treatment. Australian guidelines have been updated in light of growing antibiotic resistance.¹²

If possible, the susceptibility of organisms recently identified in patient samples should guide antimicrobial choice.¹² Trimethoprim continues to be recommended as empirical oral antimicrobial therapy for acute cystitis, but not for non-severe pyelonephritis because it is a more serious infection with a higher risk of adverse outcomes with treatment failure.¹² Amoxicillin–clavulanic acid has an unnecessarily broad spectrum of activity for empirical therapy of cystitis (that is, treatment before the responsible organism is known), and increases the risk of selecting for antimicrobial-resistant organisms.^{12,29}

People with renal failure may be less likely to receive targeted antimicrobial agents because of concerns about renal function, and may receive antimicrobials that have less reliable effectiveness (for example, cefalexin, ceftriaxone). For patients in remote areas with renal failure, delays in receiving microbiology study results may add to the barriers to receiving effective treatment.

Risk factors for UTIs with multidrug-resistant bacteria include recent overseas travel, previous exposure to antimicrobials and living in an aged care home.³⁰ Urine culture before starting treatment is advisable for patients with any of these risk factors to guide antimicrobial choice.³⁰

Kidney infections and urinary tract infections

Reducing UTIs among Aboriginal and Torres Strait Islander people

Developing culturally appropriate and accessible information in partnership with Aboriginal and Torres Strait Islander communities could reduce the impact of UTIs in these groups.³¹ This should include information emphasising the importance of prompt medical attention for symptoms of UTI to minimise the risk of acute kidney injury and subsequent chronic kidney disease.³¹

Improving access to culturally safe care may increase the early detection and treatment of UTIs in Aboriginal and Torres Strait Islander people. Strengthening the capacity of the Aboriginal Community Controlled Health Service sector and improving the cultural safety of mainstream services are both important elements. Improving access for Aboriginal and Torres Strait Islander mothers to culturally safe models of maternity care may improve detection and treatment of UTIs in pregnancy in this group.³² See page 60 for examples of successful strategies for improving antenatal care for Aboriginal and Torres Strait Islander mothers.

Reducing risk factors for diabetes could reduce the rate of UTIs among Aboriginal and Torres Strait Islander people, as diabetes increases the risk of UTI. Diabetes prevalence is strongly related to social disadvantage among Aboriginal and Torres Strait Islander people, and the underlying social determinants of health need to be considered to address the increasing rate of diabetes.³³ The logistical and financial barriers to accessing health care for Aboriginal and Torres Strait Islander people living in remote areas also need to be addressed.

Preventing recurrent UTIs

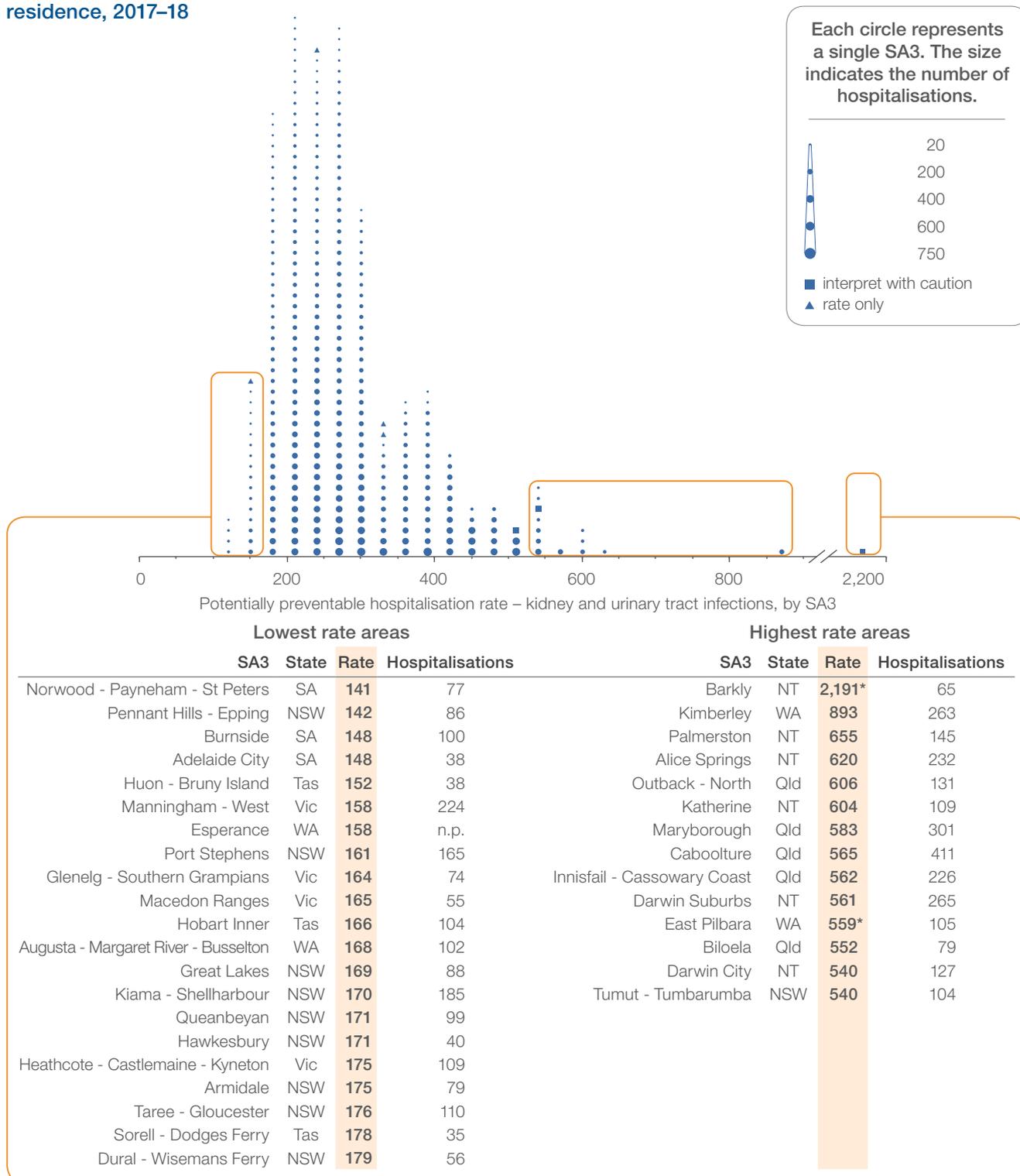
Recurrent UTIs account for a substantial number of infections, and prophylaxis may be appropriate for certain groups of patients after evaluation for contributing factors.¹² Patient-initiated treatment with antimicrobials at the onset of symptoms may also be appropriate for women who have frequent symptomatic UTIs, and this approach reduces overall antimicrobial use compared with prophylaxis.¹²

On discharging older patients from hospital with a diagnosis of UTI, communication to general practitioners emphasising recommendations to reduce the risk of recurrent UTIs may reduce the need for future hospitalisations.²³ In postmenopausal women, vaginal oestrogen may reduce recurrences of UTIs. Increasing water intake may reduce recurrences in premenopausal women.¹²

The evidence for cranberry products to prevent UTIs is conflicting. A meta-analysis published in 2017 concluded that cranberry products significantly reduce the risk of UTIs.³⁴ Another meta-analysis published in 2012 reported a non-significant trend to fewer UTIs; this review also commented that the high withdrawal rate in trials suggests that use of cranberry products may not be an acceptable intervention for some patients.³⁵ There is not enough high-quality evidence to determine whether probiotics are effective for preventing UTIs.³⁶

Rates by local area

Figure 2.27: Number of potentially preventable hospitalisations – kidney and urinary tract infections per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18



Notes:

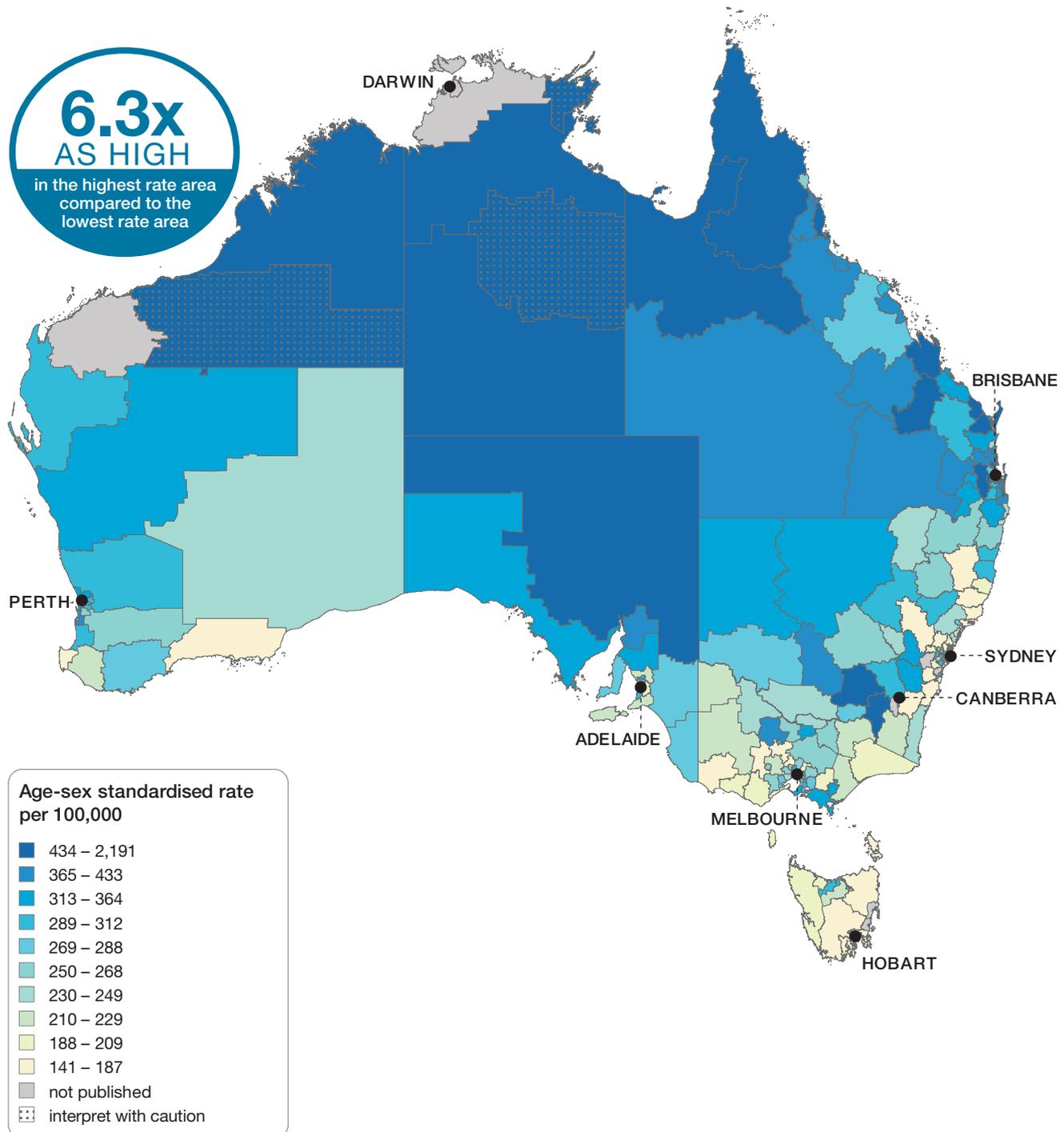
Squares (■) and asterisks (*) indicate rates that are more volatile than other rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of hospitalisations are not published (n.p.) for confidentiality reasons. Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Kidney infections and urinary tract infections

Rates across Australia

Figure 2.28: Number of potentially preventable hospitalisations – kidney and urinary tract infections per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18



Notes:

Dotted areas indicate rates that are considered more volatile than other published rates and should be interpreted with caution. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia.

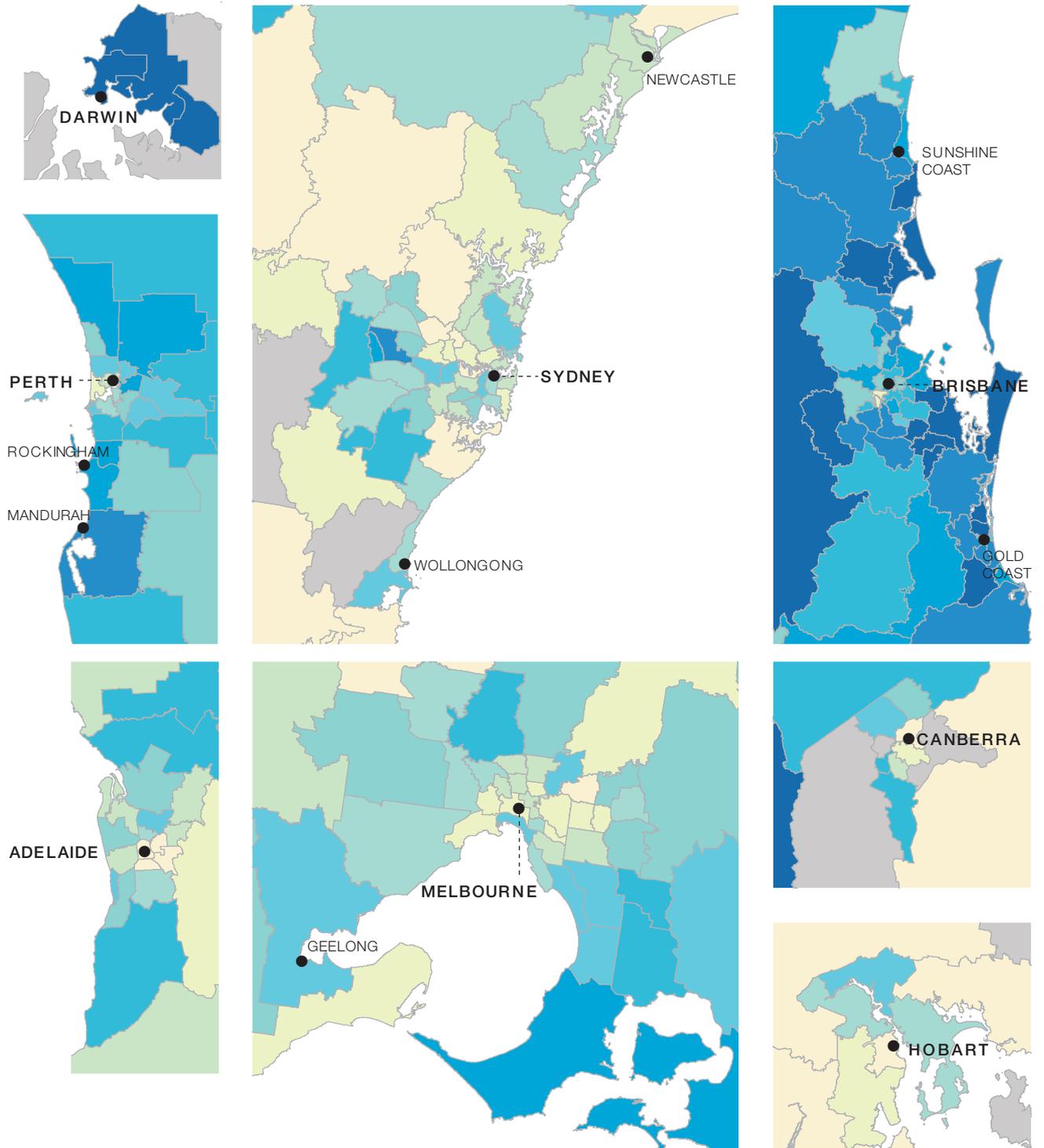
Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018.

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Rates across capital city areas

Figure 2.29: Number of potentially preventable hospitalisations – kidney and urinary tract infections per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18



Notes:

Dotted areas indicate rates that are considered more volatile than other published rates and should be interpreted with caution.

Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018.

For further detail about the methods used, please refer to the Technical Supplement.

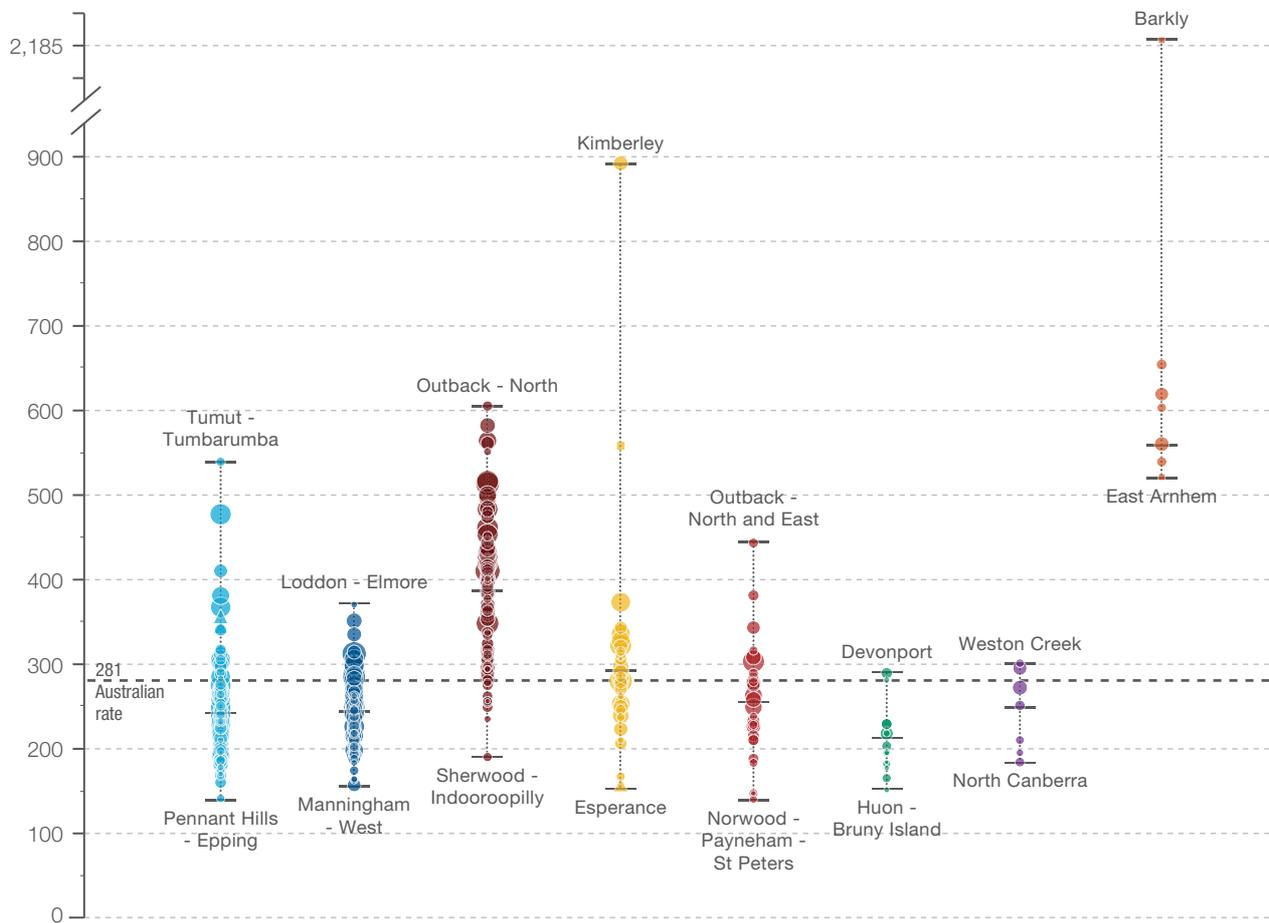
Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Kidney infections and urinary tract infections

Rates by state and territory

Figure 2.30: Number of potentially preventable hospitalisations – kidney and urinary tract infections per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Highest rate	540	371	606	893	444	290	302	2,191*
State/territory	241	244	386	291	256	212	248	559
Lowest rate	142	158	191	158	141	152	185	522*
No. hospitalisations	21,738	17,215	20,603	7,867	5,417	1,300	1,034	1,108



Each circle represents a single SA3. The size indicates the number of hospitalisations.

▲ rate only

■ interpret with caution



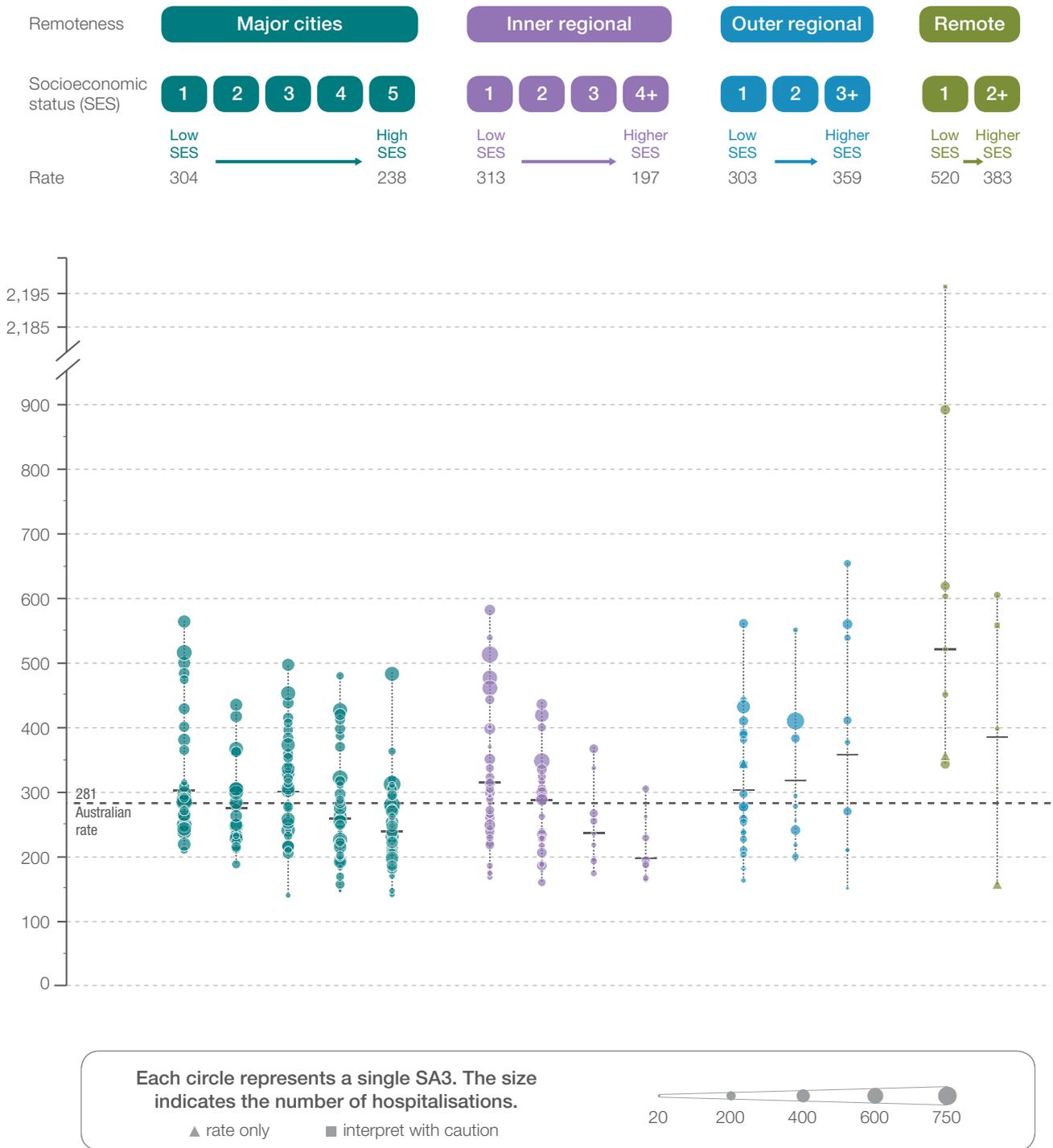
Notes:

Squares (■) and asterisks (*) indicate rates that are more volatile than other rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of hospitalisations are not published for confidentiality reasons. Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Rates by remoteness and socioeconomic status

Figure 2.31: Number of potentially preventable hospitalisations – kidney and urinary tract infections per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18



Notes:

Squares (■) and asterisks (*) indicate rates that are more volatile than other rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of hospitalisations are not published for confidentiality reasons. Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018. For further detail about the methods used, please refer to the Technical Supplement.

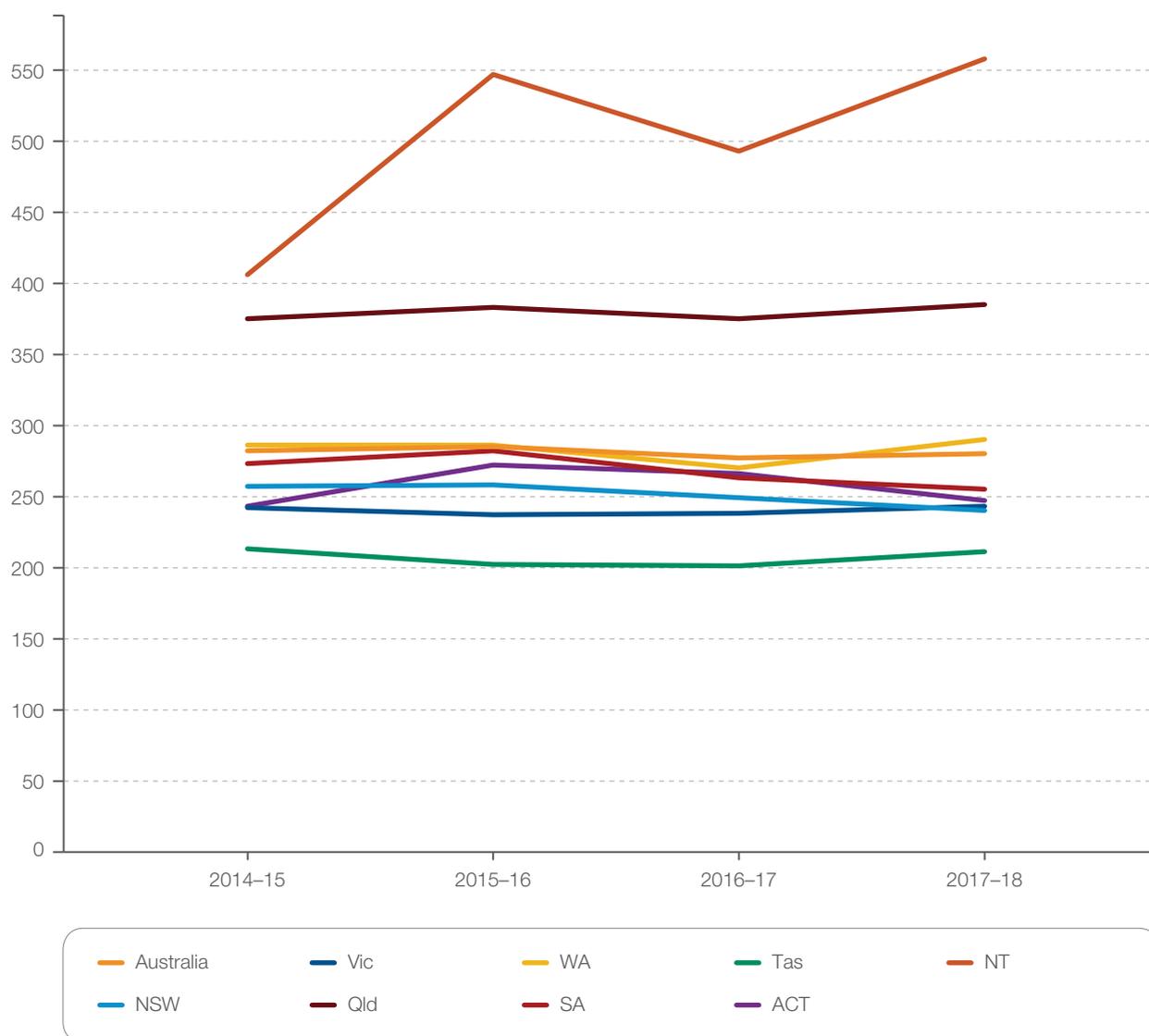
Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Kidney infections and urinary tract infections

Rates across years

Figure 2.32: Number of potentially preventable hospitalisations – kidney and urinary tract infections per 100,000 people of all ages, age and sex standardised, by state and territory of patient residence, 2014–15 to 2017–18

	2014–15	2015–16	2016–17	2017–18
Highest SA3 rate	1,097*	1,445*	1,041*	2,191*
Australian rate	283	286	278	281
Lowest SA3 rate	135	113	104	141
Magnitude of variation	6.9	8.2	6.4	6.3
Magnitude of variation without top & bottom 10% SA3	2.2	2.2	2.2	2.3



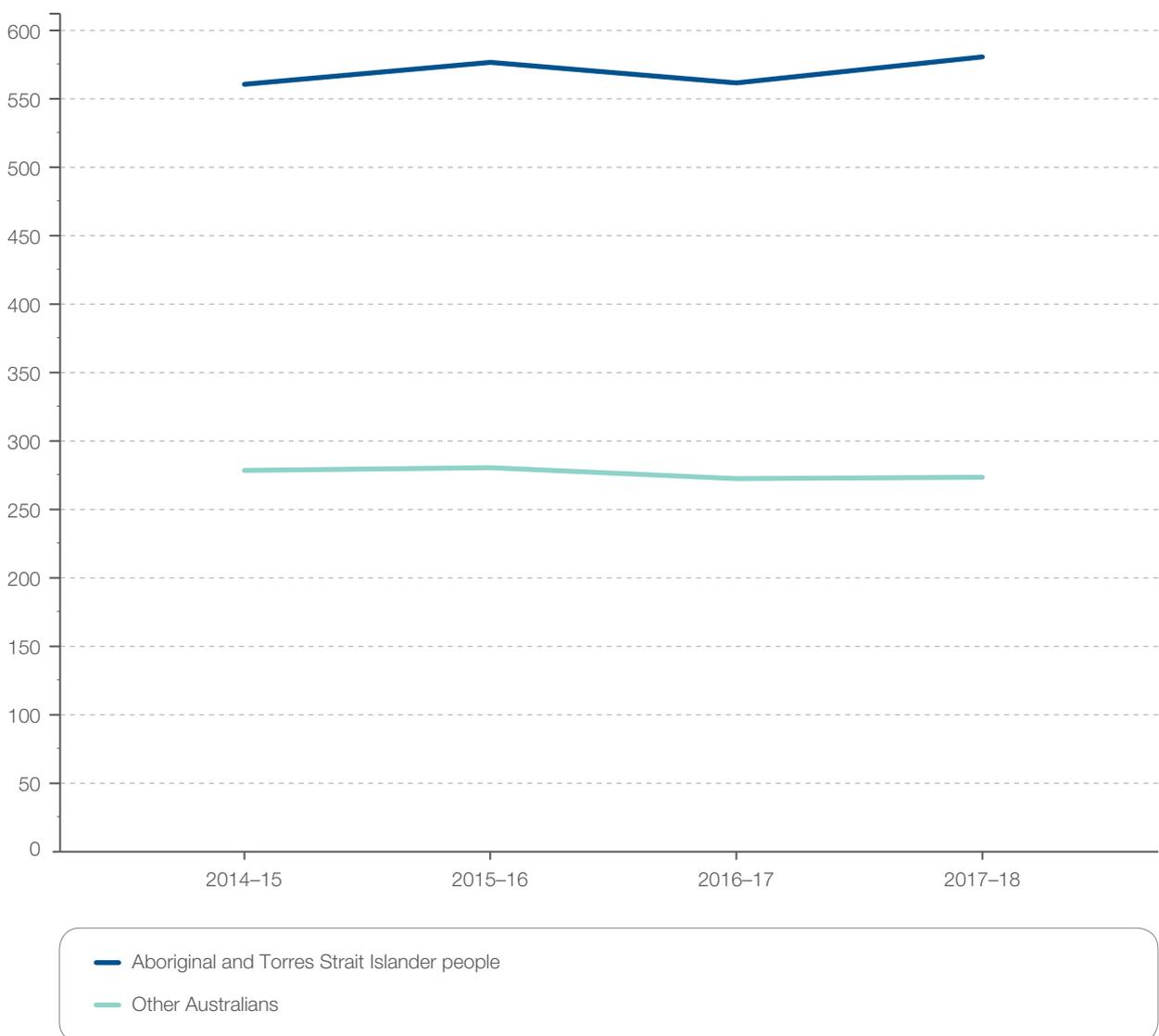
Notes:

The asterisks (*) indicate rates that are considered more volatile than others, and should be interpreted with caution. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia. Population estimates as at 31 December of the relevant year are calculated as the average of the 30 June populations before and after the relevant December. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2014 to 2018.

Rates for Aboriginal and Torres Strait Islander people across years

Figure 2.33: Number of potentially preventable hospitalisations – kidney and urinary tract infections per 100,000 people of all ages, age and sex standardised, by Aboriginal and Torres Strait Islander status, 2014–15 to 2017–18



Notes:

Data by Aboriginal and Torres Strait Islander status should be interpreted with caution as hospitalisations for Aboriginal and Torres Strait Islander patients are under-enumerated, with variation among states and territories. Population estimates as at 31 December of the relevant year are calculated as the average of the 30 June populations before and after the relevant December. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2014 to 2018.

Kidney infections and urinary tract infections

Resources

- Antibiotic guidelines: urinary tract infections (in eTG complete)¹²
- Antibiotic guidelines: urinary tract infection in aged-care facility residents (in eTG complete)¹²
- *RACGP Aged Care Clinical Guide (Silver Book)*. Melbourne: Royal Australian College of General Practitioners
- *Asymptomatic Bacteriuria: Reducing inappropriate antimicrobial prescribing for aged care facility residents* (fact sheet)¹¹
- Urinary tract infections, interactive flowchart, National Institute for Health and Care Excellence (UK), pathways.nice.org.uk/pathways/urinary-tract-infections#path=view%3A/pathways/urinary-tract-infections/urinary-tract-infections-in-people-aged-16-years-and-over.xml&content=view-index
- Non-antibiotic prevention and management of recurrent urinary tract infection³⁷
- *Urinary Catheter Passport: A guide to looking after a urinary catheter for service users and healthcare workers*. Infection Prevention Control & National Health Service, UK
- Diagnosis of urinary tract infection in older persons in the emergency department: To pee or not to pee, that is the question²³

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2.5 Cellulitis

Why is this important?

Cellulitis is an infection of the subcutaneous tissues. Crowded living conditions and socioeconomic disadvantage increase the risk of some bacterial causes of cellulitis.¹

What did we find?

Between 2014–15 and 2017–18, the rate of cellulitis hospitalisations nationally increased by 9%. The rate increased by 18% among Aboriginal and Torres Strait Islander people. The rate for Aboriginal and Torres Strait Islander people was 3.0 times as high as the rate for other Australians.

Rates of hospitalisation for cellulitis were substantially higher in remote areas than in other areas. Hospital admission rates also increased with socioeconomic disadvantage, regardless of remoteness, except in outer regional areas.

What can be done?

The rates of hospitalisation for cellulitis reported in this chapter are unacceptably high, and more must be done to prevent these infections. Addressing the social determinants of skin health, such as housing conditions, is key to reducing skin infections and cellulitis among Aboriginal and Torres Strait Islander people.^{2,3} More effective prevention and management of type 2 diabetes, an important risk factor for cellulitis, may also reduce rates of hospitalisation for cellulitis. Increasing availability of podiatry services that specialise in care of diabetic and ischaemic foot ulcers may help prevent infections and hospitalisations, particularly in rural and remote areas. Increasing availability of lymphoedema services and specific compression stockings may reduce rates of cellulitis in patients with chronic lymphoedema. Improving the accuracy of cellulitis diagnoses – for example, by early consultation with an infectious diseases specialist and/or a dermatologist – could reduce unnecessary hospitalisations and antibiotic use.

Cellulitis

Context

Cellulitis is an infection of the subcutaneous tissues. It occurs in a range of disparate conditions and circumstances, with different causes and management – for example, penetrating injuries, insect bites and wounds.⁴ Risk factors for recurrent cellulitis include lymphoedema, obesity, diabetes and pre-existing skin infections such as tinea.^{4,5} Crowded living conditions and socioeconomic disadvantage increase the risk of some infections associated with cellulitis.¹

Cellulitis was the fourth most common cause of potentially preventable hospitalisation in Australia in 2017–18, after dental conditions, kidney infections and urinary tract infections combined, and chronic obstructive pulmonary disease.⁶ Among Aboriginal and Torres Strait Islander people, cellulitis was the second most common cause of potentially preventable hospitalisation in 2017–18, after chronic obstructive pulmonary disease.⁷ Hospitalisations for cellulitis accounted for 275,653 bed days in Australia in 2017–18.⁶

Older, frail people are particularly at risk of hospitalisation due to cellulitis because even minimal infection can mean that they are unable to manage at home. The rate of hospitalisation for cellulitis in Australia is 3.0 times higher among people aged 65 years and over compared with younger adults.⁷

Few international rates of hospitalisation for cellulitis are available for comparison. The rate of hospital discharge for treatment for infection of the skin or subcutaneous tissues was 359 per 100,000 in Australia, compared to 328 per 100,000 in New Zealand, in 2016.⁸

Cellulitis is caused by a variety of pathogens. Spontaneous, rapidly spreading cellulitis and non-purulent recurrent cellulitis (for example, associated with lymphoedema) are most commonly caused by *Streptococcus pyogenes* or other streptococci.⁹

Purulent cellulitis is usually caused by *Staphylococcus aureus* (*S. aureus*).⁹ Some community-acquired *S. aureus* infections in Australia are now due to methicillin-resistant organisms.¹⁰ Cellulitis caused by *S. aureus* is less common than cellulitis caused by streptococci, and is often associated with an abscess, ulceration or penetrating injury.⁹

Oral antibiotics are recommended for cellulitis without systemic features of infection. Intravenous antibiotics are usually required for patients with two or more features of systemic infection.⁹

About the data

All hospitalisations with a principal diagnoses of cellulitis are included.

Data are sourced from the National Hospital Morbidity Database, and include admitted patients in both public and private hospitals, including Hospital in the Home care.

Rates are based on the number of hospitalisations for cellulitis per 100,000 people of all ages in 2017–18.

Because a record is included for each hospitalisation for cellulitis, rather than for each patient, patients hospitalised for cellulitis more than once in the financial year will be counted more than once.

The analysis and maps are based on the usual residential address of the patient and not the location of the hospital.

Rates are age and sex standardised to allow comparisons between populations with different age and sex structures.

Data quality issues – for example, the extent of identification of Aboriginal and Torres Strait Islander status in datasets – could influence the variation seen.

What do the data show?

Magnitude of variation

In 2017–18, there were 68,663 hospitalisations for cellulitis, representing 256 hospitalisations per 100,000 people of all ages (the Australian rate).

The number of hospitalisations for cellulitis across 330* local areas (Statistical Area Level 3 – SA3) ranged from 90 to 1,393 per 100,000 people. The rate was **15.5 times as high** in the area with the highest rate compared with the area with the lowest rate. The number of hospitalisations varied across states and territories, from 185 per 100,000 people in the Australian Capital Territory to 679 in the Northern Territory (Figures 2.35–2.38).

After the highest and lowest 10% of results were excluded and 264 SA3s remained, the number of hospitalisations per 100,000 people was 2.9 times as high in the area with the highest rate compared with the area with the lowest rate.

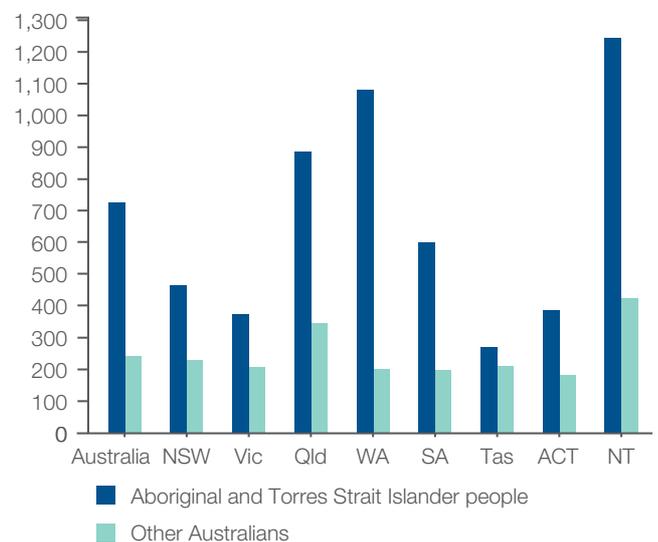
Analysis by remoteness and socioeconomic status

Rates of hospitalisation for cellulitis were substantially higher in remote areas than in other areas. Hospital admission rates also increased with socioeconomic disadvantage, regardless of remoteness category, except in outer regional areas (Figure 2.39).

Analysis by Aboriginal and Torres Strait Islander status

The rate for Aboriginal and Torres Strait Islander people (727 per 100,000 people) was 3.0 times as high as the rate for other Australians (242 per 100,000 people) (Figure 2.34).

Figure 2.34: Number of potentially preventable hospitalisations – cellulitis per 100,000 people of all ages, age and sex standardised, by state and territory of patient residence, by Aboriginal and Torres Strait Islander status, 2017–18†



The data for Figure 2.34, and the data and graphs for Analysis by Primary Health Network are available at safetyandquality.gov.au/atlas

* There are 340 SA3s. For this item, data were suppressed for 10 SA3s due to a small number of hospitalisations and/or population in an area.

Notes:

Some SA3 rates are more volatile than others. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia.

† Data by Aboriginal and Torres Strait Islander status should be interpreted with caution as hospitalisations for Aboriginal and Torres Strait Islander patients are under-enumerated, with variation among states and territories.

Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018.

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Cellulitis

Trends over time

Between 2014–15 and 2017–18, the rate of cellulitis hospitalisations per 100,000 people nationally increased by 9% (Figure 2.40).

For Aboriginal and Torres Strait Islander people, the rate of cellulitis hospitalisations per 100,000 people nationally increased by 18% between 2014–15 and 2017–18 (Figure 2.41).

Interpretation

Potential reasons for the variation include geographical differences in:

- Clinician factors:
 - Diagnostic error, potentially leading to both under-diagnosis and over-diagnosis of cellulitis. Several other conditions can be mistaken for cellulitis, due to its non-specific features, and reported rates of misdiagnosis range from 30% to 74% in United States (US) hospitals.^{11,12} In one US study where 30% of cellulitis diagnoses were later found to be incorrect, 85% of the misdiagnosed patients were unnecessarily hospitalised and 92% received unnecessary antibiotics due to the misdiagnosis¹³ (see ‘Improving diagnostic accuracy’ on page 157).
- Demographic and consumer factors
 - prevalence of diabetes, and poorly managed diabetes, which increase the risk of skin disease; diabetes is more prevalent among Aboriginal and Torres Strait Islander people
 - prevalence of obesity, chronic venous stasis, immobility and lymphoedema, which increase the risk of oedema and cellulitis, and prevalence of heart failure with lymphoedema
 - prevalence of community-associated methicillin-resistant *Staphylococcus aureus* (MRSA), which is high in outer regional, remote and very remote areas compared with major cities and inner regional areas of Australia¹⁴
- Health system factors
 - prevalence of streptococcal infections in some Aboriginal and Torres Strait Islander communities
 - overcrowded housing
 - swimming facilities (type, cleanliness and frequency of use); use of swimming pools may reduce skin infections¹⁵
 - occupational risk factors for skin injury
 - density of populations with a high risk of cellulitis, such as residents of aged care homes¹⁶
 - temperature and humidity, and associated effects (for example, open footwear, tinea).
- Health system factors
 - delayed or inadequate access to appropriate health care; poor health literacy may contribute to delays in seeking health care, resulting in increased need for hospitalisation
 - access to dermatologists for managing serious skin conditions and preventing progression to cellulitis
 - access to culturally appropriate health care for Aboriginal and Torres Strait Islander people
 - implementation of hospital avoidance schemes
 - availability of integrated care that connects patients with social services and programs
 - use of emergency department short-stay units, where a patient stay is coded as a hospitalisation rather than an emergency department-only visit.

Variations between areas may not directly reflect the practices of the clinicians who are based in these areas. Area boundaries reflect where people live rather than where they obtain their health care. Patients who live in metropolitan, regional and rural areas may all travel outside their local areas to receive care.

Impact of MRSA

The prevalence of community-associated MRSA is higher in outer regional, remote and very remote areas than in major cities and inner regional areas of Australia.¹⁴ In 2017, 41% of *S. aureus* infections in remote areas were methicillin resistant, compared with 20% in major cities of Australia.¹⁴ Prevalence of MRSA increased in Australia overall between 2015 and 2017, but to a larger extent in remote and very remote areas than in major cities.¹⁴ Higher prevalence of MRSA is likely to contribute to higher rates of hospitalisation for cellulitis for several reasons:

- Ineffectiveness of antibiotics used for empirical treatment can result in progression of the infection
- MRSA infections require surgical drainage, which is more likely to require hospital care
- Higher prevalence of MRSA may cause an increase in rates of skin abscesses, furuncles and boils, which can progress to cellulitis.

In addition, longer waiting times for the results of microbiological investigations in remote areas lead to longer periods before a change in antibiotic if there is a mismatch in susceptibility, and greater opportunity for progression of infection.

Addressing variation

The rates of hospitalisation for cellulitis reported in this chapter are unacceptably high, and more must be done to prevent these severe infections. The 9% increase in cellulitis hospitalisations overall, and the 18% increase among Aboriginal and Torres Strait Islander people, between 2014–15 and 2017–18 underscore this need. Suitable strategies to reduce potentially preventable hospitalisations for cellulitis will depend on the specific underlying causes in local areas and their accurate diagnosis.

Improving diagnostic accuracy

Several other conditions can be mistaken for cellulitis, due to its non-specific features. Reported rates of misdiagnosis range from 30% to 74% in US hospitals.^{11,12} In one US study where 30% of cellulitis diagnoses were later found to be incorrect, 85% of the misdiagnosed patients were unnecessarily hospitalised, and 92% received unnecessary antibiotics as a result of the misdiagnosis.¹³

Early consultation with an infectious diseases specialist or a dermatologist can improve outcomes for patients with a presumed diagnosis of cellulitis, and so reduce antibiotic use.¹¹ In a US trial, patients who were assessed by a dermatologist within 24 hours of admission had significantly better clinical improvement after two weeks, and had significantly lower duration of antibiotic treatment, than patients treated by the usual medical team.¹¹

Ambulatory Care

Many patients with cellulitis are treated in ambulatory settings, community health, specialist outpatient clinics, general practice and Hospital in the home. Ambulatory settings may be preferable for selected older patients, to reduce the risk of geriatric complications such as delirium.¹⁷

Cellulitis

Managing predisposing conditions and recurrent cellulitis

More effective prevention and management of type 2 diabetes, an important risk factor for cellulitis, may contribute to reducing rates of hospitalisation for cellulitis. Access to information about self-management at an appropriate health literacy level, and in languages other than English, is fundamental to enabling consumers to prevent future episodes of cellulitis. Improved self-management of skin diseases such as eczema, and encouraging early action to prevent worsening of infections, may reduce hospitalisations for cellulitis.

Increasing availability of podiatry services that specialise in care of diabetic and ischaemic foot ulcers may help prevent infections and hospitalisations, particularly in rural and remote areas. Similarly, increasing availability of lymphoedema services and specific compression stockings may reduce rates of cellulitis in patients with chronic oedema. In a small Australian trial, leg compression therapy halved the rate of hospitalisation for cellulitis among patients with chronic oedema of the leg and recurrent cellulitis.¹⁸

Other factors that increase the risk of recurrent cellulitis include tinea of the feet, lymphoedema and lymphatic malformation.⁹ In addition to managing these risk factors, giving patients with recurrent cellulitis a prescription for antibiotic treatment so that they can start treatment as soon as symptoms appear may prevent rapid progression of infection.⁹

Antibiotic prophylaxis is recommended for some people with frequent recurrences.^{9,19} Recommended prophylaxis is phenoxymethylpenicillin 250 mg orally, twice daily for up to six months initially, followed by regular review.⁹

Individualising treatment

Using better-tolerated treatments for impetigo (also known as school sores) in primary care may encourage earlier presentation. Delays in presentation due to the pain of treatment with penicillin G injection may contribute to treatment failure in the primary healthcare setting. Previous experience of ineffective treatment with flucloxacillin or other β -lactam antibiotics for MRSA infections may also contribute to treatment failure in the primary healthcare setting.

Treatment for patients with suspected MRSA or risk factors

For patients with purulent cellulitis (or suspected *S. aureus* infection) and risk factors for MRSA infection, intravenous vancomycin is recommended.²⁰ In some areas, clindamycin or lincomycin is a suitable alternative, based on local community-associated MRSA susceptibility patterns.²⁰

Risk factors for infection with MRSA include:

- Living in an area with a high prevalence of MRSA (for example, the Northern Territory, remote communities in northern Queensland, regions north of metropolitan Perth in Western Australia – especially the Pilbara and Kimberley)
- Previous colonisation or infection with MRSA, particularly if recent (this also applies to neonates exposed to caregivers colonised or infected with MRSA)
- Residence in an aged care home with a high prevalence of MRSA, particularly if the patient has had several courses of antibiotics
- Frequent stays, or a current prolonged stay, in a hospital with high MRSA prevalence, particularly if the patient has had antibiotic treatment or recent surgery.²⁰

Promoting skin health among Aboriginal and Torres Strait Islander people

The burden of bacterial skin infections and parasitic skin infestations among Aboriginal and Torres Strait Islander people is highest in remote communities.²¹ These conditions can lead to impetigo and cellulitis.²¹ The risk of skin infections is reduced by adequate housing conditions, including adequate space for the number of people living in the house.²²

The Housing for Health Program involves repairs and maintenance of housing items required for healthy living practices. The program has significantly reduced the rate of hospitalisations for skin infections, and led to other benefits for people living in Aboriginal community housing (see 'Case study: Housing for health' on this page).²³

Children in remote Aboriginal and Torres Strait Islander communities in northern Australian have the highest rates of impetigo in the world.²⁴ Prevention programs for skin infections can increase protective factors against cellulitis in these settings.^{25,26} Public swimming pools have also been associated with a lower prevalence and severity of skin sores in remote Aboriginal and Torres Strait Islander communities, and may decrease the burden of infections and staphylococcal diseases in particular.^{15,27}

In areas with very high rates of skin infections in children, such as the Kimberley and Pilbara, skin infections may become normalised, meaning that clinicians may not offer treatment unless asked, and patients may not seek treatment.³ However, in settings with a high burden of skin infections, individual treatment without community-level interventions is likely to be ineffective, partly because of extensive community-level transmission of impetigo.² Addressing the normalisation of skin infections and the social determinants of skin health is key to increasing protective factors against skin infections among Aboriginal and Torres Strait Islander children.^{2,3}

Strengthening the capacity of the Aboriginal Community Controlled Health Service sector and improving the cultural safety of mainstream services are important for improving access to care for Aboriginal and Torres Strait Islander people. Strengthening the Aboriginal and Torres Strait Islander health workforce is also fundamental to improving access to culturally safe health care.

Case study: Housing for health

The risk of skin infections is increased by poor housing conditions, including inadequate facilities for healthy living practices.²² The Housing for Health Program involves repairs and maintenance of housing items required for healthy living practices. The program has significantly reduced the rate of hospitalisations for skin infections, and led to other benefits for people living in Aboriginal community housing.²³

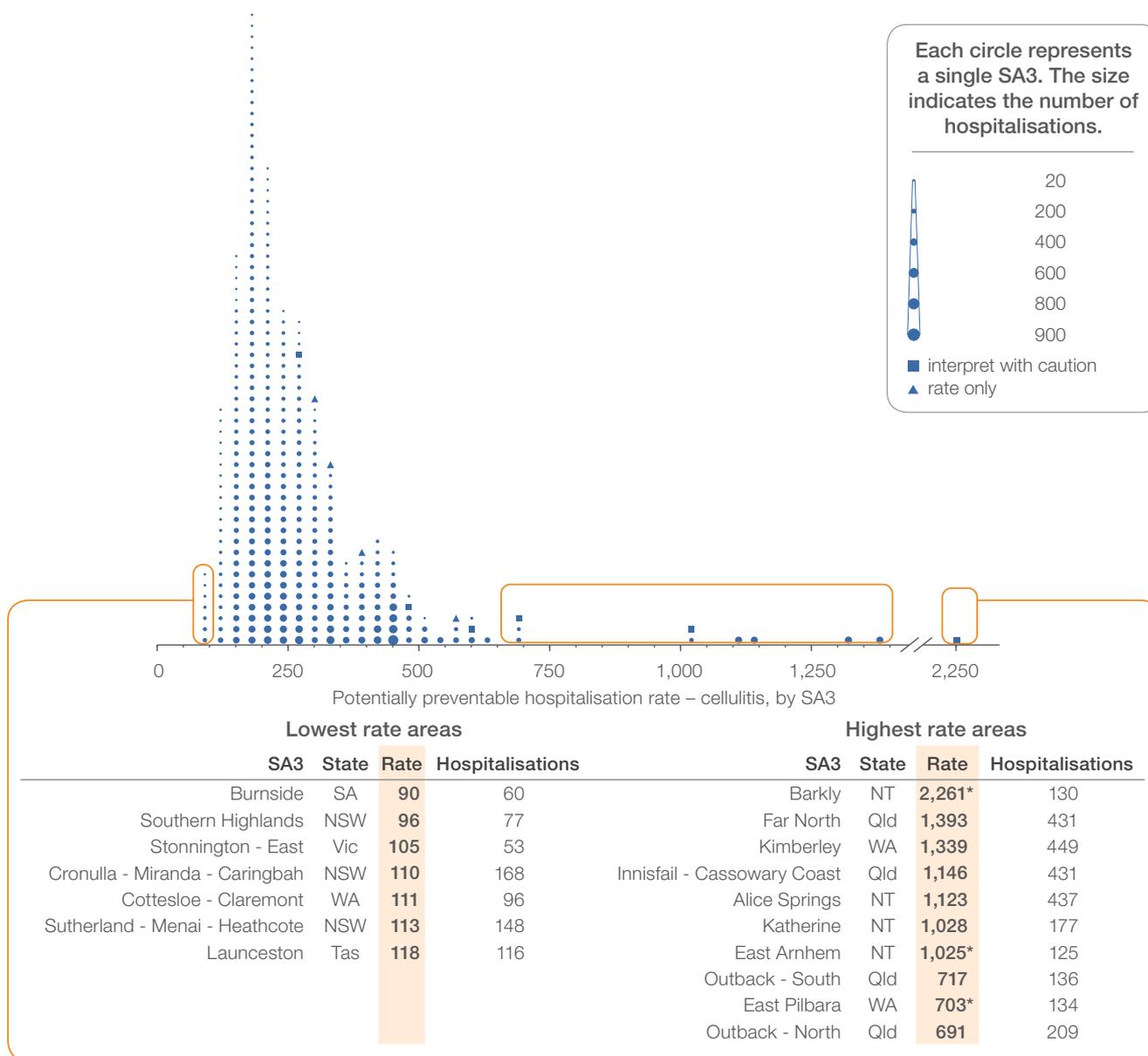
Over the 10-year evaluation period, repairs were made to 2,230 houses in 71 communities around New South Wales. Repairs included fixing hot water systems, showers, washing machines, toilets and insect screens. Repairs to improve safety, temperature control, and the ability to store and prepare food were also carried out. The proportion of houses with adequate facilities for residents to wash themselves, their clothes and their bedding doubled after the intervention.

The rate of hospitalisations for skin infections was 19% lower in the intervention group than in the non-intervention group. Hospitalisations were also reduced by 42% for respiratory conditions and by 43% for intestinal infections. The program had broader benefits in building goodwill through timely repairs (either the same day or the day after houses were surveyed), and employing local Aboriginal and Torres Strait Islander tradespeople to carry out repairs, where possible.²³

Cellulitis

Rates by local area

Figure 2.35: Number of potentially preventable hospitalisations – cellulitis per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18



Notes:

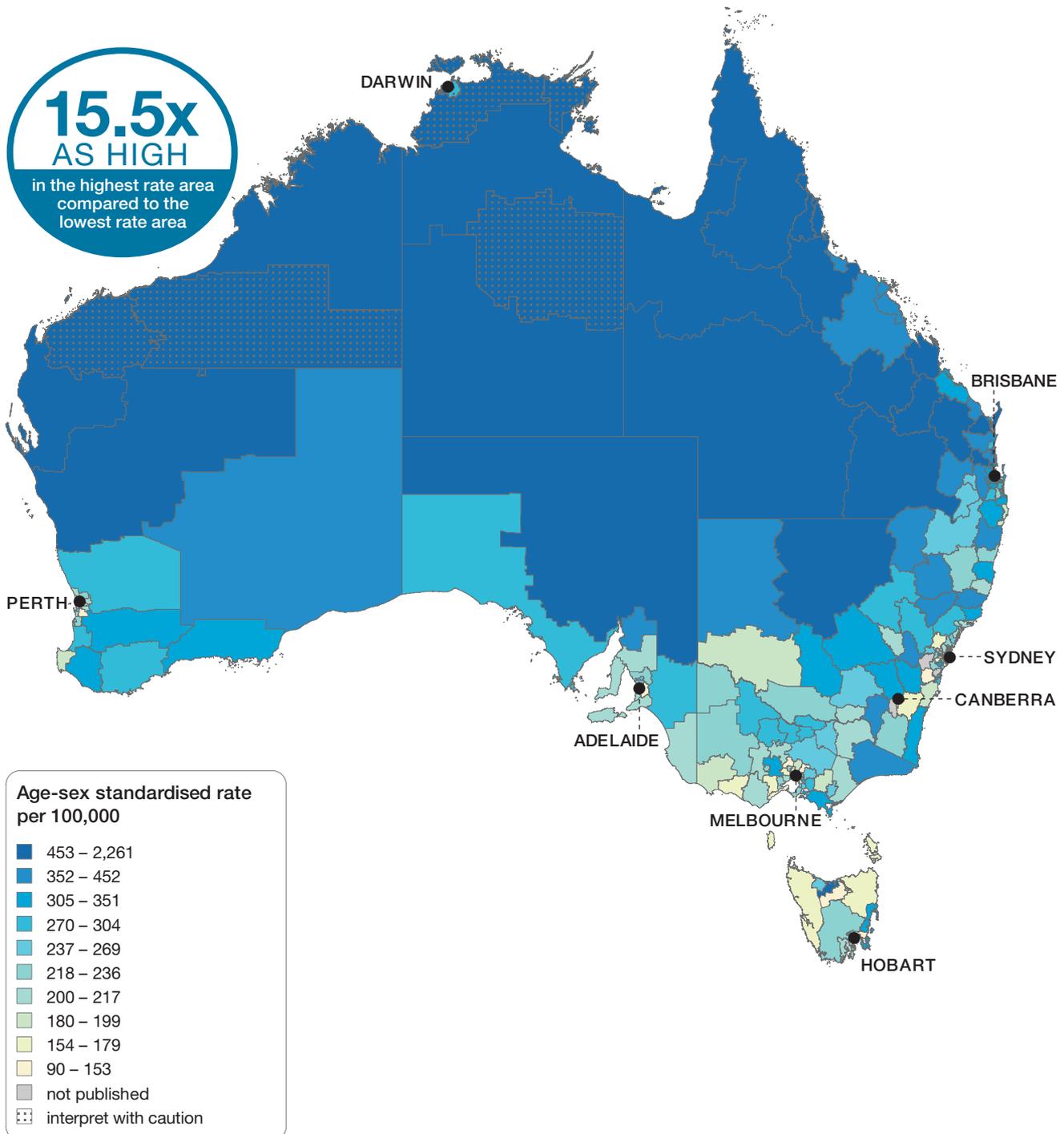
Squares (■) and asterisks (*) indicate rates that are more volatile than other rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of hospitalisations are not published for confidentiality reasons. Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Cellulitis

Rates across Australia

Figure 2.36: Number of potentially preventable hospitalisations – cellulitis per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18



Notes:

Dotted areas indicate rates that are considered more volatile than other published rates and should be interpreted with caution. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia.

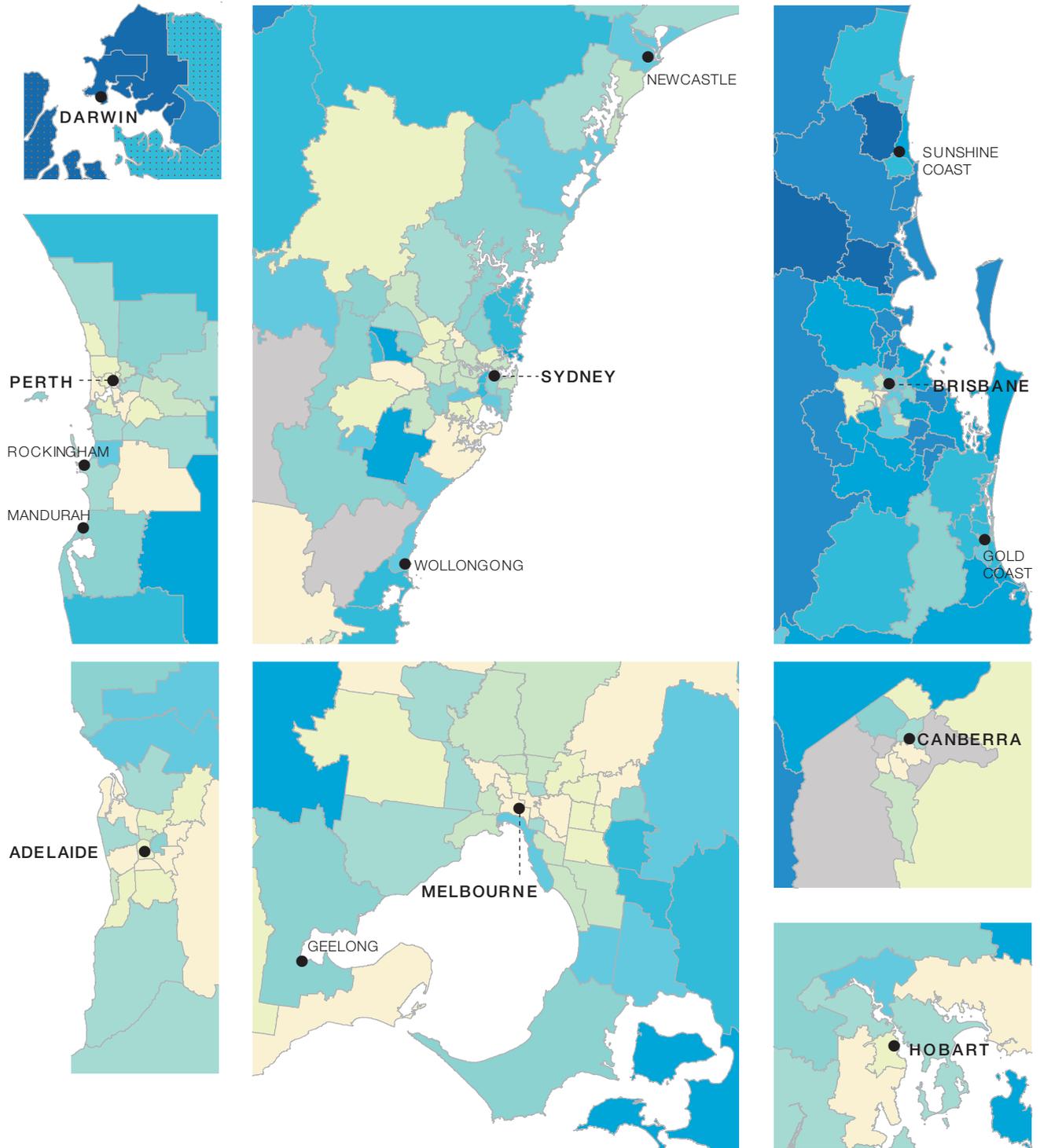
Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018.

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Rates across capital city areas

Figure 2.37: Number of potentially preventable hospitalisations – cellulitis per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18



Notes:

Dotted areas indicate rates that are considered more volatile than other published rates and should be interpreted with caution. Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018. For further detail about the methods used, please refer to the Technical Supplement.

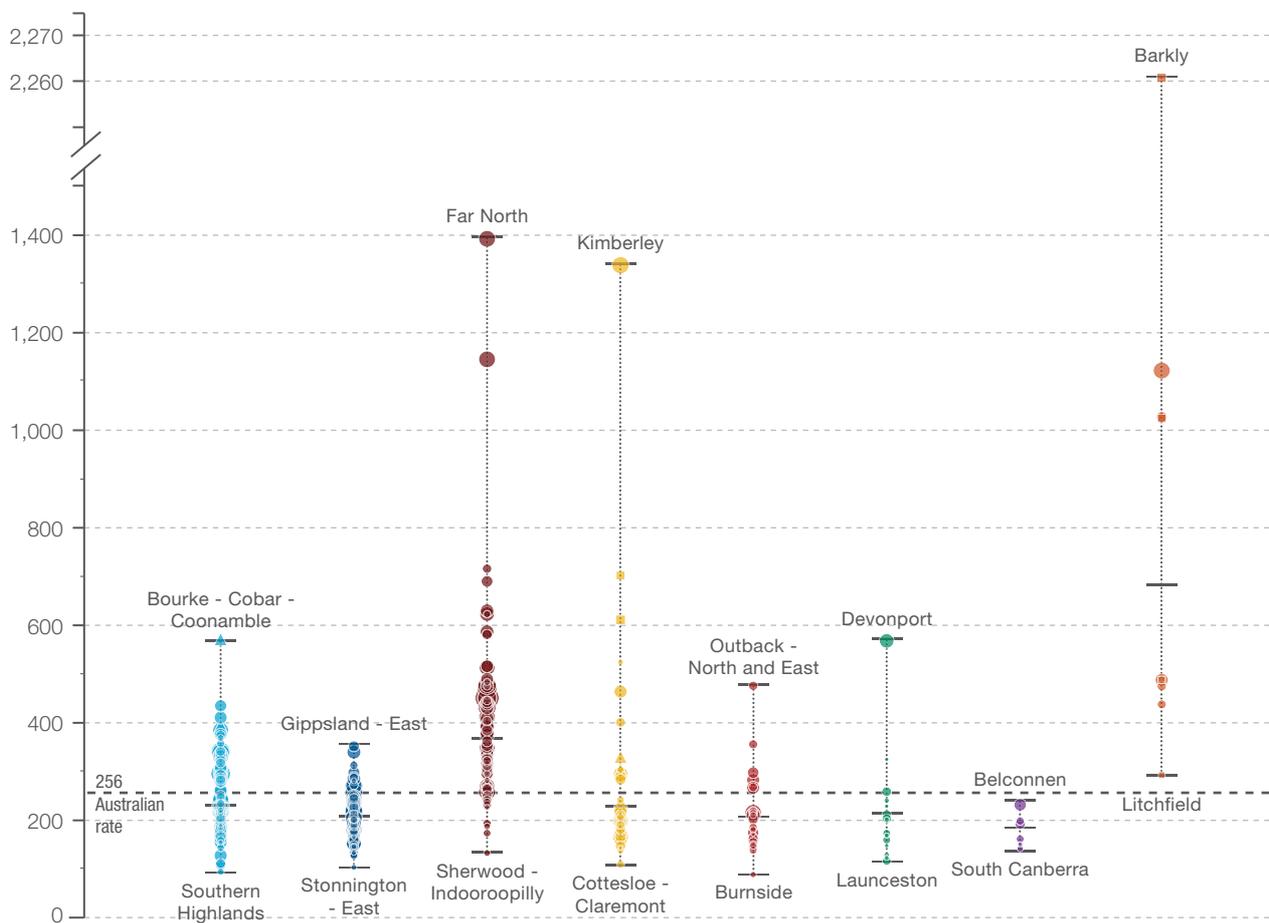
Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Cellulitis

Rates by state and territory

Figure 2.38: Number of potentially preventable hospitalisations – cellulitis per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Highest rate	572	353	1,393	1,339	477	569	233	2,261*
State/territory	231	205	368	231	205	215	185	679
Lowest rate	96	105	134	111	90	118	143	294*
No. hospitalisations	20,407	14,148	19,307	6,221	4,204	1,328	770	1,570



Each circle represents a single SA3. The size indicates the number of hospitalisations.

▲ rate only ■ interpret with caution



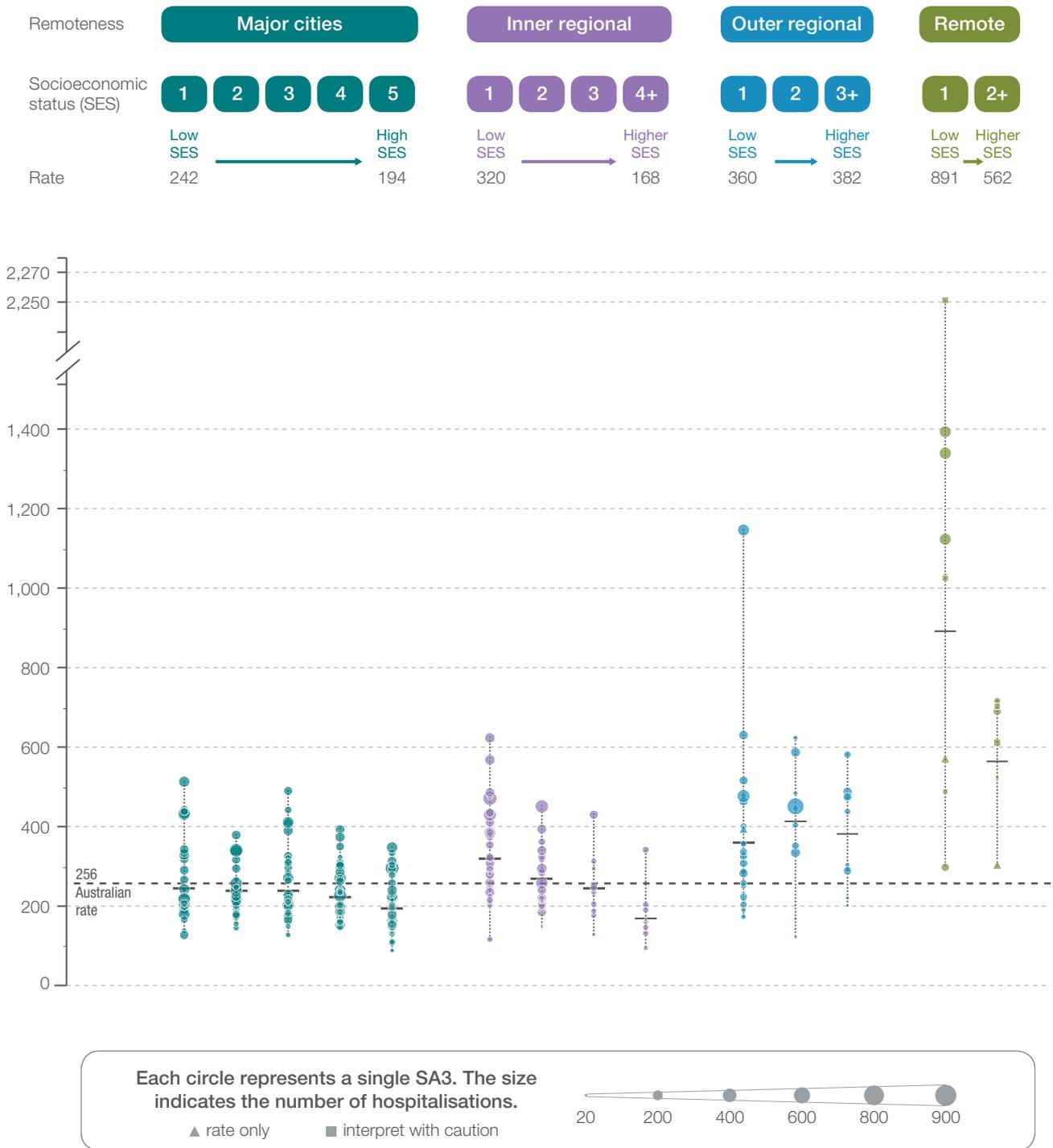
Notes:

Squares (■) and asterisks (*) indicate rates that are more volatile than other rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of hospitalisations are not published for confidentiality reasons. Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Rates by remoteness and socioeconomic status

Figure 2.39: Number of potentially preventable hospitalisations – cellulitis per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18



Notes:

Squares (■) and asterisks (*) indicate rates that are more volatile than other rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of hospitalisations are not published for confidentiality reasons. Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations of 2017 and 2018. For further detail about the methods used, please refer to the Technical Supplement.

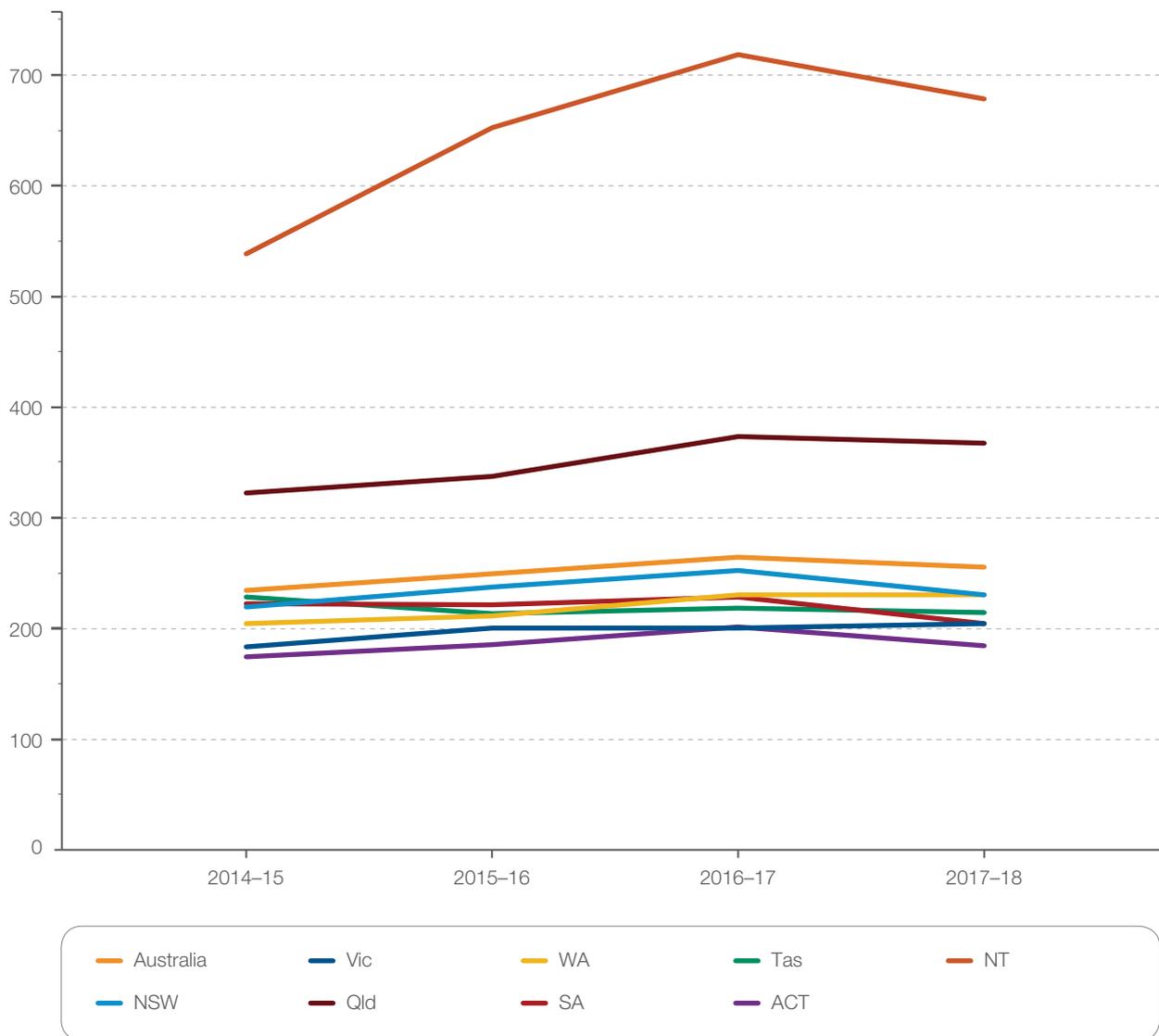
Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Cellulitis

Rates across years

Figure 2.40: Number of potentially preventable hospitalisations – cellulitis per 100,000 people of all ages, age and sex standardised, by state and territory of patient residence, 2014–15 to 2017–18

	2014–15	2015–16	2016–17	2017–18
Highest SA3 rate	2,620*	3,238*	1,543	2,261*
Australian rate	235	250	265	256
Lowest SA3 rate	99	92	82	90
Magnitude of variation	13.3	13.9	18.8	15.5
Magnitude of variation without top & bottom 10% SA3	2.9	2.8	3.0	2.9



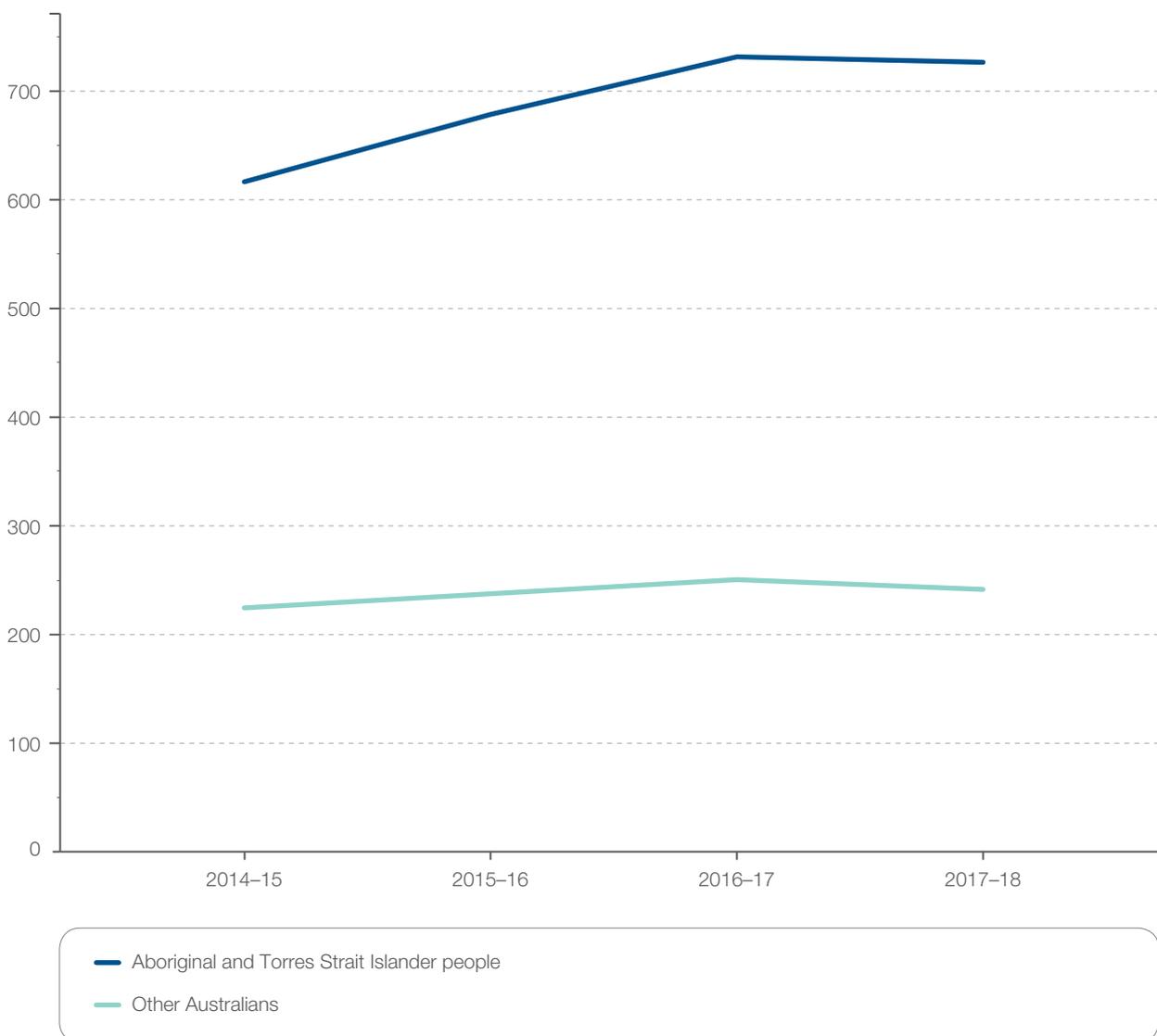
Notes:

The asterisks (*) indicate rates that are considered more volatile than others, and should be interpreted with caution. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia. Population estimates as at 31 December of the relevant year are calculated as the average of the 30 June populations before and after the relevant December. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2014 to 2018.

Rates for Aboriginal and Torres Strait Islander people across years

Figure 2.41: Number of potentially preventable hospitalisations – cellulitis per 100,000 people of all ages, age and sex standardised, by Aboriginal and Torres Strait Islander status, 2014–15 to 2017–18



Notes:

Data by Aboriginal and Torres Strait Islander status should be interpreted with caution as hospitalisations for Aboriginal and Torres Strait Islander patients are under-enumerated, with variation among states and territories. Population estimates as at 31 December of the relevant year are calculated as the average of the 30 June populations before and after the relevant December. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2014 to 2018.

Cellulitis

Resources

- Cellulitis and erysipelas (Antibiotic Guidelines, in eTG complete)⁹
- Cellulitis and other bacterial skin infections, clinical practice guidelines, Royal Children's Hospital Melbourne, rch.org.au/clinicalguide/guideline_index/cellulitis_and_skin_infections
- *Healthy Skin Program: Guidelines for community control of scabies, skin sores, tinea and crusted scabies in the Northern Territory*. Darwin: Northern Territory Department of Health; 2015
- *Housing Strategies that Improve Indigenous Health Outcomes*²⁸
- *CARPA Standard Treatment Manual*, 7th ed. Alice Springs: Remote Primary Health Care Manuals; 2017
- *National Healthy Skin Guideline: For the prevention, treatment and public health control of impetigo, scabies, crusted scabies and tinea for Indigenous populations and communities in Australia*²¹
- Penicillin to prevent recurrent leg cellulitis¹⁹
- Top 10 myths regarding the diagnosis and treatment of cellulitis²⁹
- Community packages to support independence at home, available in some states and territories
- *Cellulitis* (patient fact sheet)³⁰

Australian initiatives

The information in this chapter will complement work already underway to reduce the rate of hospitalisations for cellulitis in Australia. At a national level, this work includes:

- National Partnership Agreement on Remote Indigenous Housing, Council of Australian Governments
- HotNorth collaborative skin health projects, hotnorth.org.au/projects

Many states and territory initiatives are also in place, including:

- Housing for Health in the Aboriginal community, New South Wales
- Integrated Care initiatives, New South Wales
- *Cellulitis* patient fact sheet, Victoria³⁰
- Delivering Connected Care for Complex Patients with Multiple Chronic Needs, Tasmania
- Aboriginal Environmental Health Program, Western Australia.

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Chapter 3

Ear, nose and throat surgery for children and young people

At a glance



Tonsillectomy

Tonsillectomy is used to treat recurrent throat infections (tonsillitis) and obstructive sleep apnoea (OSA), but there are uncertainties about its benefits. It is one of the most common surgical procedures performed in children in Australia.

The Atlas found that, in 2017–18, the rate of hospitalisation for tonsillectomy in children and young people was six times higher in the local area with the highest rate than in the area with the lowest.* It also found that the rate of tonsillectomy hospitalisations increased by 3% between 2012–13 and 2017–18.

More information is needed to ensure evidence-based care for children with recurrent tonsillitis or OSA. Further developing the Australian Society of Otolaryngology Head and Neck Surgery ENT data registry could add to the knowledge base about outcomes for specific patient groups and support more effective peer review of tonsillectomy.

Myringotomy

Myringotomy is another common surgical procedure in young children. It is used to treat otitis media, a middle ear infection that can cause hearing loss.

Myringotomy (with insertion of grommets) is recommended for children who have otitis media with effusion (fluid) and documented hearing loss in both ears for more than three months.

Otitis media is the key cause of hearing loss in Aboriginal and Torres Strait Islander children, who are at risk of earlier, more severe and longer-lasting middle ear disease than other children. This chapter examined rates in Aboriginal and Torres Strait Islander children for the first time in the Atlas series.

The Atlas found that, in 2017–18, the rate of hospitalisation for myringotomy in children and young people was about eight times higher in the local area with the highest rate than in the area with the lowest.* Although the rate for Aboriginal and Torres Strait Islander children was 6% higher than the rate for other children, it was lower than would be expected if surgery rates matched the prevalence of otitis media in this group.

A comprehensive approach combining prevention, early treatment and coordinated management is urgently required to reduce rates of otitis media in Aboriginal and Torres Strait Islander children.

* After standardising to remove age and sex differences between populations.
The Fourth Australian Atlas of Healthcare Variation

Recommendations

The Commission consulted widely, but is solely responsible for making the recommendations; as such, the recommendations may not reflect the views of all contributors to the Atlas.

Tonsillectomy

3a. The Australian and New Zealand Society of Paediatric Otorhinolaryngology to work with relevant clinical colleges to develop clinical guidelines on tonsillectomy in children, and subsequent to this the Commission to develop a clinical care standard with safety and quality indicators.

3b. Health service organisations to:

- i. Conduct audits of indications for tonsillectomy and tonsillectomy rates to monitor variation and provide the results back to clinicians to act upon in line with Action 1.28 of the National Safety and Quality Health Service (NSQHS) Standards

 - ii. Incorporate individual clinicians' audit data as part of re-credentialing processes.
-

Myringotomy

3c. State and territory health departments and health service organisations to set benchmarks for access to paediatric audiology services.

3d. The Australian Government Department of Health to develop and implement two national ear and hearing health performance indicators for Aboriginal and Torres Strait Islander children consistent with the recommendations of the National Aboriginal and Torres Strait Islander Hearing Health Advisory Panel:

- i. Measure the proportion of Aboriginal and Torres Strait Islander children who received an annual ear and hearing health check and the proportion of these who were found to have ear and/or hearing health conditions

 - ii. Measure the proportion of Aboriginal and Torres Strait Islander children who received audiology services and the proportion of these diagnosed with hearing loss.
-

3e. The Australian Government Department of Health, as part of the Roadmap for Hearing Health, to publish data on progress against the integrated national approach to undertaking ear health checks of children aged 0–6, with the goal of every Aboriginal and Torres Strait Islander child having regular ear health checks.

3f. Health service organisations to:

- i. Conduct audits of myringotomy and myringotomy rates to monitor variation and provide the results back to clinicians to act upon in line with Action 1.28 of the NSQHS Standards

 - ii. Incorporate individual clinician's audit data as part of recredentialing processes.
-

3.1 Tonsillectomy hospitalisations, 17 years and under

Why is this important?

Tonsillectomy is one of the most common procedures performed in children in Australia.¹ The rate of tonsillectomy in people of all ages is higher in Australia than in New Zealand or the United Kingdom.² Tonsillectomy is used to treat recurrent throat infections that affect the tonsils (tonsillitis) and obstructive sleep apnoea (OSA), but there are uncertainties about its benefits. There is moderate-quality evidence to support tonsillectomy over watchful waiting in children with recurrent tonsillitis.³ There is also evidence that tonsillectomy benefits some children with OSA, but some children get better without surgery.⁴ Uncertainties about benefits of tonsillectomy can make it difficult for parents to make decisions about treatment.

What did we find?

In 2017–18, the rate of hospitalisation for tonsillectomy in people aged 17 years and under was **6.0 times as high** in the area with the highest rate compared with the area with the lowest rate. Between 2012–13 and 2017–18, the rate of tonsillectomy hospitalisations increased by 3%.

What can be done?

There is an urgent need for information about the short- and long-term outcomes of tonsillectomy. Further developing the ear, nose and throat (ENT) data registry of the Australian Society of Otolaryngology Head and Neck Surgery could capture information on eligible patients, provide information for effective peer review of tonsillectomy and add to the knowledge base about outcomes for specific patient groups. All parents who decide their children should have tonsillectomy should be informed about the registry. If the child meets the registration criteria, parents should be asked if they are willing for the child to be included. Surgeons should contribute data on all consenting patients, and regularly audit and review patient outcome data with their peers.

Other actions to address variation include updating the 2008 Australian clinical practice guidelines, providing information to parents about the risks and benefits of surgery, and encouraging shared decision making.

Tonsillectomy hospitalisations, 17 years and under

Context

The first *Australian Atlas of Healthcare Variation* identified substantial variation in age-standardised hospitalisations for tonsillectomy in children and young people. This variation – 6.5 times as high in the local area (Statistical Area Level 3 – SA3) with the highest rate as in the area with the lowest rate – warrants further investigation.⁵

Tonsillectomy is a surgical procedure to remove the tonsils, which are soft tissue masses on each side at the back of the throat. Tonsils are prone to infection and inflammation that can lead to enlargement. In some children, significant enlargement of the tonsils may cause a range of breathing problems during sleep, including OSA.⁶

Tonsillectomy can be performed with or without surgical removal of the adenoids (adenoidectomy).⁶ Adenoids are glands that sit in the back of the throat behind the nose. Like tonsils, adenoids help defend the body against harmful bacteria and viruses that enter the body through the mouth and nose. An adenotonsillectomy is when the tonsils and the adenoids are removed.

Tonsillectomy is one of the most common procedures performed in children in Australia.¹ The rate of tonsillectomies is higher in Australia than in many reporting Organisation for Economic Co-operation and Development (OECD) countries. In an analysis of OECD data on tonsillectomies per 100,000 people of all ages between 1993 and 2014, the rate in Australia was 1.7 times and 1.9 times as high as the rates in New Zealand and the United Kingdom, respectively.²

Tonsillectomy has traditionally been used to treat recurrent throat infections that affect the tonsils (tonsillitis). In the United States in the past 30 years, there has been a decline in the use of tonsillectomy to treat recurrent tonsillitis and a gradual increase in the use of tonsillectomy to treat OSA.⁶

In Australia, a multi-centre Victorian study of almost 60,000 patients showed that tonsillectomy for OSA had driven an increase in the number of tonsillectomies

between 2010 and 2015.⁷ An accompanying small decline in the rate of tonsillectomies for recurrent tonsillitis led to OSA overtaking throat infections as the main reason for tonsillectomy in Victoria in 2014–15.⁷ The reason for the increase in tonsillectomies for OSA is unclear but could involve greater awareness of the possible links between OSA and learning and behavioural problems.⁷

Recurrent tonsillitis

Compared with no surgery, in children who have frequent tonsillitis, tonsillectomy reduces the number of throat infections, visits to the doctor and school absences in the first year after the procedure, but the benefits do not last.⁸

A Cochrane systematic review of adenotonsillectomy for recurrent tonsillitis in children found that children who had surgery had fewer episodes of sore throat in the first year than those who had non-surgical treatment. However, the effect was small, and many children improved spontaneously without surgery. The authors concluded that the potential benefit of surgery must be weighed against the risks of the procedure, particularly bleeding.³

There are no current Australian or United Kingdom evidence-based guidelines for the role of tonsillectomy in managing recurrent throat infections in children.

A 2018 United States guideline advises that clinicians may recommend tonsillectomy as an option for children who have frequent tonsillitis (seven or more episodes per year, five or more per year for two years, or three or more per year for three years).⁶ The guideline states that patient preference should have a substantial role in the decision.

Obstructive sleep apnoea

Children with OSA have repeated episodes of partial or complete blockage of the upper airways, which can cause problems during sleep, including snoring, gasping or choking, and pauses in breathing.⁶ Untreated OSA in some children may lead to impaired growth, cognitive and behavioural problems, and cardiovascular effects.⁹

OSA is thought to be usually caused by large tonsils and adenoids (adenotonsillar hypertrophy).⁶ It is common in children, with peak incidence between 2 and 8 years of age, most likely due to the large size of tonsils and adenoids compared with the size of the airway.⁹

OSA is more common in obese children, and in children who have Down syndrome, abnormalities of the brain and facial bones, or neuromuscular disorders.¹⁰

General practitioners (GPs) use snoring and sleep-related symptoms to identify children with possible moderate to severe OSA who should be referred for consideration of adenotonsillectomy. Overnight sleep studies that measure obstructive respiratory events per hour are the gold standard for diagnosing OSA.^{6,11} In Australia, sleep studies can only be ordered and assessed by a sleep specialist.¹² OSA can be categorised by this type of sleep study as mild, moderate or severe.

Adenotonsillectomy is generally considered the first-line intervention for children with moderate or severe OSA and enlarged tonsils.⁹ Watchful waiting for six months may be an acceptable option for some otherwise-healthy children with mild or moderate OSA and tolerable symptoms.⁹

A Cochrane systematic review found mixed evidence about the impact of adenotonsillectomy in otherwise-healthy children aged 5–9 years with mild to moderate OSA (diagnosed by sleep study) up to 12 months after the surgery.⁴ It found:

- High-quality evidence that the procedure has no benefit in terms of objective measures of attention and cognitive function compared with watchful waiting
- High-quality evidence that it improves sleep study scores compared with watchful waiting
- Moderate-quality evidence that it is beneficial in terms of symptoms, behaviour and quality of life (as rated by caregivers).

The review noted that, in one key randomised trial (the CHAT study)¹³, sleep study findings returned to normal in 46% of the non-surgical group within seven months, compared with 79% of the surgical group.

Two recent randomised controlled trials examined a gap in evidence – the impact of adenotonsillectomy on young children with OSA. A Swedish study compared surgery with watchful waiting in 60 children aged 2–4 years with mild to moderate OSA. It found no statistically significant difference between the groups in changes in sleep study scores (the primary outcome of the study). However, surgery was more effective than watchful waiting in improving sleep study scores in a small group of children with moderate OSA ($n = 24$). The study also found a statistically significant difference in quality-of-life scores after adenotonsillectomy at six months compared with watchful waiting. The researchers concluded that otherwise-healthy children aged 2–4 years with mild OSA and mild effect on quality of life would benefit from watchful waiting, whereas children with moderate OSA should be considered for surgery.¹⁴

The other study, in Australia, compared outcomes in preschool children with mild to moderate OSA who had early adenotonsillectomy with children on the waiting list who had no surgery. At 12 months, no differences were seen in cognitive function between the two groups. However, children who had adenotonsillectomy had reduced obstructive respiratory events (measured by sleep study) and improved behaviour (rated by parents) compared with children who did not have surgery.¹⁵

Uncertainties about the benefits of tonsillectomy for children with OSA and limited access to formal diagnostic testing can make it difficult for clinicians and parents to make appropriate decisions about treatment. These uncertainties include a lack of evidence about the long-term impact of tonsillectomy¹⁶, and how parents and clinicians can distinguish between simple snoring and OSA in the absence of sleep studies.⁴ The Cochrane review summarised above found that there was inconclusive evidence that children who had been diagnosed with OSA based on clinical grounds alone benefit from tonsillectomy.⁴

Tonsillectomy hospitalisations, 17 years and under

Given the uncertainties around the procedure to treat OSA, the Cochrane review authors suggested that doctors and parents should carefully consider the benefits and risks of surgery versus watchful waiting, because children could get better without treatment.⁴

OSA and children with obesity

OSA is more common in children who are obese: prevalence is 19–61% in children with obesity, compared with 1–6% in children with a healthy weight.¹⁷ Children with obesity are more likely to have severe OSA.⁶

With the prevalence of childhood OSA expected to increase in line with rising obesity levels in many developed countries⁴, the management of obesity-related OSA is a key issue.

A systematic review found that children with OSA who are obese benefited from tonsillectomy. However, the outcome was less satisfactory than in normal-weight children, and there was a higher risk of persistent OSA after surgery (33–76% in children who are obese, compared with 15–37% in normal-weight children).¹⁷ Children with obesity also have a higher risk of respiratory complications immediately after surgery.¹⁸

There is evidence that weight loss can significantly improve OSA symptoms in children and adolescents with obesity, although few studies have been conducted.¹⁷ More research is needed into the effectiveness of weight loss as a treatment for OSA in children.^{4,17} Weight loss is also recommended for children who are obese who still have OSA symptoms after adenotonsillectomy.⁹

Potential harms of tonsillectomy

Tonsillectomy has the highest rate of postoperative complications of all childhood surgical procedures.¹⁹ Complications include respiratory compromise, pain, bleeding, dehydration, nausea and vomiting, speech disorders and, rarely, death.^{6,20} Postoperative bleeding is the most common complication of tonsillectomy and can be life-threatening. Rates of readmission due to bleeding vary in studies from 2% to 5%.¹

Rates of unplanned readmission after tonsillectomy are high in Australia²¹ and internationally.¹⁹ In Australia, in 2015–16, the rate of unplanned readmission after adenotonsillectomy (34.7 per 1,000 separations) was the highest for selected procedures in public hospitals.²²

Why revisit variation in tonsillectomy?

The first Atlas examined age-standardised hospitalisations for tonsillectomy for children aged 17 years and under.

It found that, in 2012–13, the number of tonsillectomy hospitalisations was 6.5 times higher in the area with the highest rate compared with the area with the lowest rate. Rates were highest in inner regional areas and lowest in remote areas. There were no patterns in hospitalisation rates for tonsillectomy according to socioeconomic status.

However, since the first Atlas, there has been evidence of differences in rates of tonsillectomy according to socioeconomic advantage. In 2017–18, people living in the most socioeconomically disadvantaged areas had the lowest rate of separations for tonsillectomy (2.1 per 1,000 population), compared with rates of 2.5–2.7 per 1,000 population for areas with higher socioeconomic status.²³

Given the wide variation seen in the first Atlas, and evidence of differences in access to tonsillectomy according to socioeconomic status, it is important to revisit the item to provide a comparison over time, particularly to see whether local variations continue.

It is also important to revisit variation in tonsillectomy because Australia continues to have a higher rate than New Zealand or the United Kingdom², and because of uncertainties about the benefits of tonsillectomy and the lack of current Australian guidelines.

About the data

Data are sourced from the National Hospital Morbidity Database, and include admitted patients in both public and private hospitals.

Rates are based on the number of hospitalisations for tonsillectomy per 100,000 people aged 17 years and under in 2012–13, 2015–16 and 2017–18.

Because a record is included for each hospitalisation for the procedure, rather than for each patient, patients hospitalised for the procedure more than once in the financial year will be counted more than once.

The analysis and maps are based on the usual residential address of the patient and not the location of the hospital.

Rates are age and sex standardised to allow comparisons between populations with different age and sex structures.

Data quality issues – for example, the extent of identification of Aboriginal and Torres Strait Islander status in datasets – could influence the variation seen.

Some private hospitals in Tasmania admit public patients under a contractual arrangement. There is a small over-count of hospitalisations for the procedure in Tasmania because hospitalisations were recorded by both contracting hospital and contracted hospital.

What do the data show?

Magnitude of variation

In 2017–18, there were 42,509 hospitalisations for tonsillectomy, representing 750 hospitalisations per 100,000 people aged 17 years and under (the Australian rate). The median age for patients was 5 years, and this was similar across Australia.

The number of hospitalisations for tonsillectomy across 320* local areas (Statistical Area Level 3 – SA3) ranged from 305 to 1,836 per 100,000 people. The rate was **6.0 times as high** in the area with the highest rate compared with the area with the lowest rate. The number of hospitalisations varied across states and territories, from 387 per 100,000 people in the Northern Territory to 850 per 100,000 people in the Australian Capital Territory (Figures 3.3–3.6).

After the highest and lowest 10% of results were excluded and 256 SA3s remained, the number of hospitalisations per 100,000 people was 2.2 times as high in the area with the highest rate compared with the area with the lowest rate.

Analysis by remoteness and socioeconomic status

Rates for tonsillectomy hospitalisations were higher in inner regional areas than outer regional areas, major cities and remote areas (Figure 3.7). There was no clear pattern according to socioeconomic status in major cities and inner regional areas. In outer regional areas, rates were higher in areas of socioeconomic disadvantage. In remote areas, rates were lower in areas of socioeconomic disadvantage.

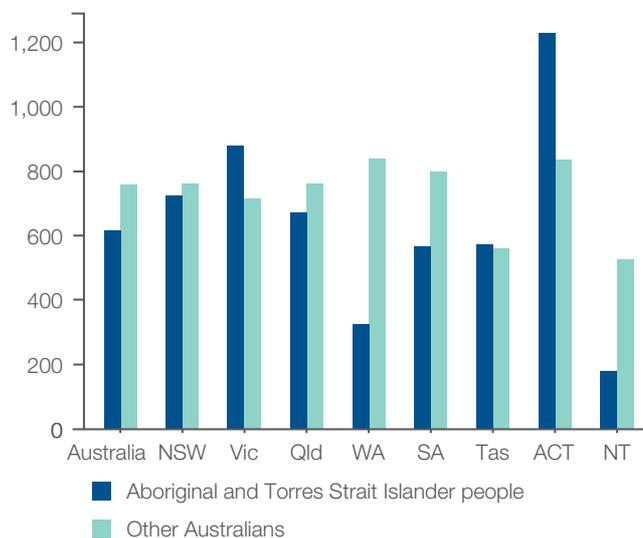
* There are 340 SA3s. For this item, data were suppressed for 20 SA3s due to a small number of hospitalisations and/or population in an area.

Tonsillectomy hospitalisations, 17 years and under

Analysis by Aboriginal and Torres Strait Islander status

In 2017–18, the rate for Aboriginal and Torres Strait Islander children (620 per 100,000 people) was 18% lower than the rate for other Australians (759 per 100,000 people) (Figure 3.1).

Figure 3.1: Number of hospitalisations for tonsillectomy per 100,000 people aged 17 years and under, age and sex standardised, by state and territory of patient residence, by Aboriginal and Torres Strait Islander status, 2017–18

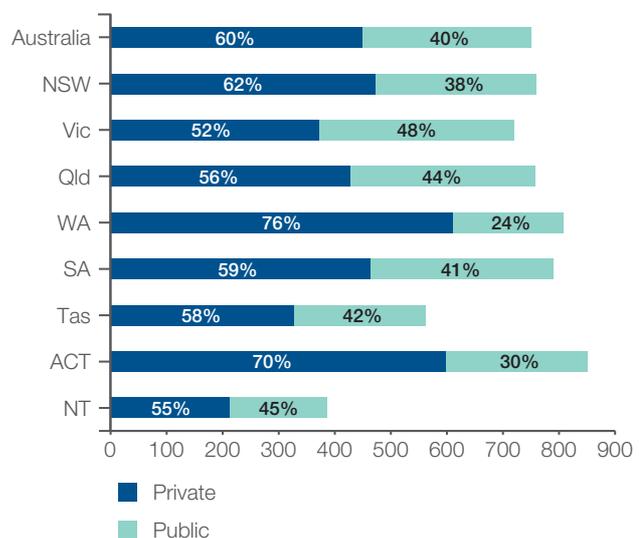


The data for Figures 3.1 and 3.2, and the data and graphs for analysis by Primary Health Networks are available at safetyandquality.gov.au/atlas

Analysis by patient funding status

Overall, 60% of hospitalisations for tonsillectomy were for privately funded patients. This proportion varied from 52% in Victoria to 76% in Western Australia (Figure 3.2).

Figure 3.2: Number of hospitalisations for tonsillectomy per 100,000 people aged 17 years and under, age and sex standardised, by state and territory of patient residence, by patient funding status, 2017–18



Notes:

Data by Aboriginal and Torres Strait Islander status should be interpreted with caution as hospitalisations for Aboriginal and Torres Strait Islander people are under-enumerated, with variation among states and territories.

Hospitalisations for public patients do not incur a charge to the patient or a third-party payer (for example, a private health insurance fund), unlike hospitalisations for private patients.

Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018.

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Trends over time

Between 2012–13 and 2017–18, the rate of tonsillectomy hospitalisations per 100,000 people nationally increased by 3% (Figure 3.8).

For Aboriginal and Torres Strait Islander children, the rate of tonsillectomy hospitalisations per 100,000 people nationally increased by 58% during this period (Figure 3.9).

Interpretation

Variation in rates of tonsillectomy is likely to be due to geographical differences in the factors discussed below.

Variations between areas may not directly reflect the practices of the clinicians who are based in these areas. The analysis is based on where people live rather than where they obtain their health care. Patients may travel outside their local area to receive care.

Rates of underlying disease

Variation is warranted and desirable when it reflects variation in the underlying need for care. However, use of tonsillectomy may not match patterns of patient need.

There are indications that rates of sore throat and rates of obstructive sleep symptoms may be higher in areas of severe socioeconomic disadvantage.⁷ Indigenous children from the Torres Strait and Northern Peninsula Area had a relatively high prevalence of symptoms suggestive of obstructive sleep problems in a 2004 study²⁴, although research in this area is lacking.²⁵

Clinical decision-making

High or low rates of tonsillectomy in some areas may be related to clinical practice that is not supported by evidence.

A recent Australian study found that around one-quarter of patients with serious recurrent episodes of tonsillitis were not referred for a tonsillectomy.²⁶ A similar pattern has been observed in the United Kingdom, where a study found that selection for tonsillectomy did not regularly follow evidence-based criteria.²⁷

There is no current Australian evidence-based guideline for the use of tonsillectomy in managing recurrent throat infections and OSA in children. The most recent national document is a 2008 position paper on indications for tonsillectomy and adenotonsillectomy.²⁸

Differences in diagnosing OSA may contribute to variation. The gold standard for diagnosing OSA before tonsillectomy is an overnight inpatient sleep study.^{1,6,10} The test is expensive, and there is growing demand for use of the limited facilities that provide sleep studies for children in Australia^{1,10,29}, demonstrating the need for appropriate patient selection.

The referral process for sleep studies may also contribute to variation. Under the Medicare Benefits Schedule, a paediatric sleep specialist is required to review a child with OSA symptoms before and after the sleep study. These requirements may reduce appropriate access to sleep studies and increase waiting times for review of ENT symptoms – for example, in rural and remote areas.³⁰

Tonsillectomy hospitalisations, 17 years and under

Access to tonsillectomy services

Ability to pay out-of-pocket costs for tonsillectomy is likely to be lower in areas of socioeconomic disadvantage.

Research has identified increasing rates of adenotonsillectomy in children who live in areas of socioeconomic advantage, suggesting increasing demand for tonsillectomy in more advantaged areas and lack of access to surgery in disadvantaged groups.⁷

This pattern was not reflected across all Atlas data, apart from remote areas, where the rate was lower in areas of socioeconomic disadvantage.

Distance to travel to see ENT surgeons may affect clinical decision-making. Remote and rural patients often have to travel a long way to see a specialist. This may influence a surgeon to recommend surgery earlier, because of difficulties for the patient in returning for follow-up visits.

For metropolitan patients, healthcare access may depend on cost as well as health literacy (which may be influenced by cultural and language barriers).

Parents of Aboriginal and Torres Strait Islander children may not seek care for OSA because of lack of awareness of potential implications for the child's health. Support from family and friends is an important factor in influencing the uptake of therapy.³¹ Improved access to ENT surgeons through government programs may have contributed to the increase in tonsillectomy rates for Aboriginal and Torres Strait Islander children between 2012–13 and 2017–18.

Rates of private health insurance and waiting times

Access to a hospital bed is likely to be one of the largest influences on variation in care.

Having private health insurance allows affordable access to the procedure in private hospitals. Atlas data found that, overall, 60% of hospitalisations for tonsillectomy were for privately funded patients.

This aligns with other admitted patient data that showed that, in 2017–18, 50% more tonsillectomies were performed in private hospitals than in public hospitals (1.5 operations per 1,000 population in private hospitals, compared with 1.0 per 1,000 population in public hospitals).²³

In 2017–18, the median waiting time for elective tonsillectomy in a public hospital was 121 days, ranging from 23 days in the Northern Territory to 293 days in New South Wales and 326 days in the Australian Capital Territory.³² Having private health insurance significantly reduces waiting time for a tonsillectomy in a public hospital. In 2015–16, public patients waited almost three times longer than privately insured patients to have a tonsillectomy in a public hospital (median waiting times 138 days and 49 days, respectively).³³ However, shorter waiting times for private patients may reflect severe OSA or other medical problems.

Long waits for surgery in public hospitals may mean that some parents choose to pay for their child's operation in the private system rather than having the child continue to have OSA or tonsillitis.

Lower rates of tonsillectomy among Aboriginal and Torres Strait Islander children may reflect lower rates of private health insurance cover in this population.

Parents' preference

Consumers' understanding of the options, and risks and benefits of tonsillectomy may affect variation. Parents may not understand that symptoms might resolve without treatment. They may also have unrealistic beliefs that tonsillectomy will always cure OSA.⁶ (Tonsillectomy does not resolve around 17–40% of uncomplicated cases of OSA.²¹)

The first Atlas recommended that the Australian Commission on Safety and Quality in Health Care review patient information about tonsillectomy in Australia.⁵ The review found that most (37 out of 50) resources examined did not include a description of what would occur if recurrent tonsillitis and OSA were not treated.³⁴

Similarly, an Australian study found that most online consumer health information about adenotonsillectomy for children with OSA was highly favourable about the potential benefits of surgery and downplayed potential complications or non-surgical options.³⁵ Since this study, Safer Care Victoria has published a fact sheet to help GPs and families discuss the risks and benefits of tonsillectomy.³⁶

Addressing variation

More information is needed to ensure that evidence-based care is provided to children with recurrent tonsillitis or OSA. There is an urgent need for information about the short- and long-term outcomes of tonsillectomy for different indications.

Further developing the ENT data registry of the Australian Society of Otolaryngology Head and Neck Surgery could capture information on eligible patients, provide comparative feedback to ENT surgeons on their rates of tonsillectomy and add to the knowledge base about outcomes for specific groups of patients. All parents who decide that their children should have tonsillectomy should be informed about the ENT data registry and, if their child meets the registration criteria, should be asked if they are willing for them to be included. Surgeons undertaking this procedure should contribute data on eligible patients to the ENT data registry and participate in routine peer review.

Other options to address variation include the following:

Improve evidence base, and access to diagnosis and appropriate treatment

- Improve the evidence behind the indications for surgery and non-surgical options to inform clinical practice
- Update Australian clinical practice guidelines, although in the United Kingdom variation in rates of tonsillectomy increased despite publication of guidelines³⁶
- Disseminate the guidelines and promote uptake, including through parent-focused education and an awareness strategy using fact sheets, social media and other channels

- Ensure that the updated guidelines include specific and targeted recommendations to increase access to tonsillectomy among Aboriginal and Torres Strait Islander children who need the procedure
- Prioritise public health, clinical research and intervention programs that aim to address disparity and improve Aboriginal and Torres Strait Islander children's access to surgery and other treatments
- Ensure that culturally capable and publicly funded ENT services are embedded in the Aboriginal and Torres Strait Islander community care sector, and that there are processes to ensure appropriate selection and triage for remote Aboriginal and Torres Strait Islander children to have ENT surgery in public hospitals.

Improve data about access

- Improve data about access to tonsillectomy, such as ENT surgeon distribution, rates of private health insurance by SA3 and waiting lists.

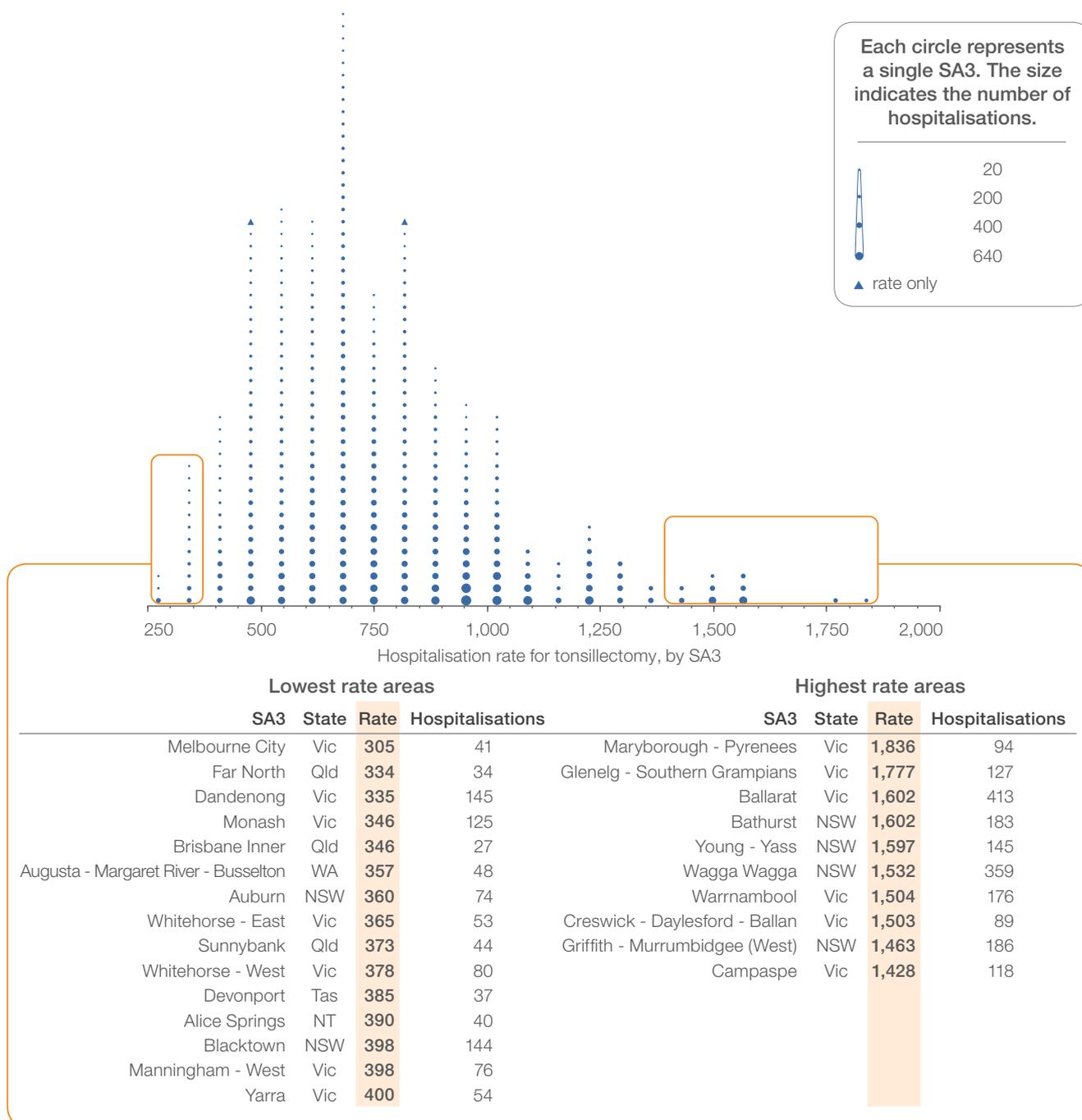
Improve shared decision making

- Encourage shared decision making so that rates of the procedure are based on patients' needs and assessment of benefits and risks³⁷
- Support shared decision making by giving patients accurate information, and informing GPs to avoid over- or underestimating the risks and benefits of tonsillectomy, which could drive variation in referral to an ENT surgeon; Safer Care Victoria's decision-making tools for GPs and parents for tonsillectomy (see 'Australian initiatives' on page 190) provide this opportunity for shared decision making and could be disseminated nationally
- Raise awareness of the health risks of untreated OSA and the benefits of treatment as an important first step for Aboriginal and Torres Strait Islander people to seek treatment.³¹

Tonsillectomy hospitalisations, 17 years and under

Rates by local area

Figure 3.3: Number of hospitalisations for tonsillectomy per 100,000 people aged 17 years and under, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18



Notes:

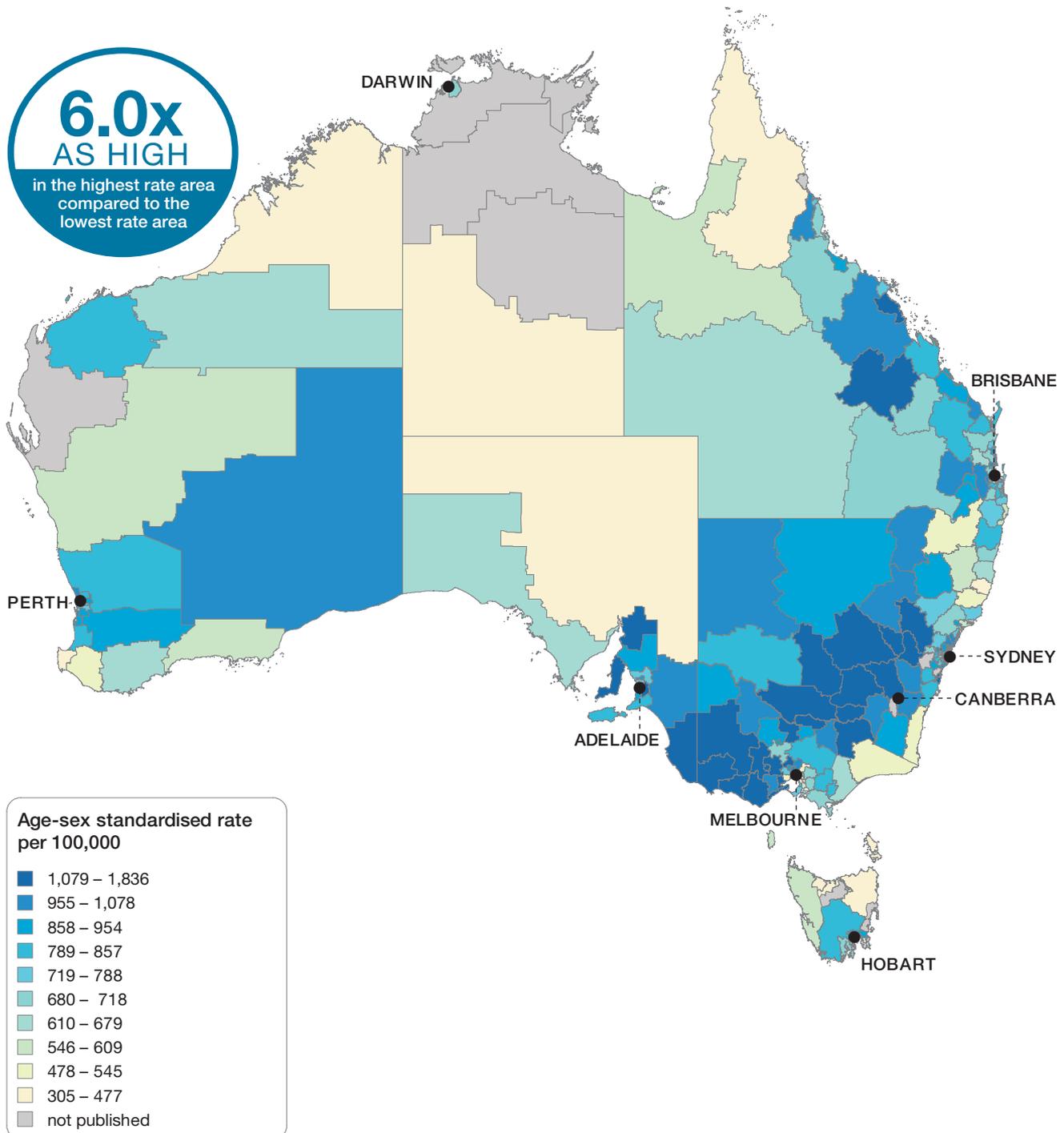
Triangles (▲) indicate SA3s where only rates are published. The numbers of hospitalisations are not published for confidentiality reasons. Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations as at 30 June of 2017 and 2018.

Tonsillectomy hospitalisations, 17 years and under

Rates across Australia

Figure 3.4: Number of hospitalisations for tonsillectomy per 100,000 people aged 17 years and under, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18



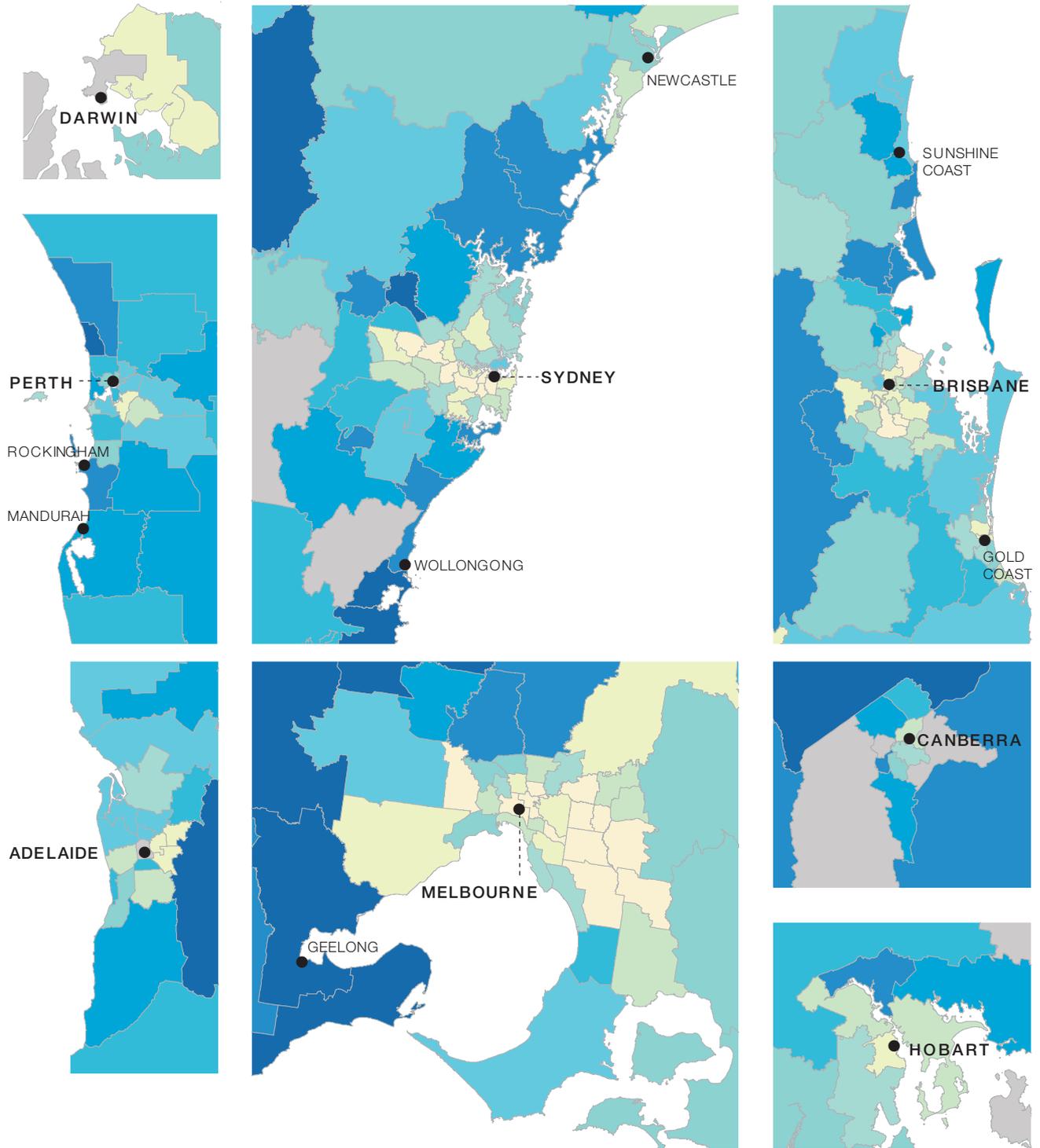
Notes:

Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Rates across capital city areas

Figure 3.5: Number of hospitalisations for tonsillectomy per 100,000 people aged 17 years and under, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18



Notes:

Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018. For further detail about the methods used, please refer to the Technical Supplement.

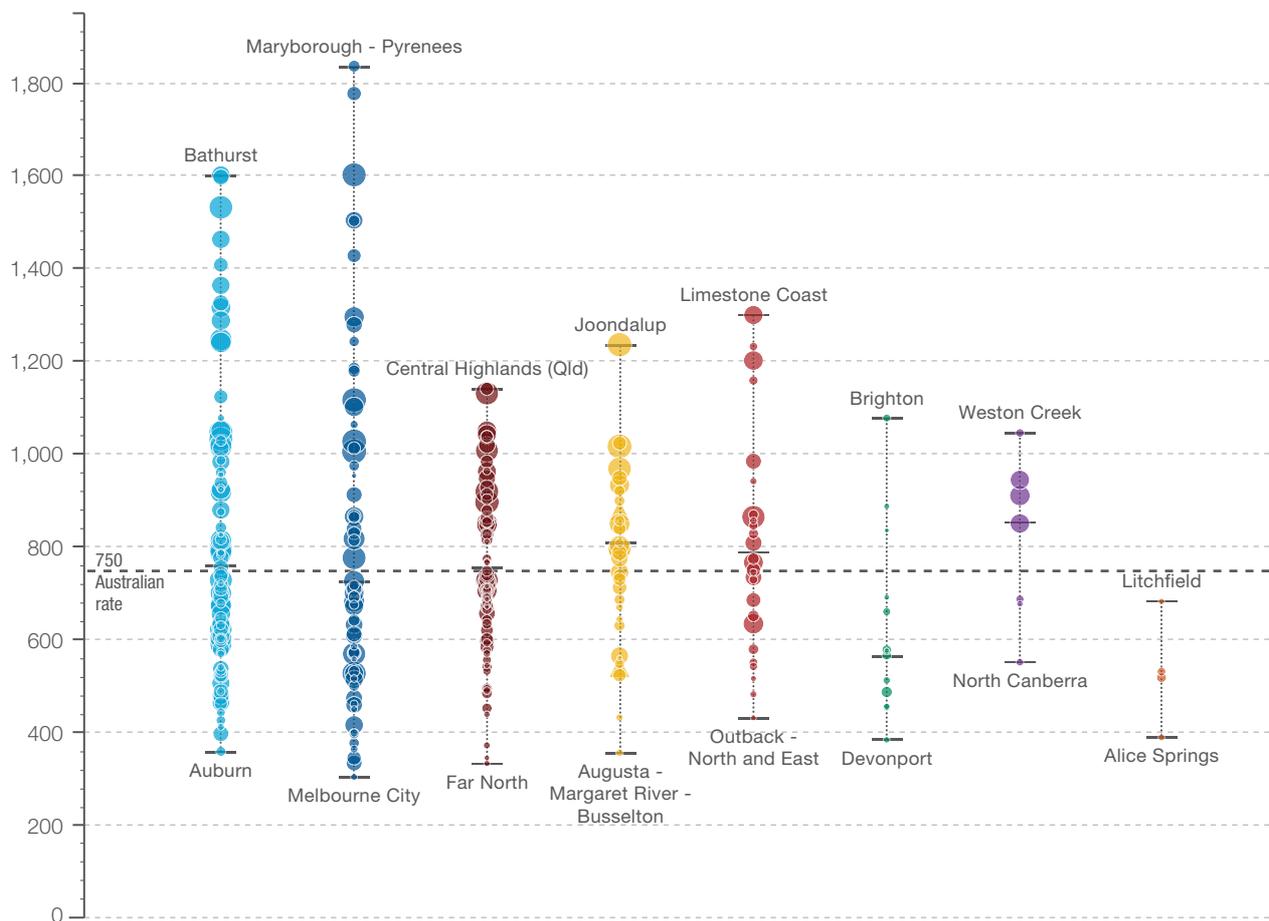
Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Tonsillectomy hospitalisations, 17 years and under

Rates by state and territory

Figure 3.6: Number of hospitalisations for tonsillectomy per 100,000 people aged 17 years and under, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Highest rate	1,602	1,836	1,141	1,236	1,300	1,078	1,046	683
State/territory	760	721	757	807	789	562	850	387
Lowest rate	360	305	334	357	432	385	552	390
No. hospitalisations	13,666	10,296	8,892	4,971	2,932	631	838	251



Each circle represents a single SA3. The size indicates the number of hospitalisations.

▲ rate only



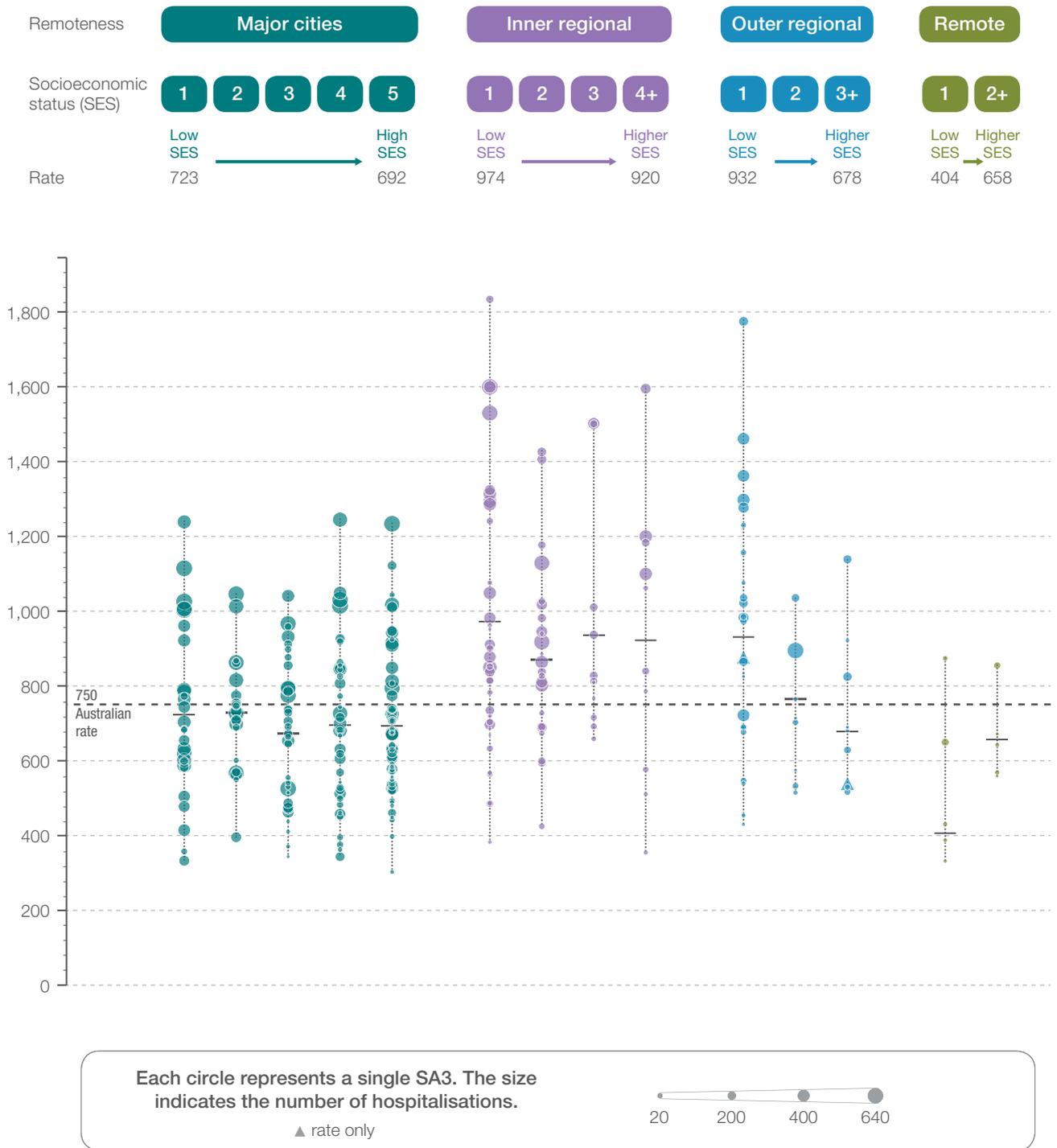
Notes:

Triangles (▲) indicate SA3s where only rates are published. The numbers of hospitalisations are not published for confidentiality reasons. For the NT, the territory rate is lower than the minimum SA3 rate as it includes SA3 rates that are not published for reliability reasons. Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Rates by remoteness and socioeconomic status

Figure 3.7: Number of hospitalisations for tonsillectomy per 100,000 people aged 17 years and under, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18



Notes:

Triangles (▲) indicate SA3s where only rates are published. The numbers of hospitalisations are not published for confidentiality reasons. Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018. For further detail about the methods used, please refer to the Technical Supplement.

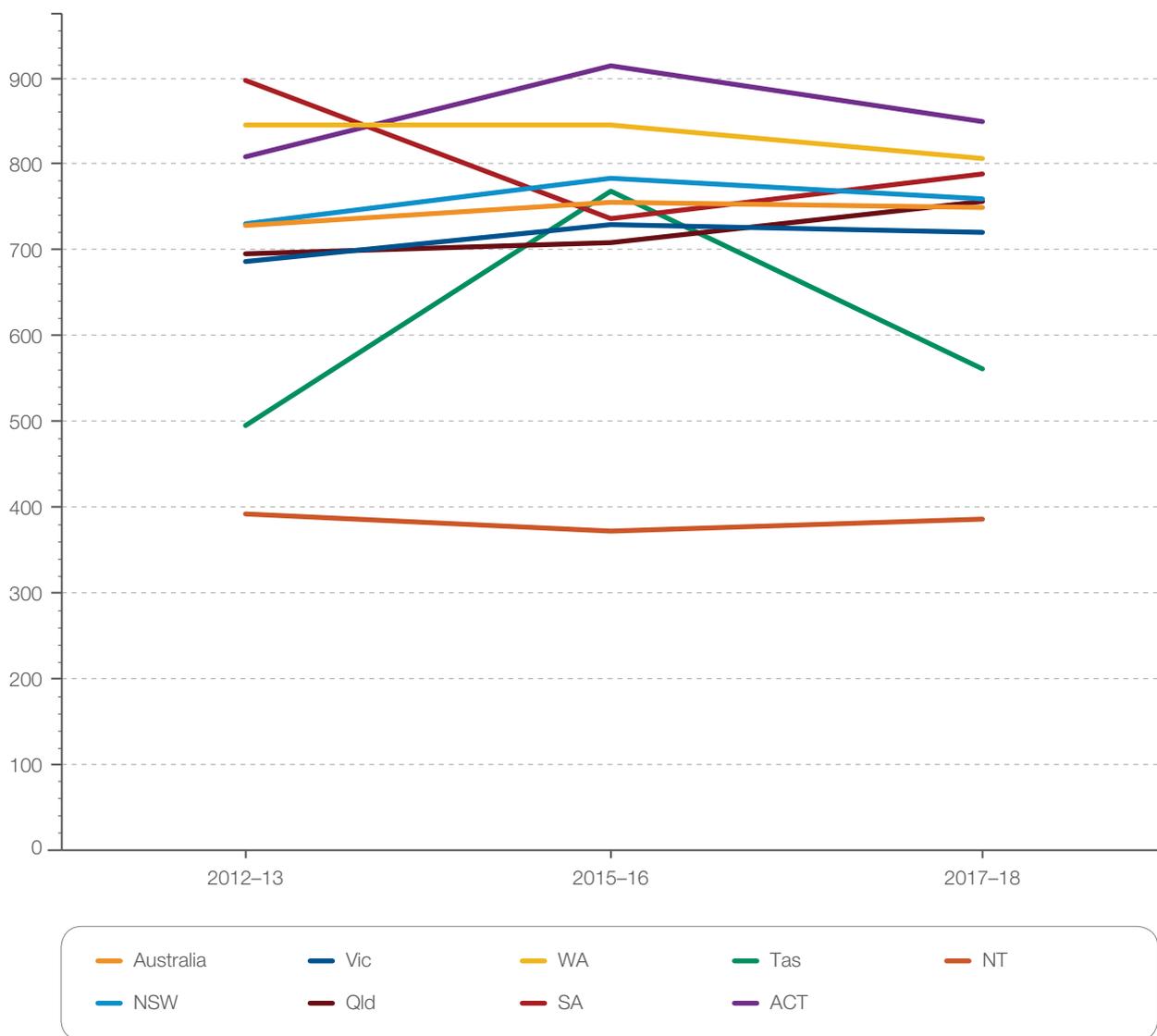
Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Tonsillectomy hospitalisations, 17 years and under

Rates across years

Figure 3.8: Number of hospitalisations for tonsillectomy per 100,000 people aged 17 years and under, age and sex standardised, by state and territory of patient residence, 2012–13, 2015–16 and 2017–18

	2012–13	2015–16	2017–18
Highest SA3 rate	2,414	1,753	1,836
Australian rate	729	756	750
Lowest SA3 rate	218	258	305
Magnitude of variation	11.1	6.8	6.0
Magnitude of variation without top & bottom 10% SA3	2.3	2.3	2.2



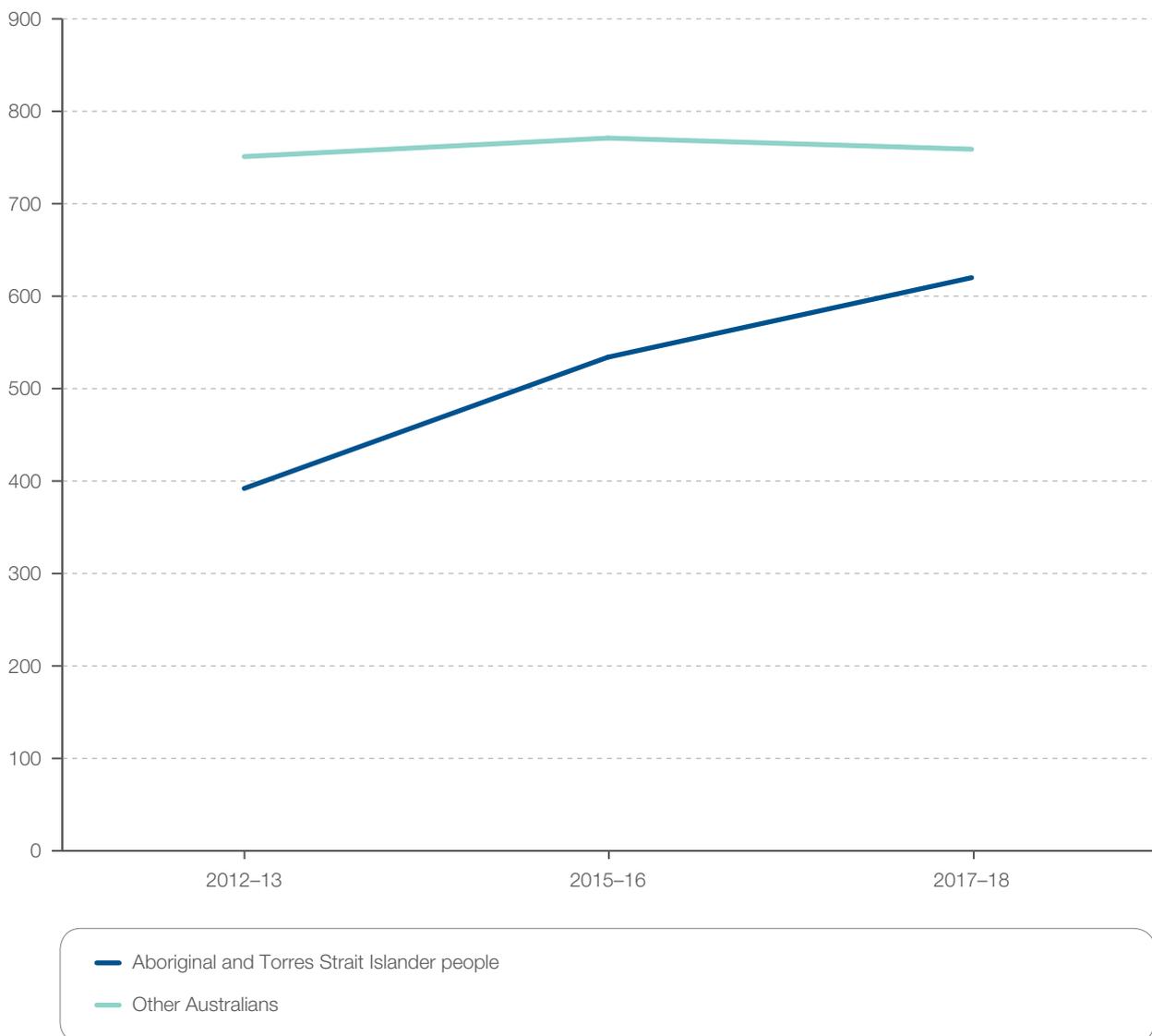
Notes:

Population estimates as at 31 December of the relevant year are calculated as the average of the 30 June populations before and after the relevant December. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2012, 2013 and 2015 to 2018.

Rates for Aboriginal and Torres Strait Islander people across years

Figure 3.9: Number of hospitalisations for tonsillectomy per 100,000 people aged 17 years and under, age and sex standardised, by state and territory of patient residence, by Aboriginal and Torres Strait Islander status, 2012–13, 2015–16 and 2017–18



Notes:

Data by Aboriginal and Torres Strait Islander status should be interpreted with caution as hospitalisations for Aboriginal and Torres Strait Islander people are under-enumerated among states and territories, with variation among states and territories. Population estimates as at 31 December of the relevant year are calculated as the average of the 30 June populations before and after the relevant December. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2012, 2013 and 2015 to 2018.

Tonsillectomy hospitalisations, 17 years and under

Resources

- Clinical practice guideline: tonsillectomy in children (update), American Academy of Otolaryngology – Head and Neck Surgery⁶
- Plain language summary for patients: tonsillectomy in children, American Academy of Otolaryngology – Head and Neck Surgery³⁸
- Tonsillectomy for obstructive sleep-disordered breathing or recurrent throat infection in children, Agency for Healthcare Research and Quality⁸

Resources for GPs

Resources to support GPs in shared decision making with families were introduced in November 2018, as part of the Statewide Paediatric HealthPathways Project, under the Victorian and Tasmanian Primary Health Network Alliance partnership (vtphna.org.au/our-work/best-practice-prevention-management-and-support/statewide-paediatric-healthpathways-project). The clinical pathways and associated referral pages cover:

- Snoring and obstructive sleep apnoea in children
- Sore throat in children.

Australian initiatives

ENT surgical registry

The Australian Society of Otolaryngology Head and Neck Surgery operates a surgical registry that collects data on ENT surgical procedures. The registry, which has been operating for two years, collects data on tonsillectomy, insertion of grommets and septoplasty.

Shared decision-making resources

Safer Care Victoria has developed a suite of consumer resources to support patient decision-making for tonsillectomy (bettersafercare.vic.gov.au/resources/tools/making-a-decision-about-tonsillectomy), including a fact sheet.³⁵

HealthPathways

HealthPathways is a free online health information portal with evidence-based guidance on the assessment, management and referral of common clinical conditions.³⁹ These resources, which have been developed locally across Australia, have the potential to improve the standardisation of treatment.⁴⁰

Paediatric sleep unit in Darwin

A paediatric sleep service was established as part of the local Darwin adult sleep clinic in 2016. The service, which provides telehealth consultations by paediatric sleep physicians, and diagnostic and treatment services, has improved the management of sleep issues, including OSA, in Aboriginal and Torres Strait Islander children.⁴¹

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3.2 Myringotomy hospitalisations, 17 years and under

Why is this important?

Myringotomy is one of the most common surgeries performed in young children. It is used to treat otitis media, an infection of the middle ear that can cause hearing loss.

Myringotomy (with insertion of grommets) is recommended for children who have otitis media with effusion (fluid) and documented hearing loss in both ears for more than three months.^{1,2} The likelihood of benefit of myringotomy increases with the severity of the hearing loss.²

The first Atlas found wide variation in the rates of myringotomy, and a correlation between higher rates of myringotomy and higher socioeconomic status in some areas.

There is continuing concern about variation in myringotomy rates that might not align with the expected prevalence of the conditions being treated. Otitis media is the key cause of hearing loss in Aboriginal and Torres Strait Islander children, who are at risk of earlier, more severe and longer-lasting middle ear disease than other children.³ This is the first Atlas to examine rates in Aboriginal and Torres Strait Islander children.

What did we find?

In 2017–18, the number of hospitalisations for myringotomy across 314 local areas (Statistical Area Level 3 – SA3) ranged from 198 to 1,607 per 100,000 people aged 17 years and under. The rate was **8.1 times as high** in the area with the highest rate compared with the area with the lowest rate.

The rate for Aboriginal and Torres Strait Islander children was 6% higher than the rate for other children. It is less than what would be expected if surgery rates matched the prevalence of otitis media in Aboriginal and Torres Strait Islander children.

What can be done?

A comprehensive approach combining prevention, early treatment and coordinated management is urgently required to reduce rates of otitis media in Aboriginal and Torres Strait Islander children. Prevention strategies in Aboriginal and Torres Strait Islander communities must take a wide-ranging, whole-of-community approach driven by primary health care.⁴ Strategies to ensure that children who need myringotomy surgery receive it include improving the collection and monitoring of data on ear health and hearing, obtaining better data on access to myringotomy and surgery outcomes, improving training of general practitioners (GPs) and other health professionals in diagnostic techniques, and updating Australian clinical guidelines.

Myringotomy hospitalisations, 17 years and under

Context

The first *Australian Atlas of Healthcare Variation* identified substantial variation in hospitalisations for myringotomy in children and young people in 2012–13. This variation – up to 6.8 times as high in the area with the highest rate compared with the area with the lowest – warrants further investigation.⁵

Myringotomy is a procedure to make a small cut in the eardrum (tympanic membrane) to drain fluid from the middle ear. It usually involves inserting grommets (tympanostomy tubes) to keep the cut open, and to allow ventilation and drainage of the middle ear.⁶

It is most commonly used to treat otitis media, an infection of the middle ear that is common in young children. Otitis media is a spectrum of diseases, ranging from otitis media with effusion (OME; where fluid builds up behind the eardrum) to acute otitis media (AOM; painful infection of the middle ear) and chronic suppurative otitis media (CSOM; perforated eardrum with chronic discharge).⁷

Myringotomy with insertion of grommets is one of the most common surgical procedures performed in children in Australia.⁷ It is most often performed in children aged 0–4 years.⁸

This Atlas again maps hospitalisation rates for myringotomy in children and young people (aged 17 years and under), and also examines rates in Aboriginal and Torres Strait Islander children and young people.

In 2016, the Medicare Benefits Schedule Review Taskforce recommended further work to examine the reasons for geographic variation in rates of myringotomy, particularly the low rates in the Northern Territory, where lack of service provision could have serious implications for hearing problems in Aboriginal and Torres Strait Islander communities.⁹

Otitis media in Aboriginal and Torres Strait Islander children

Aboriginal and Torres Strait Islander children experience the highest rate of middle ear disease in the world.⁷ Otitis media is the key cause of hearing loss in Aboriginal and Torres Strait Islander children, who are at risk of earlier, more severe and longer-lasting middle ear disease than other children.³

Recurrent episodes of acute otitis media (AOM) can lead to chronic suppurative otitis media (CSOM; ‘runny ear’), which causes chronic discharge through a perforation in the eardrum. CSOM is the most disabling form of otitis media and is most likely to persist without treatment.¹⁰ The discharge from CSOM can last for years and can cause permanent hearing loss. The prevalence of CSOM in Aboriginal and Torres Strait Islander children declined from 24% in 2001 to 14% in 2012.¹¹ This is still higher than the World Health Organization’s measure of 4% prevalence that indicates a ‘massive public health problem’.¹²

Hearing loss in the critical first 1,000 days of life can have a devastating impact on Aboriginal and Torres Strait Islander children that can continue into adulthood. It can affect speech and language development, leading to problems in education, including language development, inattention, truancy and early school leaving.¹³

There are national guidelines on the management of otitis media in Aboriginal and Torres Strait Islander populations.² The priority for primary care programs for Aboriginal and Torres Strait Islander people is to improve identification of children with otitis media, hearing loss, or speech and language problems, and to offer early and effective guideline-recommended care.

Place of myringotomy in therapy

Myringotomy with grommets is an effective procedure for some children who have had OME for more than three months.¹⁴ It may decrease episodes in some children who have recurrent AOM, although evidence is limited.¹⁵ Guidelines do not recommend the procedure as a first-line treatment for either condition in most cases¹⁶, nor myringotomy without insertion of grommets.²

Otitis media with effusion

OME, also known as glue ear, causes a build-up of fluid (effusion) in the middle ear. It has been described as an insidious disease that may be overlooked because it usually has no symptoms apart from hearing loss.¹⁶ OME is often found in children after an episode of AOM.¹⁷

In most cases, OME resolves without treatment within three months.¹ However, OME persists in at least 25% of children, and can cause ongoing hearing loss, and problems with language, education and behaviour.¹⁶

Clinical practice guidelines note there is strong evidence to support watchful waiting for three months for children who do not have other risk factors (such as speech delays) to see if OME resolves without surgery. The guidelines recommend myringotomy (with insertion of grommets) for children who have OME in both ears for more than three months and documented hearing loss.^{1,2,16,18}

Myringotomy with grommets achieves a modest improvement in hearing for the first 6–9 months compared with watchful waiting.¹⁴ The likelihood of benefit increases with the severity of the hearing loss.² The procedure has also been found to prevent fluid build-up in the middle ear (while the grommets are in place).¹

Acute otitis media

AOM is one of the most common reasons for severe pain in babies and children. It is an infection of the middle ear that comes on suddenly and causes pain, fever, a red and bulging eardrum, and fluid in the middle ear.²

United States clinical practice guidelines advise that clinicians may offer myringotomy with insertion of grommets as an option for a child who has had three episodes of AOM in six months or four in a year.¹⁹ The American Academy of Otolaryngology recommends (on the basis of strong evidence) that grommets should not be inserted for recurrent AOM unless middle ear effusion is also present at the time of assessment.¹⁹

A Cochrane systematic review found that children who received grommets were less likely to have recurrences of AOM than those who had active monitoring and placebo medication (low to very low-quality evidence). The effect was modest, with only one fewer episode of AOM at six months in children who received grommets.¹⁵

The review also found that it was uncertain whether grommets were more effective than antibiotics in preventing recurrent AOM. It pointed out that none of the studies had looked at how grommets affected the severity of AOM recurrences or antibiotic use. This was important because grommets could reduce the severity of AOM recurrences and allow the use of antibiotic eardrops, reducing the risk of side effects and antimicrobial resistance associated with oral antibiotics.¹⁵

The reviewers concluded that the modest potential benefits of grommets need to be balanced against the risks of both the procedure and any surgical intervention in young children, and called for new and high-quality randomised controlled trials.¹⁵

Myringotomy hospitalisations, 17 years and under

What are the potential harms?

The most common postoperative complication of grommet insertion is discharge through the grommets (otorrhoea), which occurs in about one-quarter of children while the grommet is in place.²⁰ Eardrum perforations, which may require repair, occur in about 2% of children who have short-term grommets.²⁰

Preventing otitis media

Otitis media may be prevented to some extent through improved living standards, maternal education, breastfeeding, a smoke-free environment and pneumococcal vaccination.² The pneumococcal conjugate vaccine reduces the risk of AOM and recurrent AOM in children.²

Prevention should have a whole-of-community approach driven by primary health care.²

Why revisit variation in myringotomy?

The first *Australian Atlas of Healthcare Variation* examined hospitalisations for myringotomy for people aged 17 years and under.⁵ It found that, in 2012–13, the number of myringotomy hospitalisations across 308 local areas (SA3s) ranged from 205 to 1,398 per 100,000 people aged 17 years and under.

The first Atlas found a correlation between higher rates of myringotomy and higher socioeconomic status in metropolitan, inner regional and remote areas. This correlation was reversed in outer regional areas, which had lower rates of surgery than other remote categories.

Given the wide variation seen in the first Atlas, it is important to revisit the item to provide a comparison over time, particularly to see whether variations between local areas (relatively high or low rates compared with others) continue. Examining rates over time improves the rigour of data.

There is also continuing concern about variation in myringotomy rates that might not align with the expected prevalence of the conditions being treated.

In 2016, the Medicare Benefits Schedule Review Taskforce highlighted the need for further work to explore the finding in the first Atlas of geographical variation in rates of myringotomy, including higher rates on the North Shore of Sydney, and in Adelaide and Perth.⁹

This Atlas also examines rates in Aboriginal and Torres Strait Islander children and young people, given the high burden of disease and low rates of myringotomy in this group.

About the data

Data are sourced from the National Hospital Morbidity Database, and include admitted patients in both public and private hospitals.

Rates are based on the number of hospitalisations for myringotomy per 100,000 people aged 17 years and under in 2012–13, 2015–16 and 2017–18.

Because a record is included for each hospitalisation for the procedure, rather than for each patient, patients hospitalised for the procedure more than once in the financial year will be counted more than once.

The analysis and maps are based on the usual residential address of the patient and not the location of the hospital.

Rates are age and sex standardised to allow comparisons between populations with different age and sex structures.

Data quality issues – for example, the extent of identification of Aboriginal and Torres Strait Islander status in datasets – could influence variations seen.

Some private hospitals in Tasmania admit public patients under a contractual arrangement. There is a small over-count of hospitalisations for the procedure in Tasmania because hospitalisations are recorded by both contracting hospital and contracted hospital.

What do the data show?

Magnitude of variation

In 2017–18, there were 34,755 hospitalisations for myringotomy, representing 600 hospitalisations per 100,000 people aged 17 years and under (the Australian rate). The median age for patients was 3 years, and this was similar across Australia.

The number of hospitalisations for myringotomy across 314* local areas (Statistical Area Level 3 – SA3) ranged from 198 to 1,607 per 100,000 people aged 17 years and under. The rate was **8.1 times as high** in the area with the highest rate compared with the area with the lowest rate. The number of hospitalisations varied across states and territories, from 458 per 100,000 people in the Northern Territory to 895 in South Australia (Figures 3.12–3.15).

After the highest and lowest 10% of results were excluded and 252 SA3s remained, the number of hospitalisations per 100,000 people was 2.3 times as high in the area with the highest rate compared with the area with the lowest rate.

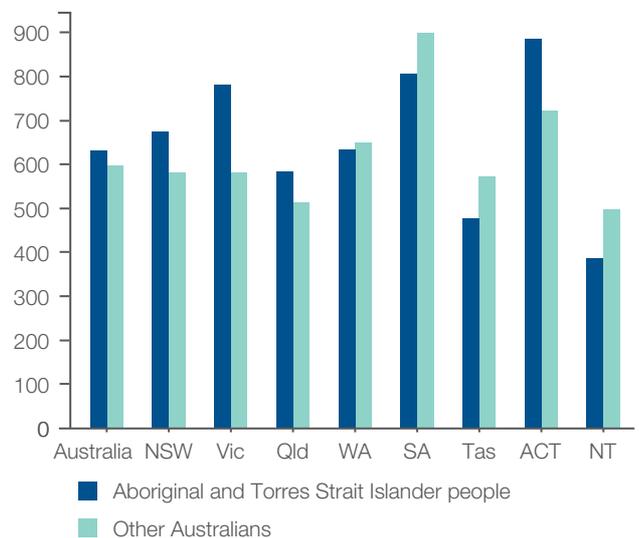
Analysis by remoteness and socioeconomic status

Rates for myringotomy hospitalisations were higher in inner regional areas than elsewhere. There was a pattern of higher rates with higher socioeconomic status in major cities and inner regional areas; the reverse pattern was seen in outer regional areas. No socioeconomic pattern was seen in remote areas (Figure 3.16).

Analysis by Aboriginal and Torres Strait Islander status

In 2017–18, the rate for Aboriginal and Torres Strait Islander people aged 17 years and under (632 per 100,000 people) was 6% higher than the rate for other people of the same age (598 per 100,000 people) (Figure 3.10).

Figure 3.10: Number of hospitalisations for myringotomy per 100,000 people aged 17 years and under, age and sex standardised, by state and territory of patient residence, by Aboriginal and Torres Strait Islander status, 2017–18



The data for Figure 3.10 are available at safetyandquality.gov.au/atlas

* There are 340 SA3s. For this item, data were suppressed for 26 SA3s due to a small number of hospitalisations and/or population in an area.

Notes:

Data by Aboriginal and Torres Strait Islander status should be interpreted with caution as hospitalisations for Aboriginal and Torres Strait Islander people are under-enumerated, with variation among states and territories.

Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018.

For further detail about the methods used, please refer to the Technical Supplement.

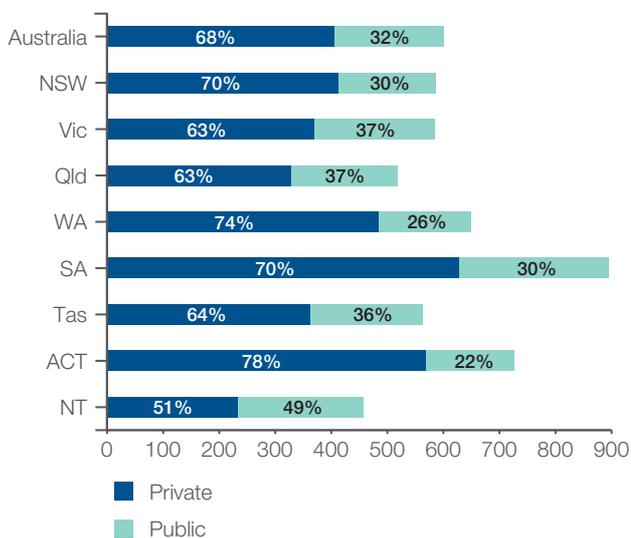
Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Myringotomy hospitalisations, 17 years and under

Analysis by patient funding status

In 2017–18, overall, 68% of hospitalisations for myringotomy were for privately funded patients. This proportion varied from 51% in the Northern Territory to 78% in the Australian Capital Territory (Figure 3.11).

Figure 3.11: Number of hospitalisations for myringotomy per 100,000 people aged 17 years and under, age and sex standardised, by state and territory of patient residence, by patient funding status, 2017–18



The data for Figure 3.11, and the data and graphs for analysis by Primary Health Networks are available at safetyandquality.gov.au/atlas

Trends over time

Between 2012–13 and 2017–18, the rate of myringotomy hospitalisations per 100,000 people aged 17 years and under, nationally, decreased by 4%. The rate increased from 625 per 100,000 people aged 17 years and under in 2012–13 to 628 in 2015–16, before falling to 600 in 2017–18 (Figure 3.17).

For Aboriginal and Torres Strait Islander people, the rate of myringotomy hospitalisations per 100,000 people aged 17 years and under, nationally, increased by 30% between 2012–13 and 2017–18. The rate increased from 488 in 2012–13 to 550 in 2015–16, and rose again to 632 in 2017–18 (Figure 3.18).

Interpretation

Variation in rates of myringotomy is likely to be due to geographical differences in the factors discussed below.

Variation between areas may not directly reflect the practices of the clinicians who are based in these areas. The analysis is based on the usual residential address of the patient and not the location of the hospital. Patients may travel outside their local area to receive care.

Rates of underlying disease

Variation is warranted and desirable when it reflects variation in the underlying need for care.

Australia's Health 2018 reported that, between July 2014 and June 2016, the overall rate of myringotomy and tympanoplasty procedures for children aged 0–14 years was similar for Aboriginal and Torres Strait Islander children (5.6 per 1,000) and other children (5.7 per 1,000).²¹ However, ear disease is more common in Aboriginal and Torres Strait Islander children; if not treated, it can have devastating educational and social consequences. The burden

Notes:

Hospitalisations for public patients do not incur a charge to the patient or a third-party payer (for example, a private health insurance fund), unlike hospitalisations for private patients.

Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018.

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

of disease from otitis media in Aboriginal and Torres Strait Islander children is 8.5 times as high as in other children.²¹ Also, there is substantial under-reporting of hearing impairment in the Aboriginal and Torres Strait Islander population.²²

A Western Australian study examining Aboriginal and Torres Strait Islander children's access to surgery for otitis media found that children from disadvantaged backgrounds (Aboriginal and other children) had higher rates of hospitalisation for otitis media but lower rates of grommet insertion than children from advantaged backgrounds. It found that the rates of grommet surgery increased with greater socioeconomic advantage and were higher for children living in major cities than in remote areas, even though the disease burden was greater in socioeconomically disadvantaged families.²³

This is consistent with a New South Wales study that found that the rates of grommet surgery in Aboriginal and Torres Strait Islander children aged under 4 years were around two-thirds of the rates in other children. This 'significant inequality' in grommet surgery between Aboriginal and Torres Strait Islander and other children was due to differences in socioeconomic status and geographical remoteness.²⁴

The findings of this Atlas have shown a 30% increase in the national myringotomy rates in Aboriginal and Torres Strait Islander children between 2012–13 and 2017–18.

Although the 2017–18 Atlas data show that the myringotomy rate for Aboriginal and Torres Strait Islander children is 6% higher than the rate for other children, it does not match the rate that would be expected if surgery rates matched the prevalence of otitis media in Aboriginal and Torres Strait Islander children.

Clinical decision-making

High or low rates of myringotomy in some areas may be related to clinical practice that is not supported by evidence-based guidelines.

The only current national Australian guidelines on the management of otitis media in children are clinical care guidelines on the management of otitis media in Aboriginal and Torres Strait Islander populations², which were developed in 2010 and updated in 2017.

Guidelines developed in the United States¹⁹ and the United Kingdom¹⁶ also guide practice in Australia.

Despite the availability of guidelines, it can be challenging for clinicians to advise parents about treatment because recommendations vary depending on the child's age, the condition, the risk of complications and parents' preferences.⁷

There is also concern that clinicians may interpret and apply guidelines from the United States and the United Kingdom differently, and this may lead to inconsistency in care.²⁵

Parents' preferences

Consumers' understanding of the options, and risks and benefits, of myringotomy may affect variation.

Clinicians may recommend watchful waiting in line with clinical guidelines, but ultimately parents make treatment decisions and may push for surgical intervention, often after months of experiencing the social, financial and emotional impacts of caring for a child with recurrent otitis media.²⁵

A qualitative study of Australian parents who had a child booked to have grommet surgery found that parents had been frustrated with watchful waiting and the requirement for a minimum number of episodes of otitis media a year before referral to an ear, nose and throat (ENT) surgeon. Some parents who were unhappy with their GP's response had pushed for a referral or had shopped around for another GP who would refer for surgery. All parents in the study expected that surgery would improve their child's symptoms and quality of life; some parents believed that surgery would cure their child.²⁵

Myringotomy hospitalisations, 17 years and under

Parents of Aboriginal and Torres Strait Islander children may feel less empowered to push for their child to have a myringotomy because of a lack of culturally safe services.²⁶

Diagnostic skills and training

Early detection of chronic otitis media is vital to prevent hearing loss in children.³ Otitis media is often diagnosed and managed in general practice.²⁷ There are concerns that GPs may over- or under-diagnose OME, partly as a result of challenges in accurate diagnosis.²⁷

Clinical guidelines recommend the use of two diagnostic tools – pneumatic otoscopy and tympanometry – to accurately detect fluid in the middle ear.¹ A small qualitative Australian study reported that some GPs believe that pneumatic otoscopy and tympanometry may not be practical in general practice and that the techniques were not essential to diagnosing otitis media. It also found that there was a lack of training for GPs in these techniques and that GPs might need to be convinced of the benefits of using these techniques to detect otitis media in general practice.²⁷

Access to audiology services

The availability of audiology services may affect the timely detection of otitis media and rates of myringotomy. Audiology services can be used to triage children and select those requiring specialist review.²⁸

Access to myringotomy services

Access to myringotomy surgery may be affected by the availability of ENT specialists, which varies across states and territories. Australian Government Department of Health figures show that, in 2016, there were 460 ENT specialists (also known as otolaryngologists) in Australia, of whom 85% worked in a major city and 0.2% worked in the most remote areas.²⁹ South Australia had the highest ratio of otolaryngologists to population (2.3 per 100,000 people), compared with the Northern Territory, which had the lowest ratio (0.8 per 100,000 people).²⁹ These figures largely reflect surgeons' primary places of practice.

Atlas data show that South Australia had the highest number of myringotomy hospitalisations (895 per 100,000 people aged 17 years and under) of any state or territory, and the Northern Territory had the lowest (458).

Distance to travel to see ENT surgeons may affect clinical decision-making. Remote and rural patients often have to travel a long way to see a specialist. These factors may influence a surgeon to recommend surgery earlier, due to difficulties in their patient returning for follow-up visits. Health literacy, cultural and language barriers may affect access in some areas.

Rates of private health insurance and waiting times

Having private health insurance allows affordable access to the procedure in private hospitals. Atlas data found that, overall, 68% of hospitalisations for myringotomy were for privately funded patients.

This aligns with other admitted patient data showing that, in 2017–18, the rate of myringotomy performed in private hospitals was almost double the rate performed in public hospitals (1.1 operations per 1,000 people in private hospitals, compared with 0.6 in public hospitals).³⁰

Having private health insurance significantly reduces the waiting time for a myringotomy in a public hospital. In 2015–16, public patients waited 3 times longer than privately insured patients to have a myringotomy in a public hospital (median waiting time 63 days versus 21 days).³¹

In areas of socioeconomic disadvantage, the burden on the public system is higher, and public patients may have no other option but to access the private system as self-funded patients rather than wait for surgery in the public system and risk hearing loss, and speech and language delays.

Addressing variation

Aboriginal and Torres Strait Islander children

Interventions to improve prevention, diagnosis and treatment of otitis media in Aboriginal and Torres Strait Islander children are a priority.

A comprehensive approach combining prevention, early treatment and coordinated management is required to address the disparity in rates of otitis media between Aboriginal and Torres Strait Islander children and other children.⁴

Primary prevention includes working with families to encourage breastfeeding, encourage healthy eating, reduce exposure to second-hand smoke, clear nasal passages, seek early medical assessment and encourage vaccination.²

Otitis media prevention must include a wide-ranging, whole-of-community approach driven by primary health care. A central part of community messaging must be awareness of the devastating implications of hearing loss at an early age.²

Once otitis media develops, medical management should be in line with the *Recommendations for Clinical Care Guidelines on the Management of Otitis Media in Aboriginal and Torres Strait Islander Populations*.²

Specific interventions could include the following:

Improved monitoring of ear health

- Improve data collection to monitor the national prevalence of ear disease, geographic distribution, wait times between referrals, and whether timely and appropriate treatments are being delivered
- Undertake annual national reporting of readily available data on hospital treatment and interventions for Aboriginal and Torres Strait Islander children with middle ear disease and hearing loss
- Develop national ear and hearing health performance indicators.

Training and workforce innovations

- Train GPs at registrar level to use pneumatic otoscopy
- Primary care networks to train all staff in appropriate otoscopy use, including encouraging and supporting development of Aboriginal and Torres Strait Islander staff in ear health
- Increase the use of alternative health professionals for ear examination, such as speech pathologists and audiologists, who could perform pneumatic otoscopy and tympanometry screening in at-risk populations. Audiologists can provide an initial assessment before a child is referred to an ENT specialist and may be more available than ENT specialists, particularly outside major urban centres³
- Use innovation in training Aboriginal and Torres Strait Islander health workers on country to be knowledge bearers and health guides to ENT access
- Focus on recruiting ENT surgeons to work in remote areas of Australia where there is reduced access to surgery.

Clinical guidelines

- Update Australian clinical practice guidelines, stratified for at-risk groups, with efforts to disseminate the guidelines and promote uptake, including parent-focused education and awareness through use of fact sheets, social media and other channels
- Ensure that guidelines are practical and appropriate for rural and remote practice, and match availability of equipment.

Myringotomy hospitalisations, 17 years and under

Improved healthcare pathways

- Develop accelerated ENT pathways specifically for Aboriginal and Torres Strait Islander people
- Develop culturally safe care pathways, such as the Australian Government's Eye and Ear Surgical Support Program, which provides wraparound care for the patient and their carer when accessing ear surgery
- Improve coordination of ENT outreach services to better accommodate patient needs.

Support for shared decision making

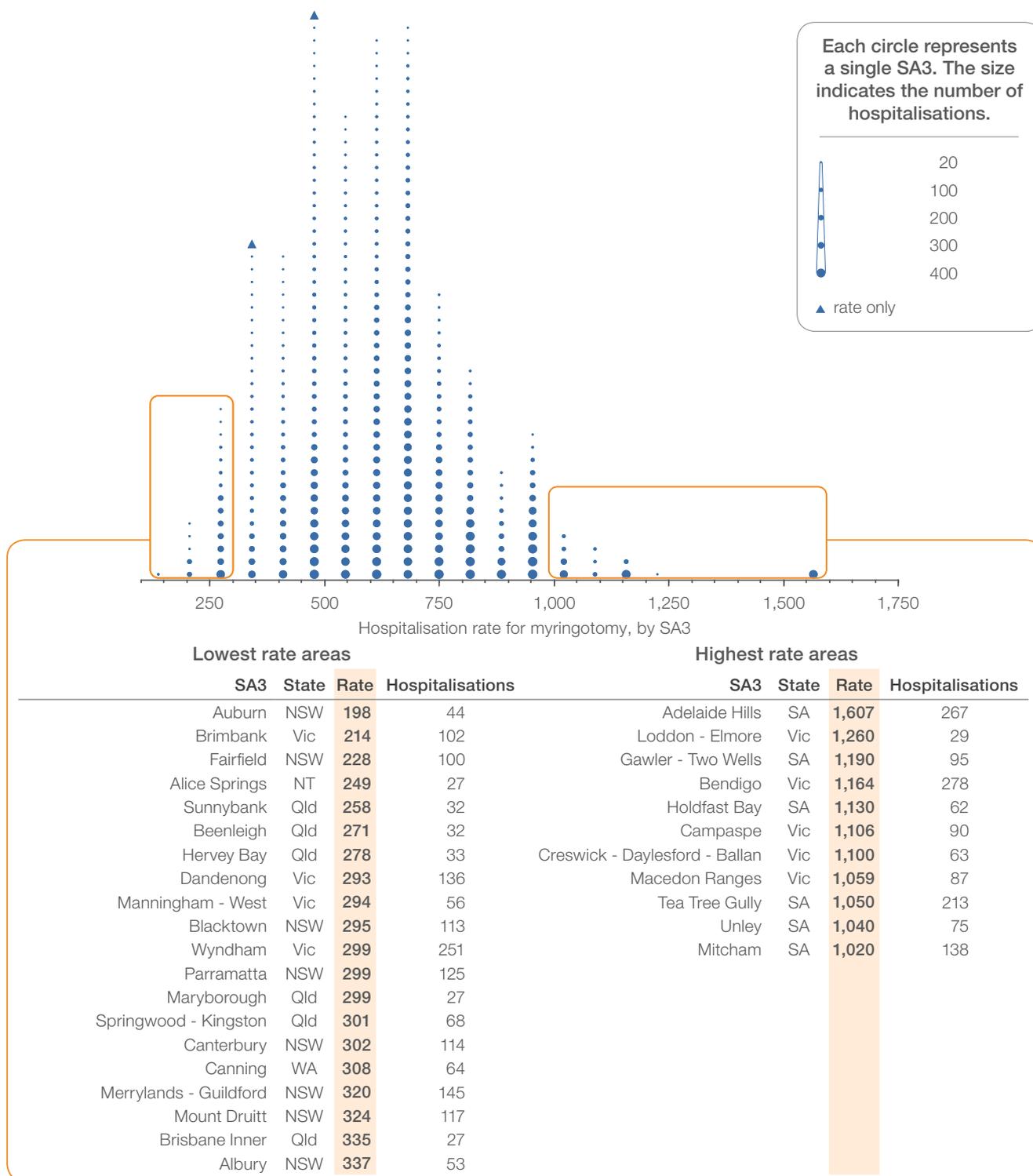
- Support shared decision making to establish what level of variation is appropriate based on patients' needs and assessment of risk.³² Supporting shared decision making means giving patients accurate information, as well as informing GPs to avoid over- or underestimating the risks and benefits of myringotomy, which is likely to drive variation in referral to an ENT surgeon.

Improved data collection

- Improve data about access to myringotomy, such as the distribution of ENT surgeons and length of waiting lists. This would focus efforts on improving access in areas with the lowest rates of myringotomy. Some of these efforts could include financial incentives to improve access to surgery in areas that have low rates
- Further develop the Australian Society of Otolaryngology Head and Neck Surgery data registry to record patient outcomes after surgery (see 'Australian initiatives' on page 210).

Rates by local area

Figure 3.12: Number of hospitalisations for myringotomy per 100,000 people aged 17 years and under, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18



Notes:

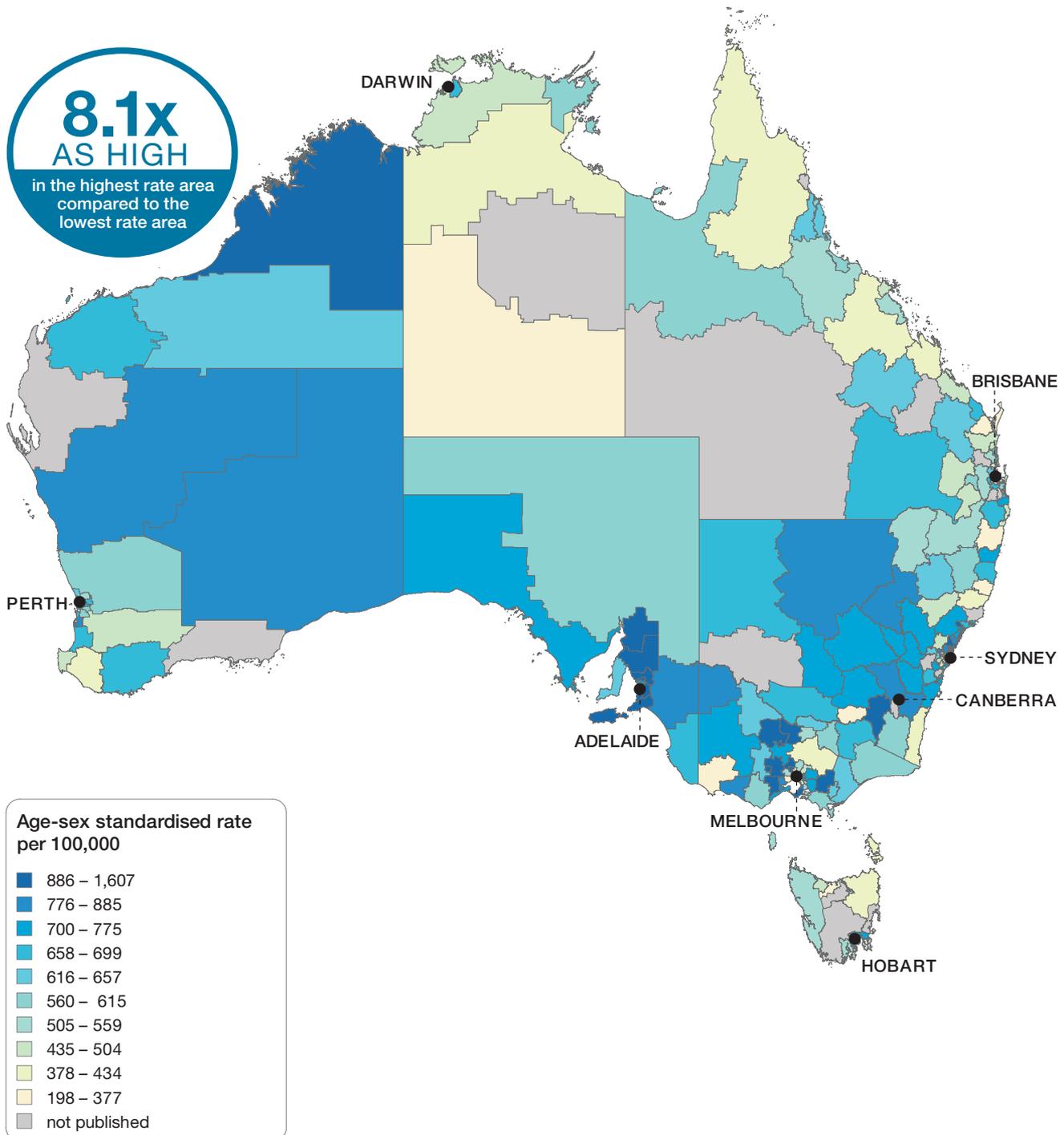
Triangles (▲) indicate SA3s where only rates are published. The numbers of hospitalisations are not published for confidentiality reasons. Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Myringotomy hospitalisations, 17 years and under

Rates across Australia

Figure 3.13: Number of hospitalisations for myringotomy per 100,000 people aged 17 years and under, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18



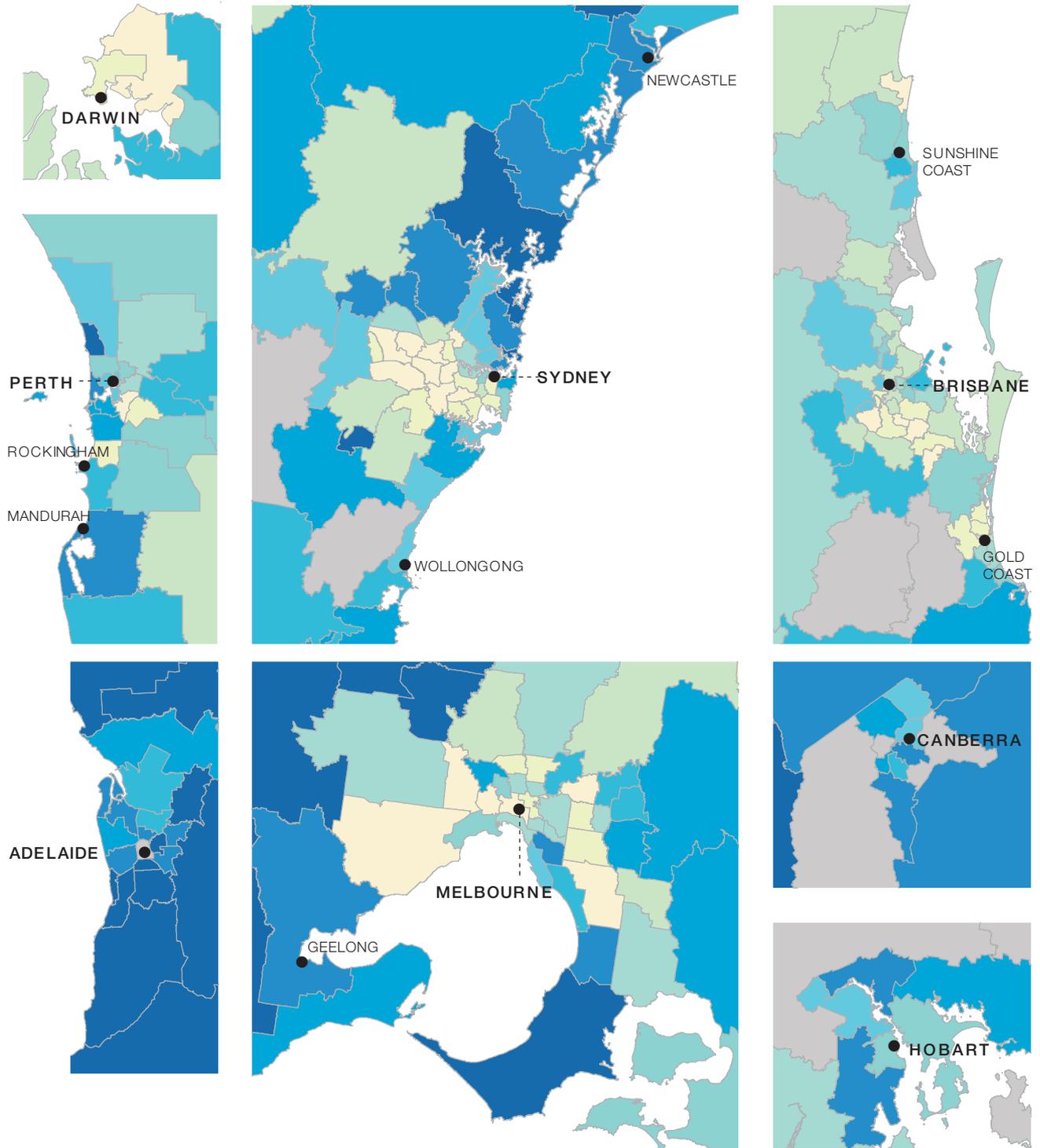
Notes:

Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Rates across capital city areas

Figure 3.14: Number of hospitalisations for myringotomy per 100,000 people aged 17 years and under, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18



Notes:

Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018. For further detail about the methods used, please refer to the Technical Supplement.

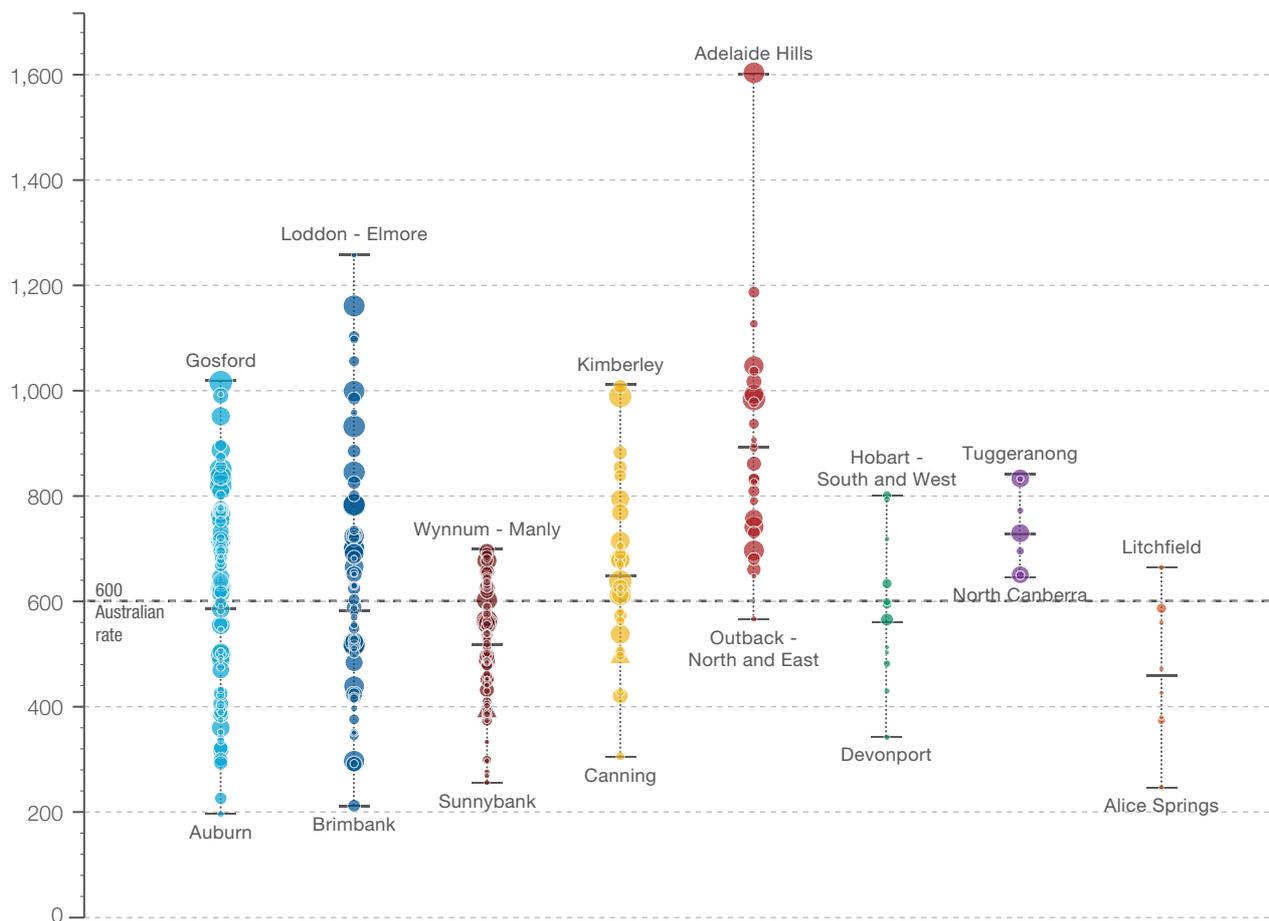
Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Myringotomy hospitalisations, 17 years and under

Rates by state and territory

Figure 3.15: Number of hospitalisations for myringotomy per 100,000 people aged 17 years and under, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Highest rate	1,019	1,260	698	1,011	1,607	804	836	667
State/territory	586	585	518	650	895	564	727	458
Lowest rate	198	214	258	308	569	344	652	249
No. hospitalisations	10,799	8,638	6,135	4,113	3,364	633	746	310



Each circle represents a single SA3. The size indicates the number of hospitalisations.

▲ rate only



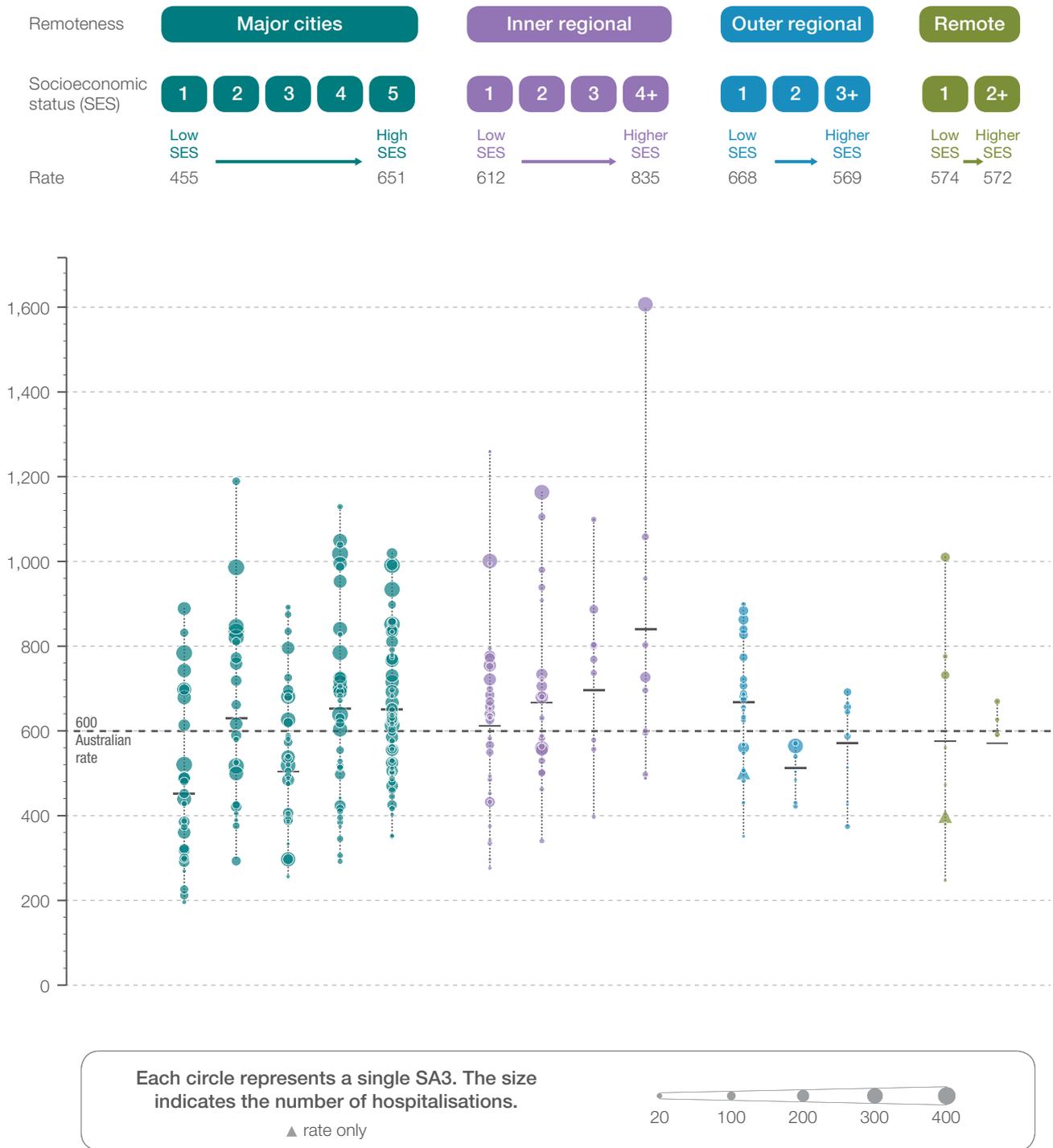
Notes:

Triangles (▲) indicate SA3s where only rates are published. The numbers of hospitalisations are not published for confidentiality reasons. Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Rates by remoteness and socioeconomic status

Figure 3.16: Number of hospitalisations for myringotomy per 100,000 people aged 17 years and under, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2017–18

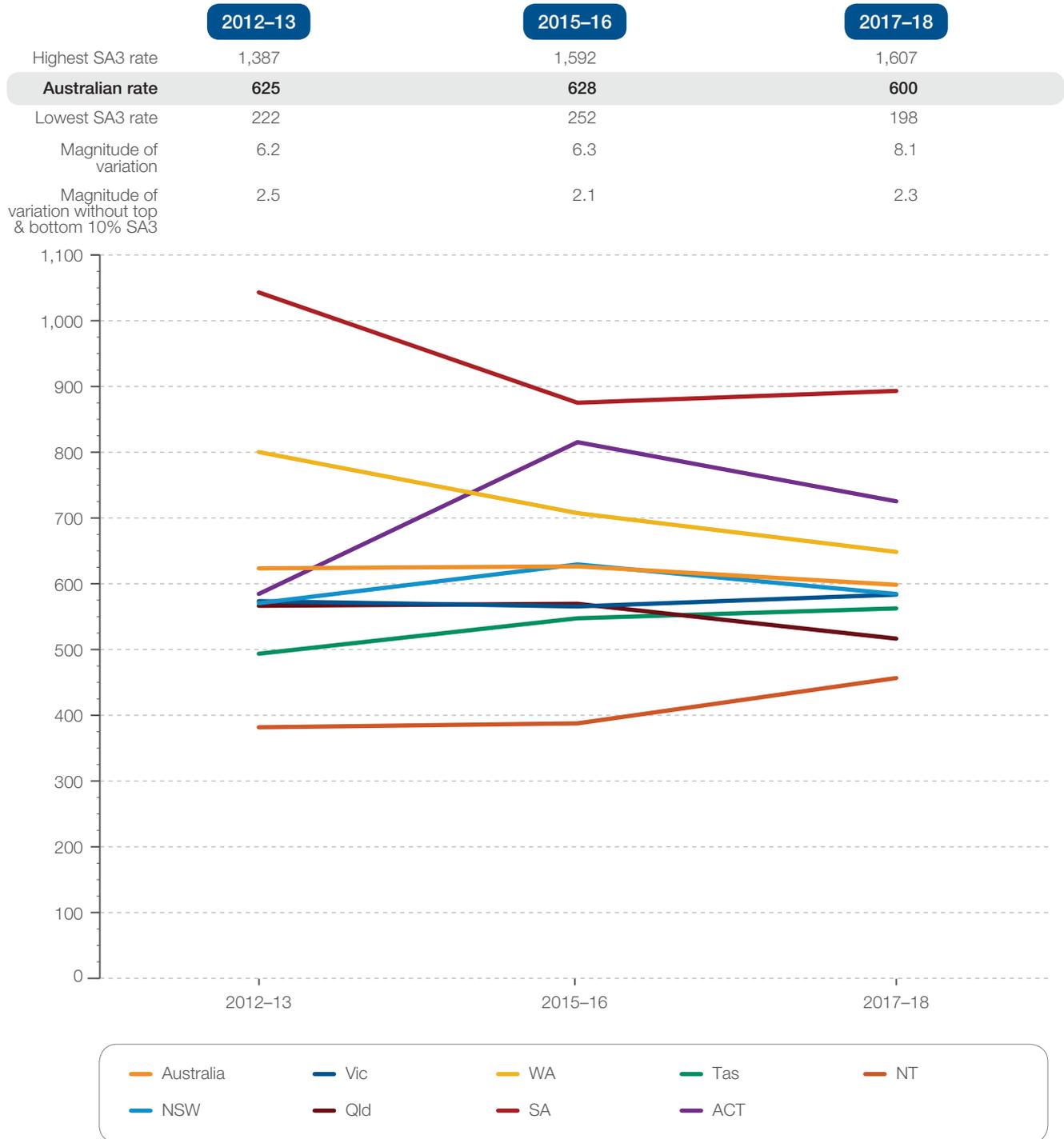


Notes:
 Triangles (▲) indicate SA3s where only rates are published. The numbers of hospitalisations are not published for confidentiality reasons.
 For Remote and SES of 2+, the remoteness and SES rate is lower than the minimum SA3 rate as it includes SA3 rates that are not published for reliability reasons.
 Population estimates as at 31 December 2017 are calculated as the average of the 30 June populations in 2017 and 2018.
 For further detail about the methods used, please refer to the Technical Supplement.
Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2017 and 2018.

Myringotomy hospitalisations, 17 years and under

Rates across years

Figure 3.17: Number of hospitalisations for myringotomy per 100,000 people aged 17 years and under, age and sex standardised, by state and territory of patient residence, 2012–13, 2015–16 and 2017–18



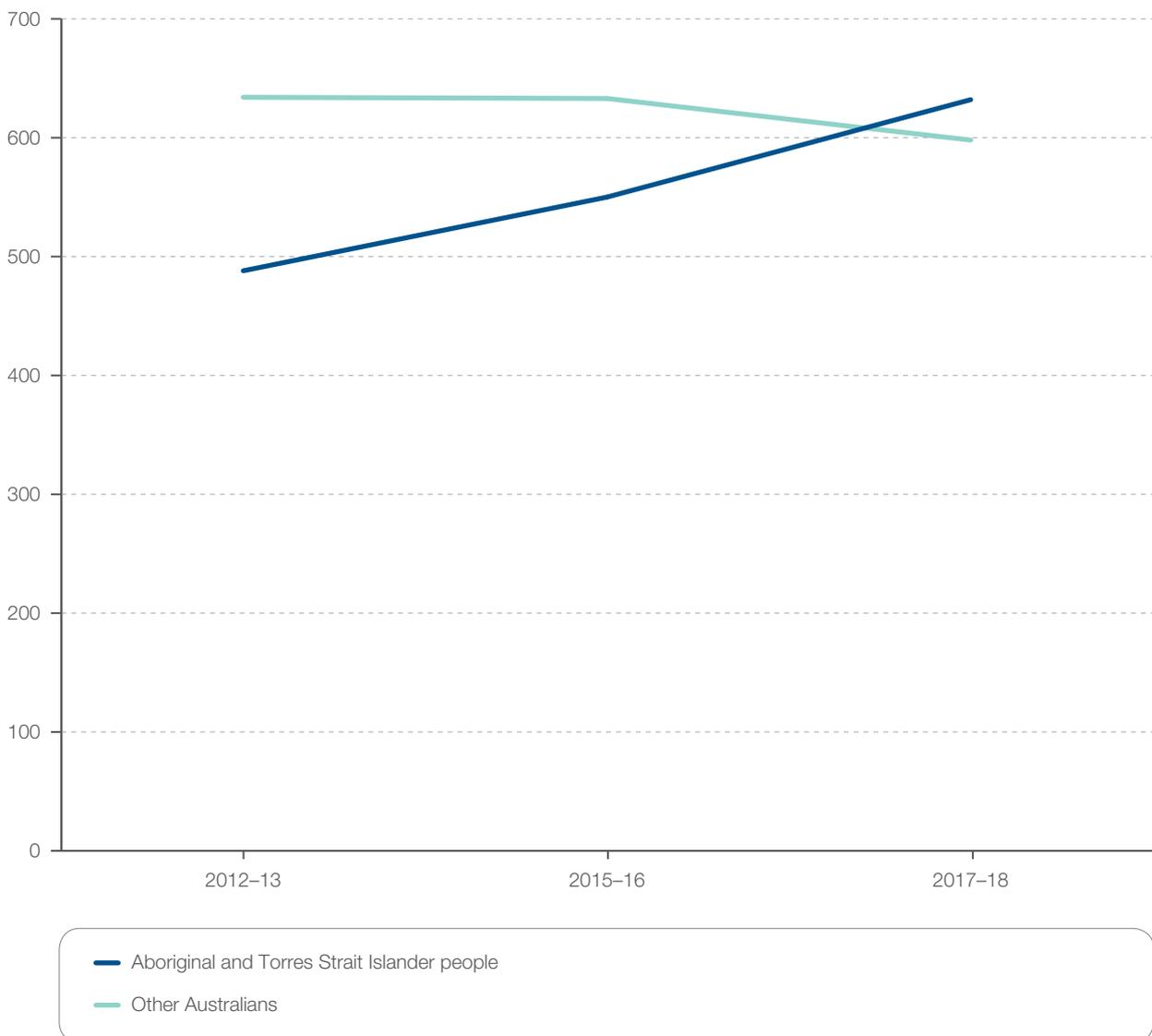
Notes:

Population estimates as at 31 December of the relevant year are calculated as the average of the 30 June populations before and after the relevant December. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2012, 2013 and 2015 to 2018.

Rates for Aboriginal and Torres Strait Islander people across years

Figure 3.18: Number of hospitalisations for myringotomy per 100,000 people aged 17 years and under, age and sex standardised, by state and territory of patient residence, by Aboriginal and Torres Strait Islander status, 2012–13, 2015–16 and 2017–18



Notes:

Data by Aboriginal and Torres Strait Islander status should be interpreted with caution as hospitalisations for Aboriginal and Torres Strait Islander people are under-enumerated among states and territories, with variation among states and territories. Population estimates as at 31 December of the relevant year are calculated as the average of the 30 June populations before and after the relevant December. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2012, 2013 and 2015 to 2018.

Myringotomy hospitalisations, 17 years and under

Resources

Australian

- *Recommendations for Clinical Care Guidelines on the Management of Otitis Media in Aboriginal and Torres Strait Islander Populations*²
- Insertion of middle ear ventilation tubes for middle ear disease in children, Safer Care Victoria, bettersafecare.vic.gov.au/clinical-guidance/non-urgent-elective-surgery/insertion-of-middle-ear-ventilation-tubes-for-middle-ear-disease-in-children

International

- Clinical practice guideline: otitis media with effusion (update)¹
- International consensus (ICON) on otitis media with effusion in children³³
- Clinical practice guidelines for the diagnosis and management of otitis media with effusion (OME) in children in Japan, 2015¹⁸

Australian initiatives

Roadmap for Hearing Health

The Roadmap for Hearing Health works to foster collaboration between stakeholders to address the challenges facing an estimated 3.6 million Australians who experience some form of hearing impairment. The second domain of the Roadmap – Closing the Gap for Aboriginal and Torres Strait Islander Ear and Hearing Health – addresses the catastrophic levels of ear disease among Aboriginal and Torres Strait Islander people.³⁴

Clinical guidelines

Recommendations for Clinical Care Guidelines on the Management of Otitis Media in Aboriginal and Torres Strait Islander Populations

The clinical care guidelines (otitismediaguidelines.com)² were first published in 2001, and updated in 2010 and 2017. They were disseminated nationally to all Aboriginal Community Controlled Health Services, and accompanied by clinical training and supply of equipment. The recommendations provide the evidence base for local clinical guidelines, and ear health manuals and frameworks.³⁵

Vaccination

The pneumococcal conjugate vaccine (13vPCV) is part of the National Immunisation Program, and is available for all children free of charge starting at the age of 2 months. In addition, the seasonal influenza vaccine is available free for all children aged 6 months to under 5 years. (Influenza vaccination may result in a small reduction in AOM, which often follows a viral infection such as influenza.)³⁶

Hearing support

Children need access to hearing support, including audiology services and ENT surgeons. Hearing Australia is piloting hearing testing in Aboriginal and Torres Strait Islander children. This may identify children needing myringotomy procedures.⁷

#Earhealthforlife (<https://earandhearinghealth.org.au/blog/ear-health-life-taskforce>) is a network that is committed to a national Aboriginal and Torres Strait Islander Hearing Health Taskforce that can provide evidence-based advice to government about hearing health.

HealthPathways provides clinicians with access to evidence-based guidelines on assessment, management and referral of children with AOM and OME. HealthPathways may help to achieve standardisation of care among GPs.³⁷

Shared decision making

In July 2020, the Victorian Department of Health and Human Services advised Victorian health services that a variety of procedures (including myringotomy) were to be performed only for a specific list of clinical indications. Hospitals were advised that communication must involve shared and documented decision making with the patient about the evidence, risks and benefits, and other options for care. See Resources for best-care guidance on insertion of grommets for middle ear disease.

Diagnosis and treatment for Aboriginal and Torres Strait Islander children

The Australian Government's Hearing Assessment Program – Early Ears (HAP-EE) started in late 2018–19. Hearing Australia is delivering ear and hearing assessments nationally. Follow-up ENT services are delivered through the Australian Government's jurisdictional fundholders for outreach hearing services.

Queensland's Deadly Ears Program

This program was started in 2007 and provides access to specialist ear and hearing services, including audiology services and ENT surgeons, for Aboriginal and Torres Strait Islander children from communities across rural and remote Queensland.³⁸

ENT surgical registry

The Australian Society of Otolaryngology Head and Neck Surgery operates a surgical register that collects data on ENT surgical procedures. The registry, which has been operating for two years, collects data on tonsillectomy, insertion of grommets and septoplasty.

Myringotomy hospitalisations, 17 years and under

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Chapter 4

Lumbar spinal surgery

At a glance



Lumbar spinal surgery refers to surgery in the lumbar spine or lower back. It is sometimes used to treat degenerative spinal disorders, which is the focus of this chapter. The Atlas excludes use of spinal surgery for treating infection, tumours or injury.

Degenerative spinal disorders are a diverse group of conditions that can cause chronic low back pain, leg pain and disability. Lumbar spinal surgery is generally only considered for certain degenerative spinal disorders if non-surgical options have not worked. There are limited data on patient outcomes, due in part to difficulties in conducting high-quality randomised controlled trials of these types of surgery. Two common lumbar spinal procedures are fusion and decompression.

Spinal fusion surgery involves joining two or more vertebrae using a bone graft. It has a role in treating a small minority of people who have degenerative spinal disorders that include nerve-related problems. Most people with chronic low back pain related to degenerative disorders do not have nerve-related symptoms. The role of spinal fusion in these circumstances is limited and controversial.

The Atlas found that, in 2015–2018, the rate of hospitalisation for lumbar spinal fusion was about 12 times higher in the local area with the highest rate than in the area with the lowest.* There was a 4% fall in the national rate of lumbar spinal fusion, and a 25% fall in the rate of lumbar spinal fusion excluding decompression, between 2012–2015 and 2015–2018.

Spinal decompression aims to increase the amount of the space in the spinal canal to relieve pressure on nerves and blood vessels.

The Atlas found that, in 2015–2018, the rate of hospitalisation for lumbar spinal decompression was about eight times higher in the local area with the highest rate than in the area with the lowest.* The national rate of lumbar spinal decompression fell by 6% between 2012–2015 and 2015–2018.

To address variation, it is important to improve access to services that provide multidisciplinary review and non-surgical treatments for chronic low back pain, and to develop the Australian Spine Registry to collect data on patient outcomes and support audit and peer review.

* After standardising to remove age and sex differences between populations.
The Fourth Australian Atlas of Healthcare Variation

Recommendations

The Commission consulted widely, but is solely responsible for making the recommendations; as such, the recommendations may not reflect the views of all contributors to the Atlas.

4a. Health service organisations and Primary Health Networks to implement evidence-based pathways for the management of low back pain consistent with the care described in the Low Back Pain Clinical Care Standard (planned for publication in late 2021).

4b. Health service organisations where lumbar spinal surgery is conducted to implement evidence-based guidelines; for example, the National Institute for Health and Care Excellence guidelines: *Low Back Pain and Sciatica in Over 16s: Assessment and management*.

4c. The Royal Australasian College of Surgeons to require surgeons performing lumbar spinal surgery to participate in the Australian Spine Registry as part of mandatory continuing professional development requirements.

4d. The Commission to work with relevant specialist organisations to develop a list of key safety and quality indicators for the management of specified spinal conditions, which can be used by members for audit of their practice.

4e. Health service organisations to:

i. Develop and implement scope of clinical practice models for surgeons undertaking spinal surgery

ii. Audit spinal surgery and provide the results back to clinicians to act upon in line with Action 1.28 of the National Safety and Quality Health Service (NSQHS) Standards

iii. Incorporate individual spinal surgeons' audit data as part of re-credentialing processes

iv. Report key performance indicators, trends and adverse events in spinal surgery to their governing body, consistent with the NSQHS Standards.

4f. Primary Health Networks to implement a nationally agreed health pathway for management of low back pain, including imaging and referral indications, based on the Commission's Low Back Pain Clinical Care Standard (planned for publication in late 2021).

4.1 Lumbar spinal fusion, 18 years and over

Why is this important?

Degenerative spinal disorders are a diverse group of conditions that can cause chronic low back pain, leg pain and disability.¹ Non-surgical treatments are mainly recommended as the first-line management because they help many people and the risk of harms is generally low.²

Spinal fusion surgery involves fusing two or more vertebrae using a bone graft. It has a role in treating a small minority of people with degenerative spinal disorders: where there is nerve or spinal cord compression³, or where there are severe nerve-related problems.⁴ Complication rates are higher for spinal fusion than for spinal decompression surgery.^{5,6}

Most people with chronic low back pain related to degenerative disorders do not have nerve-related symptoms. The role of spinal fusion in these circumstances is limited and controversial.⁴

The *Second Australian Atlas of Healthcare Variation* found marked differences in rates of lumbar spinal fusion. There has been little change to the evidence base for lumbar spinal fusion since publication of the second Atlas in June 2017.

What did we find?

In 2015–2018, the rate of hospitalisation for lumbar spinal fusion was **12.4 times as high** in the area with the highest rate compared with the area with the lowest rate. Between 2012–2015 and 2015–2018, there was a small decline (4%) in the rate of lumbar spinal fusion, and a larger decline (25%) in the rate of lumbar spinal fusion excluding decompression.

What can be done?

Priority should be given to examining and improving access to services that provide multidisciplinary review and non-surgical treatments for chronic low back pain.

The substantial variation in rates of lumbar spinal fusion, a procedure recommended in limited circumstances, suggests an urgent need for high-quality evidence on who may benefit from this surgery and the degree of benefit.

Clinical trials are difficult to conduct for lumbar spinal fusion, so it is essential to improve collection of registry data on patient outcomes. The Australian Spine Registry should be developed to support data collection for all consenting patients having lumbar spinal surgery. Patients offered spinal fusion surgery should be fully informed of the potential benefits and risks for them. Surgeons should contribute data on all consenting patients, and regularly audit and review patient outcome data with their peers. Health services should include clinical audit as a credentialing requirement for surgeons who perform lumbar spinal surgery.

Lumbar spinal fusion, 18 years and over

Context

Lumbar spinal fusion is a surgical procedure that uses a bone graft to permanently join (fuse) two or more vertebrae to stop them from moving against each other. The procedure can be done with or without the use of hardware (internal fixation), such as screws, cages or plates, which support the vertebrae while the bone graft is healing.

Spinal fusion can be performed on its own or with spinal decompression, a surgical procedure that increases the amount of space in the spinal canal to relieve pressure on nearby nerves and blood vessels.

This item examines lumbar spinal fusion with or without decompression. It excludes the use of spinal fusion for infection, tumours, injury and spinal deformities such as scoliosis, and therefore focuses on the use of spinal fusion for degenerative spinal disorders and associated chronic low back pain.

Degeneration of the lumbar spinal joints and intervertebral discs is part of ageing.⁵ In some people, it can cause low back pain, leg pain related to pressure on nerves (radicular pain), and reduced mobility.⁷ Common types of degenerative conditions include lumbar spinal stenosis (narrowing of the spinal canal), spondylolisthesis (where one vertebra slips over another) and herniated disc (where disc material protrudes into the spinal canal or outer nerves).^{5,8}

Non-surgical measures are recommended as first-line treatment for most people with acute or chronic low back pain.^{7,9} These include exercise, weight loss, cognitive behavioural therapy and physiotherapy.⁹ Most people with acute pain will improve within six weeks, but some people have recurrences, and around 40% develop chronic low back pain (lasting for more than three months).¹⁰

Surgical intervention, including spinal fusion, is recommended for patients where nerve compression from spinal degeneration causes severe or progressive weakness, or bladder and bowel problems.⁴ It is also recommended in selected patients where instability (e.g. spondylolisthesis) causes nerve or spinal compression.³

Most people with chronic low back pain related to degenerative disorders do not have nerve-related symptoms. The role of spinal fusion in these circumstances is limited and controversial.⁴

Cochrane and other systematic reviews have reported inconclusive findings on the effectiveness of spinal fusion due to uncertainties in the available evidence, and have noted difficulties in conducting high-quality trials in this area.^{2,11-13}

Spinal fusion may be an option for people who have persistent (for more than one year) disabling low back pain and significantly impaired quality of life, and who have not responded to non-surgical treatment.⁴ However, most people with isolated low back pain without evidence of nerve compression are unlikely to benefit from spinal fusion.^{9,14}

People who have persistent radicular pain may benefit from surgery, but the evidence about who benefits and the degree of benefit is not clear. Adding spinal fusion to decompression has not been clearly shown to achieve better outcomes for patients with spinal stenosis.¹¹ Added spinal fusion may result in better outcomes than decompression alone for spondylolisthesis.⁶

Sometimes spinal fusion is added to repeat decompression surgery to treat recurrent herniated disc, although this has not been shown to improve clinical outcomes compared with decompression alone.¹²

Adding fusion to decompression increases the risks of complications compared with decompression alone, and doubles the hospital costs.^{5,11} Spinal fusion surgery is associated with a risk of serious complications; the risk increases with the age of the patient and complexity of the fusion procedure.^{5,6} The risk of major complications with complex fusion procedures (joining of more than two vertebrae) is several times the risk of major complications of decompression alone.⁵

It is important that patients are informed about the possible complications of spinal fusion, particularly older people and Aboriginal and Torres Strait Islander people, who may have other medical conditions (comorbidity) that can increase the risk of complications.⁶

Reoperation because of continuing symptoms may also be needed. Rates of reoperation depend on the type of degenerative condition and type of surgery.¹⁵

Guidelines from the United Kingdom National Institute for Health and Care Excellence (NICE) recommend against spinal fusion to treat low back pain unless as part of a randomised controlled trial.⁹ Belgian guidelines recommend that spinal fusion for people with low back pain should only be considered after non-surgical interventions have failed as part of a multidisciplinary evaluation. The treatment should also preferably be recorded in a register.¹⁶

Why revisit variation in lumbar spinal fusion?

The first and second editions of the *Australian Atlas of Healthcare Variation* examined hospitalisation rates for lumbar spinal surgery in people aged 18 years and over.^{17,18}

The first Atlas examined variation in lumbar spinal decompression and lumbar spinal fusion combined, and found that, over the three-year period 2010–11 to 2012–13, the rate was 4.8 times as high in the area with the highest rate as in the area with the lowest rate.¹⁷

The second Atlas separately explored variation in spinal decompression (without fusion) and lumbar spinal fusion (with or without decompression). It found that, over the three-year period 2012–2015, the number of hospitalisations for lumbar spinal fusion across 305 local areas (Statistical Area Level 3 – SA3) ranged from 10 to 69 per 100,000 people aged 18 years and over. The rate was 6.9 times as high in the area with the highest rate compared with the area with the lowest rate. Rates of surgery were higher in inner regional areas than in major cities or outer regional areas, and were lowest in remote areas.¹⁸

It is important to continue to monitor rates of spinal fusion for degenerative spinal conditions because of the low quality of the evidence on the effectiveness of this procedure.

About the data

Data are sourced from the National Hospital Morbidity Database, and include admitted patients in both public and private hospitals.

Rates are based on the number of hospitalisations for lumbar spinal fusion (with or without decompression) per 100,000 people aged 18 years and over in 2012–13 to 2014–15 and 2015–16 to 2017–18. Hospitalisations resulting from infection, tumours, injury and spinal deformities such as scoliosis are excluded from this analysis.

Because a record is included for each hospitalisation for the procedure, rather than for each patient, patients hospitalised for the procedure more than once in the financial year will be counted more than once.

It is not possible to estimate rates of staged surgery across separate hospitalisations from these data. Hospitalisations for the same patient have not been linked. Therefore, a patient who was hospitalised for spinal fusion without decompression may have had a hospitalisation for decompression in the same data collection period.

The analysis and maps are based on the usual residential address of the patient and not the location of the hospital.

Rates are age and sex standardised to allow comparisons between populations with different age and sex structures. Data quality issues – for example, the extent of identification of Aboriginal and Torres Strait Islander status in datasets – could influence the variation seen.

It is not possible to examine variation in fusion for chronic axial back pain at a small area level because of confidentiality reasons.

Lumbar spinal fusion, 18 years and over

Principal diagnoses included and the percentage of hospitalisations for lumbar spinal fusion with or without decompression for 2015–2018* are:

- Spinal stenosis (lumbar and lumbosacral), 36%
- Lumbar and other intervertebral disc disorders with radiculopathy, 21%
- Spondylolisthesis (lumbar and lumbosacral), 25%
- Radiculopathy (lumbar and lumbosacral), 5%
- Low back pain, 5%
- Other specified intervertebral disc displacement, 5%
- Lumbago with sciatica, 1%
- Lumbar and other intervertebral disc disorders with myelopathy, 1%
- Unspecified dorsalgia (lumbar and lumbosacral) and other dorsalgia (lumbar and lumbosacral), 1%.

What do the data show?

Magnitude of variation

Over the three-year period 2015–2018, there were 14,608 hospitalisations for lumbar spinal fusion (with or without decompression), representing 24 hospitalisations per 100,000 people aged 18 years and over (the Australian rate). The median age for patients was 64 years, and varied across states and territories, from 55 in the Northern Territory to 67 in South Australia.

The number of hospitalisations for lumbar spinal fusion (with or without decompression) across 307† local areas (Statistical Area Level 3 – SA3) ranged from 7 to 87 per 100,000 people. The rate was **12.4 times as high** in the area with the highest rate compared with the area with the lowest rate. The number of hospitalisations for lumbar spinal fusion (with or without decompression) varied across states and territories, from 11 per 100,000 people in the Northern Territory to 50 in Tasmania (Figures 4.3–4.6).

After the highest and lowest 10% of results were excluded and 249 SA3s remained, the number of hospitalisations per 100,000 people was 2.7 times as high in the area with the highest rate compared with the area with the lowest rate.

There were 1,860 hospitalisations for lumbar spinal fusion excluding decompression for people aged 18 years and over during this three-year period. This equates to an Australian rate of 3 hospitalisations per 100,000 people. The graph for this analysis is available at safetyandquality.gov.au/atlas

Analysis by remoteness and socioeconomic status

Rates for lumbar spinal fusion (with or without decompression) hospitalisations were generally higher in inner regional areas than in outer regional areas or major cities, and were lowest in remote areas. In major cities and remote areas, rates decreased with socioeconomic disadvantage, but this pattern was not evident for other categories of remoteness (Figure 4.7).

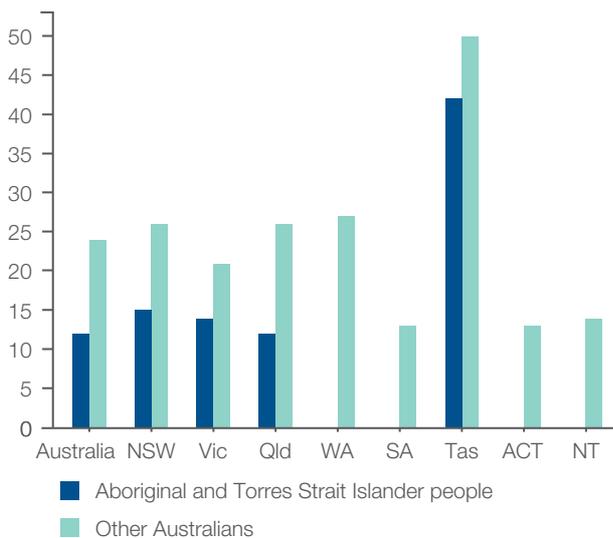
* Australian Commission on Safety and Quality in Health Care analysis of Admitted Patient Care National Minimum Data Set, 2015–16 to 2017–18.

† There are 340 SA3s. For this item, data were suppressed for 33 SA3s due to a small number of hospitalisations and/or population in an area.

Analysis by Aboriginal and Torres Strait Islander status

The rate for Aboriginal and Torres Strait Islander people (12 per 100,000 people) was 50% lower than the rate for other Australians (24 per 100,000 people). This difference was most pronounced in Queensland, where the rate for Aboriginal and Torres Strait Islander people was 54% lower than the rate for other Australians (Figure 4.1).

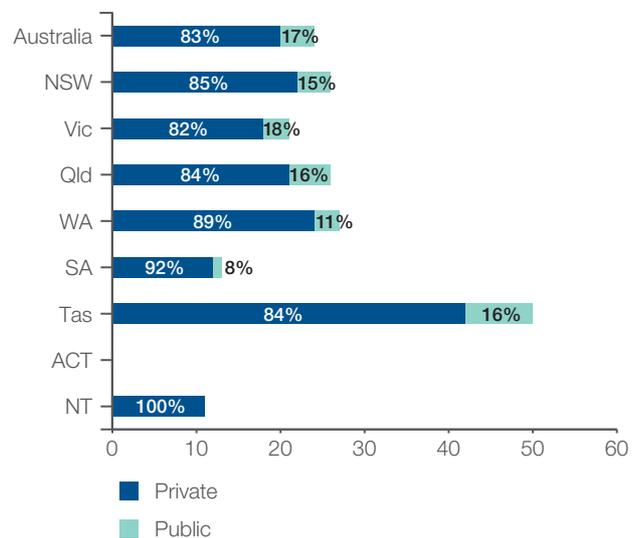
Figure 4.1: Number of hospitalisations for lumbar spinal fusion (with or without lumbar spinal decompression) per 100,000 people aged 18 years and over, age and sex standardised, by state or territory of patient residence, by Aboriginal and Torres Strait Islander status, 2015–16 to 2017–18*



Analysis by patient funding status

Overall, 83% of hospitalisations for lumbar spinal fusion (with or without decompression) were for privately funded patients. This proportion varied from 82% in Victoria to 100% in the Northern Territory (Figure 4.2).†

Figure 4.2: Number of hospitalisations for lumbar spinal fusion (with or without lumbar spinal decompression) per 100,000 people aged 18 years and over, age and sex standardised, by state or territory of patient residence, by patient funding status, 2015–16 to 2017–18†



The data for Figures 4.1 and 4.2 are available at safetyandquality.gov.au/atlas

Notes:

* Data for some states and territories (Aboriginal and Torres Strait Islander people) have been suppressed. Data by Aboriginal and Torres Strait Islander status should be interpreted with caution as hospitalisations for Aboriginal and Torres Strait Islander people are under-enumerated, with variation among states and territories.

† Data for the Northern Territory (public patients) are not published for reliability reasons. The 100% private patients are a result of rounding. For 2016–17, there were data quality issues related to the recording of patient funding source for patients admitted to ACT private hospitals. ACT private hospitals for 2016–17 are excluded from the analysis and data for the ACT are not published. Hospitalisations for public patients do not incur a charge to the patient or a third-party payer (for example, a private health insurance fund), unlike hospitalisations for private patients.

Denominator populations are the sum of the population estimates as at 31 December of 2015 to 2017. Population estimates as at 31 December are calculated as the average of the 30 June populations before and after the relevant December.

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2015 to 2018.

Lumbar spinal fusion, 18 years and over

Analysis by age group

Rates for lumbar spinal fusion (with or without decompression) hospitalisations were higher for patients aged 75–84 years (73 per 100,000 people) and 65–74 years (70 per 100,000 people) than for patients aged 18–64 years (16 per 100,000 people) or 85 years and over (17 per 100,000 people).

The data and graphs for analysis by age group and by Primary Health Network are available at safetyandquality.gov.au/atlas

Trends over time

Between 2012–2015 and 2015–2018, the rate of hospitalisations for lumbar spinal fusion (with or without decompression) decreased by 4% (from 25 per 100,000 people to 24 per 100,000 people) in the Australian population as a whole (Figure 4.8).

The rate for Aboriginal and Torres Strait Islander people increased by 50% (from 8 per 100,000 people to 12 per 100,000 people) over the same period.

Over the same period, the rate of hospitalisations for lumbar spinal fusion excluding decompression decreased by 25% (from 4 per 100,000 people to 3 per 100,000 people) in the population as a whole.

The data for analysis over time for Aboriginal and Torres Strait Islander people, and analysis by Primary Health Network are available at safetyandquality.gov.au/atlas

Interpretation

Variation in rates of lumbar spinal fusion surgery is likely to be due to geographical differences in the factors discussed below.

Variations between areas may not directly reflect the practices of the clinicians who are based in these areas. The analysis is based on where people live rather than where they obtain their health care. Patients may travel outside their local area to receive care.

Clinical decision making

Problems with the current evidence base may contribute to variation in rates of spinal fusion. In the absence of good evidence and clearly established guidelines, differing perceptions among spinal surgeons about the benefits that some patients derive from spinal fusion will lead to variation in practice.

Patients' expectations

Patients' expectations about the need for spinal surgery to deal with chronic low back pain may drive variation. These expectations may be affected by psychosocial factors, such as dependence on alcohol or other drugs (e.g. opioids), depression and job loss.

Access to services

One reason for the very high variation in the rates of spinal fusion may be lack of access to affordable and accessible alternatives to surgery, such as physiotherapy with cognitive behavioural therapy, multidisciplinary back pain assessment clinics and pain clinics. People who are unable to access these types of care and who have persistent disabling pain may be referred for surgical opinion in the absence of other options for management of pain.

Having private health insurance allows affordable and timely access to spinal fusion in private hospitals. Atlas data found that most (83%) hospitalisations for lumbar spinal fusion (with or without decompression) were for privately funded patients.

Also, private health insurance may not cover the cost of non-surgical treatments for degenerative spinal conditions.

Workforce issues

Workforce factors may influence the overall rates of spinal surgery and geographic variation in rates, and this should be explored further. One possible reason for high rates in some areas is an undersupply of health practitioners who provide alternatives to surgical intervention. Differences in geographical access to spinal surgeons will also influence the use of these interventions. An oversupply of surgeons may lead to increased rates of surgery.

Addressing variation

Considering the burden of disease, the costs associated with low back pain and the number of spinal operations occurring in Australia, priority should be given to ensuring that there are appropriate services for multidisciplinary review and non-surgical management of chronic back pain in health services throughout the country.

Because of uncertainty in the evidence base and the risks of spinal fusion surgery, high-quality research is needed to identify whether there are subgroups of patients who would benefit from the surgery, and what degree of benefit might be gained compared with use of more conservative treatments. Better information on surgery outcomes, including patient-reported outcomes in the medium to longer term, is also required.

Given the burden of disease, and numbers of spinal operations occurring in Australia, priority should be given to further developing the Australian Spine Registry so that it can capture information on all eligible patients, provide information for effective peer review of spinal surgery and add to the knowledge base about outcomes for specific groups of patients.

Patients with degenerative spinal conditions who are offered the option of spinal fusion surgery should be fully informed of the potential benefits and the risk of complications for them.

All patients who decide to have surgery should be informed about the Australian Spine Registry and, if they fulfil the registration criteria, should be asked if they are willing to be included. Surgeons undertaking this procedure should contribute data on all eligible patients to the Australian Spine Registry and participate in routine peer review.

Initiatives to address variation could include the following:

High-quality research and outcome monitoring

- Undertake high-quality research to resolve uncertainties about benefit for patients with degenerative spinal conditions
- Ensure resourcing to support widespread use of the Australian Spine Registry
- Develop agreed measures for audit

Clear information for patients

- Ensure that all patients have clear information about treatment options, likely risks and benefits, and the uncertainties about the evidence base – before and after specialist referral

Access to services

- Increase access to healthcare services that provide alternatives to surgical intervention, particularly physiotherapy services with cognitive behavioural therapy and specialist pain management services, especially for those with opioid dependence
- Ensure that psychosocial factors are part of any assessment for axial chronic low back pain before referral for surgery
- Establish a targeted strategy to improve access to spinal surgery for Aboriginal and Torres Strait Islander people

Lumbar spinal fusion, 18 years and over

Training and professional development

- Improve fellowship training through ongoing curriculum review
- Improve post-fellowship training and possibly develop a qualification
- Focus on continuing professional development, mentoring and peer review
- Educate clinicians about the benefits, costs and complications of surgery compared with other options

Credentialing and scope of practice

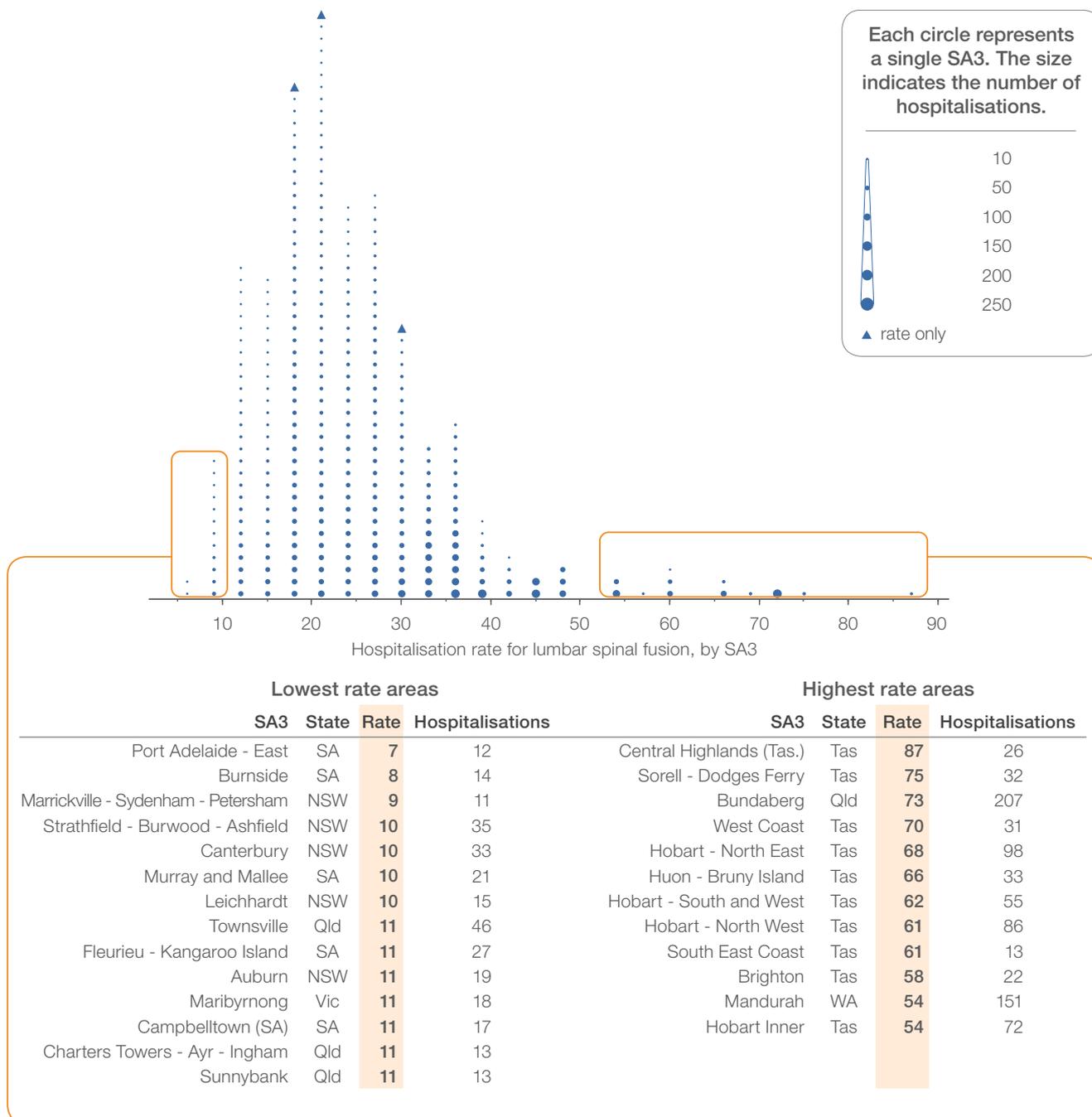
- Develop appropriate credentialing and definition of scope of practice in all hospitals
- Develop best-practice guidelines, especially in complex surgery

Care pathways

- Implement multidisciplinary clinical pathway and multidisciplinary preoperative review
- Develop evidence-based care pathways, including referral guidelines for general practitioners

Rates by local area

Figure 4.3: Number of hospitalisations for lumbar spinal fusion (with or without lumbar spinal decompression) per 100,000 people aged 18 years and over, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2015–16 to 2017–18



Notes:

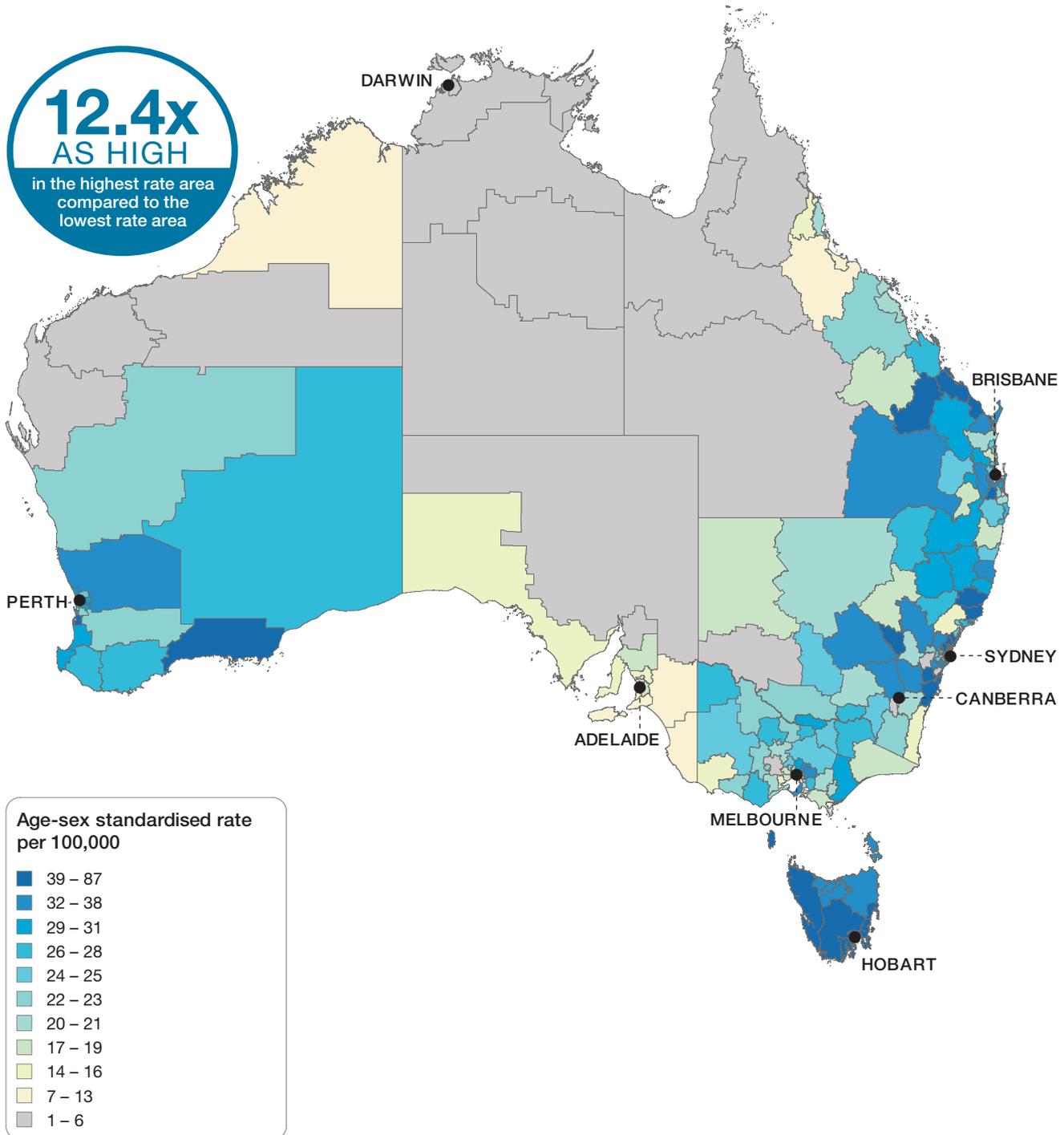
Triangles (▲) indicate SA3s where only rates are published. The numbers of hospitalisations are not published for confidentiality reasons. Denominator populations are the sum of the population estimates as at 31 December of 2015 to 2017. Population estimates as at 31 December are calculated as the average of the 30 June populations before and after the relevant December. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2015 to 2018.

Lumbar spinal fusion, 18 years and over

Rates across Australia

Figure 4.4: Number of hospitalisations for lumbar spinal fusion (with or without lumbar spinal decompression) per 100,000 people aged 18 years and over, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2015–16 to 2017–18



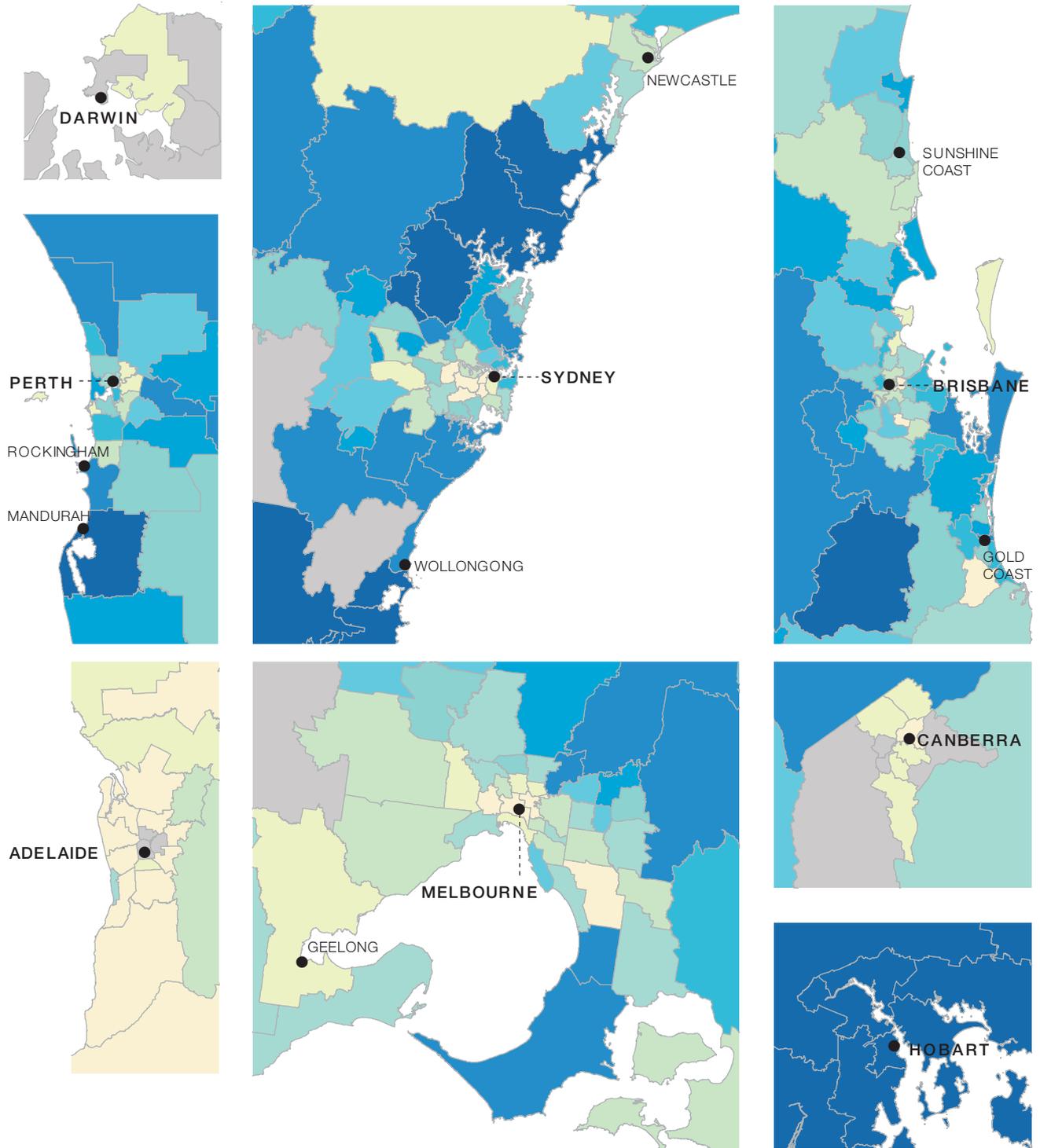
Notes:

Denominator populations are the sum of the population estimates as at 31 December of 2015 to 2017. Population estimates as at 31 December are calculated as the average of the 30 June populations before and after the relevant December. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2015 to 2018.

Rates across capital city areas

Figure 4.5: Number of hospitalisations for lumbar spinal fusion (with or without lumbar spinal decompression) per 100,000 people aged 18 years and over, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2015–16 to 2017–18



Notes:

Denominator populations are the sum of the population estimates as at 31 December of 2015 to 2017. Population estimates as at 31 December are calculated as the average of the 30 June populations before and after the relevant December. For further detail about the methods used, please refer to the Technical Supplement.

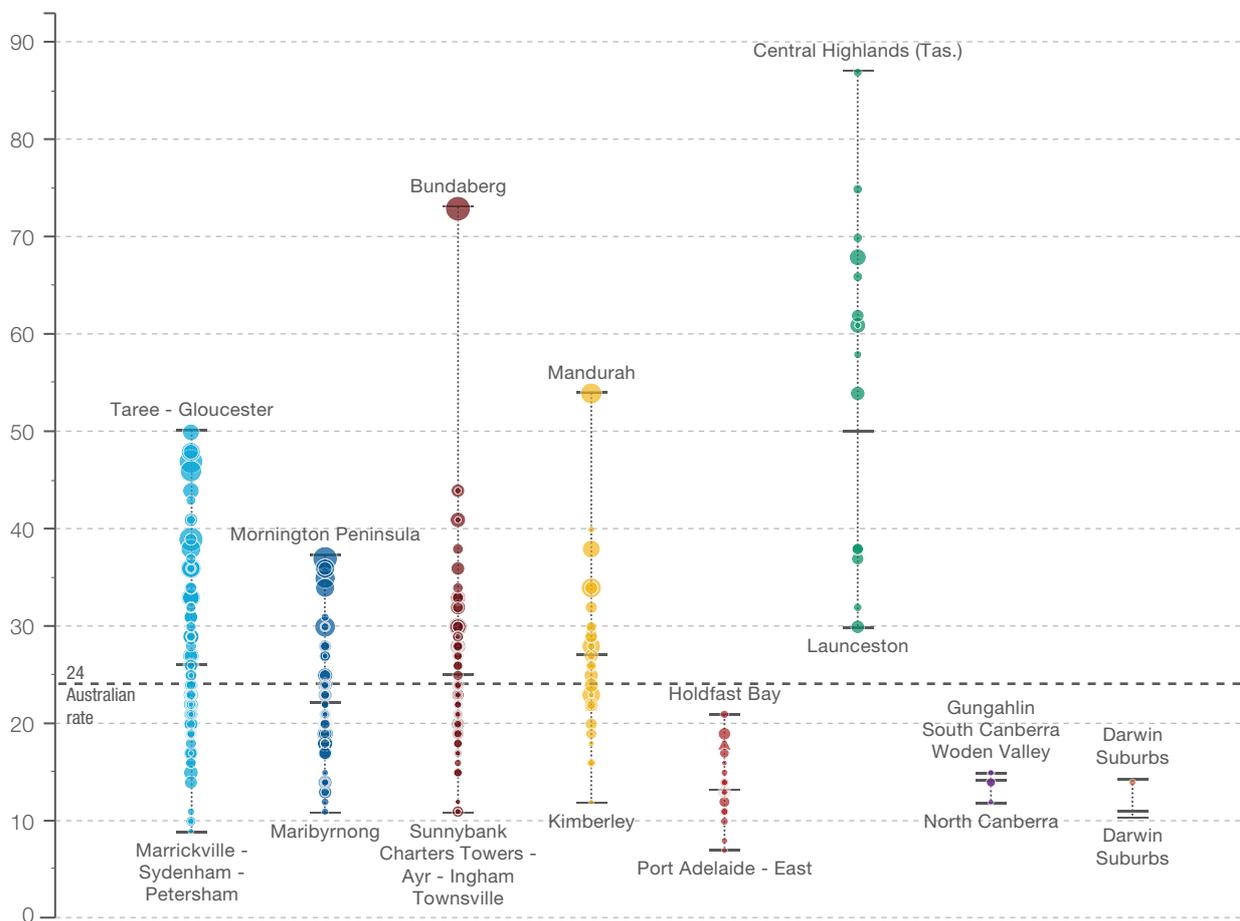
Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2015 to 2018.

Lumbar spinal fusion, 18 years and over

Rates by state and territory

Figure 4.6: Number of hospitalisations for lumbar spinal fusion (with or without lumbar spinal decompression) per 100,000 people aged 18 years and over, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2015–16 to 2017–18

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Highest rate	50	37	73	54	21	87	15	14
State/territory	26	22	25	27	13	50	14	11
Lowest rate	9	11	11	12	7	30	12	14
No. hospitalisations	5,121	3,320	3,008	1,662	615	699	123	50



Each circle represents a single SA3. The size indicates the number of hospitalisations.

▲ rate only



Notes:

Triangles (▲) indicate SA3s where only rates are published. The numbers of hospitalisations are not published for confidentiality reasons.

For the NT, the territory rate is lower than the minimum SA3 rate as it includes SA3 rates that are not published for reliability reasons. Only Darwin suburbs is publishable.

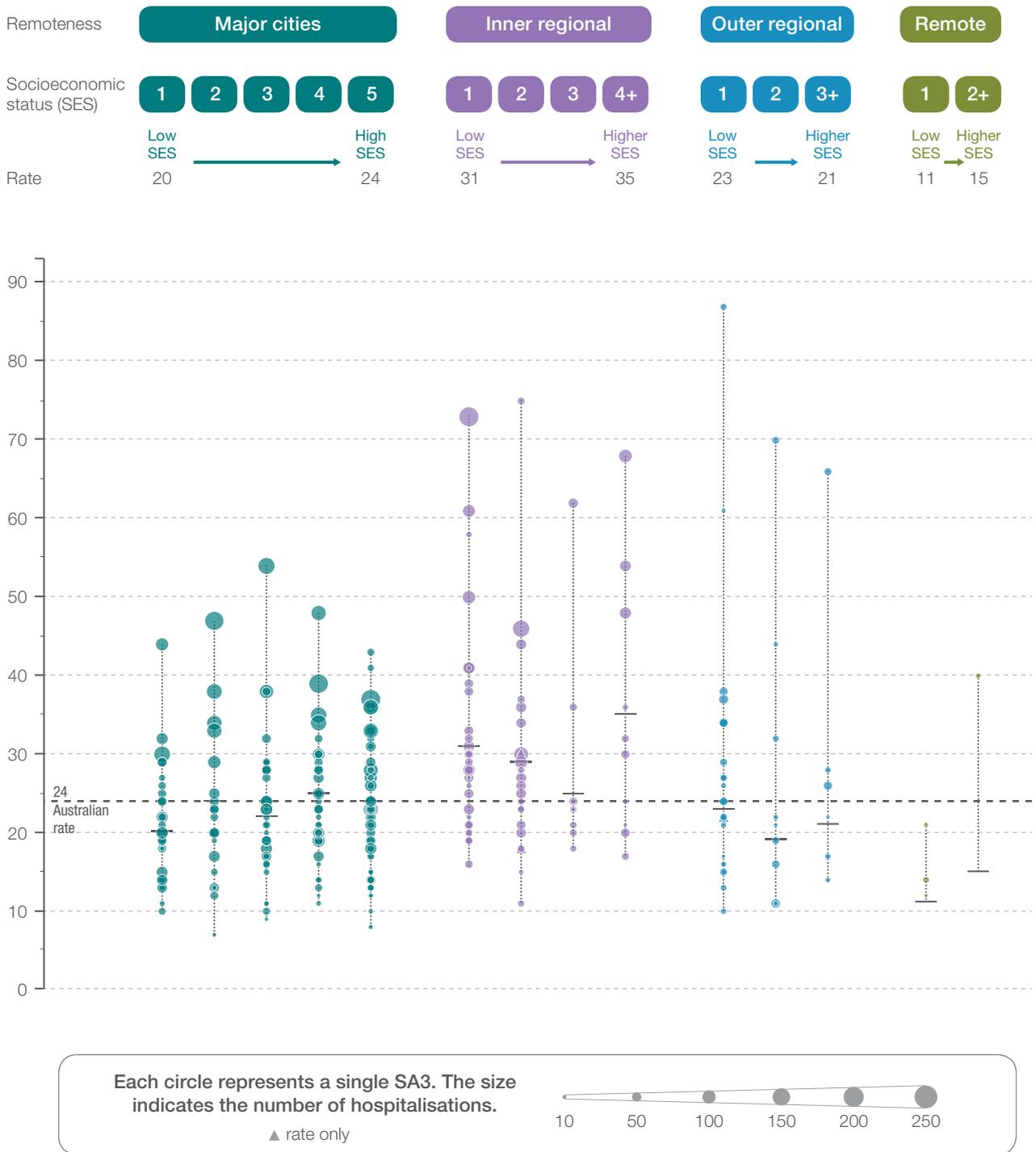
Denominator populations are the sum of the population estimates as at 31 December of 2015 to 2017. Population estimates as at 31 December are calculated as the average of the 30 June populations before and after the relevant December.

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2015 to 2018.

Rates by remoteness and socioeconomic status

Figure 4.7: Number of hospitalisations for lumbar spinal fusion (with or without lumbar spinal decompression) per 100,000 people aged 18 years and over, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2015–16 to 2017–18



Notes:

Triangles (▲) indicate SA3s where only rates are published. The numbers of hospitalisations are not published for confidentiality reasons. For Remote (SES of 1 and SES of 2+), the remoteness and SES rate is lower than the minimum SA3 rate as it includes SA3 rates that are not published for reliability reasons.

Denominator populations are the sum of the population estimates as at 31 December of 2015 to 2017. Population estimates as at 31 December are calculated as the average of the 30 June populations before and after the relevant December.

For further detail about the methods used, please refer to the Technical Supplement.

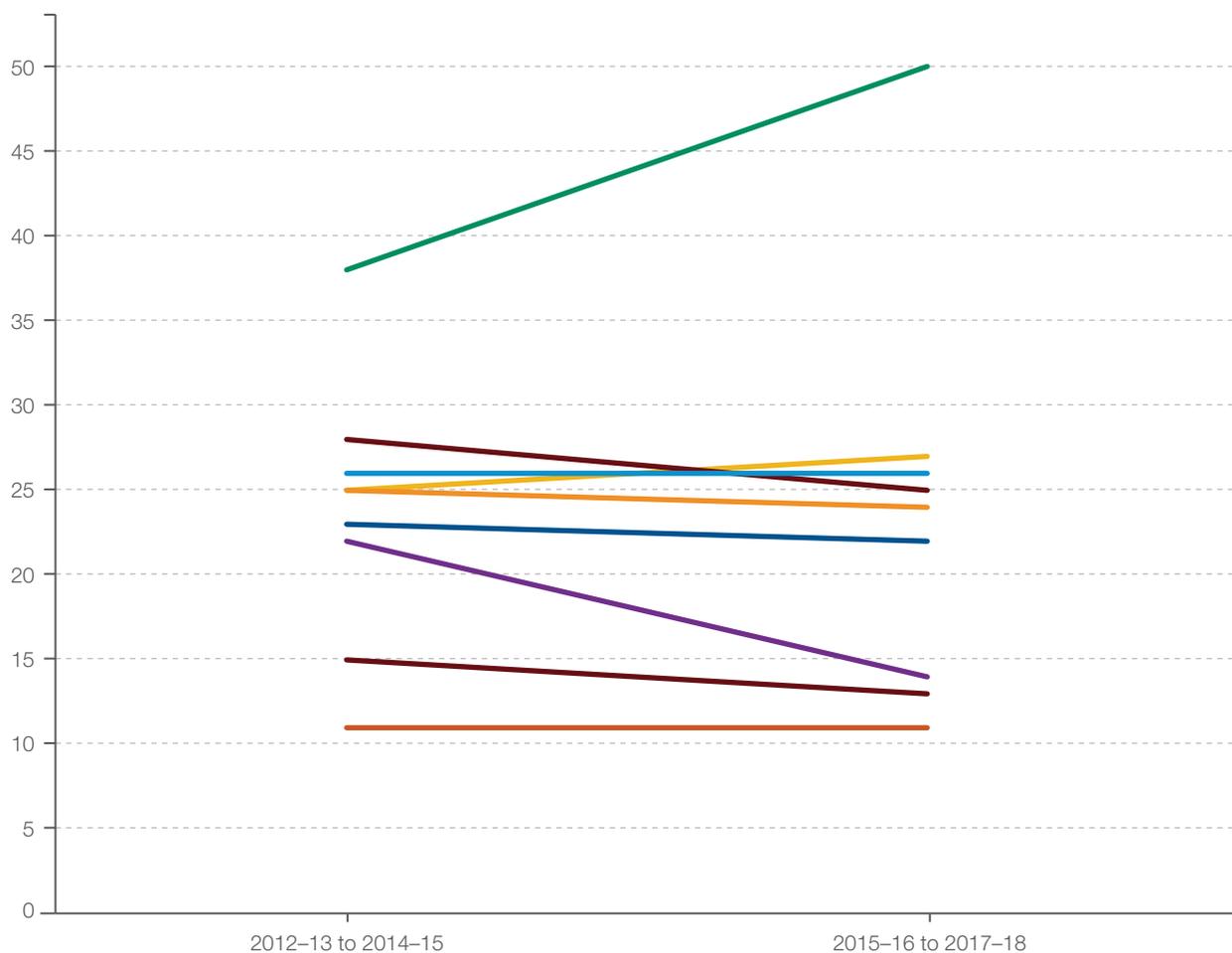
Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2015 to 2018.

Lumbar spinal fusion, 18 years and over

Rates across years

Figure 4.8: Number of hospitalisations for lumbar spinal fusion (with or without lumbar spinal decompression) per 100,000 people aged 18 years and over, age and sex standardised, by state and territory of patient residence, 2012–13 to 2014–15 and 2015–16 to 2017–18

	2012–13 to 2014–15	2015–16 to 2017–18
Highest SA3 rate	67	87
Australian rate	25	24
Lowest SA3 rate	9	7
Magnitude of variation	7.4	12.4
Magnitude of variation without top & bottom 10% SA3	2.4	2.7



Notes:

Denominator populations are the sum of the population estimates as at 31 December of 2012 to 2014 and 2015 to 2017. Population estimates as at 31 December are calculated as the average of the 30 June populations before and after the relevant December. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2012 to 2015 and 2015 to 2018.

Resources

Australian

- Spinal fusion for chronic axial low back pain: resource for clinicians, Safer Care Victoria, bettersafecare.vic.gov.au/clinical-guidance/non-urgent-elective-surgery/spinal-fusion-for-chronic-axial-low-back-pain
- Back pain, Better Health Victoria, betterhealth.vic.gov.au/health/ConditionsAndTreatments/Back-pain

International

- *Low Back Pain and Sciatica in Over 16s: Assessment and management*. Invasive treatments for low back pain and sciatica. NICE guideline NG59⁹
- The MIST guidelines: the Lumbar Spinal Stenosis Consensus Group guidelines for minimally invasive spine treatment¹⁹
- Danish national clinical guidelines for surgical and nonsurgical treatment of patients with lumbar spinal stenosis⁷
- Subacute and chronic low back pain: surgical treatment⁴

Australian initiatives

The Australian Spine Registry (spineregistry.org.au) has been collecting data since January 2018 about spine surgery in Australia, aiming to improve the quality of care. The registry is supported by the Spine Society of Australia, in partnership with Monash University. It collects data on the frequency of spine surgery; the usefulness, safety and results of different procedures; factors that predict favourable and unfavourable outcomes; and the care provided to Australians having spine surgery and how it compares with international best practice.

In July 2020, the Victorian Department of Health and Human Services advised health services that a range of procedures (including spinal fusion for chronic axial back pain) should be performed only for a specific list of clinical indications. Hospitals were advised that communication must involve shared and documented decision making with the patient about evidence, risks and benefits, and other options for care. Victoria is developing resources to support patients and healthcare providers to make decisions together about the most appropriate pathways of care. Spinal fusion surgery for chronic axial low back pain is one of these pathways.

Low Back Pain Clinical Care Standard (planned for publication late 2021), Australian Commission on Safety and Quality in Health Care. safetyandquality.gov.au/standards/clinical-care-standards/low-back-pain-clinical-care-standard

Lumbar spinal fusion, 18 years and over

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4.2 Lumbar spinal decompression, 18 years and over

Why is this important?

Degenerative spinal disorders are a diverse group of conditions that can cause chronic low back pain, leg pain and disability.¹ Non-surgical treatments are mainly recommended as the first-line management because they help many people and the risk of harms is generally low.²

Spinal decompression surgery aims to increase the space in the spinal canal to reduce pressure on nerves and blood vessels. It may be considered when non-surgical treatments have not worked or for selected people with serious symptoms.³

The *Second Australian Atlas of Healthcare Variation* found marked differences in rates of lumbar spinal decompression. There has been little change to the evidence base for lumbar spinal decompression since publication of the second Atlas in June 2017.

What did we find?

In 2015–2018, the rate of hospitalisation for lumbar spinal decompression (excluding lumbar spinal fusion) was **7.7 times as high** in the area with the highest rate compared with the area with the lowest rate. There was a small decline (6%) in the national rate of lumbar spinal decompression between 2012–2015 and 2015–2018.

What can be done?

Priority should be given to improving access to services that provide multidisciplinary review and non-surgical treatments for chronic low back pain.

Clinical trials are difficult to conduct for lumbar spinal decompression, so it is essential to improve collection of registry data on patient outcomes. The Australian Spine Registry should be developed to support data collection for all consenting patients having lumbar spinal surgery. Patients offered lumbar spinal decompression surgery should be fully informed of the potential benefits and risks for them. Surgeons should contribute data on all consenting patients, and regularly audit and review patient outcome data with their peers. Health services should include clinical audit and review as a credentialing requirement for surgeons who perform lumbar spinal surgery.

Lumbar spinal decompression, 18 years and over

Context

Lumbar spinal decompression is a surgical procedure that increases the amount of space in the spinal canal to relieve pressure on nearby nerves and blood vessels.

Spinal decompression procedures include laminectomy (removal of a section of bone from one of the vertebrae) and discectomy (removal of a section of a damaged disc). In many cases, a combination of these techniques is used.

Spinal decompression is sometimes performed to treat spinal injuries such as fractures, and spinal cord compression due to metastatic cancer. Spinal decompression can be performed in combination with spinal fusion surgery (joining at least two vertebrae to stop movement), but it is often done on its own.⁴

This item focuses on the use of spinal decompression for degenerative spinal conditions. It excludes the use of spinal decompression for infection, tumours and injury, and therefore focuses on degenerative spinal disorders and associated chronic low back pain.

Spinal decompression is often performed to treat symptoms associated with degenerative conditions of the spine where there is pressure on the nerves. These conditions include lumbar spinal stenosis (narrowing of the spinal canal), spondylolisthesis (where one vertebra slips over another) and herniated disc (where disc material protrudes into the spinal canal or outer nerves).^{4,5}

Degenerative spinal disorders are a diverse group of conditions that cause a range of symptoms and disabling effects. Although some patients are likely to benefit from surgery, in other patients the place of surgery for treating these conditions is not clear. There are limited data on patient outcomes, and it is difficult to conduct high-quality randomised controlled trials comparing treatment options and outcomes.⁶

Lumbar spinal stenosis

People with spinal stenosis can experience a range of symptoms due to nerve compression, including low back pain that radiates to the buttocks and legs, numbness and weakness, and problems with walking and balance. Symptoms are often worse when standing or walking.³ Spinal stenosis is a common condition in older people⁷, and sometimes occurs with degenerative spondylolisthesis.

Conservative measures are recommended as first-line treatments for most people with spinal stenosis who have mild symptoms.^{3,8} Spinal decompression is recommended as an option if conservative measures have not worked and there is sciatica (pain going down one or both legs).⁸ It is also recommended when there are serious symptoms, such as progressive weakness, or bladder or bowel disturbance related to nerve compression.^{3,9}

Herniated disc

A herniated (or prolapsed) disc can press on nearby nerves and lead to sciatica.⁸ A herniated disc is usually the result of disc degeneration due to ageing, although it can occur in a younger age group.

Most people with herniated disc will get better without treatment.⁵ Conservative treatments, including physiotherapy and steroid injections, are usually tried first if symptoms persist.⁵

Spinal decompression (discectomy) is considered when there is uncontrolled pain, numbness or weakness, or bladder or bowel problems, and conservative measures have not worked.⁵ It has been found to be more effective than conservative management in relieving back and leg pain and disability in people whose herniated disc has not responded to initial conservative options.^{5,10}

Complications from lumbar spinal decompression

It is important that patients are informed about the possible complications of spinal decompression, particularly older people and Aboriginal and Torres Strait Islander people, who may have other medical conditions (comorbidity) that can increase the risk of complications.¹¹

Reoperation because of continuing symptoms may also be needed. Rates of reoperation depend on the type of degenerative condition.^{12–14}

Why revisit variation in lumbar spinal decompression?

The first and second editions of the *Australian Atlas of Healthcare Variation* examined hospitalisation rates for lumbar spinal surgery in people aged 18 years and over.^{15,16}

The first Atlas examined variation in lumbar spinal decompression and lumbar spinal fusion combined. It found that, over the three-year period 2010–11 to 2012–13, the rate was 4.8 times as high in the area with the highest rate as in the area with the lowest rate.¹⁵

The second Atlas separately explored variation in spinal decompression (without fusion). It found that, over the three-year period 2012–2015, the number of hospitalisations for lumbar spinal decompression across 322 local areas (Statistical Area Level 3 – SA3) ranged from 30 to 156 per 100,000 people aged 18 years and over. The rate was 5.2 times as high in the area with the highest rate compared with the area with the lowest rate.¹⁶

Rates of surgery were higher in inner regional areas than in major cities, and were lowest in outer regional areas and remote areas. Rates of surgery decreased with socioeconomic disadvantage.¹⁶

It is important to continue to monitor rates of spinal decompression for degenerative spinal stenosis as the evidence on effectiveness of different therapies develops and because of changes in the supply of the health workforce.

About the data

Data are sourced from the National Hospital Morbidity Database, and include admitted patients in both public and private hospitals.

Rates are based on the number of hospitalisations for lumbar spinal decompression (excluding lumbar spinal fusion) per 100,000 people aged 18 years and over in 2015–2018. Hospitalisations resulting from infection, tumours and injury are excluded from this analysis.

Because a record is included for each hospitalisation for lumbar spinal decompression surgery, rather than for each patient, patients hospitalised for the procedure more than once in the financial year will be counted more than once.

The analysis and maps are based on the usual residential address of the patient and not the location of the hospital.

Rates are age and sex standardised to allow comparisons between populations with different age and sex structures.

Data quality issues – for example, the extent of identification of Aboriginal and Torres Strait Islander status in datasets – could influence the variation seen.

Some private hospitals in Tasmania admit public patients under a contractual arrangement. There is a small over-count of hospitalisations for the procedure in Tasmania because hospitalisations were recorded by both contracting hospital and contracted hospital.

Lumbar spinal decompression, 18 years and over

What do the data show?

Over the three-year period 2015–2018, there were 43,185 hospitalisations for lumbar spinal decompression (excluding lumbar spinal fusion), representing 74 hospitalisations per 100,000 people aged 18 years and over (the Australian rate). The median age for patients was 58 years, and varied across states and territories, from 49 in the Northern Territory to 62 in South Australia.

The number of hospitalisations for lumbar spinal decompression (excluding lumbar spinal fusion) across 327* local areas (Statistical Area Level 3 – SA3) ranged from 27 to 209 per 100,000 people. The rate was **7.7 times as high** in the area with the highest rate compared with the area with the lowest rate. The number of hospitalisations varied across states and territories, from 34 per 100,000 people in the Australian Capital Territory to 126 in Tasmania (Figures 4.11–4.14).

After the highest and lowest 10% of results were excluded and 265 SA3s remained, the number of hospitalisations per 100,000 people was 2.1 times as high in the area with the highest rate compared with the area with the lowest rate.

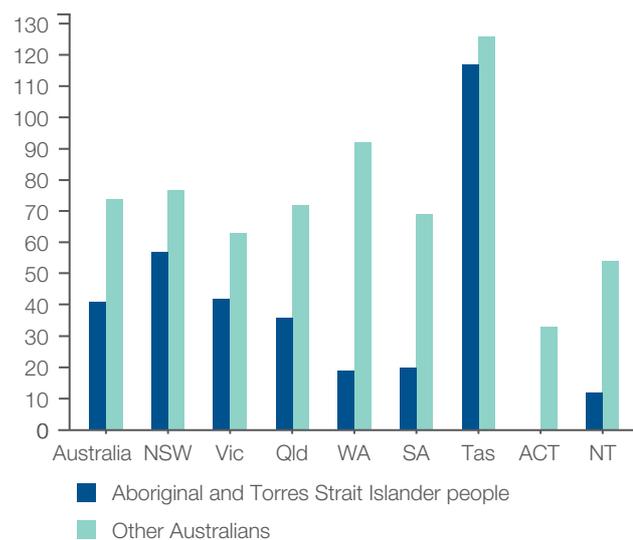
Analysis by remoteness and socioeconomic status

Rates for lumbar spinal decompression (excluding lumbar spinal fusion) hospitalisations were higher in inner regional areas than in major cities or outer regional areas, and were lowest in remote areas. In inner regional and remote areas, rates decreased with socioeconomic disadvantage. This pattern was not evident in major cities or outer regional areas (Figure 4.15).

Analysis by Aboriginal and Torres Strait Islander status

The rate for Aboriginal and Torres Strait Islander people (41 per 100,000 people) was 45% lower than the rate for other Australians (74 per 100,000 people). This difference was most pronounced in Western Australia, where rates for Aboriginal and Torres Strait Islander people were 79% lower than rates for other Australians (Figure 4.9).

Figure 4.9: Number of hospitalisations for lumbar spinal decompression (excluding lumbar spinal fusion) per 100,000 people aged 18 years and over, age and sex standardised, by state and territory of patient residence, by Aboriginal and Torres Strait Islander status, 2015–16 to 2017–18



* There are 340 SA3s. For this item, data were suppressed for 13 SA3s due to a small number of hospitalisations and/or population in an area.

Notes:

Data for some states and territories (Aboriginal and Torres Strait Islander people) are not published for reliability reasons.

Data by Aboriginal and Torres Strait Islander status should be interpreted with caution as hospitalisations for Aboriginal and Torres Strait Islander people are under-enumerated among states and territories.

Denominator populations are the sum of the population estimates as at 31 December of 2015 to 2017. Population estimates as at 31 December are calculated as the average of the 30 June populations before and after the relevant December.

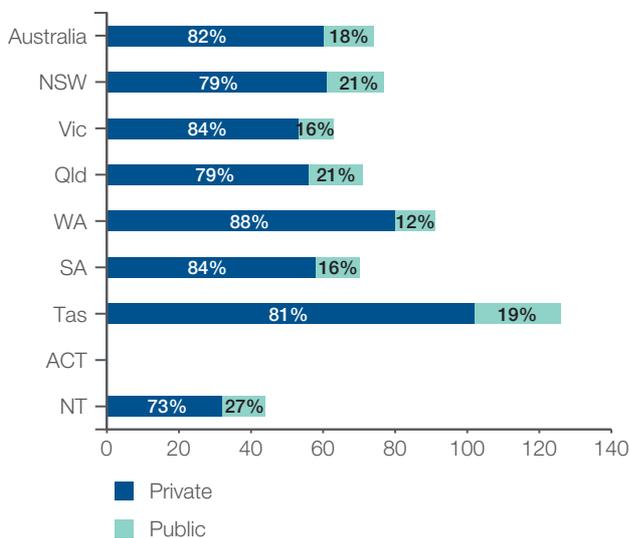
For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2015 to 2018.

Analysis by patient funding status

Overall, 82% of hospitalisations for lumbar spinal decompression (excluding lumbar spinal fusion) were for privately funded patients. This proportion varied from 73% in the Northern Territory to 88% in Western Australia (Figure 4.10).

Figure 4.10: Number of hospitalisations for lumbar spinal decompression (excluding lumbar spinal fusion) per 100,000 people aged 18 years and over, age and sex standardised, by state and territory of patient residence, by patient funding status, 2015–16 to 2017–18



The data for Figures 4.9 and 4.10 are available at safetyandquality.gov.au/atlas

Trends over time

Between 2012–2015 and 2015–2018, the rate of hospitalisations for lumbar spinal decompression excluding lumbar spinal fusion per 100,000 people decreased by 6% (from 79 per 100,000 people to 74 per 100,000 people) in the Australian population as a whole (Figure 4.16).

The rate for Aboriginal and Torres Strait Islander people increased by 37% (from 30 per 100,000 people to 41 per 100,000 people) over the same period.

The data for analysis over time for Aboriginal and Torres Strait Islander people, and analysis by Primary Health Network are available at safetyandquality.gov.au/atlas

Notes:

For 2016–17, there were data quality issues related to the recording of patient funding source for patients admitted to ACT private hospitals. ACT private hospitals for 2016–17 are excluded from the analysis and data for the ACT are not published.

Hospitalisations for public patients do not incur a charge to the patient or a third-party payer (for example, a private health insurance fund), unlike hospitalisations for private patients.

Denominator populations are the sum of the population estimates as at 31 December of 2015 to 2017. Population estimates as at 31 December are calculated as the average of the 30 June populations before and after the relevant December.

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2015 to 2018.

Lumbar spinal decompression, 18 years and over

Interpretation

Variation in rates of lumbar spinal decompression surgery is likely to be due to geographical differences in the factors discussed below.

Variations between areas may not directly reflect the practices of the clinicians who are based in these areas. The analysis is based on where people live rather than where they obtain their health care. Some patients may travel outside their local area to receive care.

Clinical decision making

High or low rates of spinal decompression in some areas may be related to differences between clinicians in interpretation of the available evidence about the effectiveness of spinal decompression, and differing clinical beliefs about the likelihood of benefits and complications of this type of spinal surgery for some groups of patients.

Patients' expectations

Patients' expectations about the need for spinal surgery to deal with chronic low back pain may drive variation. These expectations may be affected by psychosocial factors, such as dependence on alcohol or other drugs, depression and job loss.

Access to services

One reason for the high variation in the rates of spinal decompression may be lack of access to affordable and accessible alternatives to surgery, such as physiotherapy with cognitive behavioural therapy, multidisciplinary back pain assessment clinics and pain clinics. People who are unable to access these types of care and who have persistent disabling pain may be referred for surgical opinion in the absence of other options for management of pain.

Having private health insurance allows affordable access to spinal decompression in private hospitals. Atlas data found that most (82%) hospitalisations for lumbar spinal decompression were for privately funded patients.

Also, private health insurance may not cover the cost of non-surgical treatments for degenerative spinal conditions.

Workforce issues

Workforce factors may influence the overall rates of spinal surgery and geographic variation in rates, and this should be explored further. One possible reason for high rates in some areas is an undersupply of health practitioners who provide alternatives to surgical intervention. Differences in geographical access to spinal surgeons will also influence the use of these interventions. An oversupply of surgeons may lead to increased rates of surgery.

Addressing variation

Considering the burden of disease, the costs associated with low back pain and the number of spinal operations occurring in Australia, priority should be given to ensuring that there are appropriate services for multidisciplinary review and non-surgical management of chronic back pain in health services throughout the country.

Because of uncertainty in the evidence base, high-quality research is needed to identify whether there are subgroups of patients who would benefit from spinal surgery, and what degree of benefit might be gained compared with use of more conservative treatments. Better information on surgery outcomes, including patient-reported outcomes in the medium to longer term, is also required.

Given the burden of disease and numbers of spinal operations occurring in Australia, priority should be given to further developing the Australian Spine Registry so that it can capture information on all eligible patients, provide information for effective peer review of spinal surgery and add to the knowledge base about outcomes for specific groups of patients.

Patients with degenerative spinal conditions who are offered the option of spinal decompression surgery should be fully informed about the potential benefits and the risk of complications for them.

All patients who decide to have surgery should be informed about the Australian Spine Registry and, if they fulfil the registration criteria, should be asked if they are willing to be included. Surgeons undertaking this procedure should contribute data on all eligible patients to the Australian Spine Registry and participate in routine peer review.

Initiatives to address variation could include the following:

High-quality research and outcome monitoring

- Undertake high-quality research to resolve uncertainties about benefit
- Ensure resourcing to support widespread use of the Australian Spine Registry
- Develop agreed measures for audit

Clear information for patients

- Ensure that all patients have clear information about treatment options, likely risks and benefits, and the uncertainties about the evidence base – before and after specialist referral

Access to services

- Increase access to healthcare services that provide alternatives to surgical intervention
- Ensure that psychosocial factors are part of any assessment for axial chronic low back pain before referral for surgery
- Establish a targeted strategy to improve access to spinal surgery for Aboriginal and Torres Strait Islander people

Training and professional development

- Improve fellowship training through ongoing curriculum review
- Improve post-fellowship training and possibly develop a qualification
- Focus on continuing professional development, mentoring and peer review
- Educate clinicians about the benefits, costs and complications of surgery compared with other options

Credentialing and scope of practice

- Develop appropriate credentialing and definition of scope of practice in all hospitals
- Develop best-practice guidelines, especially in complex surgery

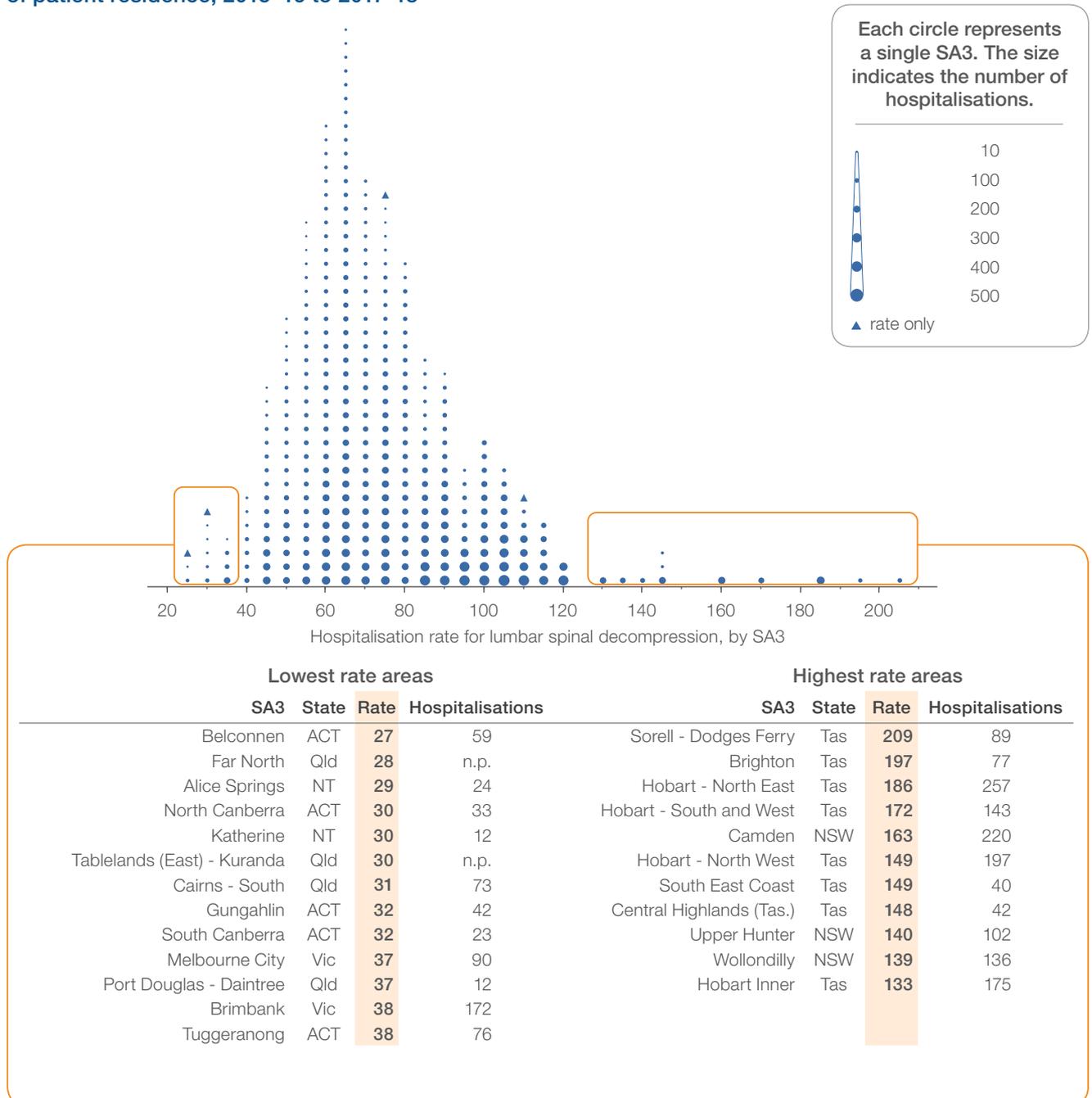
Care pathways

- Implement multidisciplinary clinical pathways and multidisciplinary preoperative review
- Develop evidence-based care pathways, including referral guidelines for general practitioners

Lumbar spinal decompression, 18 years and over

Rates by local area

Figure 4.11: Number of hospitalisations for lumbar spinal decompression (excluding lumbar spinal fusion) per 100,000 people aged 18 years and over, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2015–16 to 2017–18



Notes:

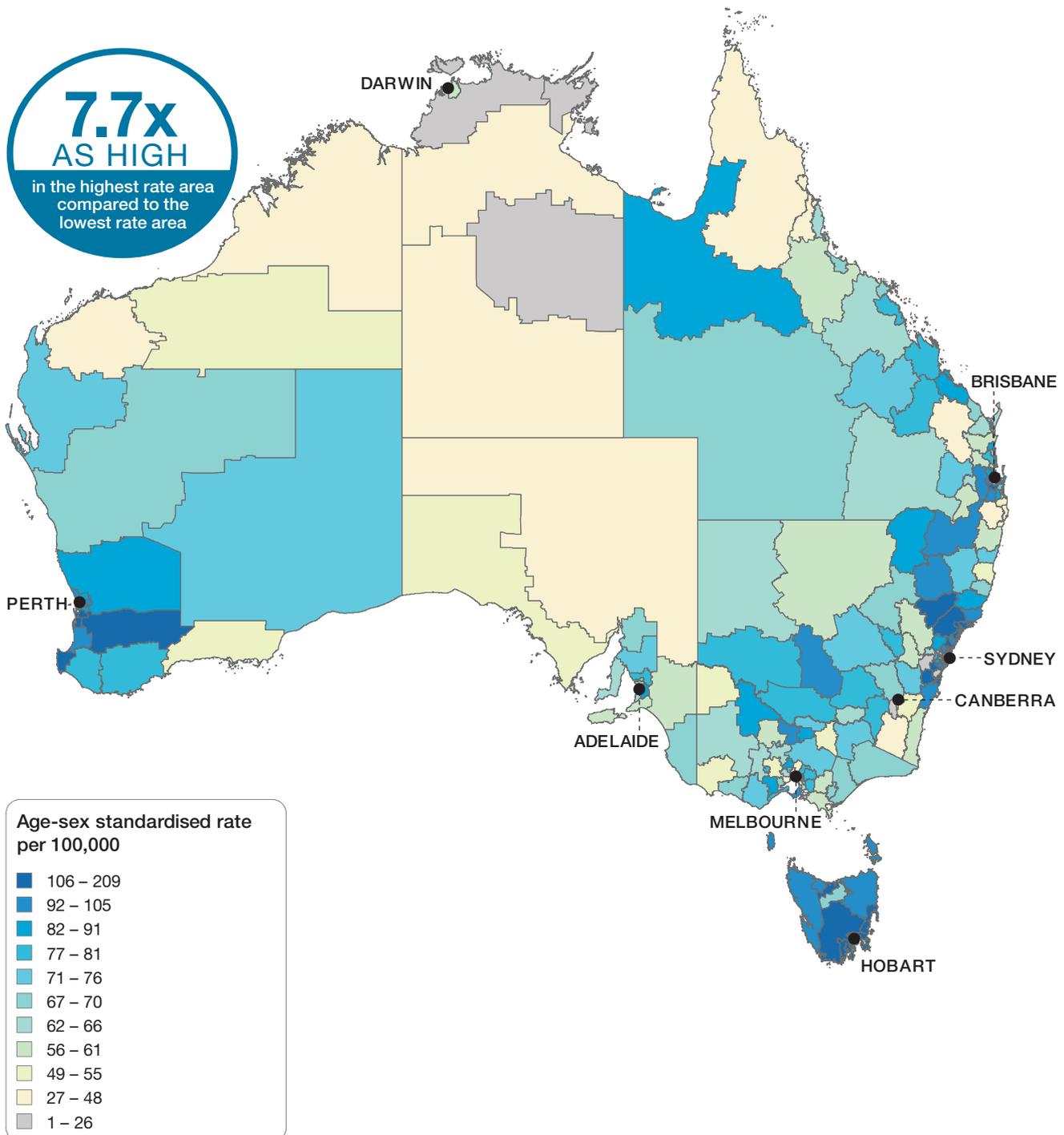
Triangles (▲) indicate SA3s where only rates are published. The numbers of hospitalisations are not published (n.p.) for confidentiality reasons. Denominator populations are the sum of the population estimates as at 31 December of 2015 to 2017. Population estimates as at 31 December are calculated as the average of the 30 June populations before and after the relevant December. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2015 to 2018.

Lumbar spinal decompression, 18 years and over

Rates across Australia

Figure 4.12: Number of hospitalisations for lumbar spinal decompression (excluding lumbar spinal fusion) per 100,000 people aged 18 years and over, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2015–16 to 2017–18



Notes:

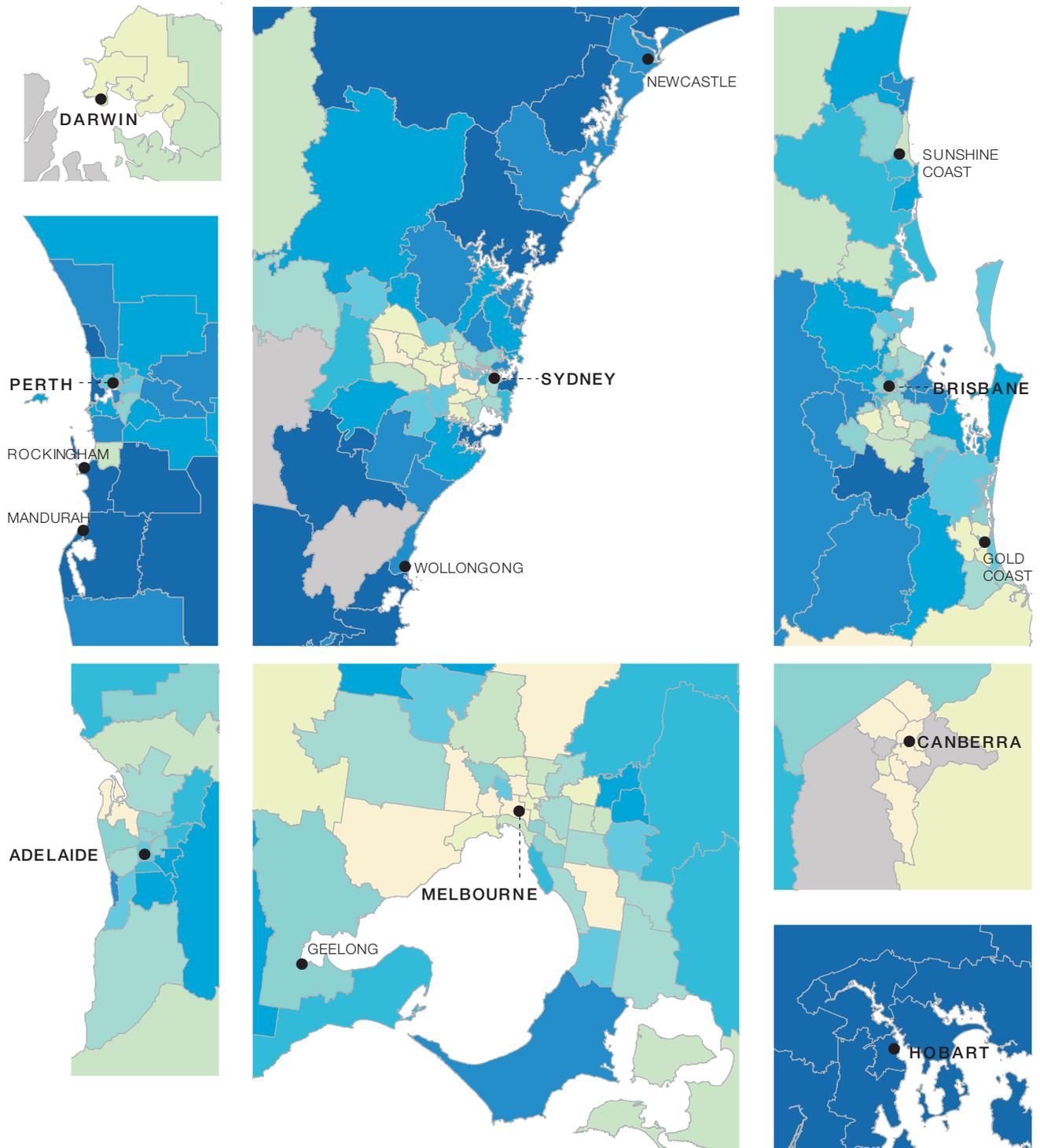
Denominator populations are the sum of the population estimates as at 31 December of 2015 to 2017. Population estimates as at 31 December are calculated as the average of the 30 June populations before and after the relevant December.

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2015 to 2018.

Rates across capital city areas

Figure 4.13: Number of hospitalisations for lumbar spinal decompression (excluding lumbar spinal fusion) per 100,000 people aged 18 years and over, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2015–16 to 2017–18



Notes:

Denominator populations are the sum of the population estimates as at 31 December of 2015 to 2017. Population estimates as at 31 December are calculated as the average of the 30 June populations before and after the relevant December.

For further detail about the methods used, please refer to the Technical Supplement.

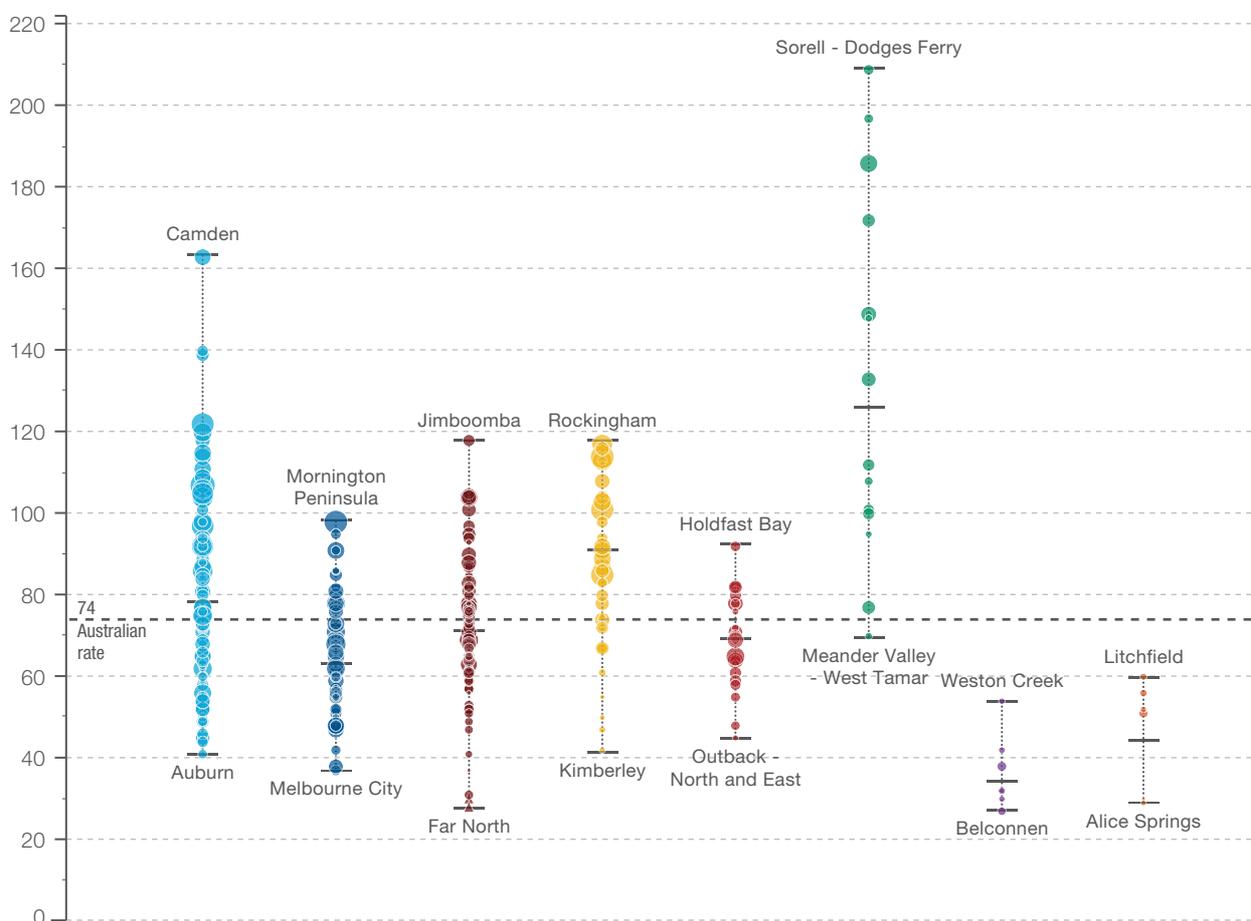
Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2015 to 2018.

Lumbar spinal decompression, 18 years and over

Rates by state and territory

Figure 4.14: Number of hospitalisations for lumbar spinal decompression (excluding lumbar spinal fusion) per 100,000 people aged 18 years and over, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2015–16 to 2017–18

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Highest rate	163	98	118	117	92	209	54	60
State/territory	78	63	71	91	69	126	34	44
Lowest rate	41	37	28	42	45	70	27	29
No. hospitalisations	14,783	9,490	8,144	5,462	3,059	1,657	307	229



Each circle represents a single SA3. The size indicates the number of hospitalisations.

▲ rate only



Notes:

Triangles (▲) indicate SA3s where only rates are published. The numbers of hospitalisations are not published for confidentiality reasons.

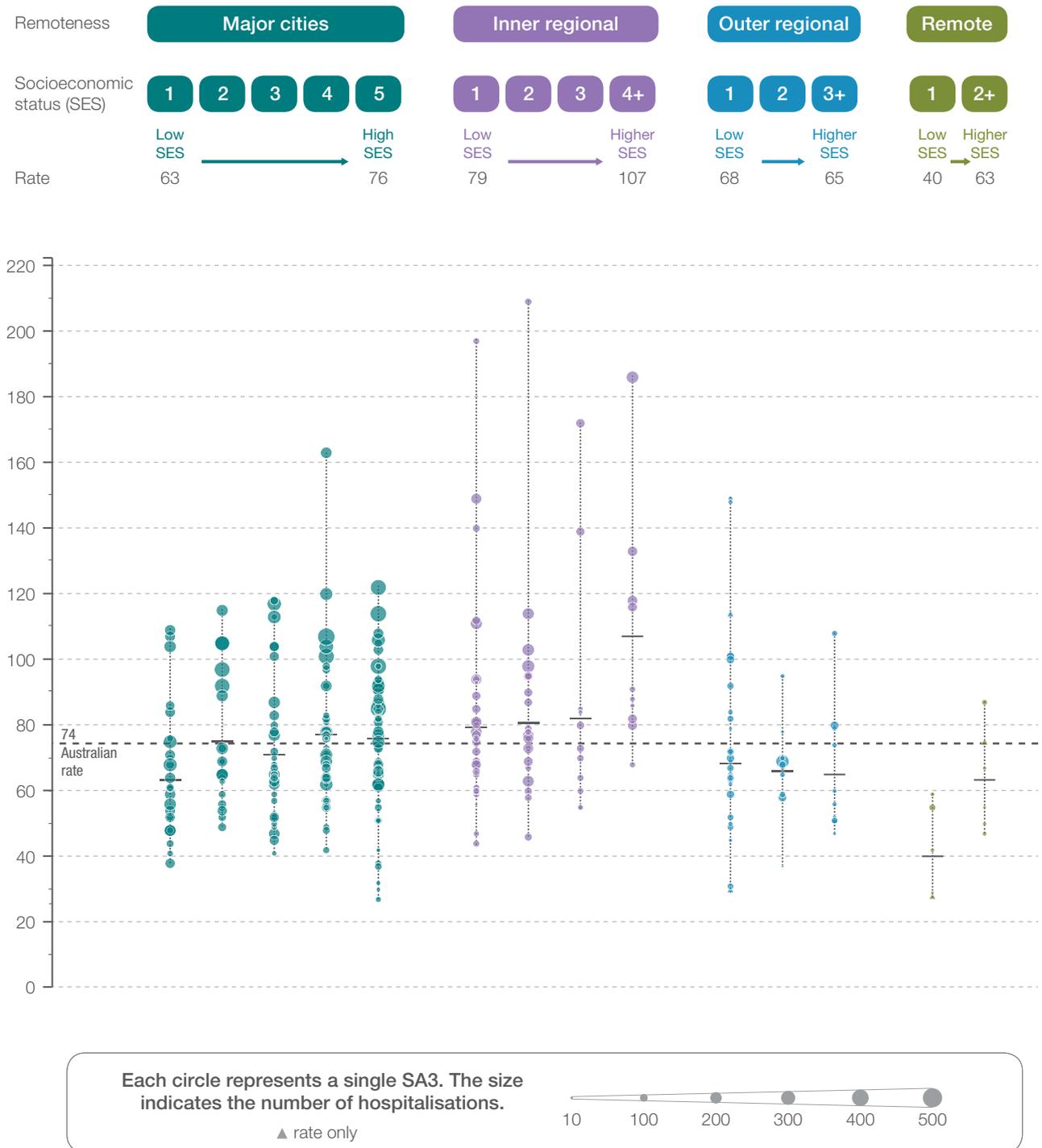
Denominator populations are the sum of the population estimates as at 31 December of 2015 to 2017. Population estimates as at 31 December are calculated as the average of the 30 June populations before and after the relevant December.

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2015 to 2018.

Rates by remoteness and socioeconomic status

Figure 4.15: Number of hospitalisations for lumbar spinal decompression (excluding lumbar spinal fusion) per 100,000 people aged 18 years and over, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2015–16 to 2017–18



Notes: Triangles (▲) indicate SA3s where only rates are published. The numbers of hospitalisations are not published for confidentiality reasons. Denominator populations are the sum of the population estimates as at 31 December of 2015 to 2017. Population estimates as at 31 December are calculated as the average of the 30 June populations before and after the relevant December. For further detail about the methods used, please refer to the Technical Supplement.

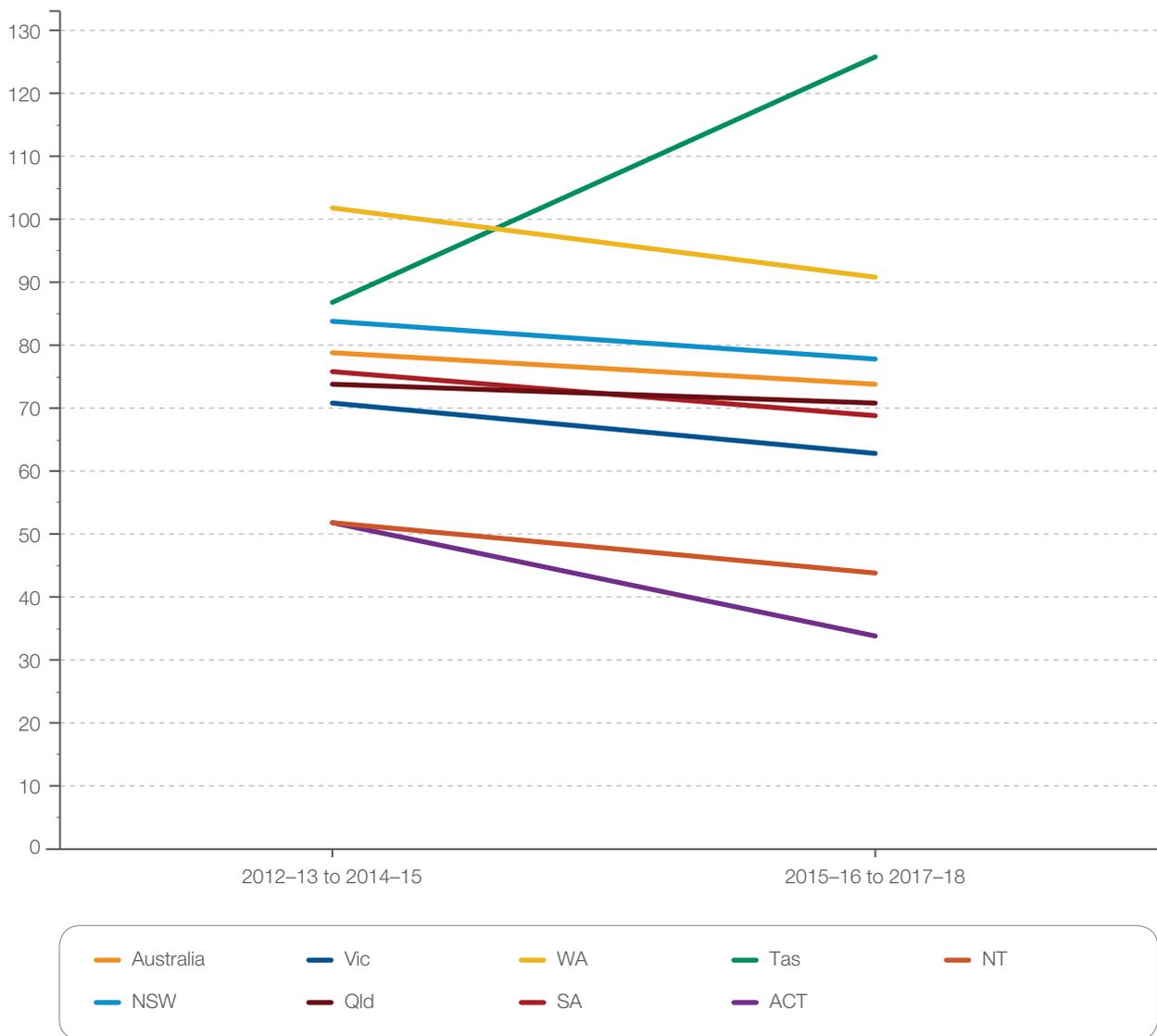
Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2015 to 2018.

Lumbar spinal decompression, 18 years and over

Rates across years

Figure 4.16: Number of hospitalisations for lumbar spinal decompression (excluding lumbar spinal fusion) per 100,000 people aged 18 years and over, age and sex standardised, by state and territory of patient residence, 2012–13 to 2014–15 and 2015–16 to 2017–18

	2012–13 to 2014–15	2015–16 to 2017–18
Highest SA3 rate	156	209
Australian rate	79	74
Lowest SA3 rate	30	27
Magnitude of variation	5.2	7.7
Magnitude of variation without top & bottom 10% SA3	2.0	2.1



Notes:

Denominator populations are the sum of the population estimates as at 31 December of 2012 to 2014 and 2015 to 2017. Population estimates as at 31 December are calculated as the average of the 30 June populations before and after the relevant December. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of National Hospital Morbidity Database and ABS Estimated Resident Populations 30 June of 2012 to 2015 and 2015 to 2018.

Resources

Australian

- Back pain, Better Health Victoria, betterhealth.vic.gov.au/health/ConditionsAndTreatments/Back-pain
- Laminectomy, Better Health Victoria, betterhealth.vic.gov.au/health/conditionsandtreatments/laminectomy

International

- *Low Back Pain and Sciatica in Over 16s: Assessment and management*. Invasive treatments for low back pain and sciatica. NICE guideline NG59⁸
- The MIST guidelines: the Lumbar Spinal Stenosis Consensus Group guidelines for minimally invasive spine treatment⁹
- Danish national clinical guidelines for surgical and nonsurgical treatment of patients with lumbar spinal stenosis³
- Chou R. Subacute and chronic low back pain: Surgical treatment. In: Atlas SJ, editor. *UpToDate*. Waltham, MA: UpToDate; 2020

Australian initiatives

SUcceSS trial: SUrgery for Spinal Stenosis

This Australian trial will help to fill a gap in evidence by measuring the effect of spinal decompression versus placebo surgery on walking and function in patients with symptomatic lumbar spinal stenosis. This will be the first randomised placebo-controlled trial of surgery for spinal stenosis. It aims to provide high-quality evidence on the efficacy of spinal decompression for treating spinal stenosis.¹⁷ The trial is enrolling participants until December 2022.

Australian Spine Registry

The Australian Spine Registry (spineregistry.org.au) has been collecting data since January 2018 about spine surgery in Australia, aiming to improve the quality of care. The registry is supported by the Spine Society of Australia, in partnership with Monash University. It collects data on the frequency of spine surgery; the usefulness, safety and results of different procedures; factors that predict favourable and unfavourable outcomes; and the care provided to Australians having spine surgery and how it compares with international best practice.

Clinical care standard

Low Back Pain Clinical Care Standard (planned for publication late 2021), Australian Commission on Safety and Quality in Health Care.
www.safetyandquality.gov.au/standards/clinical-care-standards/low-back-pain-clinical-care-standard

Lumbar spinal decompression, 18 years and over

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Chapter 5

Gastrointestinal investigations

At a glance



Gastroscopy is used to investigate, treat or monitor conditions of the upper gastrointestinal (GI) tract. Most conditions that affect the upper GI tract and require gastroscopy are uncommon in people aged under 55 years.

The Atlas found that, in 2018–19, the rate of Medicare Benefits Schedule (MBS)–subsidised services for gastroscopy for people aged 18–54 years was almost 11 times higher in the local area with the highest rate than in the area with the lowest.* Rates were markedly higher in major cities than elsewhere. Almost two-thirds of gastroscopy services were performed on the same day as a colonoscopy for the same person.

Few people who have an initial gastroscopy require another within three years. Repeat gastroscopy is used mainly to monitor conditions that increase the risk of upper GI cancer or bleeding in high-risk groups.

The Atlas found that, in 2018–19, the rate of MBS-subsidised services for repeat gastroscopy performed within two years and 10 months of an earlier gastroscopy was almost 15 times higher in the local area with the highest rate than in the area with the lowest.* Rates were markedly

higher in major cities and also increased with socioeconomic advantage.

National guidance on appropriate use of gastroscopy, including when to perform repeat gastroscopy, is needed. Education for clinicians and consumers about the low risk of upper GI cancer for most people, especially those aged under 55 years, and improved consumer understanding about the role of gastroscopy, are required.

Repeat colonoscopy is used mainly to monitor for bowel cancer in people at increased risk. The timing of repeat colonoscopy is based on bowel cancer risk. There are limited reasons for repeating a colonoscopy within three years.

The Atlas found that, in 2018–19, the rate of MBS-subsidised services for repeat colonoscopy performed within two years and 10 months of an earlier colonoscopy was almost 20 times higher in the local area with the highest rate than in the area with the lowest.* Rates were markedly higher in major cities and increased with socioeconomic advantage.

A focus on driving implementation of national guidelines and the *Colonoscopy Clinical Care Standard* is needed.

* After standardising to remove age and sex differences between populations.

Recommendations

The Commission consulted widely, but is solely responsible for making the recommendations; as such, the recommendations may not reflect the views of all contributors to the Atlas.

5a. State and territory health departments to develop and implement evidence-based triage criteria for the prioritisation and allocation of patients to gastroscopy, colonoscopy, and gastroscopy performed with colonoscopy.

5b. Health service organisations to:

- i. Audit clinicians performing endoscopy services and provide the results back to clinicians to act upon, in line with Action 1.28 of the National Safety and Quality Health Service (NSQHS) Standards

 - ii. Incorporate individual clinicians' audit data as part of re-credentialing processes

 - iii. Report key performance indicators, trends and adverse events in endoscopy to the governing body, consistent with the NSQHS Standards.
-

5c. The Gastroenterological Society of Australia to develop a position statement on the appropriate use and timing of gastroscopy, and of gastroscopy performed with colonoscopy, for gastroenterologists and general practitioners.

5.1 Gastroscopy MBS services, 18–54 years

Why is this important?

Gastroscopy is used to investigate or treat conditions affecting the upper gastrointestinal (GI) tract. It can also be used to monitor conditions affecting the upper GI tract that lead to cancer in certain high-risk groups.¹⁻³

Most conditions affecting the upper gastrointestinal (GI) tract that require a gastroscopy are uncommon in people aged under 55 years. Oesophageal and stomach cancers are very rare in this age group, and even less common in people without certain risk factors, such as smoking.¹⁻³

The *Third Australian Atlas of Healthcare Variation* found substantial variation in hospitalisations for gastroscopy among people of all ages.⁴ Higher rates were seen in areas of socioeconomic advantage in major cities, and in women. These findings are not consistent with the prevalence of GI disease.

The fourth Atlas now examines gastroscopy services that are subsidised under the Medicare Benefits Schedule (MBS) in a population that has few indications for its use: people aged 18–54 years.

What did we find?

In 2018–19, there were 154,338 MBS-subsidised services for gastroscopy for people aged 18–54 years. The rate was **10.8 times as high** in the area with the highest rate as in the area with the lowest rate.

Rates were markedly higher in major cities than elsewhere. The national rate for women was 1.6 times as high as the rate for men. About six in every 10 gastroscopy services were performed on the same day as a colonoscopy service for the same person.

What can be done?

Development of national guidance on the appropriate use of gastroscopy is a priority. Guidelines should include recommendations on when gastroscopy should be done at the same time as a colonoscopy. Structured referral forms could aid assessment of appropriateness against guidelines. Health service organisations could ensure that credentialing requirements for clinicians performing gastroscopy include audit of adherence to guidelines.

Interventions are needed that focus on educating consumers and clinicians that the risk of upper GI cancer in this age group is low. Improving consumer understanding about the role of gastroscopy is also important.

More attention needs to be given to clinicians' education on the causes of iron deficiency anaemia in women aged under 55 years. Heavy menstrual bleeding, a commonly unrecognised cause, should be excluded before referral for gastroscopy.

Gastroscopy MBS services, 18–54 years

Context

This item examines rates of MBS-subsidised services for gastroscopy for people aged 18–54 years in Australia in 2018–19.

What is gastroscopy?

Gastroscopy, also known as an upper GI endoscopy, is the examination of the upper part of the GI tract, using a small, flexible tube with a camera on the end, called an endoscope. The procedure can also include a biopsy, if needed. The procedure, requires an empty stomach for an accurate examination. It is usually quick to perform, taking up to about 15 minutes.^{1,5}

What is it used for?

Gastroscopy is used to investigate, treat or monitor certain upper GI symptoms or diseases. Recommended uses are¹:

- Investigation of suspected bleeding from the upper GI tract and upper small bowel
- Investigation of symptoms suggestive of cancer (such as difficulty swallowing, weight loss, bleeding and stomach pain) or no response to acid suppression therapy
- Tissue diagnosis of suspected cancer or coeliac disease
- Surveillance of high-risk groups with chronic conditions that can increase cancer risk (for example, Barrett's oesophagus).

Gastroscopy is also used to treat bleeding in the upper GI tract, some upper GI cancers or a narrowed oesophagus (oesophageal stricture). However, gastroscopies for treatment (therapeutic gastroscopies) are not included in this data item.

Most conditions affecting the upper GI tract that require investigation with gastroscopy are uncommon in people aged under 55 years. They become more common with increasing age, the onset of chronic disease, or the use of certain medicines such as non-steroidal anti-inflammatory drugs.^{2,3}

Gastroscopy is not required to investigate uncomplicated reflux^{2,3,6,7}, a common condition that affects more than one in 10 people in Australia^{8,9}, with a few exceptions. This is because:

- Most people with reflux have heartburn or regurgitation that can be diagnosed clinically without investigation and managed effectively with dietary or lifestyle modifications, or acid suppression medicines⁶
- Only about one-third of people with gastro-oesophageal reflux disease (GORD), a condition in which reflux affects wellbeing and requires treatment, have abnormalities visible on gastroscopy²
- Most reflux does not progress to changes in the cells lining the upper GI tract, which can lead to Barrett's oesophagus or oesophageal cancer.²

Investigation with gastroscopy is required if reflux does not respond to a trial of acid suppression therapy and if 'alarm features' suggestive of cancer are present, such as difficulty swallowing, bleeding, weight loss, recurrent vomiting and anaemia. It is also required if the diagnosis is unclear or there are complications such as stricture.^{2,6,7,10-12}

Upper GI cancer is rare in people of any age and even lower in people aged under 55 years. Use of gastroscopy for population-based screening for upper GI cancer is not recommended because the chance of diagnosing serious disease is low. Upper GI cancer rates are lower in women than in men, and lower in people without risk factors, such as those who have never smoked^{2,13-17} (Table 5.1). These are important considerations for the appropriate use of gastroscopy, particularly for common conditions.

Table 5.1: Upper GI cancer rates per 100,000 people, by sex and age group, 2019

Age	Oesophageal cancer		Gastric cancer	
	Males	Females	Males	Females
35–39	0.5	0.1	1.6	1.9
40–44	1.0	0.2	3.4	2.5
45–49	2.9	1.3	5.6	1.6
50–54	7.2	1.5	11.2	5.7

Source: Australian Institute of Health and Welfare¹⁸

Coeliac disease is a common and under-diagnosed condition. Gastroscopy is used to confirm a diagnosis for people with positive coeliac serology or where the diagnosis is uncertain.^{6,10,19} Repeat gastroscopy after treatment with a gluten-free diet is controversial and is yet to be shown as cost-effective.²⁰

Gastroscopy is also used to investigate causes of suspected GI blood loss. People without a clear reason for iron deficiency should have a gastroscopy to exclude GI bleeding or malignancy (for example, postmenopausal women and most men). Menstruating women, blood donors and people with vegetarian or vegan diets should have other common causes of iron deficiency excluded first to avoid a missed diagnosis and unnecessary gastroscopy.^{21,22}

Why examine gastroscopy in people aged 18–54 years?

This Atlas examines variation in MBS-subsidised gastroscopy services for an age group in which signs and symptoms appropriate for investigation with gastroscopy are uncommon: adults aged under 55 years. Findings from the *Third Australian Atlas of Healthcare Variation* and a New South Wales study support exploration of variation in gastroscopy in this age group.^{4,23}

The third Atlas reported more than half a million (505,544) hospitalisations for gastroscopy among people of all ages in Australia in 2016–17.⁴ The rate in the area with the highest rate was 7.4 times as high as the rate in the area with the lowest rate. Higher rates were seen in areas of socioeconomic advantage in major cities, and in women. More than one-third (36%) of hospitalisations for colonoscopy included a gastroscopy.

The third Atlas findings highlighted a clear anomaly between the prevalence of risk factors for upper GI disease and gastroscopy hospitalisations, suggesting that some people are receiving care that is inappropriate and of no or little benefit.

Inappropriate use of gastroscopy in people aged under 55 years was examined in a New South Wales study.²³ Use of gastroscopy for investigating dyspepsia (indigestion or heartburn) in people aged under 55 years was considered low-value care – defined as care that provides no benefit, or a risk of harm that is greater than the benefit, or a benefit that is disproportionately low compared with its cost. About 14% of gastroscopies in adults aged under 55 years in New South Wales public hospitals were identified as low-value care in 2016–17. The rate of low-value gastroscopy increased by about 8% each year between 2010–11 and 2016–17.

Gastroscopy MBS services, 18–54 years

About the data

Data are sourced from the MBS dataset. This dataset includes information on MBS claims processed by Services Australia. It covers a wide range of services (attendances, procedures, tests) provided across primary care and hospital settings.

The dataset does not include:

- Services for publicly funded patients in hospital
- Services for patients in public outpatient clinics
- Services covered under Department of Veterans' Affairs arrangements.

The dataset does not allow analysis by Aboriginal and Torres Strait Islander status.

Rates are based on the number of MBS-subsidised services for gastroscopy per 100,000 people aged 18–54 years in 2018–19.

Because a record is included for each service rather than for each patient, patients who receive the service more than once in the financial year will be counted more than once.

The analysis and maps are based on the patient's postcode recorded in their Medicare file and not the location of the service.

Rates are age and sex standardised to allow comparisons between populations with different age and sex structures.

What do the data show?

Magnitude of variation

In 2018–19, there were 154,338 MBS-subsidised services for gastroscopy, representing 1,247 services per 100,000 people aged 18–54 years (the Australian rate).

The number of MBS-subsidised services for gastroscopy across 327* local areas (Statistical Area Level 3 – SA3) ranged from 218 to 2,348 per 100,000 people. The rate was **10.8 times as high** in the area with the highest rate compared with the area with the lowest rate. The number of MBS-subsidised services for gastroscopy varied across states and territories, from 481 per 100,000 people in the Northern Territory to 1,312 in Victoria (Figures 5.5–5.8).

After the highest and lowest 10% of results were excluded and 263 SA3s remained, the number of MBS-subsidised services per 100,000 people was 2.9 times as high in the area with the highest rate compared with the area with the lowest rate.

Analysis by remoteness and socioeconomic status

Rates were markedly higher in major cities than in other areas, and markedly lower in remote areas than in other areas. Overall, the rate for major cities was 3.4 times as high as the rate for remote areas (Figures 5.1 and 5.9).

Rates decreased with socioeconomic disadvantage in major cities, and in inner regional and remote areas. Overall, the rate of gastroscopy in the highest socioeconomic group was 1.4 times as high as in the lowest group (Figures 5.2 and 5.9).

* There are 340 SA3s. For this item, data were suppressed for 13 SA3s due to a small number of services and/or population in an area, or potential identification of individual patients, practitioners or business entities.

Notes:

Some SA3 rates are more volatile than others. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia.

For further detail about the methods used, please refer to the Technical Supplement.

Figure 5.1: Number of MBS-subsidised services for gastroscopy per 100,000 people aged 18–54 years, age and standardised, by remoteness of patient residence, 2018–19

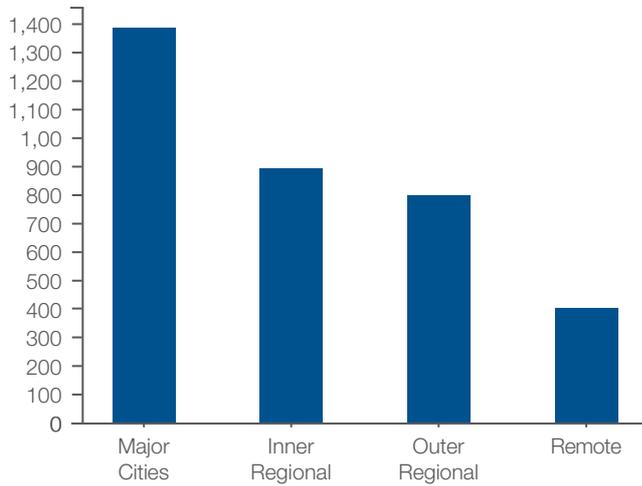
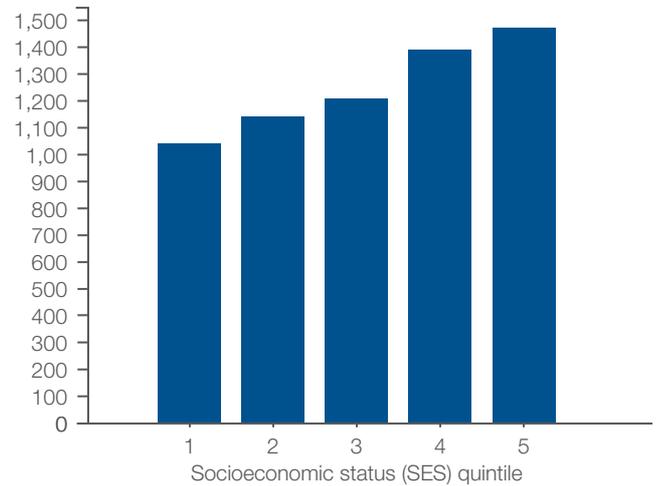


Figure 5.2: Number of MBS-subsidised services for gastroscopy per 100,000 people aged 18–54 years, age and standardised, by socioeconomic area of patient residence, 2018–19*



Notes:

* Areas with a low SES (=1) have a high proportion of relatively disadvantaged people. Areas with a high SES (=5) have a low proportion of relatively disadvantaged people.

For further detail about the methods used, please refer to the Technical Supplement.

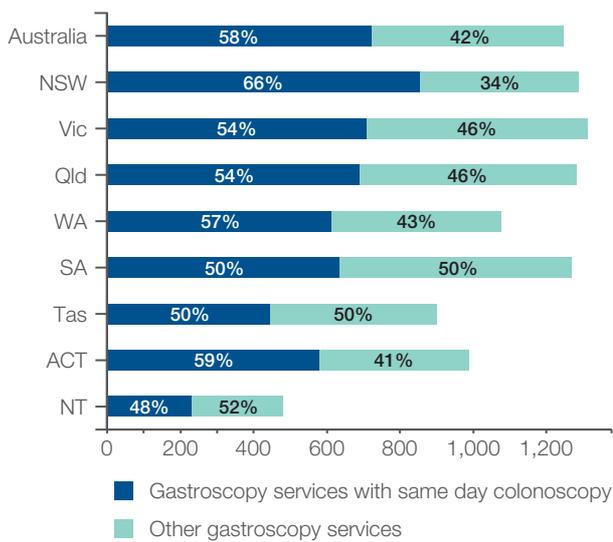
Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Gastrosocopy MBS services, 18–54 years

Number of MBS-subsidised services for gastroscopy and colonoscopy for the same patient on the same day

In 2018–19, 58% of MBS-subsidised services for gastroscopy were performed on the same day as an MBS-subsidised service for colonoscopy for the same patient. There were 89,399 services for gastroscopy that accompanied a colonoscopy (Figure 5.3).

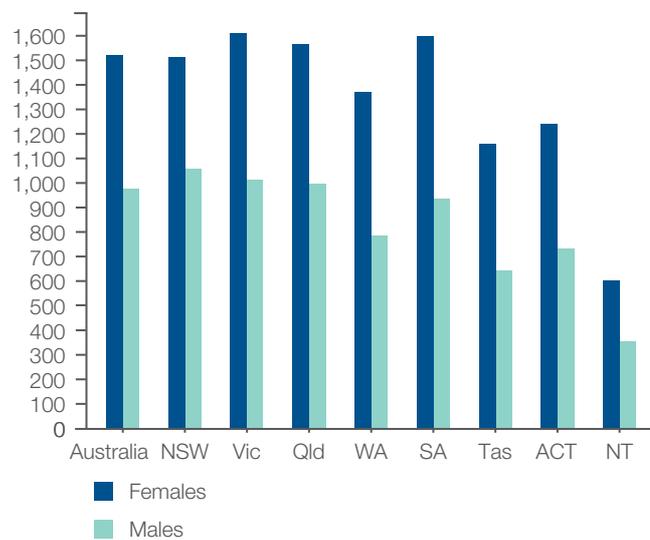
Figure 5.3: Number of MBS-subsidised services for gastroscopy on the same patient and same day as an MBS-subsidised service for colonoscopy, per 100,000 people aged 18–54 years, age and sex standardised, by state and territory of patient residence, 2018–19



Analysis by sex

The national rate of MBS-subsidised services for gastroscopy for females was 1.6 times as high as the rate for males. Rates were consistently higher for females in all states and territories (Figure 5.4).

Figure 5.4: Number of MBS-subsidised services for gastroscopy per 100,000 people aged 18–54 years, age and sex standardised, by state and territory of patient residence, by sex, 2018–19



The data for Figures 5.3 and 5.4, and the data and graphs for analysis by Primary Health Network are available at safetyandquality.gov.au/atlas

Notes:

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Interpretation

There is wide variation in gastroscopy use, probably involving overuse in some areas and underuse in others. Rates of gastroscopy were markedly higher in major cities than elsewhere. Rates were also higher for women than for men in all states and territories.

These findings are consistent with those in the third Atlas, which examined public and private hospitalisations for gastroscopy.

Variation in rates of gastroscopy is likely to be due to geographical differences in the factors discussed below.

Variation between areas may not directly reflect the practices of the clinicians who are based in these areas. The analysis is based on where people live rather than where they obtain their health care. People may travel outside their local area to receive health care.

Clinical decision-making

Variation in adherence with available clinical guidelines may influence rates of gastroscopy.

International evidence suggests that a high proportion of gastroscopies do not accord with guideline recommendations. A 2010 meta-analysis of more than 13,000 patients undergoing gastroscopy found that 22% of procedures did not align with recommended indications in European and American guidelines.²⁴ More recently, a 2018 systematic review and meta-analysis reported that up to 54% of gastroscopies in 15 countries were performed for inappropriate indications.²⁵ Despite guidelines that recommend against using gastroscopy to investigate uncomplicated GORD^{6,7,11,26}, a New Zealand study reported this as one of the most common inappropriate indications for performing gastroscopy.²⁷

Differences in clinical opinion on management where the evidence is unclear may contribute to variation. For example, further evidence is needed to demonstrate the benefit of gastroscopy after a diagnosis of coeliac disease.²⁰

Difficulties in keeping up to date with rapidly changing evidence may also influence rates.²⁵

Some clinicians may perform gastroscopy in low-risk people, such as those aged under 55 years, to relieve patient anxiety and reassure them that they do not have GI cancer. However, this reassurance may be short lived, and the procedure has a low chance of diagnosing significant disease.²⁸⁻³⁰

Fear of litigation for not investigating symptoms may influence clinicians' decisions about use of gastroscopy, particularly if they are unaware of current recommendations or evidence about the incidence of upper GI cancers. Concerns about late diagnosis and subsequent litigation, as well as few disincentives for over-testing may also contribute to overuse of gastroscopy.²⁵

Higher rates of gastroscopy in women than in men may be related to higher rates of iron deficiency in women. Gastroscopy might have been used before exclusion of dietary causes of iron deficiency, or heavy menstrual bleeding in menstruating women. Higher gastroscopy rates in women raise concern of delayed diagnoses and treatment, because common causes of iron deficiency are being missed.

Gastroscopy and colonoscopy performed on the same day

The ease of performing a gastroscopy at the same time as a colonoscopy may contribute to variation. About six in 10 gastroscopy services were performed on the same day in the same person. Both procedures should be performed concurrently for only a limited number of conditions, so the high rates suggest inappropriate use.

Australia's National Bowel Cancer Screening Program offers a two-yearly faecal occult blood test (FOBT) for people aged 50–74 years. Guidelines recommend colonoscopy for people who have a positive FOBT to assist with diagnosing disease.³¹ Some clinicians performing gastroscopies may be unaware that a FOBT only detects lower GI tract bleeding.

Gastrosocopy MBS services, 18–54 years

Higher rates of both procedures may also reflect investigation of iron deficiency in menstruating women before excluding diet or heavy menstrual bleeding as the cause.

Referral practices

Variation in gastrosocopy rates may be due to referral practices. A New Zealand study found that 42% of referrals did not follow American Society of Gastroenterology criteria. No cancers were found in gastrosocopies from inappropriate referrals.²⁷ Surveillance of healed benign lesions was the most common inappropriate reason to request a gastrosocopy among hospital-based clinicians (31% of consultant requests). Investigation of symptoms considered functional in origin (heartburn) was the most common inappropriate reason among general practitioners (GPs) (25% of requests).

Consumer expectations

Consumer expectations and perception of cancer risk may contribute to variation in rates of gastrosocopy use.^{26,32} People often have incorrect beliefs about their cancer risk.^{32,33} This may influence their perceptions about the benefits of interventions such as screening to detect GI cancer, and their preference and demand for investigations, even when their risk of cancer is low.

In the United Kingdom, the ‘Be Clear on Cancer’ campaign in 2015, which aimed to raise awareness of GI cancers, increased demand for gastrosocopy by 48% but did not affect the rate of cancer diagnosis.³⁴

Access to services and number of clinicians providing services

Access to clinicians may influence the likelihood of people seeking care and the rates of gastrosocopy use. The practice styles of individual clinicians may be more likely to affect rates in areas with fewer clinicians, such as rural and regional locations, than in areas with more clinicians.

Availability and affordability of services may also influence patterns of use. Ability to pay out-of-pocket costs for gastrosocopy is likely to be lower in areas of socioeconomic disadvantage, and access is likely to be more difficult in areas with fewer services. Open-access endoscopy services, where GPs are able to request gastrosocopy without specialist review, may also influence patterns of use.

Financial incentives

Greater remuneration for providing a service rather than consultation may lead to variation and over-servicing in some areas.

Promoting appropriate care

Unwarranted variation in the use of gastrosocopy in people aged under 55 years could be addressed by reducing the rate of inappropriate gastrosocopies and increasing access in areas that are under-served.

Australia’s finite health resources should be directed to high-value care, and away from low-value care such as use of gastrosocopy to investigate reflux in people aged under 55 years, where it will not change the diagnosis or management. Improving awareness of the causes of iron deficiency unrelated to the upper GI tract will reduce unnecessary gastrosocopy and avoid delays in diagnosis. Reducing inappropriate referrals for gastrosocopy could also free up resources to reduce waiting times for public colonoscopy services.

Guideline and resource development

Development of national guidance to support appropriate use of gastrosocopy is a priority. These could be used to assess appropriateness of referrals and for clinical audit of clinicians’ gastrosocopy practices. The guidelines should cover guidance on appropriate use of same-day upper and lower GI endoscopy, as recommended by the Medicare Benefits Schedule Review Taskforce.³⁵

Integration of cancer mortality and lifestyle data into healthcare pathways, training guidelines, and specialist and consumer resources could also support appropriate use of gastrosocopy.

Clinical decision-making

Strategies to improve clinicians' skills in provisional diagnosis could improve the assessment of reflux symptoms and iron deficiency, and reduce unnecessary gastroscopy.

Use of medicines that can cause GORD symptoms should be excluded in people presenting with reflux.

Dietary causes and heavy menstrual bleeding should be excluded in women with iron deficiency. Improved awareness and application of the *Heavy Menstrual Bleeding Clinical Care Standard* may reduce delays in diagnosis of heavy menstrual bleeding and the rates of unnecessary gastroscopy in menstruating women.^{4,36}

Improved use of medicines to manage GORD symptoms may help reduce inappropriate gastroscopies. Proton pump inhibitors (PPIs), which are commonly used to manage GORD symptoms, are most effective when taken at least half an hour before the first meal of the day.⁶ Taking PPI medicines at the wrong time can lead to poor symptom control, and may contribute to unnecessary use of gastroscopy to investigate symptoms.

Consumer education and reassurance

Informing people aged under 55 years about the limited role of gastroscopy in the management of most upper GI symptoms, and reassuring them that their risk of developing upper GI cancer is very low may reduce demand for inappropriate gastroscopy. Interactive tools that identify a person's risk or the incidence of cancer – such as the Australian Institute of Health and Welfare cancer summary data tool (see 'Resources' on page 264) – may help clinicians when having conversations with their patients about upper GI cancer risk.¹⁸

Consumer education for women about the importance of considering heavy menstrual bleeding or diet as a cause of iron deficiency anaemia may also reduce unnecessary demand and use of gastroscopy.

Reducing risk factors

Making lifestyle changes to reduce the risk of GORD, upper GI cancers and bowel cancer should be the focus for people aged under 55 years presenting with reflux symptoms who are concerned about cancer, rather than having a gastroscopy. For example, weight loss can reduce GORD symptoms. In women, a 3.5 kg/m² reduction in body mass index can result in a nearly 40% reduction in the risk of frequent GORD symptoms.^{37,38} Improving a person's understanding about their cancer risk – particularly in people aged under 55 years – is important to reduce anxiety and dispel myths about cancer.³⁹

Public health initiatives that address diet, smoking, obesity, excessive alcohol consumption and sedentary lifestyle should be targeted to areas with a high prevalence of risk factors for upper GI disease.

Clinical audit and clinician education

Clinical audit is a tool that could be used more widely to support appropriate use of gastroscopy in Australia.

Health service organisations could ensure that credentialing requirements for clinicians include a clinical audit against evidence-based guidelines. Audits in this area could form part of continuing education requirements for clinicians.

A study of Australian GPs found that participation in clinical self-audit against Gastroenterological Society of Australia recommendations improved management of GORD.⁴⁰ Referral for gastroscopy fell from 48% to 45% of patients during the audit program. Other aspects of management improved – for example, identification of risk factors that triggered symptoms (such as medicines), and recommendations for lifestyle changes such as weight loss and dietary changes.⁴⁰

An indicator to measure gastroscopies performed after a positive FOBT (which is contrary to guidelines which recommend a colonoscopy only) could be developed for clinical audits.

Gastroscopy MBS services, 18–54 years

Structured referral forms and checklists for GPs could support appropriate requests for gastroscopy in younger adults. Using guidelines to assess the appropriateness of referrals could also increase the likelihood that the procedure will assist with providing a diagnosis.

Educational programs for gastroenterologists and GPs could improve the appropriateness of requests for gastroscopy. Education could cover the:

- Non-GI causes of iron deficiency anaemia
- Low risk of upper GI cancer in people aged under 55 years
- Limited role of gastroscopy in GORD
- Low chance that gastroscopy will diagnose significant disease for simple upper GI symptoms.

Appropriate prioritisation of colonoscopy and gastroscopy

Health service organisations need to examine the volume of gastroscopies that may be tying up resources needed to perform colonoscopies. Colonoscopy for people with a positive FOBT should be prioritised over gastroscopy for people whose management is unlikely to change as a result of the gastroscopy, such as people aged under 55 years with typical symptoms of reflux. Better use of resources according to clinical need would improve the likelihood of diagnosing significant disease and reduce delays in diagnosis.

Triage systems

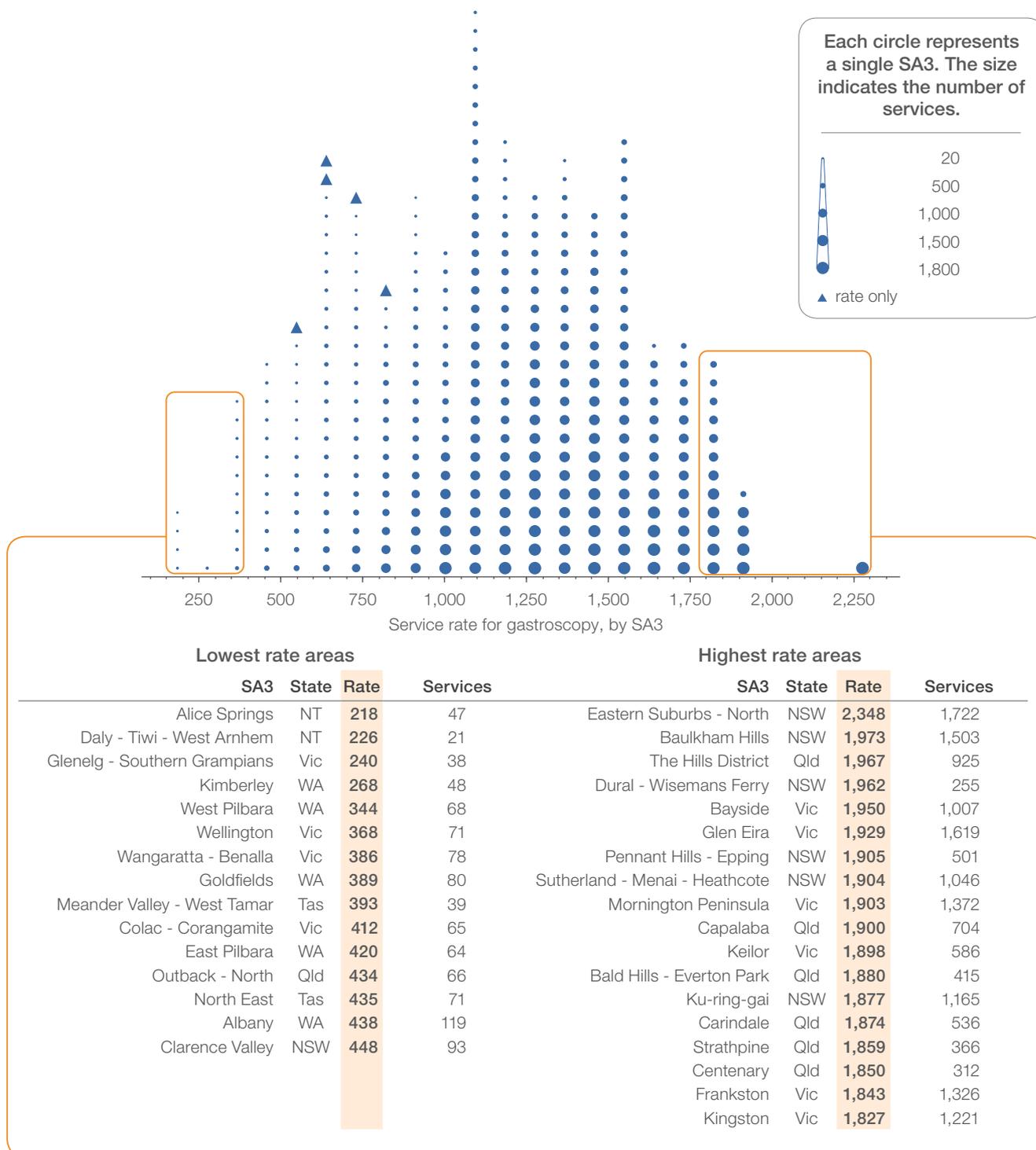
Many states and territories are introducing evidence-based triage systems for prioritising and allocating people for gastroscopy and colonoscopy, with the aim of reducing variation in use of these procedures:

- Victorian health services require clinicians to refer people for gastroscopy according to the categorisation guidelines; these guidelines specify the appropriate use of gastroscopy in people aged under 55 years who have symptoms of GORD with no alarm features, and surveillance of people with Barrett's oesophagus⁴¹
- Tasmania has adopted the Victorian categorisation guidelines and formed a statewide endoscopy network to monitor the quality of its services⁴²
- Queensland and Western Australia have introduced clinical prioritisation criteria for many clinical areas, including gastroenterology, to triage patients referred to public specialist outpatient services.^{43,44}

Wider use of these triage systems could result in more appropriate prioritisation of gastroscopy and colonoscopy.

Rates by local area

Figure 5.5: Number of MBS-subsidised services for gastroscopy per 100,000 people aged 18–54 years, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Notes:

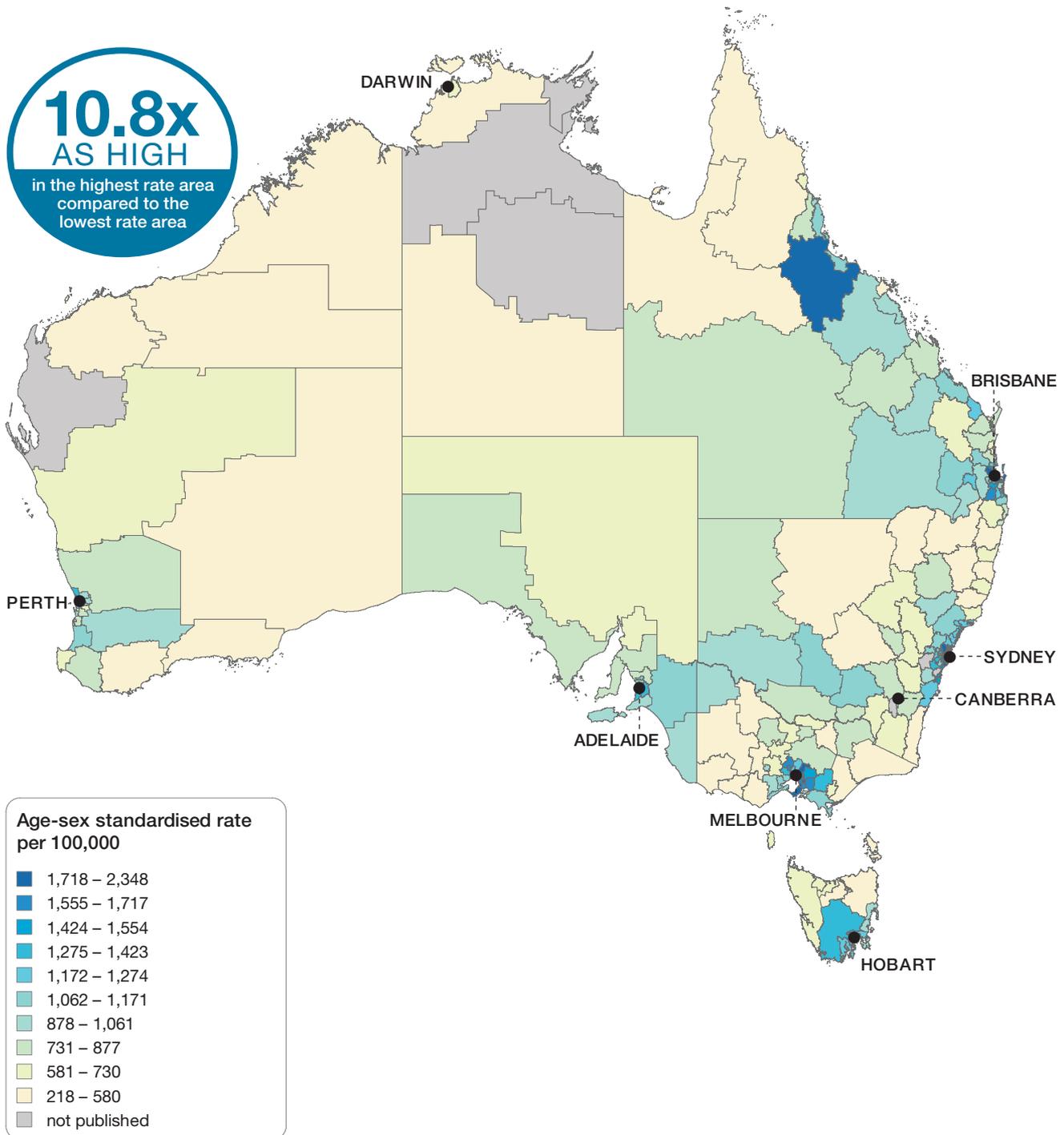
Triangles (▲) indicate SA3s where only rates are published. The number of services are not published for confidentiality reasons. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Gastrosocopy MBS services, 18–54 years

Rates across Australia

Figure 5.6: Number of MBS-subsidised services for gastroscopy per 100,000 people aged 18–54 years, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



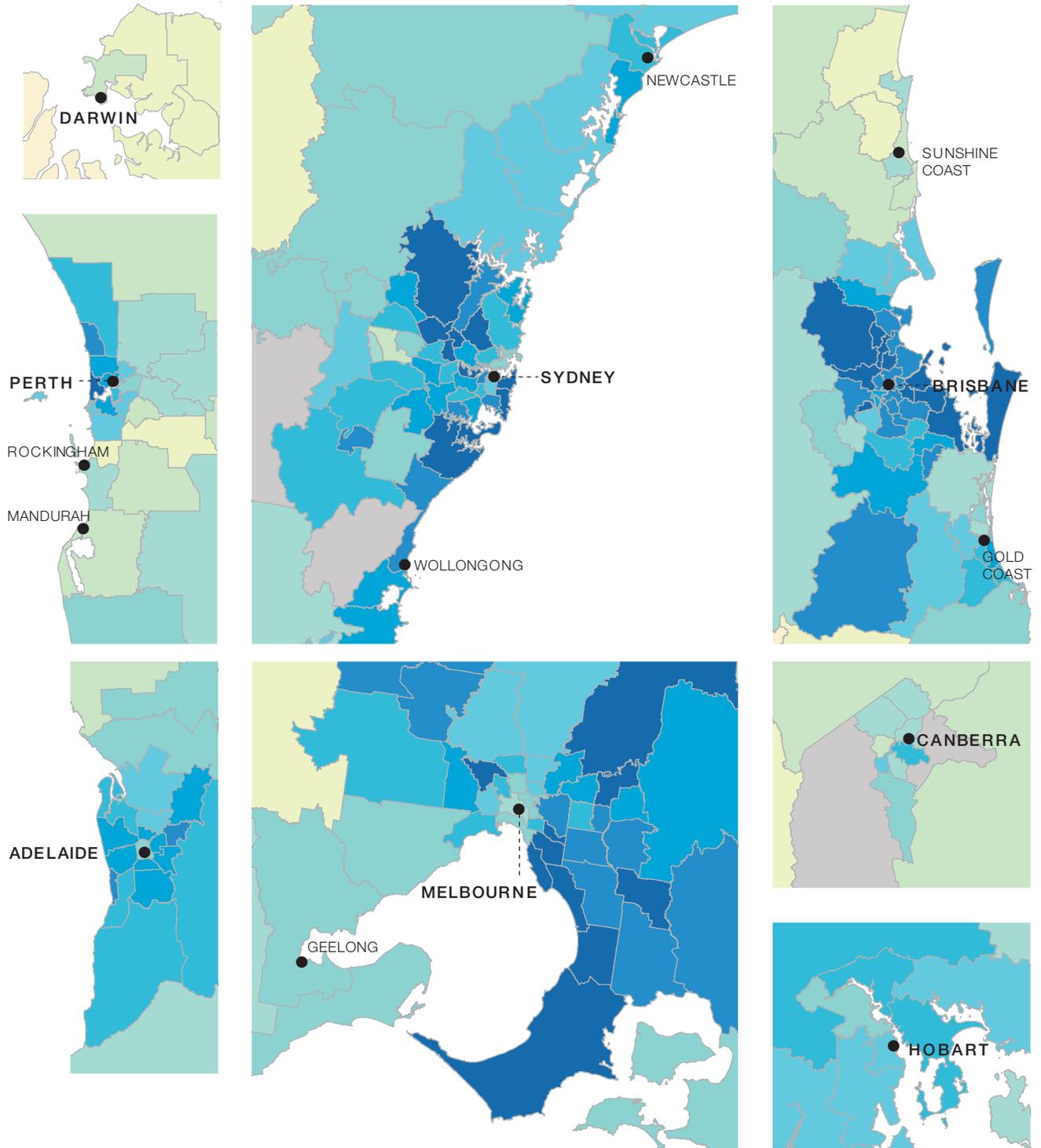
Notes:

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Rates across capital city areas

Figure 5.7: Number of MBS-subsidised services for gastroscopy per 100,000 people aged 18–54 years, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Notes:

For further detail about the methods used, please refer to the Technical Supplement.

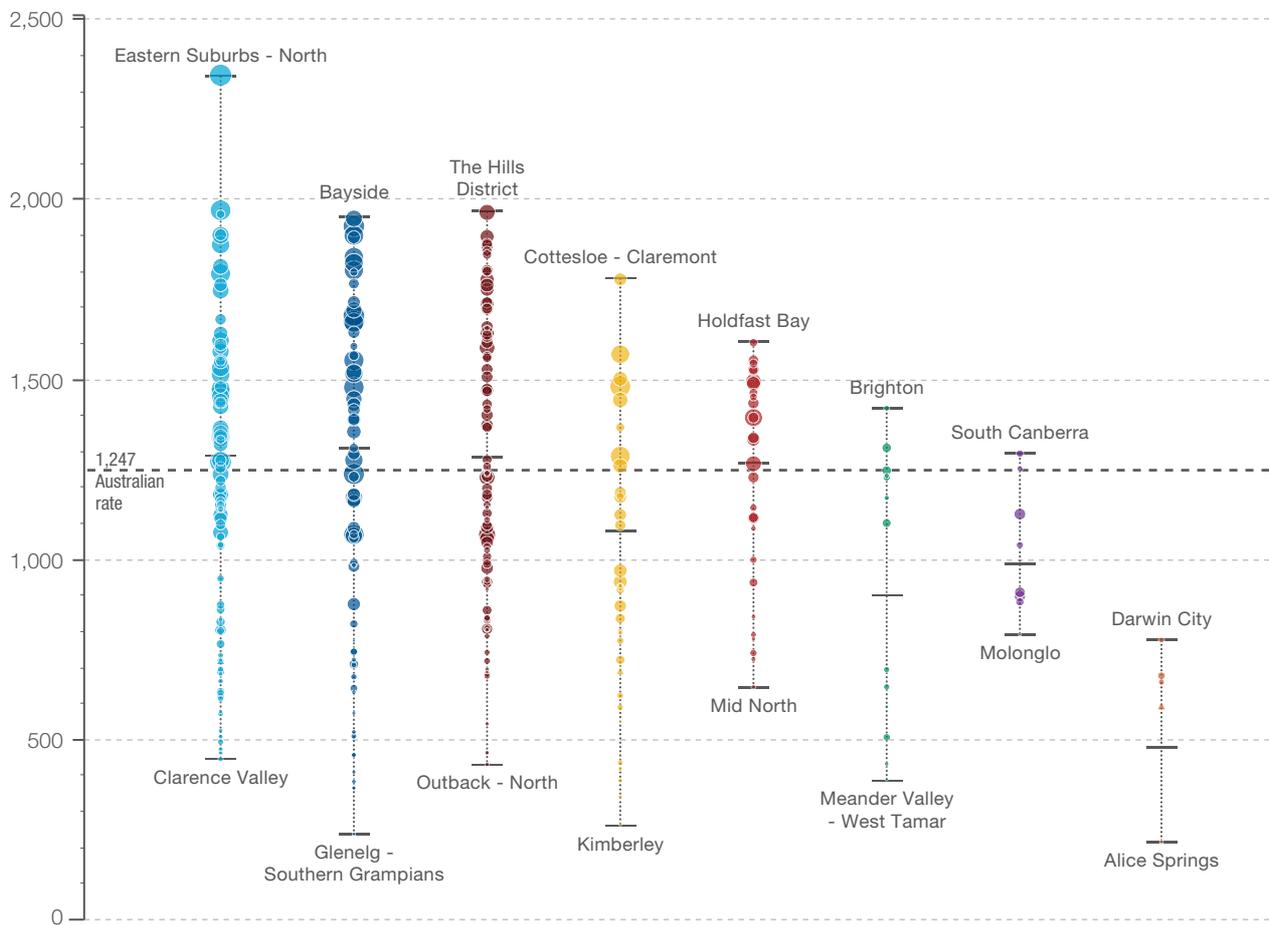
Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Gastrosocopy MBS services, 18–54 years

Rates by state and territory

Figure 5.8: Number of MBS-subsidised services for gastrosocopy per 100,000 people aged 18–54 years, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Highest rate	2,348	1,950	1,967	1,781	1,605	1,423	1,297	779
State/territory	1,287	1,312	1,282	1,078	1,270	902	987	481
Lowest rate	448	240	434	268	649	393	794	218
Total services	50,349	42,576	31,703	14,143	10,549	2,198	2,167	641



Each circle represents a single SA3. The size indicates the number of services.

▲ rate only



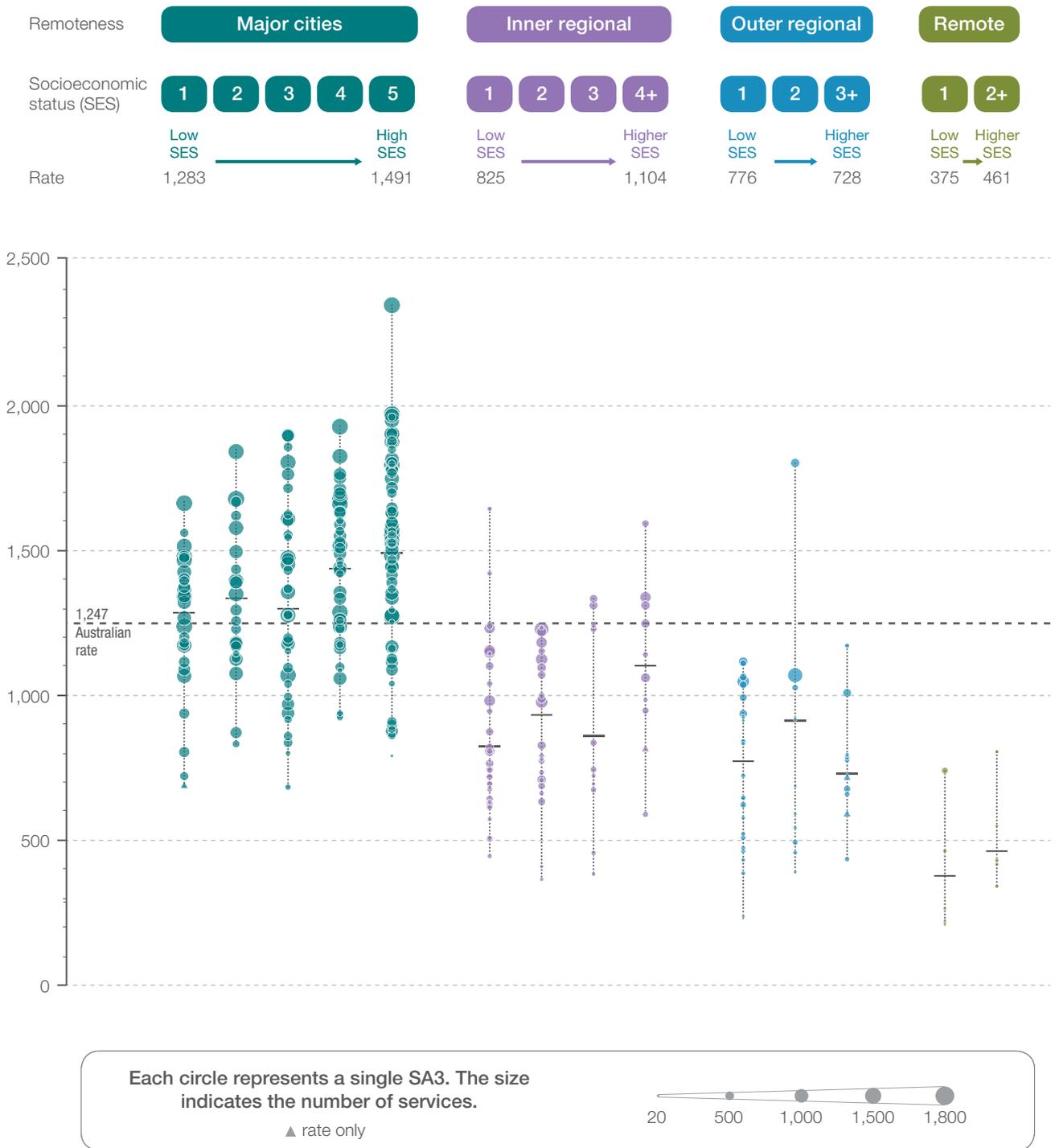
Notes:

Triangles (▲) indicate SA3s where only rates are published. The number of services are not published for confidentiality reasons. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Rates by remoteness and socioeconomic status

Figure 5.9: Number of MBS-subsidised services for gastroscopy per 100,000 people aged 18–54 years, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Notes: Triangles (▲) indicate SA3s where only rates are published. The number of services are not published for confidentiality reasons. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Gastrosocopy MBS services, 18–54 years

Resources

- Australian Institute of Health and Welfare, Cancer summary data visualisations¹⁸, aihw.gov.au/reports/cancer/cancer-data-in-australia/contents/cancer-summary-data-visualisation
- *Gastro-oesophageal Reflux Disease in Adults: Clinical update* (2011)²
- *Clinical Practice Guidelines for the Diagnosis and Management of Barrett's Oesophagus and Early Oesophageal Adenocarcinoma*¹⁶
- *Therapeutic Guidelines: Gastrointestinal*, version 6⁶
- *Gastro-oesophageal Reflux Disease and Dyspepsia in Adults: Investigation and management* (clinical guideline)³
- *Suspected Cancer: Recognition and referral – upper gastrointestinal tract cancers*⁴⁵
- Guidelines for the diagnosis and management of gastroesophageal reflux disease⁷
- The role of endoscopy in the management of GERD¹¹

Australian initiatives

The information in this chapter will complement work already underway to improve the use of gastroscopy in Australia. At a national level, this work includes:

- Royal Australasian College of Surgeons, Choosing Wisely recommendation 4: Do not use endoscopy for investigation in gastric band patients with symptoms of reflux⁴⁶
- A review of the impact of the changes made to the MBS items for gastroenterology services in response to the Medicare Benefits Schedule Review Taskforce.³⁵

Many state and territory initiatives are also in place to address access to gastroscopy, including:

- *Upper Gastrointestinal Endoscopy Categorisation Guidelines for Adults*, Victoria⁴¹
- *Endoscopy Action Plan*, Queensland⁴⁷
- Clinical prioritisation criteria: endoscopy⁴⁸ and Clinical prioritisation criteria: gastroenterology⁴³, Queensland
- *Referral Guidelines: Direct Access Gastrointestinal Endoscopic Procedures*, Western Australia⁴⁹
- *Urgency Categorisation and Access Policy for Public Direct Access Adult Gastrointestinal Endoscopy Services*, Western Australia⁴⁴
- Statewide endoscopy care network, which monitors and assesses the quality of endoscopy services, Tasmania.⁴²

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5.2 Repeat colonoscopy MBS services, all ages

Why is this important?

Colonoscopy is used to investigate bowel problems or symptoms. Repeat colonoscopy is mainly used to monitor for bowel cancer and its precursor, polyps (adenomas), in people with an increased risk of developing bowel cancer. Less commonly, colonoscopy is repeated to manage chronic inflammatory conditions of the bowel.

The first and third Atlases in the *Australian Atlas of Healthcare Variation* series found substantial variation in rates of colonoscopy according to where people live.^{1,2} Differences in adherence to surveillance guidelines were identified as a possible reason for the variation. Guideline recommendations on the timing of repeat colonoscopies are based on bowel cancer risk. There are limited reasons for repeating a colonoscopy after a period of less than three years.

The fourth Atlas examines rates of colonoscopy that are repeated within two years and 10 months of an earlier colonoscopy, using Medicare Benefits Schedule (MBS) data.

What did we find?

In 2018–19, there were almost 148,000 MBS-subsidised services for repeat colonoscopy performed within two years and 10 months in people of all ages.

The rate in the area with the highest rate was **19.9 times as high** as the rate in the area with the lowest rate. Rates were markedly higher in major cities than elsewhere. In major cities, rates increased with socioeconomic advantage.

What can be done?

More needs to be done to improve the consistent application of the national guidelines on bowel cancer screening and surveillance. A concerted focus by clinicians, medical colleges and health service organisations to drive implementation of the *Colonoscopy Clinical Care Standard* and national guidelines could reduce inappropriate requests for repeat colonoscopies and free up services for people at high risk of bowel cancer.³⁻⁵

Structured referral forms could aid assessment of requests for repeat colonoscopies against guidelines. Health service organisations could ensure that re-credentialing requirements for clinicians performing colonoscopy include clinical audit against guidelines to promote high-quality colonoscopies.

Wider consumer awareness about the impact of lifestyle on cancer risk is needed. Educating people on ways they can reduce their risk of bowel cancer and improve their general health should be an integral part of surveillance. Integration of data about cancer incidence and lifestyle into healthcare pathways, training guidelines and consumer resources could help prompt discussion between clinicians and patients and may reduce inappropriate repeat colonoscopy.

Repeat colonoscopy MBS services, all ages

Context

This item examines rates of MBS-subsidised services for repeat colonoscopy performed within two years and 10 months of an earlier colonoscopy for people of all ages in Australia in 2018–19.

What is colonoscopy?

Colonoscopy is the examination of the large bowel (colon) using a small, flexible tube with a camera on the end, called a colonoscope. It can also include removal of polyps (adenomas) or other abnormal growths, and a biopsy. Polyps can be precursors of bowel cancer and are a marker of increased risk.

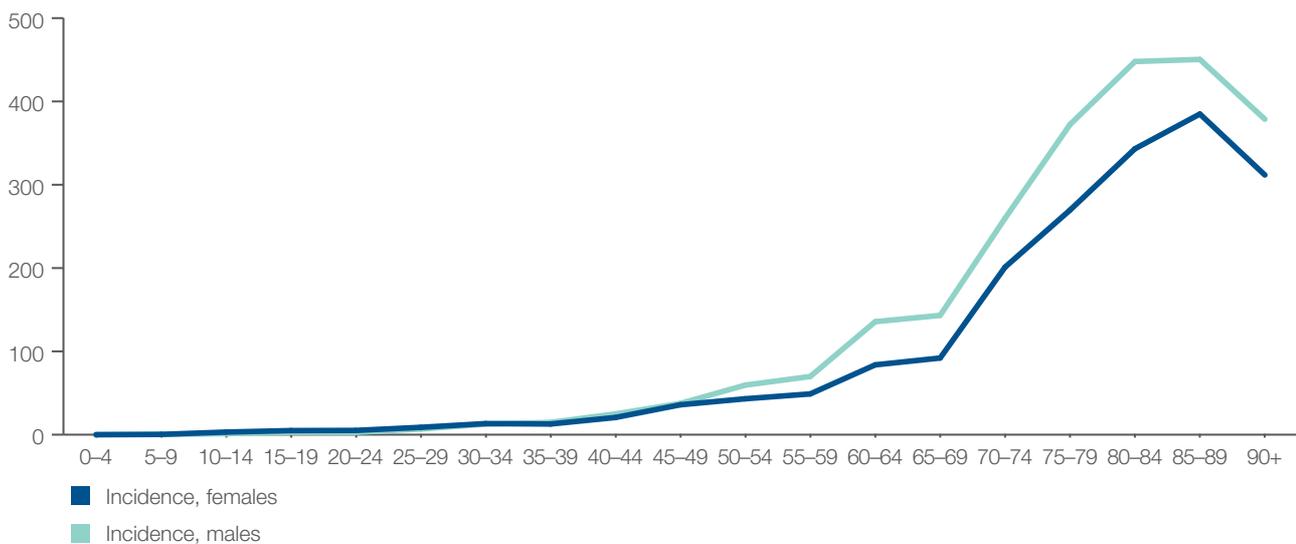
What is it used for?

Colonoscopy is used to investigate bowel problems or symptoms. It is also used to monitor for and detect polyps or bowel cancer (colorectal cancer) in people with no symptoms but with an increased risk, and to manage chronic conditions of the bowel, such as inflammatory bowel disease (IBD). Increased

risk of bowel cancer can be identified from a faecal occult blood test (FOBT) of a person's bowel motion (possibly done as part of the National Bowel Cancer Screening Program [NBCSP]), previous results of a colonoscopy, a family history of bowel cancer or a high-risk genetic condition.³ Bowel cancer is the fourth most commonly diagnosed cancer in Australia.^{6,7} After the age of 50, the incidence of bowel cancer steadily increases (Figure 5.10).⁴ About 55% of the bowel cancer burden in Australia can be attributed to lifestyle factors including diet (high in processed meat, red meat and sugar), physical inactivity, being overweight, smoking and alcohol use.⁷

While the age-standardised incidence of bowel cancer in Australia declined from 2001 to 2020* (from 66 to 51 cases per 100,000 people), the estimated number of people diagnosed with bowel cancer increased (from 12,806 to 15,494 people) because of the ageing population.⁸

Figure 5.10: Colorectal cancer rates (per 100,000 people), by sex and age group, 2020*



* 2020 incidence estimates are projections based on 2007–2016 incidence data.

Source: Australian Institute of Health and Welfare.⁸

When does a colonoscopy need to be repeated?

The most common reasons to repeat a colonoscopy are^{4,5}:

- Monitoring (surveillance) of the bowel after colorectal surgery or removal of polyps that can lead to bowel cancer
- Monitoring (surveillance) of chronic conditions of the bowel such as IBD
- Regular screening of people with a strong family history of bowel cancer, or a hereditary cancer syndrome that can lead to bowel cancer
- Removal (treatment) of previously identified polyps
- Onset of new signs or symptoms thought to be from the lining of the bowel
- Inadequate previous colonoscopy; for example, because of an incomplete colonoscopy or poor bowel preparation.

High-quality colonoscopy can detect about 95% of bowel cancers and polyps, but it is an invasive and costly procedure with a risk of complications.⁵ For this reason, colonoscopy for population screening is reserved for people with an increased risk of bowel cancer, if there is a higher chance of diagnosing significant disease.⁷ Similarly, recommendations for a repeat colonoscopy and its timing for greatest benefit are based on a person's risk of bowel cancer.

The national *Colonoscopy Clinical Care Standard* mandates that, if surveillance is required, colonoscopy is repeated at intervals consistent with evidence-based guidelines.³ Two Australian national guidelines address the need for and timing of repeat colonoscopy – one focuses on the use of colonoscopy in screening high-risk groups (that is, people with a family history of bowel cancer or a hereditary cancer syndrome), while the other focuses on the use of colonoscopy for surveillance.^{4,5}

If guidelines are followed, a small proportion of people who have an initial colonoscopy might be expected to need a repeat within three years. These would usually be people identified as having a high risk of bowel cancer or who have IBD. A poor-quality colonoscopy, or uncertainty about when a previous colonoscopy was performed, are also reasons a colonoscopy may be repeated within one or two years.^{4,5} However, the *Colonoscopy Clinical Care Standard* addresses the problem of uncertainty about the timing of a previous colonoscopy by stipulating that the results of colonoscopies are communicated to the person who had the procedure, the general practitioner (GP) and any other relevant clinicians involved in the person's care.³

Colonoscopy surveillance guidelines identify a person's risk of bowel cancer based on the results of their previous colonoscopy or colonoscopies.^{5,9} These guidelines apply to anyone who has had a colonoscopy, including participants in the NBCSP who had a colonoscopy because of a positive FOBT. The timing of the next colonoscopy, if needed, depends on the number, size and type of polyps removed.⁹ The greater the risk, the smaller the interval before repeating the procedure. People at potentially high risk will generally require a repeat colonoscopy every one to two years. Yearly colonoscopies are also recommended for high-risk people with IBD, and a repeat colonoscopy is also recommended within 12 months of bowel resection (surgery).⁵

A colonoscopy is also recommended every one to two years for people with, or at high risk of having, a hereditary cancer syndrome, such as Lynch syndrome, and may start at 25 years or younger for people with this syndrome.⁴

Repeat colonoscopies are also recommended for other groups, such as people with a strong family history and people otherwise at moderate risk of bowel cancer. However, for most people in these groups, the recommended intervals between colonoscopies are longer than that examined in this Atlas.^{4,5}

Repeat colonoscopy MBS services, all ages

Why examine repeat colonoscopy?

The first and third Atlases in the *Australian Atlas of Healthcare Variation* series examined MBS-subsidised services for colonoscopy and hospitalisations for colonoscopy, respectively.^{1,2} Although these Atlases used different datasets, each found substantial variations in colonoscopy rates according to where people live. They also found patterns of use that did not match the burden of disease. Outer regional areas and areas of socioeconomic disadvantage have the highest rates of bowel cancer incidence and mortality in Australia^{7,10}, yet both Atlases found the highest rates of colonoscopy in the most socioeconomically advantaged areas of major cities.

Clinical practice that is not supported by guidelines, such as repeating colonoscopies sooner than is recommended, was identified as a possible reason for the high rates of colonoscopy in some metropolitan areas. Differences in uptake of the NBCSP were also identified as a possible reason for the variation between major cities and other areas.^{1,2}

Little is known about the rate of repeat colonoscopies in Australia. This Atlas examines variation in rates of short-interval repeat colonoscopy using MBS-subsidised services performed in the same person in 2018–19. The interval of two years and 10 months was chosen to exclude services to people who present early for their three-yearly colonoscopy.

Data from this Atlas item should provide a baseline for evaluating changes to MBS items for colonoscopy introduced by the Australian Government in 2019, which included new item numbers with guideline-recommended surveillance intervals.¹¹ It should also be helpful for evaluating implementation of the *Colonoscopy Clinical Care Standard*, mandated in 2019, as part of the National Safety and Quality Health Service (NSQHS) Standards for the accreditation of all hospitals and day procedure services performing colonoscopy.^{3,12}

About the data

Data are sourced from the MBS dataset. This dataset includes information on MBS claims processed by Services Australia. It covers a wide range of services (attendances, procedures, tests) provided across primary care and hospital settings.

The dataset does not include:

- Services for publicly funded patients in hospital
- Services for patients in outpatient clinics of public hospitals
- Services covered under Department of Veterans' Affairs arrangements.

The dataset does not allow analysis by Aboriginal and Torres Strait Islander status.

Rates are based on the number of MBS-subsidised services for repeat colonoscopy per 100,000 people of all ages, age and sex standardised, in 2018–19.

Because a record is included for each service rather than for each patient, patients who receive the service more than once in the financial year will have more than one service counted.

In the patient count analysis, patient counts reflect the number of unique patients, regardless of the number of services the patient may have received in the year.

The analysis and maps are based on the patient's postcode recorded in their Medicare file and not the location of the service.

Rates are age and sex standardised to allow comparisons between populations with different age and sex structures.

What do the data show?

Magnitude of variation

In 2018–19, there were 147,875 MBS-subsidised services for repeat colonoscopy performed within two years and 10 months, representing 522 services per 100,000 people of all ages (the Australian rate).

The number of MBS-subsidised services for repeat colonoscopy across 324* local areas (Statistical Area Level 3 – SA3) ranged from 62 to 1,236 per 100,000 people. The rate was **19.9 times as high** in the area with the highest rate compared with the area with the lowest rate. The number of MBS-subsidised services for repeat colonoscopy varied across states and territories, from 191 per 100,000 people in the Northern Territory to 596 in Queensland (Figures 5.13–5.16).

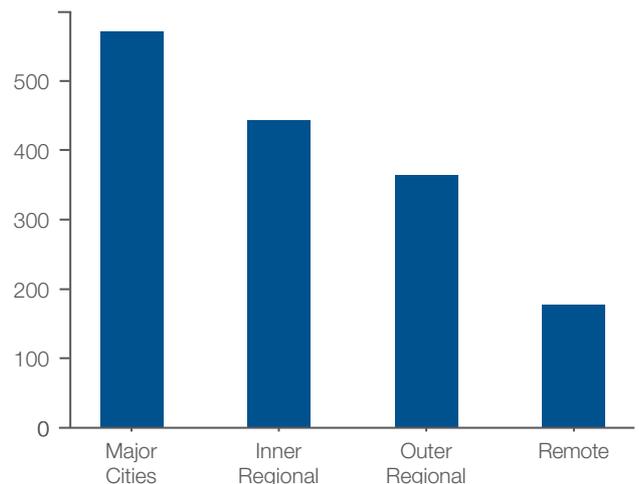
After the highest and lowest 10% of results were excluded and 260 SA3s remained, the number of MBS-subsidised services per 100,000 people was 2.7 times as high in the area with the highest rate compared with the area with the lowest rate.

Analysis by remoteness and socioeconomic status

Rates for MBS-subsidised services for repeat colonoscopy were higher in major cities than elsewhere. The rate for major cities was 3.2 times as high as the rate for remote areas (Figures 5.11 and 5.17).

Rates increased with socioeconomic advantage in major cities and overall. The rate in the highest socioeconomic group was 1.6 times as high as the rate in the lowest (Figures 5.12 and 5.17).

Figure 5.11: Number of MBS-subsidised services for repeat colonoscopy per 100,000 people of all ages, age and sex standardised, by remoteness of patient residence, 2018–19



The data for Figures 5.11 and 5.12 are available at safetyandquality.gov.au/atlas

* There are 340 SA3s. For this item, data were suppressed for 16 SA3s due to a small number of services and/or population in an area, or potential identification of individual patients, practitioners or business entities.

Notes:

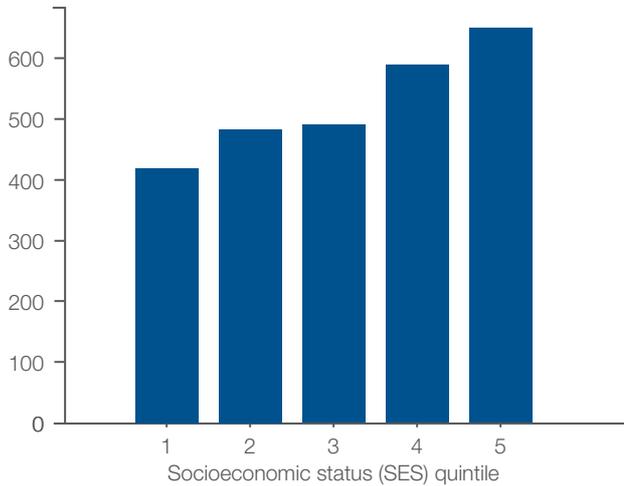
Some SA3 rates are more volatile than others. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia.

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Repeat colonoscopy MBS services, all ages

Figure 5.12: Number of MBS-subsidised services for repeat colonoscopy per 100,000 people of all ages, age and sex standardised, by socioeconomic area of patient residence, 2018–19



Analysis by number of people who had at least one repeat colonoscopy

In 2018–19, there were 139,072 people who had at least one MBS-subsidised service for repeat colonoscopy, representing 491 people per 100,000 people of all ages.

Analysis by number of repeat colonoscopy services without polyp removal

In 2018–19, there were 71,464 MBS-subsidised services for repeat colonoscopy without polyp removal, representing 257 services per 100,000 people of all ages (the Australian rate). The percentage of MBS-subsidised services for repeat colonoscopy without polyp removal was 49%, and varied across states and territories, from 35% in the Australian Capital Territory to 55% in Victoria and the Northern Territory.

The data and graphs for analysis by number of people who had at least one repeat colonoscopy, analysis by number of repeat colonoscopy services without polyp removal, and analysis by Primary Health Network are available at safetyandquality.gov.au/atlas

Notes:

Areas with a low SES (=1) have a high proportion of relatively disadvantaged people. Areas with a high SES (=5) have a low proportion of relatively disadvantaged people.

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Interpretation

Variation is warranted when it reflects variation in underlying disease and need for care; however, the rates of repeat colonoscopy do not appear to match this pattern, nor do they match the epidemiology of disease. There was widespread variation in repeat colonoscopy use, with rates much higher in major cities compared with elsewhere. Rates were also lower in areas of socioeconomic disadvantage.

These findings are consistent with the findings in the first and third Atlases, which examined rates of MBS-subsidised colonoscopy, and public and private hospitalisations for colonoscopy, respectively.

Variation in rates of repeat colonoscopy is likely to be due to the geographical differences in the factors discussed below.

Variation between areas may not directly reflect the practices of the clinicians who are based in these areas. The analysis is based on where people live rather than where they obtain their health care. Patients may travel outside their local area to receive health care.

Clinical decision-making

High rates of early repeat colonoscopy may be related to clinical practice that is not supported by guidelines. Australian and international studies have found that one-third of colonoscopies are repeated at intervals sooner than the guidelines recommend, with some reporting this to be as high as half.¹³⁻¹⁸ Difficulties in keeping up to date with guidelines and differences in clinical opinion on management may also contribute.¹⁹

Fear of litigation for not investigating symptoms may also influence clinicians' decisions about when and how often to provide repeat colonoscopies for the same person, particularly if they are unaware of current recommendations, or of evidence about the incidence of gastrointestinal (GI) cancers and the risk of symptoms leading to significant disease. Concerns about late diagnosis and subsequent litigation, and a lack of disincentives for over-testing, may also contribute to overuse.¹⁹

Some colonoscopies may be repeated because the previous report was not easily accessible or did not contain the information required to guide clinical decision-making.

Quality of bowel preparation

High-quality bowel preparation is essential for a successful colonoscopy.⁵ In the United Kingdom, poor bowel preparation has been reported to account for up to 25% of failed colonoscopies.²⁰ Poor bowel preparation results in poor visualisation of the colon, and has been associated with up to 47% lower likelihood of detecting and removing polyps that can lead to the development of bowel cancer.²¹ For this reason, people who had a colonoscopy with poor bowel preparation require a repeat colonoscopy within a year.^{5,22} Poor bowel preparation also results in considerable inconvenience and waste. Australian guidelines recommend that successful bowel preparation should be achieved in at least 90% of colonoscopies.⁵

The training and experience of the colonoscopist may also contribute to variation. International studies report a three-to-six-fold difference in adenoma detection rate variability between colonoscopists.⁵

Consumer expectations

A person's understanding about their risk of bowel cancer and the rate of development of bowel cancer may drive anxiety and lead to more frequent surveillance. Anxiety about interval cancers – cancers that occur between routine surveillance – has been suggested as a reason for repeating colonoscopies at shorter intervals than guidelines currently recommend.²³ Lack of access to a GP, specialist or surgeon who is informed about the evidence to help allay a person's anxiety about their risk of developing cancer may also lead to inappropriate repeat colonoscopies.

Repeat colonoscopy MBS services, all ages

People often have incorrect perceptions of their cancer risk and the benefits of interventions such as screening and surveillance to detect GI cancer.^{24,25} These perceptions can influence their preference and demand for investigations, even when their risk of cancer is low.²⁶

Access to services and number of clinicians providing services

Access to clinicians may influence the likelihood of people seeking care and the rates of repeat colonoscopy. The practice styles of individual clinicians may be more likely to affect rates in areas with fewer clinicians, such as rural and regional locations, than in areas with more clinicians.

Availability and affordability of services may also influence patterns of use. Ability to pay out-of-pocket costs for services is likely to be lower in areas of socioeconomic disadvantage, and access is likely to be more difficult in areas with fewer services. Open-access endoscopy services, in which GPs are able to request colonoscopy without specialist review, may also influence patterns of use.

Financial incentives

Greater remuneration for providing a service rather than a consultation may lead to variation and over-servicing in some areas.

Promoting appropriate care

More must be done to improve the consistent application of the national guidelines on bowel cancer screening and surveillance. The Atlas shows a pattern of repeat colonoscopy use that is not consistent with the prevalence of disease, indicating possible overuse in some areas and underuse in others. Repeating the procedure in people who are unlikely to benefit puts them at risk of procedural harms and may reduce opportunities for people who are at high risk of bowel cancer and more in need of the procedure. It also results in inconvenience, cost and confusion to the individual and the health system.

A concerted focus by clinicians, medical societies and colleges, and health service organisations across Australia to implement the *Colonoscopy Clinical Care Standard*³ is needed to drive improvements in the appropriate use of colonoscopy, reduce inappropriate short-interval repeat colonoscopies and free up services for people at high risk of bowel cancer.

The *Colonoscopy Clinical Care Standard* aims to ensure colonoscopies are used appropriately and performed safely, and is mandated as part of the NSQHS Standards for the accreditation of hospitals and day procedure services performing colonoscopy in Australia.^{3,12} To improve the follow-up and reporting of a colonoscopy, it recommends that the clinician who performs the colonoscopy communicates in writing the reason for the colonoscopy, its findings, any histology results, and recommendations for management to the person having the procedure, the GP, and any other relevant clinicians, and documents this in the facility records. It recommends that, if surveillance colonoscopy is required, it must be consistent with the intervals in national evidence-based guidelines.

Health service organisations could improve the implementation of the *Colonoscopy Clinical Care Standard*³ by ensuring that credentialing requirements for clinicians performing colonoscopy include a clinical audit against the clinical care standard, and that they provide audit results to the hospital's clinical review meetings and re-credentialing committee. Resources for colonoscopists to support implementation include a colonoscopy report template and a template for follow-up letters to GPs and patients (see Resources).

The low rates of short-interval repeat colonoscopies in disadvantaged remote areas are concerning, because they suggest that people at high risk of bowel cancer could be missing out on appropriate surveillance. These low rates are consistent with participation rates reported in the NBCSP.⁷ Strategies to improve participation in the NBCSP and access to colonoscopy services for people living in remote areas are a priority.

Unwarranted variation in repeat colonoscopy could be addressed in the following ways.

Quality colonoscopy and clinical audit

Recertification of ongoing competency is now mandatory for all practitioners working in health service organisations that are assessed against the NSQHS Standards.¹² Only colonoscopists who meet the certification and recertification standards can perform colonoscopy independently in Australia. The quality indicator together with the standard for reporting should reduce the proportion of repeat colonoscopies performed because of uncertainty about the quality of another clinician's colonoscopy.

Clinical audit could be used more widely to support decision-making about repeat colonoscopies. Audits in this area could also be part of continuing education requirements for clinicians.

Structured referral forms and checklists outlining the appropriate reasons for, and frequency of, repeat colonoscopy for greatest benefit, as recommended in the *Colonoscopy Clinical Care Standard*³ and national guidelines, could aid assessment of requests that do not meet guideline-recommended intervals.

Clinician education

Educational programs for clinicians could improve the appropriateness of requests for repeat colonoscopies. Improving clinician familiarity with guidelines, with the evidence base for recommended surveillance intervals and with the consequences of overuse of colonoscopy could better equip them to manage requests for performing colonoscopy earlier than the guidelines recommend.

Consumer education and reassurance

Informing and reassuring people of their risk of developing bowel cancer, and that the rate of progression from polyp formation to bowel cancer is generally slow may reduce demand for more frequent surveillance. Improving a person's understanding about their cancer risk is important to reduce anxiety and dispel myths about cancer. Interactive tools that identify a person's cancer risk – such as the Australian Institute of Health and Welfare cancer summary data tool (see 'Resources' on page 282) – may aid understanding.⁸

Integration of data about cancer incidence and lifestyle into healthcare pathways and consumer resources could help prompt these discussions between consumers and clinicians.

Reducing risk factors

Wider consumer awareness about risk factors and the impact of lifestyle on bowel cancer risk is needed. Bowel cancer incidence could be significantly reduced with successful modification of the key population attributable risks – that is, addressing diet (21.8%), physical inactivity (16.5%), being overweight or obese (12.5%), smoking (7.4%) and alcohol use (5.5%).^{7*} Public health initiatives to address risk factors should be targeted to areas with a high prevalence of these.

Educating consumers on ways they can reduce their risk of bowel cancer and improve their general health should be an integral part of colonoscopy surveillance, and may reduce requests for colonoscopies to be performed sooner than the guidelines recommend.

* Attributable burden from multiple risk factors cannot be combined or added together due to the complex pathways and interactions between risk factors.

Repeat colonoscopy MBS services, all ages

Triage systems

Many states and territories are introducing evidence-based triage systems for prioritising and allocating people for gastroscopy and colonoscopy, with the aim of reducing variation in use of these procedures:

- Victorian health services require clinicians to refer people for colonoscopy according to the categorisation guidelines²⁷
- Tasmania has adopted the Victorian categorisation guidelines and formed a statewide endoscopy network to monitor the quality of its services²⁸
- New South Wales has developed categorisation guidelines to support the appropriate use of colonoscopy across all healthcare settings²⁹
- Queensland and Western Australia have introduced clinical prioritisation criteria for many clinical areas, including gastroenterology, to triage patients referred to public specialist outpatient services.³⁰⁻³²

Wider use of such systems could result in more appropriate prioritisation of colonoscopy, as well as gastroscopy.

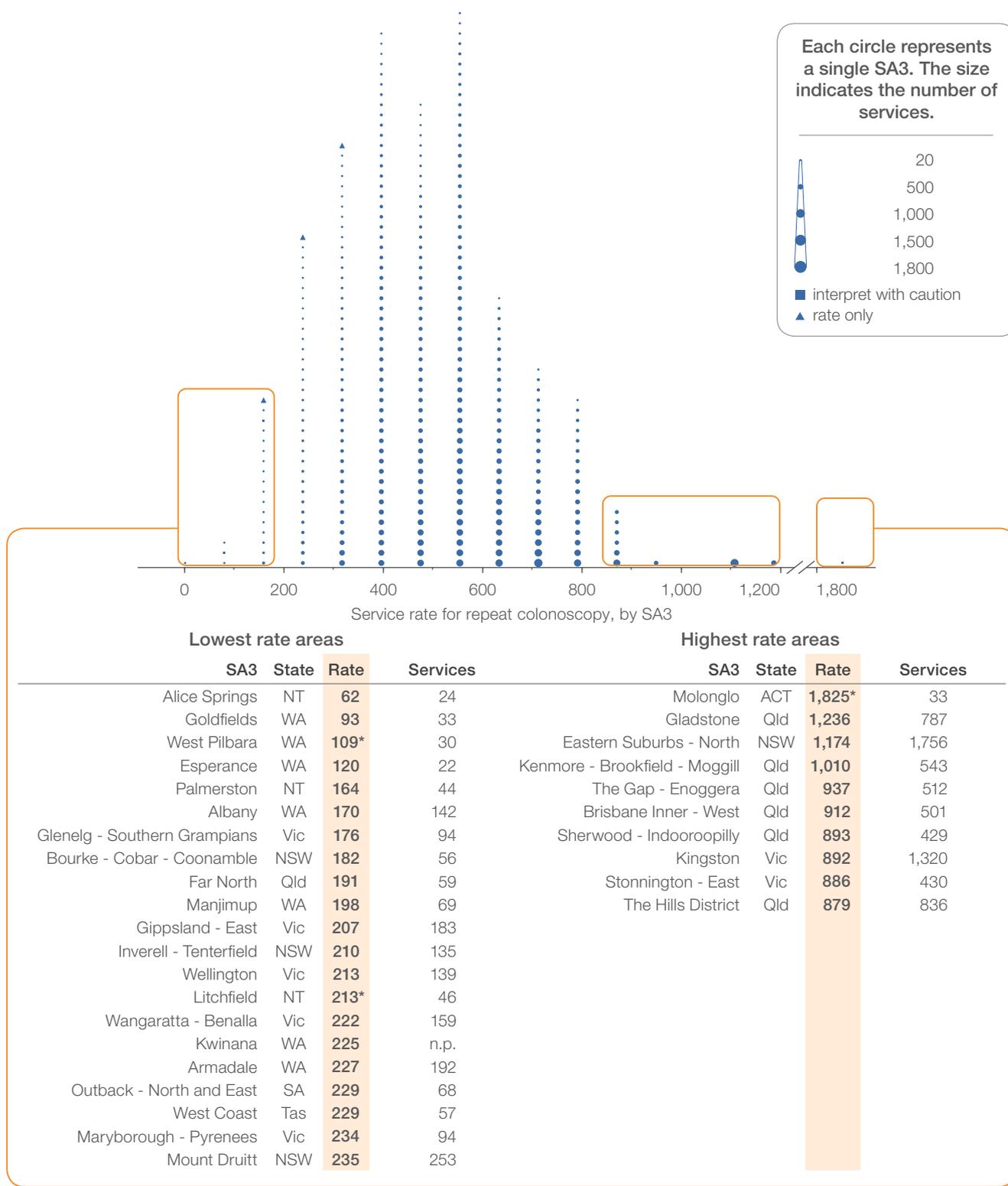
Promoting existing initiatives

As part of the Choosing Wisely Australia initiative, the Gastroenterological Society of Australia made the following recommendation in 2016, to promote the appropriate use of surveillance colonoscopy³³:

- Do not repeat colonoscopies more often than recommended by the National Health and Medical Research Council–endorsed guidelines.

Rates by local area

Figure 5.13: Number of MBS-subsidised services for repeat colonoscopy per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Notes:

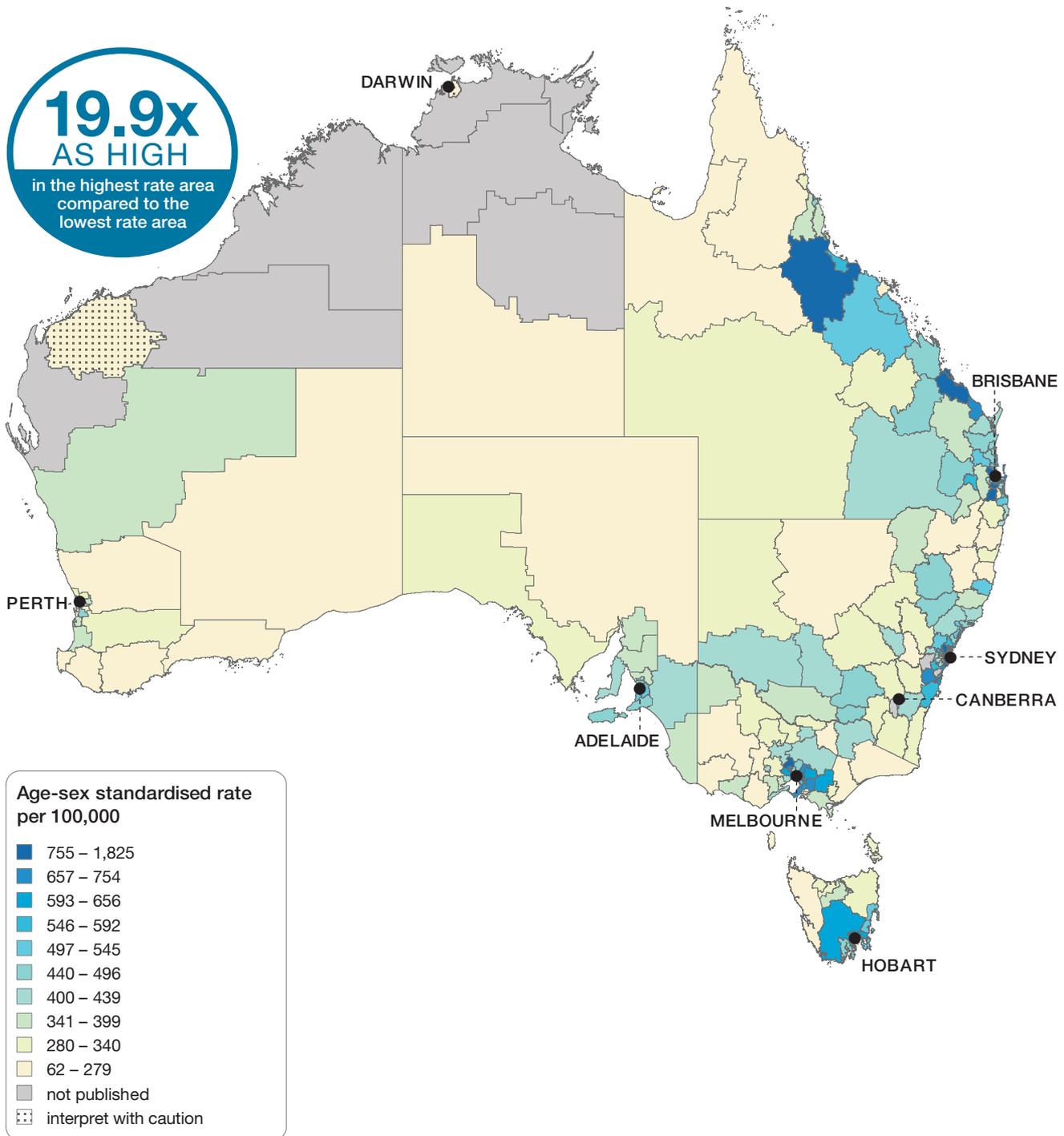
Squares (■) and asterisks (*) indicate rates that are considered more volatile than other published rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of services are not published (n.p.) for confidentiality reasons. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Repeat colonoscopy MBS services, all ages

Rates across Australia

Figure 5.14: Number of MBS-subsidised services for repeat colonoscopy per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



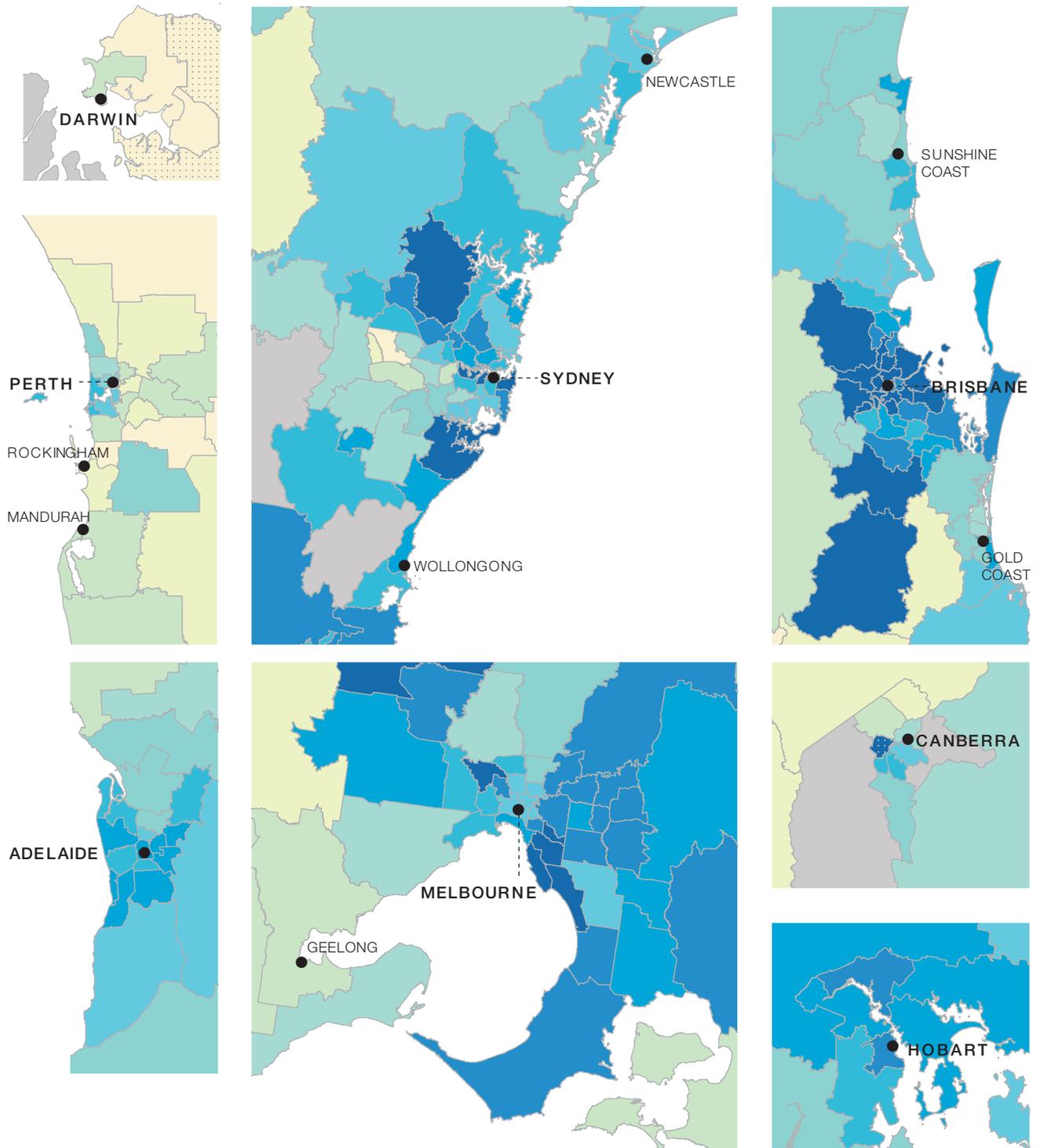
Notes:

Dotted areas indicate rates that are considered more volatile than other published rates and should be interpreted with caution. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Rates across capital city areas

Figure 5.15: Number of MBS-subsidised services for repeat colonoscopy per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Notes:

Dotted areas indicate rates that are considered more volatile than other published rates and should be interpreted with caution. For further detail about the methods used, please refer to the Technical Supplement.

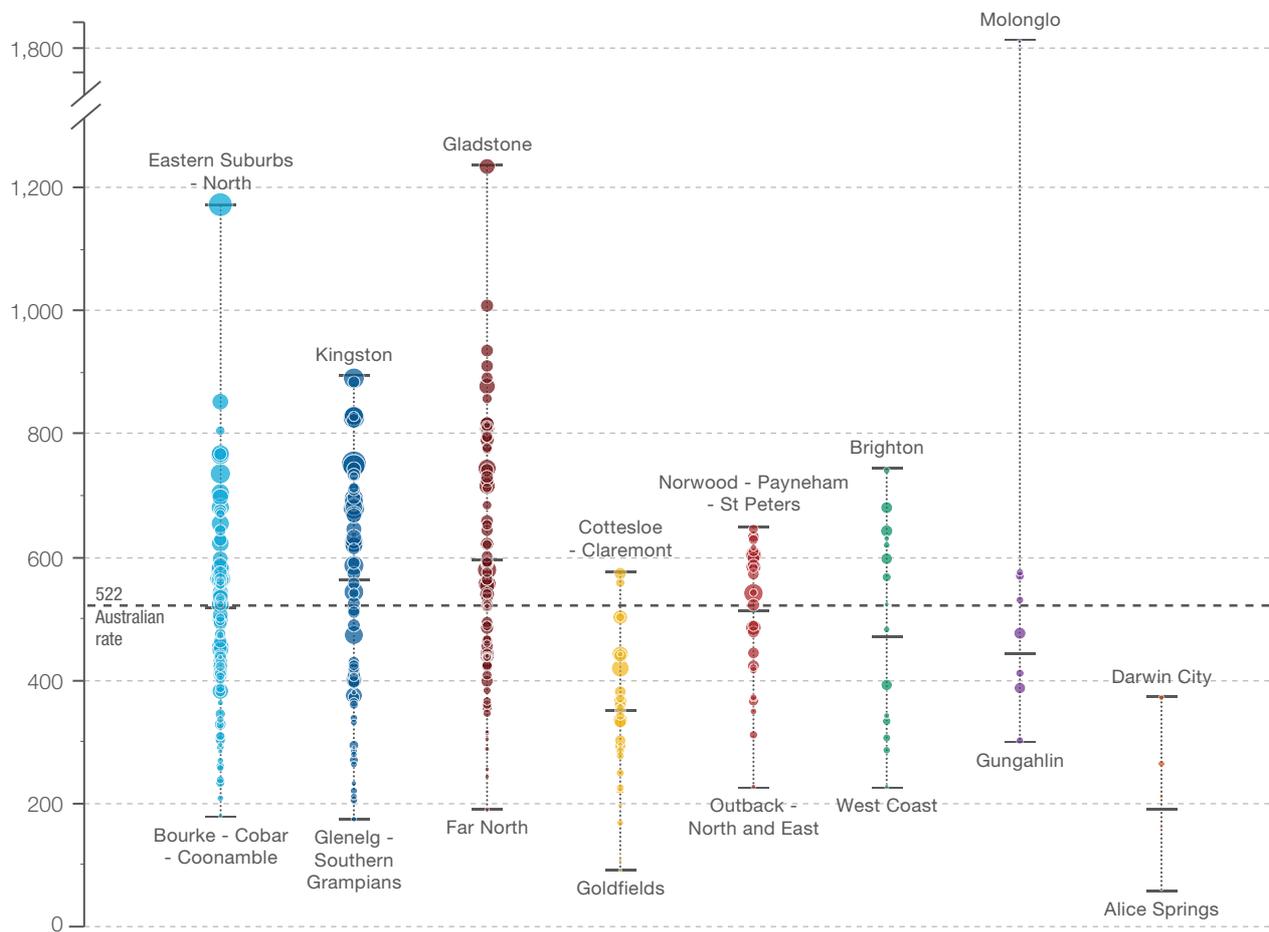
Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Repeat colonoscopy MBS services, all ages

Rates by state and territory

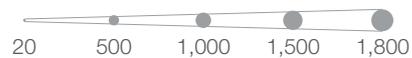
Figure 5.16: Number of MBS-subsidised services for repeat colonoscopy per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Highest rate	1,174	892	1,236	575	647	742	1,825*	373
State/territory	517	562	596	352	513	472	443	191
Lowest rate	182	176	191	93	229	229	304	62
Total services	47,257	40,377	33,629	9,977	11,002	3,331	1,884	391



Each circle represents a single SA3. The size indicates the number of services.

▲ rate only ■ interpret with caution



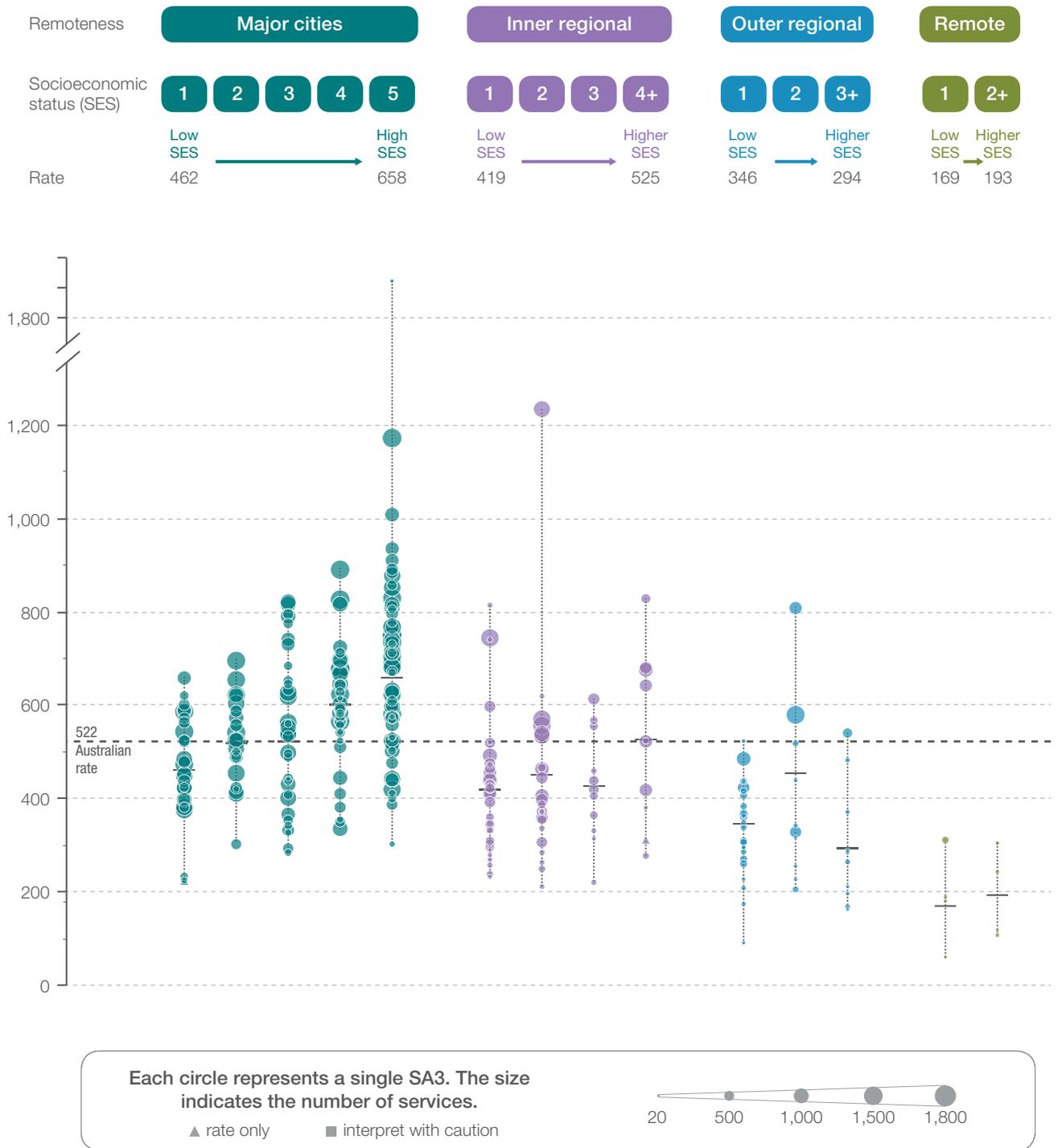
Notes:

Squares (■) and asterisks (*) indicate rates that are considered more volatile than other published rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of services are not published for confidentiality reasons. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Rates by remoteness and socioeconomic status

Figure 5.17: Number of MBS-subsidised services for repeat colonoscopy per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Notes: Squares (■) and asterisks (*) indicate rates that are considered more volatile than other published rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of services are not published for confidentiality reasons. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Repeat colonoscopy MBS services, all ages

Resources

- Australian Commission on Safety and Quality in Health Care, *Colonoscopy Clinical Care Standard*³
- Cancer Council Australia, *Clinical Practice Guidelines for the Prevention, Early Detection and Management of Colorectal Cancer*⁴
- Cancer Council Australia, *Clinical Practice Guidelines for Surveillance Colonoscopy*⁵
- Australian Institute of Health and Welfare, Cancer summary data visualisations⁸, aihw.gov.au/reports/cancer/cancer-data-in-australia/contents/cancer-summary-data-visualisation

Australian initiatives

Information in this chapter will complement work already underway to prevent inappropriate repeat colonoscopy in Australia. At a national level, this work includes:

- Australian Commission on Safety and Quality in Health Care, *Colonoscopy Clinical Care Standard*³
- Gastroenterological Society of Australia, Choosing Wisely recommendation 1: Do not repeat colonoscopies more often than recommended by the National Health and Medical Research Council–endorsed guidelines.³³

Many state and territory initiatives also aim to improve colonoscopy use, including:

- Clinical Priority Category: Colonoscopy²⁹, Agency for Clinical Innovation, New South Wales
- *Colonoscopy Categorisation Guidelines*, Victoria³⁴
- *Endoscopy Action Plan*, Queensland³⁵
- Clinical prioritisation criteria: endoscopy³⁶ and Clinical prioritisation criteria: gastroenterology³⁰, Queensland
- *Referral Guidelines: Direct access gastrointestinal endoscopic procedures*, Western Australia³¹
- *Urgency Categorisation and Access Policy for Public Direct Access Adult Gastrointestinal Endoscopy Services*, Western Australia³²
- Statewide endoscopy care network, which monitors and assesses the quality of endoscopy services, Tasmania.²⁸

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Repeat colonoscopy MBS services, all ages

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5.3 Repeat gastroscopy MBS services, all ages

Why is this important?

Gastroscopy is used to investigate or treat conditions affecting the upper gastrointestinal (GI) tract. It can also be used to monitor conditions affecting the upper GI tract that lead to cancer in certain high-risk groups.¹

Differences in use of gastroscopy for monitoring were identified as a possible reason for the substantial variation seen in hospitalisations for gastroscopy reported in the *Third Australian Atlas of Healthcare Variation*.² There are very few clinical reasons for repeating a gastroscopy after a period of less than three years. Guidelines recommend repeating gastroscopy at three to five years to monitor for signs of cancer for most people with Barrett's oesophagus, the most common condition that may require surveillance.³

The fourth Atlas examines rates of gastroscopy that are repeated within two years and 10 months of an earlier gastroscopy, using Medicare Benefits Schedule (MBS) data.

What did we find?

In 2018–19, there were almost 88,000 MBS-subsidised services for repeat gastroscopy performed within two years and 10 months in people of all ages.

The rate in the area with the highest rate was **14.9 times as high** as the rate in the area with the lowest rate. Rates were markedly higher in major cities than elsewhere. Rates increased with socioeconomic advantage everywhere apart from outer regional areas.

What can be done?

Development and application of national guidance on the appropriate use of gastroscopy are priorities. The guidelines should include guidance on when it is appropriate to repeat the procedure.

Integration of data about cancer incidence and lifestyle into healthcare pathways and resources could promote discussion between clinicians and patients about the low risk of upper GI cancer for most people and reduce inappropriate requests for the procedure.

Better ways to identify people at high risk of progression to upper GI cancers are needed to improve rates of cancer detection and minimise low-value care. Educating people about the lifestyle measures that can be taken to reduce upper GI cancer risk could also reduce inappropriate repeat gastroscopy.

Repeat gastroscopy MBS services, all ages

Context

This item examines rates of MBS-subsidised services for repeat gastroscopy performed within two years and 10 months of an earlier gastroscopy for people of all ages in Australia in 2018–19.

What is gastroscopy?

Gastroscopy, also known as an upper GI endoscopy, is the examination of the upper part of the GI tract, using a small, flexible tube with a camera on the end, called an endoscope.⁴ It can also include a biopsy, if needed. The procedure requires an empty stomach for a safe and accurate examination. It is usually quick to perform, taking up to about 15 minutes.^{1,4}

When does a gastroscopy need to be repeated?

Gastroscopy is used to investigate, treat or monitor certain upper GI symptoms or diseases.

The most common reasons to repeat a gastroscopy are¹:

- Monitoring (surveillance) of conditions that can increase the risk of upper GI cancer or bleeding in high-risk groups – for example, Barrett's oesophagus, gastrointestinal metaplasia (GIM) and oesophageal varices
- Investigation of new signs and symptoms, such as bleeding
- Confirmation that a stomach ulcer is healing.

Gastroscopy may be repeated within one to two years of a previous gastroscopy in people with coeliac disease to monitor response to treatment with a gluten-free diet, although there is uncertainty about its benefit.⁵⁻⁸

A repeat gastroscopy is also recommended to treat upper GI conditions detected in an earlier gastroscopy, such as bleeding, some upper GI cancers, or a narrowed oesophagus (oesophageal stricture) that may be causing difficulty swallowing. However, gastroscopies repeated for treatment (therapeutic gastroscopy) are not included in this data item.

A small proportion of people who have a gastroscopy require a repeat within three years. Many people who have a gastroscopy do not need a further one because they have a negative result or a further investigation is of no benefit.⁹ A minority of people may require a repeat gastroscopy for surveillance of an upper GI condition or for the reasons noted above. However, of these, only a small number are likely to need one within three years if guidelines are followed.

Barrett's oesophagus is a chronic upper GI condition in which the cells change in the lining of the oesophagus. It requires monitoring with gastroscopy because it can lead to oesophageal cancer in some people. It affects about 5% of the general population.¹⁰ Barrett's oesophagus is more common in men, people aged 55 years and over, and people with chronic uncontrolled gastro-oesophageal reflux disease (GORD).¹⁰⁻¹²

Guidelines recommend that people with Barrett's oesophagus undergo repeat gastroscopy every three to five years, with more frequent surveillance if risk factors are present.^{3,11,13,14} Although this is recommended practice, there is uncertainty about the effectiveness and value of gastroscopic surveillance for people at low risk of developing cancer. The evidence base for surveillance is weak, except in high-risk groups.¹⁵⁻¹⁷

Although people with Barrett's oesophagus have up to 50 times the risk of developing oesophageal cancer of the general population, the absolute risk of progression to cancer in most people is very low.^{3,12} Population-based studies estimate that the incidence of oesophageal cancer for people with Barrett's oesophagus is 0.22% per year.¹⁸ People with Barrett's oesophagus are more likely to succumb to other conditions, such as coronary artery disease, before developing oesophageal cancer.¹⁹ As well, the vast majority of people who develop oesophageal cancer have no previous diagnosis of Barrett's oesophagus.³ For these reasons, the anxiety associated with surveillance may outweigh the chance of detecting cancer for people with Barrett's oesophagus who are at low risk of developing upper GI cancer, and so they may choose not to participate in gastroscopic surveillance.^{11,20,21}

Similarly, in people with GIM – a condition that can lead to stomach cancer – the annual risk of progression to cancer is very low, with a Dutch study reporting estimates of 0.25% per year.²² United Kingdom guidelines suggest surveillance with gastroscopy every three years²³, whereas United States guidelines promote participation in shared decision making instead.²⁴

Use of gastroscopy for population-based screening for upper GI cancer is not recommended because of the low chance of diagnosing serious disease.

Why examine repeat gastroscopy?

The Gastroenterology Clinical Committee of the Medicare Benefits Schedule Review Taskforce reviewed numbers of repeat gastroscopies per patient.²⁵ It noted that more than 40% of people who had a gastroscopy between 2008–09 and 2014–15 had a repeat gastroscopy within three to five years. The number of repeat gastroscopies ranged from two to 51 per patient. The rates were higher than expected, given the taskforce’s estimation of rates of recurrent bleeding.²⁵

The *Third Australian Atlas of Healthcare Variation* examined rates of hospitalisation for gastroscopy and found that the rate in the area with the highest rate was 7.4 times as high as the rate in the area with the lowest rate.² Rates were higher in major cities and inner regional areas than elsewhere, and generally lower in areas with more socioeconomic disadvantage. Patterns of gastroscopy use did not reflect the prevalence of risk factors for, or burden of, upper GI cancer in Australia. Differences in clinical opinion on the value of gastroscopy for surveillance of people with Barrett’s oesophagus and other upper GI conditions were identified as a possible reason for variation.²

This Atlas examines variation in rates of MBS-subsidised short-interval repeat gastroscopy services performed in the same person. The interval of two years and 10 months was chosen to exclude services to people who present early for their three-yearly gastroscopy for surveillance of Barrett’s oesophagus or other conditions such as GIM.

About the data

Data are sourced from the MBS dataset. This dataset includes information on MBS claims processed by Services Australia. It covers a wide range of services (attendances, procedures, tests) provided across primary care and hospital settings.

The dataset does not include:

- Services for publicly funded patients in hospital
- Services for patients in outpatient clinics of public hospitals
- Services covered under Department of Veterans’ Affairs arrangements.

The dataset does not allow analysis by Aboriginal or Torres Strait Islander status.

Rates are based on the number of MBS-subsidised services for repeat gastroscopy per 100,000 people of all ages, age and sex standardised, in 2018–19.

Because a record is included for each service rather than for each patient, patients who received the service more than once in the financial year will be counted more than once.

In the patient count analysis, patient counts reflect the number of unique patients, regardless of the number of services the patient may have received in the year.

The analysis and maps are based on the patient’s postcode recorded in their Medicare file and not the location of the service.

Rates are age and sex standardised to allow comparisons between populations with different age and sex structures.

Repeat gastroscopy MBS services, all ages

What do the data show?

Magnitude of variation

In 2018–19, there were 87,933 MBS-subsidised services for repeat gastroscopy performed within two years and 10 months, representing 314 services per 100,000 people of all ages (the Australian rate).

The number of MBS-subsidised services for repeat gastroscopy across 321* local areas (Statistical Area Level 3 – SA3) ranged from 61 to 908 per 100,000 people. The rate was **14.9 times as high** in the area with the highest rate compared with the area with the lowest rate. The number of MBS-subsidised services for repeat gastroscopy varied across states and territories, from 114 per 100,000 people in the Northern Territory to 353 in Queensland (Figures 5.20–5.23).

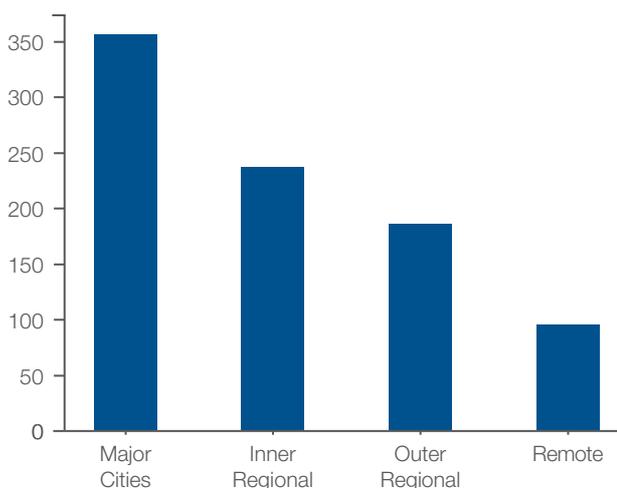
After the highest and lowest 10% of results were excluded and 257 SA3s remained, the number of MBS-subsidised services per 100,000 people was 3.1 times as high in the area with the highest rate compared with the area with the lowest rate.

Analysis by remoteness and socioeconomic status

Rates for MBS-subsidised services for repeat gastroscopy were markedly higher in major cities than elsewhere. The rate for major cities was 3.7 times as high as the rate for remote areas (Figures 5.18 and 5.24).

Rates decreased with socioeconomic disadvantage in major cities, and inner regional and remote areas. Overall, the rate in the highest socioeconomic group was 1.6 times as high as the rate in the lowest (Figures 5.19 and 5.24).

Figure 5.18: Number of MBS-subsidised services for repeat gastroscopy per 100,000 people of all ages, age and sex standardised, by remoteness of patient residence, 2018–19



The data for Figures 5.18 and 5.19 are available at safetyandquality.gov.au/atlas

* There are 340 SA3s. For this item, data were suppressed for 19 SA3s due to a small number of services and/or population in an area, or potential identification of individual patients, practitioners or business entities.

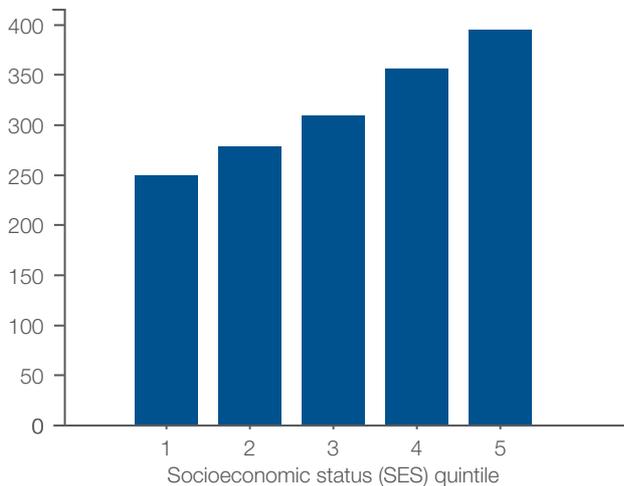
Notes:

Some SA3 rates are more volatile than others. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia.

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Figure 5.19: Number of MBS-subsidised services for repeat gastroscopy per 100,000 people of all ages, age and sex standardised, by socioeconomic area of patient residence, 2018–19



Analysis by number of people who had at least one repeat gastroscopy

In 2018–19, there were 81,893 people who had at least one repeat MBS-subsidised service for gastroscopy, representing 292 people per 100,000 people of all ages.

The data and graphs for analysis by number of people who had at least one repeat gastroscopy, and for analysis by Primary Health Network are available at safetyandquality.gov.au/atlas

Interpretation

There is wide variation in repeat gastroscopy use. Rates were higher in major cities and in areas with socioeconomic advantage than elsewhere.

These findings are consistent with those in the third Atlas, which examined hospitalisations for gastroscopy.

Variation in rates of repeat gastroscopy is likely to be due to geographical differences in the factors discussed below.

Variation between areas may not directly reflect the practices of the clinicians who are based in these areas. The analysis is based on where people live rather than where they obtain their health care. People may travel outside their local area to receive health care.

Clinical decision-making

Variation in adherence with available clinical guidelines may influence rates of repeat gastroscopy.

A high proportion of repeat gastroscopies are performed earlier than intervals recommended in guidelines.²⁶⁻²⁸ According to a 2012 multi-centre study in the United States of people with Barrett’s oesophagus at low risk of progression to oesophageal cancer, 65% were recommended a repeat gastroscopy earlier than the recommended three to five year interval, resulting in a mean of 2.3 excess endoscopies per person.²⁶ A more recent study conducted in 2019, also in the United States, found that 30% of people had a repeat gastroscopy too soon.²⁸ A United States retrospective analysis of data from a registry of patients with Barrett’s oesophagus reported that less than 16% of people had gastroscopy repeated at the interval recommended by guidelines.²⁷

Notes:

Areas with a low SES (=1) have a high proportion of relatively disadvantaged people. Areas with a high SES (=5) have a low proportion of relatively disadvantaged people.

For further details about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Repeat gastroscopy MBS services, all ages

Differences in clinical opinion on management where the evidence is unclear may contribute to variation. For example, although surveillance is recommended for people with Barrett's oesophagus, whether it is beneficial is unclear, particularly in low-risk groups.¹⁵⁻¹⁷ A multi-centre randomised controlled trial is currently examining the impact of two-yearly surveillance on outcomes such as overall survival, cancer-specific survival, and stage of oesophageal cancer at diagnosis in people with Barrett's oesophagus in low-risk groups. The results will help determine who may benefit most from surveillance.²⁹

Difficulties in keeping up to date with evidence may also influence rates.³⁰

Fear of litigation for not investigating symptoms may influence clinicians' decisions about when and how frequently to repeat a gastroscopy for the same person, particularly if they are unaware of current recommendations, or evidence about the incidence of upper GI cancers or risk of progression to significant disease. The risk of GORD progressing to Barrett's oesophagus is low, as is the risk of Barrett's oesophagus progressing to oesophageal cancer.³

Concerns about late diagnosis and subsequent litigation, as well as few disincentives for over-testing, may also contribute to overuse.³⁰

Consumer expectations

Consumer expectations, perception of cancer risk, and anxiety about developing oesophageal cancer have been highlighted as potentially driving overuse of gastroscopic surveillance.^{31,32}

People often have incorrect beliefs about their cancer risk; for example, people with Barrett's oesophagus often greatly overestimate their risk of developing oesophageal cancer.^{31,33,34} This can influence their perception about the benefits of interventions such as surveillance to detect upper GI cancer, and their preference and demand for investigations, even when their risk of cancer is low.¹¹

Access to services and number of clinicians providing services

Access to clinicians may influence the likelihood of people seeking care and the rates of repeat gastroscopy. The practice styles of individual clinicians may be more likely to affect rates in areas with fewer clinicians, such as rural and regional locations, than in areas with more clinicians.

Availability and affordability of services may also influence patterns of use. Ability to pay out-of-pocket costs for gastroscopy is likely to be lower in areas of socioeconomic disadvantage, and access is likely to be more difficult in areas with fewer services. Open-access endoscopy services, where general practitioners are able to request gastroscopy without specialist review, may also influence patterns of use.

Financial incentives

Greater remuneration for providing a service rather than consultation may lead to variation and over-servicing in some areas.

Promoting appropriate care

Inappropriate use of gastroscopy for monitoring, such as frequent use in people with very low risk of upper GI cancer, contributes to low-value care and can reduce access to the procedure for people who are most in need. Adherence to the recommended intervals for repeating a gastroscopy ensures that the benefits of the procedure outweigh the risk of procedural harms and costs to individuals.

Unwarranted variation in repeat gastroscopy could be addressed in the following ways:

Guideline and resource development

Development of national guidance to support appropriate use of gastroscopy services is a priority. These should incorporate the current guidelines on the diagnosis and management (including surveillance) of Barrett's oesophagus.³ This is consistent with recommendations made by the

Medicare Benefits Schedule Review Taskforce in 2015 to develop guidelines that cover when a repeat gastroscopy is clinically appropriate.²⁵ The guidelines could be used to assess appropriateness of referrals and for clinical audit of clinicians' practices.

Integration of data on cancer incidence and lifestyle into healthcare pathways, training guidelines, and specialist and consumer resources could also support appropriate use of repeat gastroscopy.

Consumer education and reassurance

Informing people about the role of gastroscopy, and reassuring them that their risk of developing upper GI cancer is very low may reduce demand for gastroscopy or repeating gastroscopy earlier than guidelines recommend. Interactive tools that identify a person's cancer risk – such as the Australian Institute of Health and Welfare cancer summary data tool (see 'Resources' on page 298) – may help clinicians when having conversations with their patients about the risk of upper GI cancer.³⁵

Reducing risk factors

Improved consumer awareness of risk factors for GORD and upper GI cancers, and of making lifestyle changes to reduce risk factors, should be the focus for people presenting earlier than the recommended intervals for gastroscopic surveillance. Improving a person's understanding about their cancer risk – particularly in people without additional risk factors for upper GI cancer – is important to reduce anxiety and dispel myths about cancer.³³

Public health initiatives that address risk factors for GORD and upper GI cancer – such as smoking, obesity, excessive alcohol consumption, sedentary lifestyle or uncontrolled symptoms of GORD – should be targeted to areas with a high prevalence of these risk factors before repeating gastroscopy earlier than guidelines recommend.³³ For example, smoking cessation reduces the risk of upper GI cancers – people with Barrett's oesophagus who smoke are twice as likely to progress to oesophageal cancer as people who do not.^{12,36}

Clinical audit and clinician education

Clinical audit is a tool that could be used more widely to support appropriate use of repeat gastroscopy for monitoring upper GI tract cancer.

Guidelines are available outlining which people are most at risk of developing upper GI cancer and how frequently gastroscopic surveillance should be performed. Clinical audit against these guidelines could help determine the value of surveillance and whether it can be stopped, particularly in people at low risk, to achieve more effective use of healthcare resources. Audits in this area could also form part of continuing education requirements for clinicians.

Structured referral forms and checklists outlining appropriate reasons and frequency of repeat gastroscopy for greatest benefit could support appropriate requests. Using guidelines to assess the appropriateness of requests against recommended surveillance intervals could also improve use of healthcare resources.

Educational programs for clinicians could improve the appropriateness of requests for repeat procedures. Education could cover the:

- Conditions that require gastroscopic surveillance, and the timing of surveillance for greatest benefit
- Low prevalence of conditions that require gastroscopic surveillance, such as Barrett's oesophagus, and the low risk of progression to significant disease unless other risk factors are present
- Low likelihood that repeating gastroscopy earlier than guidelines recommend will diagnose significant upper GI disease for most people.

Repeat gastroscopy MBS services, all ages

Appropriate prioritisation of services

Health service organisations need to examine the volume of gastroscopies that may be tying up resources needed to perform colonoscopies. People who need a colonoscopy for a positive faecal occult blood test should be prioritised over those having repeat gastroscopies earlier than recommended, especially when the likelihood of the findings changing management is low – for example, in people without additional risk factors for developing upper GI cancer. Better use of resources according to clinical need would improve the likelihood of diagnosing significant disease and reduce delays in diagnosis.

Triage systems

Many states and territories are introducing evidence-based triage systems for prioritising and allocating people for gastroscopy and colonoscopy, with the aim of reducing variation in use of these procedures:

- Victorian health services require clinicians to refer people for gastroscopy according to the categorisation guidelines – the guidelines specify the appropriate gastroscopic surveillance intervals for people with Barrett's oesophagus³⁷
- Tasmania has adopted the Victorian categorisation guidelines and formed a statewide endoscopy network to monitor the quality of its services³⁸
- Queensland and Western Australia have introduced clinical prioritisation criteria for many clinical areas, including gastroenterology, to triage patients referred to public specialist outpatient services.³⁹⁻⁴¹

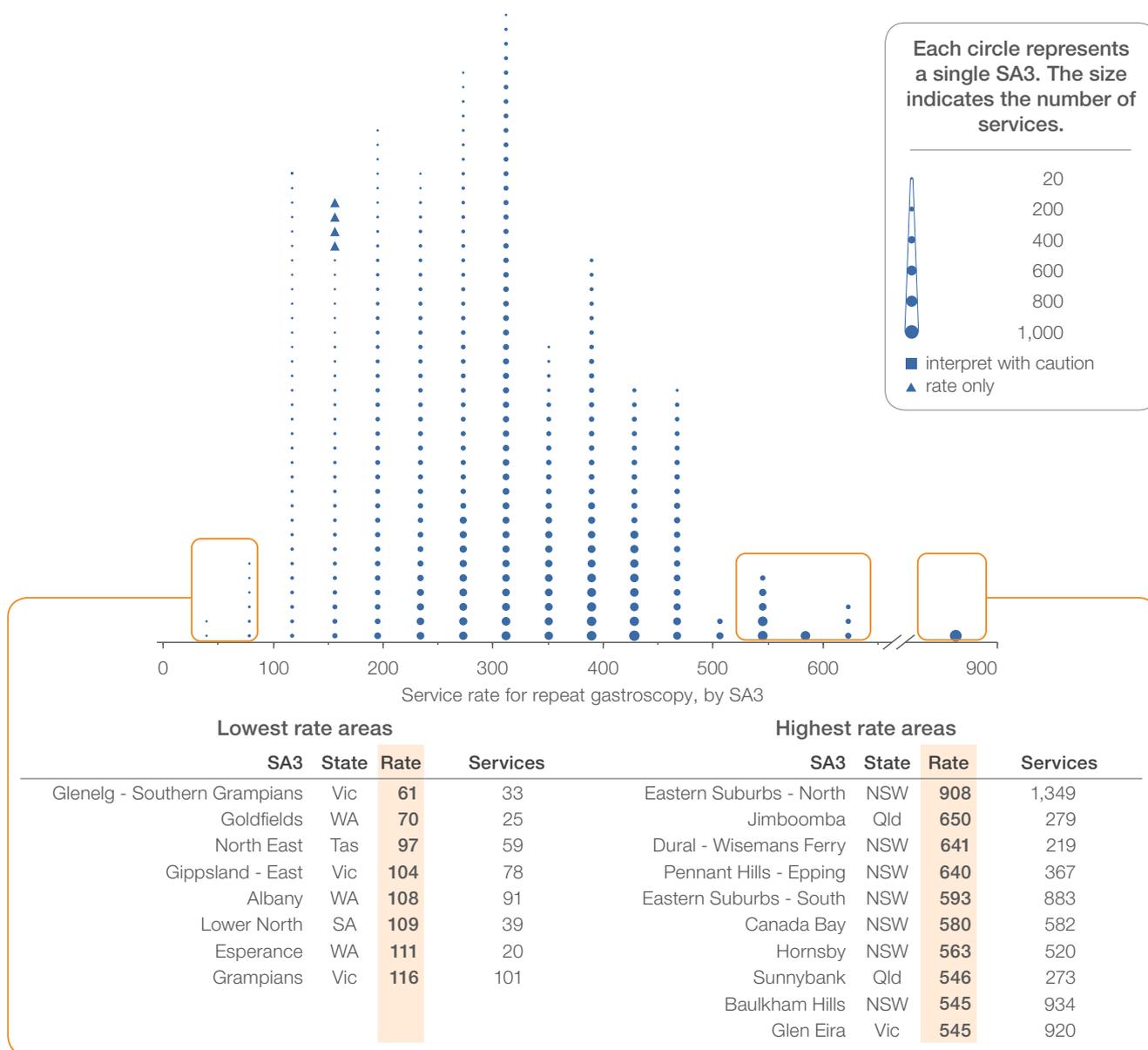
Wider use of these triage systems could result in more appropriate prioritisation of repeat gastroscopy.

Promotion of existing initiatives

In 2016, the Gastroenterological Society of Australia recommended, as part of Australia's Choosing Wisely campaign, that gastroscopy for people with Barrett's oesophagus should be questioned by people if recommended sooner than three years after their last gastroscopy.⁴² This is consistent with the Choosing Wisely campaign in the United States. People with Barrett's oesophagus who have no abnormal cells present have a very low risk of developing oesophageal cancer. In these people, it is not necessary to examine the oesophagus more frequently than every three years because, if cellular changes occur, they do so very slowly. Recommendation 5 states: Do not perform a follow-up endoscopy less than three years after two consecutive findings of no dysplasia from endoscopies with appropriate four quadrant biopsies for patients diagnosed with Barrett's oesophagus.

Rates by local area

Figure 5.20: Number of MBS-subsidised services for repeat gastroscopy per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Notes:

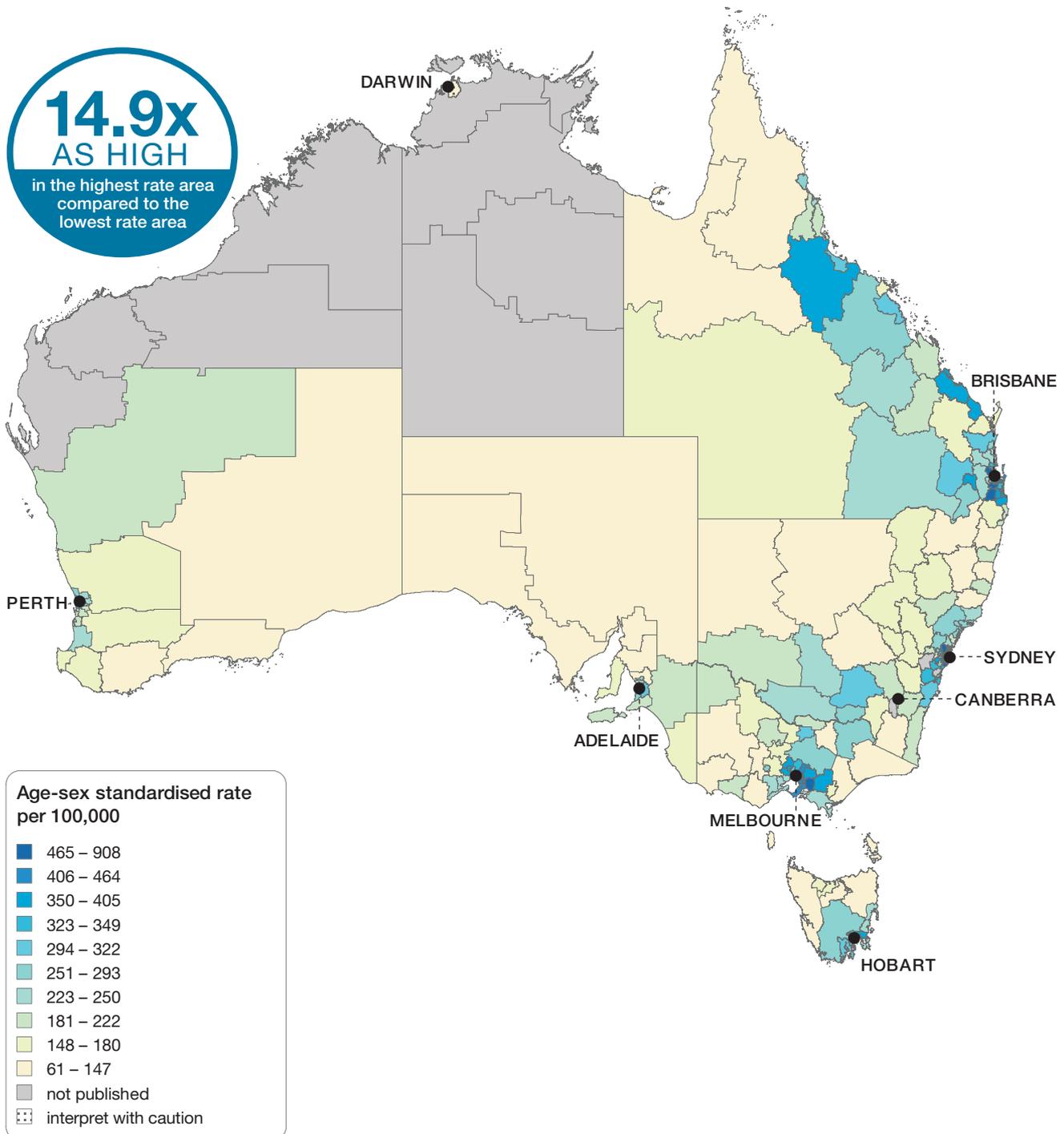
Squares (■) indicate rates that are considered more volatile than other published rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of services are not published for confidentiality reasons. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Repeat gastroscopy MBS services, all ages

Rates across Australia

Figure 5.21: Number of MBS-subsidised services for repeat gastroscopy per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



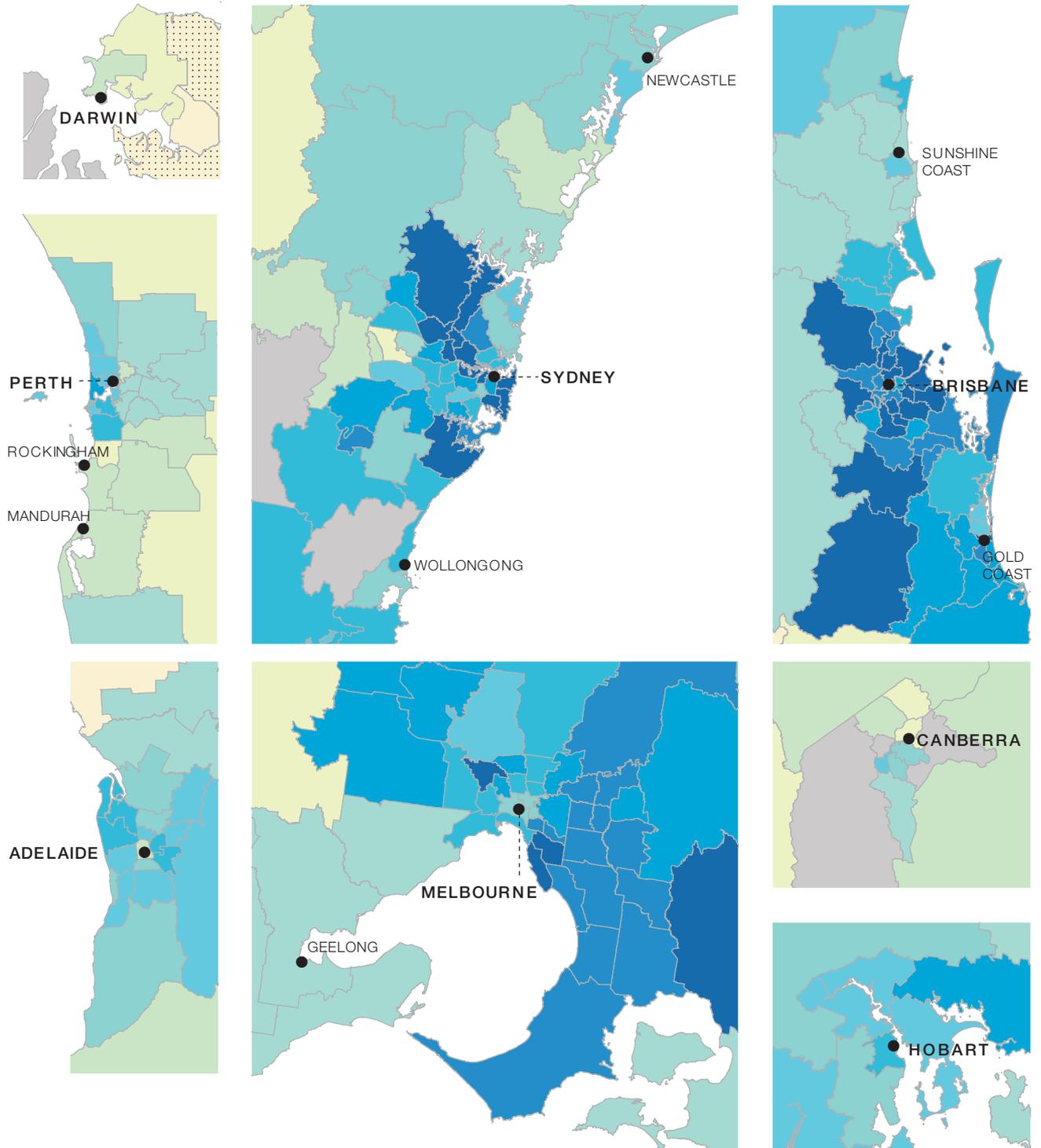
Notes:

Dotted areas indicate rates that are considered more volatile than other published rates and should be interpreted with caution. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Rates across capital city areas

Figure 5.22: Number of MBS-subsidised services for repeat gastroscopy per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Notes:

Dotted areas indicate rates that are considered more volatile than other published rates and should be interpreted with caution. For further detail about the methods used, please refer to the Technical Supplement.

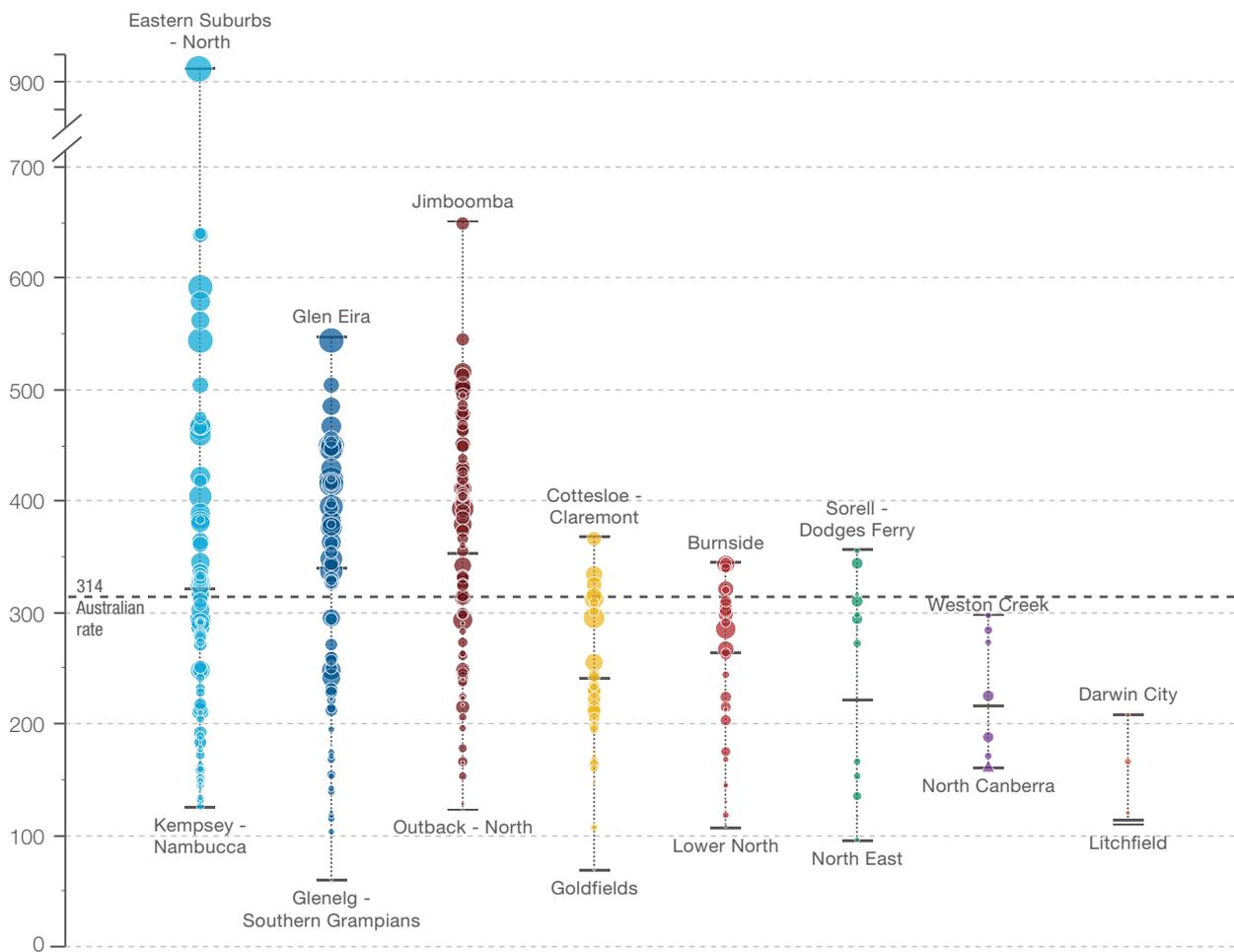
Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Repeat gastroscopy MBS services, all ages

Rates by state and territory

Figure 5.23: Number of MBS-subsidised services for repeat gastroscopy per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Highest rate	908	545	650	367	345	356	298	209
State/territory	321	340	353	241	264	221	216	114
Lowest rate	127	61	124	70	109	97	163	121*
Total services	29,036	24,096	19,829	6,778	5,554	1,497	901	231



Each circle represents a single SA3. The size indicates the number of services.

▲ rate only ■ interpret with caution



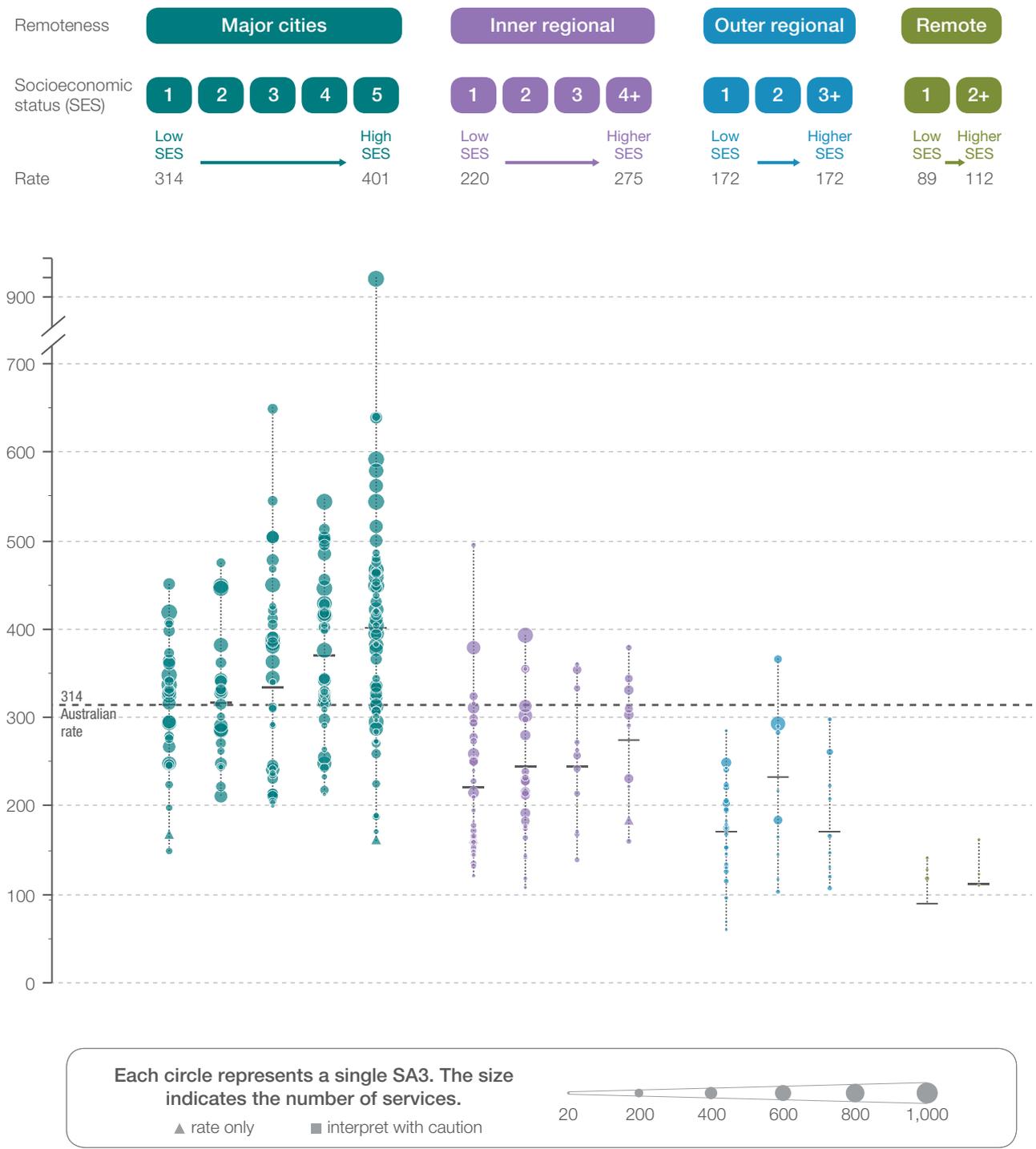
Notes:

Squares (■) and asterisks (*) indicate rates that are considered more volatile than other published rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of services are not published for confidentiality reasons. For the NT, the territory rate is lower than the minimum SA3 rate as it includes SA3 rates that are not published for reliability and/or confidentiality reasons. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Rates by remoteness and socioeconomic status

Figure 5.24: Number of MBS-subsidised services for repeat gastroscopy per 100,000 people of all ages, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Notes: Squares (■) indicate rates that are considered more volatile than other published rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of services are not published for confidentiality reasons. For Remote and SES of 1, the remoteness and SES rate is lower than the minimum SA3 rate as it includes SA3 rates that are not published for reliability and/or confidentiality reasons. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Repeat gastroscopy MBS services, all ages

Resources

- Australian Institute of Health and Welfare, Cancer summary data visualisations³⁵, aihw.gov.au/reports/cancer/cancer-data-in-australia/contents/cancer-summary-data-visualisation
- *Gastro-oesophageal Reflux Disease in Adults: Clinical update*⁴³
- *Clinical Practice Guideline for the Diagnosis and Management of Barrett's Oesophagus and Early Oesophageal Adenocarcinoma*³
- *Therapeutic Guidelines: Gastrointestinal*, version 6⁴⁴
- *Suspected Cancer: Recognition and referral – upper gastrointestinal tract cancers*⁴⁵

Australian initiatives

Information in this chapter will complement work already underway to prevent inappropriate repeat gastroscopy in Australia. At a national level, this work includes:

- Gastroenterological Society of Australia, Choosing Wisely recommendation 5: Do not perform a follow-up endoscopy less than three years after two consecutive findings of no dysplasia from endoscopies with appropriate four quadrant biopsies for patients diagnosed with Barrett's oesophagus.⁴²

Many state and territory initiatives are also in place to improve gastroscopy use, including:

- *Upper Gastrointestinal Endoscopy Categorisation Guidelines for Adults*, Victoria³⁷
- *Endoscopy Action Plan*, Queensland⁴⁶
- Clinical prioritisation criteria: endoscopy⁴⁷ and Clinical prioritisation criteria: gastroenterology³⁹, Queensland
- *Referral Guidelines: Direct access gastrointestinal endoscopic procedures*, Western Australia⁴⁰
- *Urgency Categorisation and Access Policy for Public Direct Access Adult Gastrointestinal Endoscopy Services*, Western Australia⁴¹
- State-wide endoscopy care network, which monitors and assesses the quality of endoscopy services, Tasmania.³⁸

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Repeat gastroscopy MBS services, all ages

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Chapter 6

Medicines use in older people

At a glance



Polypharmacy is the concurrent use of multiple medicines. It is common in older people because they are more likely to have chronic diseases that are managed with medicines. Although polypharmacy may be appropriate, it can increase the risk of harm from medicines.

The Atlas found that, in 2018–19, the rate of people aged 75 years and over dispensed five or more medicines was about six times higher in the local area with the highest rate than in the area with the lowest.* Almost 40% of people aged 75 years and over were dispensed five or more medicines. Rates of polypharmacy were higher in major cities than elsewhere, and rates increased with socioeconomic disadvantage, except in remote areas.

Residential Medication Management Review (RMMR) and Home Medicines Review (HMR) are two types of medicine reviews available to people living in aged care facilities or at home. The reviews aim to help people to get the maximum benefit from their medicines and prevent medicine-related harm.

The Atlas found that, in 2018–19, the rate of people aged 75 years and over who had at least one Medicare Benefits Schedule–subsidised service for an RMMR or HMR was almost 12 times higher in the

local area with the highest rate than in the area with the lowest rate.* About 5.4% of people had a review.

Interventions for identifying people at risk of harm from polypharmacy, such as frail people and those with multiple morbidities, are needed. System changes are needed to improve access to RMMR and HMR services for these at-risk groups. Initiatives to improve uptake of pharmacist recommendations may improve the effectiveness of the review services.

Proton pump inhibitor (PPI) medicines are effective for gastro-oesophageal reflux disease. They are commonly used in older people, often at higher doses or long term without reassessing need. Older people may be especially susceptible to harms from long-term use.

The Atlas found that, in 2018–19, the rate of dispensing of PPI medicines to people aged 75 years and over was about six times higher in the local area with the highest rate than in the area with the lowest.* Almost half people aged 75 years and over had at least one prescription dispensed for a PPI medicine.

Targeted interventions that prompt clinicians to regularly review the need for PPI medicines in older people are needed.

* After standardising to remove age and sex differences between populations.
The Fourth Australian Atlas of Healthcare Variation

Recommendations

The Commission consulted widely, but is solely responsible for making the recommendations; as such, the recommendations may not reflect the views of all contributors to the Atlas.

6a. The Commission, in collaboration with the Australian Government Department of Health, the Aged Care Quality and Safety Commission, NPS MedicineWise and relevant groups, to develop nationally consistent:

-
- i. Guidance for people taking multiple medicines
-
- ii. Guidance about the communication of reports to medical practitioners from Residential Medication Management Reviews and Home Medicines Reviews
-
- iii. Measures for aged care homes to compare the percentage of residents who have received Residential Medication Management Reviews and the percentage of pharmacists' recommendations, in line with the Commonwealth's development of the National Aged Care Mandatory Quality Indicator Program
-
- iv. Guidance for the establishment, governance, composition and operation of Medication Advisory Committees within aged care homes.
-

6b. The Australian Government Department of Health to investigate ways of collecting patient-level data on the supply of Pharmaceutical Benefits Scheme medicines through the S100 Remote Area Aboriginal Health Services Program to gather accurate information about the use of medicines in rural and remote Aboriginal communities.

6.1 Polypharmacy, 75 years and over

Why is this important?

Polypharmacy is defined by the World Health Organization (WHO) as the concurrent use of five or more medicines.¹ Polypharmacy is common in older people because they often have several chronic conditions requiring multiple medicines to prevent or control symptoms. About two-thirds of Australians aged 75 years and over are taking five or more medicines, including over-the-counter and complementary medicines.²

Polypharmacy may be necessary and appropriate for some people; however, there are risks associated with multiple medicines use.¹ Older people are more vulnerable to harms from polypharmacy because of increased frailty and age-related changes that alter the way their bodies respond to medicines.¹

Monitoring polypharmacy is recognised in the WHO's third Global Patient Safety Challenge: Medication without Harm as a way of identifying people at risk of medicine-related harm and who may benefit from a medicines review.¹ The fourth Atlas uses Pharmaceutical Benefits Scheme (PBS) prescription dispensing data to examine rates of polypharmacy for people aged 75 years and over.

What did we find?

In 2018–19, about 40% of people aged 75 years and over were dispensed five or more different medicines. Polypharmacy was **6.4 times as high** in the area with the highest rate as in the area with the lowest rate.

Rates of polypharmacy were higher in major cities than elsewhere. Areas with the most socioeconomic disadvantage had the highest rates of polypharmacy, except for remote areas.

What can be done?

We can:

- Implement interventions to identify people at risk of harm from polypharmacy, such as frail people and those with several chronic conditions, to prompt the timely review of their medicines; this could include increased monitoring of polypharmacy
- Raise awareness among consumers and clinicians about harms associated with multiple medicines use, and about lifestyle changes that can reduce the need for some medicines
- Support older people to keep an up-to-date medicines list
- Include information about deprescribing in medicines product information.

Polypharmacy, 75 years and over

Context

This item examines the rate of polypharmacy for people aged 75 years and over in Australia in 2018–19.

What is polypharmacy?

Polypharmacy is the use of multiple medicines to prevent or treat medical conditions. It is commonly defined as the concurrent use of five or more medicines by the same person. This definition is used by WHO and the Organisation for Economic Co-operation and Development.^{1,3} Medicines include prescription, as well as over-the-counter and complementary medicines.¹

This Atlas examines polypharmacy for people aged 75 years and over using prescription dispensing data from the Pharmaceutical Benefits Scheme (PBS). Over-the-counter and complementary medicines are not in the dataset and so are not counted. This means that Atlas findings are likely to be a conservative measure of polypharmacy in Australia.

Why examine polypharmacy in people aged 75 years and over?

Monitoring polypharmacy is one of the three key actions recommended in the WHO's third Global Patient Safety Challenge: Medication without Harm, to reduce the global burden of harm associated with medicine use.^{1,4} Monitoring polypharmacy also underpins recommendations in Australia's Choosing Wisely initiative, which advises to not prescribe additional medicines to people already taking five or more medicines without a comprehensive review of their medicines to ensure all are necessary.⁵

Polypharmacy is common in older people because they are more likely to be living with several chronic conditions, requiring medicines to prevent or control symptoms.^{6,7} About 80% of Australia's population aged 65 years and over have one or more chronic conditions, and over half (51%) have two or more.⁶ Because people become more sensitive to the effects of medicines as they age, the consequences of polypharmacy tend to be more serious in older people.⁸⁻¹⁰

Polypharmacy is associated with an increased risk of adverse drug reactions, interactions with other medicines and increased likelihood of not taking medicines as prescribed.^{1,11-14} Errors associated with prescribing and monitoring medicines are more likely in older people, and the likelihood increases with the number of medicines taken.¹ The more medicines prescribed, the more complex medicine regimens become, which increases the risk of errors such as taking the wrong medicine or dose, missing a dose or taking it at the wrong time.^{1,15} Polypharmacy is also associated with harms including delirium and falls^{10,12,16}, hospitalisation¹¹, reduced quality of life¹⁷ and premature morbidity and mortality.^{12,16}

Polypharmacy may be appropriate when medicines are prescribed according to the best available evidence, and use for that person has been optimised to reduce the risk of medicine-related harm.^{1,14,17} For these reasons, definitions of polypharmacy are shifting from numeric thresholds – such as the use of five or more medicines – to emphasise the clinical appropriateness of polypharmacy.^{1,17} However, there are risks associated with using multiple medicines, even when each medicine on its own is appropriate.^{1,11,18} The benefits gained from each additional medicine are likely to be reduced when people take multiple medicines, and the risk of medicine-related harm increases.¹⁹

Polypharmacy is associated with an increased use of medicines that are considered potentially inappropriate in older people – where the risks of their use outweigh the benefits.^{12,20-23} Medicines considered potentially inappropriate in older people are best avoided or used extremely cautiously, with monitoring to ensure the benefits of taking the medicine outweigh the possible harms.

Examples of medicines considered potentially inappropriate in older people include²⁴:

- Medicines that cause sedation, dizziness and confusion, such as opioids, antipsychotics, anticholinergics, antidepressants and medicines for anxiety – these can increase the risk of confusion, falls or delirium
- Long-acting non-steroidal anti-inflammatory drugs – these are associated with increased risk of kidney failure, gastrointestinal bleeding and cardiac effects in older people
- Medicines that are removed from the body by the kidneys – reduced kidney function in older people can allow these to accumulate in the body and cause toxicity.

Prescribing medicines when they are no longer needed is common in older people and contributes to polypharmacy. A study of veterans in the United States found that 60% of people taking five or more medicines were taking one or more medicines that were no longer needed.²⁵

A prescribing cascade can exacerbate polypharmacy. This occurs when additional medicines are prescribed to treat the adverse effects caused by other medicines but misinterpreted as symptoms of a new condition.²⁶ Older people are at higher risk of experiencing prescribing cascades. This is because they often have several medical conditions that are treated by different clinicians. Clinicians may focus on managing a single disease state without considering the patient's other conditions and treatments.

Rates of polypharmacy in older people in Australia

Prevalence of polypharmacy in different Australian healthcare settings has been reported to range between 43% and 95%, with higher estimates for people in hospital and aged care homes.

A national census in 2012, which explored the use of prescription, over-the counter, and complementary medicine use in Australians aged 50 years and over living at home, found that 43% took five or more medicines.² The number of people taking five or more medicines increased with age, with two out of three Australians aged 75 years and over taking five or more medicines.

A study of Australians aged 70 years and older (average age 81.3), who had been admitted to hospital between July 2005 and May 2010, found that 75% of people took five or more medicines.⁷ In Australian aged care homes, up to 95% of residents are reported to take five or more medicines.^{27,28}

An analysis of PBS dispensing data found that, between 2006 and 2017, the prevalence of taking five or more medicines increased by 9% (from 33% to 36%) in Australians aged 70 years and over.²⁹ The prevalence among those aged 80–84 years and 85–89 years was 44% and 46%, respectively, in 2017.

Although many studies have described polypharmacy in Australia, the maps and graphs in this Atlas provide a novel way of analysing the issue and highlighting the areas and groups that may be more at risk of experiencing harm from polypharmacy.

Polypharmacy, 75 years and over

About the data

Data are sourced from the PBS dataset, which includes all prescriptions dispensed under the PBS and the Repatriation Pharmaceutical Benefits Scheme (RPBS), including under copayment prescriptions.

Data used in this report exclude doctors' bag items and any programs with alternative supply arrangements (section 100 of the *National Health Act 1953*) in which patient-level details are not available, such as direct supply to remote Aboriginal health services.

The PBS and RPBS do not cover medicines supplied to public hospital inpatients, over-the-counter medicines or private prescriptions.

The dataset does not allow analysis by Aboriginal and Torres Strait Islander status.

Rates are based on the number of people dispensed five or more different medicines per 100,000 people aged 75 years and over in 2018–19.

To be counted, a medicine must have had four or more prescriptions dispensed for it in the year. Medicines are counted as distinct if the Anatomical Therapeutic Chemical codes differ at the fourth level.

Patient count analysis reflects the number of unique patients that qualify according to the polypharmacy specification.

The analysis and maps are based on the patient's post code recorded in their Medicare file and not the location of the prescriber or the dispensing pharmacy.

Rates are age and sex standardised to allow comparisons between populations with different age and sex structures.

Some data have been suppressed to manage volatility and confidentiality. This process takes into account the Australian Government Department of Health's requirements for reporting PBS data (see the Technical Supplement). Data suppression for this item has been notably marked for remote areas of the Northern Territory. This is indicated on the maps in grey. Reporting for the Northern Territory was possible at a territory level.

What do the data show?

Magnitude of variation

In 2018–19, 690,516 people were dispensed five or more medicines, representing 40,226 people per 100,000 people aged 75 years and over (the Australian rate).

The number of people dispensed five or more medicines across 328* local areas (Statistical Area Level 3 – SA3) ranged from 11,206 to 72,059 per 100,000 people. The rate was **6.4 times as high** in the area with the highest rate compared to the area with the lowest rate. The number of people varied across states and territories, from 25,058 per 100,000 people in the Northern Territory to 41,446 in New South Wales. (Figures 6.2–6.5).

After the highest and lowest 10% of results were excluded and 264 SA3s remained, the number of people dispensed five or more medicines per 100,000 people was 1.4 times as high in the area with the highest rate compared to the area with the lowest rate.

* There are 340 SA3s. For this item, data were suppressed for 12 SA3s due to a small number of prescriptions dispensed and/or population in an area. Some SA3 rates are more volatile than others. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia.

For further detail about the methods used, please refer to the Technical Supplement.

Analysis by remoteness and socioeconomic status

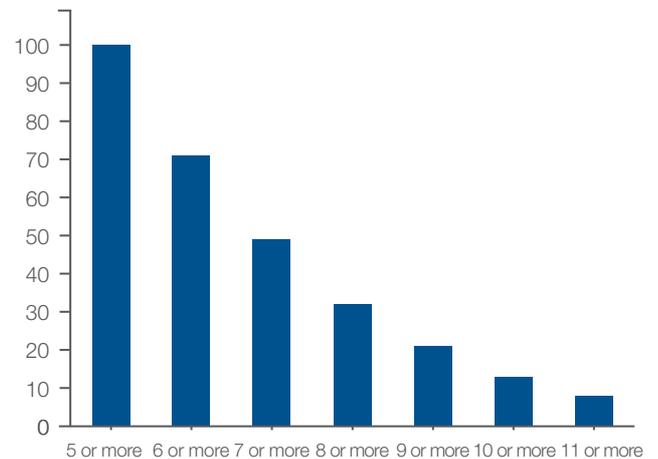
Rates of polypharmacy were higher in major cities and inner regional areas than in outer regional areas and remote areas. With the exception of remote areas, areas with the most disadvantage had the highest rates for polypharmacy compared to all other socioeconomic groups in the same remoteness category (Figure 6.6).

Analysis by number of medicines for people with polypharmacy

In 2018–19, of the 690,516 people with polypharmacy aged 75 years and over, 49% had seven or more medicines dispensed and 8% had 11 or more medicines dispensed (Figure 6.1).

The data and graphs for Figures 6.1, analysis by Primary Health Network (PHN), analysis by PHN and age group, and analysis by numbers of medicines for each age group, are available at safetyandquality.gov.au/atlas

Figure 6.1: Percentage of people by the number of medicines dispensed, for patients with polypharmacy aged 75 years and over, 2018–19



The data for Figure 6.1 are available at safetyandquality.gov.au/atlas

Notes:

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Pharmaceutical Benefits Scheme data and ABS Estimated Resident Population 30 June 2018.

Polypharmacy, 75 years and over

Interpretation

The Atlas findings indicate that about 40% of people aged 75 years and over were taking five or more different medicines on an ongoing basis in 2018–19. The data do not allow assessment of the appropriateness of polypharmacy.

Variation in rates of polypharmacy in people aged 75 years and over are likely to be due to the geographical differences in the factors discussed below.

Variation between areas may not directly reflect the practices of the clinicians who are based in these areas. The analysis is based on where people live rather than where they obtain their health care. Patients may travel outside their local area to receive health care.

Possible reasons for variation in rates of polypharmacy

Rates of underlying disease, social determinants of health and lifestyle factors

Areas with higher rates of chronic disease or people living with several chronic conditions are expected to have higher rates of polypharmacy. The higher rates of polypharmacy observed in socioeconomically disadvantaged areas may reflect a higher prevalence of multimorbidities (having several chronic conditions), and lifestyle factors that increase the risk of chronic disease. These factors include obesity, smoking, poor diet and alcohol intake. People living in disadvantaged areas may be restricted in their ability to afford, choose or find healthier lifestyle options, exacerbating rates of polypharmacy.¹

Number of prescribers and dispensing pharmacies

The number of prescribers involved in a person's care may contribute to variation in rates of polypharmacy. One clinician rarely has oversight of prescribing a person's medicines, because different specialists provide care for different conditions. The number of medicines prescribed is known to increase with the number of prescribers involved in a person's care.³⁰

It is unclear whether digital health systems (such as My Health Record) that can sort and centralise a person's medicines information affect rates of polypharmacy.

The number of pharmacies where people obtain their medicines may also contribute to the variation seen. Having medicines dispensed at the same pharmacy gives the pharmacist an awareness of a patient's dispensing history, which may allow pharmacists and pharmacy staff to identify people taking multiple medicines who might benefit from a medicines review.

Age and location of aged care homes

Areas with more aged care homes are likely to have higher rates of polypharmacy because residents of aged care homes generally take more medicines than people of the same age living in their own home.^{2,29} Because Atlas data are age and sex standardised – to control for differences in population structures between areas – variation in rates between areas cannot be explained solely by the proportion of older people in an area.

Clinical decision making and access to care

Variation in rates may be influenced by different prescribing practices of clinicians. Many clinical guidelines are based on research in adults aged under 65 years with a single disease state. Application of these guidelines to older people with multimorbidity has been found to exacerbate polypharmacy.^{1,18}

The number of clinicians providing services in the area, and the ability to see a specific clinician, may influence the likelihood of people seeking care. The practice styles of individual clinicians may be more likely to affect rates in areas with fewer clinicians, such as rural and regional locations, than in areas with more clinicians.

Promoting appropriate care

Reducing the risk of harms from polypharmacy in older people requires a multifaceted and collaborative approach with a variety of strategies and interventions to support appropriate medicines use.^{14,31,32}

Strategies should aim to improve health outcomes, increase engagement with consumers, and promote appropriate use of healthcare resources.¹

Australia's response to the WHO Global Patient Safety Challenge: Medication without Harm, proposes four priority actions to reduce harms from polypharmacy and the use of potentially inappropriate medicines⁴:

- Broad and consistent implementation of evidence-based primary care programs for medication reconciliation and review services
- Consumer communications to raise awareness of programs aimed at improving consumer ability to manage their medicines
- Broad and complete implementation of the National Safety and Quality Health Service (NSQHS) Standards Medication Safety Standard in health service organisations
- Broad implementation of medicines review and promotion of deprescribing best practice throughout Australia's health system.

Initiatives supporting these actions are discussed below.

Medication management review

A comprehensive and structured review of a person's medicines is key to identifying whether polypharmacy is appropriate. Studies examining the appropriateness of polypharmacy in older Australians have found that one in five people are taking a medicine considered potentially inappropriate when use should generally be avoided³³, increasing to half in those living in aged care facilities.^{34,35}

Medication management reviews (also known as medicines reviews) are effective in minimising harms from polypharmacy and improving the safe use of medicines.¹ Services in Australia include home medicines review (HMR), residential medication management review (RMMR), in-pharmacy medicine checks (MedsCheck) and medicine reviews as part of multidisciplinary care plans.³⁶ Further detail about HMR and RMMR are available in Chapter 6.2. There are also specific programs that focus on improving medicines use in the Australian veteran community.³⁷ Medicines review is also a requirement for all health service organisations under the NSQHS Standards.³⁸

Shared decision making

Partnering with consumers and their families or carers in shared decision making and empowering people to have a more active role in their care are key strategies for minimising harms from polypharmacy.^{38,39}

Discussions between consumers and clinicians about the benefits and risks of medicines before prescriptions are issued, and an assessment of the person's perspective on their health and their need to take multiple medicines, may lead to fewer medicines being prescribed.¹⁶

Consumers may be more receptive to stopping medicines when they have a greater understanding of the risks of continuing their medicine, particularly if a medicine has limited expected benefit or is no longer of benefit.^{40,41} About 90% of Australians have reported they would be willing to stop taking one or more of their medicines if their clinician thought it was appropriate to do so.⁴²

Polypharmacy, 75 years and over

Medicines lists

Supporting people to know what medicines they are taking can help minimise harms from polypharmacy.

Tools such as the NPS MedicineWise Medicines List (see 'Australian initiatives' on page 318) can help people to take an active role in managing their medicines and improve communication with their clinicians. Medicines lists can improve a person's understanding and adherence to medicines regimens¹², and are useful at transitions of care for ensuring the accurate transfer of medicines information and minimising unintended medicine changes.³⁸ Smartphone apps to store a person's medicines information may also be useful, but further evaluation is required to determine their benefits.¹⁶ A limitation of technology-based tools like smartphone apps currently identified is that older people, who are the main target for interventions to reduce harm from polypharmacy, are the least likely to use them.

Digital systems such as My Health Record may also help with maintaining lists and allow better identification of people who may benefit from a medicines review.

Over-the-counter and complementary medicines were not included in the Atlas analysis. However, they are commonly used by older people^{2,6,43} and contribute to polypharmacy.^{2,44} GPs and pharmacists should routinely ask about use of over-the-counter and complementary medicines and record them as part of a patient's medication history.² Patients should be encouraged to record them as part of their medicines list.

Lifestyle factors

Addressing lifestyle factors that increase the risk of chronic disease or experiencing symptoms may reduce the need for medicines use that can contribute to polypharmacy.¹

Lifestyle factors should be discussed with people when considering medicines use or undertaking a medication review. This is especially important in

areas that have a higher prevalence of risk factors for chronic disease, such as areas with higher socioeconomic disadvantage.¹⁹

Medication reconciliation at transitions of care

More than 50% of medication errors occur at transitions of care – when people move from one healthcare setting to another.⁴⁵ The probability of such errors increases with the number of medicines prescribed.²

Medication reconciliation is the process of working with patients and their carers to develop an accurate medicines history in order to ensure the accurate transfer of information about their medicines, and is an effective way of minimising harms from polypharmacy.^{1,4,38} It can reduce discrepancies and medication errors during transitions of care by 50–94%³⁸, with most success seen in high-risk populations such as older people experiencing polypharmacy.^{1,46} It is a requirement for all Australian health service organisations under the NSQHS Standards.³⁸

Guideline adaptation and comorbidities

Developing guidelines that take into account multimorbidity in older people could help reduce complex medicine regimens and minimise harms from polypharmacy.¹⁷ Evidence-based guidelines commonly recommend treatments for a single disease state. Lack of guidance on the management of multimorbidity can be a driver of polypharmacy.¹

Deprescribing

Deprescribing is the supervised process of reducing or stopping medicines that may no longer be of benefit or may be causing harm.^{34,47} Deprescribing can reduce the number of medicines taken by frail older people living in aged care homes with no harm to clinical outcomes.¹⁵ It may also reduce medicine complications such as the number of falls experienced by older people.^{34,48}

Initiatives need to address the known barriers to deprescribing. Examples include clinician reluctance to deprescribe because of clinical complexity, incomplete information on the rationale for the medicines, ambiguous or frequently changing care goals, uncertainty about the harms of continuing or stopping medicines, a perception that it is the responsibility of another clinician to deprescribe medicines, and lack of a defined process for deprescribing.⁴⁹⁻⁵³ Patients may be reluctant to stop their medicines because they are worried about their symptoms returning, or they are confused, having been told previously that they needed them. Opinions of their family members or information from other sources, such as the media, may also be influencing factors.⁴⁰

The National Strategic Plan to Improve the Quality Use of Medicines in Older Adults³⁴ recommends that all Australian Approved Product Information (PI) leaflets for prescribing medicines and all Consumer Medicines Information (CMI) leaflets include information on 'cessation' or 'deprescribing'. An analysis of Australian Approved PI leaflets for the 99 most commonly dispensed medicines in 2015 found that only a quarter provided guidance on how to discontinue use.⁵⁴ Consumer testing showed that CMI leaflets with information about stopping medicines have been positively received by Australians aged 65 years and over.⁵⁵

Active ingredient prescribing

Inconsistency in the way medicines are described can cause confusion for patients, who may inadvertently take multiple doses of the same active ingredient if it is prescribed under different brand names. The risk is increased in older people and those who take many medicines.⁵⁶ To reduce these risks and support people to better understand their medicines, prescriptions supplied under the PBS from February 2021 must describe the medicine by its active ingredient, and not the brand name.⁵⁶

Electronic decision support tools

Electronic decision support tools may be useful in minimising harms from polypharmacy in older people.^{57,58} The Goal-directed Medication review Electronic Decision Support System provides clinical decision support to clinicians conducting medication reviews, and has shown to be useful when conducting an HMR.⁵⁸ Research is continuing to examine the effect of the system on clinical outcomes.⁵⁹

Monitoring of polypharmacy

Monitoring rates of polypharmacy can identify people who may have an increased risk of medicine-related harm. It can prompt a medicines review to ensure that prescribed medicines are appropriate for that person.⁴ This approach has been used successfully in aged care homes in Victoria, through the development of a quality indicator that reports on the proportion of residents using nine or more medicines.⁴

Australia's National Indicators for Quality Use of Medicines in Australian Hospitals 2014 can be used for monitoring safe and appropriate medicines use.⁶⁰ Another set of indicators has been proposed for use in Australian hospitals by the New South Wales Therapeutic Advisory Group. These indicators identify people at high risk of medicine-related harm, including inappropriate polypharmacy.⁴

People are often discharged from hospital with more medicines than they were previously taking; this is especially common in older people.^{7,61} Monitoring rates of polypharmacy at the time of hospital discharge could help identify people who may be at risk of medicine-related harm and may benefit from a medication review.

The correlation between rates of polypharmacy and rates of medication management reviews (MMRs, reported in Chapter 6.2) could also be a useful indicator. Areas with high rates of polypharmacy but low rates of MMRs should be further investigated.

Polypharmacy, 75 years and over

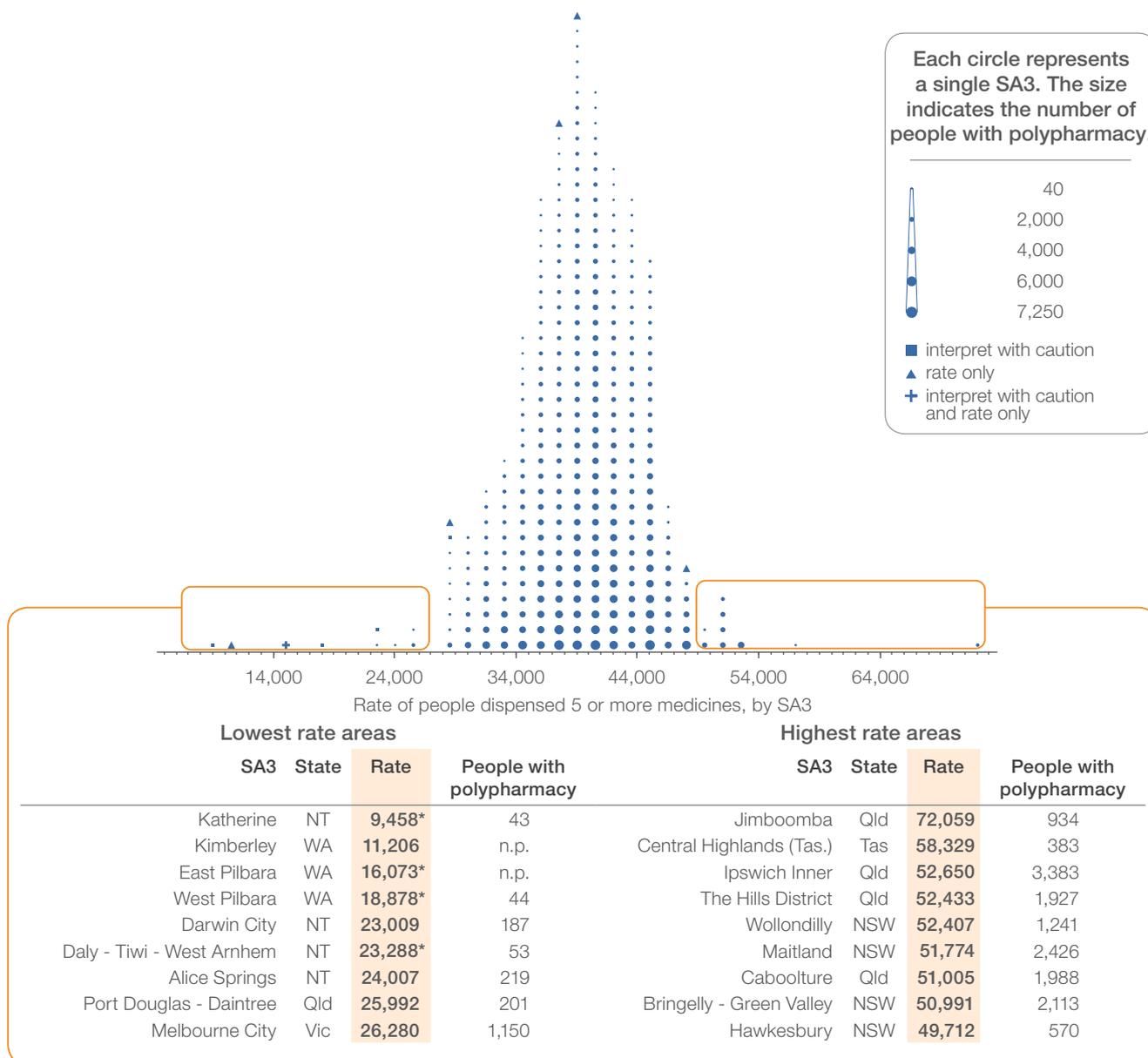
Promoting existing initiatives

Recommendations have been made as part of the Royal Australasian College of Physicians EVOLVE program and Australia's Choosing Wisely initiative to minimise harms associated with polypharmacy. These focus on^{5,62}:

- The importance of recognising and avoiding prescribing cascades
- Reducing the use of medicines when more effective non-pharmacological management strategies are available
- Stopping medicines when they are no longer of benefit
- Conducting a comprehensive review of existing medicines before prescribing further medicines in people who are already taking five or more.

Rates by local area

Figure 6.2: Number of people dispensed 5 or more medicines per 100,000 people aged 75 years and over, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Notes:

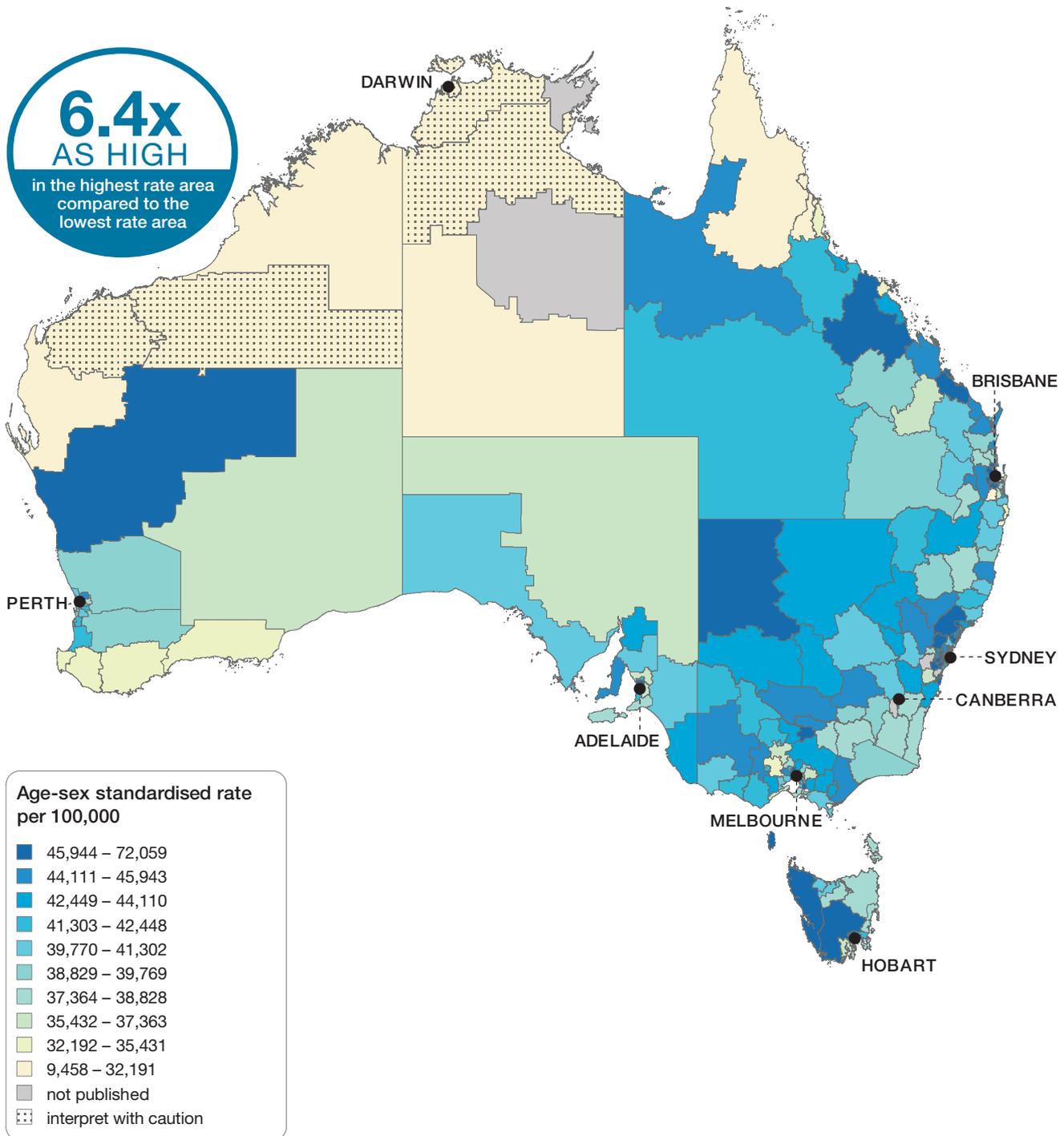
Squares (■) and asterisks (*) indicate rates that are considered more volatile than other published rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of people are not published (n.p.) for confidentiality reasons. Crosses (+) indicate SA3s where rates should be interpreted with caution, and the numbers of people are not published for confidentiality reasons. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Pharmaceutical Benefits Scheme data and ABS Estimated Resident Population 30 June 2018.

Polypharmacy, 75 years and over

Rates across Australia

Figure 6.3: Number of people dispensed 5 or more medicines per 100,000 people aged 75 years and over, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Notes:

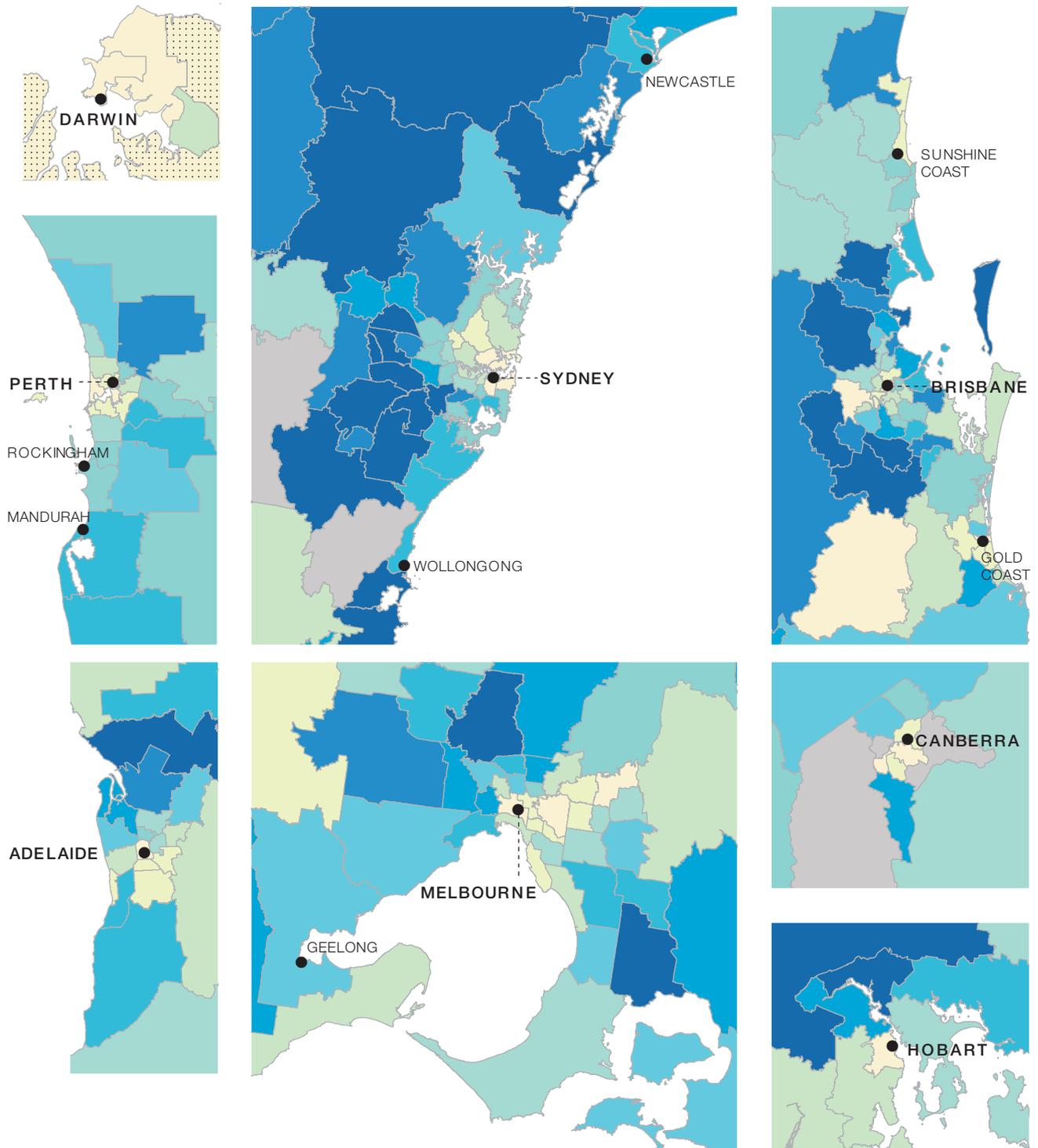
Dotted areas indicate rates that are considered more volatile than other published rates and should be interpreted with caution. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia.

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Pharmaceutical Benefits Scheme data and ABS Estimated Resident Population 30 June 2018.

Rates across capital city areas

Figure 6.4: Number of people dispensed 5 or more medicines per 100,000 people aged 75 years and over, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Notes:

Dotted areas indicate rates that are considered more volatile than other published rates and should be interpreted with caution. For further detail about the methods used, please refer to the Technical Supplement.

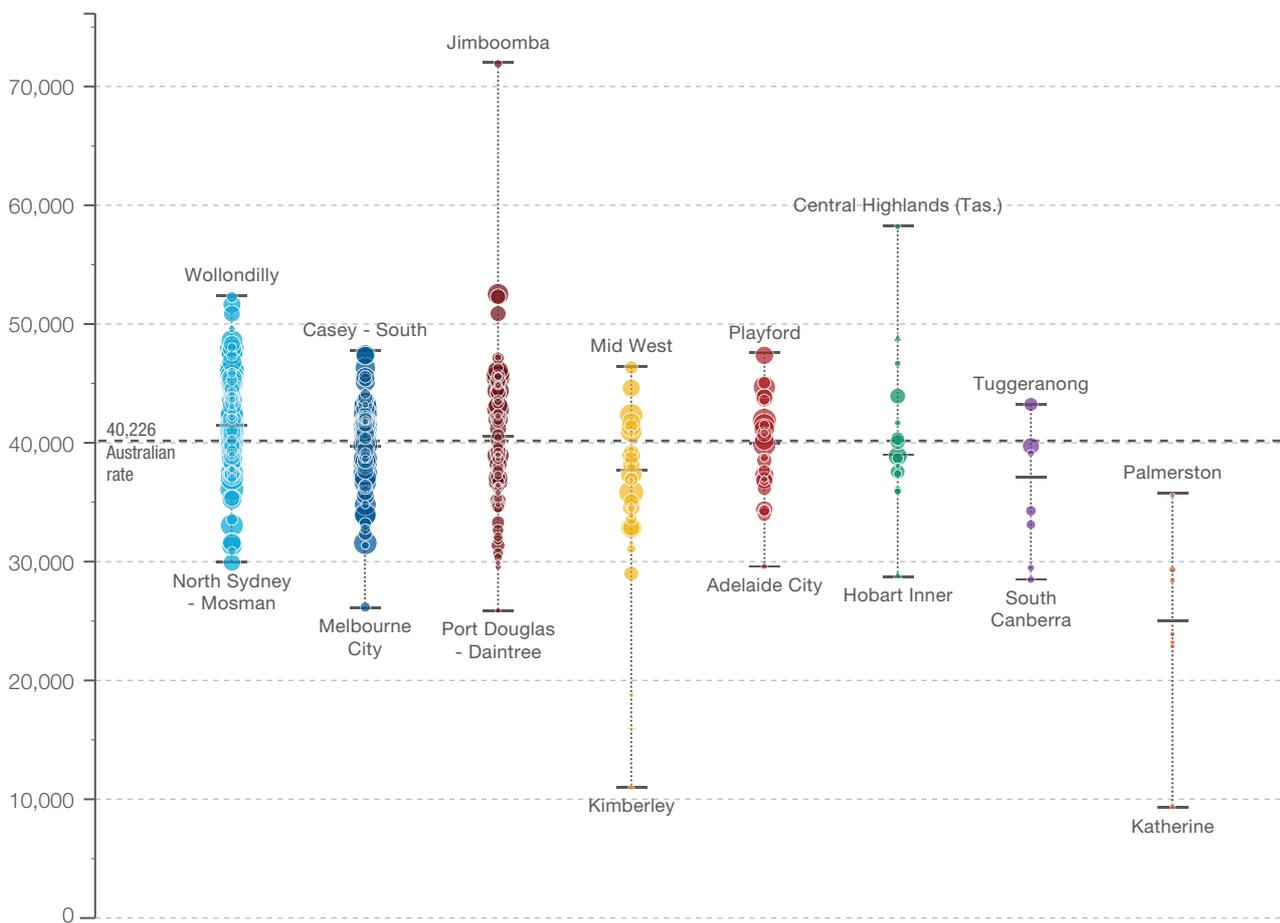
Sources: AIHW analysis of Pharmaceutical Benefits Scheme data and ABS Estimated Resident Population 30 June 2018.

Polypharmacy, 75 years and over

Rates by state and territory

Figure 6.5: Number of people dispensed 5 or more medicines per 100,000 people aged 75 years and over, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Highest rate	52,407	47,550	72,059	46,474	47,492	58,329	43,364	35,675
State/territory	41,446	39,786	40,540	37,814	40,104	38,993	37,189	25,058
Lowest rate	30,025	26,280	25,992	11,206	29,715	29,030	28,588	9,458*
Total patients	238,296	177,272	129,940	60,162	58,214	16,934	8,245	1,379



Each circle represents a single SA3. The size indicates the number of people with polypharmacy.

▲ rate only ■ interpret with caution
 + interpret with caution and rate only

40 2,000 4,000 6,000 7,250

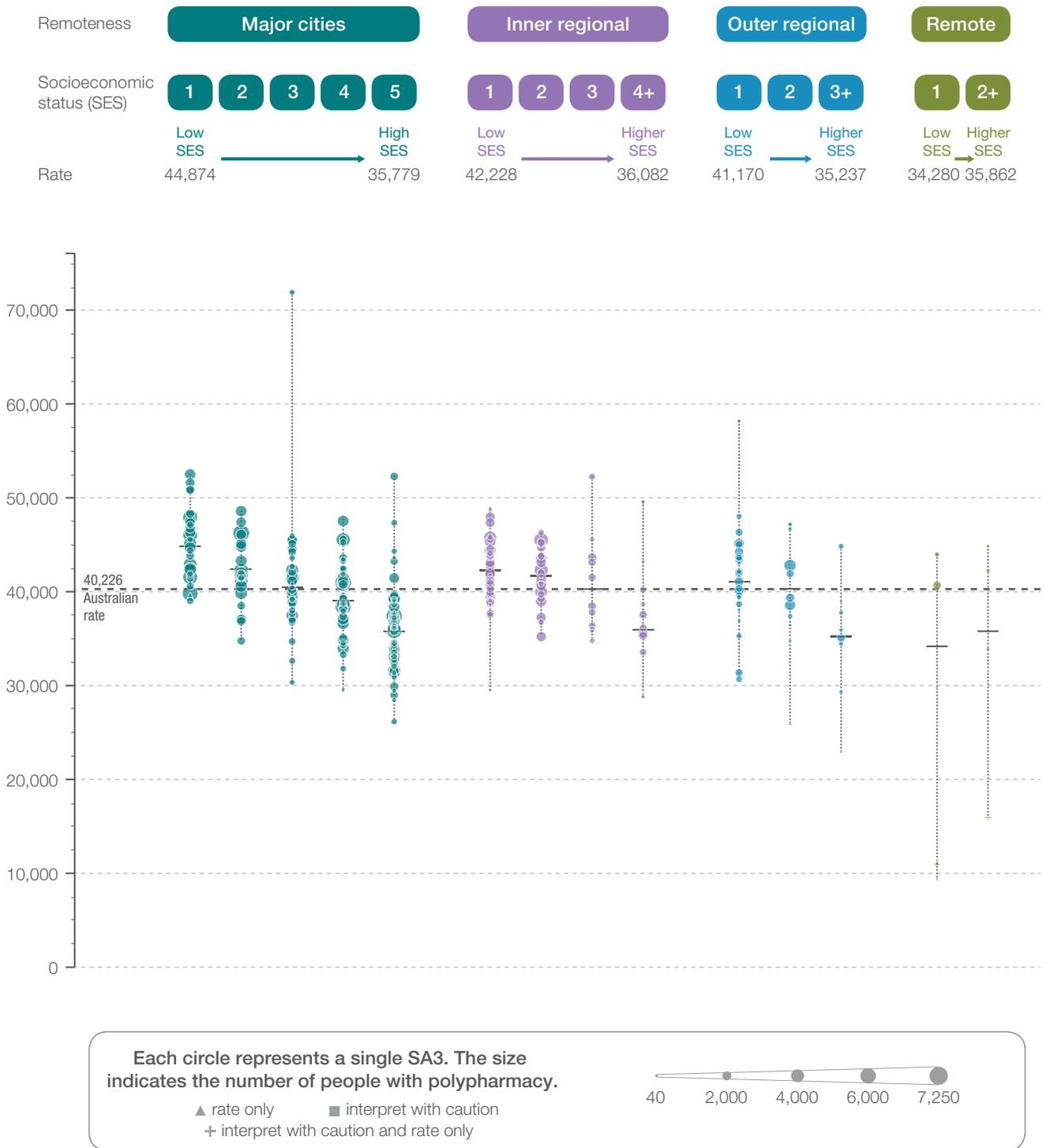
Notes:

Squares (■) and asterisks (*) indicate rates that are considered more volatile than other published rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of people are not published for confidentiality reasons. Crosses (+) indicate SA3s where rates should be interpreted with caution, and the numbers of people are not published for confidentiality reasons. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Pharmaceutical Benefits Scheme data and ABS Estimated Resident Population 30 June 2018.

Rates by remoteness and socioeconomic status

Figure 6.6: Number of people dispensed 5 or more medicines per 100,000 people aged 75 years and over, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Notes:

Squares (■) indicate rates that are considered more volatile than other published rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of people are not published for confidentiality reasons. Crosses (+) indicate SA3s where rates should be interpreted with caution, and the numbers of people are not published for confidentiality reasons. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Pharmaceutical Benefits Scheme data and ABS Estimated Resident Population 30 June 2018.

Polypharmacy, 75 years and over

Resources

- Australian Commission on Safety and Quality in Health Care, *Medication safety*⁶³, safetyandquality.gov.au/our-work/medication-safety
- NSW Clinical Excellence Commission, *A guide to medication reviews for NSW health services 2019*⁶⁴, cec.health.nsw.gov.au/keep-patients-safe/medication-safety/continuity-of-medication-management/medication-review
- Pharmaceutical Society of Australia. *Guidelines for comprehensive medication management reviews (2020)*⁶⁵, psa.org.au/mmg/
- National Institute for Health and Care Excellence (UK), *Multimorbidity and polypharmacy*¹⁹, nice.org.uk/advice/ktt18/chapter/evidence-context#polypharmacy
- National Institute for Health and Care Excellence (UK), *Multimorbidity: clinical assessment and management*⁶⁶, nice.org.uk/guidance/ng56
- National Institute for Health and Care Excellence (UK), *Medicines optimisation: the safe and effective use of medicines to enable the best possible outcomes*⁶⁷, nice.org.uk/guidance/ng5
- American Geriatrics Society, 2019 Updated AGS Beers criteria® for potentially inappropriate medication use in older adults²⁴
- American Geriatrics Society Expert Panel on the Care of Older Adults with Multimorbidity, *Guiding principles for the care of older adults with multimorbidity: An approach for clinicians*⁶⁸

Australian initiatives

The information in this chapter will complement work already under way to minimise harms from polypharmacy in Australia. At a national level, this work includes:

- NHMRC Cognitive Decline Partnership Centre, University of Sydney, Australian Deprescribing Network, NPS MedicineWise, development of recommendations for a national strategic plan to reduce inappropriate polypharmacy³⁴
- NPS MedicineWise, Keeping a medicines list⁶⁹, nps.org.au/consumers/keeping-a-medicines-list
- Society of Hospital Pharmacists of Australia, Standard of practice in geriatric medicine for pharmacy services⁷⁰
- The Veterans MATES program, funded by the Australian Government Department of Veteran's Affairs³⁷, veteransmates.net.au/
- EVOLVE⁶² and Choosing Wisely Australia⁵ – includes advice about recognising and avoiding prescribing cascades, deprescribing medicines when they are no longer needed, and not prescribe medicines to people already taking five or more medicines without first undertaking a comprehensive review to ensure use of all medicines is necessary
- National Aged Care Mandatory Quality Indicator Program – quality indicator requiring that, from 1 July 2021, all Commonwealth-subsidised residential aged care facilities are to report on polypharmacy as part of optimising medicines use.⁷¹

Many state and territory initiatives are also in place, including:

- Deprescribing guides and resources for clinicians and consumers, developed by a translational research project team lead by Prof Sarah Hilmer, available from NSW Therapeutic Advisory Group website⁷², nswtag.org.au/deprescribing-tools/
- Resource Kit for Measuring Strategies to Reduce Harm from Polypharmacy in Australian Hospitals: QUM Indicators, Patient Reported Experience Measures and Risk Stratification Tools, NSW Therapeutic Advisory Group⁷³, nswtag.org.au/polypharmacy-qum-indicators-and-resources/
- The Goal-directed Medication review Electronic Decision Support System; tools include the Goals of Care Management Tool, the Drug Burden Index Calculator, and the revised Patients' Attitudes Towards Deprescribing questionnaire⁷⁴
- Polypharmacy in older inpatients elearning module, Health Education and Training Institute, NSW⁷⁵, heti.nsw.gov.au/education-and-training/courses-and-programs/polypharmacy-in-older-inpatients-
- The Statewide Frailty Initiative, Agency for Clinical Innovation, NSW⁷⁶
- Managing medicines, Primary Health Tasmania⁷⁷, primaryhealthtas.com.au/for-health-professionals/programs/managing-medicines/
- Standardised Care Process for Polypharmacy Management in Residential Aged Care, Department of Health and Human Services, Victoria⁵⁶, health.vic.gov.au/ageing-and-aged-care/residential-aged-care/safety-and-quality/improving-resident-care/standardised-care-processes
- Quality indicator to monitor the proportion of residents using nine or more medicines, Department of Health and Human Services, Victoria⁷⁸, health.vic.gov.au/about/publications/policiesandguidelines/section-3-indicator-4-use-of-nine-or-more-medicines
- Improving medication reconciliation in community settings pilot, Pharmacy Guild of Victoria.⁷⁹

Polypharmacy, 75 years and over

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6.2 Medication management reviews, 75 years and over

Why is this important?

A medication management review (MMR) is a comprehensive, structured assessment of a person's medicines. It aims to help people get the most benefit from their medicines and minimise their risk of experiencing medicines-related harm.^{1,2}

Residential Medication Management Review (RMMR) and Home Medicines Review (HMR) are types of MMR for people living in an aged care facility, or at home, respectively, who are at risk of experiencing a medicines-related problem.

Most people who receive RMMRs and about half of those who receive HMRs are aged 75 years and over.³ Many older people have several chronic diseases and need to take multiple medicines (polypharmacy) to manage them.⁴ However, polypharmacy, frailty and age-related changes in the way the body responds to medicines increase the risk of medicines-related harm in older people.

RMMRs and HMRs are effective at detecting and resolving a variety of medicines-related problems^{5,6}, but the appropriate rate of MMR services for older people is unclear.

The fourth Atlas examines rates of people aged 75 years and over who had at least one Medicare Benefits Schedule (MBS)-subsidised service for an RMMR or HMR in Australia, in 2018–19.

What did we find?

About 5.4% of people aged 75 years and over had at least one MBS-subsidised service for an RMMR or HMR in 2018–19. The rate was **11.7 times as high** in the area with the highest rate compared to the area with the lowest rate.

Rates were generally higher in major cities than in other areas. Rates generally increased with socioeconomic disadvantage in major cities and outer regional areas. Patterns were similar to those of polypharmacy in many areas, suggesting appropriate targeting of MMRs in some but not in all areas.

What can be done?

RMMRs are recommended for new residents in aged care facilities, and for existing residents after changes in clinical condition or medicines.^{7–9} System changes are needed to drive implementation of these recommendations across aged care facilities.¹⁰

Recent changes to funding arrangements to improve access to RMMR and HMR services in rural and remote areas should be evaluated for their effectiveness.¹¹

Initiatives to improve medical practitioner uptake of pharmacist recommendations following MMRs should be a priority. One such initiative is the development of medication review indicators for aged care facilities.

Medication management reviews, 75 years and over

Context

This item examines the rate at which people aged 75 years and over obtained at least one MBS-subsidised service for an MMR (RMMR or HMR) in Australia in 2018–19.

What is a medication review?

An MMR – also known as a medication management review or medicines review – is a comprehensive and structured assessment of a person’s medicines. The aim of an MMR is to help people get the maximum benefit from their medicines and to prevent medicine-related harm.^{1,2}

This item examines rates of two types of MMR services that are funded under the MBS and dedicated Australian Government programs¹²:

- Residential Medication Management Review (RMMR)* – available to people living in an eligible Australian Government-funded aged care facility
- Home Medicines Review (HMR)[†], also known as Domiciliary Medication Management Review – available to people living in their own home.

RMMR and HMR services have been available to Australians since 1997 and 2001 respectively.^{13,14} They are effective in detecting medicine-related problems^{5,6} and are commonly conducted for older people because older people have high rates of medicine-related problems and are particularly vulnerable to harms from medicines.^{15–18} About 86% of all RMMRs and about half of all HMRs were for people aged 75 years and over in 2018–19.³

Use of multiple medicines (polypharmacy) is common among older people. This is largely because the prevalence of chronic diseases that are managed with medicines increases with ageing.^{4,15,19} About two-thirds of Australians aged 75 years and over living at home are taking five or more medicines.¹⁶ In residential aged care facilities, up to 95% of residents take five or more medicines, with 25% taking 10 or more.²⁰

Older people often need to take many medicines, but are very susceptible to harms from medicines because of frailty and age-related changes in the way their bodies respond to medicines.²¹ Polypharmacy increases the risk of medication-related harm, and leads to increased hospital admissions.⁴ There are also risks associated with specific medicines that can be especially harmful for older people.^{4,21}

Over half the people living in aged care facilities are prescribed medicines that are considered potentially inappropriate in older people, and for which use should be avoided if possible.^{21,22}

Rules and guidelines for conducting RMMR and HMR

RMMR and HMR services are carried out in a collaborative and structured way involving the patient, their medical practitioner (usually a general practitioner [GP]), an accredited pharmacist and sometimes carers and other clinicians. There are three key steps involved in conducting a review^{1,23,24}:

1. Based on criteria for a review and risk factors for medicines-related harm, a medical practitioner identifies and assesses whether a patient will benefit from an MMR. With the patient’s consent, the practitioner refers them to an accredited pharmacist – that is, a pharmacist who has undergone the required training in this area – to conduct the review.
2. The accredited pharmacist conducts the review together with the patient, and consults with other people such as carers and other members of the healthcare team. The pharmacist assesses the risks and benefits of each medicine, the complexity of the regimen and how the person is managing their medicines. They identify ways to resolve any medicine-related problems, and make recommendations about ongoing therapy in a report, which they send to the referring medical practitioner.
3. The referring practitioner reviews the report with the patient. The report forms the basis of an agreed-upon medicines management plan.

* MBS item numbers 903 and 249

† MBS item numbers 900 and 245

Several rules and guidelines ensure that RMMR and HMR services are appropriately provided to people who may benefit from them while avoiding inappropriate reviews. These rules include the MBS criteria for medical practitioners^{7,25}, the RMMR and HMR program rules for accredited pharmacists^{23,24}, and other guidelines.^{1,8,26,27} The rules set out how to identify whose medicines to review, and how and how often to perform reviews, which can affect rates of RMMR and HMR services.^{5,6}

A person's need for an HMR is assessed according to a variety of risk factors for medicines-related harm or suboptimal use, such as whether they²⁵:

- Are taking five or more medicines regularly
- Are taking more than 12 doses of medicine per day
- Are taking medicines that have a small difference between doses that are safe and doses that can be harmful (narrow therapeutic index)
- Are attending different doctors
- Have been discharged from a facility or hospital in the last four weeks
- Have difficulty managing their medication regimens because of literacy or language difficulties, physical difficulties – such as poor dexterity or impaired sight – or cognitive difficulties – such as confusion or dementia
- Are managing significant changes made to their medicines in the last three months
- Are experiencing symptoms suggestive of an adverse drug reaction
- Are displaying suboptimal responses to treatment with their medicines
- Are suspected of having problems with adhering to their medicines or problems managing medicine-related therapeutic devices – for example, inhalers for asthma.

A person's need for an RMMR is based on whether they are⁷:

- A new resident to an aged care facility
- An existing resident who has had a significant change in their medical condition or medicines.

It is recommended that new residents of an aged care facility receive an RMMR as soon as possible after admission, and that it is completed within four weeks.⁷ Under the program rules, a patient cannot receive another RMMR or HMR from a pharmacist within 24 months of an initial review. However, they can be referred by a medical practitioner within that period if there is a clinical need – for example, if there has been a change in their clinical condition or their medicines. Since April 2020, a patient can also receive two follow-up services to deal with any medicine-related problems identified at the initial RMMR or HMR.^{11,23,24}

Medical practitioners' services are claimed through the MBS item numbers examined in this report. Medical practitioners can refer a person within 12 months of an earlier RMMR or HMR or at any time if there is a clinical need.^{7,25} The HMR program had a cap of 20 HMR services per month per accredited pharmacist until March 2020, when the cap was increased to 30; there is no cap for RMMR services.^{11,23,24}

Other types of MMRs

RMMRs and HMRs are not the only types of medication reviews that patients may be offered. Medication reviews are conducted by all hospitals and other health services as a requirement under the National Safety and Quality Health Service Standards.²⁸ Some health services also offer hospital outreach medication review services to improve medicines management during transitions of care to the community following a hospital stay.²⁹ GPs may conduct a medication review as part of a general consultation or chronic disease management service.³⁰ Community pharmacists may also conduct medication reviews outside of the HMR and RMMR arrangements. Examples include pharmacist services contracted by aged care facilities, and in-pharmacy MedsCheck and Diabetes MedsCheck services.²

Medication management reviews, 75 years and over

Effectiveness of RMMR and HMR

RMMRs and HMRs are effective in detecting medicine-related problems in older people.^{5,6,31-33} Up to 98% of older people in Australian studies have at least one medicine-related problem detected at the time of a medicines review, with most having three^{20,34-37}, and some as many as five.³⁵ In Australian residential aged care facilities, over 95% of residents have at least one medicine-related problem detected at the time of review.^{9,21,38-42} On average, three to four problems are identified per resident at the time of review.^{21,43} The problems most commonly identified at the time of an RMMR or HMR are^{20,31,32,43}:

- Inappropriate prescribing of medicines
- Prescribing of medicines that are no longer needed
- Not prescribing a medicine that is needed
- Failure to adhere to medicines regimens
- Lack of laboratory monitoring
- Adverse reactions to medicines.

HMRs can reduce the number of medicines prescribed^{6,44}, improve appropriateness of prescribing⁶, and improve a person's understanding and adherence to medicines^{6,32} and their confidence in managing their medicines.^{6,13} RMMRs are effective in identifying and stopping medicines that are known to cause sedation and increase the risk of falls.⁵ Like HMRs, they are effective in improving the appropriateness of prescribing and reducing the number of medicines prescribed.⁵

In studies of Australian war veterans, HMRs delayed hospitalisation in certain patient groups, such as people with heart failure and people taking warfarin.^{45,46}

Improvements in management of chronic diseases, such as diabetes, have been shown when other types of medication reviews are conducted by pharmacists in community settings such as GP clinics, community pharmacies, and outpatient and specialist clinics.⁴⁷

More research is needed to find out whether and how RMMRs and HMRs improve quality of life and reduce risk of hospital admissions associated with adverse medicine events – for example, by preventing a drug interaction that could lead to clinical deterioration.^{5,6,44,48,49}

Factors influencing effectiveness of RMMR and HMR

GPs' uptake of recommendations to resolve medicine-related problems identified during reviews is variable. For example, the extent of collaboration between the GP and the pharmacist conducting the review affects acceptance and implementation of recommendations.^{48,50}

The likelihood of accepting and implementing recommendations from HMRs has been reported to range between 17% and 86%⁵⁰, despite recommendations being based on evidence.¹

Similar variability has been reported in studies examining the impact of RMMR, with 45% to 84% of recommendations accepted by GPs in a recent Australian systematic review.⁴³

Rates of RMMR and HMR in Australia

A large-scale study in New South Wales of Pharmaceutical Benefits Scheme concession card holders examined HMR use in people aged 45 years and over between 2009 and 2014.⁵¹ In this study, 5.2% of people aged 75 years and over had at least one HMR. Even in groups associated with high-risk prescribing, rates were still generally below 10%. Rates increased with age, and were higher in people receiving more medicines and in people who had recently been discharged from hospital.⁵¹ Higher rates of HMR were found in smokers, people with obesity, and people with diabetes and broader health issues such as impaired physical functioning.⁵¹ Living in a rural or remote area, having a lower level of education, and lower household income were also associated with higher rates of HMR services.⁵¹

Earlier studies of HMR conducted in older Australians reported participation rates ranging from 3.6% to 5.5%.⁵²⁻⁵⁴ Rates increased with age and were higher in women, people taking more medicines, people who had more visits to a GP, people who had had a previous review, and people who had had a hospital admission. Rates were lower in people who used more dispensing pharmacies, had more specialist visits, and were at greater socioeconomic advantage.⁵²

Studies of Australian aged care facilities found that less than half of residents received a RMMR in 2013–14.⁵⁵⁻⁵⁶ Less than 22% of new residents received a timely RMMR between 2012–2015 in a study of residents in aged care homes.⁵⁷

Why map rates of RMMR and HMR?

RMMRs and HMRs can detect and resolve medicine-related problems and improve medicines use in older people, but uptake of services has stabilised despite Australia's ageing population.^{5,6,51,57} Appropriate rates for RMMR and HMR services are unclear. Mapping rates of MMR is one way of exploring the appropriate use of these services.

About the data

Data are sourced from the MBS dataset. This dataset includes information on MBS claims processed by Services Australia. It covers a wide range of services (attendances, procedures, tests) provided across primary care and hospital settings.

The dataset does not include:

- Services for publicly funded patients in hospital
- Services for patients in hospital outpatient clinics where claims are not made to the MBS
- Services covered under the Department of Veterans' Affairs arrangements.

The dataset does not allow analysis by Aboriginal and Torres Strait Islander status.

The dataset includes the MBS claims for RMMR or HMR services provided by medical practitioners. These claims are made after the accredited pharmacist conducts the review and the medical practitioner discusses it with the patient. Claims made by accredited pharmacists for conducting the review are funded under the Community Pharmacy Agreement, which is a separate dataset.

Rates are based on the number of people who had at least one MBS-subsidised service for a medication management review (RMMR or HMR) per 100,000 people aged 75 years and over in 2018–19. Patient counts reflect the number of unique patients, regardless of the number of services a patient may have received in the year.

The analysis and maps are based on the patient's postcode recorded in their Medicare file and not the location of the service.

Rates are age and sex standardised to allow comparisons between populations with different age and sex structures.

Medication management reviews, 75 years and over

For all MBS items in the Atlas, some data have been suppressed to manage volatility and confidentiality. This process takes into account the Australian Government Department of Health's requirements for reporting MBS data (see the Technical Supplement). Data suppression for this item has been extensive, and affects all of the Northern Territory, and remote areas of Western Australia and Queensland. Reporting for the Northern Territory was possible at the territory level. Most local areas (Statistical Area Level 3 – SA3) were suppressed to prevent identification of the provider (practitioner or business entity). This is indicated on the maps in grey.

What do the data show?

Magnitude of variation

In 2018–19, 96,533 people aged 75 years and over had at least one MBS-subsidised service for a medication management review (RMMR or HMR), representing 5,392 people per 100,000 people aged 75 years and over (the Australian rate).

The number of people who had at least one MBS-subsidised service for a medication management review (RMMR or HMR) across 314* local areas (Statistical Area Level 3 – SA3) ranged from 1,618 to 19,006 per 100,000 people aged 75 years and over. The rate was **11.7 times as high** in the area with the highest rate compared to the area with the lowest rate. The number of people varied across states and territories, from 1,224 per 100,000 people in Northern Territory to 7,037 per 100,000 people in Tasmania. (Figures 6.7–6.10).

After the highest and lowest 10% of results were excluded and 252 SA3s remained, the number of people per 100,000 people was 2.0 times as high in the area with the highest rate compared to the area with the lowest rate.

Analysis by remoteness and socioeconomic status

Rates for medication management reviews were generally higher in major cities than elsewhere. Rates generally increased with socioeconomic disadvantage in major cities and in outer regional areas. There was unclear patterning elsewhere (Figure 6.11).

Analysis by age group

In 2018–19, 45,592 people aged 75–84 years had at least one medication management review, representing 3,896 people per 100,000 people (the Australian rate for this age group).

In 2018–19, 49,665 people aged 85 years and over had at least one medication management review, representing 10,180 people per 100,000 people (the Australian rate for this age group).

Data and graphs for analysis by age group and analysis by Primary Health Network are available at safetyandquality.gov.au/atlas

* There are 340 SA3s. For this item, data were suppressed for 26 SA3s due to one or more of a small number of services or population in an area, or potential identification of individual patients, practitioners or business entities. Some SA3 rates are more volatile than others. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia.

For further detail about the methods used, please refer to the Technical Supplement.

Interpretation

The Atlas found that about 5.4% of people aged 75 years and over had at least one MBS-subsidised MMR in 2018–19. This equates to about 1 in 7 people aged 75 years and over with polypharmacy (people dispensed five or more medicines) receiving an MMR in the year. While not all people with polypharmacy may need an MMR and some people with polypharmacy may receive a medication review that is not counted in MBS data, this ratio may be helpful in monitoring changes in MMR use. MBS statistics for the same period show that 62.5% of MBS-subsidised MMR services processed for people aged 75 years and over were RMMRs and the remaining 37.5% were HMRs.³

Rates for medication management reviews were higher in major cities, which raises concern about access in other areas, a finding previously highlighted in HMR program evaluations.⁶⁴ Data suppression was extensive in remote areas and must be considered in the interpretation of the findings.

Rates were higher in socioeconomically disadvantaged areas of major cities, which is consistent with previous Australian research and suggests appropriate targeting of MMRs in these areas.^{6,52}

Possible reasons for variation in rates of MMR

Variation between areas may not directly reflect the practices of the clinicians who are based in those areas. The analysis is based on where people live rather than where they obtain their health care. Patients may travel outside their local area to receive health care.

Variation in rates is likely to be due to the geographical differences in the factors discussed below.

Patient need

Variation is warranted when it reflects patient need. Nationally, higher rates of MMR were seen in people aged 85 years and over than in people aged 75–84 years, which is consistent with higher polypharmacy rates seen in the older age group.

Because the data are age and sex standardised – to control for differences in population structures between areas – variation in rates cannot be explained by higher proportions of older people. However, areas with aged care homes would be expected to have higher rates than areas without, given the higher numbers of RMMRs compared to HMRs.³

Areas with higher rates of underlying chronic disease are expected to have higher rates of polypharmacy. Higher rates of MMR are likely in these areas, given MMRs are recommended for people taking five or more medicine.^{7,25} High rates of MMRs observed in some disadvantaged areas may reflect the prevalence of multimorbidities and risk factors for chronic disease in these areas.

Access to services

The number of clinicians providing services in the area, and the ability to see a specific clinician, may influence the likelihood of people seeking care and therefore rates of MMR. The practice styles of individual clinicians may be more likely to affect rates in areas with fewer clinicians, such as rural and regional locations, than in areas with more clinicians.

In particular, the number of accredited pharmacists providing MMRs, and ease of access to them, may affect rates. This may be an issue in rural and remote areas, where there may be fewer accredited pharmacists available to provide services compared to major cities.^{6,13,58}

Medication management reviews, 75 years and over

The program rules for MMR services may also affect access.^{5,6} The program cap of 20 (now 30) HMR services per month per accredited pharmacist may disproportionately affect participation rates in rural areas because there are fewer accredited pharmacists in these areas.⁶ Differences in providers' perceptions of the program rules (for example, that the rules are stringent) could also influence rates in some areas.^{5,6} The 24-month restriction on patients receiving another review and introduction of a 30-day deadline to submit claims had an immediate and lasting influence on overall rates of RMMR when introduced in 2014.⁵

Knowledge of MMR processes by clinicians, as well as time taken to generate referrals, previous experience with referrals and the strength of working relationships between medical practitioners and accredited pharmacists may influence rates of MMRs.^{51,59}

Rates of MMRs may also be influenced by rates of other medication reviews conducted in the community, such as reviews conducted by GPs (for example, as part of routine consultations, or as part of a health assessment for people aged 75 years and over³⁰, or as part of a chronic disease management plan), and medication reviews conducted by community nurses and community pharmacists outside the RMMR and HMR programs.

Clinical decision-making

Variation in medical practitioners' views on the benefits of MMRs is a likely contributor to the variation seen.^{13,59}

Most GPs are supportive of MMR services^{59,60}, with general agreement that they reduce inappropriate polypharmacy and potentially improve medicine safety, as well as a person's understanding of and adherence to medicines regimes.^{31,60} GPs have also reported that MMRs provide helpful insights into all the medicines a person is taking – including complementary and over-the-counter medicines.⁶⁰

However, not all GPs are convinced of their value.^{13,59} Some believe they don't offer any new insights about a person's medicines or provide clinically significant recommendations.⁵⁹ The complexity of the process, time constraints, and the volume of paperwork associated with reviews, as well as inconsistencies in the format and quality of reports generated by pharmacists have been cited by GPs as barriers to participation in MMR services.^{13,60,61}

Consumer awareness

Consumer awareness of MMR services, their level of comfort in having a pharmacist visit them at home and their attitude towards medication reviews may affect rates.

A study of older people living in regional Australia taking five or more different medicines showed 15% were aware of HMR services.⁶² Reasons for lack of awareness included not being informed about the services by GPs or pharmacists, and not seeing leaflets or advertising material relating to HMRs.

Not knowing the pharmacist who is providing the service has been reported by GPs as a barrier for people when deciding whether to participate in an HMR, as they feel uncomfortable having a stranger in their home conducting the review.⁶⁰

The level of concern a person has about their medicine may influence rates. In one Australian study, people aged 75 years and over at high risk of medicine-related harm were least likely to worry about their medicines and participate in an MMR.⁶³

A clinician's ability to be clear about the benefits of MMRs may also influence whether a person will have a review.^{13,59}

People's attitudes towards MMR may affect rates. Some people associate a sense of independence with managing their own medicines, and so they may perceive an MMR as a sign of losing independence.¹³

Promoting appropriate care

System changes are needed to improve access to MMRs for older people who are at risk of medicine-related harm and likely to benefit from a review.

RMMRs are recommended for new residents on admission to aged care facilities and existing residents after changes in their clinical condition or medicines.⁷⁻⁹ However, compliance to this recommendation is poor. A national study of 143,676 people aged 65 years and over who first entered permanent residential aged care in Australia between January 2012, and December 2015 found that 21.5% received an RMMR within 90 days. In only 6.2% of the aged care facilities did more than 50% of new residents receive a timely RMMR.⁵⁷

The recommendation for use of RMMR was reiterated in the 2017 review of national aged care quality regulatory processes⁹ and in the 2021 final report on the Royal Commission into Aged Care Quality and Safety.¹⁰ More needs to be done to implement the recommendation.

Other priorities to improve the appropriate use of MMRs include:

- Improving access to MMR services in rural and remote areas
- Improving medical practitioner uptake of pharmacist recommendations following MMRs.

To deal with these concerns, regulatory changes to the RMMR and HMR programs were introduced in early 2020.^{11,23,24} Key changes included expanding referral of RMMRs and HMRs to medical practitioners other than GPs, increasing the number of HMR services accredited pharmacists can provide from 20 to 30 per month, and allowing up to two services after an initial review for follow-up of recommendations made in the pharmacist's initial report. Improving access to RMMR or HMR following a hospital stay may also reduce medicine-related problems, especially within the first 10 days of discharge from hospital.^{13,14} Frameworks have been developed to support medical practitioners in hospital to identify and refer people at high risk of medicine-related

harm following a hospital stay for an RMMR or HMR.⁶⁴ These changes must be evaluated for their effectiveness.

Audit and monitoring

The development of medication review indicators for aged care facilities could help support the appropriate use of RMMR. Indicators could measure the proportion of people taking five or more medicines who receive a review⁹, the percentage of people who receive a timely review on admission to an aged care facility, or the percentage of pharmacist recommendations that are acted on.

Improving collaboration between pharmacists and GPs

Team-based models of general practice that include pharmacists could improve collaboration between GPs and pharmacists and increase the likelihood that a pharmacist's recommendations are acted upon. While these models are well established internationally, more research regarding their effectiveness in the Australian is needed.⁶⁵

Good working relationships between GPs and pharmacists conducting reviews have been found to influence uptake of MMR services by GPs. Some have reported that the role of HMR may be limited in major cities by a lack of opportunity to build relationships between GPs and pharmacists.⁵⁹ GPs that interact with pharmacists throughout the review process are more likely to initiate reviews and implement recommendations than those who do not, highlighting the importance of collaboration.^{48,50} Australian research has shown that greater collaboration between GPs and pharmacists conducting HMRs can improve management or resolve up to 81% of identified medicine-related problems.³¹ Changes to RMMR and HMR programs that allow pharmacists to conduct two follow-up reviews could improve collaboration between GPs and pharmacists.

Medication management reviews, 75 years and over

Use of evidence based-tools to support reviews

Electronic decision support tools have been found to be an important adjunct in clinical decision-making for pharmacists conducting MMRs.⁶⁶ However a person's individual needs and preferences for treatment must also be taken into account by the pharmacist or reviewer when assessing recommendations generated by these tools.⁶⁷

The Goal-directed Medication review Electronic Decision Support System provides clinical decision support to clinicians conducting medication reviews, and has been shown to be useful when conducting an HMR.⁶⁸ Research is continuing to examine the effect of the tool on clinical outcomes.⁶⁹

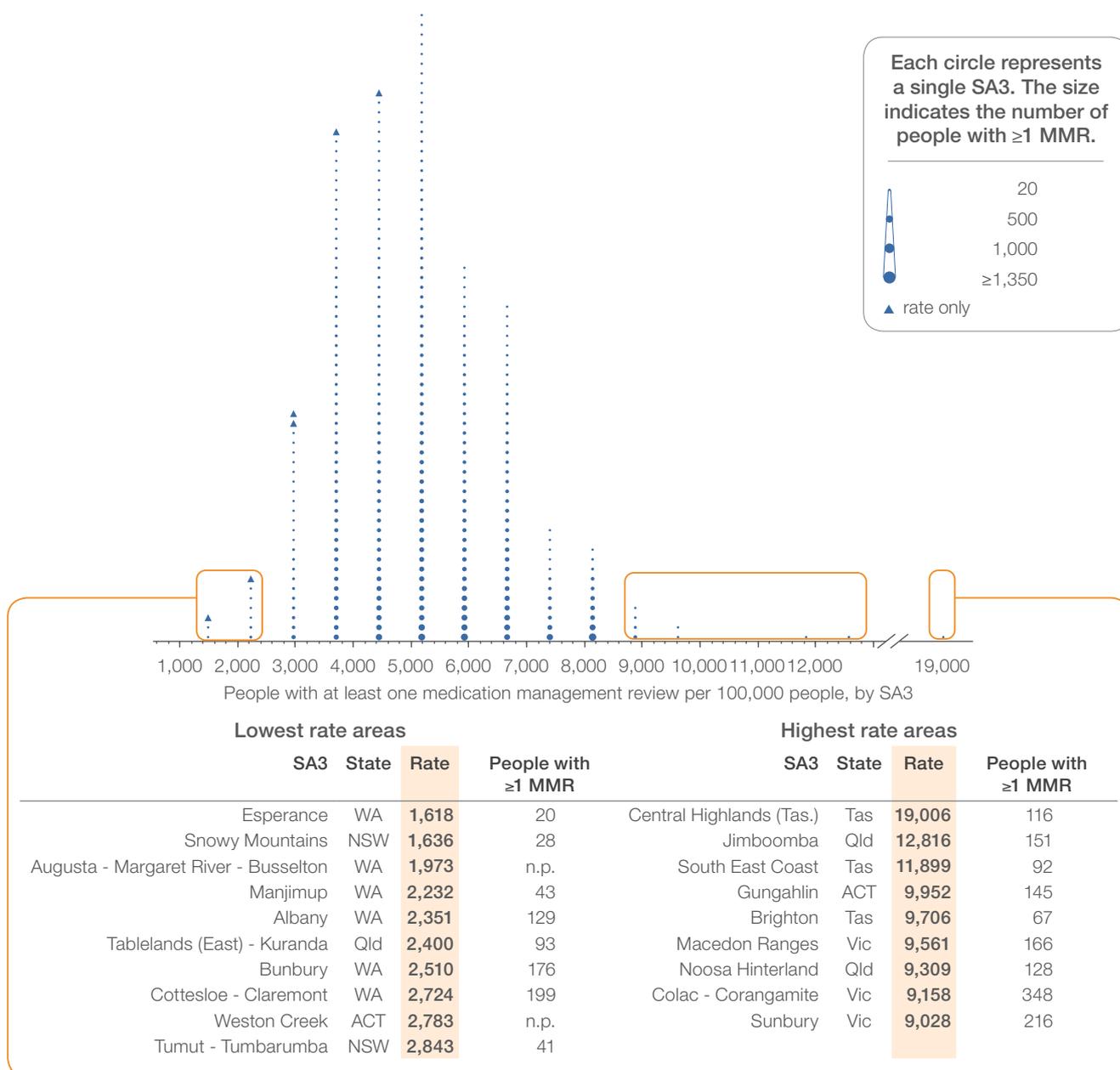
Tools to support simplification of medicine regimens for residents of aged care facilities have also been developed and validated.⁷⁰ The MRS GRACE Tool helps pharmacists identify how to reduce the complexity of a resident's regimen. The tool has been shown to be especially useful in those taking five or more medicines a day. In two-thirds of residents, medicines can be taken in a simpler way without changing the goals of therapy. High rates of acceptance and implementation of recommendations have been found, with some recommendations – such as reducing the number of medicine times – implemented in 62% of residents, as well as sustained results 12 months later at follow-up.⁷¹

Consumer awareness

Improved consumer awareness about programs aimed at improving their ability to manage their medicines and the benefit of MMR services could support uptake⁶², particularly of HMRs. Consumer research has found that people are more likely to participate in a review if they understand the reasons for having one, and their GP thinks it will be beneficial.^{13,59}

Rates by local area

Figure 6.7: Number of people who had at least one MBS-subsidised service for a medication management review (MMR) per 100,000 people aged 75 years and over, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Notes:

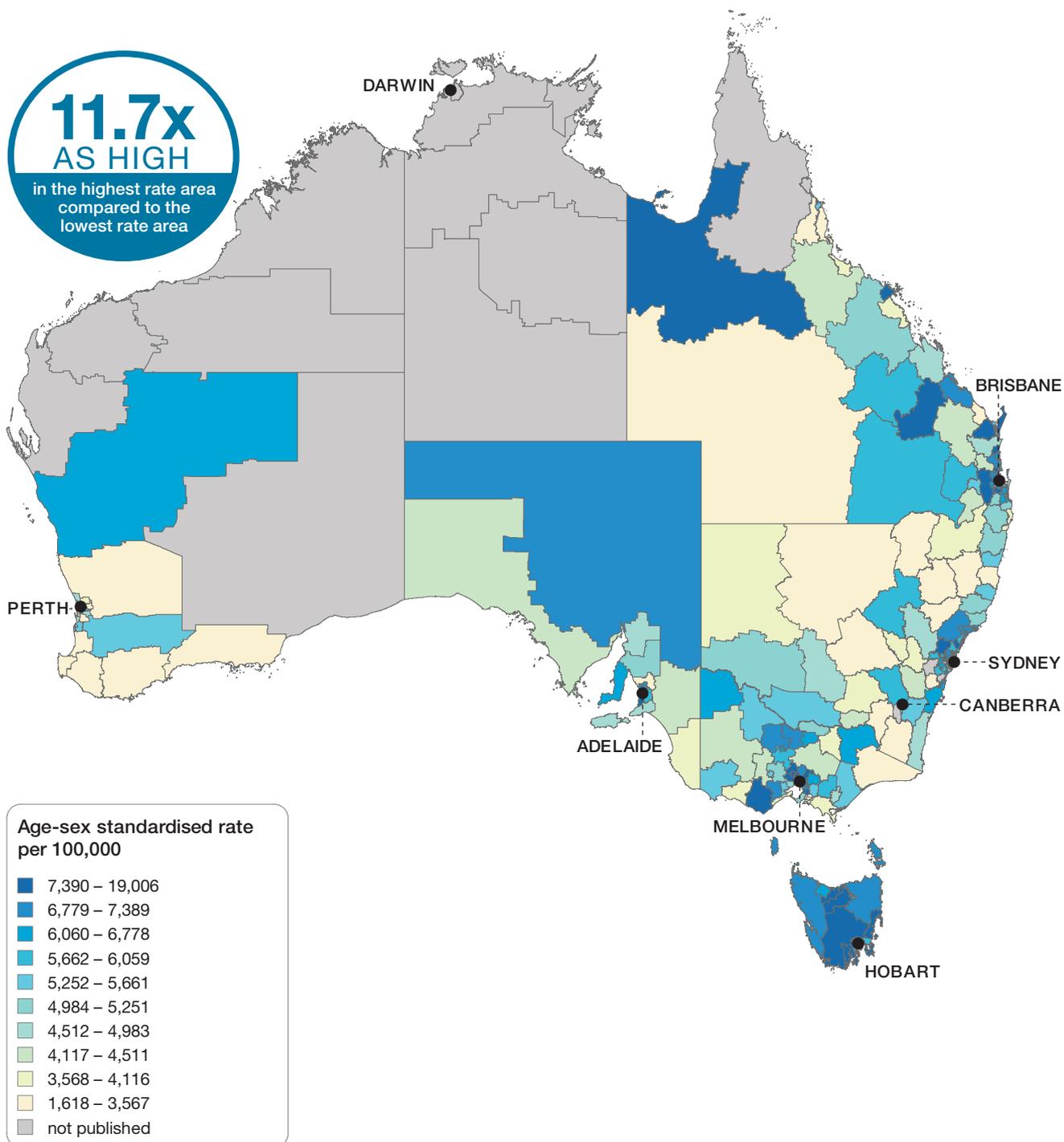
Triangles (▲) indicate SA3s where only rates are published. The numbers of people are not published (n.p.) for confidentiality reasons. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Medication management reviews, 75 years and over

Rates across Australia

Figure 6.8: Number of people who had at least one MBS-subsidised service for a medication management review per 100,000 people aged 75 years and over, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



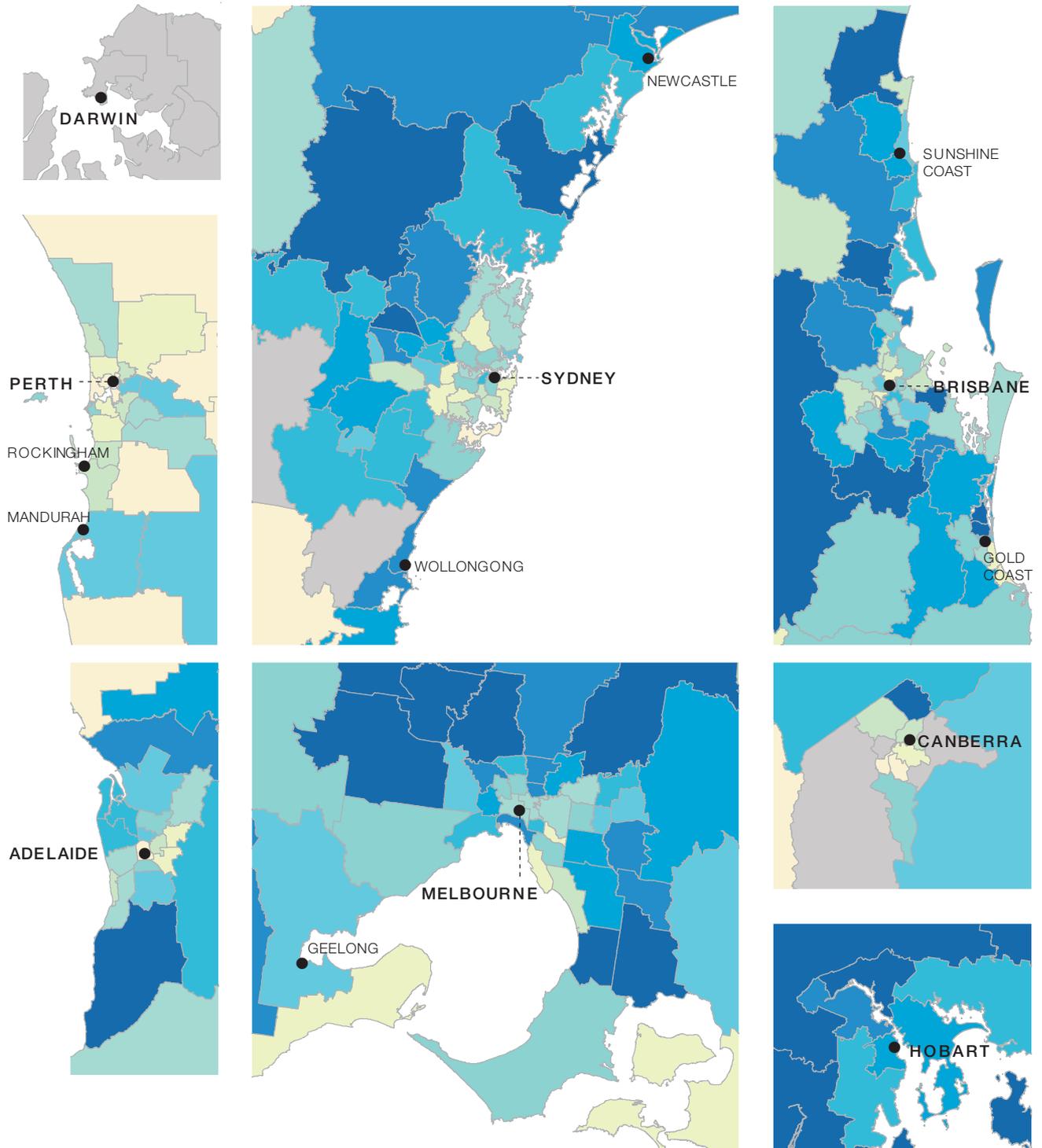
Notes:

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Rates across capital city areas

Figure 6.9: Number of people who had at least one MBS-subsidised service for a medication management review per 100,000 people aged 75 years and over, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Notes:

For further detail about the methods used, please refer to the Technical Supplement.

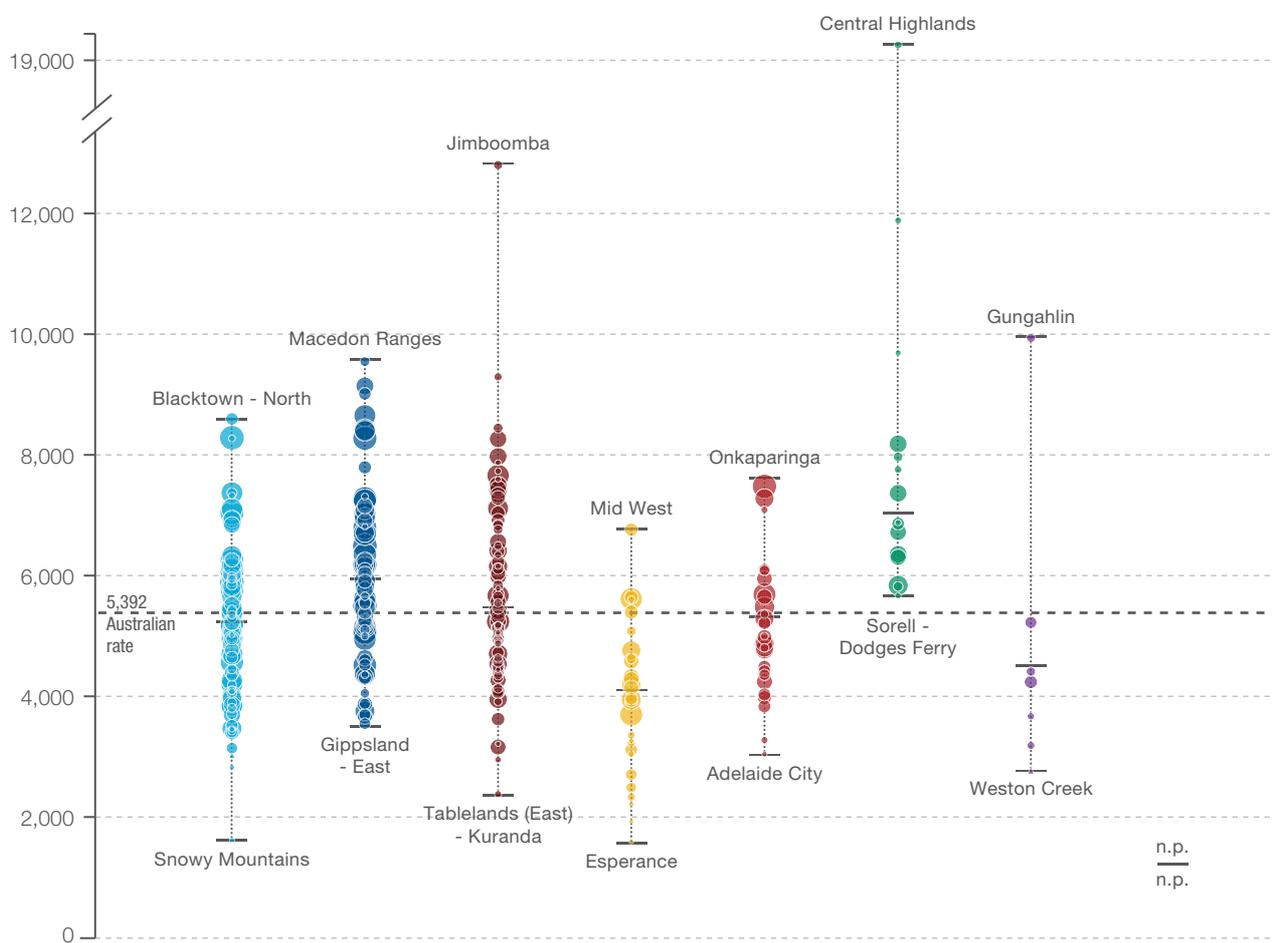
Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Medication management reviews, 75 years and over

Rates by state and territory

Figure 6.10: Number of people who had at least one MBS-subsidised service for a medication management review (MMR) per 100,000 people aged 75 years and over, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Highest rate	8,614	9,561	12,816	6,778	7,497	19,006	9,952	n.p.
State/territory	5,233	5,937	5,481	4,119	5,315	7,037	4,524	1,224
Lowest rate	1,636	3,567	2,400	1,618	3,065	5,684	2,783	n.p.
Total patients	31,667	27,725	18,006	6,728	8,180	3,132	1,030	60



Each circle represents a single SA3. The size indicates the number of people with ≥ 1 MMR.

▲ rate only



Notes:

Triangles (▲) indicate SA3s where only rates are published. The numbers of people are not published (n.p.) for confidentiality reasons.

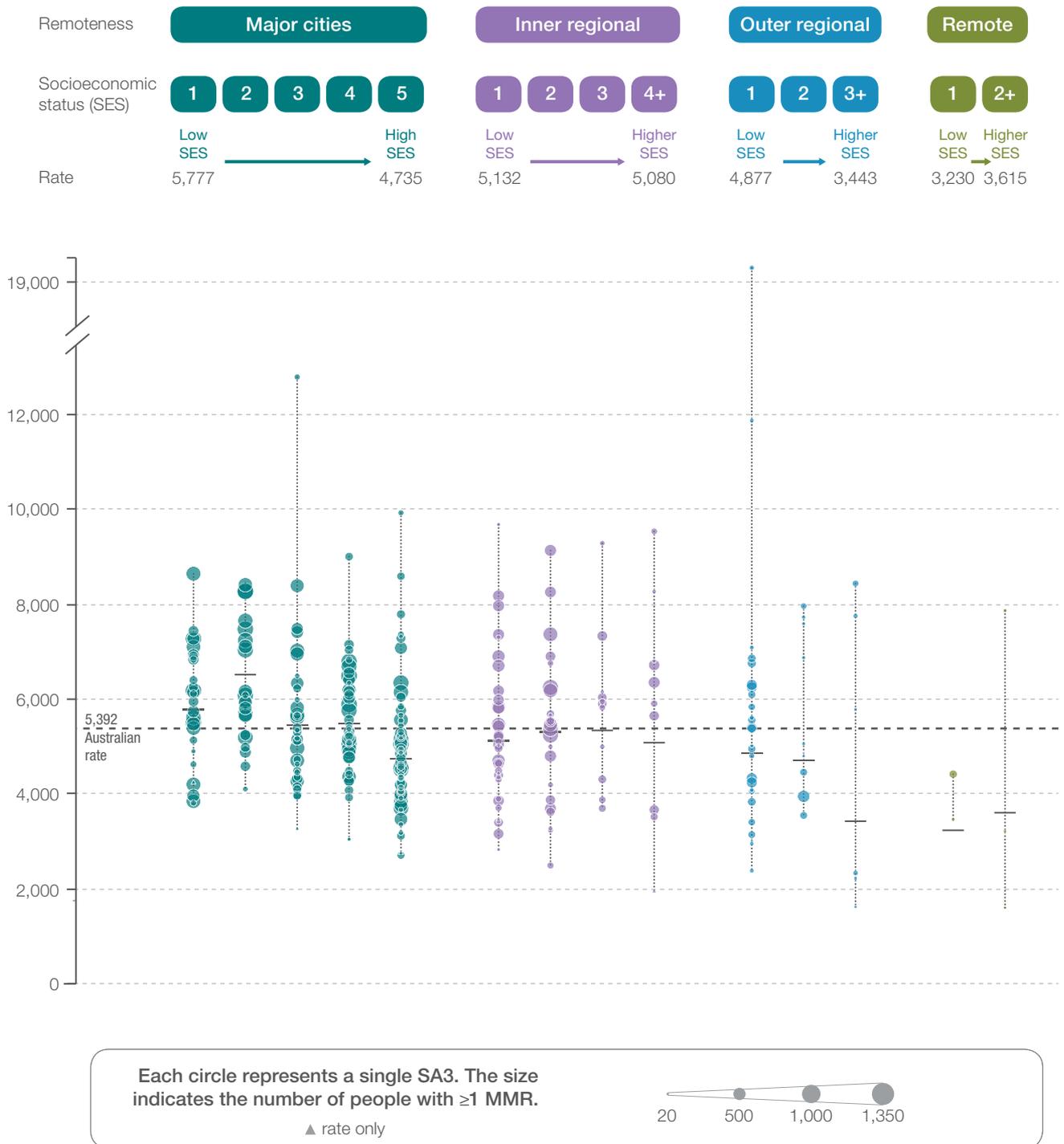
Rates for SA3s in the NT are not published for reliability and/or confidentiality reasons.

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018.

Rates by remoteness and socioeconomic status

Figure 6.11: Number of people who had at least one MBS-subsidised service for a medication management review (MMR) per 100,000 people aged 75 years and over, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Notes:

Triangles (▲) indicate SA3s where only rates are published. The numbers of people are not published for confidentiality reasons. For Remote and SES of 1, the remoteness and SES rate is lower than the minimum SA3 rate as it includes SA3 rates that are not published for reliability and/or confidentiality reasons.

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Medicare Benefits Schedule data and ABS Estimated Resident Population 30 June 2018

Medication management reviews, 75 years and over

Resources

- Australian Government Department of Health. Medication management reviews¹², health.gov.au/internet/main/Publishing.nsf/Content/medication_management_reviews.htm
- Australian Government Department of Health. *Program Rules: Home Medicines Review*²³, ppaonline.com.au/wp-content/uploads/2019/01/HMR-Program-Rules.pdf
- Australian Government Department of Health. *Program Rules: Residential Medication Management Review and Quality Use of Medicines*²⁴, ppaonline.com.au/wp-content/uploads/2019/01/RMMR-and-QUM-Program-Rules.pdf
- Pharmaceutical Society of Australia. *Guidelines for Quality Use of Medicines (QUM) Services (2020)*²⁷, psa.org.au/mmg/
- Pharmaceutical Society of Australia. *Guidelines for Comprehensive Medication Management Reviews (2020)*¹, psa.org.au/mmg/
- Australian Government Department of Health. *Guiding Principles for Medication Management in the Community*⁷², health.gov.au/internet/main/publishing.nsf/Content/Publications-16
- Australian Government Department of Health. *Guiding Principles for Medication Management in Residential Aged Care Facilities*⁸, health.gov.au/internet/main/publishing.nsf/Content/Publications-16
- Australian Government Department of Health. *Guiding Principles to Achieve Continuity in Medication Management*⁷³, health.gov.au/internet/main/publishing.nsf/Content/Publications-16
- Australian Government Department of Health. *National Guidelines to Achieve the Continuum of Quality Use of Medicines Between Hospital and Community*⁷⁴, health.gov.au/internet/main/publishing.nsf/Content/Publications-16

Australian initiatives

Information in this chapter will complement work already under way in Australia regarding medication review and MMR services. At a national level this work includes:

- NPS MedicineWise, Managing your medicines – includes resources to getting an HMR and supporting patients with keeping a medicines list⁷⁵, nps.org.au/consumers/managing-your-medicines
- Society of Hospital Pharmacists of Australia. Hospital-initiated medication reviews (HIMR)⁶⁴
- The Veterans MATES program, funded by the Australian Government Department of Veteran's Affairs⁷⁶, veteransmates.net.au/

Many state and territory initiatives are also in place to improve medication review and support uptake of MMR services, including:

- The Goal-directed Medication review Electronic Decision Support System tools include the Goals of Care Management Tool, the Drug Burden Index Calculator, and the revised Patients' Attitudes Towards Deprescribing questionnaire⁷⁷
- Consumer information leaflet – *Rethink your medications*⁷⁸, Primary Health Tasmania, primaryhealthtas.com.au/wp-content/uploads/2018/06/Rethinking-Your-Medications-consumer-brochure.pdf
- *Standardised Care Process for Polypharmacy Management in Residential Aged Care*, Department of Health and Human Services, Victoria⁵⁴, health.vic.gov.au/ageing-and-aged-care/residential-aged-care/safety-and-quality/improving-resident-care/standardised-care-processes

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6.3 Proton pump inhibitor medicines dispensing, 75 years and over

Why is this important?

Proton pump inhibitor (PPI) medicines are one of the most commonly used medicines in Australia, particularly among older people. PPI medicines are highly effective in managing gastro-oesophageal reflux disease (GORD), but are often used long term without reassessment of need. Older people may be particularly susceptible to harms from long-term use. These harms include unnecessary complexity in medicine regimens, unnecessary costs and possible rare but serious adverse effects.

The *Third Australian Atlas of Healthcare Variation* found substantial variation in rates of PPI medicine use in people aged 18 years and over.

The fourth Atlas examines PPI medicine dispensing in people aged 75 years and over.

What did we find?

In 2018–19, more than 7.1 million Pharmaceutical Benefits Scheme (PBS) prescriptions were dispensed for a PPI medicine for people aged 75 years and over.

The rate was **5.9 times as high** in the area with the highest rate as in the area with the lowest rate.

Almost half (47%) of people aged 75 years and over had at least one PBS prescription dispensed for a PPI medicine; more than one-third (38%) had at least four prescriptions dispensed in the year, suggesting long-term PPI medicine use.

There was substantial variation in rates of dispensing of high-dose PPI medicines between Primary Health Networks (PHNs). The rate was 6.1 times as high for the PHN with the highest rate as for the PHN with the lowest rate.

What can be done?

Increased PBS restrictions for prescribing PPI medicines for GORD, introduced in May 2019, should help to reduce inappropriate long-term use, particularly of high-dose PPI medicines.

Interventions that actively engage clinicians and encourage them to regularly review the need for PPI medicines in older people remain a priority. A greater focus is needed on educating people at every suitable opportunity about lifestyle measures that can be taken to reduce reflux. Improved consumer awareness of the appropriate timing of PPI medicine dosing may also improve the effectiveness of treatment and reduce the need for higher doses or long-term use.

Proton pump inhibitor medicines dispensing, 75 years and over

Context

This item examines PPI medicine dispensing for people aged 75 years and over in Australia in 2018–19.

PPIs are a group of medicines that reduce stomach acid production.¹ They reduce the potential for reflux of stomach acid into the oesophagus, and promote healing of inflammation and ulcers in both the oesophagus and the stomach. PPI medicines available in Australia include omeprazole, pantoprazole, lansoprazole, rabeprazole and esomeprazole.^{2,3} They are available by prescription; some are also available as over-the-counter medicines in lower strengths and pack sizes.

PPI medicines are one of the most commonly dispensed medicines for older people.⁴ They are most often used to manage GORD.⁵ They are also used in people at high risk of gastrointestinal bleeding who need to take medicines such as non-steroidal anti-inflammatory drugs (NSAIDs), which can increase this risk.^{3,5,6}

GORD affects about 11% of Australian adults and rates of disease do not significantly change with age.^{7,8} People with GORD have frequent symptomatic reflux on two or more days of the week, or reflux that is severe enough to affect their quality of life.⁹ PPI medicines, accompanied by lifestyle modifications, are recommended as first-line treatment for GORD because they provide fast symptom relief and are more effective than less potent acid-suppression medicines.^{2,3,10,11}

Guidelines for treating GORD recommend starting with a standard-strength PPI medicine for 4–8 weeks. A 'step-up' approach to a higher dose is recommended only if symptoms are severe.^{2,3,11} If symptoms are well controlled after initial treatment, treatment can be 'stepped down' to a lower dose or stopping altogether can be tried.^{2,3} More than two-thirds of people may be able to stop taking PPI medicines altogether, without their symptoms returning, after an initial course of treatment; gradual tapering of the dose is the most successful, particularly if the initial dose was high.^{12,13}

Despite guideline recommendations, research suggests that many older people treated for GORD continue to take a PPI medicine long term without reassessment of need.^{14–16} The issue highlights the importance of discussion with people at the time of prescribing PPI medicines about the natural course of GORD, and the role of lifestyle changes in reducing reflux symptoms long term. Lifestyle measures, such as modifying diet, losing weight and stopping smoking, are an essential part of GORD treatment because they reduce reflux and reduce the risk of oesophageal cancer.³

Guidelines also recommend PPI medicines for people at high-risk of GI bleeding who need ongoing treatment with NSAIDs, including low-dose aspirin for management of cardiovascular disease.^{3,6} Older age is a risk factor for GI bleeding from NSAID use³, and so PPI medicines are prescribed in older people for the duration of NSAID use to reduce this risk.^{3,6} Bleeding risk can also be reduced by taking other measures; for example, using the least potent NSAID for the shortest duration possible, or treating other risk factors such as *Helicobacter pylori* (*H. pylori*) infection, if present.^{17,18}

PPI medicines also have a role in treating mild to intermittent reflux. About 15–20% of adults experience reflux on an intermittent basis.⁹ Symptoms can often be managed with the lifestyle modifications described above. If acid suppression treatment is needed, guidelines recommend an antacid or, if needed, a more potent medicine, such as a histamine 2 receptor antagonist (H² antagonist) or a PPI medicine.^{3,11,19} Over-the-counter PPI medicines are available for treating mild to intermittent reflux, however rates of their use are not readily available.

Previous Atlas findings on PPI medicine use

The *Third Australian Atlas of Healthcare Variation* mapped PBS dispensing of PPI medicines for people aged 18 years and over.²⁰ More than 21 million PBS prescriptions for PPI medicines were dispensed in Australia in 2016–17. The dispensing rate was 5.0 times as high in the area with the highest rate as in the area with the lowest rate. Dispensing rates were also higher in areas with socioeconomic disadvantage

in major cities, and in inner and outer regional areas. Overall, 15% of the adult population had a least one prescription for a PPI medicine dispensed during the year.

Why revisit this topic for people aged 75 years and over?

Concerns about high rates of PPI medicine dispensing and potentially inappropriate long-term use have been expressed for years.²¹ Recent Australian research has shown that older people are substantially higher users of PPI medicines than younger adults.¹⁴ This pattern is also seen in many comparable countries, such as New Zealand, the United Kingdom, the United States and Canada.²²⁻²⁸ Concerns have also been raised about the long-term use of PPI medicines in older people without a clear indication.^{14,29,30}

In a population study, rates of PPI medicine use per 100 people in Australia were 42.2 for people aged 75–84 years and 42.8 for people aged 85 years and over, compared with 12.5 for the whole population, between 2013 and 2016.¹⁴ Of people aged 75 years and over who started treatment with a PPI medicine, 42% continued to take it for longer than 12 weeks, and 31% took it for more than 12 months, either intermittently or continuously. The study also found that a substantial proportion of people who continued to take a PPI medicine after 12 weeks did so at the dose they were started on. PPI medicines were more commonly prescribed in people who were taking more medicines than in those who were taking fewer.

An Australian study of 41,000 veterans (average age of 79 years) prescribed PPI medicines for GORD found that more than two-thirds did not have their therapy reduced or stopped after eight weeks of treatment, as recommended in guidelines. Thirty-eight percent continued PPI medicines for one year.¹⁵

Similar trends have been observed in Australian aged care homes. Half to three-quarters of residents have been found to take PPI medicines for durations longer than recommended.^{16,31,32} Rates of PPI medicine use are also higher among residents who take more medicines than among those taking fewer.³³

Although PPI medicines have a good safety profile, there are concerns about potential harms associated with long-term use in older people, prompting an increased focus on regularly reviewing the need for these medicines.⁶ Long-term use has been linked to an increased risk of hip fracture.³⁴ PPI medicines alter the gut microbiome, and there is some evidence that this may increase the risk of type 2 diabetes, as well as infections with *Clostridium difficile* and other pathogens.^{35,36} PPI medicines can also increase the risk of vitamin B₁₂ deficiency and kidney complications.^{6,10,37,38}

Older people may be more susceptible to these harms than younger people because of increased frailty and age-related physiological changes that alter the way that their bodies respond to medicines.^{31,39} Many older people also have multiple conditions requiring treatment with multiple medicines, which also increases their risk of medicine-related harm.³¹ Although the absolute risk of these adverse effects is low, the population impact may be high because of the number of older people taking PPI medicines.¹⁶

PBS changes

On 1 May 2019, restrictions on PPI medicines came into effect that aim to improve the appropriateness of their use. These changes aim to reduce unwarranted long-term use, particularly high-dose use among older people.^{40,41} Key changes include the reclassification of doses, increased restrictions on high-dose and standard-dose PPI medicines for GORD, changes to the number of repeat prescriptions and the addition of new item numbers for standard doses.

Proton pump inhibitor medicines dispensing, 75 years and over

About the data

Data are sourced from the PBS dataset, which includes all prescriptions dispensed under the PBS and the Repatriation Pharmaceutical Benefits Scheme (RPBS), including under co-payment prescriptions.

Data used in this report exclude doctors' bag items and any programs with alternative supply arrangements (section 100 of the *National Health Act 1953*) where patient level details are not available, such as direct supply to remote Aboriginal health services.

The PBS and RPBS do not cover medicines supplied to public hospital inpatients, over-the-counter medicines or private prescriptions.

The dataset does not allow analysis by Aboriginal and Torres Strait Islander status.

Rates are based on the number of prescriptions dispensed for PPI medicines per 100,000 people aged 75 years and over in 2018–19, unless otherwise indicated. For defined daily dose (DDD), the rate is calculated per 1,000 people per day. Patient counts reflect the number of unique patients, regardless of the number of prescriptions the patient may have received in the year.

The data do not include PPI medicines in fixed-dose combinations with antibiotics.

The analysis and maps are based on the patient's postcode recorded in their Medicare file and not the location of the prescriber or the dispensing pharmacy.

Rates are age and sex standardised to allow comparisons between populations with different age and sex structures.

Some data have been suppressed to manage volatility and confidentiality. This process takes into account the Australian Government Department of Health's requirements for reporting PBS data (see the Technical Supplement). Data suppression for this item (indicated on the maps in grey) has been particularly marked for remote areas of the Northern Territory.

What do the data show?

Magnitude of variation

In 2018–19, there were 7,114,281 PBS prescriptions dispensed for PPI medicines to people aged 75 years and over, representing 418,360 prescriptions per 100,000 people aged 75 years and over (the Australian rate).

The number of prescriptions dispensed for PPI medicines across 328* local areas (Statistical Area Level 3 – SA3) ranged from 131,393 to 777,098 per 100,000 people aged 75 years and over. The rate was **5.9 times as high** in the area with the highest rate compared with the area with the lowest rate. The number of prescriptions dispensed for PPI medicines varied across states and territories, from 257,216 per 100,000 people aged 75 years and over in the Northern Territory to 462,138 in Tasmania (Figures 6.12–6.15).

After the highest and lowest 10% of results were excluded, 264 SA3s remained. The number of prescriptions per 100,000 people aged 75 years and over was **1.4 times as high** in the SA3 with the highest rate compared with the SA3 with the lowest rate.

Analysis by remoteness and socioeconomic status

Rates for PBS prescriptions for PPI medicines for people aged 75 years and over were higher in inner regional areas than elsewhere. Rates increased with socioeconomic disadvantage (Figure 6.16).

* There are 340 SA3s. For this item, data were suppressed for 12 SA3s due to a small number of prescriptions dispensed and/or population in an area. Some SA3 rates are more volatile than others. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia.

For further detail about the methods used, please refer to the Technical Supplement.

Analysis by people dispensed at least one prescription for a PPI medicine by state and territory

In 2018–19, the number of people aged 75 years and over dispensed at least one PPI medicine prescription was 794,861, representing 47% of people aged 75 years and over in Australia.

Analysis by people dispensed at least four prescriptions for a PPI medicine by state and territory

In 2018–19, the number of people aged 75 years and over dispensed at least four prescriptions for a PPI medicine was 639,243, representing an average of 38% of people aged 75 years and over in Australia.

The data and graphs for the following are available at safetyandquality.gov.au/atlas

- Analysis by people dispensed at least one prescription for a PPI medicine
- Analysis by people dispensed at least four prescriptions for a PPI medicine
- Analysis by defined daily dose
- Analysis by Primary Health Network.

Analysis by dose (high, standard and low*) and PHN

The number of prescriptions dispensed for **high-dose** PPI medicines varied across PHNs, from 15,746 per 100,000 people aged 75 years and over in the Northern Territory to 96,557 in Tasmania. The rate was 6.1 times as high for the PHN with the highest rate as for the PHN with the lowest rate.

The number of prescriptions dispensed for **standard-dose** PPI medicines varied across PHNs, from 205,806 per 100,000 people aged 75 years and over in the Northern Territory to 403,499 in Murrumbidgee. The rate was 2.0 times as high for the PHN with the highest rate as for the PHN with the lowest rate.

The number of prescriptions dispensed for **low-dose** PPI medicines varied across PHNs, from 22,303 per 100,000 people aged 75 years and over in South Western Sydney to 55,928 in Western Queensland. The rate was 2.5 times as high for the PHN with the highest rate as for the PHN with the lowest rate. (Figure 6.17).

Interpretation

Variations in rates of PPI medicine dispensing in people aged 75 years and over are likely to be due to the geographical differences in the factors discussed below.

Variation between areas may not directly reflect the practices of the clinicians who are based in these areas. The analysis is based on where people live rather than where they obtain their health care. Patients may travel outside their local area to receive health care.

Rates of underlying disease

Variation is warranted and desirable when it reflects variation in the underlying need for care. The higher PPI medicine dispensing rates seen in socioeconomically disadvantaged areas in the Atlas may reflect the prevalence of GORD and its risk factors (such as obesity, smoking, poor diet and alcohol intake), which are more common among people with lower levels of education and higher socioeconomic disadvantage.^{4,42}

The prevalence of arthritis and rates of NSAID use to manage symptoms may also contribute to variation in PPI medicine dispensing.³ PPI medicines are used to reduce the risk of gastrointestinal bleeding for people who need ongoing treatment with an NSAID and are at high risk of gastrointestinal bleeding. Almost half (49%) of people aged 65 years and over have arthritis, according to self-reported data.⁴³

* According to definitions introduced by the Pharmaceutical Benefits Advisory Committee in May 2019.

Proton pump inhibitor medicines dispensing, 75 years and over

Use of low-dose aspirin may also contribute to variation in PPI medicine use. PPI medicines are also often prescribed to prevent gastrointestinal bleeding associated with medicines other than NSAIDs and low-dose aspirin, although this practice is not well supported by evidence.¹⁴

The prevalence of untreated *H. pylori* infection and rates of peptic ulcer disease may affect rates of PPI medicine dispensing. Infection rates, which increase the risk of peptic ulcer disease, are higher in older people. Rates of people with untreated *H. pylori* infection starting on an NSAID may also affect PPI dispensing. For people taking an NSAID, *H. pylori* infection increases the risk of peptic ulcer disease by up to 3.5 times, compared with no infection.¹⁷

Clinical decision-making

Variation in adherence to guidelines is likely to influence patterns of use, particularly adherence to recommendations to assess ongoing need for a PPI medicine.

Clinician and consumer willingness to discuss the natural history of reflux, the risks and benefits of treatment, and approaches to addressing lifestyle factors such as obesity and diet may influence PPI medicine use. Some people with uncomplicated GORD may be using PPI medicines long-term without attempting to step down to a lower dose or a less potent medicine, or to cease altogether. This may be due to concerns about symptoms re-emerging, or because the clinician and consumer have not discussed other treatment strategies, so that they may not be aware that it is possible to stop taking PPI medicines.

Taking PPI medicines at an inappropriate time of day may lead to variation in effectiveness of the medicines and how well reflux symptoms are controlled. Some people may not be aware that PPI medicines are most effective after a prolonged fast and should be taken at least half an hour before the first meal of the day.^{2,3} Poor packing of PPI medicines in dose administration aids may contribute to this problem.

Variation may also reflect lack of transfer of information when people are discharged from hospital or move between other healthcare settings. Important information includes what a PPI medicine was prescribed for and when it should be reviewed or stopped. Medicines that are continued without clear instructions about when they should be reviewed or stopped can have downstream effects on ongoing prescribing and contribute to unnecessary medicine use.⁴⁴

Access to medical care

Access to general practitioners and gastroenterologists may influence the likelihood of consumers seeking care for GORD, and therefore affect rates of PPI medicine use.

Variation in rates of PPI medicine dispensing between areas may also be influenced by the number of clinicians providing services to people living in the area. The practice styles of individual clinicians may be more likely to affect rates in areas with fewer clinicians, such as rural and regional locations, than in areas with more clinicians.

Uptake of PBS changes

Regulatory changes to the PBS listings for PPI medicines made in May 2019 – at the end of the data collection period for this Atlas – might be expected to have more impact on rates in areas in which adherence to guidelines has been low. However, the effect on findings is probably small because the changes applied only to new PBS prescriptions dispensed from this date.

Over-the-counter use of PPI medicines

Australians are high consumers of over-the-counter medicines.⁴³ Ability to afford over-the-counter medicines may have contributed to the lower rates of PPI medicine dispensing in areas of socioeconomic advantage. However, most people aged 75 years and over have a concession or pension card, so the effect of this may be small.

Addressing variation

Regulatory changes

Changes to the PBS restrictions, dose classifications and number of repeat prescriptions for PPI medicines came into effect in Australia in May 2019.⁴⁰ These changes followed advice from the Drug Utilisation Sub Committee of the Pharmaceutical Benefits Advisory Committee that, given guideline recommendations and the prevalence of GORD in Australia, high-dose PPI medicines appear to be overprescribed for long periods, particularly in older people.^{40,41} The changes aim to encourage clinical review of PPI medicines and reduce inappropriate long-term use, particularly of high-dose PPI medicines. The effect of these regulatory changes is yet to be evaluated.

Reviewing the need for PPI use

Australia's National Indicators for Quality Use of Medicines in Australian Hospitals 2014 can be used to monitor safe and appropriate medicines use.⁴⁵ An indicator to measure long-term PPI medicine use may be helpful in identifying people who would benefit from ceasing therapy (deprescribing).

Employing pharmacists in general practice clinics as part of a team-based model of care may increase access to medicine review and education services. These models are well established internationally, and further research on their effectiveness in the Australian healthcare system is needed.⁴⁶

Consumer and clinician education

Multifaceted national education campaigns that focus on reviewing the need for PPI medicines and actively stepping down or deprescribing when the medicine is no longer needed appear to have the most success in improving PPI medicine use, particularly in the veteran population.⁴⁷⁻⁴⁹

Recent campaigns conducted in the wider Australian population have had limited success, despite being multifaceted and including strategies for actively engaging clinicians.⁵⁰

Interventions that focus on knowledge translation, and engagement of clinicians and consumers are likely to be more successful in improving PPI medicine use than others.⁴⁹

Education and awareness campaigns for health professionals that include reminders to review PPI medicines at the point of care may reduce use by people who do not have a clear reason to be taking a PPI medicine long term.⁵¹

Lifestyle factors

Educating people about addressing lifestyle factors that may trigger symptoms is an important part of GORD treatment. Having a poor diet – particularly a diet high in fat – as well as smoking and being overweight, can exacerbate symptoms and increase the risk of oesophageal cancer. Weight loss has particularly been shown to reduce the symptoms of GORD.^{52,53} In women, a 3.5 kg/m² reduction in body mass index can result in nearly a 40% reduction in the risk of having frequent GORD symptoms.⁵⁴ Addressing these risk factors for GORD has the added benefit of improving health in general.^{3,9,10}

Optimising effectiveness of PPI medicines

Educational and other initiatives that target the importance of taking PPI medicines on an empty stomach may improve medicine effectiveness and reduce dose increases. Strategies that improve clinician uptake of guideline recommendations for *H. pylori* testing and treatment may help reduce variation in PPI medicine use. Routine *H. pylori* testing and, if needed, treatment, before prescription of NSAIDs may also reduce the risk of peptic ulcer.¹⁷

Proton pump inhibitor medicines dispensing, 75 years and over

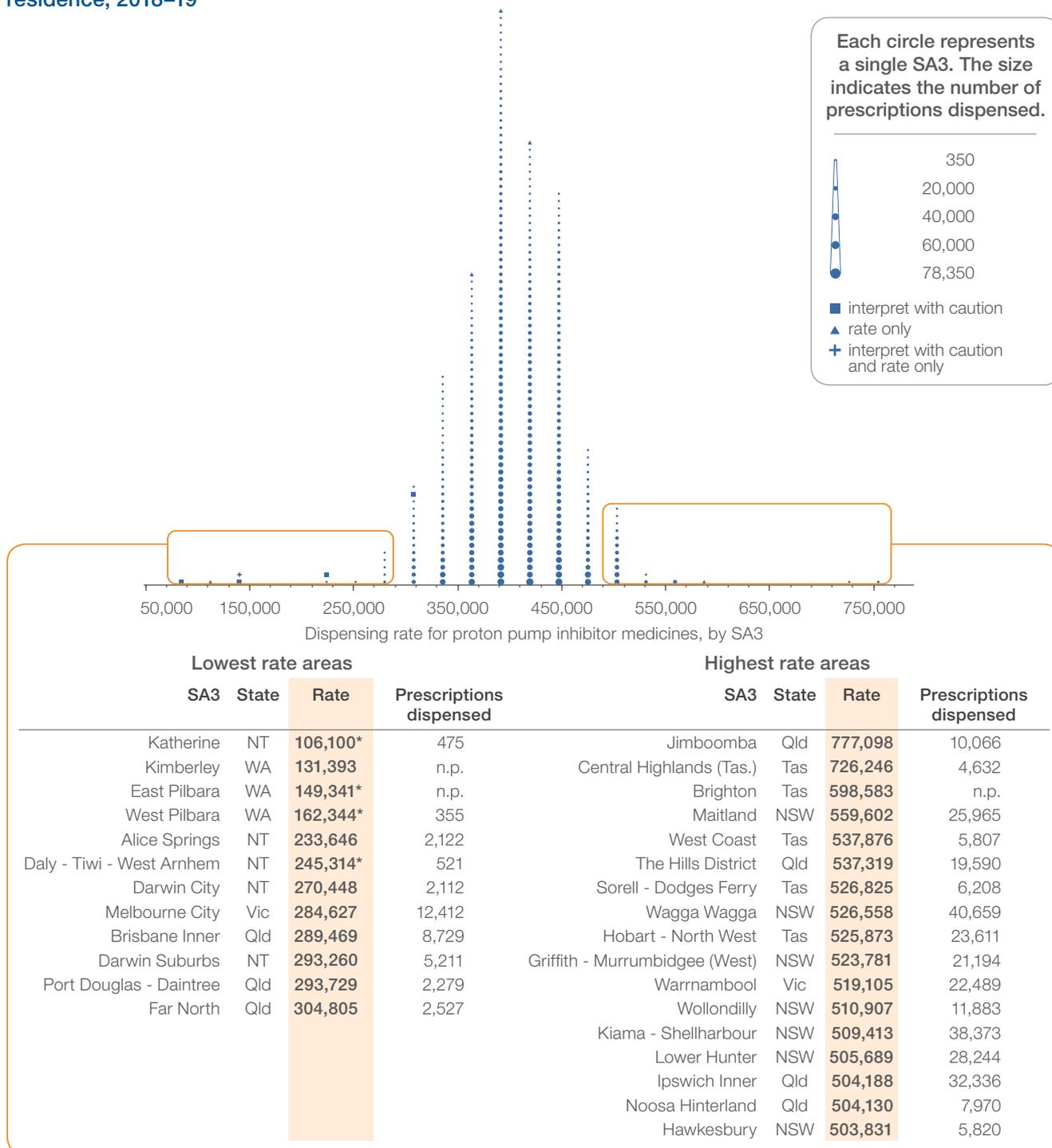
Other initiatives

As part of the Choosing Wisely Australian initiative⁵⁵, the Gastroenterological Society of Australia (GESA) and the Royal Australian College of General Practitioners (RACGP) made two recommendations in 2015 and 2016, to promote appropriate PPI medicine prescribing:

- Do not use PPI medicines long term in people with uncomplicated disease without regular attempts at reducing dose or ceasing therapy
- Do not continue prescribing long-term PPI medicines to people without attempting to reduce the medicine to the lowest effective dose or cease the therapy altogether.

Rates by local area

Figure 6.12: Number of PBS prescriptions dispensed for proton pump inhibitor medicines per 100,000 people aged 75 years and over, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Notes:

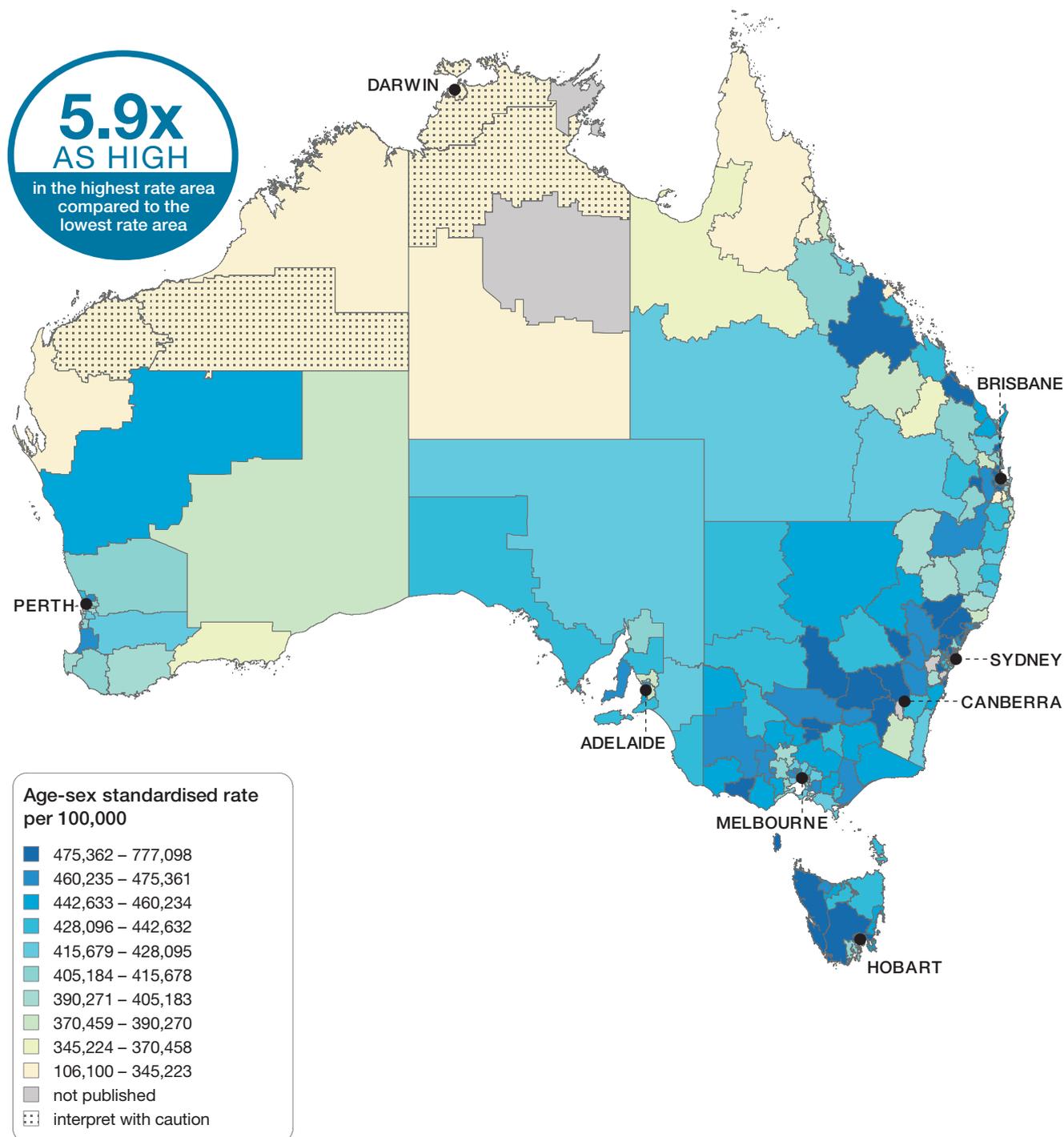
Squares (■) and asterisks (*) indicate rates that are considered more volatile than other published rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of prescriptions are not published (n.p.) for confidentiality reasons. Crosses (+) indicate SA3s where rates should be interpreted with caution, and the numbers of prescriptions are not published for confidentiality reasons. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Pharmaceutical Benefits Scheme data and ABS Estimated Resident Population 30 June 2018.

Proton pump inhibitor medicines dispensing, 75 years and over

Rates across Australia

Figure 6.13: Number of PBS prescriptions dispensed for proton pump inhibitor medicines per 100,000 people aged 75 years and over, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Notes:

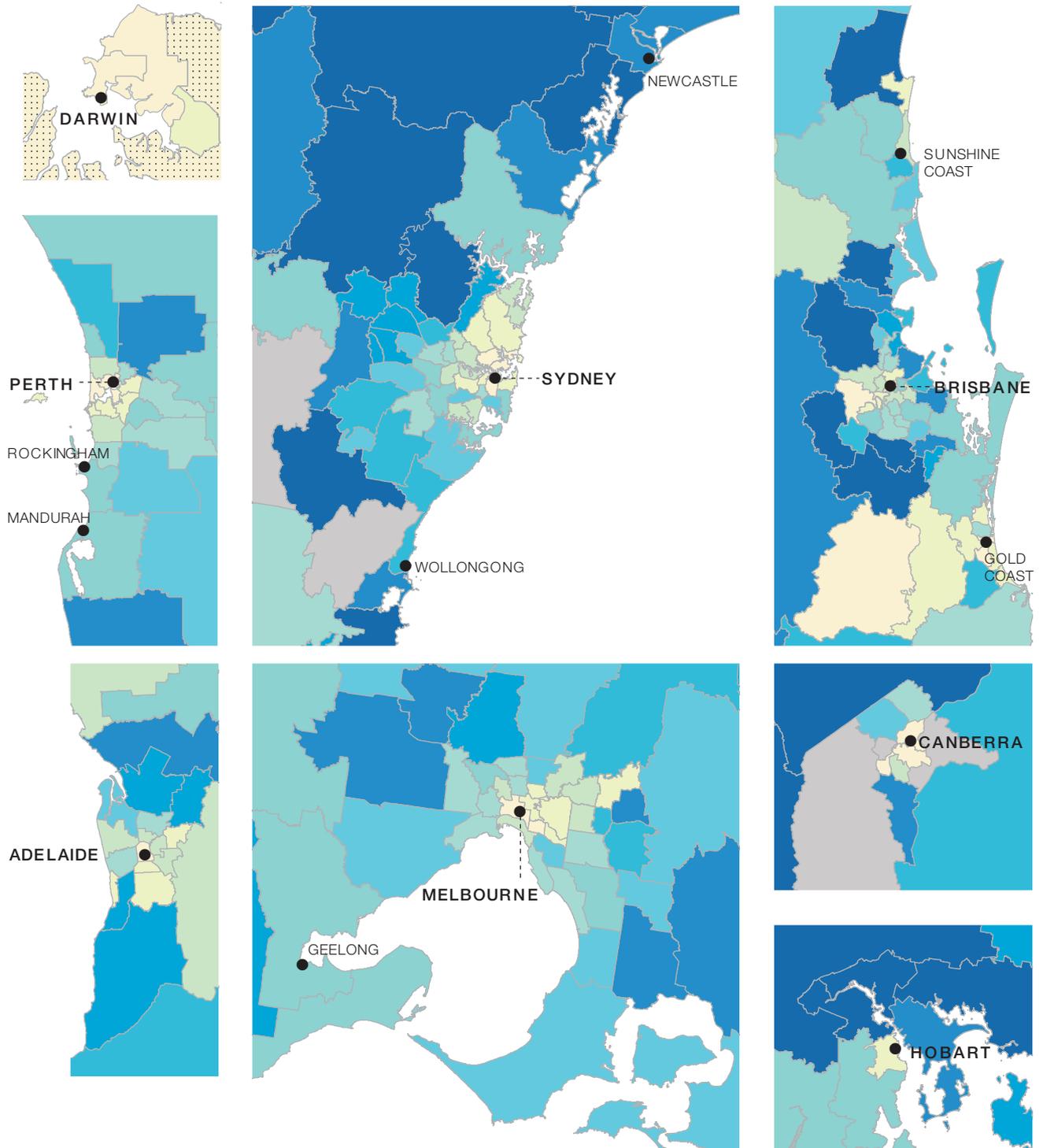
Dotted areas indicate rates that are considered more volatile than other published rates and should be interpreted with caution. These rates are excluded from the calculation of the difference between the highest and lowest SA3 rates in Australia.

For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Pharmaceutical Benefits Scheme data and ABS Estimated Resident Population 30 June 2018.

Rates across capital city areas

Figure 6.14: Number of PBS prescriptions dispensed for proton pump inhibitor medicines per 100,000 people aged 75 years and over, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



Notes:

Dotted areas indicate rates that are considered more volatile than other published rates and should be interpreted with caution. For further detail about the methods used, please refer to the Technical Supplement.

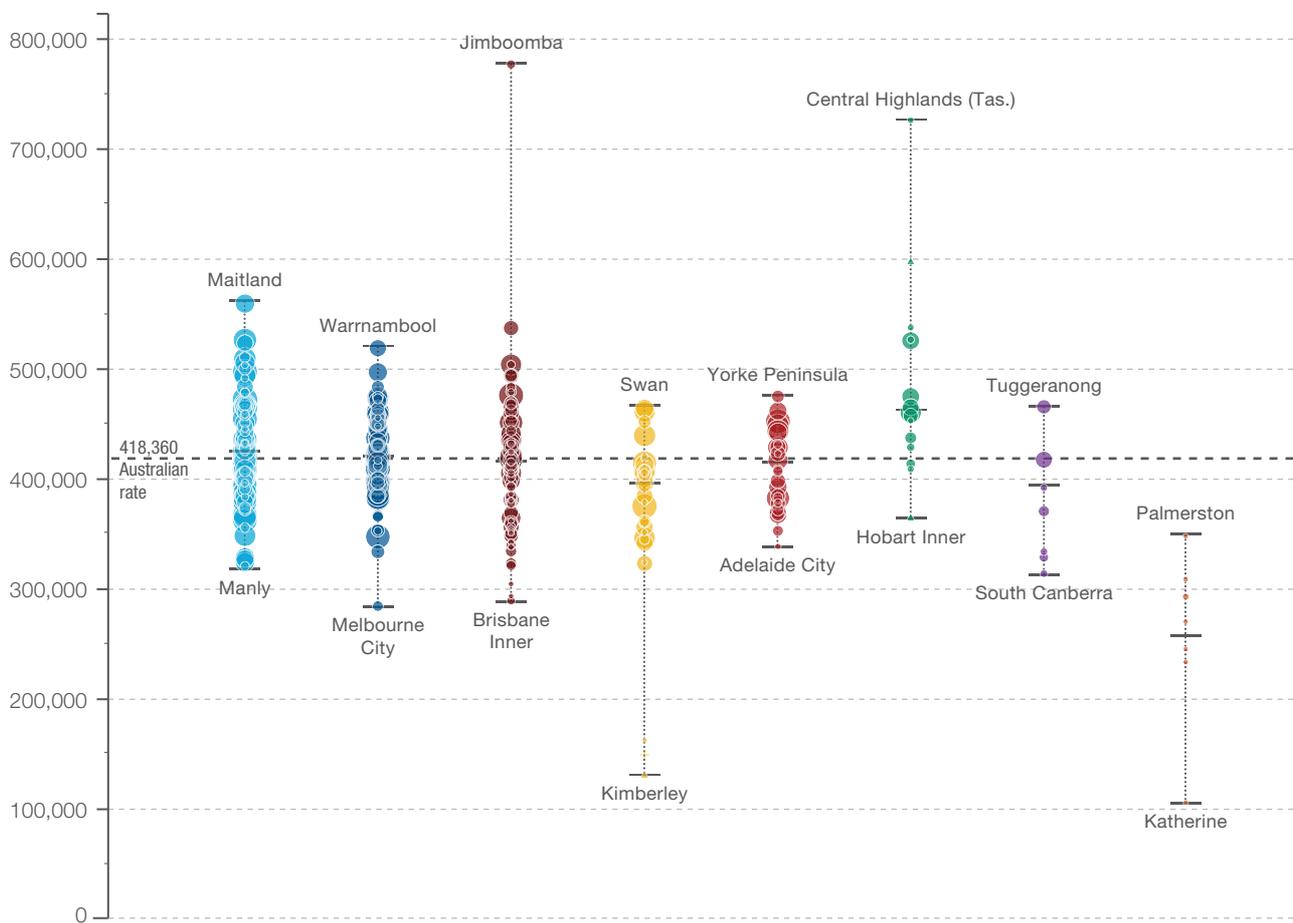
Sources: AIHW analysis of Pharmaceutical Benefits Scheme data and ABS Estimated Resident Population 30 June 2018.

Proton pump inhibitor medicines dispensing, 75 years and over

Rates by state and territory

Figure 6.15: Number of PBS prescriptions dispensed for proton pump inhibitor medicines per 100,000 people aged 75 years and over, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Highest rate	559,602	519,105	777,098	464,260	475,170	726,246	465,765	348,205
State/territory	424,793	420,340	415,710	394,763	415,103	462,138	394,152	257,216
Lowest rate	321,014	284,627	289,469	131,393	338,869	365,462	314,176	106,100*
Total prescriptions	2,417,560	1,856,172	1,321,085	622,289	596,202	199,766	86,503	13,875



Each circle represents a single SA3. The size indicates the number of prescriptions dispensed.

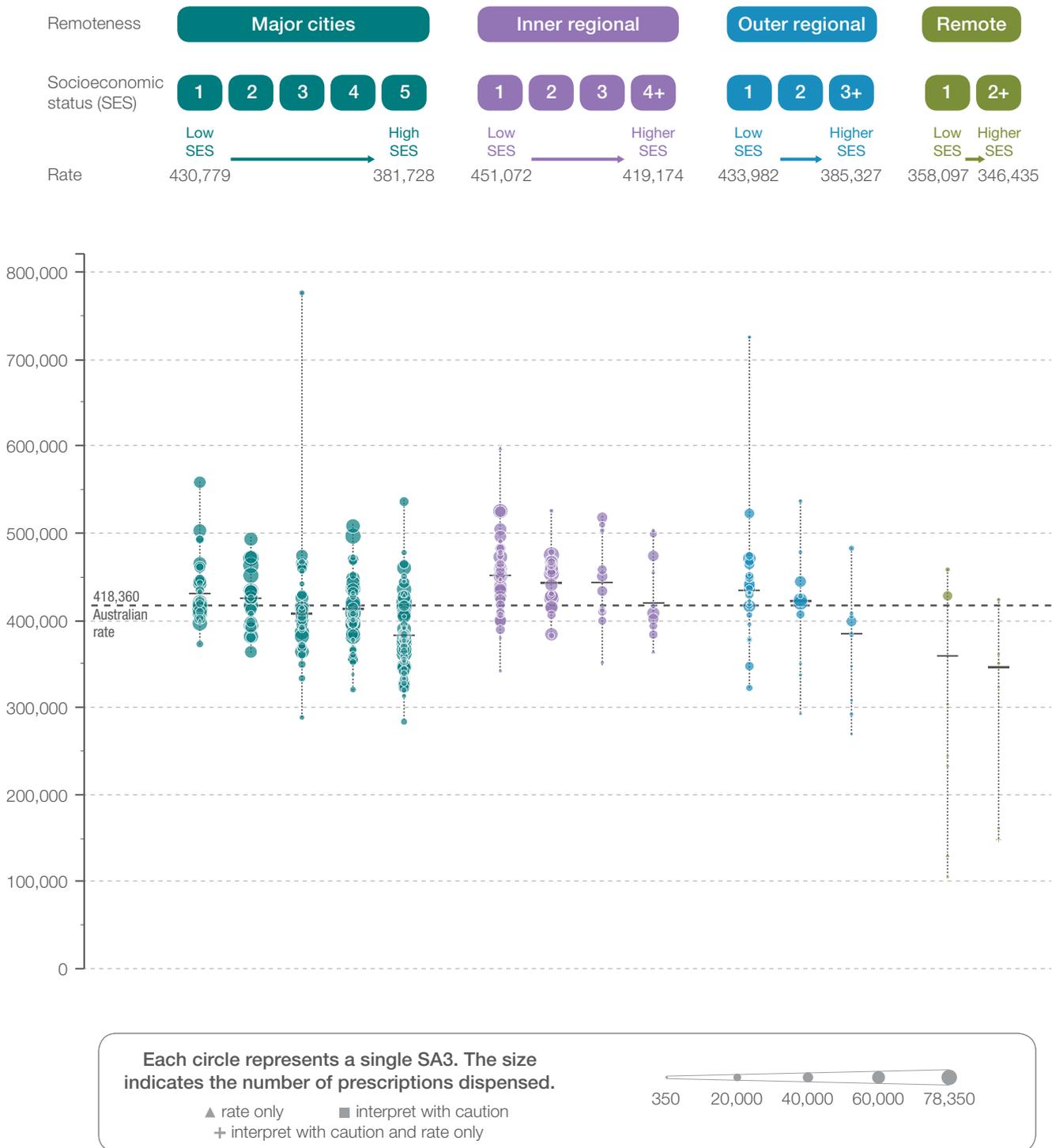
▲ rate only ■ interpret with caution
 + interpret with caution and rate only

350 20,000 40,000 60,000 78,350

Notes:
 Squares (■) and asterisks (*) indicate rates that are considered more volatile than other published rates and should be interpreted with caution.
 Triangles (▲) indicate SA3s where only rates are published. The numbers of prescriptions are not published for confidentiality reasons.
 Crosses (+) indicate SA3s where rates should be interpreted with caution, and the numbers of prescriptions are not published for confidentiality reasons.
 For further detail about the methods used, please refer to the Technical Supplement.
Sources: AIHW analysis of Pharmaceutical Benefits Scheme data and ABS Estimated Resident Population 30 June 2018.

Rates by remoteness and socioeconomic status

Figure 6.16: Number of PBS prescriptions dispensed for proton pump inhibitor medicines per 100,000 people aged 75 years and over, age and sex standardised, by Statistical Area Level 3 (SA3) of patient residence, 2018–19



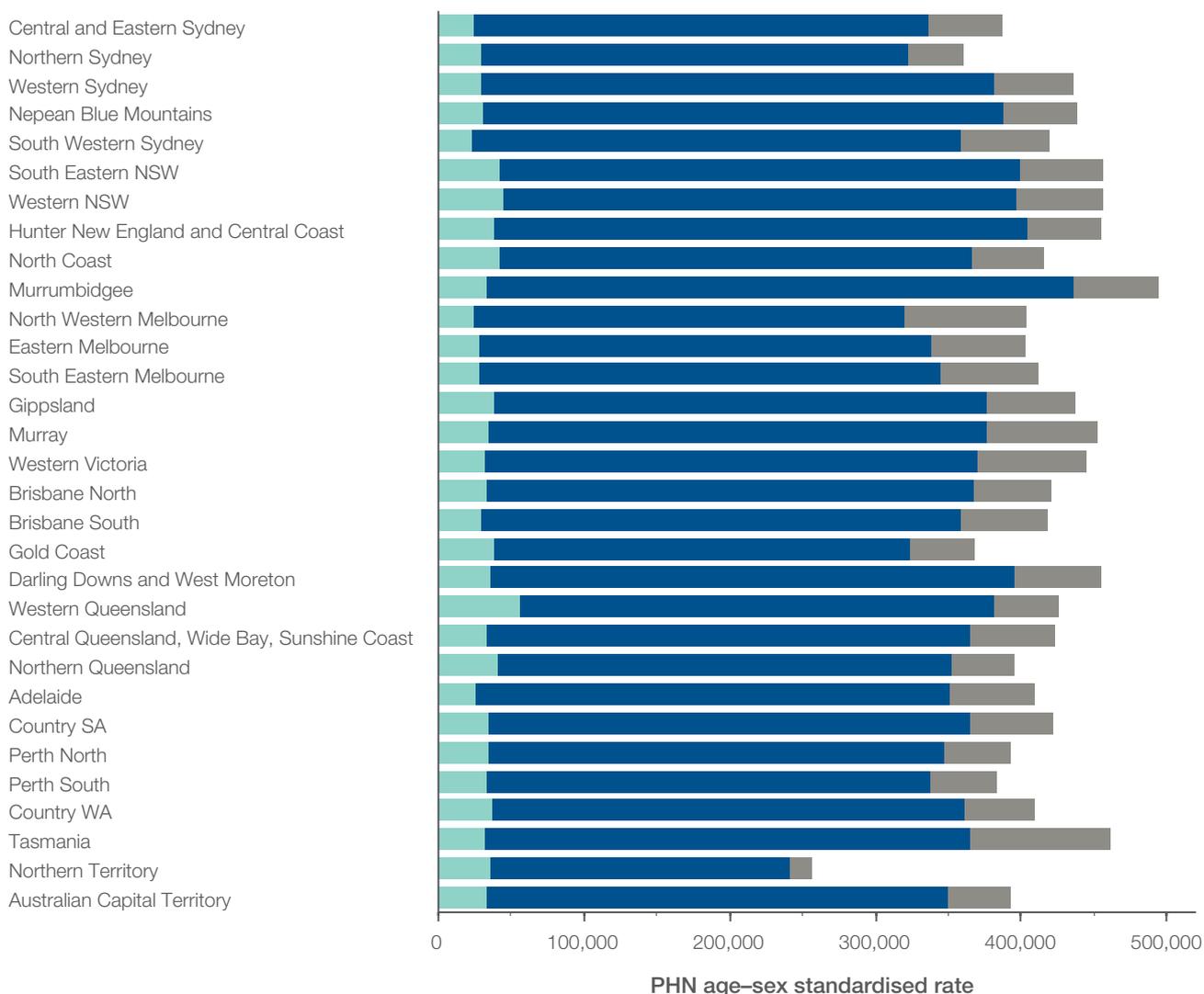
Notes:

Squares (■) indicate rates that are considered more volatile than other published rates and should be interpreted with caution. Triangles (▲) indicate SA3s where only rates are published. The numbers of prescriptions are not published for confidentiality reasons. Crosses (+) indicate SA3s where rates should be interpreted with caution, and the numbers of prescriptions are not published for confidentiality reasons. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Pharmaceutical Benefits Scheme data and ABS Estimated Resident Population 30 June 2018.

Proton pump inhibitor medicines dispensing, 75 years and over

Figure 6.17: Number of PBS prescriptions dispensed for proton pump inhibitor medicines per 100,000 people aged 75 years and over, age and sex standardised, by Primary Health Network (PHN) of patient residence, by dose category, 2018–19



Dose category

- high dose
- standard dose
- low dose

Notes: Dose categories: high dose includes esomeprazole 40 mg; standard dose includes esomeprazole 20 mg, lansoprazole 30 mg, omeprazole 20 mg, pantoprazole 40 mg and rabeprazole 20 mg; low dose includes lansoprazole 15 mg, omeprazole 10 mg, pantoprazole 20 mg and rabeprazole 10 mg. For further detail about the methods used, please refer to the Technical Supplement.

Sources: AIHW analysis of Pharmaceutical Benefits Scheme data and ABS Estimated Resident Population 30 June 2018.

Resources

- *Gastro-oesophageal Reflux Disease in Adults*⁹
- Heartburn and reflux: manage your medicine¹
- Veterans' MATES (Medicines Advice and Therapeutics Education Services)⁵⁶
- *Helicobacter pylori* eradication: an update on the latest therapies⁵⁷
- Educational visiting program on managing GORD with PPIs in primary care and associated resources, NPS MedicineWise
- *Managing your Medicine for Reflux and Heartburn*, patient action plan, NPS MedicineWise, nps.org.au/assets/50240b737233cd47-a615f8d13d0c-NPS1993_SSDSM_PAP_v5.1.pdf
- *Therapeutic Guidelines: Gastrointestinal* (available by subscription at tg.org.au)
- *Australian Medicines Handbook* (available by subscription at: shop.amh.net.au/)
- Guidance for provision of a Pharmacist Only medicine: proton pump inhibitors, Pharmaceutical Society of Australia (available by subscription at: my.psa.org.au/s/article/Proton-pump-inhibitors-S3-guidance-document)

Australian initiatives

Information in this chapter will complement work already underway to improve PPI medicine use. At a national level this work includes:

- Veterans' MATES, Australian Government Department of Veterans' Affairs, initiatives to improve PPI medicine use⁵⁶
- RACGP and Choosing Wisely Australia, Recommendation 1: Do not use proton pump inhibitors (PPIs) long term in patients with uncomplicated disease without regular attempts at reducing dose or ceasing⁵⁸
- GESA and Choosing Wisely Australia, Recommendation 3: Do not continue prescribing long-term proton pump inhibitor (PPI) medication to patients without attempting to reduce the medication down to the lowest effective dose or cease the therapy altogether.⁵⁵

Many state and territory initiatives are also in place to improve appropriateness of prescribing PPI medicines, including:

- *A Guide to Deprescribing Proton Pump Inhibitors*¹⁸, Tasmania
- Deprescribing resources for clinicians and consumers, developed by a translational research project team lead by Professor Sarah Hilmer, to support deprescribing in older hospital patients, New South Wales.⁵⁹

Proton pump inhibitor medicines dispensing, 75 years and over

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Technical supplement

Introduction

This is the *Fourth Australian Atlas of Healthcare Variation* in a series providing statistics at a local level identifying variation across Australia for a number of health indicators. Statistics in the Atlas are presented in the form of maps, graphs and tables. This technical supplement provides information on the methods used for data extraction and analysis, for presentation in the maps and graphs. Activity rates are presented by local areas using Statistical Area Level 3 (SA3) geography defined by the Australian Bureau of Statistics (ABS), as well as Primary Health Network (PHN) areas defined by the Australian Government Department of Health, at state and territory, and national levels.

The Australian Commission on Safety and Quality in Health Care and the Australian Institute of Health and Welfare (AIHW) developed the specifications for each indicator. These can be found on the AIHW Metadata Online Registry (METeOR) at meteor.aihw.gov.au/content/index.phtml/itemId/723541

The specifications include details such as:

- The data source
- The relevant population
- Inclusions and exclusions (description of items included and excluded, and relevant data source codes)
- The numerator (what is being measured) and denominator (in what population)
- Computation (the calculation that shows how the numerator and denominator relate)
- Disaggregation (the way the data are analysed and presented)
- Data suppression rules (rules that set out what cannot be presented for reasons of confidentiality and/or reliability).

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Four data sources were used in the Atlas:

- Medicare Benefits Schedule (MBS)
- National Hospital Morbidity Database (NHMD)
- National Perinatal Data Collection (NPDC)
- Pharmaceutical Benefits Scheme (PBS).

Analyses are based on the place of usual residence of the patient (patient residence) and not the location of the hospital, clinic or pharmacy where the service was provided. If the patient residence was unknown or invalid, or could not be allocated to an SA3, PHN, or state or territory, the record was included in the total for Australia only.

For MBS and PBS data, the Medicare enrolment postcode is used as a proxy for the patient residence because it corresponds to most people's usual residence. The postcode of the dispensing pharmacy was substituted if the enrolment postcode was unknown or invalid.

Records with unknown or invalid age or sex were excluded from NHMD, MBS and PBS data because they could not be age and sex standardised (see 'Analysis methods'). NPDC data are not standardised, as a result of small numbers.

The AIHW conducted the data extraction and analysis, and presentation of the data in maps and graphs. Analyses in this report have not been adjusted to account for the under-identification of Aboriginal and Torres Strait Islander people in the data sources used. Data by Aboriginal and Torres Strait Islander status should be interpreted with caution because Aboriginal and Torres Strait Islander people are under-enumerated in health data, and there is variation in the under-enumeration among states and territories, and among datasets.

1. Medicare Benefits Schedule data

MBS data are a by-product of the assessment of claims for Medicare benefits by Services Australia, and are provided to the Australian Government Department of Health. The MBS data in this report comprise hospital and non-hospital services provided in financial year 2018–19 for claims processed up to and including 29 February 2020. A service includes any claims resulting in the payment of a Medicare benefit. Bulk-billing incentives and 'top-up' services are excluded from service counts as they are not attendances or procedures in their own right.

MBS data do not include:

- Services provided free of charge to public patients in hospitals
- Services that qualify for a benefit under the Department of Veterans' Affairs National Treatment Account
- Services provided under an entitlement, such as services covered by third-party or workers compensation, where an interim benefit has not been paid, or services provided to repatriation beneficiaries or defence personnel
- Services provided for insurance or employment purposes
- Health screening services, except for services as directed by the minister.

Some Australian residents may access medical services through other arrangements, such as salaried doctor arrangements. As a result, MBS data may underestimate the use of services by some members of the community.

Under Medicare, 'eligible persons' are persons who reside permanently in Australia. This includes New Zealand citizens and holders of permanent residence visas. Applicants for permanent residency may also be eligible, depending on their circumstances. In addition, overseas visitors from countries with which Australia has a reciprocal healthcare agreement might also be entitled to benefits under MBS arrangements.

For some patients, the total count for the services in question may be zero or negative (for example, due to cheque cancellations; see meteor.aihw.gov.au/content/index.phtml/itemId/601800). In these cases, all records of the patient are excluded from the analyses.

A patient's age calculated in MBS data is their age in years on the date the service was provided to them.

2. National Hospital Morbidity Database

The NHMD is a comprehensive dataset containing records for all episodes of admitted patient care from almost all hospitals in Australia. This includes all public and private acute and psychiatric hospitals, freestanding day hospital facilities, and alcohol and drug treatment centres. Hospitals operated by the Australian Defence Force and corrections authorities, and hospitals in Australia's offshore territories are not in scope, but some are included. The data elements included in the NHMD are based on the Admitted Patient Care National Minimum Data Set (APC NMDS). The NHMD includes episodes for admitted patients discharged (separated) between 1 July and 30 June for each financial year.

Data are collected at each hospital from patient administrative and clinical record systems, and forwarded to the relevant state or territory health authorities. The data are provided to the AIHW for national collation annually.

The counting unit for the NHMD is a 'separation'. Separation refers to an episode of admitted patient care, which can be a total hospital stay (from admission to discharge, transfer or death) or a portion of a hospital stay, beginning or ending in a change in the type of care (for example, from acute care to rehabilitation). In this report, separations are referred to as 'hospitalisations'.

A record is included for each hospitalisation, not for each patient. Patients hospitalised more than once in the financial year have more than one record in the NHMD.

The NHMD does not include non-admitted patient care provided in outpatient clinics or emergency departments. If patients in these settings are admitted to hospital subsequently, the care provided to them as admitted patients is included in the NHMD.

Records for which the overall nature of care was 'newborn care with unqualified days only', 'posthumous organ procurement' or 'hospital boarder' were excluded from the analysis.

A patient's age calculated in NHMD data is their age in years on the date they were admitted to hospital.

NHMD data in this report comprise hospitalisations in:

- 2014–15 to 2017–18 for potentially preventable hospitalisations
- 2012–13 to 2017–18 for lumbar spinal surgery
- 2012–13, 2015–16 and 2017–18 for tonsillectomy and myringotomy.

The specifications developed for the potentially preventable hospitalisations are based on the nationally agreed specification, National Healthcare Agreement: PI 18 – Selected potentially preventable hospitalisations, 2021 (meteor.aihw.gov.au/content/index.phtml/itemId/725793).

For potentially preventable hospitalisations, data for New South Wales for 2017–18 in this report may not align with the data published by New South Wales because of changes in admission practices in New South Wales public hospitals in 2017.

For lumbar spinal surgery, the annual number of hospitalisations is not sufficient for reliable reporting at a local level. Three years of data (2012–13 to 2014–15 and 2015–16 to 2017–18) are combined. In this case, rates are based on the number of hospitalisations over three years and the summed population over three years. This method differs from the calculation of an average annual rate. However, the rates from both methods will generally be the same, or very similar, particularly for areas with low proportional population change between years.

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For lumbar spinal surgery, tonsillectomy and myringotomy, some private hospitals in Tasmania admit public patients under a contractual arrangement. There is a small over-count of hospitalisations for these procedures in Tasmania because hospitalisations were recorded by both contracting hospital and contracted hospital.

More information on the APC NMDS for 2012–13 to 2017–18 is available at:

- meteor.aihw.gov.au/content/index.phtml/itemId/466132 (2012–13)
- meteor.aihw.gov.au/content/index.phtml/itemId/491555 (2013–14)
- meteor.aihw.gov.au/content/index.phtml/itemId/535047 (2014–15)
- meteor.aihw.gov.au/content/index.phtml/itemId/588909 (2015–16)
- meteor.aihw.gov.au/content/index.phtml/itemId/612171 (2016–17)
- meteor.aihw.gov.au/content/index.phtml/itemId/641349 (2017–18).

The data quality statements for the NHMD for 2012–13 to 2017–18 are available at:

- meteor.aihw.gov.au/content/index.phtml/itemId/568730 (2012–13)
- meteor.aihw.gov.au/content/index.phtml/itemId/611030 (2013–14)
- meteor.aihw.gov.au/content/index.phtml/itemId/638202 (2014–15)
- meteor.aihw.gov.au/content/index.phtml/itemId/723825 (2015–16)
- meteor.aihw.gov.au/content/index.phtml/itemId/724186 (2016–17)
- meteor.aihw.gov.au/content/index.phtml/itemId/724188 (2017–18).

Components of NHMD analysis

Diagnoses and procedures

Hospital diagnosis and procedure data in this report were reported to the NHMD by states and territories using several editions of the *International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification* (ICD-10-AM), incorporating the *Australian Classification of Health Interventions* (seventh edition for 2012–13, eighth edition for 2013–14 and 2014–15, ninth edition for 2015–16 and 2016–17, and 10th edition for 2017–18).

The comparability of the coded diagnosis and procedure data can be affected by variations in the quality of the coding, and by state-specific coding standards. This should be taken into account when comparing across states and territories.

Aboriginal and Torres Strait Islander status

For NHMD data, hospitalisations for Aboriginal and Torres Strait Islander people are compared with hospitalisations for other Australians. Other Australians comprise people who were reported as not of Aboriginal and/or Torres Strait Islander origin, and people for whom information on Aboriginal and Torres Strait Islander status was not reported.

In 2011–12, an estimated 88% of Aboriginal and Torres Strait Islander patients were correctly identified in public hospital admission records. The estimated completeness of Aboriginal and Torres Strait Islander identification (with 95% confidence intervals) for public hospitals was 80% (76–83%) in New South Wales, 78% (71–84%) in Victoria, 87% (84–91%) in Queensland, 91% (85–95%) in South Australia, 96% (92–98%) in Western Australia, 64% (53–74%) in Tasmania, 98% (96–99%) in the Northern Territory and 58% (46–69%) in the Australian Capital Territory. It is not known to what extent Aboriginal and Torres Strait Islander patients might be under-identified in private hospital admission records.

There were wide variations in correct identification of Aboriginal and Torres Strait Islander patients by remoteness: estimates ranged from 77% (72–81%) in major cities to 99% (96–100%) in very remote areas. For more information, see *Indigenous Identification in Hospital Separations Data: Quality report* at aihw.gov.au/publication-detail/?id=60129543215

Patient funding status

Apart from potentially preventable hospitalisations, NHMD data are presented separately for hospitalisations according to the funding status of the patient. This reflects the funding arrangements for the patient's hospitalisation, not the sector of the hospital to which they were admitted. Hospitalisations were categorised by funding status of patients – public or private – based on three data elements:

- 'Source of funding' (meteor.aihw.gov.au/content/index.phtml/itemId/649391)
- 'Patient election status' (meteor.aihw.gov.au/content/index.phtml/itemId/326619)
- 'Hospital sector' (meteor.aihw.gov.au/content/index.phtml/itemId/269977).

Hospitalisations for publicly funded patients comprise those for whom the patient funding source was:

- Health service budget (not covered elsewhere)
- Health service budget (due to eligibility under a reciprocal healthcare agreement)
- Health service budget (no charge raised as a result of a hospital decision) AND in a public hospital
- Other hospital or public authority (contracted care) AND a patient election status of 'public' (regardless of hospital sector).

Hospitalisations for privately funded patients comprise those for whom the patient funding source was:

- Health service budget (no charge raised as a result of a hospital decision) AND in a private hospital
- Other hospital or public authority (contracted care) AND a patient election status of 'private' (or not reported)

- Department of Veterans' Affairs
- Department of Defence
- Correctional facility
- Private health insurance
- Workers compensation
- Motor vehicle third-party personal claim
- Other compensation (for example, public liability, common law, medical negligence)
- Self-funded
- Other funding source
- Not known.

For 2016–17, there were data quality issues relating to the recording of patient funding source for patients admitted to private hospitals in the Australian Capital Territory. Data for these private hospitals for 2016–17 were excluded from analysis by patient funding status for the lumbar spinal surgery indicators.

Condition onset flag

For the lumbar spinal surgery indicators, records with infections not noted as arising during the episode of admitted patient care are excluded. There is some variation between states and territories in the overall proportion of records for which a condition was reported as arising during the episode of care. Differences in the types of patients treated by states and territories may account for some of this variation. However, the variation may indicate that there are differences in the allocation of condition onset flag values (meteor.aihw.gov.au/content/index.phtml/itemId/651997). There are also differences in the quality of the provided condition onset flag over time. Overall, the provision of condition onset flag data has improved since 2013–14, particularly for private hospitals.

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Further information on the quality of the coded diagnosis and procedure data, Aboriginal and Torres Strait Islander status data, and condition onset flag data at the state and territory level is available in *Australian Hospital Statistics 2012–13* at aihw.gov.au/reports/hospitals/australian-hospital-statistics-2012-13 and *Admitted Patient Care: Australian hospital statistics* reports at aihw.gov.au/reports/hospitals/admitted-patient-care-2017-18/report-editions (2013–14 to 2017–18).

3. National Perinatal Data Collection

The NPDC collects data about births in Australia, including births in hospitals, birth centres and the community (such as home births). All live births and stillbirths of at least 20 weeks gestation or at least 400 grams birth weight are included, except in Victoria and Western Australia, where births are included if gestational age is at least 20 weeks or, if gestation is unknown, birth weight is at least 400 grams. NPDC data in this report relate to births that occurred in the calendar year 2017.

NPDC data are based on births reported to the perinatal data collection in each state and territory. Midwives and other birth attendants, using information obtained from mothers and from hospital or other records, complete notification forms for each birth. Each state or territory provides a standard de-identified extract to the AIHW annually to form the NPDC. The data elements in the NPDC include the Perinatal National Minimum Data Set (Perinatal NMDS), the Perinatal National Best Endeavours Data Set (Perinatal NBEDS) and additional data elements. More information on the Perinatal NMDS and NBEDS for 2017 is available at meteor.aihw.gov.au/content/index.phtml/itemId/517456 and meteor.aihw.gov.au/content/index.phtml/itemId/654975, respectively.

Additional data elements are at different stages of standardisation. Some have national data standards but have not been implemented in the Perinatal NMDS or NBEDS, while others do not have common definitions for collecting the data.

The data quality statement for the NPDC for 2017 is available at meteor.aihw.gov.au/content/index.phtml/itemId/716326

Both ‘main indication for caesarean section’ (meteor.aihw.gov.au/content/index.phtml/itemId/695698) and ‘main indication for induction of labour’ (meteor.aihw.gov.au/content/index.phtml/itemId/655515) have been collected as voluntary non-standard data elements in the NPDC. Indication for caesarean section was revised and added to the Perinatal NBEDS from 2014 onwards, and indication for induction from 2015 onwards. There are differences in definitions and methods used for data collection of these data elements across states and territories; for this reason, data are not comparable across states and territories.

The reason for a method of birth (caesarean section or induction of labour) is not necessarily related to the reason for early birth. Data on the latter are not available.

In Australia:

- Clinical indications for early birth, such as fetal compromise, were not always recorded as the main indication for caesarean section when the decision to perform a caesarean section was pre-planned in the antenatal period
- Clinical events such as pre-labour rupture of membranes, which may lead to an unplanned early caesarean section, were not always recorded when the decision to perform a caesarean section was pre-planned in the antenatal period.

‘Without medical or obstetric indication’ includes the following reasons for caesarean section:

- Previous caesarean section
- Previous severe perineal trauma
- Previous shoulder dystocia
- Maternal choice in the absence of any obstetric, medical, surgical or psychological indication.

'Without medical or obstetric indication' includes the following reasons for induction of labour:

- Administrative or geographical indication
- Maternal choice in the absence of any obstetric, medical, fetal, administrative or geographical indication.

In the case of multiple births, gestational age and method of birth are based on the first-born baby.

Analysis was by place of usual residence of the mother and excluded Australian non-residents, residents of external territories, and records in which place of usual residence was not stated.

Components of NPDC analysis

Aboriginal and Torres Strait Islander status

For NPDC data, data for Aboriginal and Torres Strait Islander women are compared with data for non-Indigenous Australian women. Non-Indigenous Australian women comprise women who were reported as not of Aboriginal and/or Torres Strait Islander origin. Women for whom information on Aboriginal and Torres Strait Islander status was not reported were excluded from the analysis.

Data collection methods for Aboriginal and Torres Strait Islander status of the mother may vary between states and territories. In 2017, information on Aboriginal and Torres Strait Islander status was provided for nearly all mothers (99.7%) who gave birth. However, no formal assessment of the quality of Aboriginal and Torres Strait Islander identification in NPDC data has been undertaken. For more information, see *Australia's Mothers and Babies 2017: In brief*, available at aihw.gov.au/reports/mothers-babies/australias-mothers-and-babies-2017-in-brief

Patient funding status

For NPDC data, patient funding status was determined using the additional data element 'admitted patient elected accommodation status'. Public patients are those for whom the admitted patient's (mother's) elected accommodation status was 'public'. Private patients are those for whom the admitted patient's elected accommodation status was 'private'.

Women who gave birth at home or in birth centres attached to hospitals were excluded from the analysis. The specification for this data element is only for births in hospitals.

Some private hospitals in Western Australia admit public patients. The number of women who elected private status might be lower than the number of women admitted to private hospitals. For some records, mainly those related to giving birth before admission, admitted patient elected accommodation status was missing.

For Tasmania, the majority of private hospitals were unable to collect data for indication for caesarean section and indication for induction according to revised specifications introduced from 1 July 2015; this may affect women with an admitted patient elected accommodation status of both public and private. Data have been mapped to the new specifications where possible. Data for public hospitals were collected according to the new specifications.

Caution must be exercised when interpreting these data for Western Australia and Tasmania.

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4. Pharmaceutical Benefits Scheme data

The Australian Government subsidises the cost of a wide range of prescription medicines through two separate schemes: the PBS and the Repatriation Pharmaceutical Benefits Scheme (RPBS). Claims for reimbursement for the supply of PBS- or RPBS-subsidised medicines are submitted by pharmacies through Services Australia for processing, and are provided to the Australian Government Department of Health. Subsidies for prescription medicines are available to all Australian residents who hold a current Medicare card, and overseas visitors from countries with which Australia has a reciprocal healthcare agreement. Patients pay a contribution to the cost of the medicine (co-payment), and the Australian Government covers the remaining cost.

The PBS data in this report are from records of prescriptions dispensed in 2018–19 under the two schemes, where either:

- The Australian Government paid a subsidy
- The prescription was dispensed at a price less than the relevant patient co-payment (under co-payment prescriptions) and did not attract a subsidy.

The PBS data cover all prescriptions dispensed by approved suppliers, including community pharmacies, public and private hospital pharmacies, and dispensing doctors.

The PBS does not cover:

- Over-the-counter purchases (non-prescription)
- Private prescriptions (prescriptions that are not eligible for subsidy under the PBS – for example, prescriptions for medicines that are not listed on the PBS)
- Medicines supplied to admitted patients in public hospitals; however, prescriptions to patients on discharge and non-admitted patients in most states and territories are in scope, except in New South Wales and the Australian Capital Territory.

Patient categories of ‘general’, ‘concessional’, ‘repatriation’ and ‘unknown’ are included (meteor. aihw.gov.au/content/index.phtml/itemId/604103). Doctor’s bag medicines (supply of medicines free to patients for emergency use) and medicines dispensed through alternative arrangements where the patient cannot be identified, such as direct supply to Aboriginal health services, are excluded.

Provision of some medicines may be under-represented in remote areas, particularly in the Northern Territory, that have a high proportion of Aboriginal and Torres Strait Islander people who access medicines through Aboriginal health services.

The number of prescriptions represents the total number of times that a prescribed medicine is supplied to a patient. Prescriptions can be written either as one-off (original with no repeats) or original with repeats. When an original prescription and all the repeats were supplied at the one time, the total number of prescriptions (original and repeats) was counted.

For individual prescriptions where the quantity dispensed varied from the listed maximum quantity, no adjustment was made for increased or reduced quantity supplied. The supply was counted as one prescription.

A patient’s age calculated in PBS data is their age in years on the date the medicine was supplied to them.

Polypharmacy is based on PBS prescriptions. It is defined as five or more prescriptions for medicines with different Anatomical Therapeutic Chemical (ATC) codes at the fourth level (for example, A10BA), with each medicine dispensed at least four times in the year. Combination medicines (for example, amiloride/hydrochlorothiazide) are counted as one medicine.

The ATC classification is a classification system for medicines maintained by the World Health Organization (WHO). The ATC classification groups medicines according to the body organ or system on which they act, and their therapeutic and chemical characteristics. More information on the ATC classification system can be found at whocc.no/atc/structure_and_principles

For proton pump inhibitor medicines, medicines that are purchased over the counter without a prescription are out of scope. On 1 May 2019, changes were made to improve the appropriate prescribing of prescription medicines. Medicines were changed from dose category of highest, high and low, to high, standard and low. Esomeprazole 40 mg is in the high dose category; esomeprazole 20 mg, lansoprazole 30 mg, omeprazole 20 mg, pantoprazole 40 mg and rabeprazole 20 mg are in the standard dose category; and lansoprazole 15 mg, omeprazole 10 mg, pantoprazole 20 mg and rabeprazole 10 mg are in the low dose category. More information on the changes is available at nps.org.au/radar/articles/proton-pump-inhibitors-pbs-changes-may-2019

Defined daily dose

Defined daily dose (DDD) is the average maintenance dose per day for a medicine used for its main indication in adults, defined by the WHO. DDDs are assigned to medicines by the WHO Collaborating Centre for Drug Statistics Methodology. Using DDDs allows comparisons of medicine dispensing independent of price, preparation and quantity per prescription. Medicine dispensing expressed in DDDs per thousand people per day (DDD/1,000/day) allows data for medicines with differing daily doses to be aggregated. However, the DDD is only a unit of measurement and does not necessarily reflect the recommended or average prescribed dose. DDDs are not established for all medicines. More information on DDD is available at who.int/medicines/regulation/medicines-safety/toolkit_ddd/en

Combination medicines

Combination medicines are medicines with multiple active ingredients. The Australian Government Department of Health and WHO differ in their methods for assigning DDDs. The WHO method takes account of the main ingredient only (whocc.no/ddd/definition_and_general_considera/#DDD), whereas the Department of Health method takes account of each ingredient. The WHO method is used for this report to allow international comparisons, and DDDs/1,000/day in this report may not align with those in the *Australian Statistics on Medicines* report, available at pbs.gov.au/info/statistics/asm/australian-statistics-on-medicines

DDD are the WHO-assigned DDDs as at January 2019. Information on DDD assignment to medicines is available at whocc.no/atc_ddd_index

5. Analysis methods

Australian population

Most indicators use an estimated resident population from the ABS in the denominator. The exception is early planned births, for which the denominator is number of women who gave birth, from the NPDC.

The ABS produces estimates for the overall Australian population for two time points each year – 30 June and 31 December – at state and territory level. Estimates at 31 December are not available for lower geography levels (such as SA3), and Aboriginal and Torres Strait Islander people. Estimates as at 30 June are appropriate for use when calculating rates based on calendar year data, but they are not appropriate for use when calculating rates based on financial year data. In such instances, estimates for 31 December (the midpoint of the financial year) are needed.

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Population estimates as at 31 December in the relevant year were used as the denominator for indicators based on NHMD data for 2012–13 to 2017–18. For example, population estimates as at 31 December 2017 were used for 2017–18. Where three years of data were combined (for example, 2015–16, 2016–17 and 2017–18), the denominator was the sum of the population estimates as at 31 December 2015, 31 December 2016 and 31 December 2017. Population estimates as at 31 December were calculated as the average of the 30 June population estimates before and after the relevant December.

Population estimates as at 30 June 2018 were used as the denominator for indicators based on MBS and PBS data for 2018–19. ABS population estimates as at 30 June 2019 were not available for calculation of the 31 December population estimates in 2018 at the time the analysis was done.

Aboriginal and Torres Strait Islander status

The population estimates for Aboriginal and Torres Strait Islander people were based on the population estimates from the 2016 Census. For 2016 and earlier, population estimates (2016) and backcast estimates were used. For 2017 onwards, series B population projections were used. More information on series B is available at abs.gov.au/statistics/people/aboriginal-and-torres-strait-islander-peoples/estimates-and-projections-aboriginal-and-torres-strait-islander-australians/latest-release#frequently-asked-questions

The population estimates for non-Indigenous people (other Australians) were derived by subtracting the population estimates for Aboriginal and Torres Strait Islander people from the Australian population estimates.

Derived populations

The population estimates for the tonsillectomy and myringotomy (17 years and under) and lumbar spinal surgery (18 years and over) indicators require separate male and female estimates for Aboriginal and

Torres Strait Islander people in the two age groups 15–17 years and 18–19 years. These have not been published by the ABS and were derived based on the combined-sex population estimates for Aboriginal and Torres Strait Islander people, and the 2016 Census counts of Aboriginal and Torres Strait Islander males and females:

- The sex ratios for Aboriginal and Torres Strait Islander people were calculated using the 2016 Census counts of Aboriginal and Torres Strait Islander males and females for each age between 15 and 19, in each state and territory
- The sex ratios were applied to the population estimates for Aboriginal and Torres Strait Islander people to calculate Aboriginal and Torres Strait Islander males and females for each age between 15 and 19, in each state and territory
- The corresponding population estimates for non-Indigenous people were calculated by subtracting the population estimates for Aboriginal and Torres Strait Islander people from the Australian population estimates.

People aged 15–17 years were placed in their own age group, and people aged 18–19 years were placed in the 18–24-year age group.

Age and sex standardisation

This report presents age- and sex-standardised rates, except for the early planned birth indicator, which is presented with percentages. Age and sex standardisation is a method to remove the influence of age and sex when comparing populations with different age and sex structures. For this report, the Australian estimated resident population as at 30 June 2001 was used as the standard population. Some indicators used specific age ranges. In these cases, only the relevant age groups were included in age- and sex-standardisation calculations. Standardised rates based on different age groups and/or standard populations are not directly comparable.

Five-year age groups were used (except for the special cases of the 15–17-year and 18–24-year age groups described above). The age group of 65 years and over was the highest used in standardisation for Aboriginal and Torres Strait Islander status analysis, and 85 years and over was the highest age group used in other analyses. These age groups were adjusted for specific age ranges.

The age and sex standardisation method was adapted from the general age standardisation formula for populations, available at meteor.aihw.gov.au/content/index.phtml/itemId/327276

Geography levels

This report presents data based on the ABS Australian Statistical Geography Standard (ASGS) 2016 SA3 geography, which incorporates the Territory of Norfolk Island for the first time. There are 340 spatial SA3s, covering Australia without

gaps or overlaps. SA3s generally have a population of 30,000–130,000 people, and comprise clusters of whole SA2s (meteor.aihw.gov.au/content/index.phtml/itemId/659727). These areas were grouped by PHN area, state or territory, remoteness and socioeconomic status to assist comparisons. For more information on ASGS 2016, see meteor.aihw.gov.au/content/index.phtml/itemId/659352

Allocation to an SA3 was based on the patient’s residence, not the place where they received the service. The geographical data that were used to allocate the number of events (hospitalisations, services, prescriptions, DDDs and patients) to an SA3 level varied depending on the data source (Table 1).

Table 1: Geographical data used to allocate an SA3

Data source	Data on geographic location
MBS data	Postcode
NHMD	<p>SA2, when available; otherwise, SA2 was derived from Statistical Local Area* (SLA) or postcode.</p> <p>Between 2012–13 and 2016–17, New South Wales provided SLA instead of SA2, and all other states and territories provided SA2 for most records. In 2017–18, all states and territories provided SA2 for all records. SA2s were derived as follows.</p> <p>For 2012–13:</p> <ul style="list-style-type: none"> • SA2 was mapped from SLA for all New South Wales records • SA2 was mapped from postcode for some South Australian and some Northern Territory records. <p>For 2013–14:</p> <ul style="list-style-type: none"> • SA2 was mapped from SLA for all New South Wales records • SA2 was mapped from postcode for some Victorian records. <p>For 2014–15:</p> <ul style="list-style-type: none"> • SA2 was mapped from SLA for all New South Wales records and some Victorian records. <p>For 2015–16 and 2016–17:</p> <ul style="list-style-type: none"> • SA2 was mapped from SLA for all New South Wales records and some Victorian records; where mapping could not be undertaken on SLA, postcode was used.
NPDC	Not applicable; data are presented by state or territory of mother’s residence
PBS data	Postcode

* This is the geographic area defined in the ABS Australian Standard Geographical Classification (the classification used before the ASGS).

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NHMD

For 2012–13 to 2016–17, SA2s in the NHMD were collected using the ASGS 2011. For 2017–18, the ASGS 2016 was used. The accuracy of the information on geography (SA2 or other) could vary across and within states and territories, depending on the methods of allocation used by the hospital and the level of detail on the patient’s address captured at the service level.

When Statistical Local Area (SLA) or postcode was used, ABS correspondences were used to identify the corresponding SA2 2011 (2012–13 to 2016–17) or SA2 2016 (2017–18). Where a geographic unit overlapped SA2 boundaries, records were randomly allocated to the SA2s, according to the proportion of the unit (postcode or SLA) population in the SA2s. This is standard practice for the NHMD. Because of the random allocation, individual records in SA2s might not be accurate or reliable; however, the overall distribution of records by SA2 is considered useful.

For 2012–13 to 2016–17, the SA2 2011 was aggregated to SA3 2011. The number of hospitalisations at SA3 2011 was mapped to SA3 2016 using an ABS correspondence. Where an SA3 2011 overlapped SA3 2016 boundaries, the number of hospitalisations was apportioned across the SA3s 2016, according to the proportion of the population of SA3 2011 in the SA3s 2016.

Time series

Data were re-run for selected hospitalisation indicators presented in the first and second Atlases for the time-series analyses in this Atlas to allow robust comparison of rates over time. Since the first Atlas was published, in November 2015, there have been a number of minor changes to data specifications, updates to NHMD datasets and changes to improve data analysis, as listed in Table 2. This means that some fourth Atlas results for a given year may differ from those reported in previous Atlases. The results reported in this Atlas should be used for monitoring change over time.

MBS and PBS data

For the MBS and PBS data, an ABS correspondence was used to map postcode to SA3 2016. Where a postcode overlapped SA3 boundaries, the number of events was apportioned across the SA3s, according to the proportion of the postcode population in the SA3s. The overall distribution of events by SA3 is considered to be statistically representative of the split population.

The number of patients was determined at the Australian level. In some cases, patients can have multiple records, with different postcodes recorded. Where this occurred, the patient count was apportioned across the postcodes, according to the proportion of the patient’s services or prescriptions in that postcode. The number of patients at postcode level was mapped to SA3 2016 using the same process as above.

Table 2: Changes in analysis methods for time series of hospitalisation indicators

Atlas	Age standardised	Age and sex standardised	Postcode to SA3	SA2 to SA3	ASGS 2011	ASGS 2016	Population estimate
1	✓		✓		✓		30 June
2		✓		✓	✓		30 June
3		✓		✓		✓	30 June
4		✓		✓		✓	31 December*

* Estimated from average of 30 June estimated residential populations from the relevant years.

Primary Health Network areas

PHNs connect health services across a specific geographic area so that patients, particularly those needing coordinated care, have access to a range of services, including primary healthcare services, secondary healthcare services and hospital services. There are 31 PHN areas that cover the whole of Australia.

The number of events at SA3 2016 level was mapped to a PHN area (2017) using an ABS correspondence. The correspondence reflects the reconstructed PHN boundaries based on the ASGS 2016 and the 2011 Census population data (as the weighting unit). Where an SA3 overlapped PHN boundaries, the number of events was apportioned across the PHN areas, according to the proportion of the SA3 population in the PHN areas.

Tasmania, the Australian Capital Territory and the Northern Territory have only one PHN area each. PHN rates may differ from state or territory rates because:

- For the MBS and PBS data, populations are sourced from different data
- For the NHMD, populations and hospitalisations are sourced from different data – PHN hospitalisations are based on SA3 of patient residence, whereas state or territory hospitalisations are based on state or territory of patient residence, including records where the SA3 may not be known.

Post office boxes

For indicators based on MBS and PBS data, six post office box postcodes in major cities were excluded from analyses by SA3, PHN area, remoteness and socioeconomic status. This is because it is difficult to estimate the place of patient residence in these cases. However, these post office box postcodes were included in analyses by state and territory, and at national level.

The following post office box postcodes were excluded:

- 2001 Sydney
- 2124 Parramatta
- 3001 Melbourne
- 4001 Brisbane
- 5001 Adelaide
- 6843 Perth.

Remoteness and socioeconomic analysis

SA3s were grouped into remoteness categories and socioeconomic quintiles based on the ASGS 2016 and the ABS Socio-Economic Indexes for Areas (SEIFA) 2016, respectively. Data by SA3 were assigned to remoteness and socioeconomic groups using this method of grouping. As a result of the method used, national data by remoteness and socioeconomic status in this report may differ slightly from equivalent data calculated using the geographic unit (postcode, SLA or SA2) recorded on the individual records. However, it is expected that the overall patterns would be similar. For more information on SEIFA 2016, see meteor.aihw.gov.au/content/index.phtml/itemId/695778

Derived remoteness categories

The ASGS 2016 remoteness categories divide Australia into broad geographic regions that share common characteristics of remoteness for statistical purposes. These categories divide each state and territory into several regions based on their relative access to services.

The following remoteness categories are used:

- Major cities
- Inner regional
- Outer regional
- Remote
- Very remote.

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The ABS publishes a remoteness category for each SA1, available at abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/1270.0.55.005July%202016?OpenDocument. SA1 population was allocated to a remoteness category using the correspondence SA1 to remoteness area, and remoteness category was allocated to an SA3 using the hierarchy of SA1 to SA3 (meteor.aihw.gov.au/content/index.phtml/itemId/659750). The total population in each remoteness category was calculated for each SA3. The remoteness category with the largest population was selected for the SA3.

Derived socioeconomic quintiles

There are four indexes in SEIFA 2016, and the Index of Relative Socio-Economic Disadvantage (IRSD) 2016 was used for socioeconomic analysis. IRSD 2016 ranks areas in Australia according to relative socioeconomic disadvantage. The index is based on information collected in the 2016 Census on different aspects of disadvantage, such as low income, low educational attainment and high unemployment.

A low score indicates a high proportion of relatively disadvantaged people in an area. For example, an area could have a high proportion of people without educational qualifications or working in low-skill occupations. In contrast, a high score indicates a low proportion of relatively disadvantaged people in an area. It is important to note that the index reflects the overall socioeconomic position of the population in an area, and that the socioeconomic position of individuals in that area may vary.

The ABS publishes an index value for each SA1, available at abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/2033.0.55.0012016?OpenDocument. SA1s are ranked according to their level of disadvantage (index value) and grouped into 10 equally populated categories (deciles), with the lowest category reflecting the 10% of areas with the greatest overall level of disadvantage. For each SA3, the deciles were combined to form quintiles, and the number of SA1s in each quintile was calculated. The quintile with the largest number of SA1s was selected as the quintile for the SA3.

Table 3: Number* of SA3s by combined remoteness categories and socioeconomic quintiles

Remoteness	Socioeconomic quintile				
	1 (Low)	2	3	4	5 (High)
Major cities	29	22	35	41	63
Inner regional	37	23	11		11 [†]
Outer regional	27	10		10 [†]	
Remote and very remote	10		9 [†]		

* Two SA3s (Blue Mountains – South, and Illawarra Catchment Reserve) were not included because the population in these areas was too small for them to be assigned a socioeconomic quintile.

† Numbers are between columns where adjacent socioeconomic quintiles were combined.

Combining remoteness and socioeconomic quintiles

When remoteness categories and socioeconomic quintiles are combined, there are 25 combinations to which SA3s can be assigned. Some categories and quintiles were combined to ensure that each of the final 14 combinations contained at least six SA3s for comparison purposes (Table 3).

In this report, the SA3s in the combined 'remote' and 'very remote' areas are labelled 'remote'. The SA3s with the most overall disadvantage are labelled 'low SES (1)', and the SA3s with the least overall disadvantage are labelled 'high SES (5)'. Where socioeconomic quintiles are combined (for example, quintiles 4 and 5), the SA3s with the least overall disadvantage are labelled 'higher SES' (for example, 4+).

Suppression protocol

Rates based on small numbers of events and/or very small populations are more susceptible to random fluctuations and may not provide a reliable representation of activity in that area. For reliability reasons, areas with volatile rates were suppressed (Table 4). Data that could lead to the identification of

individual patients, providers or prescribers were also suppressed. If applicable, consequential suppression was applied to manage confidentiality.

Suppressed SA3s were marked as not published and coloured grey in maps. Data from these suppressions were included in analyses for larger geographic areas – for example, analysis by state and territory, remoteness and socioeconomic status.

Sensitivity analysis

Most data were age and sex standardised. Several SA3s in the Northern Territory were consistently suppressed because the population in one or more age and sex groups for standardisation was less than 30. The Northern Territory requested that consideration be given to relaxing this suppression rule. The AIHW developed a sensitivity analysis to investigate the volatility of the rates for the affected SA3s. For consistency, the sensitivity analysis was applied to all affected SA3s, not just those in the Northern Territory. The procedure to conduct the sensitivity analysis is summarised in Box 1.

Table 4: Rules for suppression of an area of patient residence

Data source	Numerator	Denominator	Denominator for age and sex groups
MBS data	<ul style="list-style-type: none"> Fewer than 20 Fewer than 6 services* Fewer than 6 patients* Fewer than 6 providers* One provider provided more than 85% of services* Two providers provided more than 90% of services* 	<ul style="list-style-type: none"> Fewer than 200 (medication management reviews) Fewer than 1,000 (otherwise) 	Fewer than 30
NHMD [†]	<ul style="list-style-type: none"> Fewer than 20 (single year of data) Fewer than 10 (3 years of data) 	Fewer than 1,000	Fewer than 30
NPDC	Fewer than 5*	Fewer than 100	Not applicable; data are not standardised
PBS data	Fewer than 20	Fewer than 200	Fewer than 30

* Suppression rules relate to protecting confidentiality. Suppression rules not marked with an asterisk relate to volatility.

† Additional suppression rules may apply if required by state or territory data custodians.

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Box 1:

Summary of sensitivity analysis

For each SA3 that was suppressed because of a small (below-threshold) denominator for one or more age and sex groups (affected SA3), the following analysis was undertaken:

1. The numerator was increased by 1 in each group with a small denominator, to generate a simulated rate
2. All rates, including the simulated rates, were rounded to whole numbers
3. All publishable rates for non-affected SA3s and the simulated rates for affected SA3s were ranked from lowest to highest and split into 10 categories (deciles)
4. All publishable rates for non-affected SA3s and the actual rates for affected SA3s were ranked from lowest to highest and split into deciles
5. The decile of the simulated rate (step 3) was compared with the decile of the actual rate (step 4)
6. Steps 1 to 5 were repeated with a decrease in the relevant numerators by 1. Negative numerators were reset to zero before generating a simulated rate.

All affected SA3s were included in the simulation simultaneously, to generate maximum differences between the deciles calculated using the simulated rates and the deciles calculated using the actual rates (the most extreme scenario). This was a conservative method compared with simulation conducted for one affected SA3 at a time.

The volatility of the actual rate for an affected SA3 was not considered to have a material impact on its decile if either of the following conditions was met in each simulation (increasing or decreasing the relevant numerators by 1):

- There was no difference in the decile for the simulated and actual rates; for example, both simulated and actual rates were in the lowest decile
- There was a difference of one decile, and the simulated rate was not on the cusp of the next decile (the decile that would make the difference become two deciles); for example, the actual rate was in the lowest decile and the simulated rate was in the second decile, and not on the cusp of the third decile.

Where the decile for an affected SA3 was considered to be robust against the volatility of the rate, the rate was published with caution, although it was considered potentially more volatile than other published rates. The rates with caution were not included in the calculation of the national magnitude of variation, and were presented with an asterisk (tables), or as squares or red rectangles (graphs) and dotted areas (maps).

Presentation of rates in Australia maps, capital city area maps and time-series graphs

Rates for SA3s were rounded to whole numbers. Rounded rates were ranked from lowest to highest and split into 10 categories (deciles). The deciles are displayed using various shades of colour, where darker colours represent higher rates and lighter colours represent lower rates. Each decile may not have the same number of SA3s if the number of publishable SA3s is not a multiple of 10. Furthermore, if there was more than one SA3 with the same rate at the boundary of a decile, SA3s with the same rate were assigned to the same decile.

Identification of areas with the highest and lowest rates

SA3s with the highest and lowest rates have been identified for all indicators with data presented by SA3. Having regard to the overall distribution of the rates, selection of SA3s was made from the histogram column by column, with the aim of identifying at least the 10 highest and lowest rate areas for SA3s. The selection of SA3s was also dependent on the width of the column in the histogram, and the choice of what width to use was somewhat arbitrary. For some indicators, fewer than 10 SA3s are listed because inclusion of the next column of the histogram would result in a list of SA3s too long for publication.

Identification of areas with consistently high and low rates

SA3s with consistently high or consistently low rates have been identified. Consistently high or consistently low is defined as those SA3s that fall in the top 10% or bottom 10% of all SA3s for all reporting years.

Glossary

Aboriginal Community Controlled Health Service	A primary healthcare service initiated and operated by the local Aboriginal community to deliver holistic, comprehensive and culturally appropriate health care to the community that controls it.
age and sex standardisation	The removal of the influence of age and sex when comparing rates between populations with different age and sex structures. The current standard population is the Australian estimated resident population as at 30 June 2001. Rates in the Atlas are expressed per 100,000 people.
best possible medication history	A list of all the medicines a patient is using at presentation. The list includes the name, dose, route and frequency of the medicine, and is documented on a specific form or in a specific place. All prescribed, over-the-counter and complementary medicines should be included. This history is obtained by a trained clinician interviewing the patient (and/or their carer) and is confirmed, where appropriate, by using other sources of medicines information.
carer	A person who provides unpaid care and support to a family member or friend who has a disability, chronic condition, terminal illness or general frailty. Includes parents and guardians caring for children.
Clinical Care Standard	A small number of quality statements that describe the care patients should be offered by health professionals and health services for a specific clinical condition or defined clinical pathway in line with current best evidence. Clinical Care Standards play an important role in delivering appropriate care and reducing unwarranted variation because they identify and define the care people should expect to be offered or receive, regardless of where they are treated in Australia. Further information is available at safetyandquality.gov.au/our-work/clinical-care-standards
clinician	A healthcare provider trained as a health professional. Includes registered and non-registered practitioners, and teams of health professionals who spend most of their time providing direct clinical care.
consumer	A person who has used, or may potentially use, health services, or is a carer for a patient using health services.
data linkage	Used synonymously with 'data integration' and 'record matching', data linking or linkage refers to the bringing together of information from more than one source that relates to the same individual or institution.

Glossary

defined daily dose (DDD)	A measurement unit created by the World Health Organization. The DDD is defined as the assumed average maintenance dose per day for a medicine used for its main indication in adults, and does not necessarily correspond to the recommended or prescribed daily dose. Therapeutic doses for individual patients and patient groups will often differ from the DDD because they will be based on individual characteristics such as age, weight, ethnic differences, type and severity of disease, and pharmacokinetic considerations. Use of DDDs allows comparisons of medicine dispensing independent of differences in price, preparation and quality per prescription. Expressing medicine dispensing in DDDs per thousand people per day (DDDs/1,000/day) allows the aggregation of data for medicines that have differing daily doses.
episode of care	A period of care in a hospital. This can be a total hospital stay (from admission to discharge, transfer or death), or a portion of a hospital stay beginning or ending in a change in type of care (for example, from acute care to rehabilitation).
health literacy	The Commission separates health literacy into two components: individual health literacy and the health literacy environment. Individual health literacy is the skills, knowledge, motivation and capacity of a person to access, understand, appraise and apply information to make effective decisions about health and health care, and take appropriate action. The health literacy environment is the infrastructure, policies, processes, materials, people and relationships that make up the health system, and affect the way in which people access, understand, appraise and apply health-related information and services. It reflects the demands and complexity of the health system and society at large.
HealthPathways	An online manual used by clinicians to help make assessment, management and specialist request decisions. Rather than being traditional guidelines, each pathway is an agreement between primary and specialist services on how patients with particular conditions will be managed in the local context.
health services	Services delivering health care, such as general practices, community health centres, medical specialists, nursing services, allied health services, public and private hospitals (including outpatient services), day procedure services, Aboriginal Community Controlled Health Services, community nursing and Hospital in the Home.
hospital	All public and private acute and psychiatric hospitals, freestanding day hospital facilities, and alcohol and drug treatment centres. Includes hospitals specialising in dentistry, ophthalmology, and other acute medical or surgical care. May also include hospitals run by the Australian Defence Force and correctional authorities, and those in Australia's offshore territories. Excludes outpatient clinics and emergency departments.
hospital admission	The administrative process of becoming a patient in a hospital.
Local Hospital Network	States and territories each have different descriptions of the governance structure providing health services. These include local health networks, Local Hospital Networks, local health districts, boards and area health services. Where the term 'Local Hospital Network' is used, it refers to the description of any of these terms as relevant to states and territories (see meteor.aihw.gov.au/content/index.phtml/itemId/491016).
Medicare Benefits Schedule (MBS)	A listing of the Medicare services subsidised by the Australian Government.
medicine	A chemical substance given with the intention of preventing, curing, controlling or alleviating disease, or otherwise improving the physical or mental welfare of people. Includes prescription, non-prescription and complementary medicines, regardless of administration route (for example, oral, intravenous, intra-articular, transdermal or intra-uterine).
My Health Record	A secure online summary of an individual's health information. Individuals can control what goes into it, and who is allowed to access it. They can choose to share their health information with doctors, hospitals and other healthcare providers.

National Hospital Morbidity Database (NHMD)	The AIHW NHMD is a compilation of episode-level records from admitted patient morbidity data collection systems in Australian hospitals. The database collects information about care provided to admitted patients in all public and private acute and psychiatric hospitals, freestanding day hospital facilities, and alcohol and drug treatment centres in Australia. Hospitals operated by the Australian Defence Force and correctional authorities, and hospitals in Australia's offshore territories are not in scope but may be included. More information is available in the Technical Supplement.
National Perinatal Data Collection (NPDC)	The AIHW NPDC is a national collection of data on pregnancy and childbirth. The data are based on births reported to the perinatal data collection in each state and territory in Australia. A standard de-identified extract is provided to the AIHW each year to form the NPDC. More information is available in the Technical Supplement.
National Safety and Quality Health Service Standards (NSQHS)	Evidence-based standards that address the major safety and quality issues that affect a large number of patients in areas where there is variation and it is known that practices can be improved. The primary aims of the NSQHS Standards are to protect the public from harm and to improve the quality of health care. They were developed by the Commission in collaboration with states and territories, technical experts, clinicians, patients and carers, and a range of other stakeholders. The NSQHS Standards (first edition) were released in 2011, and the second edition was released in 2017.
Pharmaceutical Benefits Scheme (PBS)	An Australian Government program that subsidises medicines.
population	<p>The Atlas uses population estimates as at 31 December of a reporting year for indicators based on NHMD data. The estimates are calculated as the average of the Australian Bureau of Statistics (ABS) estimated resident population (ERP) at 30 June before and after the relevant December. The ERPs for 30 June 2016 and previous time points are calculated by the ABS using a combination of census counts and other information, such as births and deaths. The ERPs for time points after 30 June 2016 are calculated by the ABS using the 30 June 2016 ERP and other information, such as births and deaths.</p> <p>The population estimates for Aboriginal and Torres Strait Islander people for 30 June 2016 were based on the 2016 Census and Census Post Enumeration Survey. Aboriginal and Torres Strait Islander population estimates for time points prior to 30 June 2016 were calculated by the ABS by applying assumed levels of mortality to the base 30 June 2016 Aboriginal and Torres Strait Islander population. Aboriginal and Torres Strait Islander projected populations for the period 2017–2031 were calculated by applying assumed levels of fertility, mortality and migration to the base 30 June 2016 Aboriginal and Torres Strait Islander population.</p> <p>The Atlas uses population estimates as at 30 June of a reporting year for indicators based on MBS and PBS data. The estimates are based on the ABS estimated resident population.</p>
primary care	The first level of care or entry point to the healthcare system, such as general practice clinics, community health practice (for example, clinics, outreach or home visiting services), ambulance services, pharmacists or services for specific populations (for example, Aboriginal or refugee health services).
Primary Health Network	Primary Health Networks connect health services across local communities so that patients, particularly those needing coordinated care, have the best access to a range of healthcare providers, including practitioners, community health services and hospitals. They work directly with general practitioners, other primary care providers, secondary care providers and hospitals. Primary Health Networks began to operate on 1 July 2015 to replace Medicare Locals.

Glossary

principal diagnosis	The diagnosis established after study to be chiefly responsible for occasioning an episode of admitted patient care, an episode of residential care or an attendance at the healthcare establishment, as represented by a code.
remoteness categories	Categories of geographical remoteness are based on the ABS Australian Statistical Geography Standard (ASGS) 2016. The ABS ASGS 2016 remoteness categories divide Australia into broad geographic regions that share common characteristics of remoteness for statistical purposes. More information is available in the Technical Supplement.
same-day hospitalisation	Occurs when a patient is admitted and separated from hospital on the same date.
secondary care	Health care for patients referred from primary health care (for example, by general practitioners). Includes care provided by hospitals and medical specialists.
separation	An episode of admitted patient care, which can be a total hospital stay (from admission to discharge, transfer or death), or a portion of a hospital stay beginning or ending in a change in type of care (for example, from acute care to rehabilitation). In the Atlas, a separation is referred to as a hospitalisation.
socioeconomic disadvantage	<p>Local areas are grouped into socioeconomic quintiles based on the 2016 Index of Relative Socio-Economic Disadvantage (IRSD) at the Statistical Area Level 1 (SA1) level. The IRSD is derived from census variables relating to disadvantage, such as low income, low educational attainment, unemployment and dwellings without motor vehicles.</p> <p>Information from the ABS Socio-Economic Indexes for Areas (SEIFA) and the IRSD was used to calculate the socioeconomic status at the SA3 level in the Atlas. SEIFA includes four summary measures created from 2016 Census information.</p> <p>The indexes can be used to explore different aspects of socioeconomic conditions by geographic areas. For each index, every geographic area in Australia is given a SEIFA number that shows how disadvantaged that area is compared with other areas. Each index summarises a different aspect of the socioeconomic conditions of people living in an area. For example, they provide more general measures of socioeconomic status than are given by measuring income or unemployment alone.</p>
Statistical Area Level 3 (SA3)	<p>A geographical area built from a whole SA2 and designed for the output of regional data, including 2016 Census data. As defined in the ABS Australian Statistical Geography Standard 2016, SA3 geography includes the territories of Jervis Bay, Cocos (Keeling) Islands, Christmas Island and Norfolk Island. The aim of SA3s is to create a standard framework for analysing ABS data at the regional level through clustering groups of SA2s that have similar regional characteristics.</p> <p>There are 340 spatial SA3s, covering the whole of Australia without gaps or overlaps. SA3s usually have a population of between 30,000 and 130,000 people. At 30 June 2016, some SA3s had populations below 30,000 and above 130,000. In the major cities, SA3s represent areas serviced by major transport and commercial hubs. They often closely align with large urban local government areas (for example, Gladstone, Geelong). In regional areas, they represent areas serviced by cities with populations of more than 20,000 people, or clusters of related suburbs around urban commercial and transport hubs within the major urban areas. In outer regional and remote areas, SA3s represent areas that are widely recognised as having a distinct identity, and similar social and economic characteristics.</p> <p>A small number of SA3s are termed 'zero SA3s'. These have small effective design populations and represent very large national parks close to the outskirts of major cities.</p>
telehealth	Health services delivered using information and communication technologies, such as videoconferencing.

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COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-46

This is the Annexure marked "DD-46" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.



**Prioritised list
of clinical domains
for clinical quality
registry development**

Final report

November 2016

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Executive summary

This is the report of a project undertaken by the Australian Commission on Safety and Quality in Health Care (the Commission) to implement and document a process, applying the prioritisation criteria and other elements (prioritisation criteria) in the *Framework for Australian clinical quality registries**, to create a prioritised list of clinical domains for potential development of national clinical quality registries.

The *Framework for Australian clinical quality registries*, including the prioritisation criteria, was endorsed by the Australian Health Ministers' Advisory Council in September 2014. The prioritisation criteria address both clinical relevance and feasibility.

Clinical quality registries are a specific type of clinical registry. They collect longitudinal health outcome data for an eligible population and generate risk-adjusted reports on appropriateness and effectiveness of health care. The information is used to inform quality improvement. Therefore, deep engagement of all the clinicians who deliver care to the defined patient group is critical to the success of clinical quality registries. This usually requires established organisational and/or professional linkages between the relevant clinicians.

The project terms of reference required the identification of 10 to 20 clinical domains for potential national development. An initial analysis using data from the National Hospital Cost Data Collection was conducted to identify a manageable list of diseases, conditions and interventions for further analysis. The NHCDC includes mainly hospital-based cost data. Because of concerns about its adequacy for the purpose of short-listing, the approach was supplemented with an analysis of Australian Institute of Health and Welfare Burden of Disease data[†], and a survey of clinical, consumer and jurisdictional stakeholders. The objective was to identify diseases, conditions and interventions that are high cost for health service provision, represent a high BOD in the general population and/or are considered a priority for system improvement by Governments and all stakeholders.

A short-list of clinical domains was developed by grouping the diseases, conditions and interventions that were assessed as suitable for potential registry development. Short-listed diseases and interventions were assessed against a threshold criteria of: evidence-based sequence of care; the ability to identify and address variation from the evidence-based sequence of care; suitability of the domain to a clinical quality registry data collection and suitability of the clinical domain to meet the information requirements of a national registry.

The final priority list of clinical domains as set out in Figure 1 is not exhaustive. While the prioritised clinical domains could be considered by funding bodies, funders should also consider the key components of the threshold criteria, and consistency with the *Framework for Australian clinical quality registries* to independently assess the suitability of supporting registries in other clinical domains.

The ranking of the final priority list of clinical domains should be viewed as preliminary, as the comprehensive data required to objectively analyse the relative performance of all short-listed clinical domains against all prioritisation criteria was not available. For example, it was difficult to find comprehensive data to assess the priority of diseases, conditions and interventions that had significant components of care in the community.

The approach used combined the available data with collective judgement of experts, an approach that is often used where evidence or data is limited. Ultimately, it is likely that a prioritisation process of this nature will continue to rely significantly on informed but subjective assessment of the potential benefits of development by clinicians, administrators and other stakeholders.

* Australian Commission on Safety and Quality in Health Care, [Framework for Australian clinical quality registries](#). Sydney. ACSQHC, March 2014.

† AIHW 2016. Australian Burden of Disease Study: Impact and causes of illness and death in Australia 2011. Australian Burden of Disease Study series no. 3. BOD 4. Canberra: AIHW.

Figure 1: Prioritised list of clinical domains*

SCORE	DOMAINS	SUMMARY
HIGHEST		
3	Ischaemic heart disease	Serious consequences of poor quality care, very high burden of disease and cost to the health system. Strong clinical support registries in this domain. Current national registries and potential to expand into non-surgical interventions in the future.
	Musculo-skeletal disorders	Serious consequences of poor quality care, very high cost and high burden of disease. A number of national registries in hip and knee procedures. Potential to expand to registries for non-surgical interventions in the future.
2.75	Major trauma	Serious consequences of poor quality care, very high burden of disease and high cost to the system. Established leadership group and national registry with incomplete capture as well as jurisdictional registries.
	Adult critical care	Serious consequences of poor quality care, very high cost to the health system and estimated high burden of disease. Very strong clinical support and leadership. National registry with close to complete coverage.
	High burden cancers	Serious consequences of poor quality care, very high cost and high burden of disease. Current national population based registers and a number of jurisdictional cancer specific registries. National registry for prostate cancer.
2.5	Stroke	Serious consequences of poor quality care, high burden of disease and moderately high cost to the system. Strong leadership and a national registry.
	Renal disease	Serious consequences of poor quality care, very high cost and moderately high burden of disease. Established leadership group for dialysis and transplantation and expand to registries in this domain.
2.25	Neonatal critical care	Serious consequences of poor quality care, high burden of disease and moderately high cost. Existing leadership group and national registry with substantial capture.
	Mental health	Serious consequences of poor quality care, very high burden of disease and very high cost. Clinical advocacy for registries but no identified leadership group or current registries. Initial registries may focus on sub-groups of patients where the entire population can be captured.
1.75	Maternity	Serious consequences of poor quality care, moderate burden of disease and high cost. Current data collections by jurisdictions and through administrative data are substantial which could be drawn on to develop clinical quality registries.
1.25	Dementia	Serious consequences of poor quality care, high burden of disease and moderate acute care costs. No current registries. Clinical advocacy for registry development in this area. Scoping study on potential to develop registry in this domain is underway.
1	Major burns	Serious consequences of poor quality care, moderate burden of disease and moderate cost. Established leadership group and national registry with incomplete patient capture.
	Diabetes	Serious consequences of poor quality care, high burden of disease and moderate cost. Clinical advocacy for the development of clinical quality registries.
LOWEST		

* Table with larger text provided at Attachment 7.

Background

Clinical quality registries

Clinical registries gather information about patients' diagnoses and/or interventions. Clinical quality registries are a sub-set of this larger group. Clinical quality registries are organisations that systematically monitor the quality (appropriateness and effectiveness) of health care, within specific clinical domains, by routinely collecting, analysing and reporting health-related information.*

The information collected from clinical quality registries is used to identify benchmarks, significant outcome variance, and inform improvements in healthcare quality (see Figure 2). The defining feature of clinical quality registries is the provision of feedback to clinicians on their clinical outcomes.

The purpose of clinical quality registries in the Australian context is:

- To inform improvements in the quality of health care by routinely collecting, analysing and reporting on information about the care provided to patients and how well that care is being provided
- To provide a mechanism to feedback specific information to clinicians and providers about
 - the appropriateness of health care (whether the care delivered to patients is based on the best available evidence)
 - the effectiveness of health care (measured by the degree to which the care benefits the patient).†

This information is used to inform improvements in the healthcare system.

Further, the aims of clinical quality registries are:

- To collect longitudinal health outcome data for the entire eligible population of the clinical domain
- To generate risk-adjusted reports on the appropriateness and effectiveness of health care.

If a clinical quality registry is to support continuous quality improvement, it must provide benchmarked data to the clinicians who care for the patients in the registry population and sustain engagement of those clinicians in analysing and responding to their performance data. Within the data governance framework, reports may also be provided to jurisdictions, healthcare providers, funders, clinical colleges and researchers, to identify significant variance and to benchmark nationally and internationally. Capture of data relating to an entire patient population usually requires deep engagement of the multidisciplinary group of clinicians who care for that patient population. If a population of clinicians is large, professionally diverse and does not have strong organisational governance arrangements (e.g. via professional associations or employing organisations) it is not usually possible to establish an effective clinical quality registry. Other quality improvement methodologies such as audit may be useful in such circumstances.

* Australian Commission on Safety and Quality in Health Care, [Framework for Australian clinical quality registries](#). Sydney. ACSQHC, March 2014.

† Australian Commission on Safety and Quality in Health Care. [What are clinical quality registries?](#) Accessed on 9 September 2016.

Figure 2: Improvement cycle for clinical quality registries



The Framework for Australian clinical quality registries and prioritisation criteria

The Commission released the *Framework for Australian clinical quality registries* in September 2014 after endorsement by the Australian Health Ministers' Advisory Council. The *Framework for Australian clinical quality registries* specifies national arrangements under which peak clinical groups and healthcare organisations can partner with governments to monitor and report on the appropriateness and effectiveness of health care* through clinical quality registries. The *Framework for Australian clinical quality registries* comprises the following five key elements:

1. Strategic principles
2. National health information arrangements
3. National infrastructure model
4. Principles, guidelines and standards
5. Prioritisation criteria.†

Clinical quality registry prioritisation criteria are listed in Table 1. More information about the *Framework for Australian clinical quality registries* elements is included at Attachment 1. A detailed description of the application of each prioritisation criterion is provided later in this report.

Categorisation of the prioritisation criteria

The *Framework for Australian clinical quality registries* prioritisation criteria generally fall into two groups:

1. Some criteria are necessary for the successful functioning of a clinical quality registry – these were designated **threshold criteria**. These criteria were assessed with the overarching principle that the core purpose of a clinical quality registry is to improve safety and quality of care by routinely collecting, analysing and feeding back health-related information
2. Others were identified as more appropriate to use to rank the priority of clinical domains – these were designated **prioritisation criteria**. A summary of the application of the criteria as either threshold or prioritisation is provided at Table 1.

To avoid limiting the prioritisation process to domains where registries were already established, the threshold criteria were interpreted as the potential to meet the requirements. For example prioritisation Criterion 2.4 'The information requirements for a successful clinical quality registry are in place' is interpreted as 'The information requirements for a successful clinical quality registry are in place or **can be established**'. Some criteria were not suitable for assessing potential registry domains (for example, the existence of governance arrangements or resources) and were therefore not applied.

* Australian Commission on Safety and Quality in Health Care. Corporate Plan. 2015–2019. Page 10.

† Australian Commission on Safety and Quality in Health Care, [Framework for Australian clinical quality registries](#). Sydney. ACSQHC, March 2014.

Table 1: Categorisation of the prioritisation criteria

Criteria	Type	Assessment of the criteria
1.1 There are serious consequences for the patient associated with poor quality care for the clinical condition or with poor quality of the device or procedure	Prioritisation	<ul style="list-style-type: none">■ Areas of medicine where there are serious consequences for the patient if poor quality care is delivered should be prioritised for registry development as these have the greatest impacts on patient morbidity, mortality and quality of life. Sub-optimal outcomes may also result in repeat hospitalisations and increased use of healthcare resources.■ This criterion was used to rank domains in terms of priority.
1.2 An evidence-based, well executed sequence of care improves patient outcomes for the clinical condition	Threshold	<ul style="list-style-type: none">■ The core purpose of clinical quality registries is to identify and address unwarranted variation from defined sequences of care. Where no evidence-based sequence of care has been defined, registries will be unable to collect longitudinal health outcome data for the eligible patient population and generate risk-adjusted reports on the appropriateness and effectiveness of health care. In some cases, the sequence of care for a clinical condition is articulated in clinical practice guidelines. Other clinical conditions may not have clinical practice guidelines that describe the appropriate sequence of care; however a well-executed sequence of care has been shown to influence patient outcomes.■ The importance of this criterion to the utility of a clinical quality registry was confirmed by a number of workshop participants. Where no evidence of a well-executed sequence of care was found in the literature or the existence of a functional clinical quality registry (national or international) shortlisted domains were excluded from further prioritisation. Domains that do not meet this criterion may benefit from research, epidemiological or other types of registries to improve understanding of the incidence and illness trajectory of clinical conditions and develop an evidence-based sequence of care.
1.3 Unwarranted variation from this sequence of care can be identified and addressed	Threshold	<ul style="list-style-type: none">■ Some clinical conditions may have a well-defined sequence of care, but unwanted variation from this sequence of care can be difficult to identify and/or address. This can occur where a condition has a long illness trajectory; variation in presentation; patient preference affecting treatment decisions or a lack of uniformity in outcomes. Similarly, where the sequence of care for a condition involves multiple service providers across multiple settings and over a long duration, addressing unwanted variations from the sequence of care is difficult.■ The importance of this criterion to the utility of a clinical quality registry was confirmed by a number of workshop participants. Where shortlisted diseases, conditions and interventions were identified as unable to meet this criterion they were not considered further in the prioritisation process.

Criteria	Type	Assessment of the criteria
<p>1.4 The condition, device or procedure of interest is associated with a high cost to the health system</p>	<p>Prioritisation</p>	<ul style="list-style-type: none"> ■ In order to ensure care is both high quality and efficient, providers must identify and promote treatment that yields better, more cost-effective care. Conditions associated with a high cost to the health system are a priority for registry development because these registries provide a potential information source for identifying and responding to inappropriate care or inefficient use of limited resources. ■ All domains have some cost to the health system and this criterion was therefore assessed to rank the domains in terms of priority.
<p>2.1 The clinical condition is suited to clinical quality registry data collection:</p> <p>2.1.1 The relevant clinical population can be captured</p> <p>2.1.2 The clinical condition or event is able to be systematically recognised</p>	<p>Threshold</p>	<ul style="list-style-type: none"> ■ In order to be feasible, a clinical quality registry needs to have the potential to capture the relevant clinical population. Capture of data about all or the substantial majority of the population of patients included in a registry domain avoids selection bias and ensures registry outputs validly reflect quality of care. A clinical domain may define a sub-set of a larger clinical population (for example, all patients with a specified condition who are treated as inpatients), but once a registry's focus is defined it is necessary to capture the entire population within that focus for a clinical quality registry to operate effectively. ■ For a registry to be feasible the clinical condition needs to be systematically recognised. Monitoring diseases that cannot be systematically recognised at a defined point in their clinical history may generate misleading data as a result of subjective definitions of conditions or diseases and ill-defined staging criteria for disease. ■ Diseases, conditions and interventions that were not systematically recognised or where it was not possible at this time to capture the relevant clinical population were not included in further prioritisation. Improvements in diagnostics and in data collection capabilities may lead to these diseases, conditions and interventions becoming suitable for clinical quality registry development in the future.

Criteria	Type	Assessment of the criteria
2.2 There is clinician support for the clinical quality registry (or the proposed clinical quality registry)	Prioritisation	<ul style="list-style-type: none"> ■ Clinician support for the registry (or proposed registry) is essential for clinician participation in data collection and for engaging clinicians in quality improvement activities that result from data collection. Where clinicians have a sense of ownership of the registry, their supply of information, investigation of the results of data analysis and application of findings is likely to be greater. ■ It has been assumed that a committed and skilled clinical leadership group could be identified and/or developed for all clinical quality registries where there is sufficient need. This criterion was therefore not considered a threshold criterion but was used later in the prioritisation process.
2.3 The governance requirements for a successful clinical quality registry are in place	Not applied	<ul style="list-style-type: none"> ■ Registry governance must include systems and processes to protect and share data, address outliers or unexplained variance, and have a mechanism to ensure that quality of care issues are effectively addressed and escalated appropriately. The <i>Framework for Australian clinical quality registries</i> requires formal governance structures to oversee resource application, provide focus, optimise output and ensure effectiveness and accountability. ■ A number of participants highlighted the contribution of good governance to the success of clinical quality registries, and noted that the Commission is addressing governance requirements in its overall registry policy work ■ This criterion was not applied to the prioritisation process as it has been assumed that best practice policies and procedures could be implemented in all circumstances if there was clinical support for the registry. Evidence of these arrangements should be included in any assessment of the appropriateness of proposed clinical quality registries.

Criteria	Type	Assessment of the criteria
<p>2.4 The information requirements for a successful clinical quality registry are in place (or can be established):</p> <p>2.4.1 An entire population with a chronic condition or disease, or who have undergone an acute event, can be captured</p> <p>2.4.2 There is a suitable data source</p> <p>2.4.3 Clinically meaningful performance indicators can be defined</p> <p>2.4.4 There is potential for reliable risk adjustment</p>	Threshold	<ul style="list-style-type: none"> ■ As noted under Criterion 2.1, if it is not possible to identify and capture data from the relevant clinical population, a clinical quality registry will not achieve its objectives, because of inevitable selection bias ■ Complete collection of data is necessary for indicators to be adjusted for differences in casemix and so they can be used reliably to benchmark and improve performance across institutions. Collection of these data relies on clinician input and engagement of the group of clinicians that cares for the relevant patient cohort is necessary. Prioritisation Criteria 2.4.1 and 2.4.2 (similar to 2.1.1) are unlikely to be met if all the relevant clinicians are not bound together professionally and/or organisationally. ■ Clinicians who manage patients with the relevant condition or event generally need to be strongly organised within a clinical college or society and/or work within committed, participating healthcare organisations to meet these prioritisation criteria. If relevant clinical groups are large and dispersed and do not have strong and pervasive professional and/or organisational linkages, the requisite widespread commitment to complete data capture is not usually achievable. ■ Application of these prioritisation criteria led to the exclusion of a number of potential clinical domains, particularly those in which there is a large, geographically- and organisationally-dispersed non-hospital population of patients and/or clinicians ■ Improvements in data collection capabilities or professional and organisational links may lead to these domains becoming suitable for clinical quality registry development in the future.
<p>2.5 There are sufficient resources available for the sustainable operation of the clinical quality registry</p>	Not applied	<ul style="list-style-type: none"> ■ A key element in determining the feasibility of developing a new registry or maintaining current registries relates to funding. While the availability of sufficient resources is essential for ongoing clinical quality registry operations, it was assumed that this prioritisation criterion can be addressed for all potential clinical domains, if a decision was made to prioritise them. Therefore, this criterion was not considered in the prioritisation process.

The project

The project aimed to implement and document a process, applying the prioritisation criteria and other elements in the *Framework for Australian clinical quality registries*, to create a prioritised list of clinical domains for potential development of national clinical quality registries.

Clayton Utz was engaged for the initial prioritisation of the list. This process involved identifying diseases, conditions and interventions that have a high burden on the Australian healthcare system, through an indicative cost analysis using data from the NHCDC. An environment scan of the identified high cost diseases, conditions and interventions was conducted to confirm the existence of evidence-based clinical guideline(s) and assess the diseases, conditions and interventions against the prioritisation criteria provided in the *Framework for Australian clinical quality registries*.

Four consultation workshops were held for this project. Workshop participants included stakeholders with backgrounds in health care provision, health care management, consumer advocacy, government, registry science, professional leadership and peak body representation. Participants were provided with

a discussion document prior to the workshops, which described the background to the project, an initial non-prioritised list and issues for consideration.

Following the workshops, the project was expanded to include supplementation of the initial short-list of diseases, conditions and interventions identified through the NHCDC analysis with:

- An analysis of AIHW BOD data*
- An online survey of a targeted group of clinical, government and consumer stakeholders to determine their priorities for clinical quality registry development.

Once the short-list of diseases, conditions and interventions was identified, threshold criteria were applied to remove areas that were not suitable for clinical quality registry development. The Commission, with clinical input, conducted an analysis to group the remaining diseases, conditions and interventions into appropriate clinical domains. The remaining prioritisation criteria were then applied to rank the domains and develop the final prioritised list.

The prioritisation process

A flow chart of the prioritisation process is presented in Figure 3 and is followed by a detailed description of the key steps in the prioritisation process. Key steps undertaken were:

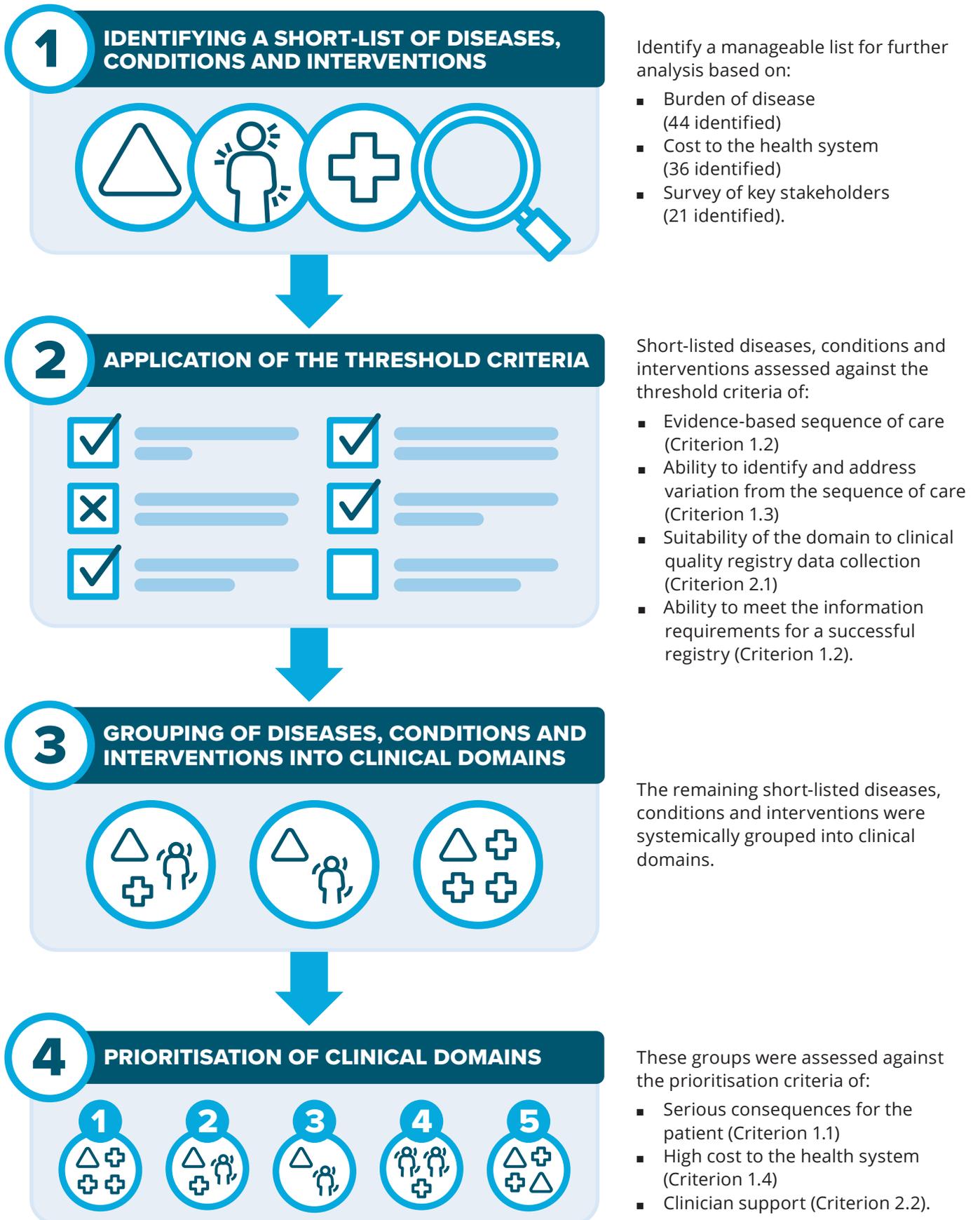
1. Shortlisting to identify a manageable list of diseases, conditions and interventions based on cost to the health system, BOD and stakeholder priority
2. Application of the threshold criteria to remove diseases, conditions and interventions that are not suitable for registry development
3. Grouping of diseases, conditions and interventions into clinical domains
4. Prioritisation of clinical domains against the remaining prioritisation criteria.

The process combines the available data with collective judgement of experts to develop a statement regarding the priorities for clinical quality registry development. Similar approaches are often used where evidence or data is limited, for example RAND/UCLA appropriateness method[†] and other Delphi based approaches.

* AIHW 2016. Australian Burden of Disease Study: Impact and causes of illness and death in Australia 2011. Australian Burden of Disease Study series no. 3. BOD 4. Canberra: AIHW.

† Fitch K, Bernstein SJ, Aguilar MD, Burnand B, LaCalle JR, Lázaro P, van het Loo M, McDonnell J, Vader JP, Kahan JP. RAND/UCLA Appropriateness Method User's Manual.

Figure 3: Prioritisation process



1. Identifying a short-list of diseases, conditions and interventions

Cost analysis

The first step in developing a manageable list of diseases, conditions and interventions for further consideration was to conduct an indicative cost analysis using data from the NHCDC to identify diseases, conditions or interventions that have a high burden on the Australian healthcare system.

Rationale

The NHCDC was established to collate information in order to determine cost weights and relativities among (mainly) acute hospital products. These elements were then used as inputs into cost and funding models in both the public and private sectors and as a tool to compare cost efficiency. The NHCDC is now described as 'the best available national source of benchmark costs'.* However, it has limitations as follows:

- Not all hospitals are represented nor are all separations captured, although this is improving. Currently, around 92% of admitted acute public hospital activity and 60% of overnight private hospital separations are captured in the NHCDC
- Private hospital costs do not include the cost of Medicare-rebated interventions for medical services, pathology and imaging
- It has a focus on acute inpatient costs and has limited data on, for example, the costs of
 - care provided in any community setting, including pre-admission and referral costs intrinsic to an acute intervention
 - community-based care for people with serious chronic conditions
 - post-discharge care directly relevant to an acute inpatient intervention such as rehabilitation costs, which can be substantial.

There was, overall, acknowledgement by workshop participants that cost burden is an important criterion for identifying priority clinical domains for potential national investment and development. However, some workshop participants questioned the use of the NHCDC as a 'short-listing' tool, for the following reasons:

- The NHCDC categorises conditions by DRG and does not capture potentially relevant non-DRG-based clinical domains
- The NHCDC does not capture conditions that result in a high cost of care in the community, but are not associated with high hospital-based care costs
- Various examples were provided of clinical domains relevant to diseases or conditions that affect a small proportion of the Australian population and therefore are responsible for a correspondingly small proportion of overall health system costs, but for which a clinical quality registry may lead to significant quality benefits for individual patients.

A number of workshop participants also made suggestions about how a cost analysis as a principal tool for short-listing could be enhanced, including suggestions that:

- The additional cost of poor quality care is a more relevant metric than the total cost of care, for prioritisation purposes
- Rather than establishing an initial prioritised list of clinical domains based on acute hospital costs (i.e. the NHCDC) alone, the initial prioritisation process should systematically incorporate total costs (hospital and community) for all potential domains
- Various data sets could be interrogated to develop a more complete picture of system-wide costs, including the Medicare and Pharmaceutical Benefit Scheme collections, jurisdictional collections and health insurer collections
- Disease or condition-based costs could be determined from specific reviews of the literature for each potential domain.

* Independent Hospital Pricing Authority. [Strategic review of the national hospital cost data collection](#). Sydney. IHPA 2013.

The limitations of the NHDC data analysis as an initial short-listing tool are recognised. However, none of the potential data sets identified by workshop participants offers a useful tool for an initial short-listing process. While there are numerous sources of domain-specific cost data, the available data collections use diverse and often unique clinical categorisation systems. There is no comprehensive national collection of health system costs (total costs, and additional costs associated with poor quality care) or a variety of separate collections that are both accessible and categorised in a way that would enable aggregation and/or comparison of cost data across collections. It is therefore not possible to develop, *de novo*, a short-list of clinical domains based on a comprehensive analysis of costs incurred in all healthcare settings in Australia.

The concern expressed by some workshop participants about the tendency for an initial analysis based solely on the NHDC to exclude clinical domains in which patients are primarily treated in community settings is valid. However, many of the clinical domains that primarily involve community-based care are unlikely to meet other essential conditions for a successful clinical quality registry.* Specifically, if the clinicians who care for patients in a defined clinical domain are not strongly organised within a clinical college, society or association and/or do not work within committed, participating health care organisations, the relevant patient cohort is unlikely to be captured and both data capture and clinician engagement criteria are unlikely to be met. This is likely to be the case with many, but not all, conditions for which people receive the majority of their care in the community. Other types of data collection are likely to be better suited to driving quality improvement in many conditions for which care is primarily community-based. An exception applies when highly specialised care is provided by small cohorts of professionally-linked clinicians in community settings, if both the patient population and clinician group can be clearly identified and engaged.

Method

Public and private sector data from Round 17 of the NHDC (2012/13) were extracted and summed to provide an ordered list of high cost Australian refined DRGs – where each DRG represents a class of patients with similar clinical conditions requiring similar hospital services. A cut-off of \$0.1 billion was used, leading to 44 DRGs and DRG groupings being considered.

The initial scan and analysis of the NHDC identified individual and adjacent high cost DRGs. Some DRGs are broad and encompass more than one clinical population but do not represent high cost DRGs. Other clinical populations are represented in more than one or adjacent DRGs. The latter situation is true for the cancer, which usually have a specific medical or surgical DRG but rarely both, so that an estimate of the costs does not encompass the entirety of the cost of the condition.

The costs attributable to the critical care groups were estimated based upon the critical care component costs of all neonatal separations for the neonatal critical care domain and critical care costs for all other separations for the adult critical care domain.

In the first instance, trauma included only codes for multi-trauma diagnoses (DRG W). Subsequently, a wider perspective of trauma including less severe injuries (selected codes from DRGs I and X) was advanced and an adjusted cost determination for trauma was made.

* 2.1.1 – The relevant clinical population can be captured.
2.3 – The governance requirements for a successful clinical quality registry are in place.
2.4.1 – An entire population with a chronic condition or disease, or who have undergone an acute event, can be captured.
2.4.2 – There is a suitable data source.

Results

The initial analysis of the NHCDC yielded the list of high cost groups identified in Table 2.

Table 2: High cost clinical diseases, conditions and interventions

Diagnoses related group	Description	NHCDC 2012/13 costs	Total separations 2012/13	Per separation
All NHCDC critical care costs except P01Z-P67ABCD	Critical care (excluding neonatal)	\$2.40 billion	> 150,000 estimated	\$16,000
I04AB, I32ABC	Knee replacement, revision	\$1.2 billion	45,390	\$26,438
I03AB, I31AB	Hip replacement, revision	\$1.1 billion	38,838	\$28,323
O60ABC	Vaginal delivery	\$1.1 billion	202,656	\$5,428
O01ABC	Caesarean delivery	\$1.0 billion	102,007	\$9,803
I06Z, I09AB	Spinal fusion	\$0.65 billion	14,872	\$43,706
L61Z	Haemodialysis	\$0.64 billion	1.17 million	\$547
E62ABC	Respiratory infection / inflammatory	\$0.59 billion	80,176	\$7,359
U61AB	Schizophrenia disorder	\$0.59 billion	26,692	\$22,104
G46ABC, G47ABC	Gastroscopy	\$0.53 billion	239,709	\$2,211
G02AB	Major small and large bowel procedure	\$0.51 billion	22,981	\$22,192
F41AB, F42ABC	Circulatory disorder +/- acute myocardial infarction (with invasive procedure)	\$0.50 billion	89,817	\$5,567
F12AB, F17AB, F18AB	Pacemaker related	\$0.45 billion	18,860	\$26,430
R63Z	Chemotherapy	\$0.43 billion	347,290	\$1,238
P01Z - P67ABCD	Critical care costs only for neonatal admits	\$0.43 billion	Not reported	Not reported
U63AB	Major affective disorder	\$0.43 billion	22,977	\$18,714
F03AB, F04AB	Cardiac valve procedure	\$0.41 billion	8,543	\$47,993
E65AB	COAD (COPD)	\$0.40 billion	58,263	\$6,865
F01AB, F02Z	AICD related	\$0.40 billion	5,977	\$66,923
I08AB	Other hip and femur procedures	\$0.39 billion	22,528	\$17,312
B69AB, B70ABCD	TIA, stroke	\$0.39 billion	47,046	\$8,290
F05AB, F06AB	Coronary bypass	\$0.37 billion	10,365	\$35,697
F62AB	Heart failure	\$0.37 billion	46,036	\$8,037
B02ABC	Cranial procedures	\$0.36 billion	17,673	\$20,370

■ The prioritisation process

Diagnoses related group	Description	NHCDC 2012/13 costs	Total separations 2012/13	Per separation
G10AB	Hernia procedures	\$0.36 billion	70,923	\$5,076
I13AB	Humerus, other lower limb procedures	\$0.36 billion	35,087	\$10,260
H08AB	Laparoscopic cholecystectomy	\$0.36 billion	49,426	\$7,284
F72AB, F74Z	Unstable angina, chest pain	\$0.36 billion	138,845	\$2,593
R60AB, R61ABC	Lymphoma, acute and non-acute leukaemia	\$0.36 billion	42,218	\$8,527
J64AB	Cellulitis	\$0.34 billion	64,558	\$5,267
G70AB	Other digestive system disorders	\$0.33 billion	94,006	\$3,510
L63AB	Kidney and urinary tract infection	\$0.32 billion	59,643	\$5,365
G48ABC	Colonoscopy	\$0.31 billion	182,528	\$1,698
J06AB, J07AB, J14Z, J62AB	Breast condition procedure, reconstruction, breast malignancy	\$0.31 billion	60,654	\$5,111
C16Z	Lens procedures	\$0.28 billion	104,993	\$2,667
G01AB	Rectal resection	\$0.26 billion	9,728	\$26,727
G07AB	Appendicectomy	\$0.24 billion	34,812	\$6,894
F08AB	Major vascular procedure	\$0.21 billion	7,158	\$29,338
I05AB	Other joint replacement	\$0.14 billion	5,297	\$26,430
M01AB	Prostate cancer – major male pelvic procedure, surgical only	\$0.13 billion	7,974	\$16,303
W01Z-W61AB	Multiple or significant trauma	\$0.13 billion	4,752	\$27,357
L71AB	Respiratory cancer – medical only	\$0.11 billion	14,847	\$7,409
Y01Z, Y02AB, Y03Z, Y60Z, Y61Z, Y62AB	Major burns	\$0.11 billion	8,034	\$12,447
B66AB	Nervous system malignancy – medical only	\$0.07 billion	7,526	\$9,301

Burden of disease analysis

To identify conditions that have a high impact on population health and wellbeing but do not necessarily generate high hospital-based costs, the NHCDC-derived short-list was supplemented with an analysis of population BOD data.

Rationale

Workshop participants raised the following methodological issues relevant to the use of BOD data as a short-listing tool:

- The extent to which the burden of poor quality care directly correlates with the BOD is unknown, for example
 - a clinical domain associated with very high existing standards of care may exhibit little potential for quality improvement, even if it is associated with a high BOD; and
 - a clinical domain associated with a lower BOD may also be associated with significant variation in care, and therefore significant improvement potential
- Analysing BOD at a population level does not identify conditions in which small numbers of individuals incur significant adverse health outcomes (either directly, as a consequence of the disease or condition, or if evidence-based care is not provided)
- Some potential clinical domains that appear well suited to clinical quality registry development (e.g. patients treated in intensive care units) are not captured through the methodology currently applied by the AIHW to quantifying BOD in Australia.

Nevertheless, if there is similar quality improvement potential across a number of clinical domains, the diagnosis and procedures associated with the greatest BOD are likely to yield the greatest population benefit if that potential for improvement can be captured. The project scope was therefore amended to incorporate a BOD analysis in the short-listing phase.

Method

We analysed the 2016 AIHW estimates of the BOD in Australia, which are based on data collected in 2011. The data are presented as a measure of total BOD expressed as DALYs. This measure combines estimates of fatal burden (years of life lost (YLL) due to premature death) and non-fatal burden (years lived with disability (YLD)) to identify the total years of life lost from disease and injury for specific diseases and disorders (Table 3).

Table 3: Burden of disease in Australia 2011 top 20 DALY (AIHW 2016)*†

Condition	YLD 2011 (rank)	YLL 2011 (rank)	Total DALYs 2011	Percentage of total DALYs 2011 (rank)
Coronary heart disease	70,946 (10)	275,704 (1)	346,651	7.7% (1)
Other musculoskeletal	173,106 (1)	10,841 (>20)	183,947	4.1% (2)
Back pain and problems	162,393 (2)	1,395 (>20)	163,788	3.6% (3)
COPD	84,985 (7)	75,361 (7)	160,346	3.6% (4)
Lung cancer	3,685 (>20)	151,205 (2)	154,890	3.4% (5)
Dementia	70,658 (11)	80,650 (6)	151,308	3.4% (6)
Anxiety disorders	140,936 (3)	35 (>20)	140,971	3.1% (7)
Stroke	16,782 (>20)	119,989 (3)	136,771	3.0% (8)
Depressive disorders	127,034 (4)	625 (>20)	127,659	2.8% (9)
Suicide and self-inflicted injuries	1,550 (>20)	111,920 (4)	113,470	2.5% (10)
Asthma	100,017 (5)	7,296 (>20)	107,313	2.4% (11)
Diabetes	47,543 (14)	54,110 (9)	101,653	2.3% (12)
Bowel cancer	6,598 (>20)	85,824 (5)	92,422	2.1% (13)
Osteoarthritis	85,088 (6)	718 (>20)	85,806	1.9% (14)
Rheumatoid arthritis	81,036 (8)	2,453 (>20)	83,489	1.9% (15)
Upper respiratory conditions	75,151 (9)	523 (>20)	75,674	1.7% (16)
Breast cancer	7,307 (>20)	63,368 (8)	70,675	1.6% (17)
Hearing loss	66,506 (12)	0	66,506	1.5% (18)
Alcohol use disorders	58,211 (13)	7,831 (>20)	66,042	1.5% (19)
Falls	34,982 (20)	24,134 (>20)	59,116	1.3% (20)

* AIHW 2016. Australian Burden of Disease Study: Impact and causes of illness and death in Australia 2011. Australian Burden of Disease Study series no. 3. BOD 4. Canberra: AIHW.

† Ibid, reproduced from Table 3.3 of report.

Stakeholder survey

To identify any gaps in the short-listing process based on NHCDC and BOD data sets, a survey was conducted inviting key organisations to nominate domains that they considered clinically important. The organisations that were contacted were:

- Consumer organisations (n=3)
- Professional organisations (n=61)
- All Australian state and territory departments of health (n=8)
- The Australian Government Department of Health and Ageing.

A list of organisations invited to participate in the survey and those that responded is at Attachment 2. Thirty-two organisations (44% of those invited) responded. Because not all clinical organisations and professional associations that were invited to participate responded, some clinical domains where development of a clinical quality registry is a priority may not be represented. Nevertheless, the survey yielded useful information. Survey respondents were asked to identify their top three priorities for clinical quality registry development. Many of the respondents identified clinical domains aligned with those already captured by the NHCDC and BOD analyses; however, a small number of new clinical domains emerged from this process. Not all respondents identified three priorities.

Priority 1

- Pancreatectomy/oesophagectomy
- Cardiac procedures and devices
- Mesh in gynaecological surgery
- Colorectal cancer
- Major burns
- Cancer
- Cancer surgery
- Surgical mortality
- Obstructive sleep apnoea
- Dementia
- Spinal surgery outcomes
- Fractures
- Diabetes
- Transition care
- Breast Cancer Surgery
- Breast Implants
- Disease-specific cancer registries
- Ear disease in Aboriginal and Torres Strait Islander people

- Mental Health – psychosis and schizophrenia, major affective disorders
- CSF shunt.

Priority 2

- Spinal surgery
- Dialysis, transplantation, organ donation
- Maternity
- Breast surgery
- Non-invasive ventilation
- Surgery for joint pain (knee, shoulder, back)
- Stroke
- Insomnia
- Pancreatic adenocarcinoma
- Osteoporotic hip fractures
- Immunisation coverage
- High cost interventional/surgical procedures/devices
- Rhinology, otology, head and neck surgery, specifically outcomes for tonsil, grommet and nasal septum surgery.

Priority 3

- Cancer treatment
- Joint replacement
- Renal
- Gastro-oesophageal surgery
- Insomnia
- Antibiotic resistant bacterial infections
- Depression
- Non-invasive ventilation
- Pregnancy outcomes
- Critical care
- Outcomes for general rhinology, otology and head and neck surgery.

2. Application of the threshold criteria

In order to identify diseases, conditions and interventions that were not suitable for development, the threshold criteria were applied. These threshold prioritisation criteria describe characteristics that were considered necessary for successful functioning of a clinical quality registry (using the *Framework for Australian clinical quality registries* criteria as a guide). A full list of prioritisation criteria, together with the rationale for their application as threshold criteria, is listed in Table 1. Diseases, conditions and interventions

that did not meet these threshold criteria were not included in further prioritisation. The method of assessment of the threshold criteria is provided in Table 4.

Attachment 3 provides information about diseases, conditions and interventions that did not meet one or more threshold prioritisation criterion.

Table 4: Assessment of compliance with threshold prioritisation criteria

Prioritisation criteria	Assessment
1.2 An evidence-based, well executed sequence of care	Whether there is an existing effective clinical quality registry and/or existing evidence-based guidelines and/or literature defining an established sequence of care – see detail in Attachment 4
1.3 Unwarranted variation can be identified and addressed	A qualitative assessment of whether clinical processes and unwarranted variation from the sequence of care can be defined, identified and addressed through a clinical quality registry
2.1.1 Relevant clinical population can be captured	Whether there are: <ul style="list-style-type: none"> ■ Existing established administrative or clinical datasets defining the population group ■ One or more identifiable clinical groups that care for the relevant patients and can be engaged in a clinical quality registry via professional or organisational links, for data submission purposes ■ Any identifiable barriers to registry engagement by patients
2.1.2 Relevant clinical condition or event can be systematically recognised	Whether the clinical domain identifies certain and definable diagnoses, conditions or events sufficiently
2.4.1 Entire population can be captured	Whether there are: <ul style="list-style-type: none"> ■ Existing established administrative or clinical datasets defining the population group ■ One or more identifiable clinical groups that care for the relevant patients and can be engaged in a clinical quality registry via professional or organisational links, for data submission purposes ■ Any identifiable barriers to registry engagement by patients
2.4.2 Suitable data source	Whether: <ul style="list-style-type: none"> ■ Data can be collected through established administrative or clinical datasets ■ Patients are sufficiently concentrated in the care of one or more identifiable clinical groups that can be engaged in and submit data to a clinical quality registry ■ There are any barriers to data collection and submission
2.4.3 Clinically meaningful performance indicators	Whether there is existing effective clinical quality registry and/or literature that identifies relevant performance indicators
2.4.4 Potential for reliable risk adjustment	Whether there is an existing effective clinical quality registry and/or literature that confirms potential to risk adjust

3. Grouping of diseases, conditions and interventions into clinical domains

NHDC data are DRG-based, BOD data are condition-based and stakeholder priorities were described in varying terms. A process was therefore undertaken to identify clinical domains that were pragmatically suitable and clinically meaningful for further prioritisation.

'Domain' is not a defined term in the Australian healthcare system. Existing Australian clinical quality registries have developed organically in response to multiple drivers. These include clinician and/or consumer interest, practical, and funding considerations. Successful clinical registries in Australia all reflect identifiable patient populations characterised by one or more of the following:

- Single DRGs
- Groups of DRGs
- Commonly-recognised diseases
- Aggregates of commonly-recognised diseases
- Single interventions that are not DRG-specific
- Aggregates of interventions that are not DRG-specific
- The provision of care in defined healthcare settings.

Commonly, registries reflect a similar sequence of care provided to a specific patient population group by an identifiable group of clinicians and/or in an identifiable clinical setting.

Workshop participants emphasised the need to ensure that a proliferation of registries does not lead to multiple collections of data relating to the same cohort of patients. This was a key consideration in aggregating and recategorising various diverse clinical diseases, conditions and interventions into potential domains.

An approach was therefore adopted that grouped similar diseases, conditions and interventions to provide a structure of domains under which multiple registries may exist. Under these domains, there may be various device, procedure and clinical registries, which could be developed depending on clinical need and support.

Focusing on these groupings, rather than specific interventions or procedures, allows for increased understanding of the appropriateness of interventions and provides opportunities to improve care across the continuum. It encourages communication between registries under each domain to avoid the burden of data collection and allows for the continuation of a bottom-up approach that has historically dominated registry development.

This approach also provides a structure for national registries in Australia that is flexible to changes in the healthcare system. For example, changing clinical coordination, such as healthcare homes and care coordinators may allow registries to be developed in areas where there were previously dispersed groups of treating clinicians. Improved data collections such as electronic health records may also provide opportunities for registries that were previously not possible.

The application of threshold criteria and pragmatic grouping of conditions resulted in a short-list of clinical domains (Table 5).

Table 5: Consolidated short-list

Clinical domain	NHCDC potential priority	Burden of disease potential priority	Stakeholder-identified potential priority
Ischaemic heart disease	<ul style="list-style-type: none"> ■ AICD related ■ Cardiac valve procedure ■ Pacemaker related ■ Circulatory disorder +/- acute myocardial infarction (with invasive procedure) ■ Coronary bypass ■ Unstable angina, chest pain 	Coronary heart disease	<ul style="list-style-type: none"> ■ Cardiac procedures and devices ■ High cost interventional/surgical procedures/devices
Musculoskeletal disorders	<ul style="list-style-type: none"> ■ Knee replacement, revision ■ Hip replacement, revision ■ Other hip and femur procedures ■ Other joint replacement ■ Humerus, other lower limb procedures 	<ul style="list-style-type: none"> ■ Osteoarthritis ■ Rheumatoid Arthritis ■ Other musculoskeletal 	<ul style="list-style-type: none"> ■ Fragility fractures ■ Osteoporotic hip fractures ■ Surgery for joint pain (knee, shoulder, back) ■ Joint replacement
	Spinal fusion	Back pain and problems	Spinal surgery outcomes
Major trauma	Multiple or significant trauma	N/A	N/A
Adult critical care	Critical care (excluding neonatal)	N/A	Critical care
High burden cancers	Lymphoma, acute and non-acute leukaemia	N/A	N/A
	Prostate cancer – major male pelvic procedure, surgical only	N/A	N/A
	Major small and large bowel procedure	N/A	N/A
	Rectal resection	Bowel cancer	Colorectal cancer
	Respiratory cancer – medical only	Lung cancer	N/A
	Breast condition procedure, reconstruction, breast malignancy	Breast cancer	<ul style="list-style-type: none"> ■ Breast cancer surgery ■ Breast implants ■ Breast surgery
Stroke	TIA, stroke	Stroke	Stroke
Renal disease	Haemodialysis	N/A	<ul style="list-style-type: none"> ■ Dialysis, transplantation and organ donation ■ Renal
Neonatal critical care	Critical care costs only for neonatal admits	N/A	N/A

Clinical domain	NHCDC potential priority	Burden of disease potential priority	Stakeholder-identified potential priority
Mental health	<ul style="list-style-type: none"> Schizophrenia disorder Major affective disorder 	<ul style="list-style-type: none"> Depressive disorders Suicide and self-inflicted injuries Anxiety disorders 	<ul style="list-style-type: none"> Mental health – psychosis and schizophrenia, major affective disorders Depression
Maternity	<ul style="list-style-type: none"> Vaginal delivery Caesarean delivery 	N/A	<ul style="list-style-type: none"> Maternity Pregnancy outcomes
Dementia	N/A	Dementia	Dementia
Major burns	Burns	N/A	Burns
Diabetes	N/A	Diabetes	Diabetes

These domains are described in broad terms only. Further detailed consultation with relevant clinicians would be required to define the specific scope (inclusions and exclusions) of registries that are suitable for development. In relation to specific clinical domains, considerations would include, for example:

- Maternity – It would be sensible to build on existing data collections already held in all jurisdictions. A significant amount of care is community-based and would be difficult to capture in a registry – the scope of data collection would need to be defined and is likely to be primarily hospital-based but would include hospital-based collection of data about some aspects of ante-natal and post-natal care
- Mental health – A significant amount of care is community-based, however most patients experiencing major affective and psychotic disorders are likely to be under the care of a psychiatrist and therefore a registry that includes both hospital- and community-based data collection is likely to be feasible
- Major burns – This clinical domain is likely to be defined by the location of care, consistent with the existing Burns Registry of Australia and New Zealand.*

4. Prioritisation of clinical domains

The final list of domains was assessed against the remaining (non-threshold) prioritisation criteria:

- Criterion 1.1: There are serious consequences for the patient associated with poor quality care for the clinical condition or with poor quality of the device or procedure
- Criterion 1.3: The condition, device or procedure of interest is associated with a high cost to the health system
- Criterion 2.2: There is clinician support for the clinical quality registry (or the proposed clinical quality registry).

Assessment against prioritisation Criterion 1.1: Serious consequences associated with poor quality care

There are numerous sources of information about the impact of poor quality care in individual clinical domains. The project scanned the literature and identified the main consequences of poor quality care for each of the clinical domains. All short-listed potential clinical domains were assessed as associated with serious clinical risk.

* Cleland et. al. The Burns Registry of Australia and New Zealand: progressing the evidence base for burn care. Med J Aust 2016; 204 (5): 195.

The prioritisation process

Because no specific data sources were identified that could reasonably be applied to systematically analyse and rank the impact of poor quality care across all short-listed potential clinical domains, BOD data was used to provide an estimate of the consequences to patients. If there is similar quality improvement potential across a number of clinical domains, the diagnosis and procedures associated with the greatest BOD are likely to yield the greatest population benefit if that potential for improvement can be captured. The BOD associated with clinical domains where registries were considered feasible was assessed using estimates from AIHW 2011 data* and data provided directly by the AIHW.†

There are significant methodological challenges in assigning an accurate numeric rating to the BOD associated with each short-listed clinical domain, including:

- BOD analysis is based on clinical diagnoses and does not capture the burden of location-based care such as care provided in intensive care units
- BOD data is presented in broad categories that do not necessarily directly relate to the relevant clinical domain being assessed, for example, osteo- and rheumatoid arthritis BOD relates to many more people than those who require a major joint procedure.

Because of the methodological limitations, four broad categories, rather than a highly granular categorisation, were adopted for the rating of relative BOD associated with the short-listed clinical domains. Estimates of the BOD for each domain are provided in Table 6.

Table 6: Burden of disease in Australia 2011 for short-listed domains

Clinical domain	Total DALYs 2011	Estimated percentage of total DALYs 2011
Ischaemic heart disease	499,468	11.10%
Musculoskeletal disorders	532,002	11.84%
Major trauma	280,984	6.25%
Adult critical care	Not suitable for burden of disease analysis	Not suitable for burden of disease analysis
High burden cancers	471,422	10.49%
Stroke	136,771	3.04%
Renal disease	56,236	1.25%
Neonatal critical care	102,773	2.27%
Mental health	341,271	7.55%
Maternity	23,083	0.51%
Dementia	151,308	3.4%
Diabetes	101,860	2.3%
Major burns	7,768	0.17%

* Australian Institute of Health and Welfare 2016. Australian Burden of Disease Study: Impact and causes of illness and death in Australia 2011. Australian Burden of Disease Study series no. 3. BOD 4. Canberra: AIHW.

† Australian Institute of Health and Welfare 2016. Unpublished burden of disease data.

More detail of the conditions used by the BOD data within each domain is provided in Attachment 5.

Using the results of this analysis, the domains were given a score using proportion of the total BOD data in accordance with the system described in Table 7.

Table 7: Scoring for burden of disease

Percentage of total burden of disease	Score
>3%	1
2% – 3%	0.75
1% – 2%	0.5
0.75% – 1%	0.25
<0.75%	0

Assessment against prioritisation Criterion 1.4 – High cost to the health care system

As noted earlier, the NHCDC collection has limitations for use in analysing costs to the healthcare system, as it does not provide a completely accurate picture of the total costs of care associated with various clinical domains. However, the NHCDC does help to establish broad rankings of potential clinical domains based on hospital costs.

Estimates of the cost of each domain is provided in Table 8.

Table 8: Cost analysis for short-listed domains

Clinical domain	NHCDC 2012/13 total costs	Percentage of total cost from NHCDC
Ischaemic heart disease	\$2.68 billion	7.94%
Musculoskeletal disorders	\$4.33 billion	12.83%
Major trauma	\$0.83 billion	2.46%
Adult critical care	\$2.40 billion	7.11%
High burden cancers	\$2.52 billion	7.47%
Stroke	\$0.39 billion	1.16%
Renal disease	\$2.19 billion	6.49%
Neonatal critical care	\$0.43 billion	1.27%
Mental health	\$1.6 billion	4.74%
Maternity	\$2.1 billion	6.22%
Dementia	\$0.0953 billion	0.28%
Major burns	\$0.11 billion	0.33%
Diabetes	\$0.193 billion	0.56%

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More detail of the DRGs applied to each clinical domain is provided in Attachment 6.

Clinical domains were ranked using proportion of the total NHCDC costs in accordance with the scoring system described in Table 9.

Table 9: Scoring for cost

Percentage of total costs	Score
>3%	1
2% – 3%	0.75
1% – 2%	0.5
0.75% – 1%	0.25
<0.75%	0

The category boundaries were chosen to represent broad grouping of the cost to the health system. More gradual scoring was not used due to the limitations of the data discussed earlier. However, as with the BOD analyses, the approach is subject to considerable methodological challenges and is intended to be indicative only.

Assessment against prioritisation Criterion 2.2 – Clinician support

Workshop participants agreed that without strong clinician support, attempts to develop clinical quality registries are generally unsuccessful.

Organisational linkages that facilitate clinician engagement are required to identify relevant patients, ensure data are submitted to the registry and initiate quality improvements based on registry analyses.

The level of clinician leadership is considered to be a key success factor for clinical quality registries. However, some participants questioned whether a deficiency in clinician support should limit the potential development of a clinical quality registry in circumstances where there is otherwise significant potential to improve clinical quality.

The level of clinician support in relation to each potential clinical domain was qualitatively assessed by two senior Commission staff independently, with differences resolved by agreement, in accordance with the scoring system set out in Table 10.

Table 10: Scoring for clinical support

Level of clinical support	Score
Established national clinical quality registry leadership group across the potential clinical domain or national clinical quality registry	1
Existing state clinical registry/audit or existing national clinical registry/audit with limited participation and/or without the characteristics of a clinical quality registry	0.75
Clinician advocacy for a registry in the potential clinical domain, registry under development, leadership group in limited jurisdictions or an existing audit or limited existing registry	0.5
Limited stakeholder engagement in development of clinical quality registries	0.25
No known existing registry resources or no known explicit clinician support for a clinical quality registry	0

Table 11: Clinical support for short-listed domains

Clinical domain	Evidence of clinical support	Current clinical quality registries	Score
Ischaemic heart disease	Established leadership group (ACOR)	<ul style="list-style-type: none"> ■ ACOR – Cardiac Devices Registry ■ Cardiac Procedures Registry ■ National Cardiac Surgery Database 	1
Musculoskeletal disorders	<ul style="list-style-type: none"> ■ Established leadership group (Spine Society of Australia, Australian Spine Registry) ■ Australian Orthopaedic Association National Joint Replacement Registry is a device surveillance registry ■ ANZHFR launched September 2016 ■ Clinician support for an osteoporotic hip fracture clinical quality registry expressed through stakeholder survey 	<ul style="list-style-type: none"> ■ Australian Orthopaedic Association ■ National Joint Replacement Registry 	1
Major trauma	<ul style="list-style-type: none"> ■ Established leadership group (AusTQIP) ■ Existing state clinical quality registry with incomplete patient capture 	<ul style="list-style-type: none"> ■ AusTQIP ■ NT Trauma ■ Victorian State Trauma System 	1
Adult critical care	Established leadership group – ANZICS CORE includes Adult Patient Database	ANZICS CORE registries	1
High burden cancers	Key agencies support the development of clinical quality registries. National registry for prostate cancer. Established leadership groups in some jurisdictions and for some specific cancer types.	<ul style="list-style-type: none"> ■ Australian Association of Cancer Registries Existing audit – Binational Colorectal Cancer Audit ■ ABDR / Breast Surgeons of Australia and New Zealand Quality Audit ■ PCOR-ANZ ■ Cutaneous Lymphoma Registry under development ■ Victorian Lung Cancer Registry 	0.75
Stroke	Established leadership group – Australian Stroke Clinical Registry	<ul style="list-style-type: none"> ■ Australian Stroke Clinical Registry ■ Australian Thrombolysis Registry 	1
Renal disease	Established leadership group (ANZDATA)	ANZDATA	1
Neonatal critical care	<ul style="list-style-type: none"> ■ Established leadership group – ANZICS CORE includes Paediatric Intensive Care Registry ■ Existing national registry with substantial patient capture 	ANZICS CORE registries	1
Mental health	Clinician advocacy – identified as a high priority in stakeholder survey	No existing registry	0.25

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Clinical domain	Evidence of clinical support	Current clinical quality registries	Score
Maternity	Existing jurisdiction-based data collections, no national clinical quality registries	<ul style="list-style-type: none"> ■ Australian Maternity Obstetric Surveillance System ■ Maternity Care Indicators data collection 	0.75
Dementia	Dementia collaborative research centres is conducting a scoping project for the National Dementia Register in Australia	No current registry	0.25
Major burns	Established leadership group and existing national registry with incomplete patient capture (Burns Registry of Australia and New Zealand)	Burns Registry of Australia and New Zealand	1
Diabetes	Clinician advocacy – identified as a high priority in stakeholder survey	<ul style="list-style-type: none"> ■ ANDA is a research audit that is conducted annually ■ No current registry 	0.25

Final list of priority clinical domains

The results of the prioritisation process are consolidated in Table 12. The scope of some prioritised clinical domains is readily identifiable by virtue of the location in which care is provided (e.g. critical care) others, such as maternity, have a potentially broad scope and will need further specification. Definition of specific inclusion/exclusion criteria for some of the prioritised clinical domains will require further detailed consultation with relevant clinical groups and may change over time. Due to the methodological challenges described in this report, the identified clinical domains and their relative priority for development should be regarded as indicative only.

Development of clinical registries in all the clinical domains listed in Table 13 could generate significant benefit for the relevant patient group. Some domains may benefit from multiple registries. However as these registries develop it is important that information and improvements are shared within the domain.

The priority and scope of the registries within each domain should be determined through further consultation with the relevant clinical groups. In some cases specific sub-populations, such as dementia patients receiving care in memory clinics or specific procedures, may be prioritised for development under these domains due to limitations in ability to collect data on the entire patient cohort. As capacity to collect data and coordination of care improves, registries may be expanded to other aspects of care where improvements can be made.

It would be appropriate to conduct a targeted expression of interest process to assess potential registries under these domains. This would allow for a more fulsome and contemporary assessment against each of the prioritisation criteria as well as the *Operating principles for clinical quality registries* endorsed by Health Ministers in November 2010 described in the *Framework for Australian clinical quality registries*.

The prevalence of poor outcomes associated with specific procedures such as use of mesh in gynaecological surgery and AMD treated with new anti-vascular endothelial growth factor drugs are of significant concern. These have not been considered in the prioritisation of clinical domains as they were considered post-market surveillance. Assessment of the suitability and priority of registries such as these should be considered separately to this work and as specific issues associated with care are identified.

The domains identified in this report provide a focus for registry development in the future based on the burden to the health system and potential for harm to patients. There may be other specific areas where a registry could provide significant improvement in care and cost savings. For example, *The First Australian Atlas of Healthcare Variation** identifies conditions in which there is variation in service provision that may correlate with poor quality care. While the atlas does not identify variation in safety or effectiveness and focuses on a limited number of healthcare interventions, further investigation of the cause of variation may identify areas where registries are an appropriate mechanism for quality improvement. Variation in care and potential for patient harm may also be identified through other mechanisms and should be considered individually and as required.

The domains identified represent the current priorities for registry development. As the registry landscape in Australia develops, data availability improves, and clinical practice changes, there is potential for priority domains to be expanded and for these priorities to change.

* Australian Commission on Safety and Quality in Health Care and National Health Performance Authority. [The First Australian Atlas of Healthcare Variation](#). Sydney: ACSQHC, 2015.

Table 12: Consolidated summary of prioritisation of potential domains

Clinical domain	Short-listed by	Criteria	Prioritisation category	Outcome
Ischaemic heart disease	<ul style="list-style-type: none"> ▪ Cost ▪ Burden of disease ▪ Stakeholder priority 	1.1 Serious consequences to the patient	Evidence – Total DALYs 2011	499,468
			Evidence – Percentage of total DALYs 2011	11.10%
		Score	1	
		1.3 High cost to health system	Evidence – NHDC hospital cost	\$2.68 billion
			Evidence – Percentage of total cost from NCCH	7.94%
		Score	Score	1
		2.2 Clinician support	Evidence – Leadership group	Established leadership group (ACOR)
			Evidence – Current clinical quality registries	<ul style="list-style-type: none"> ▪ ACOR – Cardiac Devices Registry ▪ Cardiac Procedures Registry ▪ National Cardiac Surgery Database
		Score	Score	1
		Total score	Total score	3

Clinical domain	Short-listed by	Criteria	Prioritisation category	Outcome
Musculoskeletal disorders	<ul style="list-style-type: none"> ▪ Cost ▪ Burden of disease ▪ Stakeholder priority 	1.1 Serious consequences to the patient	Evidence – Total DALYs 2011	532,002
			Evidence – Percentage of total DALYs 2011	11.84%
			Score	1
		1.3 High cost to health system	Evidence – NHDC hospital cost	\$4.33 billion
			Evidence – Percentage of total cost from NCCH	12.83%
		Score	Score	1
		2.2 Clinician support	Evidence – Leadership group	<ul style="list-style-type: none"> ▪ Established leadership group (Spine Society of Australia, Australian Spine Registry) ▪ Australian Orthopaedic Association National Joint Replacement Registry is a device surveillance registry ▪ ANZHR launched September 2016 ▪ Clinician support for an osteoporotic hip fracture clinical quality registry expressed through stakeholder survey
			Evidence – Current clinical quality registries	Australian Orthopaedic Association. National Joint Replacement Registry collects comprehensive data for all knee replacements
		Score	Score	1
		Total score	Total score	3

Final list of priority clinical domains

Clinical domain	Short-listed by	Criteria	Prioritisation category	Outcome
Major trauma	<ul style="list-style-type: none"> Cost 	1.1 Serious consequences to the patient	Evidence – Total DALYs 2011	280,984
			Evidence – Percentage of total DALYs 2011	6.25%
			Score	1
		1.3 High cost to health system	Evidence – NHDC hospital cost	\$0.83 billion
			Evidence – Percentage of total cost from NCCH	2.46%
			Score	0.75
		2.2 Clinician support	Evidence – Leadership group	<ul style="list-style-type: none"> Established leadership group (AusTQIP) Existing state clinical quality registry with incomplete patient capture
			Evidence – Current clinical quality registries	<ul style="list-style-type: none"> AusTQIP NT Trauma Victorian State Trauma System
			Score	1
			Total score	2.75

Clinical domain	Short-listed by	Criteria	Prioritisation category	Outcome
Adult critical care	■ Cost	1.1 Serious consequences to the patient	Evidence – Total DALYs 2011	X
	■ Stakeholder priority		Evidence – Percentage of total DALYs 2011	X
			Score	0.75*
		1.3 High cost to health system	Evidence – NHCDC hospital cost	\$2.4 billion
			Evidence – Percentage of total cost from NCCH	7.11%
			Score	1
		2.2 Clinician support	Evidence – Leadership group	Established leadership group – ANZICS CORE includes Adult Patient Database
			Evidence – Current clinical quality registries	ANZICS CORE registries
			Score	1
			Total score	2.75

* Difficult to assess as contains a number of conditions. Estimated at 2–3%.

Final list of priority clinical domains

Clinical domain	Short-listed by	Criteria	Prioritisation category	Outcome
High burden cancers	<ul style="list-style-type: none"> ▪ Cost ▪ Burden of disease ▪ Stakeholder priority 	1.1 Serious consequences to the patient	Evidence – Total DALYs 2011	471,422
			Evidence – Percentage of total DALYs 2011	10.49%
			Score	1
		1.3 High cost to health system	Evidence – NHCDC hospital cost	\$2.52 billion
			Evidence – Percentage of total cost from NCCH	7.47%
			Score	1
		2.2 Clinician support	Evidence – Leadership group	<ul style="list-style-type: none"> ▪ Key agencies support the development of clinical quality registries ▪ National registry for prostate cancer ▪ Established leadership groups in some jurisdictions and for some specific cancer types
			Evidence – Current clinical quality registries	<ul style="list-style-type: none"> ▪ Australian Association of Cancer Registries Existing audit – Binational Colorectal Cancer Audit ▪ ABDR ▪ Breast Surgeons of Australia and New Zealand Quality Audit ▪ PCOR-ANZ ▪ Cutaneous Lymphoma Registry under development ▪ Victorian Lung Cancer Registry
			Score	0.75
			Total score	2.75

Clinical domain	Short-listed by	Criteria	Prioritisation category	Outcome
Stroke	<ul style="list-style-type: none"> ▪ Cost ▪ Burden of disease ▪ Stakeholder priority 	1.1 Serious consequences to the patient	Evidence – Total DALYs 2011	136,771
			Evidence – Percentage of total DALYs 2011	3.00%
			Score	1
		1.3 High cost to health system	Evidence – NHCDC hospital cost	\$0.39 billion
			Evidence – Percentage of total cost from NCCH	1.16%
		Score	Score	0.5
		2.2 Clinician support	Evidence – Leadership group	Established leadership group (Australian Stroke Clinical Registry)
			Evidence – Current clinical quality registries	<ul style="list-style-type: none"> ▪ Australian Stroke Clinical Registry ▪ Australian Thrombolysis Registry
		Score	Score	1
		Total score	Total score	2.5

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Clinical domain	Short-listed by	Criteria	Prioritisation category	Outcome
Renal disease	Cost	1.1 Serious consequences to the patient	Evidence – Total DALYs 2011	56,236
	Stakeholder priority		Evidence – Percentage of total DALYs 2011	1.25%
			Score	0.5
		1.3 High cost to health system	Evidence – NHCDC hospital cost	\$2.19 billion
			Evidence – Percentage of total cost from NCCH	6.49%
			Score	1
		2.2 Clinician support	Evidence – Leadership group	Established leadership group (ANZDATA)
			Evidence – Current clinical quality registries	ANZDATA
			Score	1
			Total score	2.5

Clinical domain	Short-listed by	Criteria	Prioritisation category	Outcome
Neonatal critical care	■ Cost	1.1 Serious consequences to the patient	Evidence – Total DALYs 2011	102,773
			Evidence – Percentage of total DALYs 2011	2.27%
			Score	0.75
		1.3 High cost to health system	Evidence – NHCDC hospital cost	\$0.43 billion
			Evidence – Percentage of total cost from NCCH	1.27%
			Score	0.5
		2.2 Clinician support	Evidence – Leadership group	Established leadership group – ANZICS CORE includes Paediatric Intensive Care Registry (existing national registry with substantial patient capture)
			Evidence – Current clinical quality registries	ANZICS CORE registries
			Score	1
			Total score	2.25

Final list of priority clinical domains

Clinical domain	Short-listed by	Criteria	Prioritisation category	Outcome
Mental health	<ul style="list-style-type: none"> ▪ Cost ▪ Burden of disease ▪ Stakeholder priority 	1.1 Serious consequences to the patient	Evidence – Total DALYs 2011	341,271
			Evidence – Percentage of total DALYs 2011	7.55%
			Score	1
		1.3 High cost to health system	Evidence – NHCDC hospital cost	\$1.6 billion
			Evidence – Percentage of total cost from NCCH	4.74%
			Score	1
		2.2 Clinician support	Evidence – Leadership group	Clinician advocacy – identified as a high priority in stakeholder survey
			Evidence – Current clinical quality registries	No existing registry
			Score	0.25
			Total score	2.25

Clinical domain	Short-listed by	Criteria	Prioritisation category	Outcome
Maternity	<ul style="list-style-type: none"> ▪ Cost ▪ Stakeholder priority 	1.1 Serious consequences to the patient	Evidence – Total DALYs 2011	23,083
			Evidence – Percentage of total DALYs 2011	0.51%
			Score	0
	1.3 High cost to health system	Evidence – NHCDC hospital cost	\$2.1 billion	
		Evidence – Percentage of total cost from NCCH	6.22%	
		Score	1	
	2.2 Clinician support		Evidence – Leadership group	Existing jurisdiction-based data collections, no national clinical quality registries
			Evidence – Current clinical quality registries	<ul style="list-style-type: none"> ▪ Australian Maternity Obstetric Surveillance System ▪ Maternity Care Indicators data collection
			Score	0.75
			Total score	1.75

Final list of priority clinical domains

Clinical domain	Short-listed by	Criteria	Prioritisation category	Outcome
Dementia	<ul style="list-style-type: none"> ▪ Burden of disease ▪ Stakeholder priority 	1.1 Serious consequences to the patient	Evidence – Total DALYs 2011	151,308
			Evidence – Percentage of total DALYs 2011	3.40%
		Score		1
	1.3 High cost to health system	Evidence – NHCDC hospital cost	\$0.0953 billion*	
		Evidence – Percentage of total cost from NCCH	0.28%	
		Score		0
	2.2 Clinician support	Evidence – Leadership group	Dementia collaborative research centres is conducting a scoping project for the National Dementia Register in Australia	
		Evidence – Current clinical quality registries	No current registry	
		Score		0.25
		Total score		1.25

* Estimate to be viewed with caution – high non-acute costs for this condition.

Clinical domain	Short-listed by	Criteria	Prioritisation category	Outcome
Major burns	■ Cost	1.1 Serious consequences to the patient	Evidence – Total DALYs 2011	7,768
	■ Stakeholder priority		Evidence – Percentage of total DALYs 2011	0.17%
			Score	0
		1.3 High cost to health system	Evidence – NHCDC hospital cost	\$0.11 billion
			Evidence – Percentage of total cost from NCCH	0.33%
			Score	0
		2.2 Clinician support	Evidence – Leadership group	Established leadership group and existing national registry with incomplete patient capture (Burns Registry of Australia and New Zealand)
			Evidence – Current clinical quality registries	Burns Registry of Australia and New Zealand
			Score	1
			Total score	1

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Clinical domain	Short-listed by	Criteria	Prioritisation category	Outcome
Diabetes	<ul style="list-style-type: none"> ▪ Cost ▪ Burden of disease ▪ Stakeholder priority 	1.1 Serious consequences to the patient	Evidence – Total DALYs 2011	101,653
			Evidence – % of total DALYs 2011	2.30%
			Score	0.75
		1.3 High cost to health system	Evidence – NHCDC hospital cost	\$0.19 billion*
			Evidence – % of total cost from NCCH	0.56%
		Score	Score	0
		2.2 Clinician support	Evidence – Leadership group	Clinician advocacy – identified as a high priority in stakeholder survey
			Evidence – Current clinical quality registries	<ul style="list-style-type: none"> ▪ ANDA is a research audit that is conducted annually ▪ No current registry
			Score	0.25
			Total score	1

* AIHW 2016. Australian Burden of Disease Study: Impact and causes of illness and death in Australia 2011. Australian Burden of Disease Study series no. 3. BOD 4. Canberra: AIHW.

Attachments

Attachment 1: Elements of the *Framework for Australian clinical quality registries*

The *Framework for Australian clinical quality registries* comprises five key elements, summarised in points 1 to 5 below:

1. Strategic principles

Strategic principles for clinical quality registries were endorsed by Health Ministers in 2010. The Strategic principles provide a national approach to development of clinical quality registries, and are detailed in Section 2 of the *Framework for Australian clinical quality registries*.

2. National health information arrangements

National health information arrangements for best practice governance and custodianship of clinical quality registry data were developed by a working group of the NHIPPC. Those arrangements were endorsed by NHIPPC (15 November 2012) and by the Commission Board (29 November 2012). The elements of National health information arrangements are detailed in Section 3 of the *Framework for Australian clinical quality registries* and summarised below.

National health information arrangements for clinical quality registries:

- Specify data custodianship requirements that are incumbent on organisations and staff participating in activity under national arrangements
- Recognise existing health information arrangements incorporated in existing legislation, regulation and policies
- Will be documented for specific domains in schedules in the National Health Information Agreement.

National health information arrangements for clinical quality registries provide assurance to all participating stakeholders, including jurisdictions, health services, private hospital groups, clinicians and patients, that requirements regarding registry data custodianship, security and reporting are specified in official arrangements.

3. National infrastructure model

The literature suggests significant cost avoidance associated with improved patient outcomes where clinical quality registries operate and report under national arrangements. Efficiencies are realised by developing a single national clinical quality registry per clinical domain, rather than separate databases in multiple hospitals and jurisdictions.

The Commission has developed a national infrastructure model for the efficient design, build, development, operation and security of clinical quality registries under national arrangements. The infrastructure model was developed in collaboration with jurisdictions, the NEHTA and registry experts. The national model features a small number of expert registry centres (or clusters), with each centre operating multiple clinical quality registries in partnership with jurisdictions, healthcare providers, funders and peak clinical organisations. Interoperability with existing clinical information systems is optimised through the model, providing efficiencies in data collection. Security of data is assured through the application of robust access and reporting controls. Further detail on the elements and benefits of the national infrastructure model is provided in Section 4 of the *Framework for Australian clinical quality registries*.

4. Principles, guidelines and standards

The Commission and registry experts have developed principles, guidelines and standards for best-practice design, build, development, operation and security of clinical quality registries.

The *Operating principles for clinical quality registries* (*Framework for Australian clinical quality registries*, Section 5.1), endorsed by Health Ministers in November 2010, specify best clinical quality registry practice.

Technical guidelines and standards (*Framework for Australian clinical quality registries*, Section 5.2) have been prepared to inform standardised development of national registry infrastructure, and promote best practice registry design, development, operation and security. They include a requirements specification, infrastructure and technical standards, a logical architecture and design and a security compliance guideline.

The security compliance guideline is based on the National eHealth Security and Access framework. It provides clear guidance to those operating clinical quality registries, and can be used to assure stakeholders that registry data is managed securely.

5. Prioritisation criteria

The Commission has developed prioritisation criteria for clinical quality registries (*Framework for Australian clinical quality registries*, Section 6). The prioritisation criteria support the strategic principles for a national approach to the development of clinical quality registries.

Prioritisation criteria are grouped according to two principal considerations for prioritisation; clinical need and the feasibility of establishing the clinical quality registry for a given domain.*

* Australian Commission on Safety and Quality in Health Care, [Framework for Australian clinical quality registries](#). Sydney. ACSQHC, March 2014.

Attachment 2: Summary of stakeholder survey respondents and invitees

Organisations that responded to the stakeholder survey

- Australian Capital Territory Health
- Australian Professional Society on Alcohol and other Drugs
- Australasian College of Dermatology
- Australasian Sleep Association
- Australian and New Zealand Bone and Mineral Society
- Australian and New Zealand Burns Association
- Australian Association for Adolescent Health
- Australian College of Nursing
- Australian Society of Plastic Surgeons
- Breast Surgeons of Australia and New Zealand
- Colorectal Surgical Society of Australia and New Zealand
- Consumer (not specified)
- Department of Health and Human Services Tasmania
- Endocrine Society of Australia
- Epworth Health Care
- Monash University
- Neurosurgical Society of Australasia
- New South Wales Agency for Clinical Innovation
- Northern Territory Health
- Queensland Department of Health
- Queensland Medical Laboratory
- Royal Australian and New Zealand College of Obstetrics and Gynaecology
- Royal Australasian College of Surgeons
- Royal Australian and New Zealand College of Psychiatrists
- Royal College of Pathologists of Australasia
- South Australia Health
- South Australian Prostate Cancer Clinical Outcome Collaborative
- Sonic Healthcare
- South Australian Health and Medical Research Institute
- The Australian Society of Otolaryngology Head and Neck Surgery
- University of South Australia
- Western Australian Department of Health.

Organisations that were invited to participate

Consumer organisations

- Consumer Health Forum of Australia
- Chronic Illness Alliance
- Australian Institute for Patient and Family Centred Care.

Professional organisations

- Australasian College for Emergency Medicine
- Australasian College of Rural and Remote Medicine
- Australasian College of Dermatologists
- Australasian Professional Society on Alcohol and Other Drugs
- Australasian Sleep Association
- Australian Society of Cataract and Refractive Surgeons
- Australasian Society for Infectious Diseases
- Australasian Trauma Society
- Australian and New Zealand Association of Neurologists
- Australian and New Zealand Association of Paediatric Surgeons
- Australian and New Zealand Bone and Mineral Society
- Australian and New Zealand Burns Association
- Australian and New Zealand Child Neurology Society
- Australian and New Zealand College of Anaesthetists
- Australian and New Zealand Society for Geriatric Medicine
- Australian and New Zealand Society for Vascular Surgery
- Australian and New Zealand Society of Cardiac and Thoracic Surgeons
- Australian and New Zealand Society of Nephrology
- Australian College of Midwives
- Australian College of Nursing
- Australian Diabetes Society
- Australian Orthopaedic Association
- Australian Paediatric Orthopaedic Society
- Australian Paediatric Society
- Australian Private Hospitals Association
- Australian Rheumatology Association

- Australasian Society of Clinical Immunology and Allergy
- Australian Society of Orthopaedic Surgeons
- Australian Society of Otolaryngology Head and Neck Surgery
- Australian Society of Plastic Surgeons
- Breast Surgeons of Australia and New Zealand
- Cancer Council Australia
- Cardiac Society of Australia and New Zealand
- College for Intensive Care Medicine of Australia and New Zealand
- Colorectal Surgical Society of Australia and New Zealand
- Cosmetic Physicians College of Australasia
- Endocrine Society of Australia
- Gastroenterological Society of Australia
- Haematology Society of Australia and New Zealand
- Human Genetics Society of Australasia
- Internal Medicine Society of Australia and New Zealand
- Medical Oncology Group of Australia
- Neurosurgical Society of Australia and New Zealand
- Obesity Surgery Society of Australia and New Zealand
- Royal Australasian College of Dental Surgeons
- Royal Australasian College of Medical Administrators
- Royal Australasian College of Physicians
- Royal Australasian College of Surgeons
- Royal Australian and New Zealand College of Obstetricians and Gynaecologists
- Royal Australian and New Zealand College of Ophthalmologists
- Royal Australian and New Zealand College of Psychiatrists
- Royal Australian and New Zealand College of Radiologists
- Royal Australian College of General Practitioners
- Royal College of Pathologists of Australasia
- Spine Society of Australia
- Stroke Society of Australasia
- The Australian Association for Adolescent Health
- The Urological Society of Australia and New Zealand
- Thoracic Society of Australia and New Zealand
- Transplantation Society of Australia and New Zealand
- Clinical Oncological Society of Australia.

Jurisdictions

- All Australian State and Territory Departments of Health
- Australian Government Department of Health and Ageing.

Attachment 3: Analysis of potential conditions, diseases and interventions identified through short-listing

Table A3.1: Rationale for inclusion in short-list

Description	Short-listed by	Whether included or not and rationale
Critical care (excluding neonatal)	Cost	Included, considered under adult critical care
Knee replacement, revision	Cost	Included, considered under musculoskeletal disorders
Hip replacement, revision	Cost	Included, considered under musculoskeletal disorders
Vaginal delivery	Cost	Included, considered under maternity
Caesarean delivery	Cost	Included, considered under maternity
Spinal fusion	Cost	Included, considered under musculoskeletal disorders
Haemodialysis	Cost	Included, considered under renal disease
Respiratory infection / inflammatory	Cost	<p>Not considered further, threshold criteria not met:</p> <ul style="list-style-type: none"> ■ Criteria 1.2 / 1.3 DRG is heterogeneous for casemix, whereas guidelines are disease specific and variation from the sequence of care is difficult to address ■ Criteria 2.1.1 / 2.4.1 / 2.4.2. Relevant clinical population unable to be captured and information requirements unlikely to be met as diverse and dispersed group of treating clinicians and organisations ■ While respiratory infection/inflammation is a common complaint and contributes to the cost of the health system it is not well suited to clinical quality registry development. Patients are treated by large numbers of general practitioners, general physicians, respiratory physicians and geriatricians in community and hospital settings. Collection of the entire population would not be possible and there is no readily identifiable sequence of care covering all conditions. ■ An Australian Bronchiectasis Registry* has been developed however this is a research registry rather than a clinical quality registry. The main aims of this registry are to identify and collect health information from patients with non-Cystic Fibrosis (non-CF) Bronchiectasis for doctors to research the causes and to improve treatments.
Schizophrenia disorder	Cost	Included, considered under mental health

* lungfoundation.com.au/health-professionals/bronchiectasis-registry.

Description	Short-listed by	Whether included or not and rationale
Gastroscopy	Cost	<p>Not considered further, threshold criteria not met:</p> <ul style="list-style-type: none"> Criteria 2.1.1 / 2.4.1 / 2.4.2. Relevant clinical population unable to be captured and information requirements unlikely to be met as diverse and dispersed group of treating clinicians and organisations. Gastrosopies are performed by general practitioners, general physicians, gastroenterologists and surgeons. These disperse professional links would limit the ability to collect data from the entire population. There is also no coherent professional group to feed outcomes from the registry back to in order to improve care. Other methods of quality improvement may be more appropriate such as audit. The Australia and New Zealand Gastro Oesophageal Surgery Association Audit collects clinical and pathological data of patients undergoing resection for upper gastrointestinal cancer and gastrointestinal stromal tumour.
Major small and large bowel procedure	Cost	Included, considered under high burden cancers
Circulatory disorder +/- acute myocardial infarction (with invasive procedure)	Cost	Included, considered under ischaemic heart disease
Pacemaker related	Cost	Included, considered under ischaemic heart disease
Chemotherapy	Cost	Included, considered under high burden cancers
Critical care costs only for neonatal admits	Cost	Included, considered under neonatal critical care
Major affective disorder	Cost	Included, considered under mental health
Cardiac valve procedure	Cost	Included, considered under ischaemic heart disease

Description	Short-listed by	Whether included or not and rationale
COAD (COPD)	<ul style="list-style-type: none"> ■ Cost ■ Burden of disease 	<p>Not considered further, threshold criteria not met:</p> <ul style="list-style-type: none"> ■ Criteria 2.1.1 / 2.4.1 / 2.4.2. Relevant clinical population unable to be captured and information requirements unlikely to be met as diverse and dispersed group of treating clinicians and organisations. ■ While COAD/COPD is a common complaint it is not well suited to registry development. Patients are treated by large numbers of general practitioners, general physicians, respiratory physicians and geriatricians in community and hospital settings. These disperse professional links, along with the long disease trajectory, limit the ability to collect data from the entire population and use a registry to make improvements in care. There is currently no coherent professional group to feed outcomes from the registry back to in order to improve care. ■ No registry found.
AICD related	Cost	Included, considered under ischaemic heart disease
Other hip and femur procedures	Cost	Included, considered under musculoskeletal disorders
TIA, stroke	Cost	Included, considered under stroke
Coronary bypass	Cost	Included, considered under ischaemic heart disease
Heart failure	Cost	Included, considered under ischaemic heart disease
Cranial procedures	Cost	<p>Not considered further, threshold criteria not met:</p> <ul style="list-style-type: none"> ■ Criteria 1.2 / 1.3. DRG is heterogeneous for casemix, whereas guidelines are disease specific. No Australian guideline. ■ The DRG is too diverse to meaningfully be grouped under a single domain. It covers procedures for trauma, malignancy, bleeding, hydrocephalus and other intra-cranial abnormalities. There is no evidence-based sequence of care to cover these diverse conditions, and therefore meaningful performance indicators cannot be developed. ■ Some cranial procedures would be considered under cancer and trauma domains.
Hernia procedures	Cost	<p>Not considered further, threshold criteria not met:</p> <ul style="list-style-type: none"> ■ Criteria 1.2 / 1.3. DRG is heterogeneous for casemix. No Australian guideline. ■ The DRG is too diverse to be meaningful in a clinical quality registry context. There is no evidence-based sequence of care to cover these diverse conditions, and therefore meaningful performance indicators cannot be developed. ■ International registries on hernia focus on specific types of hernia, for example the Swedish Hernia Register is a clinical quality registry that contains data on all groin hernia repairs performed in patients aged 15 years or older.*

* [Swedish Hernia Register](#).

Description	Short-listed by	Whether included or not and rationale
Humerus, other lower limb procedures	Cost	Included, considered under musculoskeletal disorders
Laparoscopic cholecystectomy	Cost	<p>Not considered further, threshold criteria not met:</p> <ul style="list-style-type: none"> ■ Criteria 1.2 / 1.3. Changing sequence of care. Unwarranted variation from the sequence of care not evident. ■ Laparoscopic cholecystectomy is a common procedure for treatment of pancreatitis and gallstones. There is no evidence of variation from the sequence of care for this procedure. There are changing sequences of care for the treatment of gallstones and pancreatitis including the increased use of this procedure. ■ Sweden has a National Quality Registry for Gallstone Surgery and Endoscopic Retrograde Cholangiopancreatography* and further development of registries in this area could be considered in the future.
Unstable angina, chest pain	Cost	<p>Not considered further, threshold criteria not met:</p> <ul style="list-style-type: none"> ■ Criteria 2.1.1 / 2.4.1 / 2.4.2. Relevant clinical population unable to be captured and information requirements unlikely to be met as diverse and dispersed group of treating clinicians and organisations. ■ Unstable angina is a common complaint. Patients are treated by large numbers of general practitioners, general physicians, geriatricians and cardiologists in community and hospital settings. These disperse professional links would limit the ability to collect data from the entire population. There is also no coherent professional group to feed outcomes from the registry back to in order to improve care. This condition may be included in ischaemic heart disease in the future. ■ No registry found.
Lymphoma, acute and non-acute leukaemia	Cost	Included, considered under high burden cancers
Cellulitis	Cost	<ul style="list-style-type: none"> ■ Not considered further, threshold criteria not met: ■ Criteria 2.1.1 / 2.4.1 / 2.4.2. Relevant clinical population unable to be captured and information requirements unlikely to be met as diverse and dispersed group of treating clinicians and organisations. ■ Cellulitis is a common complaint. Patients are treated by large numbers of general practitioners, general physicians, general surgeons, geriatricians and infectious diseases specialists in community and hospital settings. These disperse professional links would limit the ability to collect data from the entire population. There is also no coherent professional group to feed outcomes from the registry back to in order to improve care. ■ No registry found.

* [National Quality Registry for Gallstone Surgery and Endoscopic Retrograde Cholangiopancreatography.](#)

Description	Short-listed by	Whether included or not and rationale
Other digestive system disorders	Cost	<p>Not considered further, threshold criteria not met:</p> <ul style="list-style-type: none"> ■ Criteria 1.2 / 1.3 / 2.1.1 / 2.4.1 / 2.4.2. DRG is heterogeneous for casemix, whereas guidelines are disease specific. No Australian guideline. Information requirements unlikely to be met as diverse and dispersed group of treating clinicians and organisations. ■ The DRG is too diverse to be meaningful in a clinical quality registry context. Patients are treated by large numbers of general practitioners, gastroenterologists, general physicians and surgeons in community and hospital settings. There is no evidence-based sequence of care to cover these diverse conditions, and therefore meaningful performance indicators cannot be developed.
Kidney and urinary tract infection	Cost	<p>Not considered further, threshold criteria not met:</p> <ul style="list-style-type: none"> ■ Criteria 2.1.1 / 2.4.1 / 2.4.2. Relevant clinical population unable to be captured and information requirements unlikely to be met as diverse and dispersed group of treating clinicians and organisations. ■ Kidney and urinary tract infection is a common complaint. Patients are treated by large numbers of general practitioners, general physicians, geriatricians, renal physicians and infectious diseases specialists in community and hospital settings. These disperse professional links would limit the ability to collect data from the entire population. There is also no coherent professional group to feed outcomes from the registry back to in order to improve care. ■ No registry found.
Colonoscopy	Cost	<p>Not considered further, threshold criteria not met:</p> <ul style="list-style-type: none"> ■ Criteria 2.1.1 / 2.4.1 / 2.4.2. Relevant clinical population unable to be captured and information requirements unlikely to be met as diverse and dispersed group of treating clinicians and organisations. ■ Colonoscopies are performed by general practitioners, general physicians, gastroenterologists, general surgeons and colorectal surgeons. These disperse professional links would limit the ability to collect data from the entire population. There is also no coherent professional group to feed outcomes from the registry back to in order to improve care. Quality, including appropriateness, of colonoscopy is being addressed through other projects. ■ The appropriate and safe use of colonoscopies would be considered under disease specific registries such as bowel cancer.
Breast condition procedure, reconstruction, breast malignancy	Cost	Included, considered under high burden cancers
Lens procedures	Cost	<p>Not considered further, threshold criteria not met:</p> <ul style="list-style-type: none"> ■ Criterion 1.3. Unwarranted variation from the sequence of care not evident. ■ Lens procedures are common procedures with a high cost to the health system. There is no evidence of variation from the sequence of care for this procedure or harm to patients. Where new procedures are developed there may be a need to undertake post-market surveillance.

Description	Short-listed by	Whether included or not and rationale
Rectal resection	Cost	Included, considered under colorectal cancer
Appendicectomy	Cost	Not considered further, threshold criteria not met: <ul style="list-style-type: none"> ■ Criterion 1.2. Changing sequence of care ■ Recent changes in the treatment of appendicitis, such as the use of antibiotics prior to invasive interventions, have led to a changing sequence of care.
Major vascular procedure	Cost	Not considered further, threshold criteria not met: <ul style="list-style-type: none"> ■ While treatment of peripheral vascular disease has a high cost to the health system it is an outcome of multiple disease processes, including smoking and diabetes. The casemix of patients vary and a large proportion is likely to have a number of comorbidities making development of indicators and risk adjustment difficult. A sub-population of patients who receive major vascular procedures may be considered under registries within the diabetes domain.
Other joint replacement	Cost	Included, considered under musculoskeletal disorders
Prostate cancer – major male pelvic procedure, surgical only	Cost	Included, considered under high burden cancers
Multiple or significant trauma	Cost	Included, considered under major trauma
Respiratory cancer – medical only	Cost	Included, considered under high burden cancers
Major burns	Cost	Included, considered under major burns
Nervous system malignancy – medical only	Cost	Included, considered under high burden cancers and hydrocephalus
Coronary heart disease	Burden of disease	Included, considered under ischaemic heart disease
Other musculoskeletal	Burden of disease	Included, considered under musculoskeletal disorders
Back pain and problems	Burden of disease	Included, considered under musculoskeletal disorders
COPD	Burden of disease	Included, considered above
Lung cancer	Burden of disease	Included, considered under high burden cancers
Dementia	Burden of disease	Included, considered under dementia

Description	Short-listed by	Whether included or not and rationale
Anxiety disorders	Burden of disease	Included, considered under mental health
Stroke	Burden of disease	Included, considered under stroke
Depressive disorders	Burden of disease	Included, considered under mental health
Suicide and self-inflicted injuries	Burden of disease	Not considered further, threshold criteria not met: <ul style="list-style-type: none"> Criteria 2.1.1 / 2.4.1 / 2.4.2. Relevant clinical population unable to be captured and information requirements unable to be met as diverse and dispersed group of treating clinicians and organisations. Patients are treated by large numbers of general practitioners, psychiatrists, psychologists and emergency physicians in community and hospital settings. These disperse professional links would limit the ability to collect data from the entire population. There is also no coherent professional group to feed outcomes from the registry back to in order to improve care. Additionally suicide cases are subject to Coronial inquiry and a registry may be difficult to operate effectively in that context. Aspects of suicide as self-harm would be considered in registries for major psychiatric disorders.
Asthma	Burden of disease	Not considered further, threshold criteria not met: <ul style="list-style-type: none"> Criteria 2.1.1 / 2.4.1 / 2.4.2. Relevant clinical population unable to be captured and information requirements unlikely to be met as diverse and dispersed group of treating clinicians and organisations. Asthma is a common complaint. Patients are treated by large numbers of general practitioners, general physicians and respiratory physicians in community and hospital settings. These disperse professional links would limit the ability to collect data from the entire population. There is also no coherent professional group to feed outcomes from the registry back to in order to improve care. No registry found.
Diabetes	Burden of disease	Included, considered under diabetes
Bowel cancer	Burden of disease	Included, considered under high burden cancers
Osteoarthritis and Rheumatoid arthritis	Burden of disease	Included, considered under musculoskeletal disorders
Upper respiratory conditions	Burden of disease	Not considered further, threshold criteria not met: <ul style="list-style-type: none"> Criteria 2.1.1 / 2.4.1 / 2.4.2. Relevant clinical population unable to be captured and information requirements unlikely to be met as diverse and dispersed group of treating clinicians and organisations. Upper respiratory conditions are common complaints. Patients are treated by large numbers of general practitioners, general physicians and respiratory physicians in community and hospital settings. These disperse professional links would limit the ability to collect data from the entire population. There is also no coherent professional group to feed outcomes from the registry back to in order to improve care.

Description	Short-listed by	Whether included or not and rationale
Breast cancer	Burden of disease	Included, considered under high burden cancers
Hearing loss	Burden of disease	<p>Not considered further, threshold criteria not met:</p> <ul style="list-style-type: none"> ■ Criteria 2.1.1 / 2.4.1 / 2.4.2. Relevant clinical population unable to be captured and information requirements unable to be met as diverse and dispersed group of treating clinicians and organisations. ■ Hearing loss is a common complaint. Patients are treated by large numbers of health professionals including audiologists and ear, nose and throat surgeons, mainly in community settings. These disperse professional links would limit the ability to collect data from the entire population. There is also no coherent professional group to feed outcomes from the registry back to in order to improve care. ■ No registry found.
Alcohol use disorders	Burden of disease	<p>Not considered further, threshold criteria not met:</p> <ul style="list-style-type: none"> ■ Criterion 1.2. Sequence of care is variable ■ Criteria 2.1.1 / 2.4.1 / 2.4.2 / 2.3. Relevant clinical population unable to be captured and governance and information requirements unlikely to be met as diverse and dispersed group of treating clinicians and organisations. ■ Alcohol use disorder is a common complaint and has a major impact on burden of disease in Australia; however, it is not well suited to clinical quality registry data collection. Patients are treated by large numbers of general practitioners, general physicians, drug and alcohol physicians, counsellors and allied health professionals in community and hospital settings. These disperse professional links would limit the ability to collect data from the entire population. There is also no coherent professional group to feed outcomes from the registry back to in order to improve care. While there are guidelines for the treatment of alcohol problems, within these, there are multiple options for treatment and patient choice has a large impact on the sequence of care. This variation in the sequence of care limits the ability for a registry to collect longitudinal data and generate risk-adjusted reports on the appropriateness and effectiveness of care. ■ No registry found.
Falls	Burden of disease	<p>Not considered further, threshold criteria not met:</p> <ul style="list-style-type: none"> ■ Criteria 2.1.1 / 2.1.2 / 2.4.1 / 2.4.2. The clinical condition or event is unable to be systematically recognised. Relevant clinical population unable to be captured and information requirements unlikely to be met as diverse and dispersed group of treating clinicians and organisations. ■ Falls occur commonly in hospital and community settings in the older patient cohort. The causes and harms from falls are diverse and treatment varies. Patients who are harmed by falls are treated by large numbers of general practitioners, general physicians, geriatricians, general surgeons, orthopaedic surgeons and other healthcare professionals. The harm from falls, such as hip fracture, would be considered under major orthopaedic procedures and some patients who received harm from falls would be considered under a trauma registry. Some falls would be considered under the trauma domain. ■ No registry found specifically for falls.

Description	Short-listed by	Whether included or not and rationale
Pancreatectomy/oesophagectomy	<ul style="list-style-type: none"> ■ Stakeholder priority 1 ■ Stakeholder priority 2 ■ Stakeholder priority 3 	<p>Not considered further, threshold criteria not met:</p> <ul style="list-style-type: none"> ■ Criterion 2.4.3. Clinically meaningful performance indicators cannot be defined. ■ The rationale for this proposed clinical quality registry is that of high complexity surgery being undertaken at low volumes in health services settings where there is insufficient procedural volume to achieve quality. It is a well-documented problem that is amenable to a public policy approach to improve service concentration, rather than an effort to demonstrate poor quality through a clinical quality registry. Some of these procedures would be considered under high burden cancers.
Ischaemic heart disease	Stakeholder priority 1	Included, considered under ischaemic heart disease
Mesh in gynaecological surgery	Stakeholder priority 1	<p>Not considered further, threshold criteria not met:</p> <ul style="list-style-type: none"> ■ Criteria 1.2 / 1.3. Sequence of care not clearly defined. ■ While use of mesh in gynaecological surgery has been raised as a concern, it may be more suitable for a post-market surveillance or epidemiological registry with a goal of determining the risks and benefits of the intervention.
Colorectal cancer	Stakeholder priority 1	Included, considered under high burden cancer
Major burns	Stakeholder priority 1	Included, considered under major burns
Cancer	Stakeholder priority 1	Included, considered under high burden cancers
Cancer surgery	Stakeholder priority 1	Included, considered under high burden cancers
Surgical mortality	Stakeholder priority 1	<p>Not considered further, threshold criteria not met:</p> <ul style="list-style-type: none"> ■ Criterion 2.4.1. Does not include an entire population with a chronic condition or disease or who have undergone a common acute event (intervention). ■ The Australian Audit of Surgical Mortality is an audit rather than a registry. It is understood to be highly effective, however it does not meet the requirements of a clinical quality registry as it offers one-off case review and improvement opportunities rather than continuous benchmarking of performance in relation to care in a specific setting or for a specific clinical condition. Some specific surgical procedures and diagnoses have been assessed individually.

Description	Short-listed by	Whether included or not and rationale
Obstructive sleep apnoea	Stakeholder priority 1	Not considered further, threshold criteria not met: <ul style="list-style-type: none"> Criteria 2.1.1 / 2.4.1 / 2.4.2. Relevant clinical population unable to be captured and information requirements unable to be met as diverse and dispersed group of treating clinicians and organisations. Obstructive sleep apnoea is a common complaint. Patients are treated by large numbers of general practitioners, general physicians, geriatricians and respiratory physicians in community and hospital settings. The professional or organisational links that would enable a functional clinical quality registry (particularly for registry outcomes to be acted on) are not evident. No registry found.
Dementia	Stakeholder priority 1	Included, considered under dementia
Spinal surgery outcomes	<ul style="list-style-type: none"> Stakeholder priority 1 Stakeholder priority 2 	Included, considered under musculoskeletal disorders
Fractures	Stakeholder priority 1	Not considered further, threshold criteria not met: <ul style="list-style-type: none"> Criteria 2.1.1 / 2.4.1 / 2.4.2. Relevant clinical population unable to be captured and information requirements unable to be met as diverse and dispersed group of treating clinicians and organisations. This proposed clinical domain is too diverse to be meaningful in a clinical quality registry context. It includes a number of different sequences of care. Patients are cared for by a range of general practitioners, general surgeons, emergency physicians and orthopaedic surgeons. The professional or organisational links that would enable a functional clinical quality registry (particularly for registry outcomes to be acted on) are not evident. Some fractures would be considered under musculoskeletal disorders.
Diabetes	Stakeholder priority 1	Included, considered under diabetes
Transition care	Stakeholder priority 1	Not considered further, threshold criteria not met: <ul style="list-style-type: none"> Criteria 2.1.1 / 2.1.2 / 2.4.1 / 2.4.2. Relevant clinical population unable to be captured and information requirements unable to be met as the clinical condition or event is not always recognisable and there is a diverse and dispersed group of treating clinicians and organisations. Transition of adolescents with chronic health conditions from paediatric to adult hospitals is a common requirement that, reportedly, is often not done well. Barriers include lack of protocols and lack of resources. There are large numbers of receiving hospitals and clinicians of different disciplines and specialties engaged in the transition process. The event is poorly defined and may not be uniformly recognisable.
Breast Cancer Surgery	Stakeholder priority 1	Included, considered under high burden cancers
Breast Implants	Stakeholder priority 1	Included, considered under high burden cancers

Description	Short-listed by	Whether included or not and rationale
Breast surgery	Stakeholder priority 2	Included, considered under high burden cancers
Disease-specific cancer registries	Stakeholder priority 1	Included, considered under high burden cancers
Indigenous ear disease	Stakeholder priority 1	Not considered further, threshold criteria not met: <ul style="list-style-type: none"> Criteria 2.1.1 / 2.4.1 / 2.4.2. Relevant clinical population unable to be captured and information requirements unable to be met as diverse and dispersed group of treating clinicians and organisations. Indigenous ear disease is a common complaint. Patients are treated by large numbers of general practitioners, paediatricians, public health specialists and other clinicians, mainly in community settings. These disperse professional links would limit the ability to collect data from the entire population. There is also no coherent professional group to feed outcomes from the registry back to in order to improve care. No registry found.
Mental Health – psychosis and schizophrenia, major affective disorders	Stakeholder priority 1	Included, considered under mental health
CSF shunt	Stakeholder priority 1	Not considered further, threshold criteria not met: <ul style="list-style-type: none"> Criteria 2.1.1 / 2.1.2 / 2.2 / 2.4.1. The information requirements required are difficult to establish. CSF shunts are used to treat a number of different conditions in a variety of clinical populations including trauma, malignancy, bleeding, hydrocephalus and other intra-cranial abnormalities. The casemix of patients vary and a large proportion is likely to have a number of comorbidities making development or indicators and risk adjustment difficult. Use of shunts may be considered under registries within the high burden cancer domain.
Dialysis, transplantation, organ donation	Stakeholder priority 2	Included, considered under renal disease
Maternity	Stakeholder priority 2	Included, considered under maternity
Non-invasive ventilation	<ul style="list-style-type: none"> Stakeholder priority 2 Stakeholder priority 3 	Not considered further, threshold criteria not met: <ul style="list-style-type: none"> Criteria 2.1.1 / 2.4.1 / 2.4.2. Relevant clinical population unable to be captured and information requirements unable to be met as diverse and dispersed group of treating clinicians and organisations. Patients are treated by large numbers of general practitioners, general physicians, geriatricians and respiratory physicians in community and hospital settings. These disperse professional links would limit the ability to collect data from the entire population. There is also no coherent professional group to feed outcomes from the registry back to in order to improve care. No registry found.

Description	Short-listed by	Whether included or not and rationale
Surgery for joint pain (knee, shoulder, back)	Stakeholder priority 2	Included, considered under musculoskeletal disorders
Stroke	Stakeholder priority 2	Included, considered under stroke
Insomnia	<ul style="list-style-type: none"> ■ Stakeholder priority 2 ■ Stakeholder priority 3 	<p>Not considered further, threshold criteria not met:</p> <ul style="list-style-type: none"> ■ Criteria 2.1.1 / 2.4.1 / 2.4.2 Relevant clinical population unable to be captured and information requirements unable to be met as diverse and dispersed group of treating clinicians and organisations. ■ Insomnia is a common complaint. Patients are treated by large numbers of general practitioners, general physicians, respiratory physicians and other sleep specialists, mainly in community settings. These disperse professional links would limit the ability to collect data from the entire population. There is also no coherent professional group to feed outcomes from the registry back to in order to improve care. ■ No registry found.
Osteoporotic hip fractures	Stakeholder priority 2	Included, considered under musculoskeletal disorders
Immunisation coverage	Stakeholder priority 2	<p>Not considered further, threshold criteria not met:</p> <ul style="list-style-type: none"> ■ Criteria 1.1 / 1.2 / 1.3 / 1.4. Clinical relevance is not established. ■ Immunisation is a simple procedure and there are few risks associated with a routine service. The purpose of a registry would not be to monitor and improve coverage, rather than the quality of the service per se. While that is an important public health goal, an immunisation registry is an epidemiological, rather than a clinical quality registry.
High cost interventional/ surgical procedures/ devices	Stakeholder priority 2	Included, considered under ischaemic heart disease
Rhinology, otology, head and neck surgery, specifically outcomes for tonsil, grommet and nasal septum surgery	<ul style="list-style-type: none"> ■ Stakeholder priority 2 ■ Stakeholder priority 3 	<p>Not considered further, threshold criteria not met:</p> <ul style="list-style-type: none"> ■ Criteria 2.1.1 / 2.4.1 / 2.4.2. The proposed clinical domain is too broad to be meaningful. ■ This proposed clinical domain is too diverse to be meaningful in a clinical quality registry context. It includes a number of different sequences of care. ■ No registry found.
Cancer treatment	Stakeholder priority 3	Included, considered under high burden cancers
Joint replacement	Stakeholder priority 3	Included, considered under musculoskeletal disorders
Renal	Stakeholder priority 3	Included, considered under renal disease

Description	Short-listed by	Whether included or not and rationale
Antibiotic resistant bacterial infections	Stakeholder priority 3	Included, considered above
Depression	Stakeholder priority 3	Included, considered under mental health
Pregnancy outcomes	Stakeholder priority 3	Included, considered under maternity
Critical care	Stakeholder priority 3	Included, considered under adult critical care

A clinical domain of 'AMD treated with new anti-vascular endothelial growth factor drugs' was also proposed during consultation for this project but is not included in the short-list as it did not emerge from the stakeholder survey.

The population cost (reportedly \$12 billion per year in Australia), the prevalence of AMD-related blindness (up to 40,000 new cases each year in Australia) and the availability of new, effective drugs were proposed as the rationale for an AMD clinical quality registry.

A clinical registry has already been established for AMD, the purpose of which is to:

- Track the risks and benefits of the new treatments for macular disease in the general population in Australia to determine how to use these treatments as safely and cost-effectively as possible
- Determine the most appropriate method of treatment for macular disease.

The proposed clinical domain of AMD has been excluded from further consideration because there is no evidence-based, well executed sequence of care that improves patient outcomes for the particular condition (Criterion 1.2). In fact, development of evidence-based clinical management guidelines is one of the anticipated outcomes of the registry. The registry is clearly a valuable and important endeavour, but it does not meet the development criteria for a clinical quality registry. Its purpose appears to be research and/or post-market drug surveillance.

Attachment 4: Analysis of evidence-based sequences of care and/or existing registries

Table A4.1: Evidence analysis

Diagnoses related group	Description	Guidelines and registries
A06AB	Tracheostomy with ventilation >95 hours with / without catastrophic complications	<ul style="list-style-type: none"> ■ DRG is intervention based, not diagnosis based, so very heterogeneous casemix ■ Guideline: Not specific to DRG ■ Australia has the ANZICS CORE registries (adult patient database, paediatric intensive care registry, critical care resources registry and Central Line Associated Blood Stream Infection registry). Note: Not all sites that ventilate patients contribute to the registries.
I04AB, I32ABC	Knee replacement, revision	<ul style="list-style-type: none"> ■ Guideline: Systematic review – Mak, J. C. S., Fransen, M., Jennings, M., March, L., Mittal, R. and Harris, I. A. (2014), Evidence-based review for patients undergoing elective hip and knee replacement. ANZ Journal of Surgery, 84: 17–24. ■ Registry: Australian Orthopaedic Association. National Joint Replacement Registry collects comprehensive data for all knee replacements.
I03AB, I31AB	Hip replacement, revision	<ul style="list-style-type: none"> ■ Guideline: Systematic review – Mak, J. C. S., Fransen, M., Jennings, M., March, L., Mittal, R. and Harris, I. A. (2014), Evidence-based review for patients undergoing elective hip and knee replacement. ANZ Journal of Surgery, 84: 17–24. ■ Registry: Australian Orthopaedic Association. National Joint Replacement Registry collects comprehensive data for all hip replacements.
O60ABC	Vaginal delivery	<ul style="list-style-type: none"> ■ Guideline: State Health Department guidelines for example – NSW Health. (2010). PD2010_045, Maternity-Towards Normal Birth in NSW. ■ No Australian registry, however, national maternal data collection for all pregnancies through National Perinatal Data Collection.
O01ABC	Caesarean delivery	<ul style="list-style-type: none"> ■ Guideline: State Health Department guidelines, for example, NSW Health. (2014). Supporting women in the first birth after caesarean section. NICE (2011). Caesarean section, (CG132). ■ No Australian registry, however, national maternal data collection for all pregnancies through National Perinatal Data Collection.
I06Z, I09AB	Spinal fusion	<ul style="list-style-type: none"> ■ No Australian guideline: Systematic review of seventeen aspects of lumbar spinal fusion management. Groff MW et al. J Neurosurg Spine. 2014 Jul; 21(1):1–139. ■ Registry: Newly established as the Australian Spine Registry. Data does not appear to be available at this stage. ■ Multiple spine registries exist internationally, including in Sweden, Europe, Canada, US and the UK. The British Spine Registry was set up by the British Association of Spinal Surgeons to monitor the outcomes of spinal procedures, collecting data to better understand procedures, techniques and a patient’s experience and quality of life.

Diagnoses related group	Description	Guidelines and registries
L61Z	Haemodialysis	<ul style="list-style-type: none"> Guideline: Kidney Health Australia – CARI guidelines Registry: ANZDATA collects comprehensive data.
U61AB	Schizophrenia disorder	<ul style="list-style-type: none"> Guideline: No Australian guideline. NICE (2014) Psychosis and Schizophrenia in Adults – prevention and management (CG178). No Australian schizophrenia registry Internationally, the Management of Schizophrenia in Clinical Practice registry is a US disease-based schizophrenia registry. Other countries with schizophrenia registries include Malaysia, Latin America, the Netherlands, Denmark, Sweden.
G46ABC, G47ABC	Gastroscopy	<ul style="list-style-type: none"> No Australian or international guideline No Australian registry In the US, the GIQuIC has an endoscopic quality registry of upper gastrointestinal endoscopy and related quality measures. GIQuIC is a quality benchmarking registry co-sponsored by the American College of Gastroenterology and the American Society for Gastrointestinal Endoscopy, to provide reliable and relevant measures of endoscopic quality. The UK Radiofrequency Ablation (RFA) registry captures data on RFA for Barrett's oesophagus from participating centres. Also registries in Malaysia and Sweden.
G02AB	Major small and large bowel procedure	<ul style="list-style-type: none"> No Australian guideline Australian registries include the hereditary cancer registry, Australasian Colorectal Cancer Family Registry and Australasian Association of Cancer Registries Registries that collect data internationally include the Intestinal Transplant Registry and Short Bowel Syndrome Registry. Other countries have inflammatory bowel disease registries (US, UK).
F41AB, F42ABC	Circulatory disorder +/- acute myocardial infarction (with invasive procedure)	<ul style="list-style-type: none"> Guideline: 2016 ACS guidelines being developed. Also 2011 addendum to the National Heart Foundation of Australia/Cardiac Society of Australia and New Zealand guidelines for the management of acute coronary syndromes (ACS) 2006. ACOR is a cardiac procedures registry to document and measure outcomes for patients undergoing cardiovascular procedures in Australia and New Zealand with the aim of improving cardiovascular outcomes for patients. Data are collected on a range of procedures including, coronary artery bypass grafting and valve surgery, Percutaneous coronary intervention, implantable cardioverter defibrillator and cardiac resynchronisation therapy device insertion. Not all sites that perform these procedures contribute to the registry. Australia also has an Australian and New Zealand Society for Vascular Surgery Australasian Vascular Audit, Australian Genetic Heart Disease Registry and Australian Cardiac Procedures Registry The US, UK and Europe operate clinical quality registries in cardiovascular disease. Sweden has the most extensive group of registries internationally. In the cardiovascular domain they have the following registries: heart failure, coronary angiography and angioplasty, heart surgery, cardiac intensive care, out-of-hospital cardiac arrest, congenital heart disease, adult congenital heart disease, secondary prevention in cardiac intensive care, catheter ablation and atrial fibrillation and anticoagulation.

Diagnoses related group	Description	Guidelines and registries
F12AB, F17AB, F18AB	Pacemaker related	<ul style="list-style-type: none"> No Australian guideline. International guideline about device selection: Gillis AM, et al. HRS/ACCF expert consensus statement on pacemaker device and mode selection. Heart Rhythm. 2012 Aug;9(8):1344–65. ACOR is a cardiac procedures registry to document and measure outcomes for patients undergoing cardiovascular procedures in Australia and New Zealand with the aim of improving cardiovascular outcomes for patients. Data are collected on a range of procedures including implantable cardioverter defibrillator and cardiac resynchronisation therapy device insertion. Not all sites that perform these procedures contribute to the registry. The US, UK and Europe operate clinical quality registries that include pacemakers.
P01Z – P67ABCD	Critical care costs only for neonatal admits	<ul style="list-style-type: none"> No Australian guideline In Australia the national data collection for all births is maintained by the National Perinatal Statistics Unit in the National Perinatal Data Collection.
U63AB	Major affective disorder	<ul style="list-style-type: none"> Guideline: Australian Society for bipolar and depressive disorders. A consensus statement for safety monitoring guidelines of treatments for major depressive disorder 2011. Provides guidance about monitoring treatment effects not treatment itself. NICE (2014) Bipolar Disorder – Assessment and Management (CG 184). No Australian registry The Danish Psychiatric Disorders Registry is most comprehensive registry and is used as a basis for assessing effectiveness of different therapy options and monitoring patient outcomes. Also, there are psychiatric registries in some US States and in South-East Asia (Malaysia).
F03AB, F04AB	Cardiac valve procedure	<ul style="list-style-type: none"> No Australian guideline. International guideline: 2014 AHA/ACC guideline for the management of patients with valvular heart disease: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. ACOR is a cardiac procedures registry to document and measure outcomes for patients undergoing cardiovascular procedures in Australia and New Zealand with the aim of improving cardiovascular outcomes for patients. Data are collected on a range of procedures including valve surgery. Not all sites that perform these procedures contribute to the registry. The US, UK and Europe operate clinical quality registries that include valvular procedures.
F01AB, F02Z	AICD related	<ul style="list-style-type: none"> No Australian guideline. NICE (2014) Implantable defibrillators and cardiac resynchronisation therapy for arrhythmias and heart failure (TAG314) is guidance about patient and device selection, not a clinical pathway. ACOR is a cardiac procedures registry to document and measure outcomes for patients undergoing cardiovascular procedures in Australia and New Zealand with the aim of improving cardiovascular outcomes for patients. Data are collected on a range of procedures including AICDs. Not all sites that perform these procedures contribute to the registry. The US, UK and Europe operate clinical quality registries that include AICDs.

Diagnoses related group	Description	Guidelines and registries
I08AB	Other hip and femur procedures	<ul style="list-style-type: none"> ■ ANZHFR Australian and New Zealand Guideline for Hip Fracture Care - Improving Outcomes in Hip Fracture Management of Adults (2014) ■ No comprehensive registries identified nationally or internationally for surgeries other than joint replacement (with the exception of spinal registries which collect surgical data on all spinal surgeries).
B69AB, B70ABCD	TIA, stroke	<ul style="list-style-type: none"> ■ The Australian Guideline: Stroke Foundation – Clinical guidelines. National Service Improvement Framework for Stroke 2010. ■ The Australian Stroke Clinical Registry is a collaborative national effort to monitor, promote and improve the quality of acute stroke management. The registry collects data from participating hospitals across Australia. ■ Multiple stroke registries exist internationally, including in the US, UK, multiple European sites, Malaysia and India.
F05AB, F06AB	Coronary bypass	<ul style="list-style-type: none"> ■ Guideline: 2016 ACS guidelines being developed. Also 2011 addendum to the National Heart Foundation of Australia/Cardiac Society of Australia and New Zealand guidelines for the management of acute coronary syndromes (ACS) 2006. ■ ACOR is a cardiac procedures registry to document and measure outcomes for patients undergoing cardiovascular procedures in Australia and New Zealand with the aim of improving cardiovascular outcomes for patients. Data are collected on coronary artery bypass grafting. Not all sites that perform these procedures contribute to the registry. ■ The US, UK and Europe operate clinical quality registries that capture coronary bypass data.
H08AB	Laparoscopic cholecystectomy	<ul style="list-style-type: none"> ■ No Australian guideline. International guideline: NICE (2014) Gallstone disease: diagnosis and initial management (CG 188). ■ No Australian registry ■ There is a Norwegian National Cholecystectomy Registry. Some jurisdictions in the US have cholecystectomy registries. There is a US National Laparoscopic Surgery Registry, which some laparoscopic surgeons enter data into.
R60AB, R61ABC	Lymphoma, acute and non-acute leukaemia	<ul style="list-style-type: none"> ■ Comprehensive national data collection through Australasian Association of Cancer Registries. Australia also has the Australian Bone Marrow Donor Registry and Australasian Bone Marrow Transplant Recipient Registry and Australasian Leukaemia and Lymphoma Group Registry and Tissue Bank. There is also a Tasmanian Lymphoma and Leukaemia Registry. ■ Lymphoma-specific registries internationally include the Swedish Lymphoma Registry, Danish Lymphoma Registry, American Burkitt Lymphoma Registry, German Central Cutaneous Lymphoma Registry and European Blood and Marrow Transplant Lymphoma Registry.

Diagnoses related group	Description	Guidelines and registries
G48ABC	Colonoscopy	<ul style="list-style-type: none"> ■ No Australian guideline. There are international guidelines with respect to surveillance colonoscopy and the use of colonoscopy in management of specific conditions. ■ Australia has a bowel cancer screening registry which collects colonoscopy-related data on the sub-group of patients who participate in the National Bowel Cancer Screening Program ■ The US GIQuIC collects data from physicians from hospitals, universities, ambulatory surgery centres and office-based endoscopy units nationwide on quality indicators for colonoscopy.
J06AB, J07AB, J14Z, J62AB	Breast condition procedure, reconstruction, breast malignancy	<ul style="list-style-type: none"> ■ No Australian guideline ■ The ABDR tracks quality and outcomes associated with breast device surgery in participating centres nationally. The Australian Society of Plastic Surgeons operated an Australian Breast Implant Registry which was superseded by the ABDR. ■ There are international and European breast implant registries. There is a Danish Registry for Plastic Surgery of the Breast and there are breast implant registries in the UK and other Scandinavian countries. The US also has a nipple-sparing mastectomy registry.
C16Z	Lens procedures	<ul style="list-style-type: none"> ■ No Australian guideline. International guideline: Cataract in the adult eye. 1996 Sep (revised 2011 Sep). NGC:008993 American Academy of Ophthalmology – Medical Specialty Society. ■ There is no Australia-wide lens registry. The Australian Corneal Graft Registry is an Australia-wide register of human corneal transplants. ■ The American Academy of Ophthalmology IRIS[®] Registry (Intelligent Research in Sight) is a comprehensive US eye disease clinical registry. Active engagement with the IRIS Registry enables ophthalmologists to meet accreditation requirements. The Paediatric Cataract Surgery Outcomes Registry collects data in paediatric patients in the US. The European Registry of Quality Outcomes for Cataract and Refractive Surgery (EUREQUO), the UK Royal College of Ophthalmologists' National Ophthalmology Database and the Malaysian Cataract Registry are also comprehensive eye registries.
G01AB	Rectal resection	<ul style="list-style-type: none"> ■ No Australian guideline. International guideline: NICE (2014) Colorectal cancer: diagnosis and management (CG131). ■ No Australian registry. Rectal and anal cancer data are within the Australasian Association of Cancer Registries and various Australian bowel cancer registries (described above) ■ Europe has the European Stapled Transanal Rectal Resection Registry. There is a Swedish Colorectal Cancer Registry, a Spanish National Registry of Anastomotic Leakage and Norwegian Rectal Cancer Registry.
G07AB	Appendicectomy	<ul style="list-style-type: none"> ■ No Australian guideline. No Australian registry. ■ The Swedish Inpatient Registry contains detailed appendicectomy data.

Diagnoses related group	Description	Guidelines and registries
F08AB	Major vascular procedure	<ul style="list-style-type: none"> Guidelines: Australian and New Zealand Comprehensive Guidelines on Leg Ulcer Management. International guidelines from the US include Management of Diabetic Foot, Atherosclerotic Occlusive Disease of the Lower Extremities, Management of Venous Leg Ulcers, Early Thrombus Removal Strategies for Acute DVT, Management of Extracranial Carotid Disease and from Europe include Critical Limb Ischaemia and Diabetic Foot, Management of Abdominal Aortic Aneurysms, Chronic Venous Disease. Registry: National Vascular Audit.
I05AB	Other joint replacement	<ul style="list-style-type: none"> No Australian guideline. International guideline: NICE (2010) Shoulder resurfacing arthroplasty (IPG 354). A North American systematic review, American Academy of Orthopaedic Surgeons clinical practice guideline on the treatment of glenohumeral joint osteoarthritis. 2009 Dec 4 (reaffirmed 2014). NGC:007581 American Academy of Orthopaedic Surgeons – Medical Specialty Society, was unable to provide definitive recommendations with respect to arthroplasty. Australian Orthopaedic Association National Joint Replacement Registry collects comprehensive data on all joint replacement surgery. Other joint procedures not collected. No comprehensive registries identified nationally or internationally for surgeries other than joint replacement.
M01AB	Prostate cancer – major male pelvic procedure, surgical only	<ul style="list-style-type: none"> Guidelines: Cancer Council Australia Clinical Practice Guidelines: PSA testing and early management of test-detected prostate cancer (2016). Clinical Practice Guidelines for the management of locally advanced and metastatic prostate cancer (2010). There is an Australian And New Zealand Prostate Cancer Outcomes Registry that collects information on the type of prostatectomy procedures performed. Information about prostate cancer is also collected by the Australasian Association of Cancer Registries. The US has the American Urological Association Quality Registry that includes prostate surgery data.
L71AB	Respiratory cancer – medical only	<ul style="list-style-type: none"> Comprehensive national data collection through Australasian Association of Cancer Registries. Victoria has a lung cancer registry.
Y01Z, Y02AB, Y03Z, Y60Z, Y61Z	Burns	<ul style="list-style-type: none"> Registry: Burns Registry of Australia and New Zealand Guidelines: Multiple jurisdictional, e.g. Clinical Practice Guidelines. Burn patient management (NSW Agency for Clinical Innovation). Clinical Practice Guidelines: Burns/ management of burn wounds (RCH Melbourne).
N/A	Mesh in gynaecological surgery	<ul style="list-style-type: none"> Guidelines: RANZCOG guidelines for propylene vaginal mesh implants for vaginal prolapse (produced by the executive of the Urogynaecological Society of Australasia, 2013) No Australian registry: Internationally, there is an Austrian urogynecology vaginal mesh registry.

Diagnoses related group	Description	Guidelines and registries
N/A	Dialysis, transplantation, organ donation	<ul style="list-style-type: none"> ■ Guideline: Kidney Health Australia – Caring for Australasians with Renal Impairment guidelines – chronic kidney disease, dialysis, transplantation ■ Registry: ANZDATA collects comprehensive data.
N/A	CSF shunt	<ul style="list-style-type: none"> ■ Registry: Pilot Australasian Shunt Registry based a Children’s Hospital Westmead. Neurosurgical Society of Australasia proposes broader development of a registry. Multiple international registries, e.g. UK shunt registry. ■ Guidelines: Multiple jurisdictional, e.g. Insertion or revision of ventriculoperitoneal shunt. WA Health.

Attachment 5: Burden of disease data for short-listed clinical domains

Table A5.1: Ischaemic heart disease

Conditions used in burden of disease	Total DALYs 2011	As percentage of total DALYs 2011
Coronary heart disease	346,651	7.71%
Aortic aneurysm	15,472	0.34%
Atrial fibrillation and flutter	37,526	0.83%
Cardiomyopathy	23,105	0.51%
Non-rheumatic valvular disease	27,531	0.61%
Rheumatic heart disease	11,539	0.26%
Other cardiovascular diseases	37,644	0.84%
Total ischaemic heart disease	499,468	11.10%

Table A5.2: Musculoskeletal disorders

Conditions used in burden of disease	Total DALYs 2011	As percentage of total DALYs 2011
Back pain and problems	163,788	3.64%
Spinal cord injuries	7,432	0.17%
Other musculoskeletal, osteoarthritis and rheumatoid arthritis	353,242	7.86%
Other musculoskeletal	183,947	4.09%
Osteoarthritis	85,806	1.91%
Rheumatoid arthritis	83,489	1.86%
Hip fracture	6,977	0.16%
Humerus fracture	142	0.00%
Tibia and ankle fracture	421	0.01%
Total musculoskeletal disorders	532,002	11.84%

Table A5.3: Major trauma

Conditions used in burden of disease	Total DALYs 2011	As percentage of total DALYs 2011
All other external causes of injury	6,874	0.15%
Drowning	10,723	0.24%
Falls	59,116	1.32%
Fire, burns and scalds	7,768	0.17%
Homicide and violence	26,057	0.58%
Other land transport injuries	13,275	0.30%
Other road traffic injuries	12,916	0.29%
Other unintentional injuries	30,671	0.68%
Poisoning	51,406	1.14%
Road traffic injuries – motor vehicle occupants	49,501	1.10%
Road traffic injuries – motorcyclists	12,677	0.28%
Total major trauma	280,984	6.25%

Table A5.4: Adult critical care

Conditions used in burden of disease	Total DALYs 2011	As percentage of total DALYs 2011
Not suitable for burden of disease analysis	–	–
Total adult critical care	–	–

Table A5.5: High burden cancers

Conditions used in burden of disease	Total DALYs 2011	As percentage of total DALYs 2011
Bowel cancer	92,422	2.06%
Gallbladder and bile duct disease	5,110	0.11%
Leukaemia	30,629	0.68%
Non-Hodgkin's lymphoma	25,456	0.57%
Other lymphohaematopoietic (blood) cancers	7,346	0.16%
Breast cancer	70,675	1.57%
Lung cancer	154,890	3.45%
Brain and central nervous system cancer	35,662	0.79%
Prostate cancer	49,232	1.10%
Total high burden cancers	471,422	10.49%

Table A5.6: Stroke

Conditions used in burden of disease	Total DALYs 2011	As percentage of total DALYs 2011
Stroke	136,771	3.04%
Total stroke	136,771	3.04%

Table A5.7: Renal disease

Conditions used in burden of disease	Total DALYs 2011	As percentage of total DALYs 2011
Chronic kidney disease	42,574	0.95%
Other kidney and urinary diseases	13,662	0.30%
Total renal disease	56,236	1.25%

Table A5.8: Neonatal critical care

Conditions used in burden of disease	Total DALYs 2011	As percentage of total DALYs 2011
Birth trauma and asphyxia	18,984	0.42%
Brain malformations	5,217	0.12%
Cardiovascular defects	12,250	0.27%
Cerebral palsy	9,192	0.20%
Cleft lip and/or palate	305	0.01%
Gastrointestinal malformations	3,364	0.07%
Neonatal infections	2,464	0.05%
Neural tube defects	3,001	0.07%
Other congenital conditions	10,238	0.23%
Other disorders of infancy	10,532	0.23%
Pre-term birth and low birth weight complications	25,230	0.56%
Urogenital malformations	1,996	0.04%
Total neonatal critical care	102,773	2.27%

Table A5.9: Mental health

Conditions used in burden of disease	Total DALYs 2011	As percentage of total DALYs 2011
Depressive disorders	127,659	2.84%
Bipolar affective disorder	38,310	0.85%
Schizophrenia	34,331	0.76%
Anxiety disorders	140,971	3.1%
Total mental health	341,271	7.55%

Table A5.10: Maternity

Conditions used in burden of disease	Total DALYs 2011	As percentage of total DALYs 2011
Hypertensive disorders of pregnancy	344	0.01%
Maternal haemorrhage	415	0.01%
Maternal infections	93	0.00%
Obstructed labour	199	0.00%
Genital prolapse	18,263	0.41%
Other reproductive conditions	3,140	0.07%
Other maternal conditions	629	0.01%
Total maternity	23,083	0.51%

Table A5.11: Dementia

Conditions used in burden of disease	Total DALYs 2011	As percentage of total DALYs 2011
Dementia	151,308	3.4%
Total dementia	151,308	3.4%

Table A5.12: Major burns

Conditions used in burden of disease	Total DALYs 2011	As percentage of total DALYs 2011
Fire, burns and scalds	7,768	0.17%
Total major burns	7,768	0.17%

Table A5.13: Diabetes

Conditions used in burden of disease	Total DALYs 2011	As percentage of total DALYs 2011
Diabetes	101,653	2.3%
Gestational diabetes	207	0.00%
Total diabetes	101,860	2.3%

Attachment 6: Cost data for short-listed potential clinical domains

Table A6.1: Ischaemic heart disease

DRG	Description	NHCDC 2012/13 costs
F41AB, F42ABC	Circulatory disorder +/- acute myocardial infarction (with invasive procedure)	\$0.50 billion
F12AB, F17AB, F18AB	Pacemaker-related	\$0.45 billion
F03AB, F04AB	Cardiac valve procedure	\$0.41 billion
F01AB, F02Z	AICD related	\$0.40 billion
F05AB, F06AB	Coronary bypass	\$0.37 billion
F62ABC	Heart failure	\$0.37 billion
F68AB	Congenital heart disease	\$0.003 billion
F76AB	Arrhythmia, cardiac arrest and conduction disorders	\$0.18 billion
Total ischaemic heart disease		\$2.68 billion

Table A6.2: Musculoskeletal disorders

DRG	Description	NHCDC 2012/13 costs
I04AB, I32ABC	Knee replacement, revision	\$1.2 billion
I03AB, I31AB	Hip replacement, revision	\$1.1 billion
I08AB, I78AB	Other hip and femur procedures, fractured neck of femur	\$0.41 billion
I05AB	Other joint replacement	\$0.14 billion
B68AB	Multiple sclerosis and cerebellar ataxia	\$0.193 billion
I09AB	Spinal fusion	\$0.20 billion
I68AB	Non-surgical spinal disorders	\$0.365 billion
A11AB	Insertion of implantable spinal infusion device	\$0.003 billion
B03AB	Spinal procedures	\$0.053 billion
I06Z	Spinal fusion for deformity	\$0.019 billion
I06Z, I09AB	Spinal fusion	\$0.65 billion
Total musculoskeletal disorders		\$4.33 billion

Table A6.3: Major trauma

DRG	Description	NHCDC 2012/13 costs
W01Z-W61AB, I74Z, I75AB, X02A-X60AB	Multi-trauma and injuries	\$0.83 billion
Total major trauma		\$0.83 billion

Table A6.4: Adult critical care

DRG	Description	NHCDC 2012/13 costs
All DRGs ex P01Z-P67ABCD	All critical care costs except neonatal admits	\$2.40 billion
Total adult critical care		\$2.40 billion

Table A6.5: High burden cancers

DRG	Description	NHCDC 2012/13 costs
G02AB	Major small and large bowel procedure	\$0.51 billion
G01AB	Rectal resection	\$0.26 billion
G60AB (73%)	Digestive malignancy	\$0.07 billion
J06AB, J07AB, J14Z, J62AB	Breast condition procedure, reconstruction, breast malignancy	\$0.31 billion
R01AB, R03AB, R60AB, R61ABC	Lymphoma, acute and non-acute leukaemia	\$0.48 billion
E01AB, E71AB	Respiratory cancer	\$0.29 billion
M01AB, M60AB	Prostate cancer	\$0.17 billion
R63Z	Chemotherapy	\$0.43 billion
Total high burden cancers		\$2.52 billion

Table A6.6: Stroke

DRG	Description	NHCDC 2012/13 costs
B69AB, B70ABCD	TIA, stroke	\$0.39 billion
Total stroke		\$0.39 billion

Table A6.7: Renal disease

DRG	Description	NHCDC 2012/13 costs
L61Z	Haemodialysis	\$0.64 billion
L60ABC	Chronic kidney disease	\$0.16 billion
L62AB, L63AB	Kidney and urinary tract neoplasms and infections	\$1.24 billion
L64Z	Urinary stones and obstruction	\$0.07 billion
L68Z	Peritoneal dialysis	\$0.005 billion
L67AB	Other kidney and urinary tract disorders	\$0.077 billion
Total renal disease		\$2.19 billion

Table A6.8: Neonatal critical care

DRG	Description	NHCDC 2012/13 costs
P01Z – P67ABCD	Critical care costs only for neonatal admits	\$0.43 billion
Total neonatal critical care		\$0.43 billion

Table A6.9: Mental health

DRG	Description	NHCDC 2012/13 costs
U61AB	Schizophrenia disorder	\$0.59 billion
U63AB	Major affective disorder	\$0.43 billion
U40Z	Mental health treatment with electroconvulsive therapy, sameday	\$0.011 billion
U60Z	Mental health treatment without electroconvulsive therapy, sameday	\$0.017 billion
U62AB	Paranoia and acute psychiatric disorders	\$0.081 billion
U64Z	Other affective and somatoform disorders	\$0.093 billion
U65Z	Anxiety disorders	\$0.042 billion
U66Z	Eating and obsessive-compulsive disorders	\$0.065 billion
U67Z	Personality disorders and acute reactions	\$0.16 billion
U68Z	Childhood mental disorders	\$0.012 billion
Total mental health		\$1.6 billion

Table A6.10: Maternity

DRG	Description	NHCDC 2012/13 costs
O60ABC	Vaginal delivery	\$1.1 billion
O01ABC	Caesarean delivery	\$1.0 billion
Total maternity		\$2.1 billion

Table A6.11: Dementia

DRG	Description	NHCDC 2012/13 costs
B63Z	Dementia and other chronic disturbances of cerebral function	\$0.095 billion
Total dementia		\$0.095 billion

Table A6.12: Major burns

DRG	Description	NHCDC 2012/13 costs
Y01Z, Y02AB, Y03Z, Y60Z, Y61Z, Y62AB	Burns	\$0.11 billion
Total major burns		\$0.11 billion

Table A6.13: Diabetes

DRG	Description	NHCDC 2012/13 costs
K60ABC, X63AB	Diabetes with and without complications and diabetes sameday	\$0.193 billion
Total diabetes		\$0.193 billion

Attachment 7: Text content for Figure 1

Score (high to low)	Domains	Summary
3	Ischaemic heart disease	Serious consequences of poor quality care, very high burden of disease and cost to the health system. Strong clinical support registries in this domain. Current national registries and potential to expand into non-surgical interventions in the future.
3	Musculoskeletal disorders	Serious consequences of poor quality care, very high cost and high burden domain. A number of national registries in hip and knee procedures. Potential to expand to registries for non-surgical interventions in the future.
2.75	Trauma	Serious consequences of poor quality care, very high burden of disease and high cost to the system. Established leadership group and national registry with incomplete capture as well as jurisdictional registries.
2.75	Adult critical care	Serious consequences of poor quality care, very high cost to the health system and estimated high burden of disease. Very strong clinical support and leadership. National registry with close to complete coverage.
2.75	High burden cancers	Serious consequences of poor quality care, very high cost and high burden of disease. Current national population based registers and a number of jurisdictional cancer specific registries. National registry for prostate cancer.
2.5	Stroke	Serious consequences of poor quality care, high burden of disease and moderately high cost to the system. Strong leadership and a national registry.
2.5	Renal disease	Serious consequences of poor quality care, very high cost and moderately high burden of disease. Established leadership group for dialysis and transplantation and expand to registries in this domain.
2.25	Neonatal critical care	Serious consequences of poor quality care, high burden of disease and moderately high cost. Existing leadership group and national registry with substantial capture.
2.25	Mental health	Serious consequences of poor quality care, very high burden of disease and very high cost. Clinical advocacy for registries but no identified leadership group or current registries. Initial registries may focus on sub-groups of patients where the entire population can be captured.
1.75	Maternity	Serious consequences of poor quality care, moderate burden of disease and high cost. Current data collections by jurisdictions and through administrative data are substantial which could be drawn on to develop clinical quality registries.
1.25	Dementia	Serious consequences of poor quality care, high burden of disease and moderate acute care costs. No current registries. Clinical advocacy for registry development in this area. Scoping study on potential to develop registry in this domain is underway.
1	Major burns	Serious consequences of poor quality care, moderate burden of disease and moderate cost. Established leadership group and national registry with incomplete patient capture.
1	Diabetes	Serious consequences of poor quality care, high burden of disease and moderate cost. Clinical advocacy for the development of clinical quality registries.

Acronyms and abbreviations

ABDR: Australian Breast Device Registry

ACOR: Australasian Cardiac Outcomes Registry

ACS: Acute coronary syndromes

AICD: Automated implantable cardioverter-defibrillator

AIHW: Australian Institute of Health and Welfare

AMD: Age-related macular degeneration

ANDA: Australian National Diabetes Audit

ANZDATA: Australian and New Zealand Dialysis and Transplant Registry

ANZHFR: Australian & New Zealand Hip Fracture Registry

ANZICS: Australian and New Zealand Intensive Care Society

AusTQIP: Australian Trauma Quality Improvement Program

BOD: Burden of disease

COAD: Chronic obstructive airways disease

COPD: Chronic obstructive pulmonary disease

CSF: Cerebrospinal fluid

DALYs: Disability-adjusted life years

DRG: Diagnosis related groups

DVT: Deep vein thrombosis

GIQuIC: Gastrointestinal Quality Improvement Consortium

NCCH: National Centre for Classification in Health

NEHTA: National E-Health Transition Authority

NHCDC: National Hospital Cost Data Collection

NHIPPC: National Health Information and Performance Principal Committee

N/A: Not applicable

PCOR-ANZ: Prostate Cancer Outcomes Registry – Australia and New Zealand

PREMs: Patient reported experience measures

PROMs: Patient reported outcome measures

RANZGOG: Royal Australian and New Zealand College of Obstetricians and Gynaecologists

The Commission: Australian Commission on Safety and Quality in Health Care

TIA: Transient ischaemic attack

YLD: Years lived with disability

YLL: Years of life lost

Glossary

Administrative data: This refers to information that is collected, processed, and stored in automated information systems. Administrative data include enrolment or eligibility information, claims information, and managed care encounters.

Burden of disease (BOD): The quantified impact of a disease or injury on a population using the DALYs measure.

Clinical guidelines: Systematically developed statements to inform practitioner and patient decisions on appropriate health care for specific clinical circumstances.

Clinical quality registry: Organisation that monitor the quality (appropriateness and effectiveness) of health care, within specific clinical domains, by routinely collecting, analysing and reporting health-related information, for a self-improving health system

Clinician: a healthcare provider, trained as a health professional, including registered and non-registered practitioners. Clinicians may provide care within a health service organisation as an employee, a contractor or a credentialed healthcare provider, or under other working arrangements. They include nurses, midwives, medical practitioners, allied health practitioners, technicians, scientists and other clinicians who provide health care, and students who provide health care under supervision.

Consumer: A person who has used, or may potentially use, health services, or is a carer for a patient using health services. A healthcare consumer may also act as a consumer representative to provide a consumer perspective, contribute consumer experiences, advocate for the interests of current and potential health service users, and take part in decision-making processes.

Disability-adjusted life years (DALYs): A measure of healthy life lost, either through premature death or living with disability due to illness or injury. Often used synonymously with health loss.

Governance: The set of relationships and responsibilities established by a health service organisation between its executive, workforce and stakeholders (including patients and consumers). Governance incorporates the processes, customs, policy directives, laws and conventions affecting the way an organisation is directed, administered or controlled. Governance arrangements provide the structure for setting the corporate objectives (social, fiscal, legal, human resources) of the organisation and the means to achieve the objectives. They also specify the mechanisms for monitoring performance. Effective governance provides a clear statement of individual accountabilities within the organisation to help align the roles, interests and actions of different participants in the organisation to achieve the organisation's objectives.

Leadership: Having a vision of what can be achieved, and then communicating this to others and evolving strategies for realising the vision. Leaders motivate people, and can negotiate for resources and other support to achieve goals.

Patient: A person who is receiving care in a health service organisation.

Quality improvement: The combined efforts of the workforce and others – including consumers, patients and their families, researchers, planners and educators – to make changes that will lead to better patient outcomes (health), better system performance (care) and better professional development. Quality improvement activities may be undertaken in sequence, intermittently or continually.

Years lived with disability (YLD): The number of years of what could have been a healthy life that were instead spent in states of less than full health. YLD represent non-fatal burden.

Years of life lost (YLL): The number of years of life lost due to premature death, defined as dying before the ideal life span. YLL represent fatal burden.



AUSTRALIAN COMMISSION
ON **SAFETY** AND **QUALITY** IN HEALTH CARE

Level 5, 255 Elizabeth Street, Sydney NSW 2000
GPO Box 5480, Sydney NSW 2001

PHONE: (02) 9126 3600



@ACSQHC

[safetyandquality.gov.au](https://www.safetyandquality.gov.au)

COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-47

This is the Annexure marked "DD-47" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.



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For Better Health

Surgical Variance Report **Urology**

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Introduction to Surgical Variance Report: Urology

The Royal Australasian College of Surgeons' (RACS) vision is to champion surgical standards, professionalism and surgical education in Australia and New Zealand. It is committed to advocating for sustainable, safe, affordable and high quality healthcare that represents best practice.

Similarly, Medibank, Australia's leading private health insurer, is focussed on improving the health outcomes of patients, improving patient experiences, and improving efficiencies in the health system.

Currently, there is limited available information to surgeons on indicators such as the median length of patient stay, rates of readmission or admission to an intensive care unit (ICU), and prices charged for services, for different procedures within their speciality, and particularly in the private sector.

However, such information would enable surgeons to gain a better understanding of variations, and consider how their practice could be improved for the benefit of patients.

RACS and Medibank are pleased to publish this Surgical Variance Report, which analyses a number of clinical and other indicators for common procedures within Urology. This report has been prepared in consultation with the Clinical Variation Working Party which includes A/Prof Andrew Brooks (Urologist, NSW) and Prof Mark Frydenberg (Urologist, VIC).

This is the second in a series of reports which will be published in the coming months, on common procedures within surgical specialities, including general surgery, urology, ear, nose and throat surgery, vascular surgery and orthopaedic surgery.

The data contained in these reports are based on analysis of de-identified Medibank claims data from 2014, which the College has analysed and interpreted. The reports deliberately pose questions that every clinician can reasonably ask about the possible reasons for the variations, and consider individual answers.

RACS and Medibank will continue to work together to identify opportunities to improve and enhance these reports so that they are as meaningful and useful as possible to surgeons, and we welcome everyone's feedback and comments.

The data contained in these reports do not define best practice, however it is hoped that by highlighting variation in practice, we will be able to improve clinical outcomes and patient care.



Professor David Watters OBE
Chair, Clinical Variation Working Party,
Royal Australasian College of Surgeons



Dr Linda Swan
Chief Medical Officer Medibank

Foreword

Data collected as part of a healthcare episode contains important insights about ways to improve care, achieve better outcomes and make care more efficient. However, there is a substantial challenge in bringing this information to light. The data is inherently complex and there is a shortage of individuals with the skills to extract intelligence from it.

The collaboration between the Royal Australasian College of Surgeons and Medibank combines the perspective of specialty experts with the skills of a data custodian. The value of this collaboration is well illustrated by the high quality information that has been derived. The dataset is large, comprising approximately 25% of the separations that occurred in private hospitals in 2014 for the procedures considered.

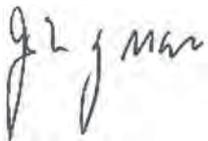
The prime purpose of the analysis is to explore variation in surgical practice and to raise questions that will allow clinicians and others to reflect on aspects of medical practice. It has been demonstrated many times that if information of this type is fed back to clinicians it often leads to greater uniformity of practice. Often the data comes as a revelation to those receiving it.

Studies of variation have become a very important part of healthcare analysis. It is frequently a sign of an evidence gap, but may also point to inefficiency or variation in outcomes. In many cases, it is the flag that initiates further more detailed analyses leading to changed practice.

Some aspects of the present report illustrate limitations typical of all large health datasets. For example, could reported variation infection rates have been influenced by variation in definitions and recording? Are readmission rates influenced by the distinction between planned and unplanned readmissions or whether the readmission was for a complication or an entirely different problem? Similarly, duration of admission is often dependent on comorbidities or social factors. So it is important that data like this is not used to reach simplistic conclusions, but should stimulate more detailed investigation.

Credible data is a powerful motivator of clinician behaviour. When convincing evidence is presented that outcomes could be better or safety improved, it is rarely ignored. One of the biggest problems at present is how little data of this type is routinely available.

For these reasons, this initiative is a welcome advance and a credit to both organisations involved in its production.



Prof. John McNeil, AM, MBBS, MSc, PhD, FRACP, FAFPHM

Professor and Head, Department of Epidemiology & Preventive Medicine, School of Public Health and Preventive Medicine, Faculty of Medicine, Nursing and Health Sciences, Monash University

Data used in this report

The data contained in this report is based on administrative claims data received by Medibank from private hospitals, for treatment of holders of Medibank-branded (but not ahm-branded) policies. The data relates to hospital separations with an admission date falling in 2014 (calendar year) and any follow-up hospital separations funded by Medibank within six months of discharge.

The data comprises:

- Hospital claims data submitted to Medibank by private hospitals and used by Medibank to assess and pay benefits relating to hospital treatment on behalf of members. Hospital claims data includes details relating to the use of, amount charged and benefits paid for hospital accommodation, intensive care and prostheses provided in connection with treatment in hospital
- Hospital casemix protocol (HCP) data submitted to Medibank by private hospitals for each privately insured hospital separation, as required by legislation. HCP data includes details relating to diagnoses, interventions, demographics and financial data in connection with policy holders' treatment in hospital
- Medicare Benefit Schedule (MBS) claims data from medical practitioners, including diagnostic providers, submitted to Medibank by Medicare, medical practitioners or members, which is used by Medibank to assess and pay benefits for medical and diagnostic services provided to policy holders in relation to their hospital treatment. MBS claims data includes details relating to the use of MBS item numbers by medical practitioners as well as the amount charged, benefits paid and out of pocket costs incurred by policy holders for each MBS item claimed.

Data relating to individual surgeons and physicians have been identified using the Medicare provider number on the MBS claim, with activity aggregated and summarised across all practice locations relating to that provider number. A principal surgeon has been identified for each hospital separation based on the surgeon claiming the highest value MBS item schedule fee relating to a surgical procedure for that hospital separation.

The indicators included in this report for each procedure have been selected by RACS, having regard to the limitations of Medibank's datasets, and in consultation with the Clinical Variation Working Party, which comprises a panel of specialty experts (see page 25 for membership).

Surgeon-level analysis of the indicators included in this report has been limited to surgeons who performed at least five procedures. This has been done to ensure that each surgeon has a sufficient sample of separations to allow a value (e.g. an average, median or percentage) against an indicator to be reported. State and territory values have only been published where five or more specialists were included in the dataset, to protect the anonymity of surgeons in those areas. Medibank has not shared any information with RACS which would enable RACS to identify surgeons and only de-identified data is contained in this report.

Outliers at a separation-level and surgeon-level have been included in the analysis, although data points for some outlying surgeons are not shown in the figures.

No attempts have been made to risk adjust the data.

Disclaimer

The purpose of this report is to provide information to surgeons that highlights variation in surgical practice and encourages surgeons to reflect on their own practice and potential causes of the variation, with a view to supporting the continuous improvement of clinical outcomes and patient care.

It is important to recognise that:

- while Medibank has taken reasonable steps to ensure the accuracy and validity of the data, the report relies on the accuracy of information prepared and provided by hospitals, medical practitioners and policy holders;
- the data used for the purposes of this report relates to a specific time period (being calendar year 2014 and part of calendar year 2015);
- no adjustment has been made to the data based on casemix, patient risk or any other factor that may be taken into account when considering the data and any variation;
- the report identifies specialists by MBS provider stems, which in some limited cases may result in one individual being identified more than once;
- the report is not intended to, and is not a basis for, an assessment of relative or actual performance of specialists;
- the report does not contain any qualitative commentary or analysis; and
- the report may not reflect results of the wider private hospital sector or the health industry as a whole.

Indicators measured in this report

A selection of the indicators described below have been analysed for each of the procedures included in this report.

Indicator	Explanation
Median age of patients	The median age of a surgeon's patients at the time of discharge.
Median length of stay (nights)	The median number of nights that a surgeon's patients stayed in hospital.
Percentage of patients that stayed in hospital overnight	Separations where the patient stayed in hospital overnight, expressed as a percentage of a surgeon's total separations for that procedure.
Percentage of separations where the patient was transferred to ICU	Separations where patients were transferred to an intensive care unit (ICU), expressed as a percentage of a surgeon's total separations for that procedure.
Rate of Hospital Acquired Complications per 1,000 separations	Separations where a Hospital Acquired Complication was identified, expressed as a rate per 1000 separations of a surgeon's total separations for that procedure. Hospital Acquired Complications are Medibank's subset of 82 International Classification of Diseases (ICD) codes drawn from the Australian Commission of Safety and Quality in Healthcare's high priority complications dataset (see Table 31). They are selected on the basis that they occur frequently in private hospitals (relative to other complications) and are likely to result in increased costs.
Percentage of patients readmitted within 30 days	Separations where patients were readmitted to the same or a different hospital within 30 days of discharge from the original separation, expressed as a percentage of a surgeon's total separations for that procedure. Readmissions for all-causes except for readmissions for rehabilitation, psychiatric treatment, dialysis and chemotherapy, were included. Separations involving a patient 80 years or older were excluded from this analysis.
Percentage of patients re-operated on within six months	Separations where patients were re-operated on for the same procedure (meaning any one of the MBS codes included in the analysis for that procedure) within 6 months of discharge from the original separation, expressed as a percentage of a surgeon's total separations for that procedure.
Average number of MBS items billed	The total number of MBS items billed by a surgeon, expressed as an average number of MBS items billed per separation for a surgeon.
Average prostheses cost	The total of all charges relating to prostheses items (including consumables) for a hospital separation, expressed as an average prostheses cost per separation for a surgeon.
Average separation cost	The total of all charges relating to the hospital separation, expressed as an average cost per separation for a surgeon. Includes all charges raised by the hospital, medical practitioners, diagnostic providers and for prostheses items.
Average surgeon out of pocket charge	The patient out of pocket charge from the principal surgeon. Expressed as an average out of pocket charge per separation for a surgeon.
Average out of pocket charge for other medical services	The patient out of pocket charge for all other medical services (including charges from the anaesthetist, assistant surgeon and for diagnostics). Expressed as an average out of pocket charge for other medical services per separation, for a surgeon.

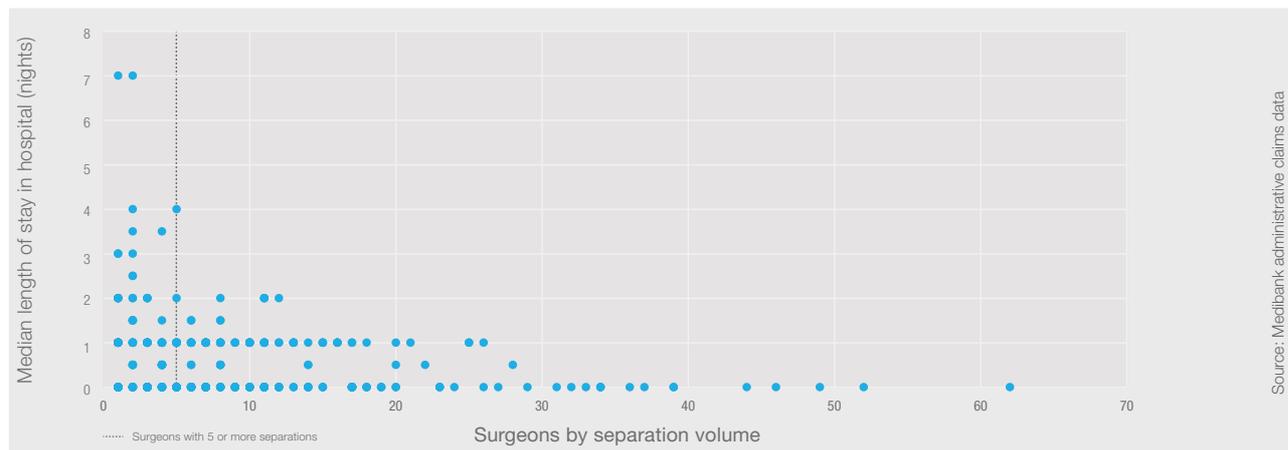
Cystoscopy with resection procedures

In 2014 Medibank funded 3,074 operations in private hospitals where cystoscopy with resection was recorded as the principal procedure (highest value MBS fee from the medical claim) for the hospital admission. This analysis is limited to those 3,074 procedures. 334 surgeons (identified through the stem of their Medicare provider number) billed Medibank for those procedures. 212 (63%) of these surgeons billed Medibank for five or more cystoscopy with resection procedures during 2014. Surgeon-level analysis of the indicators considered for this procedure has been limited to those surgeons with five or more patient separations, so that each surgeon has a sufficient sample of separations from which a value (e.g. an average, median or percentage) for an indicator can be reported.

Table 1: MBS codes included in this analysis

Procedure	MBS Codes	Volume of separations	Percentage of separations	Definition
Cystoscopy with resection	36840	1,740	56.6%	Cystoscopy, with resection, diathermy or visual laser destruction of bladder tumour or other lesion of the bladder, not being a service to which item 36845 applies
	36845	1,334	43.4	Cystoscopy, with diathermy, resection or visual laser destruction of multiple tumours in more than 2 quadrants of the bladder or solitary tumour greater than 2cm in diameter

Figure 1: Median length of stay in hospital (nights)



For the 212 surgeons who performed at least five procedures:

- The median number of nights that a surgeon's patients stayed in hospital ranged between 0 nights (same day admission and discharge) and 4 nights with a median of 0 nights.

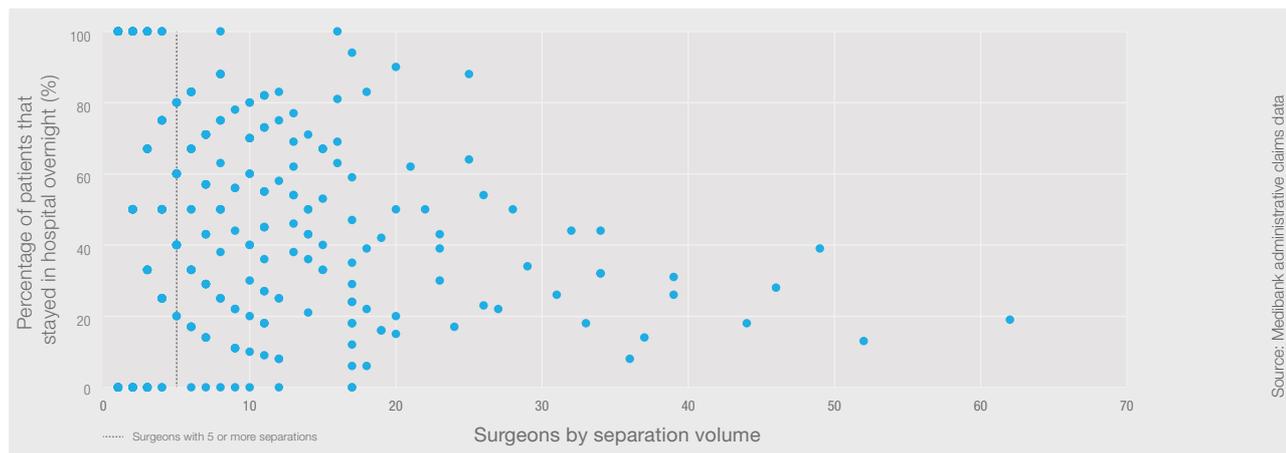
Table 2: Median length of stay (nights) by State/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Length of stay	0	0	NA*	0	0	0	1	1

*Values not published if there were less than five surgeons in the state/territory who billed Medibank, to protect anonymity

What would you consider the most effective length of stay for this procedure?

Figure 2: Percentage of patients that stayed in hospital overnight



Source: Medibank administrative claims data

In 44% of the hospital separations the patient stayed in hospital for at least one night.

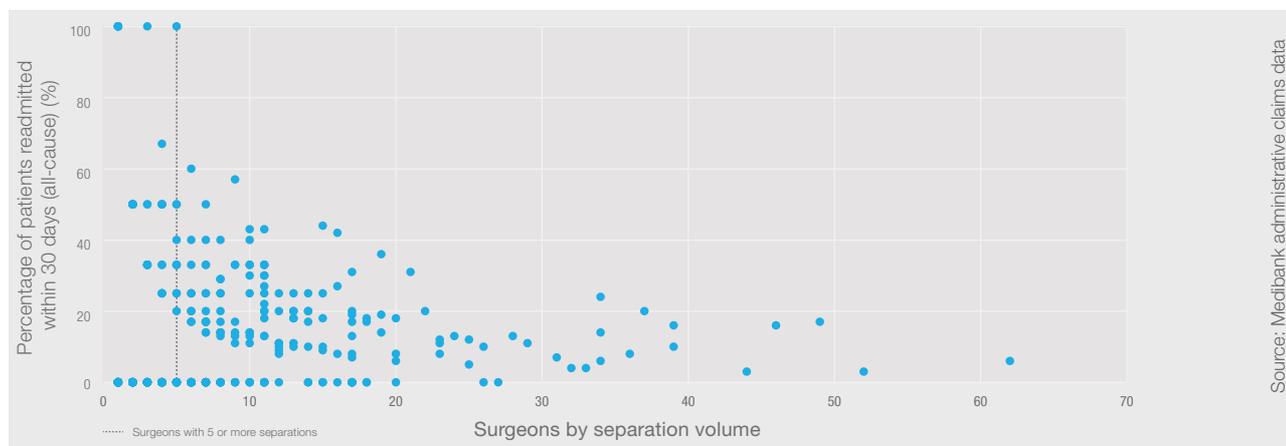
For the 212 surgeons who performed at least five procedures:

- 2 (1%) had all of their patients stay in hospital overnight
- 8 (4%) had all their patients admitted and discharged on the same day
- 202 (95%) had a mix of patients that either stayed in hospital overnight or were admitted and discharged on the same day
- The percentage of a surgeon’s patients that stayed in hospital overnight ranged between 0% and 100% with a median of 43%.

What are the reasons for a patient staying in hospital overnight following this procedure?

Why is there variation in the rate of patients that stay in hospital overnight between surgeons?

Figure 3: Percentage of patients readmitted within 30 days



Source: Medibank administrative claims data

Following 313 (14%) of separations patients were readmitted (for all causes)* to a hospital within 30 days. Administrative claims data does not indicate whether the readmissions were planned or unplanned. The median age of patients readmitted was 69 years, compared with a median age of 68 years for those patients not readmitted. Of the 313 separations followed by a readmission:

- 258 readmissions were to a private hospital (either the same hospital or a different one). In 5 of these separations a Hospital Acquired Complication (see Table 31) was identified (see Table 3)
- 55 readmissions were to a public hospital (where the patient was treated as a private patient).

For the 212 surgeons who performed at least five procedures, the percentage of a surgeon’s patients readmitted within 30 days ranged between 0% and 100% with a median of 13%.

Readmissions to public hospitals, where patients were treated as public patients, are not captured in these datasets.

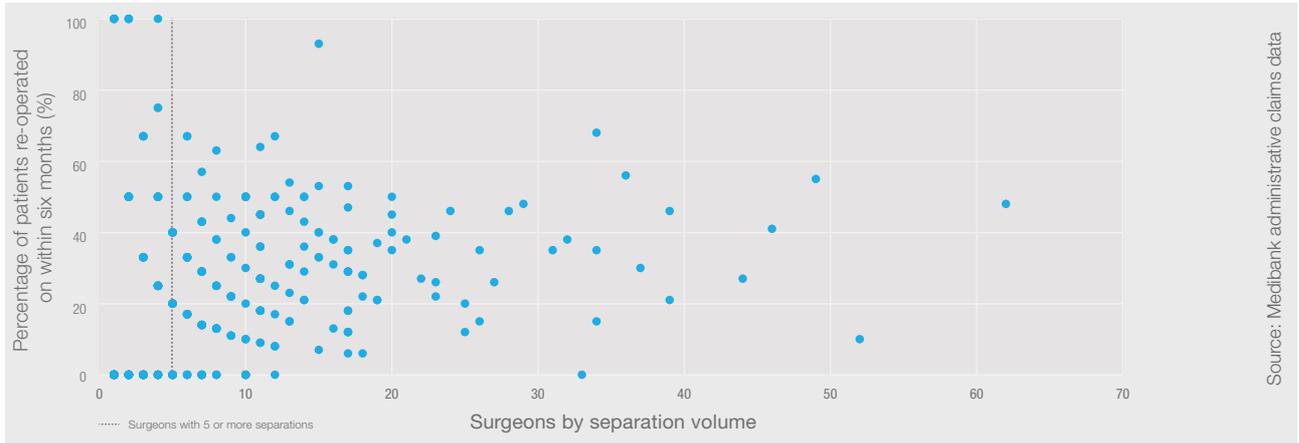
* Readmissions for rehabilitation, psychiatric treatment, dialysis and chemotherapy were excluded where identified. Separations involving a patient 80 years or older were also excluded.

Table 3: Hospital Acquired Complications identified on readmission

Category	Surgical complication	Infection	Pressure injury	Total
Number recorded	3	1	1	5

What are the reasons for readmission for this procedure, and what is the expected rate?

Figure 4: Percentage of patients re-operated on within six months



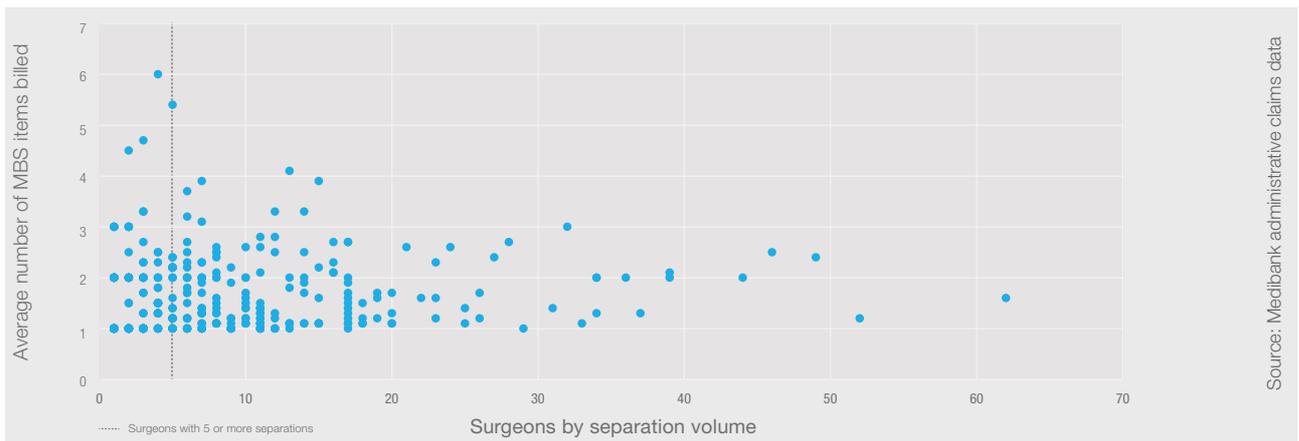
Patients were re-operated on (same procedure) within six months of discharge from hospital following 881 (29%) hospital separations. The median age of patients re-operated on six months after discharge was 74 years, compared with a median age of 72 years for those who were not.

Of the 212 surgeons who performed five or more procedures:

- 182 (86%) had one or more patients that were re-operated on within six months
- The percentage of a surgeon's patients re-operated on within six months ranged between 0% and 93% with a median of 25%.

What are the reasons for re-operation for this procedure, and what is the expected rate?

Figure 5: Average number of MBS items billed



The average number of MBS items billed by the surgeon (the principal surgeon only) was 1.7 per hospital separation.

Of the 212 surgeons who performed five or more procedures, the average number of MBS items billed by a surgeon ranged between a minimum of 1.0 and a maximum of 5.4 with a median of 1.4.

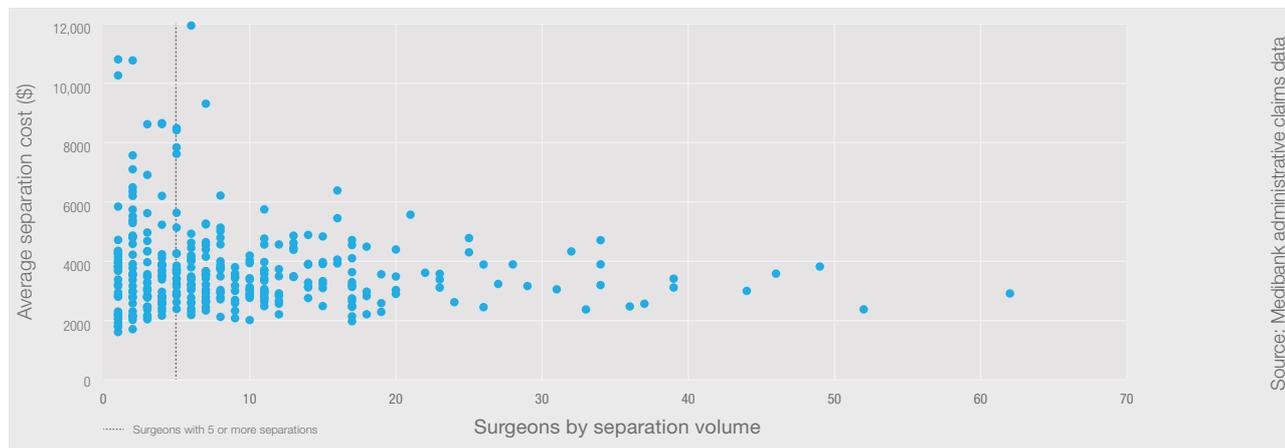
For the separations where MBS item number 36840 was recorded as the principal procedure (1,740 separations) the five most frequent MBS items billed by the surgeon are shown in the table below.

Table 4: MBS items billed by the surgeon (separations with principal MBS item # 36840)

MBS item number	Description	Total frequency	Frequency per separation
36840	Cystoscopy, with resection, diathermy or visual laser destruction of bladder tumour or other lesion	1774	1.02
00105	Professional attendance by a specialist in the practice of his or her specialty	617	0.35
36818	Cystoscopy, with ureteric catheterisation including fluoroscopic imaging of the upper urinary tract,	124	0.07
00104	Specialist, referred consultation - surgery or hospital	54	0.03
36827	Cystoscopy, with controlled hydrodilatation of the bladder (Anaes.)	52	0.03

What are the reasons for the wide variation in the number of MBS items billed?

Figure 6: Average separation cost



The separation cost includes the total charges for the hospital separation, including payments made by Medibank, Medicare and the patient. Costs include hospital accommodation and prostheses charged, and fees charged by medical practitioners and for diagnostic services. The average total cost was \$3,521 per hospital separation.

For the 212 surgeons who performed at least five procedures, the average separation cost for a surgeon ranged between \$1,972 and \$11,941 with a median of \$3,405.

Table 5: Average separation cost by region

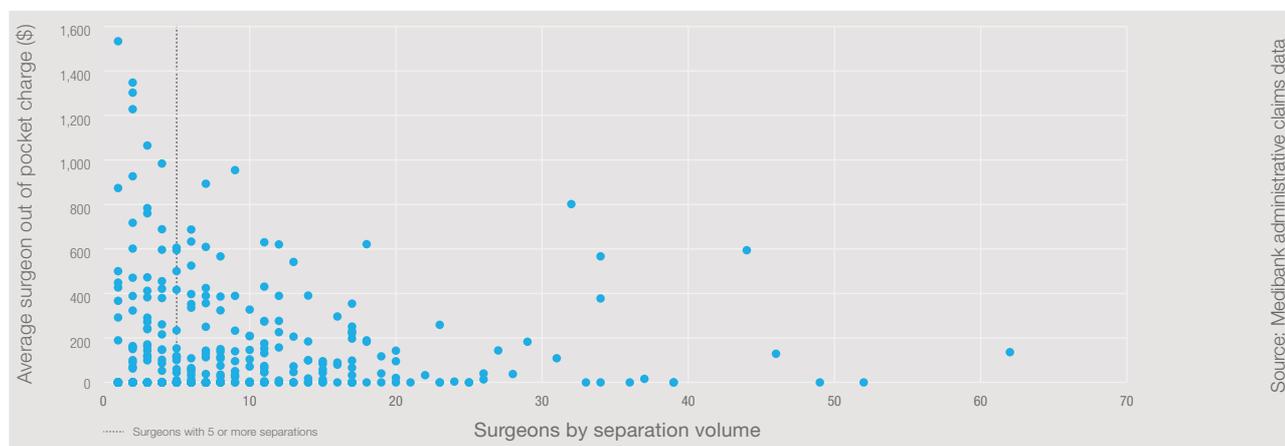
State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Average separation cost	\$3,408	\$3,062	NA*	\$3,684	\$3,368	\$3,214	\$3,856	\$3,919

*Values not published if there were less than five surgeons in the state/territory who billed Medibank, to protect anonymity

Are you aware of the associated costs for this procedure such as pathology, diagnostic imaging, surgical assistants, anaesthetists, hospital bed fees?

What are the reasons for variation in separation costs?

Figure 7: Average surgeon out of pocket charge



Patients were charged an out of pocket fee by the principal surgeon in 30% of hospital separations.

For the 212 surgeons who performed at least five procedures, 82 (39%) did not charge any of their patients an out of pocket for the hospital admission. The average out of pocket charge from a surgeon ranged from \$0 (no out of pocket charge) to a maximum of \$954 with a median of \$40.

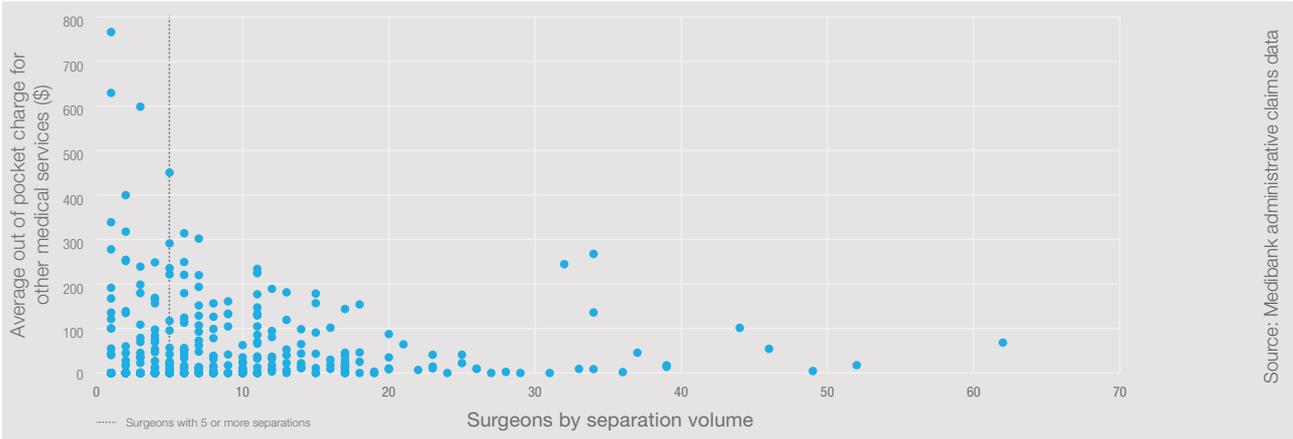
Table 6: Surgeon out of pocket charges by state/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
% of separations with OOP	90%	35%	NA*	39%	13%	32%	9%	44%
Average OOP charged	\$554	\$517	NA*	\$428	\$151	\$186	\$349	\$305

*Values not published if there were less than five surgeons in the state/territory who billed Medibank, to protect anonymity

Why is there such variation in the average out of pocket charge?

Figure 8: Average out of pocket charge for other medical services



Source: Medibank administrative claims data

Patients were charged an out of pocket fee for other medical services (including charges raised by the anaesthetist, assistant surgeon and for diagnostics) in 46% of hospital separations. For the 212 surgeons who performed at least five procedures, the average out of pocket charges received by their patients for other medical services ranged between \$0 and \$450 with a median of \$18.

Table 7: Out of pocket charges for other medical services by state/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
% of separations with OOP	64%	37%	NA*	37%	23%	41%	60%	58%
Average OOP charged	\$275	\$101	NA*	\$181	\$72	\$112	\$31	\$202

*Values not published if there were less than five surgeons in the state/territory who billed Medibank, to protect anonymity

Why is there such variation in the average out of pocket charge?

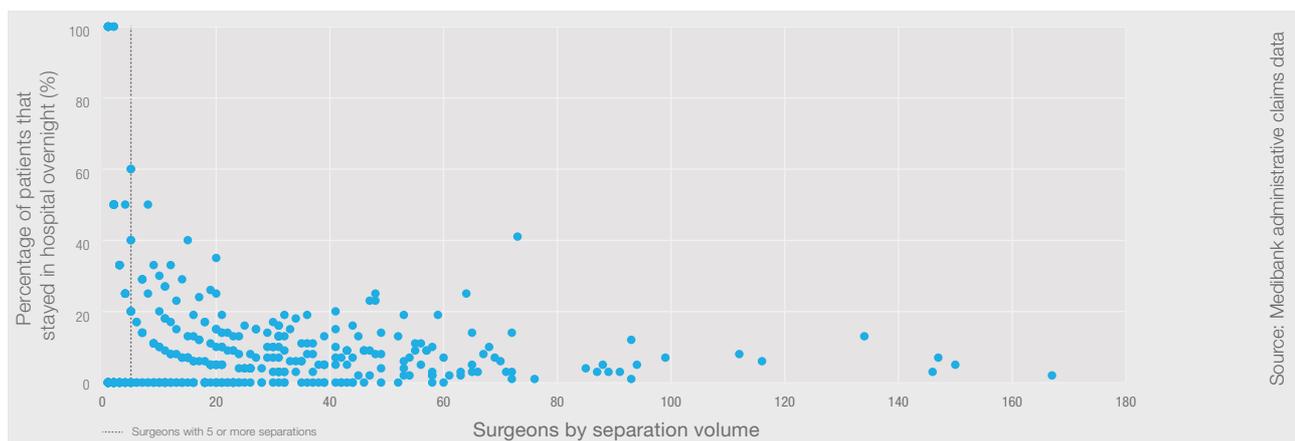
Cystoscopy without resection procedures

In 2014 Medibank funded 10,431 operations in private hospitals where cystoscopy without resection was recorded as the principal procedure (highest value MBS fee from the medical claim) for the hospital admission. The analysis is limited to those 10,431 procedures. 428 surgeons (identified through the stem of their Medicare provider number) billed Medibank for those procedures. 318 (74%) of these surgeons billed Medibank for five or more procedures in 2014. Surgeon-level analysis of the indicators considered for this procedure has been limited to those surgeons with five or more patient separations, so that each surgeon has a sufficient sample of separations from which a value (e.g. an average, median or percentage) for an indicator can be reported. surgeons undertook 5 or more procedures.

Table 8: MBS codes included in this analysis

Procedure	MBS Codes	Volume of separations	Percentage of separations	Definition
Cystoscopy without resection	36812	9,615	92.2%	Cystoscopy with urethroscopy with or without urethral dilatation, not being a service associated with any other urological endoscopic procedure on the lower urinary tract except a service to which item 37327 applies
	36818	816	7.8%	Cystoscopy with ureteric catheterisation including fluoroscopic imaging of the upper urinary tract, unilateral or bilateral, not being a service associated with a service to which item 36824 or 36830 applies

Figure 9: Percentage of patients that stayed in hospital overnight



Source: Medibank administrative claims data

In 8% of the hospital separations the patient stayed in hospital for at least one night. The median age of patients that stayed in hospital overnight was 76 years, compared with a median age of 69 years for patients admitted and discharged on the same day.

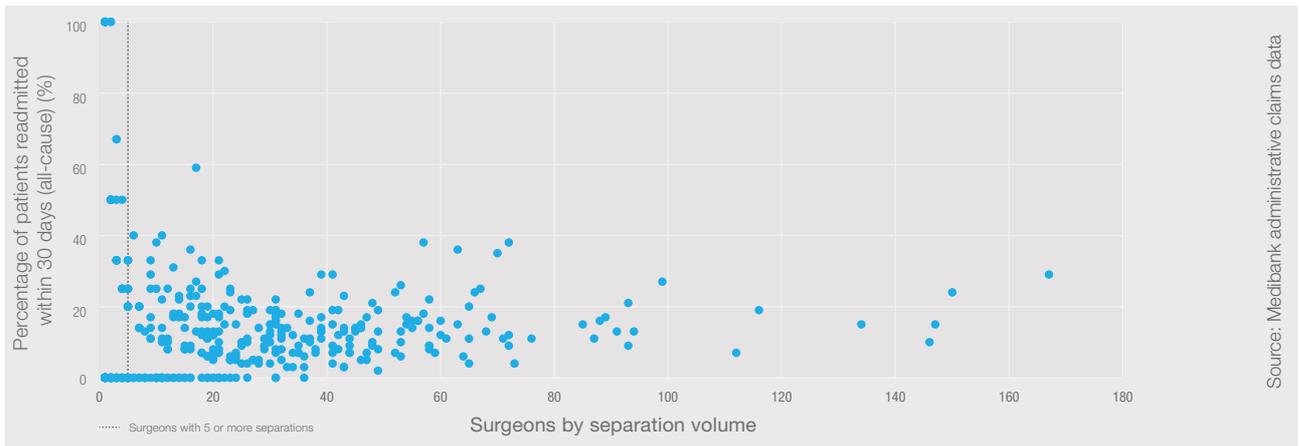
For the 318 surgeons who performed at least five procedures:

- 90 (28%) had all of their patients discharged on the same day of admission
- 228 (72%) had a mix of patients that either stayed in hospital overnight or were admitted and discharged on the same day
- The percentage of a surgeon's patients that stayed in hospital overnight ranged between 0% and 60% with a median of 6%

What are the reasons for a patient staying in hospital overnight following this procedure?

Why is there variation in the rate of patients that stay in hospital overnight between surgeons?

Figure 10: Percentage of patients readmitted within 30 days



Source: Medibank administrative claims data

Following 1,156 (14%) hospital separations, patients were readmitted (for all causes*) to a hospital within 30 days. Administrative claims data does not indicate whether the readmissions were planned or unplanned. The median age of patients readmitted was 68 years, compared with a median age of 66 years for patients not readmitted. Of the 1,156 readmissions:

- 1,053 readmissions were to a private hospital (the same one or a different hospital). In 12 of these separations at least one Hospital Acquired Complication (see Table 31) was identified (see Table 9)
- 103 readmissions were to a public hospital (where the patient was treated as a private patient).

For the 318 surgeons who performed at least five procedures, the percentage of a surgeon’s patients readmitted within 30 days ranged between 0% and 59% with a median of 12%.

Readmissions to public hospitals, where patients were treated as public patients, are not captured in these datasets.

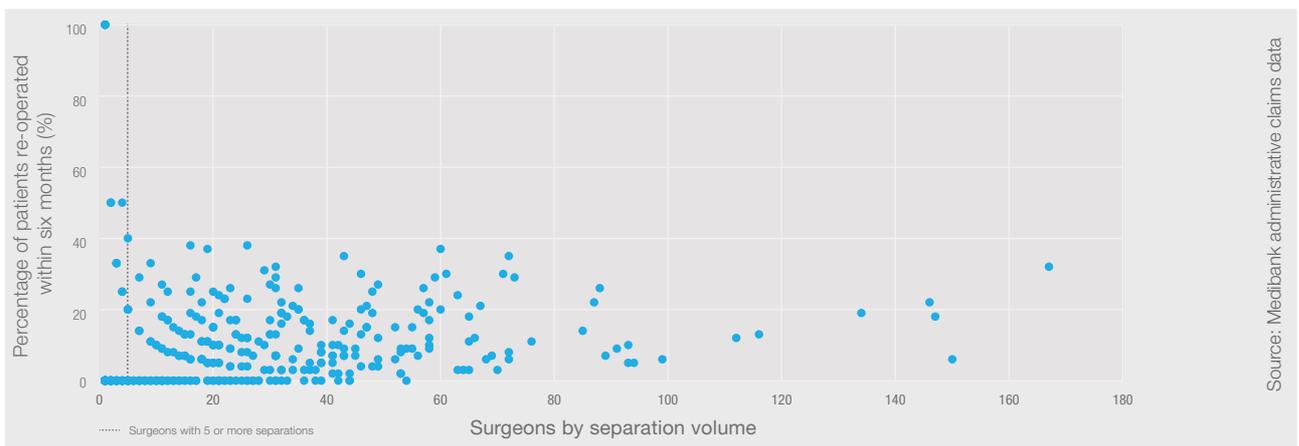
* Readmissions for rehabilitation, psychiatric treatment, dialysis and chemotherapy were excluded where identified. Separations involving a patient 80 years or older were also excluded.

Table 9: Hospital Acquired Complications identified on readmission

Category	Surgical complication	Infection	Total
Number recorded	4	9	13

What are the reasons for readmission for this procedure, and what is the expected rate?

Figure 11: Percentage of patients re-operated on within six months



Source: Medibank administrative claims data

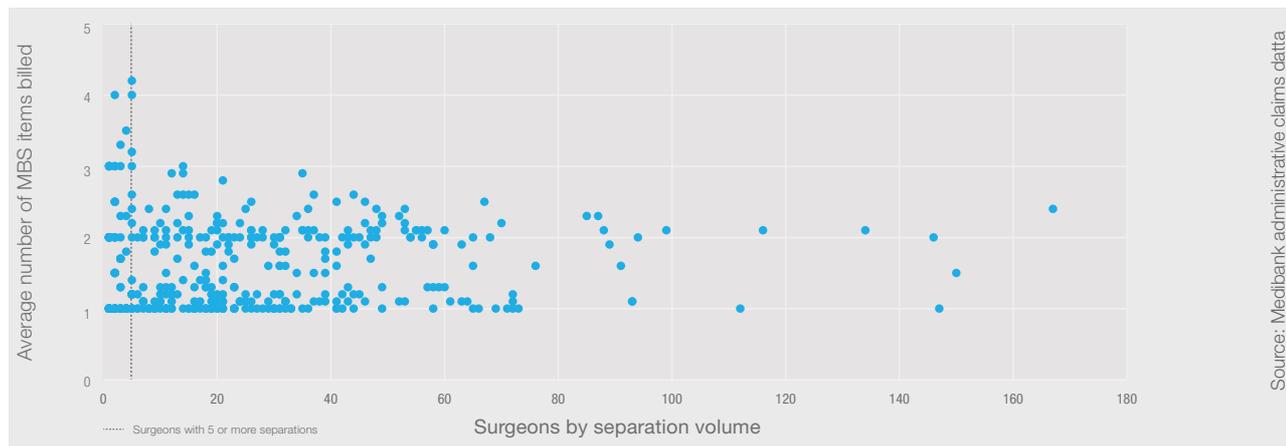
Patients were re-operated on (same procedure*) within six months of discharge from hospital in 1,217 (12%) hospital separations. The median age of patients re-operated on six months post-discharge was 72 years, compared with a median age of 69 years for those who were not.

Of the 318 surgeons who performed five or more procedures:

- 229 (72%) had one or more patients that were re-operated on within six months
- The percentage of a surgeon’s patients re-operated on within six months ranged between 0% and 40% with a median of 7%.

What are the reasons for re-operation for this procedure, and what is the expected rate?

Figure 12: Average number of MBS items billed



The average number of MBS items billed by a surgeon (the principal surgeon only) was 1.6 per hospital separation.

Of the 318 surgeons who performed five or more procedures, the average number of MBS items billed by a surgeon ranged between 1.0 and 4.2 with a median of 1.4.

For the separations where MBS item number 36182 was recorded as the principal procedure (9,615 separations) the five most frequent MBS items billed by the surgeon are shown in the table below.

Table 10: MBS items billed by the surgeon (separations with principal MBS item # 36812)

MBS item number	Description	Total frequency	Frequency per separation
36812	Cystoscopy with urethroscopy, with or without urethral dilatation	9,880	1.03
00105	Professional attendance by a specialist in the practice of his or her specialty	4,452	0.46
11900	Urine flow study including peak urine flow measurement	523	0.05
00104	Specialist, referred consultation – surgery or hospital	336	0.03
55039	Urinary tract, ultrasound scan of	221	0.02

What are the reasons for the wide variation in the number of MBS items billed?

Figure 13: Average separation cost



Three surgeons with less than five separations and an average separation cost over \$6,500 not shown

The separation cost includes the total charges for the hospital separation, including payments made by Medibank, Medicare and the patient. Costs include hospital, prostheses, medical practitioners and diagnostic services. The average total cost per hospital separation was \$1,647.

For the 318 surgeons who performed at least five procedures, the average separation cost of a surgeon ranged between \$773 and \$4,799 with a median of \$1,616.

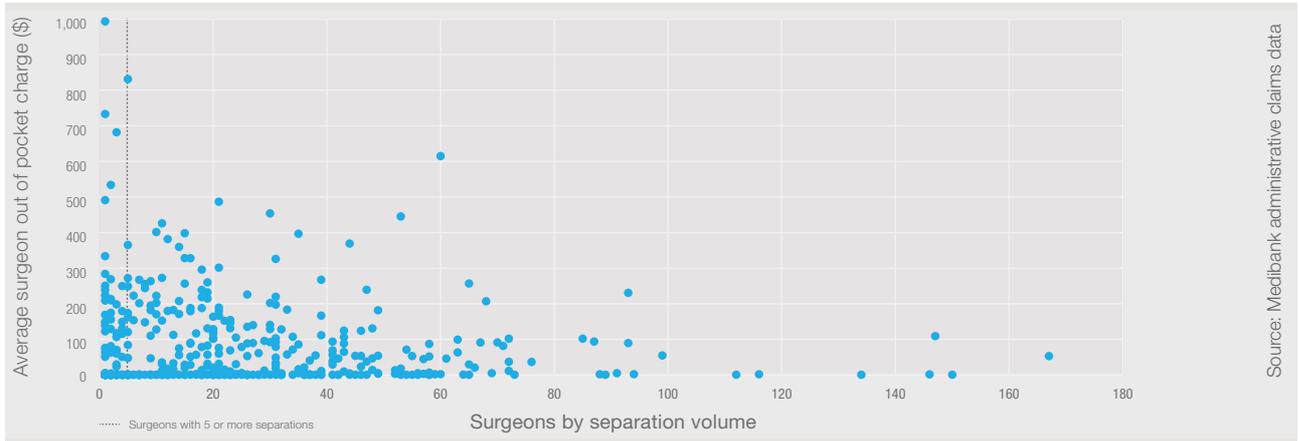
Table 11: Average separation cost by state/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Average separation cost	\$1,804	\$1,754	\$2,028	\$1,779	\$1,339	\$1,479	\$1,606	\$1,552

Are you aware of the associated costs for this procedure such as pathology, diagnostic imaging, surgical assistants, anaesthetists, hospital bed fees?

What are the reasons for variation in separation costs?

Figure 14: Average surgeon out of pocket charge



Source: Medibank administrative claims data

Patients were charged an out of pocket fee by the principal surgeon in 32% of separations and the average out of pocket charged was \$210.

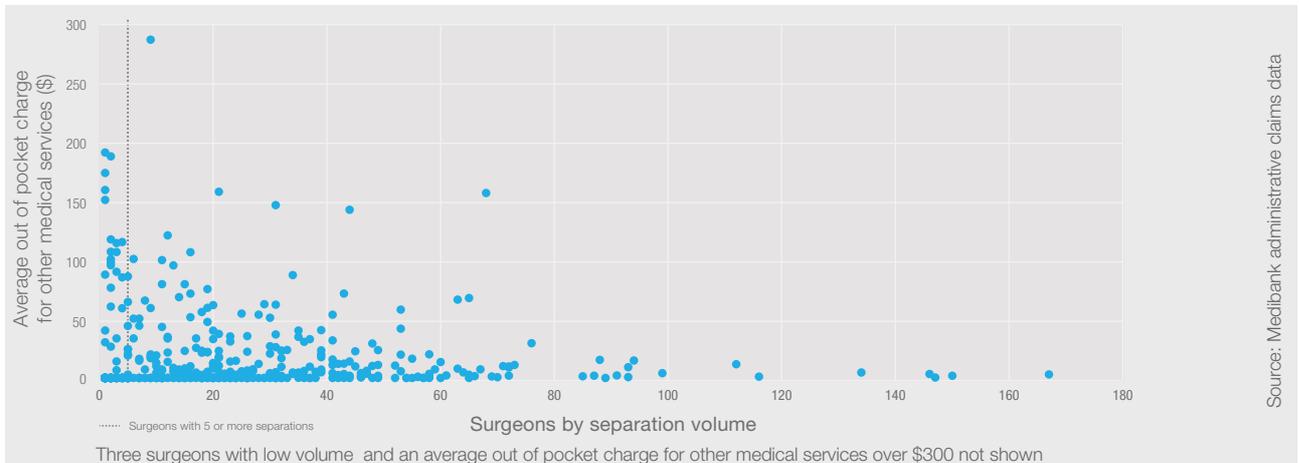
For the 318 surgeons who performed at least five procedures, 89 (28%) did not charge any of their patients an out of pocket for the hospital admission. The average out of pocket charged by these surgeons ranged from \$0 (no out of pocket charged) to \$831 with a median of \$32.

Table 12: Surgeon out of pocket charges by state/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
% of separations with OOP	86%	42%	73%	40%	22%	30%	13%	45%
Average OOP charged	\$449	\$270	\$365	\$212	\$112	\$122	\$149	\$144

Why is there such variation in the average out of pocket charge?

Figure 15: Average out of pocket charge for other medical services



Source: Medibank administrative claims data

Three surgeons with low volume and an average out of pocket charge for other medical services over \$300 not shown

Patients were charged an out of pocket fee for other medical services (including charges raised by the anaesthetist, assistant surgeon and for diagnostics) in 12% of the hospital separations.

For the 318 surgeons who performed at least five procedures, the average out of pocket charges received by their patients for other medical services ranged between \$0 and \$285 with a median of \$5.

Table 13: Out of pocket charges for other medical services by state

	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
% of separations with OOP	40%	17%	68%	15%	5%	13%	9%	5%
Average OOP	\$183	\$123	\$176	\$133	\$84	\$85	\$74	\$137

Why is there such variation in the average out of pocket charge?

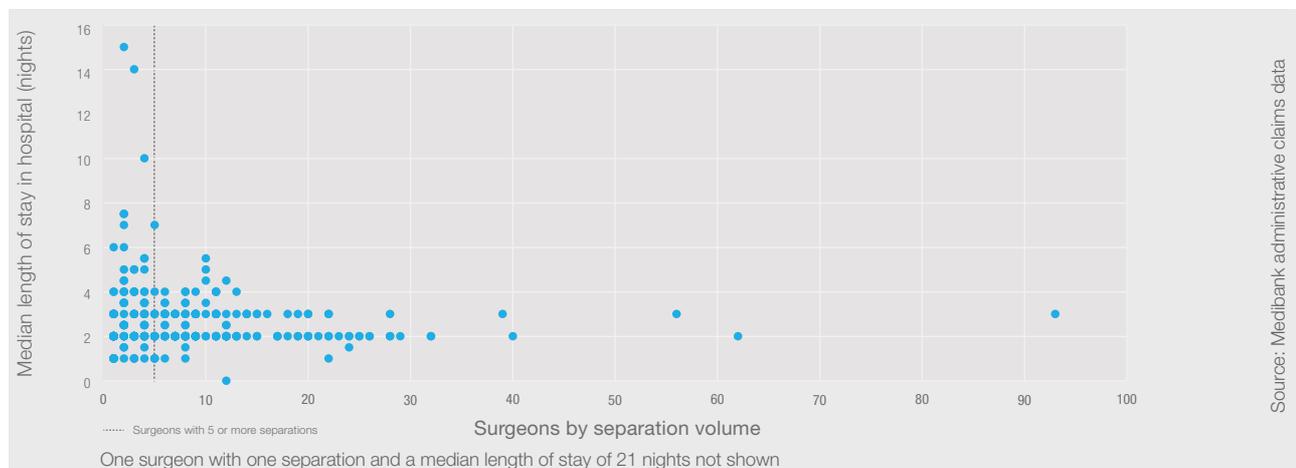
Endoscopic prostatectomy procedures

In 2014 Medibank funded 2,556 operations in private hospitals where endoscopic prostatectomy was recorded as the principal procedure (highest value MBS fee from the medical claim) for the hospital admission. The analysis is limited to those 2,556 procedures. 311 surgeons (identified through the stem of their Medicare provider number) billed Medibank for those procedures. 175 (56%) of these surgeons billed Medibank for five or more procedures. Surgeon-level analysis of the indicators considered for this procedure has been limited to those surgeons with five or more patient separations, so that each surgeon has a sufficient sample of separations from which a value (e.g. an average, median or percentage) for an indicator can be reported.

Table 14: MBS codes included in this analysis

Procedure	MBS Codes	Volume of separations	Percentage of separations	Definition
Endoscopic prostatectomy	37203	2,556	100%	Prostatectomy, (endoscopic, using diathermy or cold punch), with or without cystoscopy and with or without urethroscopy, and including services to which item 36854, 37201, 37202, 37207, 37208, 37245, 37303, 37321 or 37324 applies

Figure 16: Median length of stay in hospital (nights)



For the 175 surgeons who performed at least five procedures:

- The median number of nights that a surgeon's patients stayed in hospital ranged between 0 nights and 7 nights with a median of 2 nights.

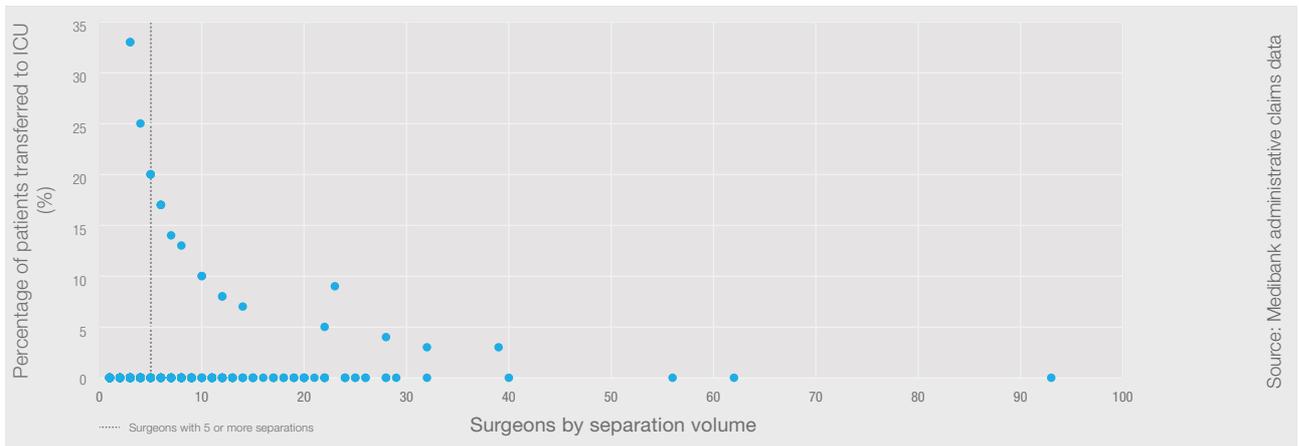
Table 15: Median length of stay (nights) by state/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Length of stay	3	2	NA	2	3	3	2	2

State/territory values not reported if dataset includes less than 5 surgeons

What would you consider the most effective length of stay for this procedure?

Figure 17: Percentage of patients transferred to ICU



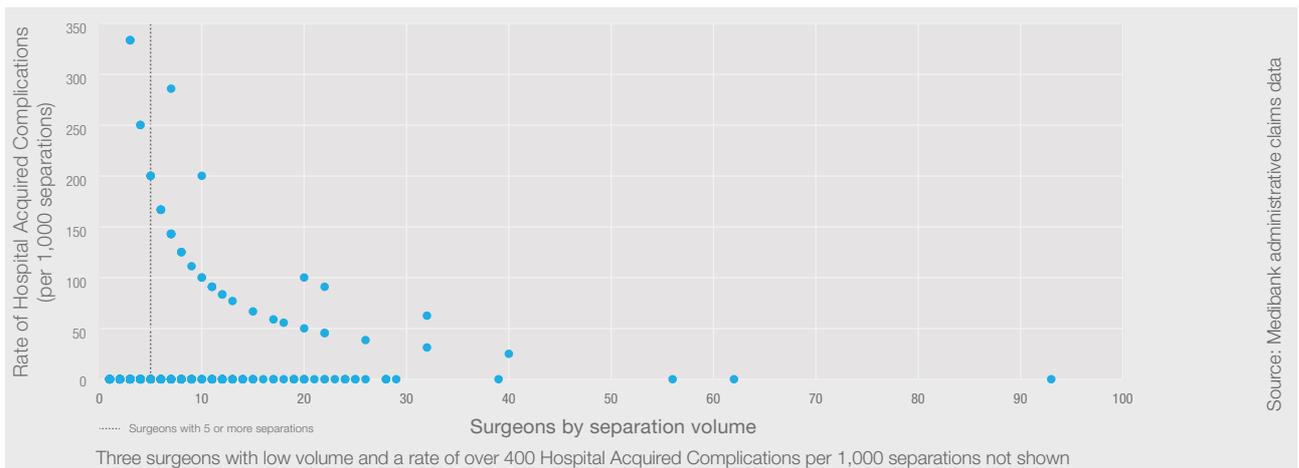
Across the total sample of 2,556 hospital separations, patients were transferred to an intensive care unit (ICU) during 22 hospital separations (1%). Administrative claims data does not indicate whether the transfers were planned or unplanned.

For the 175 surgeons who performed at least five procedures:

- 18 (10%) surgeons had one or more patient separations during which patients were transferred to ICU
- The percentage of a surgeon’s patients that were transferred to ICU ranged between 0% and 20% with a median of 0%.

Given that ICU transfers could indicate a difficult post-operative recovery, what would be the expected transfer rate?

Figure 18: Rate of Hospital Acquired Complications (per 1,000 separations)



Three surgeons with low volume and a rate of over 400 Hospital Acquired Complications per 1,000 separations not shown

Hospital Acquired Complications are a Medibank subset of 82 International Classification of Diseases (ICD) codes drawn from the Australian Commission of Safety and Quality in Health Care’s list of high priority complications (see Table 31).

The rate of Hospital Acquired Complications was 20 per 1,000 hospital separations.

For the 175 surgeons who performed at least five procedures:

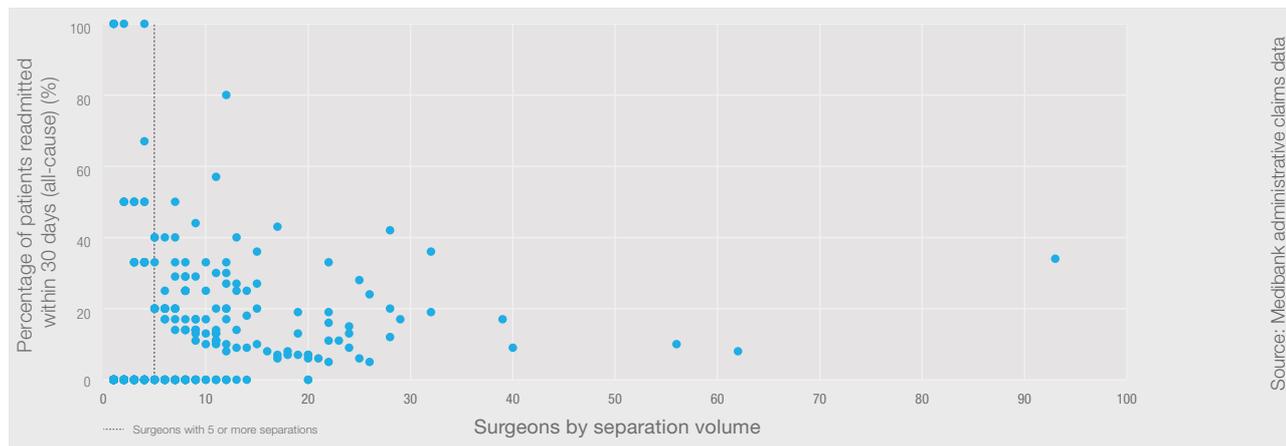
- 38 (22%) surgeons had one or more patient separations during which a Hospital Acquired Complication was identified
- The rate of Hospital Acquired Complications for a surgeon ranged between 0 per 1,000 separations to 286 per 1,000 separations with a median of 0 per 1,000 separations.

Table 16: Hospital Acquired Complications identified during the hospital separation

Description	Number recorded
Haemorrhage and haematoma complicating a procedure, not elsewhere classified	42
Vascular complications following infusion, transfusion and therapeutic injection	1
Foreign body accidentally left in body cavity or operation wound following a procedure	1
Sepsis following a procedure	2
Infection and inflammatory reaction due to other cardiac and vascular devices, implants and grafts	3
Infection and inflammatory reaction due to prosthetic device, implant and graft in urinary system	2
Total	51

What complications have you had for this procedure?

Figure 19: Percentage of patients readmitted within 30 days



In 295 (15%) of the hospital separations patients were readmitted (for all causes*) to a hospital within 30 days. Administrative claims data does not indicate whether the readmissions were planned or unplanned. The median age of patients readmitted was 70 years, compared with a median age of 69 years for those patients not readmitted. For the 295 readmissions:

- 252 readmissions were to a private hospital (the same one or a different hospital). In 14 of these separations a Hospital Acquired Complication was identified (see Table 17)
- 43 readmissions were to a public hospital (where the patient was treated as a private patient).

For the 175 surgeons who performed at least five procedures, the percentage of a surgeon's patients readmitted within 30 days ranged between 0% and 80% with a median of 13%.

Readmissions to public hospitals, where patients were treated as public patients, are not captured in these datasets.

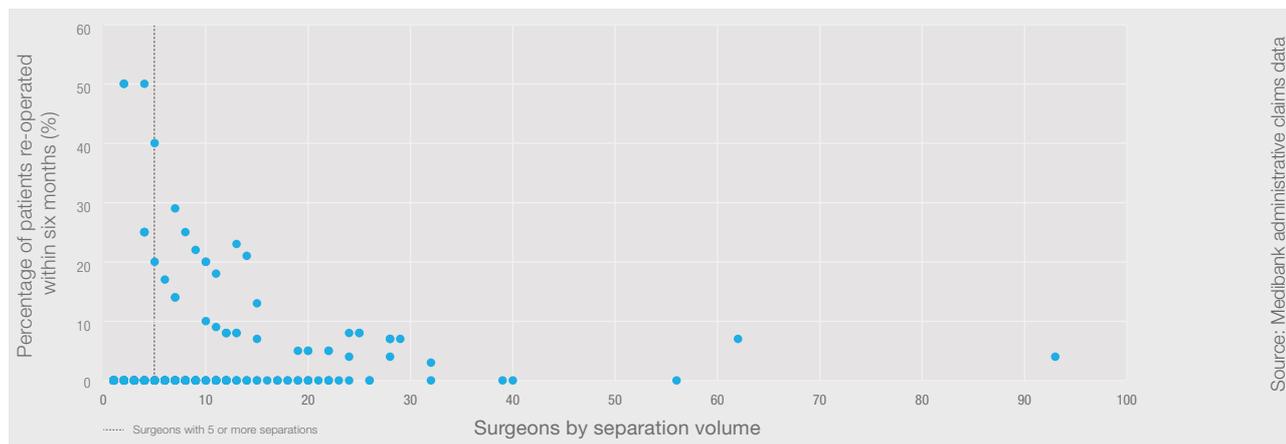
* Readmissions for rehabilitation, psychiatric treatment, dialysis and chemotherapy were excluded where identified. Separations involving a patient 80 years or older were also excluded.

Table 17: Hospital Acquired Complications identified on readmission

Category	Surgical complication	Infection	Total
Number recorded	9	5	14

What are the reasons for readmission for this procedure, and what is the expected rate?

Figure 20: Percentage of patients re-operated on within six months



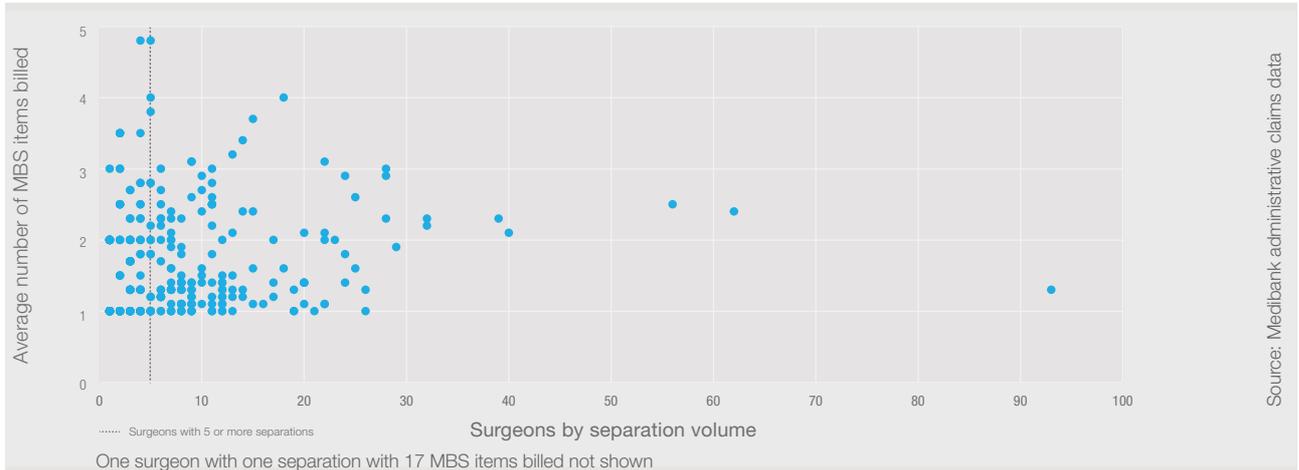
Patients were re-operated on (same procedure) within six months of discharge from hospital following 69 (3%) hospital separations. The median age of patients re-operated on six months after discharge was 72 years, compared with a median age of 71 years for those who were not.

Of the 175 surgeons who performed five or more procedures:

- 38 (22%) had one or more patients that were re-operated on within six months
- The percentage of a surgeon's patients re-operated on within six months ranged between 0% and 40% with a median of 0%.

What are the reasons for re-operation for this procedure, and what is the expected rate?

Figure 21: Average number of MBS items billed



The average number of MBS items billed by the surgeon (the principal surgeon only) was 1.8 per hospital separation.

Of the 175 surgeons who performed five or more procedures, the average number of MBS items billed by a surgeon ranged between 1.0 and 4.8 with a median of 1.4.

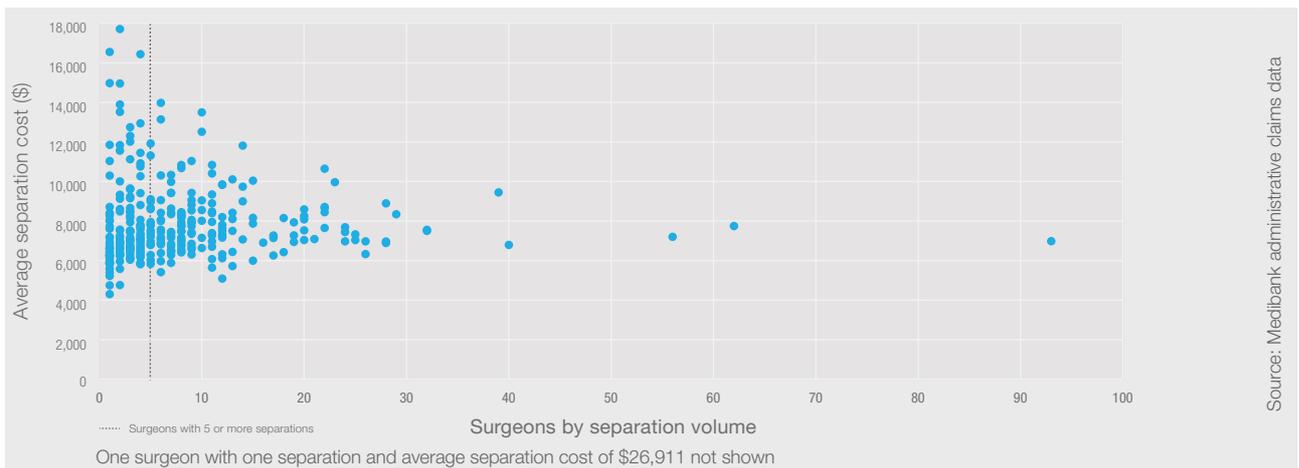
For the separations where MBS item number 37203 was recorded as the principal procedure (2,556 separations) the five most frequent MBS items billed by the surgeon are shown in the table below.

Table 18: MBS items billed by the surgeon (separations with principal MBS item # 37203)

MBS item number	Description	Total frequency	Frequency per separation
37203	Prostatectomy (endoscopic, using diathermy or cold punch), with or without cystoscopy and with or without urethroscopy	2,630	1.03
00105	Professional attendance by a specialist in the practice of his or her specialty	1,285	0.50
00104	Specialist, referred consultation - surgery or hospital	116	0.05
36863	Litholapaxy, with or without cystoscopy (Anaes.) (Assist.)	98	0.04
36845	Cystoscopy, with diathermy, resection or visual laser destruction of multiple tumours	70	0.03

What are the reasons for the wide variation in the number of MBS items billed?

Figure 22: Average separation cost



The separation cost includes the total charges for the hospital separation including payments made by Medibank, Medicare and the patient. Costs include hospital charges and prostheses charges, and fees charged by medical practitioners and for diagnostic services. The average total cost per hospital separation was \$7,857.

For the 175 surgeons who performed at least five procedures, the average separation cost for a surgeon ranged between \$5,078 and \$13,963 with a median of \$7,518.

Table 19: Average separation cost by state/territory

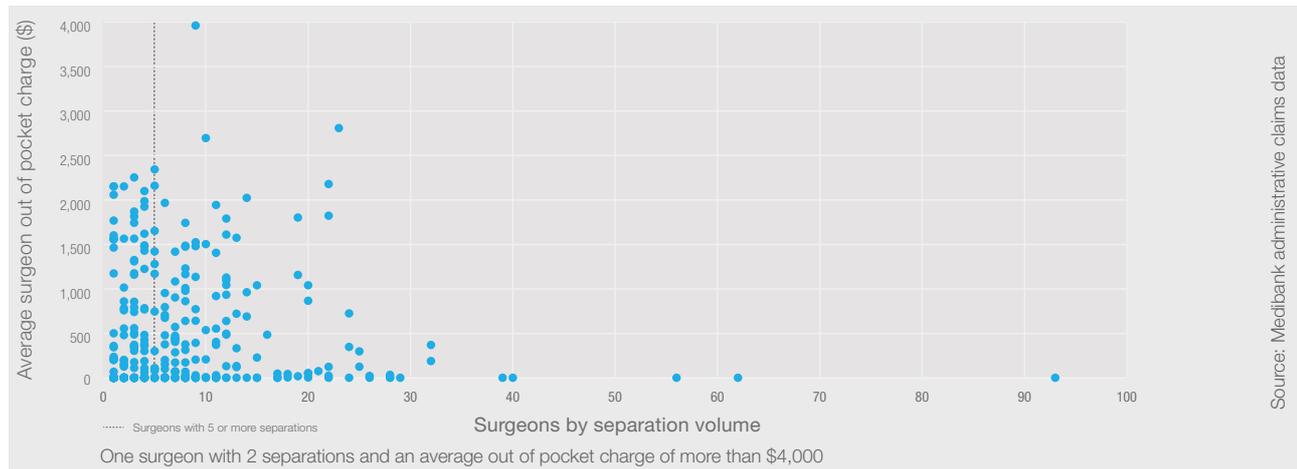
State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Average separation cost	\$9,893	\$7,848	NA*	\$7,911	\$6,860	\$7,216	\$8,041	\$7,346

*State/territory values not reported if dataset includes less than 5 surgeons

Are you aware of the associated costs for this procedure such as pathology, diagnostic imaging, surgical assistants, anaesthetists, hospital bed fees?

What are the reasons for variation in separation costs?

Figure 23: Average surgeon out of pocket charge



Patients were charged an out of pocket fee by the surgeon in 35% of separations and the average charge was \$1,279.

For the 175 surgeons who performed at least five procedures, 48 (27%) did not charge any of their patients an out of pocket for the hospital admission. The average out of pocket charged by each surgeon ranged from \$0 (no out of pocket) to a maximum of \$3,958, with a median of \$152.

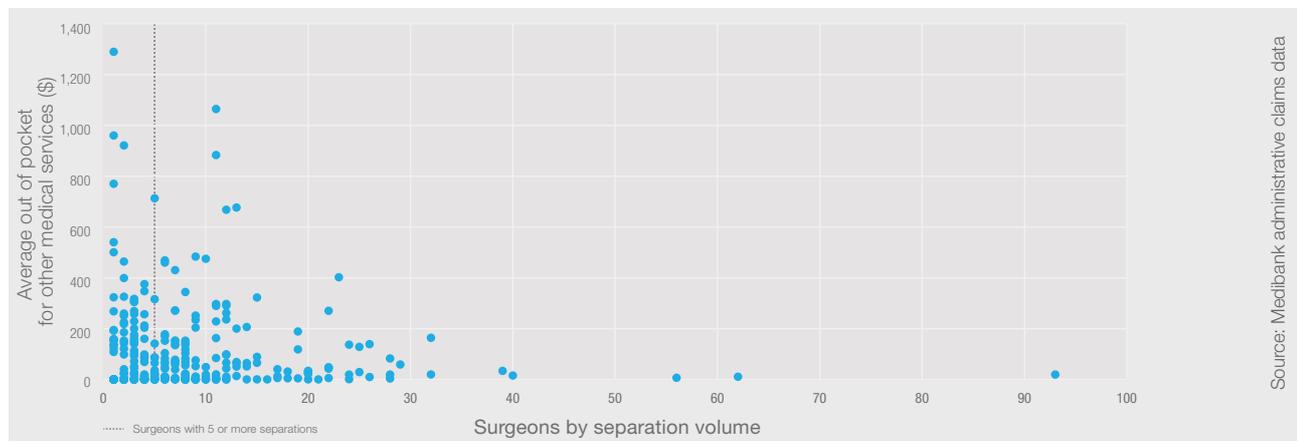
Table 20: Surgeon out of pocket charges by state/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
% of separations with OOP	93%	50%	NA*	60%	22%	27%	12%	38%
Average OOP	\$2,802	\$1,620	NA*	\$1,141	\$183	\$629	\$1,138	\$760

*State/territory values not reported if dataset includes less than 5 surgeons

Why is there such variation in the average out of pocket charge?

Figure 24: Average out of pocket charge for other medical services



Patients were charged an out of pocket fee for other medical services (including charges raised by the anaesthetist, assistant surgeon and for diagnostics) in 61% of separations and the average charge was \$147.

For the 175 surgeons who performed at least five procedures, the average out of pocket charges received by their patients for other medical services ranged between \$0 and \$1,064 with a median of \$36.

Table 21: Out of pocket charges for other medical services by state

	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
% of separations with OOP	86%	51%	NA*	55%	53%	35%	70%	74%
Average OOP	\$669	\$214	NA*	\$260	\$80	\$139	\$44	\$153

*State/territory values not reported if dataset includes less than 5 surgeons

Why is there such variation in the average out of pocket charge?

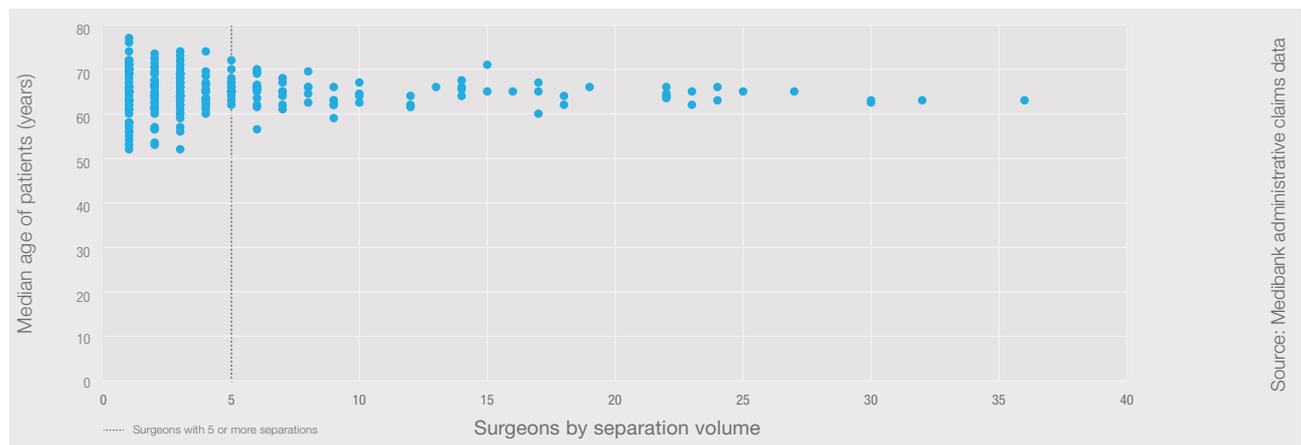
Radical prostatectomy procedures

In 2014 Medibank funded 1,273 operations in private hospitals where radical prostatectomy was recorded as the principal procedure (highest value MBS fee from the medical claim) for the hospital admission. The analysis is limited to those 1,273 procedures. 225 surgeons (identified through the stem of their Medicare provider number) billed Medibank for those procedures. 84 (37%) of these surgeons undertook five or more procedures. Surgeon-level analysis of the indicators considered for this procedure has been limited to those surgeons with five or more patient separations, so that each surgeon has a sufficient sample of separations from which a value (e.g. an average, median or percentage) for an indicator can be reported.

Table 22: MBS codes included in this analysis

Procedure	MBS Codes	Volume of separations	Percentage of separations	Definition
Radical prostatectomy surgery	37210	665	52.2%	Prostatectomy, radical, involving total excision of the prostate, sparing of nerves around the bladder and bladder neck reconstruction, not being a service associated with a service to which item 35551, 36502 or 37375 applies
	37211	608	47.8%	Prostatectomy, radical, involving total excision of the prostate, sparing of nerves around the bladder and bladder neck reconstruction, with pelvic lymphadenectomy, not being a service associated with a service to which item 35551, 36502 or 37375 applies

Figure 25: Median age of patients



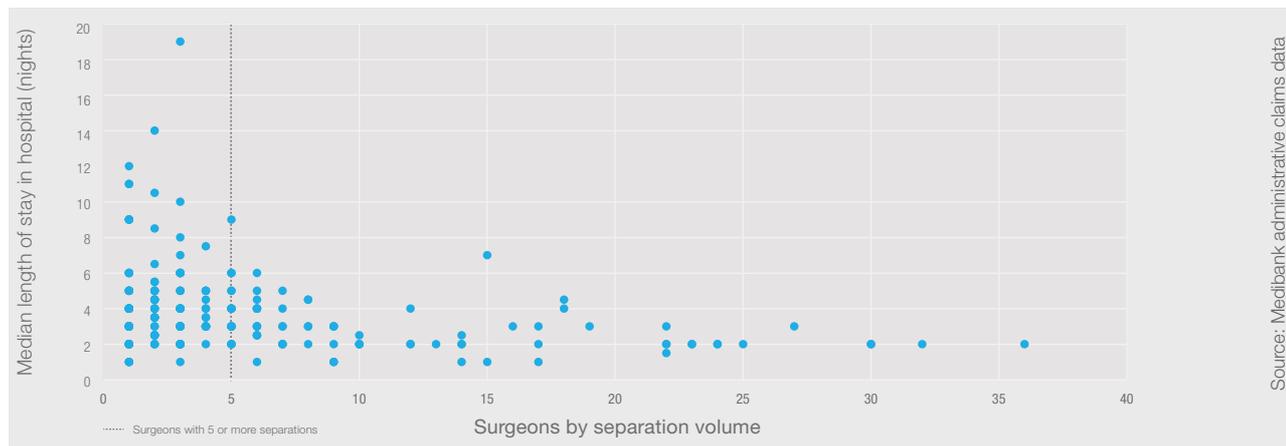
Across all separations the median patient age was 65 years.

For the 84 surgeons who performed at least five procedures:

- The median patient age of a surgeon ranged between 57 years and 72 years.

Is this variation in age clinically expected?

Figure 26: Median length of stay in hospital (nights)



Source: Medibank administrative claims data

For the 84 surgeons who performed at least five procedures:

- The median number of nights that a surgeon’s patients stayed in hospital ranged between 1 night and 9 nights with a median of 3 nights.

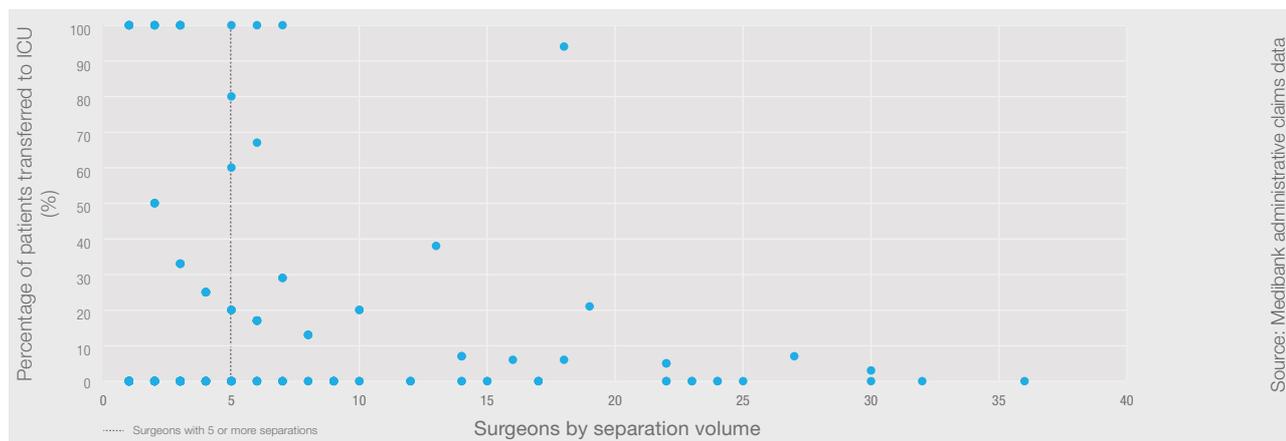
Table 23: Median length of stay (nights) by State/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Length of stay	4	3	NA*	2	2	5	3	3

*Values not published if state/territory comprised less than 5 surgeons who billed Medibank, to protect anonymity

What would you consider the most effective length of stay for this procedure?

Figure 27: Percentage of patients transferred to ICU



Source: Medibank administrative claims data

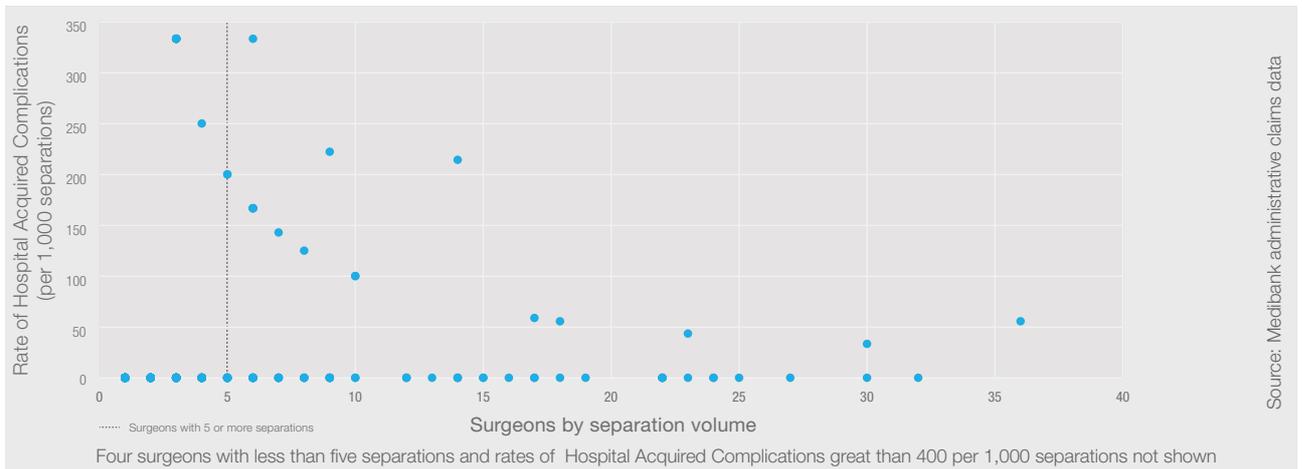
Patients were transferred to an intensive care unit (ICU) during 127 (10%) hospital separations. Administrative claims data does not indicate whether the transfers were planned or unplanned.

For the 84 surgeons who performed at least five procedures:

- 34 (40%) surgeons had one or more patient separations during which patients were transferred to ICU
- The percentage of a surgeon’s patients that were transferred to ICU ranged between 0% and 100% with a median of 0%.

Given that ICU transfers could indicate a difficult post-operative recovery, what would be the expected transfer rate?

Figure 28: Rate of Hospital Acquired Complications (per 1,000 separations)



Hospital Acquired Complications are a Medibank subset of 82 International Classification of Diseases (ICD) codes drawn from the Australian Commission of Safety and Quality in Health Care's list of high priority complications (see Table 31).

Across the total sample of hospital separations, the rate of Hospital Acquired Complications was 27 per 1,000 separations.

For the 84 surgeons who performed at least five procedures:

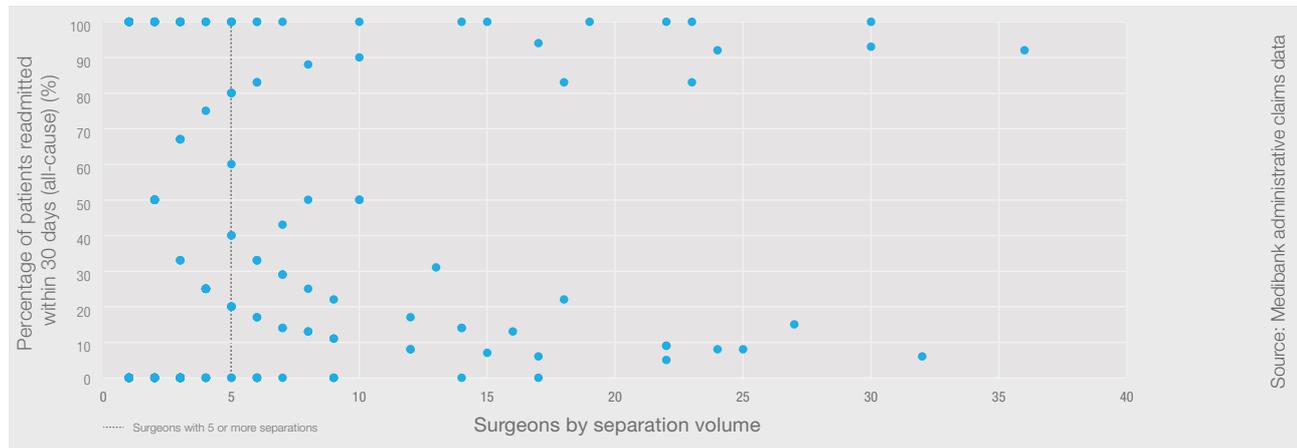
- 18 (21%) surgeons had one or more separations during which a Hospital Acquired Complication was identified
- The rate of Hospital Acquired Complications for a surgeon ranged between 0 per 1,000 separations to 333 per 1,000 separations, with a median of 0 per 1,000 separations.

Table 24: Hospital Acquired Complications identified during the hospital separation

Description	Number recorded
Haemorrhage and haematoma complicating a procedure, not elsewhere classified	26
Wound infection following a procedure	4
Foreign body accidentally left in body cavity or operation wound following a procedure	1
Accidental puncture and laceration during a procedure, not elsewhere classified	4
Disruption of operation wound, not elsewhere classified	1
Total	35

What complications have you had for this procedure?

Figure 29: Percentage of patients readmitted within 30 days



Following 544 (43%) separations, patients were readmitted (for all causes*) to a hospital within 30 days. Administrative claims data does not indicate whether the readmissions were planned or unplanned. There was no difference in the median age of patients readmitted and those not readmitted (65 years). Of the 544 separations followed by a readmission:

- 520 readmissions were to a private hospital (the same or a different private hospital). In 19 of these separations one or more Hospital Acquired Complications were identified, (a total of 20 Hospital Acquired Complications recorded in 520 readmissions, see Table 25)
- 24 readmissions were to a public hospital (where the patient was treated as a private patient).

For the 84 surgeons who performed at least five procedures, the percentage of a surgeon’s patients readmitted within 30 days ranged between 0% and 100% with a median of 24%.

Readmissions to public hospitals, where patients were treated as public patients, are not captured in these datasets.

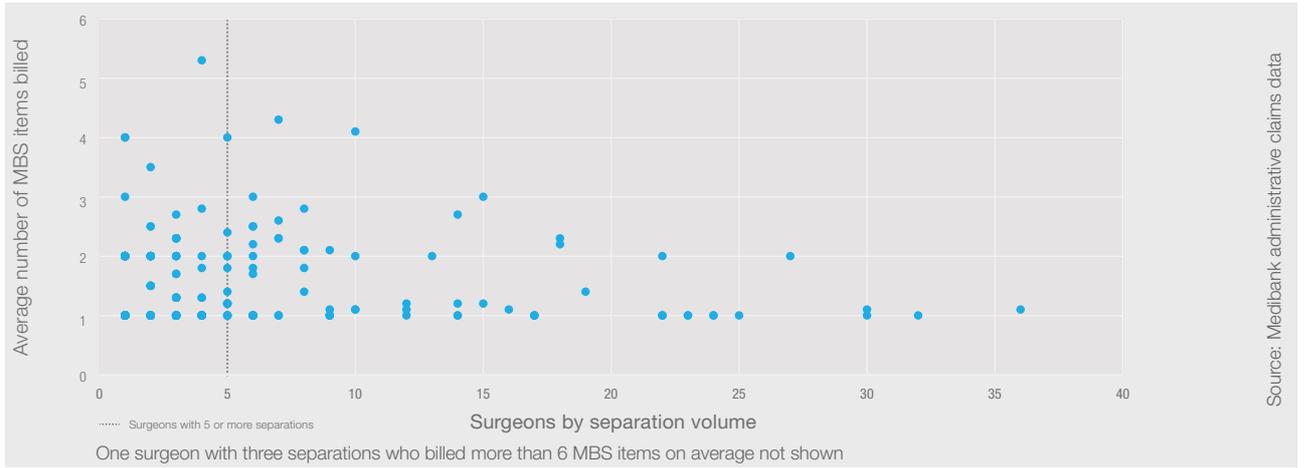
* Readmissions for rehabilitation, psychiatric treatment, dialysis and chemotherapy were excluded where identified. Separations involving a patient 80 years or older were also excluded.

Table 25: Hospital Acquired Complications identified on readmission

Category	Surgical complication	Infection	Total
Number recorded	9	11	20

What are the reasons for readmission for this procedure, and what is the expected rate?

Figure 30: Average number of MBS items billed



The average number of MBS items billed by the surgeon (the principal surgeon only) was 1.5 per hospital separation.

For the 84 surgeons who performed five or more procedures, the average number of MBS items billed by a surgeon ranged between 1.0 and 4.3 with a median of 1.1.

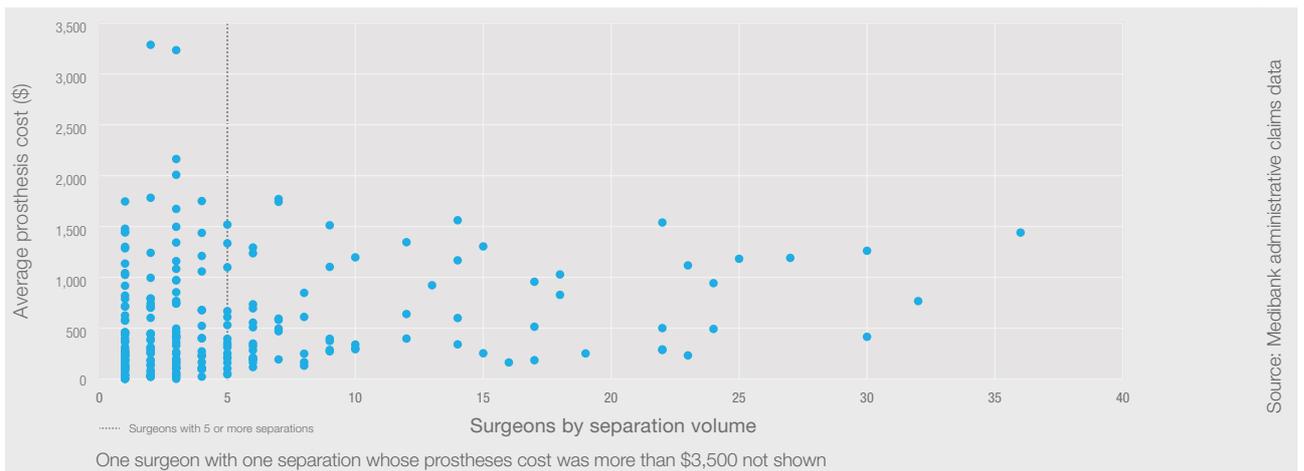
For the separations where MBS item number 37210 was recorded as the principal procedure (665 separations) the five most frequent MBS items billed by the surgeon are shown in the table below.

Table 26: MBS items billed by the surgeon (separations with principal MBS item # 37210)

MBS item number	Description	Total frequency	Frequency per separation
37210	Prostatectomy, radical, involving total excision of the prostate	682	1.03
00105	Professional attendance by a specialist in the practice of his or her specialty	178	0.27
30390	Laparoscopy, diagnostic, not being a service associated with any other laparoscopic procedure	28	0.04
36812	Cystoscopy with urethroscopy, with or without urethral dilatation	24	0.04
30393	Laparoscopic division of adhesions in association with another intra-abdominal procedure	11	0.02

What are the reasons for the wide variation in the number of MBS items billed?

Figure 31: Average prostheses cost



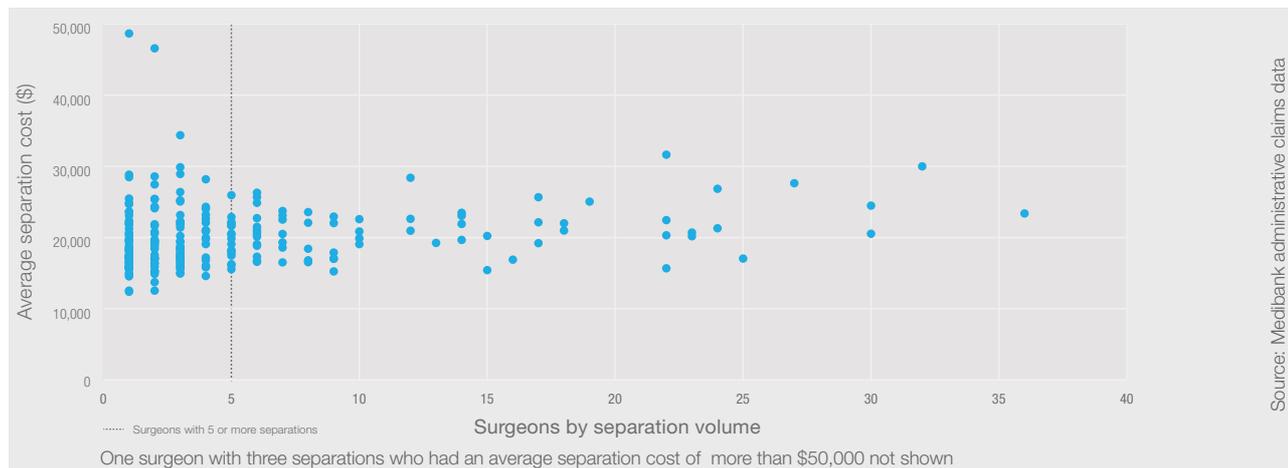
The average cost of prostheses items was \$679 per hospital separation.

For the 84 surgeons who performed at least five procedures, the average cost of prostheses used by a surgeon ranged between \$44 and \$1,768 with a median of \$492.

Are you aware of the associated costs for prostheses items used for this procedure?

What are the reasons for the variation in costs between surgeons?

Figure 32: Average separation cost



The separation cost includes the total charges for the hospital separation, including payments made by Medibank, Medicare and the patient. Costs include hospital charges and prostheses charges, and fees charged by medical practitioners and for diagnostic services. The average total cost was \$21,500 per hospital separation.

For the 84 surgeons who performed at least five procedures, the average separation cost of a surgeon ranged between \$15,215 and \$31,610 with a median of \$20,607.

Table 27: Average separation cost by state/territory

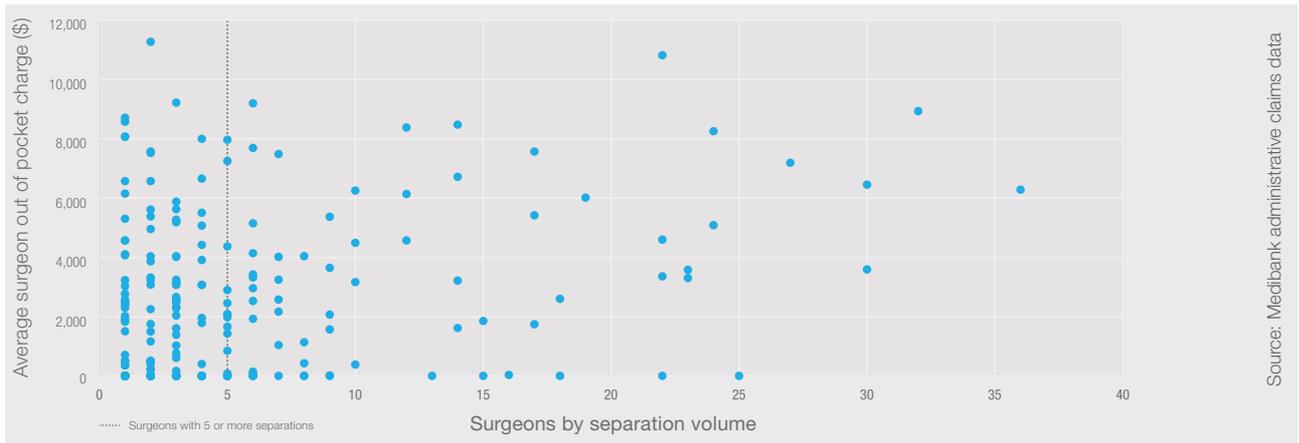
State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
Average separation cost	\$25,362	\$23,224	NA*	\$21,406	\$16,469	\$19,348	\$21,146	\$19,868

*Values not published if state/territory comprised less than 5 surgeons who billed Medibank, to protect anonymity

Are you aware of the associated costs for this procedure such as pathology, diagnostic imaging, surgical assistants, anaesthetists, hospital bed fees?

What are the reasons for variation in separation costs?

Figure 33: Average surgeon out of pocket charge



Source: Medibank administrative claims data

Patients were charged an out of pocket fee by the principal surgeon in 67% of separations and the average out of pocket charged was \$5,116. Some of these out of pocket charges may be due to the additional costs of robot-assisted surgery, which are typically paid for by the patient.

For the 84 surgeons who performed at least five procedures, 17 (20%) did not charge any of their patients an out of pocket for the hospital admission. The average out of pocket charge for a surgeon ranged from \$0 (no out of pocket charge) to a maximum of \$10,810. The median average out of pocket charged was \$2,585.

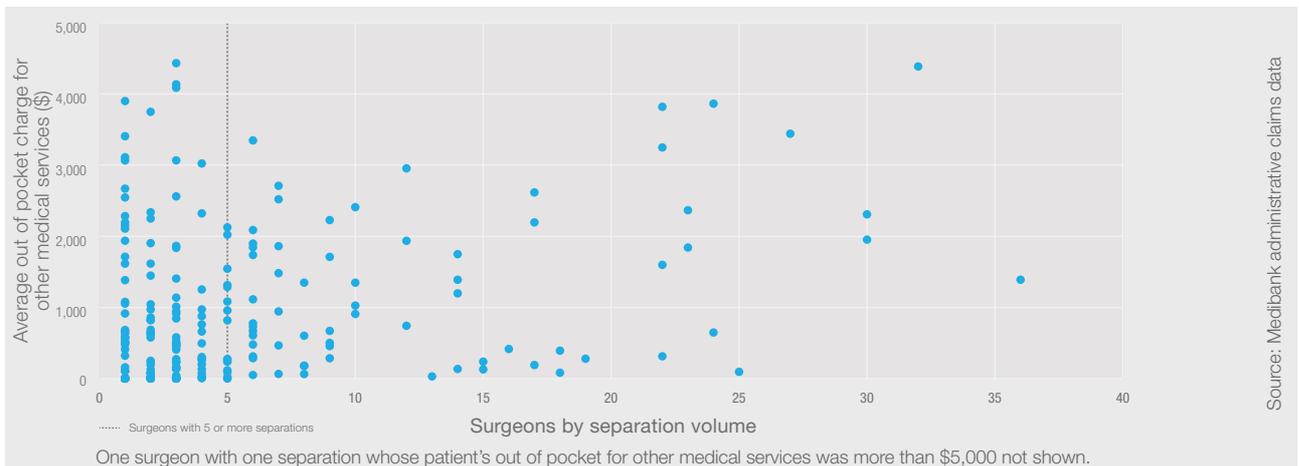
Table 28: Surgeon out of pocket charges by state/territory

State/territory	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
% of separations with OOP	100%	83%	NA*	82%	57%	59%	36%	69%
Average OOP	\$6,181	\$6,508	NA*	\$4,710	\$1,816	\$1,608	\$4,933	\$3,805

*Values not published if state/territory comprised less than 5 surgeons who billed Medibank, to protect anonymity

Why is there such variation in the average out of pocket charge?

Figure 34: Average out of pocket charge for other medical services



Source: Medibank administrative claims data

One surgeon with one separation whose patient's out of pocket for other medical services was more than \$5,000 not shown.

Patients were charged an out of pocket fee for other medical services (including charges raised by the anaesthetist, assistant surgeon and for diagnostics) in 96% of hospital separations.

For the 84 surgeons who performed at least five procedures, the average out of pocket charges received by a surgeon's patients for other medical services ranged between \$0 and \$4,383 with a median of \$924.

Table 29: Out of pocket charges for other medical services by state

	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
% of separations with OOP	97%	98%	NA*	98%	80%	66%	96%	97%
Average OOP	\$2,373	\$2,041	NA*	\$1,877	\$273	\$281	\$456	\$826

*Values not published if state/territory comprised less than 5 surgeons who billed Medibank, to protect anonymity

Why is there such variation in the average out of pocket charge?

Clinical Variation Working Party membership

Prof David Watters
(General Surgeon, VIC), Chair

A/Prof Andrew Brooks
(Urologist, NSW)

Mr Graeme Campbell
(General Surgeon, VIC)

Dr Cathy Ferguson (Otolaryngologist
Head and Neck Surgeon, NZ)

Prof David Fletcher
(General Surgeon, WA)

Prof Mark Frydenberg
(Urologist, VIC)

Prof Michael Grigg
(Vascular Surgeon, VIC)

Mr Richard Lander
(Orthopaedic Surgeon, NZ)

Dr Lawrence Malisano
(Orthopaedic Surgeon, QLD)

Prof Julian Smith
(Cardiothoracic Surgeon, VIC)

Mr Phil Truskett
(General Surgeon, NSW)

Mr Neil Vallance
(Otolaryngologist Head and Neck
Surgeon, VIC)

Mr Simon Williams
(Orthopaedic Surgeon, VIC)

Definitions

Table 30: Definitions

Term	Definition
ACT	Australian Capital Territory
HCP	Hospital Casemix Protocol. HCP data includes details of diagnoses, interventions, demographics and financial data relating to members' treatment in hospital
Hospital Acquired Complication	Medibank's subset of 82 ICD10 codes drawn from the Australian Commission of Safety and Quality in Healthcare's high priority complications dataset (see Table 27).
ICD	International Classification of Diseases. The ICD is the standard diagnostic tool for epidemiology, health management and clinical purposes.
ICU	Intensive Care Unit
MBS	Medicare Benefit Schedule
Median	The middle number in a given sequence of numbers
NSW	New South Wales
NT	Northern Territory
QLD	Queensland
SA	South Australia
Operation	The amount payable by the patient to a medical provider (including medical practitioner and diagnostics providers) for services performed during the hospital separation
Out of pocket charge	The amount payable by the patient to a medical provider (including medical practitioners and diagnostics provider) for services performed during the hospital separation
Principal surgeon/specialist	The surgeon/specialist who billed the MBS item with the highest fee in a separation
Primary procedure	The procedure performed on the patient with the highest value MBS fee
RACS	Royal Australasian College of Surgeons
Separation	The episode of admitted patient care
VIC	Victoria
WA	Western Australia

Table 31: Categories of Hospital Acquired Complications

Category	Sub-Category		
Pressure Injury	NA (only includes type 3 and 4 pressure ulcers)		
Falls	Cranial Injury	Femoral Fracture	Other Fracture
Healthcare Associated Infection	Urinary Tract Infection	Blood Stream Infection	
	Surgical Site Infection	Prostheses Site Infection	
Surgical Complication	Post-operative Haemorrhage and Haematoma	Other surgical complications including, thrombophlebitis, transfusion reaction, accidental puncture and laceration, wound disruption	
Venous Thromboembolism	Pulmonary Embolism	Venous Thrombosis	

COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-48

This is the Annexure marked "DD-48" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.



Same-day surgery for femoral, inguinal and umbilical hernia repair in adults

Final Report

February 2017



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Executive Summary

Introduction

The Royal Australasian College of Surgeons (RACS) and Medibank Private (Ltd.) recently produced a number of reports on surgical variation in high-volume procedures (RACS and Medibank 2016a). These initial reports examined variation within Medibank's administrative data-set, and based on these results an opportunity has arisen to assess the underlying clinical reasons for observed variations and establish recommendations for good clinical practice. Specifically, the data shows that the majority of patients who undergo hernia repair remain in hospital for one or more nights, whilst it is also known to be conducted as a same-day procedure.

The objective of the present review was to develop an evidence-base that can inform those areas of surgical variation in same-day surgery for hernia repair identified by the Surgical Variance Report, General Surgery (RACS and Medibank 2016b). The focus of this review is to provide guidance on best practice, inform on appropriate patient selection criteria and levers to drive change in practice, based on the best available evidence.

Methods

We utilised the rapid review method, which is an adaptation of a comprehensive systematic literature review technique. This approach ensures that project rigor is maintained while the review is completed in an expedited manner. This format allows the timely identification of best quality evidence at the highest level to answer the research questions (Watt et al. 2008a; Watt et al. 2008b). Studies were prioritised based on study design, recency and their relevancy to key clinical outcomes that inform the research questions. Studies were selected for inclusion based on a step-wise approach across three phases, as outlined in Appendix 1.

A Working Group was arranged to provide feedback and advice. The members were:

- Dr David Rankin (Medibank Clinical Director)
- Dr Stephen Bunker (Medibank Clinical Research Advisor)
- Professor Guy Maddern (Surgical Director RACS Research and Evaluation incorporating ASERNIP-S)
- Mr Alex Karatassas (General Surgeon)
- Professor David Watters (General Surgeon)
- Professor David Fletcher (General Surgeon)
- A/Prof Wendy Babidge (RACS Research, Audit and Academic Surgery Director)

The original project questions were refined and presented in a Protocol that received feedback from the Working Group. Results are provided for each research question, with the risk of bias associated with the identified evidence, literature findings (where available) and expert opinion reported for each.

Results and Conclusions

Same-day surgery for repair of inguinal, femoral and umbilical hernia is safe and effective. However, there are a number of limitations on the evidence used to form this conclusion. The evidence base is stronger for inguinal hernia and includes randomised controlled trials and other comparative

studies, while the evidence for femoral and umbilical hernia is limited to small numbers of observational studies. The studies included were able to provide some observations regarding which patient groups are unsuitable for same-day hernia repair in a clinical setting. Limited evidence suggests these patient groups include those who are elderly (over 70 years), over body mass index (BMI) of 40 (overweight), and those undergoing bilateral surgery. Two studies reported the proportion of patients ineligible for same-day hernia repair, which ranged from 3.3 – 8.0 per cent. Follow-up time across studies was relatively short and may be insufficient to investigate and report long-term adverse events. Overall, a range of guidelines and studies are consistent in the message that a large proportion of hernia repairs can be provided as a same-day procedure.

Australian and international guidelines recommend day surgery for most patients undergoing inguinal hernia repair surgery, providing surgical infrastructure is available to assess and select patients and suitable aftercare is available. The available guidelines were not explicit on day surgery for femoral and umbilical hernia repair. Australian guidelines on the broader issue of same-day surgery, published by the Australian & New Zealand College of Anaesthetists, state that requirements for same-day surgery to be acceptable are based on procedural, patient and social factors.

Clinical practice guidelines and published data from a range of countries are consistent in reporting that an appropriate rate of same-day hernia repair is in the order of 70–80 per cent of all hernia repair surgery. This rate is much greater than in Australian clinical practice, as identified through Medicare administrative data, where in 80 per cent of hospital separations the patient stayed in hospital for at least one night.

Besides the established clinical evidence and widely accepted guidelines, day surgery in general is a multifaceted topic, and many influential factors are external to clinical issues. Hospital management, financial incentives, social factors, facilities and staffing are all important aspects to determine the success of day surgery. While barriers for day surgery exist in all of these aspects, the interaction between patients, healthcare providers and the community remains the greatest one. It is plausible to gain leverage in promoting day surgery by enhancing the patient-doctor communication and education to increase patients' satisfaction, ameliorating staffing and facilities to match resources for day surgery, and creating supportive communities and policies. The acceptance and promotion of day surgery requires a holistic approach from a range of financial, institutional, societal and individual efforts.

A draft of this report was shared with the Working Group for input. Overall comments from the Working Group included the need for appropriate preoperative assessment, the benefits of protocols to guide communication and clinical practice, and the importance of dedicated facilities for same day surgery. There was agreement that most inguinal or umbilical hernia repair procedures can be undertaken in a day surgery setting. Patient preference was also discussed as being an important factor.

In summary, although the clinical benefits of day surgery for hernia repair are well established, there are a number of reasons as to why this activity is less common than expected and this report aims to highlight associated incentives which may be used to promote changes in local practice.

Recommendations

1. Most patients with inguinal or umbilical hernia can be managed as day patients.
2. There are patient satisfaction and financial incentives to maximise day surgery rates without posing risks for suitable patients.
3. The method of hernia repair will not generally affect the decision whether to manage the patient as a day patient or plan for an overnight stay.
4. Good preoperative assessment, planning and informing the patient has the potential to improve same-day surgery discharge rates.
5. Collaboration with the anaesthetists and involvement of anaesthetists in discharge planning is important.
6. The rate of same-day patients to overnight stay patients should be made transparent. The target rate for hospitals should be between 70 to 80% patients as same-day cases.
7. Patients with complex hernias and comorbidities will generally benefit from an overnight stay, or at least be considered for such.
8. The development of Australian and New Zealand guidelines or protocols should be considered, especially in the context of communication and planning to minimise barriers to same-day hernia repair.

Background

Introduction

Variation in the provision of services across surgical practice is often necessary as a result of patient needs, surgeon preference, available resources and jurisdictional requirements. However, in certain circumstances variation may be as a result of a range of different issues, which may be unrelated to clinical aspects and which may lead to increased risk for the patient and the service provider.

Guidelines established by the Australian & New Zealand College of Anaesthetists (2010; 2016) provide general recommendations on same-day surgery in Australia. They state these broader issues include patient selection and anaesthesia factors, procedural considerations, and recovery and discharge arrangements, as well as adequacy of facility resources.

The Royal Australasian College of Surgeons (RACS) and Medibank Private (Ltd.) recently produced a number of reports into surgical variation for high-volume procedures (RACS and Medibank 2016a). These initial reports examined variation within Medibank's administrative data-set, and based on these results an opportunity has arisen to assess the underlying clinical reasons for observed variations and establish recommendations for good clinical practice. In 80 per cent of the hospital separations reported in the data set the patients stayed in hospital for at least one night. The length of stay ranged from same day discharge to up to 10 nights, with one night being the median across all states in Australia. This variation in length of stay has also been observed in many other countries where the origin of the variation has been suggested to be related to the preoperative assessment of patients (Stomberg et al. 2013).

This report has been compiled to develop an evidence-base that can inform those areas of surgical variation in same-day surgery for hernia repair identified by the Surgical Variance Report, General Surgery (RACS and Medibank 2016b). Evidence from published literature is required to **demonstrate** and **promote best practice**. The focus of this report is to provide guidance on best practice, inform on appropriate patient selection criteria and levers to drive practice change, based on the best available evidence.

Project scope

The original project questions were refined and presented in a Protocol that received feedback from the Working Group.

Research questions

1. What is the safety and effectiveness of same-day surgery for inguinal, femoral and umbilical hernia repair compared to surgery with at least one night stay in-hospital?
2. What length of hospital stay does evidence-based Australian or International clinical practice guidelines (CPGs) recommend for surgical treatment of inguinal, femoral and umbilical hernia repair?
3. Are any patient groups not suitable for same-day inguinal, femoral or umbilical hernia repair?
4. What proportion of patients undergoing hernia repair are expected to be ineligible for same-day surgery?

5. Are there any broader criteria for same-day procedures to be performed in Australia that are not specific to hernia repairs?
6. What other factors are reported in the literature (peer-reviewed and grey literature) and/or by clinical experts that impact on the decision to perform same-day surgery?

The report is structured by research question; with the risk of bias associated with the identified evidence, literature findings (where available) and expert opinion reported for each.

PICO criteria

Population, Intervention, Comparator and Outcomes (PICO) were defined as following:

- Population: Adult patients undergoing surgery for inguinal, femoral and umbilical hernia of any type or complexity
- Intervention: planned same-day procedure involving surgery of any type (open or laparoscopic, with or without mesh)
- Comparator: planned ≥ 1 overnight stay following surgery
- Outcomes: adverse events, readmission to hospital, hernia recurrence, cost and resource use (e.g. hospital or hotel resources), medical management (e.g. use of analgesia, use of anti-emetics), issues of equity (e.g. distance of patient from hospital)

Note: Same day surgery is defined as admission and discharge within the same calendar day. Admission and discharge within a 23 hour period, including an overnight stay, is not considered same-day surgery for the purposes of this review.

Further detailed methods are provided in Appendix 1.

Established knowledge

In addition to length of hospital stay, literature was identified relating to a number of other variables surrounding surgery for hernia repair. A systematic review by Treadwell et al. (2012) gives a comprehensive review of hernia repair with a comparison across a large range of techniques. The results for each comparison are summarised below:

- **Repair vs watchful waiting for pain-free hernia**

Two randomised controlled trials (RCTs) met the inclusion criteria which were considered to have moderate risk of bias for all outcomes reported. One RCT was a North American multi-centre study which was funded by a manufacturer of mesh plugs (Fitzgibbons 2006), and the second was a United Kingdom single-centre RCT which did not report source of funding (O'Dwyer 2006). Both studies compared watchful waiting to Lichtenstein repair. All patients had clinically apparent hernia.

Considered outcomes were long-term quality of life, long-term pain, and acute hernia/strangulation. There was sufficient comparative evidence to derive a conclusion on one outcome only, quality of life, which at six months and one year was greater for patients who had received mesh repair than for those who were on watchful waiting. No indication was given as to which patients might specifically benefit from watchful waiting.

The European Hernia Group guidelines advise watchful waiting is a safe and acceptable option in patients with minimally symptomatic hernias and should be considered in elderly patients or patients with major comorbidities (Miserez et al. 2014).

- **Open mesh vs laparoscopic repair with mesh for primary hernia**

Of 38 non-randomised comparative studies which met the inclusion criteria, all but two (which were registry studies) were considered to have moderate risk of bias. Comparisons included transabdominal preperitoneal (TAPP) repair vs Lichtenstein repair (14 studies), totally extraperitoneal (TEP) repair vs Lichtenstein repair (14 studies), TAPP repair vs mesh plug (3 studies), TEP repair vs mesh plug (3 studies), and TAPP repair/TEP repair vs Lichtenstein repair (4 studies).

There was sufficient evidence to derive the following conclusions. Laparoscopy was favoured for time to return to work, time to return to daily activities, lower rates of long-term pain, haematoma and wound infection. Open surgery was favoured for hernia recurrence and epigastric vessel injury. There was approximate equivalence for length of stay.

- **Open mesh vs laparoscopic repair with mesh for bilateral hernia**

Six studies met the inclusion criteria, all but one (which was a registry study of level IV evidence) were considered to have moderate risk of bias.

The evidence was adequate to allow a conclusion on one outcome, return to work, with bilateral hernia patients returning to work sooner if they underwent laparoscopic repair.

- **Open mesh vs laparoscopic repair with mesh for recurrent hernia**

Eight non-randomised comparative studies met the inclusion criteria, all but two (which were registry studies) were considered to have moderate risk of bias. Procedures were Lichtenstein repair (including TAPP and TEP repair) and the Stoppa procedure.

Laparoscopic repair was associated with lower rates of recurrence, faster return to daily activities, and lower rates of long-term pain.

- **Different types of open mesh repair**

Nineteen non-randomised comparative studies met the inclusion criteria, most studies were considered to have a moderate risk of bias. Comparisons included Lichtenstein repair vs mesh plug (7 studies), Lichtenstein repair vs Prolene Hernia System (5 studies), Lichtenstein repair vs open preperitoneal mesh (3 studies), mesh plug vs Prolene Hernia System (2 studies), and Lichtenstein repair versus Kugel® patch (2 studies).

For Lichtenstein repair vs mesh plug technique, recurrence rates were similar, but Lichtenstein repair yielded better results for return to work and rates of seroma. For Lichtenstein repair vs Prolene Hernia System and Lichtenstein repair vs open preperitoneal mesh, outcomes for short-term pain were similar. For mesh plug vs Prolene Hernia System, outcomes for short-term pain were similar. For Lichtenstein repair vs Kugel mesh, outcomes were similar for both short-term pain and intermediate-term pain.

- **Different types of laparoscopic mesh repair**

Eleven non-randomised comparative studies met the inclusion criteria, most of which were considered to have a moderate risk of bias.

For the studies that compared TAPP repair versus TEP repair, TAPP resulted in quicker return to work. Data on short-term, intermediate-term, and long-term pain suggested equivalence.

- **Different mesh materials**

Of the 32 non-randomised comparative studies which met the inclusion criteria, most were considered to have a moderate risk of bias. Comparisons included standard polypropylene vs low-weight polypropylene (6 studies), standard polypropylene vs combination materials (12 studies), standard polypropylene vs coated polypropylene (6 studies), standard polypropylene vs three-dimensional Prolene Hernia System (2 studies), standard polypropylene vs porcine (2 studies), combination materials vs porcine (1 study), and low-weight polypropylene vs combination materials (3 studies).

Standard polypropylene mesh and combination materials had similar rates of recurrence. Three types of mesh (standard polypropylene, low-weight polypropylene, and porcine) had approximately equivalent rates of long-term pain.

- **Mesh fixation approaches**

Twenty-three non-randomised comparative studies met the inclusion criteria, most studies were considered to have a moderate risk of bias. Comparisons included tacks or staples vs no fixation (7

studies), fibrin glue vs staples (3 studies), sutures vs tacks (3 studies), sutures vs glue (7 studies), and absorbable sutures vs nonabsorbable sutures (3 study).

Approximate equivalence was found in recurrence rates for tacks or staples vs no fixation and sutures vs glue. Also, for long-term pain, approximate equivalence was found between sutures and glue, but less pain was associated with fibrin glue than staple fixation.

Results

The evidence base for this review is broad and includes a range of publications from systematic reviews, comparative studies, observational studies, evidence-based clinical practice guidelines, together with grey literature and opinion pieces. A PRISMA chart of study selection is shown in Appendix 3. Specific definitions of day surgery were unclear or varied between studies. The literature available is discussed in more detail in the response to each question.

Question 1: What is the safety and effectiveness of same-day surgery for inguinal, femoral and umbilical hernia repair compared to surgery with at least one night stay in hospital?

Identification of literature

Results were sourced from studies with the highest level of evidence on each hernia type. Following phase 2 study selection (full text review), a total of 47 studies were available which were relevant to question 1 (see Appendix 2). From this evidence base five studies (a systematic review and 4 case series) were included for extraction and review. The 41 remaining studies were of lower level evidence which are subject to high levels of bias and did not add to the available higher level evidence. The majority of these lower level evidence studies were included in a systematic review which was one of the five studies included for extraction and review.

The systematic review included all inguinal hernia repair patients (Fischer and Zechmeister-Koss 2014). Further studies were included to ascertain the safety and effectiveness of same-day surgery for femoral and umbilical hernia repair. One case series included a proportion of patients with femoral hernia together with the majority having inguinal hernia (Voorbrood et al. 2015). Three studies included patients with umbilical hernia (Kulacoglu et al. 2012; Kurzer et al. 2004; Menon and Brown 2003). One case series included a proportion of patients with femoral hernia together with the majority having inguinal hernia (Voorbrood et al. 2015). Three studies included patients with umbilical hernia (Kulacoglu et al. 2012; Kurzer et al. 2004; Menon and Brown 2003) (Table 15). A list of studies presenting outcomes relevant to question 1 are provided in Table 1.

As outlined in detail in the Established Knowledge section, Treadwell's (2007) systematic review on different types of hernia surgery, which did not differentiate by hernia type, concluded open and laparoscopic repair were found to have approximate equivalence for length of stay.

GRADE of the evidence-base

Table 1 provides a summary of findings for selected outcomes that were reported for question 1.

Table 1 GRADE of the evidence base for question 1

Outcomes	Assessment	Ne of participants (studies)	Quality of the evidence (GRADE)
Recurrence	Recurrence was recorded in same-day hernia repair patients.	4 (4 observational studies)	⊕⊕○○ LOW ^{ab}

Outcomes	Assessment	No of participants (studies)	Quality of the evidence (GRADE)
Unexpected prolonged stay	Unexpected prolonged stay was recorded in same-day hernia repair patients.	3 (3 observational studies)	⊕⊕○○ LOW ^{a,b}
Complications	Complications were recorded in same-day hernia repair patients.	5 (5 observational studies)	⊕⊕○○ LOW ^{a,b}

a. High risk of bias according to Downs and Black tool (Downs and Black 1998), b. ⊕⊕○○ **Low quality:** Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect.

Results: inguinal hernia repair

A systematic review by Fischer and Zechmeister-Koss (2014) addressed the safety and effectiveness of same-day surgery for femoral and inguinal hernia repair. It included three non-randomised controlled trials and two case series on inguinal hernia repair. Follow-up ranged from 3–48 months. The five other studies included to inform on the safety and effectiveness of inguinal hernia repair included one RCT, two non-randomised comparative studies and two case series including a total of 2260 patients. The systematic review identified no studies on femoral hernia repair suitable for inclusion. On the basis of the six included studies the authors concluded that inguinal hernia repair can be done safely and effectively in both day surgery and as an inpatient providing the patient fulfils the general eligibility criteria for day surgery. Satisfaction was reported in the included RCT. There was no significant difference in quality of life as measured with the RAND-36-Item Health Survey between the day case and the inpatient groups. General eligibility criteria for day surgery were not explained, although it was assumed that each hospital or healthcare system will have their own policy on this.

Subsequent to the systematic review Meyer et al. (2015) published a case series of 30 patients with inguinal hernia in France/Brazil, Lingaiah et al. (2015) published a case series of 50 patients with inguinal hernia in India, and Voorbrood et al. (2015) published a case series of 336 patients, 330 of whom had inguinal hernia, in the Netherlands. The studies found that same-day hernia repair is feasible with low rates of complications and, in Voorbrood et al. (2015) on a scale of 0–10 (where 10 was extremely satisfied), patient satisfaction was 9.0 (8.89–9.17 95 % CI).

Results: femoral hernia repair

Only one case series, in which six patients out of 336 had femoral hernia, was available on femoral hernia repair (Voorbrood et al. 2015). All consecutive patients had an appointment for same-day hernia repair in one high volume hospital in the Netherlands and 96.3% of patients had same-day surgery as planned. Of the day surgery, no conversion to open surgery was required and complications were minimal. Nine patients required admission for one night due to complications; one for 10 nights due to an unforeseen complication, and, owing to late scheduled surgery, one patient remained in hospital overnight. Outcomes were not presented for hernia type. In general, it was concluded that same-day surgery for hernia is feasible and satisfactory from an institutional perspective, as well as from a patient perspective.

Results: umbilical hernia repair

Umbilical hernia patients were studied in two retrospective and one prospective case series (Kulacoglu et al. 2012; Kurzer et al. 2004; Menon and Brown 2003), including 185 umbilical repair patients in total. Kulacoglu et al. (2012) concluded that repair of umbilical hernia as day surgery with local anaesthesia is a good option, with low infection and recurrence rates. The mean discharge time after the completion of surgery was 122 ± 58 min (45–420 min). No patient was converted to general anaesthesia. Doses of local anaesthetic agents needed were higher than those for inguinal hernia repair. Higher anaesthetic doses may be required for patients with higher BMI, recurrent hernia, and defects larger than three centimetres. Patient satisfaction rate was 97%, measured as the absence of pain (VAS) and post-operative nausea and vomiting. Being provided with detailed information about the surgery and the anaesthetic improved patient satisfaction.

Kurzer et al. (2004) and Menon & Brown (2003) studied 73 and 32 umbilical hernia repair patients, respectively, and concluded that same day surgery can be accomplished. A high degree of patient satisfaction was claimed in Kurzer et al. (2004), with no measure reported.

Summary

Same-day surgery for repair of inguinal, femoral and umbilical hernia is safe and effective. No study reported low patient satisfaction after same-day hernia repair. However, there are a number of limitations on the evidence used to form this conclusion. The evidence base is stronger for inguinal hernia. The low numbers of published studies, small population sizes and lack of comprehensive reporting with femoral and umbilical hernia repair provide a potential for bias. None of the studies, including those on inguinal hernia, reported on complex hernia repair.

Follow-up time across studies was relatively short, and may be insufficient to investigate and report long-term adverse events (such as small bowel obstruction).

Table 2 Outcomes relevant to question 1

Study ID	Publication Type	Participant characteristics	Same-day discharge rate	Comment
Fischer & Zechmeister-Koss (2014)	Systematic review of hernia repair with a mixture of level of evidence	35 studies	NR	Same-day surgery is safe and effective in 11 procedures, including inguinal hernia repair
Lingaiah et al. (2015)	Case series; retrospective; hospital records	N=40 NR	31%	No mortalities. Day care surgery is effective with low complications.
Meyer et al. (2015)	Case series; prospective; consecutive patients	N=50 NR	100%	Same-day surgery is safe and effective and should be considered for all patients
Voorbrood et al. (2015)	Case series; prospective; consecutive patients	N=336 ASA I or II Unilateral	97%	Same-day inguinal hernia repair is safe and effective, both from an institutional and patient perspective
Kulacoglu et al. (2012)	Case series; retrospective; consecutive patients	N=100 paraumbilical	100%	Same day umbilical hernia repair is safe and effective with low infection and recurrence rates
Kurzer et al. (2004)	Case series; prospective	N=73 ASA I or II	NR	Open repair with mesh is suitable for umbilical hernia and lends itself to same-day surgery with local anaesthetic in the majority of patients
Menon & Brown (2003)	Case series; retrospective	N=32 Uncomplicated	100%	Same-day umbilical hernia repair is safe and effective

ASA: American Society of Anesthesiologists status; NR: not reported.

Question 2: What length of hospital stay does evidence-based Australian or international clinical practice guidelines recommend for surgical treatment of inguinal, femoral or umbilical hernia repair?

Identification of literature

Two searches were conducted to identify clinical practice guidelines (CPGs) providing recommendations on length of hospital stay following inguinal, femoral or umbilical hernia repair. The first search was conducted in PubMed and Embase databases to identify guidelines published in the peer-reviewed literature. The second search involved keyword searching of relevant websites to identify any guideline not identified in the database search. The methods are described in Appendix 1.

Nine clinical practice guidelines, published between 2006 and 2016 were identified from database and grey literature searching. A summary of the guidelines and their recommendations regarding length of hospital stay for hernia surgery is summarised in Table 16 (Appendix 5). The evidence base underpinning the recommendations is described in Table 17 (Appendix 5).

Quality of the evidence-base

The CPGs were appraised using the AGREE II tool by one researcher and checked by a second (Brouwers et al. 2010) (Appendix 1). The CPG by the European Hernia Society (Miserez et al. 2014; Simons et al. 2009) was rated as 'Good' quality, the other CPGs were rated as being of 'Acceptable' quality. All the recommendations in the guidelines were informed by systematic searches of the literature as well as by expert consensus.

Results: inguinal hernia repair

Six guidelines (two of which had recent updates) provided recommendations on length of hospital stay for inguinal hernia repair (Bittner et al. 2011; Bittner et al. 2015; Lomanto et al. 2015; Miserez et al. 2014; Rosenberg et al. 2011; Sanders et al. 2013; Simons et al. 2009; The HerniaSurge Group 2016).

The CPG developed by the HerniaSurge group provided the most recent and comprehensive recommendations on length of stay for inguinal hernias. The guideline Steering Committee and Working Group included members from every continent including an Australasian Hernia Society representative; surgeons who performed (and researched) all types of hernia repair were included. The guideline is intended to cover the management of all adult groin hernia patients worldwide. A literature search was conducted up to 1 January 2015 for systematic reviews and up to 1 July 2016 for RCTs. Evidence was scored using the Oxford, SIGN and GRADE methodologies (Appendix 5). Statements and Recommendations were developed and graded during consensus meetings. "Recommend" was used where strong evidence was available; "Suggest" was used where weak evidence was available.

The HerniaSurge group recommends day surgery for the majority of groin hernia patients provided adequate aftercare is organised. This recommendation is consistent with evidence-based guidelines produced by the European Hernia Society (Miserez et al. 2014; Simons et al. 2009), the British Hernia Society (Sanders et al. 2013) and the Danish Hernia Database (Rosenberg et al. 2011). Guidelines

developed for the Asia region (Lomanto et al. 2015) recommend day surgery should be considered for American Society of Anesthesiologists (ASA) I and II patients following anaesthesia assessment.

The HerniaSurge group also included suggestions for length of stay for specific population groups. Day surgery (providing adequate aftercare is available) was suggested for:

- All endoscopic repairs of simple inguinal hernias
- Selected older patients (including octogenarians but excluding nonogenerians)
- ASA IIIa patients undergoing open repair with local anaesthesia
- Patients undergoing complex inguinal hernia care only in selected cases (these should generally not be performed as day surgery)

The only conflict between these suggestions and the other identified guidelines is that the Asian guidelines recommend all patients ASA \geq III, where surgery is performed under local or general anaesthesia, should be admitted for an overnight stay.

Results: femoral hernia repair

No guideline making recommendations on length of stay following femoral hernia surgery was identified.

Guidelines by the HerniaSurge group (2016) the British Hernia Society and the Danish Hernia Database (Rosenberg et al. 2011) included guidance on femoral hernias; however, recommendations on length of stay and the evidence supporting them are specific to inguinal hernia repair.

Results: umbilical hernia repair

One guideline, reported in two publications, on ventral hernia repair was identified (Bittner et al. 2014a; Bittner et al. 2014b). The guideline did not provide any recommendation on the appropriateness of day surgery; however it did recommend that hospital stay be as short as possible and that based on the shorter hospital stay, laparoscopic repair is recommended.

Summary

Day surgery is recommended for most patients undergoing inguinal hernia repair provided surgical infrastructure is available to assess and select patients and suitable aftercare is available.

Elements which were suitable for or supported same-day surgery were:

- ASA I and II patients following anaesthesia assessment (grade of recommendation: strong)
- Endoscopic repairs of simple inguinal hernias (weak)
- Selected elderly patients (including octogenarians but excluding nonogenerians) (weak)
- ASA IIIa patients undergoing open repair with local anaesthesia (weak)

Elements where a day procedure was generally unsuitable were:

- Patients undergoing complex inguinal hernia care (weak)
- Elderly patients (age not defined but includes all nonogenerians) (weak)
- All ASA IV and some ASA III patients (weak)
- Co-morbidity (weak)
- Patients on anticoagulants due to higher risk of bleeding complications (moderate evidence)

For femoral and umbilical hernia, no guidance on the appropriateness of day surgery was identified.
For umbilical hernia repair, hospital stays are recommended to be as short as possible.

Question 3: Are any patient groups not suitable for same-day inguinal, femoral or umbilical hernia repair?

Identification of literature

Results were sourced from studies with the highest level of evidence including patients with each hernia type of interest. Following phase 2 study selection (full text review), a total of sixteen studies were available which were relevant to question 3 (see Appendix 2). From this evidence base, four studies were included for extraction and review. The 12 remaining studies were of lower level evidence which are subject to high levels of bias and did not add to the available higher level evidence.

The four included studies were non-randomised comparative studies concerning different patient groups. These studies report on patients in all three hernia groups. Patient types included those from metropolitan and regional locations, obese, elderly, those of African-American race, and having bilateral or complex surgery (Table 18; Appendix 6). The World Guidelines for Groin Hernia Management was used to form the response on inguinal hernia repair. Table 4 provides outcomes relevant to question 3.

GRADE of the evidence-base

Table 3 provides a summary of findings for selected outcomes that were reported for question 3.

Table 3 GRADE of the evidence base for question 3

Outcomes	Assessment	No of participants (studies)	Quality of the evidence (GRADE)
Same day discharge	Safety and effectiveness of same-day hernia repair was assessed in different patient groups including elderly vs younger, overweight vs slim, regional vs metropolitan.	2 (2 observational studies)	⊕○○○ VERY LOW ^{a,b}
Unexpected prolonged stay		2 (2 observational studies)	⊕○○○ VERY LOW ^{a,b}
Unexpected readmission		1 (1 observational study)	⊕○○○ VERY LOW ^{a,b}
Emergency readmission		2 (2 observational studies)	⊕○○○ VERY LOW ^{a,b}

a. High risk of bias according to Downs and Black tool (Downs and Black 1998), b. ⊕○○○ **Very low quality:** We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect.

Results: inguinal hernia repair

Memtsoudis et al. (2005) conducted a large retrospective case series on same-day inguinal hernia repair patients. Unexpected prolonged stay was experienced in 7.6 per cent of the patient cohort; independent risk factors were found to be increasing age, bilateral procedure, and African-American race. It was discussed that there may be higher admission rates in patients with social insurance, and

the authors proposed that race and insurance status both influence medical treatment. Patients of African-American race and with social insurance are more likely to access medical care through emergency room and therefore are likely to require longer stay. Sinha et al. (2007) undertook a retrospective analysis on administrative and clinical data on elderly patients with inguinal hernia, comparing the results from same-day and non-same-day patients between patients aged 70 years and above, and 65 years and below. Postoperative symptoms included fever, drowsiness, dizziness, pain, bleeding, nausea, and vomiting, which were not significantly different between groups. Prolonged stay was reported in 12.5 per cent of the elderly group and 9.5 per cent of the younger group ($P=0.43$). It was concluded that same-day hernia repair can be successful in patients ≥ 70 years of age.

The World Guidelines for Groin Hernia Management by The HerniaSurge Group (2016) recommends that, while most inguinal hernias are suitable for same-day surgery, complex cases should not be performed as day surgery. The guideline identifies complex cases to include:

- groin hernias with signs of incarceration, strangulation, infection, relevant preoperative chronic pain, difficult local findings in the groin;
- groin hernias in patients with relevant comorbidities;
- difficult intraoperative findings;
- symptoms and signs of postoperative local complications and/or general complications.

Results: femoral hernia repair

A prospective Australian study by Collopy et al. (1991) reported on length of stay in patients located in regional and metropolitan areas with femoral and inguinal hernia, although the proportion of patients with each hernia type was not given. Postoperative complications were observed in 22 per cent of patients in the metropolitan hospital and 16.6 per cent of patients in the regional hospital ($p>0.05$). There was no significant difference in patient age and type of hernia between the metropolitan and regional hospital. However, there was a trend toward later surgically-advised discharge in the metropolitan hospital. The difference between advised length of stay and actual length of stay was 4.4 days in the metropolitan hospital and 2.1 days in the regional hospital, yet the time between surgery and actual discharge was the same between hospitals. The reasons behind this difference are unclear. This may be based on the beliefs of the operating surgeon or on local practice.

Results: umbilical hernia repair

Acevedo & Leon (2010) undertook a prospective analysis on obese ($BMI>30$) and non-obese ($BMI<30$) patients with umbilical (29%) and general groin (24%), and other hernia. The outcomes of pain during surgery and infection at 30 days postsurgery were significantly higher in the obese group ($P<0.004$ and $P<0.023$, respectively). Although readmissions were slightly higher in the non-obese group, this did not reach significance. It was concluded that obesity ($BMI>40$) is not a contraindication for same-day hernia repair under local anaesthetic in a specialised centre. However patients with a $BMI \geq 40$ will need general anaesthetic and may need to be admitted for a longer stay. It is important to note that while surgery can be undertaken on obese patients, the long-term outcomes may be poorer.

Summary

No studies have explicitly undertaken work to investigate specific populations which are indicated for, or should not be considered for, day-case surgery. The studies included were only able to provide observations on which patients were found to be unsuitable in a clinical setting. The limitations of the published evidence-base include the observational (non-randomised) nature of population groups, small populations of patients in different risk factor groups, and non-relevance to the Australian context. Outcomes are largely related to healthcare funding systems in another country.

Table 4 Outcomes relevant to question 3

Study ID	Publication Type	Participant characteristics	Same-day discharge rate	Comment
Memtsoudis et al. (2005)	Case series; retrospective; registry data	N=7853 inguinal hernia	100%	Increasing age, bi-lateral surgery and African-American race lowered likelihood of discharge
Acevedo & Leon (2010)	Case series; prospective	N=2031 I: BMI > 30 C: BMI < 30	100% (unclear)	Obesity with BMI 30-40 is not a risk factor for same-day hernia repair under local anaesthetic
Sinha et al. (2007)	Comparative; consecutive; retrospective	N=588 I: aged ≥ 70 C: aged ≤ 65	I: 87.5% C: 90.5%	Same-day hernia repair can be done on elderly patients aged 70 and above
Collopy et al. (1991)	Comparative; consecutive; prospective; hospital data followed by telephone survey	N=141 I: metropolitan location C: regional location	NR. Difference between the operation date and the surgically advised discharge date 4.4 days metropolitan hospital and 2.1 days in the regional hospital	The time between surgery and actual discharge was the same between metropolitan and regional hospitals

BMI: body mass index; C: comparator; I: intervention; NR: not reported.

Question 4: What proportion of patients undergoing hernia repair are expected to be ineligible for same-day surgery?

Identification of literature

Following phase 2 study selection (full text review), a total of nine studies were identified which were relevant to question 4 (see Appendix 2). Of these studies three contained relevant data. An additional study was included through pearling, resulting in four studies for extraction and review (Table 19; Appendix 7).

The evidence base is made up of a prospective multi-site case series study (Millat et al. 1993), a prospective single centre case series (Voorbrood et al. 2015), a prospective nationwide database (Kehlet and Bay-Nielsen 2008), and a qualitative study based on a survey of doctors (Toftgaard 2007). Hernia type was defined as inguinal in the survey. In the other two studies hernia type was defined as being in the groin region in general or was not defined. Two guidelines were used to inform the evidence for question 4. A list of studies presenting outcomes relevant to question 4 are provided in Table 6.

GRADE of the evidence-base

Table 5 provides a summary of findings for selected outcomes that were reported for question 4.

Table 5 GRADE of the evidence base for question 4

Outcomes	Assessment	№ of participants (studies)	Quality of the evidence (GRADE)
Proportion ineligible for same-day surgery	The proportion of patients who were ineligible for same-day hernia repair was recorded.	2 (2 observational studies)	⊕○○○ VERY LOW ^{a,b}

a. High risk of bias according to Downs and Black tool (Downs and Black 1998), low number of studies, b. ⊕○○○ **Very low quality:** We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect.

Results

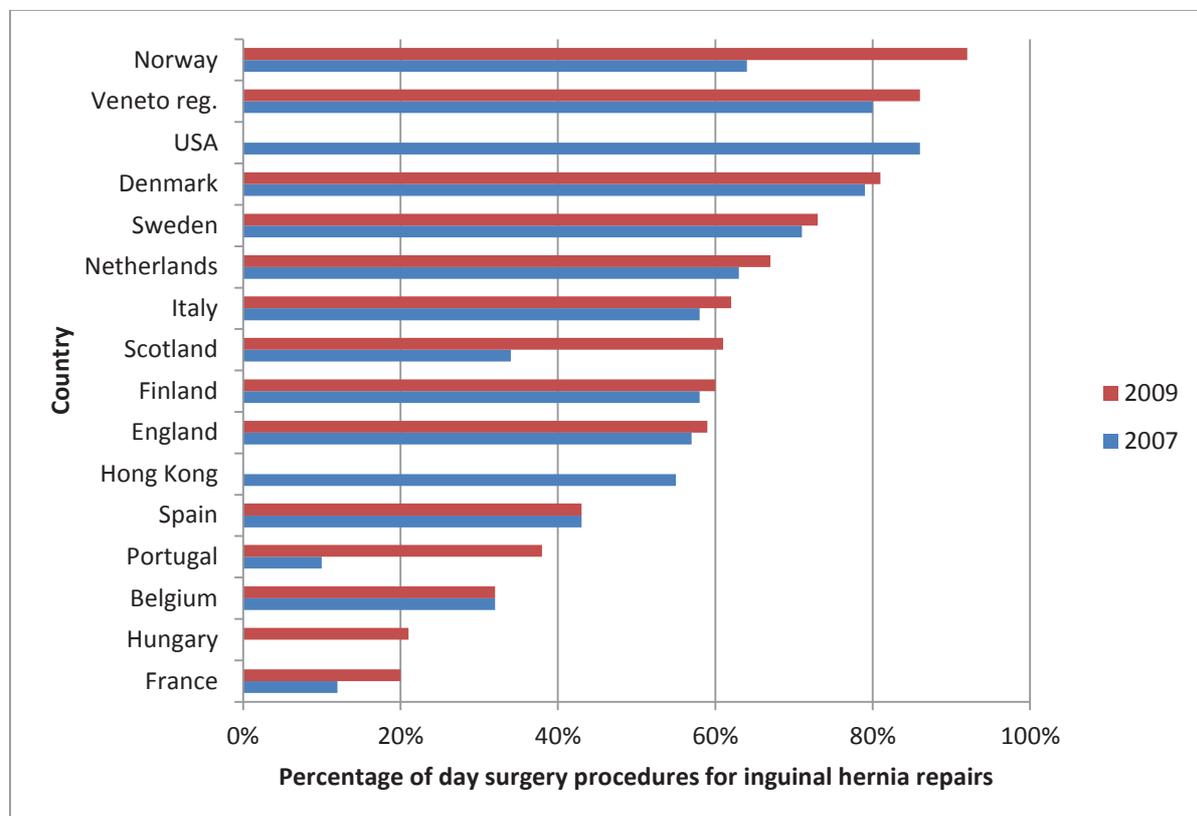
Two included peer-reviewed studies provided the proportion of patients ineligible for same-day hernia repair (Millat et al. 1993; Voorbrood et al. 2015). Across 17 surgical centres in France, a case series study on inguinal hernia repair in 500 consecutive cases identified that 89 (17.8%) were unsuitable for day procedures. Made up of 40 due to medical reasons (8%), 23 for social reasons (4.6%) and 42 due to patient refusal (8.4%). Voorbrood et al. (2015) reported on 336 consecutive patients planning to have hernia repair in a high volume hospital in the Netherlands. Across the cohort, 336 (96.3%) of patients had same-day surgery as planned; of the others, two cancelled their appointment and 11 were rejected for surgery following detailed pre-surgical assessment (3.3%).

In addition to peer-reviewed evidence, two guidelines informed this question. The clinical practice guideline published by the British Hernia Society recommends all patients should be considered for day surgery, with a small number of patients requiring an inpatient stay for comorbidity, social reasons or because of a complex hernia repair (Sanders et al. 2013). The guideline states that if

healthcare providers adhere to this guidance then 70 per cent of hernia repair procedures will be conducted as day procedures.

World guidelines by HerniaSurge suggest day surgery for inguinal hernia repair is becoming increasingly common (The HerniaSurge Group 2016). In Spain in 2005, day surgery inguinal herniorrhaphies constituted 34 per cent of the total. From 2000 to 2010 the rate of inguinal hernia day surgery in the Netherlands increased from 36 per cent to 54 per cent. Data from the Swedish National Registry indicate that 75 per cent of inguinal hernia repairs are performed in day surgery. From 2000 to 2009 the incidence of day surgery for inguinal hernias increased from 62 per cent to 87 per cent in the Northern Italian Veneto region. Further details from these guidelines can be found in the response to research question 2. The most recent analysis of international day surgery rates for inguinal surgery from 2007 and 2009 is shown in Figure 1.

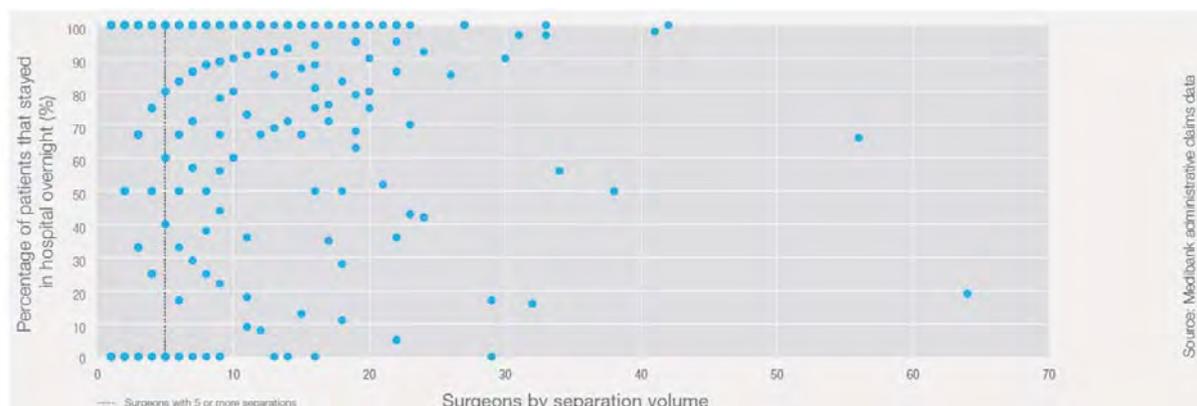
Figure 1 Percentage of day surgery procedures for inguinal hernia repairs in 2007 and 2009 in the Veneto region of Italy and in other countries (Toftgaard 2012)



The database on groin hernias in Denmark identified by pearling further elucidates the rates of same-day hernia repair. Ambulatory surgery for elective hernia repair was observed to have slowly increased over 8 years from 55 per cent in 1998 to 70 per cent in 2005 (Kehlet and Bay-Nielsen 2008). A study with worldwide data reported that in Australia the proportion of hernia repair done as day surgery in 2003 was 22.6 per cent (Toftgaard 2007). Toftgaard (2007) also highlighted there are large differences between countries for day surgery rates.

The surgical variance report also provided Australian data on rates of hernia surgery patients staying overnight by surgeons and their separation volume (Figure 2, RACS and Medibank 2016a). This showed that 80 per cent of hernia repairs funded by Medibank stay overnight and 54 per cent of surgeons kept all of their hernia repair patients overnight, while 6 per cent did not keep any of their patients overnight.

Figure 2 Percentage of hernia surgery patients that stayed in hospital overnight throughout Australia in 2014 (RACS and Medibank 2016b)



Summary

Two studies were able to provide a direct response to the research question. Others were able to indicate the proportion of patients who did undergo day surgery but not those who were found ineligible. The studies have a relatively low sample size and are observational in nature, and the results vary across jurisdictions and over time. However, the studies are consistent in their conclusions that few patients are ineligible for same-day hernia repair with a recent clinical practice guideline stating that 70 per cent of hernia repair procedures can be conducted as day procedures.

Table 6 Outcomes relevant to question 4

Study ID Location	Study design	Patient characteristics	Same-day discharge rate	Proportion ineligible for same-day surgery
Millat et al. (1993)	Case series; prospective (unclear); primary data from 17 sites	N=500 male	82%	17.8%, reasons: medical 8%, social 4.6%, patient refusal 8.4%
Voorbrood et al. (2015)	Case series; prospective; consecutive patients	N=336	97%	3.8%, reasons: no show 0.5%; medical reasons 3.3%
Kehlet et al. (2008)	Case series; prospective; database	87,840 procedures (may include recurrent)	55% in 1998, 70% in 2005	NR
Toftgaard (2003)	Qualitative; retrospective; survey data	Data from 18 countries	22.6%	NR

Question 5: Are there any broader criteria for same-day procedures to be performed in Australia that are not specific to hernia repairs?

Identification of literature

A grey literature search was conducted to identify clinical practice guidelines providing recommendations on same-day surgery in Australia. Two guidelines established by the Australian & New Zealand College of Anaesthetists (ANZCA) were published in 2010 and 2016. In addition, information was identified regarding legislative and accreditation requirements for day surgery (based on a previous report compiled by R&E/ASERNIP-S).

Australian guidelines on day surgery

The Australian & New Zealand College of Anaesthetists has published recommendations which outline the requirements for day surgery (Table 20, Appendix 8). The requirements are grouped into procedure (e.g. rapid return to food and water intake, pain controllable, low risk haemorrhage, low risk airway compromise), patient (willingness, <1 hr travel time, ASA I or II or medically stable II or IV) and social (transport, responsible person to stay overnight, access to telephone). In all cases the ultimate decision for day surgery was deemed to rest with the anaesthetist.

Legislative and accreditation requirements for day surgery

The provision of services in day procedure centres is prescribed by legislation in six jurisdictions (ACT, Qld, Tas, Vic, WA and NSW), where the day procedure services and private hospitals are collectively described as private health facilities. In South Australia and the Northern Territory, the definition of day procedure centres that provide medical and surgical services is unclear. Prescribed surgical procedures in day procedure centres are defined by the level of anaesthesia, or are explicitly listed. The detail and definitions related to this legislation varies from state to state and is currently the subject of review in many jurisdictions.

Due to the requirement of anaesthesia, the service of hernia repair should be provided in a day surgery unit or hospital.

Licensing of facilities is also governed at the state and territory level. In Australia, healthcare facilities are required to be licensed under state legislation prior to operation. Public and private hospitals, day procedure centres and other health service providers are characterised according to local legal definitions. However, each state defines and categorises healthcare facilities differently. A hospital is legislatively distinguished to be a public or a private facility based on whether it is owned by the state government. Distinctions between private hospital and day procedure centres within private settings are not consistent across states.

There is no requirement for day procedure centres to be accredited. However, at the federal level the Private Health Insurance Act (2007)¹ prohibits insurance companies from paying any benefit for treatment in a non-accredited facility. The Act mandates accreditation by an appropriate accreditation body which is defined in the Private Health Insurance (Accreditation) Rules (2011) as a body approved by the Australian Commission on Safety and Quality in Health Care (ACSQHC) to

¹ Private Health Insurance Act 2007 (Cth) ss 121-5(5)-(8)

accredit health care providers against the National Standards.² The Act ensures that any health facility performing procedures which are rebatable by private health insurers must be accredited to the National Safety and Quality Health Service Standards (NSQHS standards) regardless of State legislation.

Due to the availability of insurance and Medicare rebate, the service of hernia repair should be provided in an accredited facility.

Quality of the evidence-base

The quality of the Australian & New Zealand College of Anaesthetists (ANZCA) (2016) guideline on peri-operative care of patients selected for day procedures was appraised with the use of the AGREE II tool (Brouwers et al. 2010) (Appendix 1). The purpose and scope were stated; however, the health questions covered may not have been explicitly described. While target users of the guideline were clearly described, it was unclear if the guideline development included professionals from all groups or if the views of the target audience were sought. The quality of the guideline was diminished by not having a method section where a literature review, or way of ascertaining the knowledge, was reported. It is assumed that, in contrast to most guidelines, this guideline is intended to present the views of the ANZCA on this topic and therefore a rigorous process was not reported. The strength of the guideline was presenting recommendations in a specific and unambiguous manner, with different options for management of health issues clearly stated. The recommendations are easy to identify.

Summary

The Australian & New Zealand College of Anaesthetists has published recommendations which outline the requirements for day surgery. Local regulatory requirements enable same-day procedures in Australia.

² *Private Health Insurance (Accreditation) Rules 2011 rule 2*

Question 6: What other factors are reported in the literature that impact on the decision to perform same-day surgery?

Identification of literature / Sources of evidence

Following phase 2 study selection (full text review), a number of studies were available which were relevant to question 6 (see Appendix 2). Additional information was identified through targeted searches of the peer-reviewed literature and in searches for grey literature.

Each of the included documents was reviewed for any relevant themes relating to the levers and barriers to providing day surgery. Themes, and any supporting information, were extracted into a table (Table 21, Appendix 9). Due to the wide-ranging type (peer-reviewed manuscripts, opinion pieces, editorials, grey literature and so on) and number of publications related to this topic area, resources were extracted until saturation (no new themes were identified in additional resources). In addition, a pragmatic supplementary search was performed in PubMed to broadly capture studies reporting on factors which influence day surgery in any setting. Detailed methods on both approaches are provided in Appendix 1. As such, while every effort was made to identify relevant factors, the reference list used to inform Question 6 should not be seen as all-encompassing, rather as a representative sample. Factors discussed in previous sections of the report (patient factors, anaesthetic requirements) have not been replicated in this section. The combined results of the searches are presented thematically.

Results

A number of levers and barriers for the implementation of day surgery were identified. These encompass community facilities, hospital facilities and staffing, and insurer reimbursement arrangements.

As a result of the wide variety and type of study design that informed this question, a formal quality appraisal and GRADE of the evidence base was not undertaken. The evidence for this question is of a low quality.

A number of themes have been identified to highlight common issues and barriers in performing day surgery.

Barriers to day surgery

It is clear that day surgery can be performed safely and effectively on appropriate patients for less complicated procedures. However, there are still variations in terms of how day procedures are undertaken in real-life practice. Barriers have been identified for day surgery in terms of why a procedure was not performed in a day case but extended with overnight or longer stay. The following potential barriers for day surgery were identified.

Economic

Financial incentives/disincentives could be a barrier to day surgery. For example, private day hospitals in Australia have reported that they are disadvantaged when it comes to contract negotiations with insurers (ADHA 2011). There may be a discrepancy in funding of day hospitals compared to overnight centres for identical procedures (ADHA 2011). There also may be financial incentives to the surgeon or the hospital associated with overnight stays (Barnett 2016).

Reimbursement may be more advantageous to patients if they are kept in overnight (Castoro et al. 2007).

Social factors

A common reason behind a day surgery being extended into an admission with an overnight stay is that there is a lack of social and community support after discharge. Patients may live alone or be unable to receive continuity of care having been discharged. Possible patient support includes:

- Means of transport for travelling back home if needed (Mitchell 2015);
- Relatively short travel distance from hospitals to home (Srivastava et al. 2008), for example a one hour travel time;
- Family and friends being available for the 24 to 48 hours post-discharge to provide care (Srivastava et al. 2008; Weingessel et al. 2008); and
- Patients to provide informed consent (Chung et al. 2005);

In addition, patients should refrain from certain aspects of daily activity once home, such as driving, decision making, caring for dependents and operating machinery. If this support is not available, then day surgery is not feasible (Barnett 2016; Castoro et al. 2007; Quemby and Stocker 2013). These factors are often beyond the control of the patient and become barriers on a societal scale. Therefore, an understanding of the patient circumstances, home location, availability of an appropriate carer and patient adequate education is important to facilitate day surgery.

Facilities

Many practical issues related to the day surgery unit are important for effective provision of day surgery services.

Day surgery should be performed in a dedicated day surgery unit with dedicated administrative support (Kulacoglu et al. 2012; Sandberg et al. 2006). If a separate unit is not feasible, there should be a dedicated nursing team to achieve rapid recovery (Mitchell 2003). The unit needs to be able to remain open long enough that patients at the end of the operating list have sufficient time to recover and to be discharged. If facilities are not set up to optimise day surgery and ease of access this presents a barrier to its implementation (Barnett 2016; Castoro et al. 2007; Quemby and Stocker 2013).

Management and staffing

Day surgery requires a strong multidisciplinary team (Awad and Chung 2006; Suominen et al. 2014). However, often there is a lack of clinical leadership with a specific focus on day surgery and hospital policies and guidelines to cater for it (Awad and Chung 2006; Xirasagar and Lin 2006). The surgical and clinical staff should be supported by a day surgery manager who is in charge of day-to-day running of the unit. The surgeons and anaesthetists who act as champions for same-day surgery should be senior clinicians to promote forward flow and reduce admission rates and complications. The multidisciplinary staffing requirements may be difficult to achieve and therefore represents a potential barrier to day surgery (Barnett 2016; Castoro et al. 2007; Quemby and Stocker 2013).

Communication between patients and carers

Where there is a lack of communication between patients and healthcare providers including surgeons, nurses and other hospital staff, patients and/or healthcare providers may not be aware

that day surgery is an option (Barnett 2016). In addition, patients may often have certain concerns regarding what could happen after discharge, which may seem clinically less important from the surgeon's perspective (Briggs et al. 2009; Hwa and Wren 2013). If surgeons and other healthcare providers are not trained to communicate effectively, this information asymmetry may impact the practicalities and benefits of day surgery, and may therefore create barriers towards more day-procedures being performed (Barnett 2016; Castoro et al. 2007).

Therefore, training and continuing professional development of all staff plays a critical role in the effective adoption of day surgery practices.

Levers for day surgery

Patient satisfaction

High levels of patient satisfaction have been reported for day surgery. This can be optimised by having good postoperative pain control, short waiting times before surgery, providing a friendly environment, avoiding feelings that patients are being rushed or discharged too early and by telephone-based follow-up the day after discharge (Castoro et al. 2007). From patients' perspectives, a high level of understanding of what patients need is vital, not only to whether a day case can be successfully performed, but also of the overall recovery process after discharge (Mitchell 2015). During the a few hours of patient-doctor contact, a keen perception of what information patients would want to have will make a significant difference on patient satisfaction (Quemby and Stocker 2014). With sufficient information and greater certainty, patients are more comfortable to return home on the day of surgery. Therefore, patient satisfaction is a very important lever to day surgery.

As part of patient satisfaction, follow-up is also important. Follow-up phone calls by nurses minimises the burden on primary care, increases patient satisfaction and help early identification of complications (Castoro et al. 2007; Quemby and Stocker 2013). Monitoring and collection of feedback on results of day surgery (from both patients and hospital staff) may also benefit its effective implementation (Castoro et al. 2007).

Patient flow and surgery schedule

Timing of patient admission plays an important role in day surgery decision making. For non-complicated surgery, it is more likely to be conducted as a day case when patients are admitted in the morning (Harries et al. 2013). There will be sufficient time to undergo preoperative assessment and the surgery can be performed early in the day. Patients can be discharged later in the same day and can be followed up in the later evening, the next day or the day after via telephone (Vinoles et al. 2011), or by a visiting nurse. However, patient admission time is affected by many factors.

Comprehensive preoperative assessment

Patient suitability is of vital importance to the success of day surgery. Carefully selecting patients should ensure that day surgery is performed smoothly and efficiently. Adequate preoperative assessment is helpful to increase the efficiency of surgery and avoid unnecessary delay in discharge or cancellation (Harries et al. 2013). However, in day surgery settings, preoperative assessment varied in terms of when it is performed and by whom (Quemby and Stocker 2014; Stomberg et al. 2013). One survey on day hospital staff in Sweden showed that almost 70 per cent of the surgical units schedule their patients for a separate preoperative consultation prior to the day of surgery, and preoperative assessment was commonly undertaken by nurses and anaesthetists. It seemed

that this additional visit could be useful to ensure patients suitability for day case procedures, hence leading to success of the day surgery. However, the author also indicated that such visit might not be necessary to patients who are relatively well (ASA Grade one or two) and scheduled for minor surgery (Gilmartin and Wright 2008; Stomberg et al. 2013).

Economic outcomes

The financial benefits of day surgery are well established. Hospital costs for day surgery are reported as being between 25–68 per cent lower compared to overnight stays. In terms of hospital efficiencies, greater numbers of patients can be treated in a given time period reducing waiting lists so that inpatient facilities are released for more complex or emergency cases. Surgery cancellation due to bed shortages is reduced. Theatres can be used more efficiently. Staffing can be reduced as fewer overnight staff are required (Castoro et al. 2007). To ensure that these economic benefits are achieved the financial incentives for day surgery and overnight stay surgery should be aligned (Castoro et al. 2007). To achieve the full economic benefits of day surgery to the hospital/healthcare system, expansion of day surgery should be accompanied by equivalent reductions in inpatient capacity (Castoro et al. 2007).

Facilities and staffing

The combination of an appropriate facility and adequate staffing can significantly promote day surgery to maximise the efficiency. There should be dedicated day surgery units where patient flows of day surgery and overnight stay patients are separated (Kulacoglu et al. 2012). In addition, providing distinct management structures, and dedicated administration and nursing staff (Castoro et al. 2007) will lead to more timely recovery and discharge (Quemby and Stocker 2014). Specifically, nurse-led discharge, has been promoted in one publication as being more efficient and cost effective (Stomberg et al. 2013). Also, day surgery facilities should take advantage of motivated senior surgeons and anaesthetists as champions to drive change (Castoro et al. 2007).

Patient information and communication

Effective information provision before surgery can prepare patients psychologically for surgery, educate the patient about pre- and postoperative care, minimise risks in the postoperative period, improve patient satisfaction and ensure informed consent is obtained for the procedure (Castoro et al. 2007). As the contact duration in a day case procedure is very limited compared to an in-patient admission, clear instructions in both verbal and written format are important. It is suggested that verbal instructions should be reinforced from an early stage (referral), such as during primary care to discharge (Quemby and Stocker 2014). Written information sheets should also be provided to pre-empt potential hazards during recovery at home. Regular surgical service audits and patient feedback mechanisms are useful to obtain feedback from patients regarding what information they require. A keen insight of what patients are concerned with can give patients greater peace of mind, allowing them to return home with more confidence and less stress.

Regulation

Although regulatory barriers have been noted as being issues in the delivery of same day surgery (Castoro et al. 2007), this is not likely to be a critical issue in the Australian and New Zealand context.

Integration of community support

Primary and community health services play an integral part of day surgery in providing care pre- and postoperatively. Engagement with policy makers, general practitioners, community nurses, family caregivers and social services may improve the available community support.

Summary

The barriers and levers driving the adoption of day surgery practices are more related to logistics and management of patients in hospitals, rather than clinical issues based on published data. In other words, while the benefits of day surgery are understood in terms of clinical safety and effectiveness (see response to question 1), how hospitals, communities, and patients interact remain the biggest factors influencing whether day surgery can be routinely performed. There is a paucity of high quality published evidence in this field, with the majority of published data being surveys, questionnaires and other qualitative studies. No quantitative clinical data is available to answer this question. Large, robust and comprehensive studies are unlikely due to diversity in hospital management, levels of community support and patients' perceptions of day surgery.

Additional input from the Working Group

There was agreement across the Working Group that most inguinal or umbilical hernia repair can be undertaken in a day surgery setting.

In the context of service provision of same-day surgery, including consideration of public and private care, it was thought that practices benefit from access to dedicated day care facilities and established protocols.

Key levers are thought, by the Working Group, to be: appropriate preoperative assessment, coupled with the preparedness of the facility for same day surgery. The most important barrier is thought to be patient information and communication, therefore the process would be facilitated by the development of protocols and guidance for effective patient communication. An engagement strategy for major hospital groups could be beneficial to facilitate hospital and patient preparedness.

At the hospital level, one way to achieve a change in practice is to incorporate performance targets for same-day rates into hospital contracts.

A member of the Working Group highlighted that private patients contribute significantly to their health insurance, and in light of this, suggested surveying the hernia repair patients who stayed overnight after the procedure. This survey would explore the preference of patients for day surgery. It was felt that patient preference is an important factor and survey findings may be an incentive to change practice. Also in line with improving the understanding of local practice, patient information sheets could be reviewed with a view to potentially including some commentary on same day versus overnight hernia procedures.

It was also noted that the development of a position paper or Australian/New Zealand guidelines would be beneficial to advise regarding day surgery in the local context.

The Working Group agrees the initial decision to undertake surgery should include the option of watchful waiting. This must include appropriate patient selection and operating on clinically apparent hernia.

Conclusions

Same-day surgery for repair of inguinal, femoral and umbilical hernia is safe and effective. However, there are a number of limitations on the evidence used to form this conclusion. The evidence base is stronger for inguinal hernia repair and includes RCTs and other comparative studies, while the evidence for femoral and umbilical hernia repair is limited to small numbers of observational studies. The studies included were able to provide some observations regarding which patient groups were found to be unsuitable for same-day hernia repair in a clinical setting. Although few studies had been designed to investigate this question, limited evidence suggests these patient groups include those who are elderly (over 70 years), overweight (BMI over 40), and those undergoing bilateral surgery. Two studies reported the proportion of patients ineligible for same-day hernia repair, including a total of 836 patients, which ranged from 3.3–8 per cent. Overall, a range of guidelines and studies are consistent in the message that a large proportion of hernia repairs (70–80%) can be provided as a same-day procedure.

Australian and international guidelines recommend day surgery for most patients undergoing inguinal surgery, providing that surgical infrastructure is available to assess and select patients and suitable aftercare is available. The available guidelines were not explicit on day surgery for femoral and umbilical hernia repair. Australian guidelines on the broader issue of same-day surgery published by the Australian & New Zealand College of Anaesthetists state that requirements for same-day surgery to be acceptable include procedural, patient and social factors.

Besides the established clinical evidence and widely accepted guidelines, day surgery in general is a multifaceted topic, and many influential factors are external to clinical issues. Hospital management, financial incentives, social factors, facilities and staffing are all important aspects that determine the success of day surgery. While barriers for day surgery exist in all these aspects, the interaction between patients, healthcare providers and the community remains the most significant one. It is plausible to gain leverage in promoting day surgery by enhancing the patient-doctor communication and education to increase patients' satisfaction, ameliorating staffing and facilities to match resources for day surgery, and creating supportive communities and policies. The acceptance and promotion of day surgery requires a holistic approach from a range of financial, institutional, societal and individual efforts.

In summary, although the clinical benefits of day surgery for hernia repair are well established, there are a number of reasons as to why this activity is less common than expected and associated incentives which may be used to promote changes in local practice.

Recommendations

1. Most patients with inguinal or umbilical hernia can be managed as day patients.
2. There are patient satisfaction and financial incentives to maximise day surgery rates without posing risks for suitable patients.
3. The method of hernia repair will not generally affect the decision whether to manage the patient as a day patient or plan for an overnight stay.
4. Good preoperative assessment, planning and informing the patient has the potential to improve same-day surgery discharge rates.

5. Collaboration with the anaesthetists and involvement of anaesthetists in discharge planning is important.
6. The rate of same-day patients to overnight stay patients should be made transparent. The target rate for hospitals should be between 70 to 80% patients as same-day cases.
7. Patients with complex hernias and comorbidities will generally benefit from an overnight stay, or at least be considered for such.
8. The development of Australian and New Zealand guidelines or protocols should be considered, especially in the context of communication and planning to minimise barriers to same-day hernia repair.

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Appendix 1 Methods

Different methodologies were used according to the requirements for each research question. A search of the peer-reviewed literature was used to address questions 1, 3 and 4. A search for clinical practice guidelines was used to address questions 2 and 5. Question 6 was addressed with identified peer-reviewed literature, a grey literature search and targeted searches of peer-reviewed databases. A supplementary search of same-day umbilical hernia repair was conducted to fill any gaps in the original literature search. Outlined here are the methods used for the peer-reviewed literature search, search for clinical practice guidelines, and supplementary searches for question 6 and umbilical hernia. An outline of the appraisal of the evidence, grading of the evidence for each outcome and input for the Working Group follows.

Peer-reviewed literature search

For research questions requiring a systematic literature search the Population, Intervention, Comparator, Outcome (PICO) criteria was defined a priori.

PICO and inclusion criteria

Population, Intervention, Comparator and Outcomes are defined as following:

- Population: Patients (adults) undergoing surgery of any type of repair for (simple/complex) inguinal, femoral and umbilical hernia
- Intervention: planned same-day procedure*
- Comparator: planned ≥ 1 overnight stay following surgery
- Outcomes: adverse events, hernia recurrence, unexpected prolonged stay, unexpected readmission, emergency readmission to hospital, groups ineligible, proportion ineligible

*Note: Same day surgery is defined as admission and discharge within the same calendar day. Admission and discharge within a 23 hour period, including an overnight stay, is not considered same-day surgery for the purposes of this review.

Search strategy

Our approach utilised the rapid review method, which is an adaptation of a comprehensive systematic literature review technique. This approach ensures that the project rigor is maintained while the review is completed in an expedited manner. This format allows the timely identification of best quality evidence at the highest level to answer the research questions. (Watt et al. 2008a; Watt et al. 2008b) Studies were prioritised based on recency and their relevancy to key clinical outcomes that inform the research questions.

The search strategy was designed to encompass alternative spelling of the search terms and the corresponding MeSH (medical subject heading) terms where appropriate.

Searches were conducted in the following databases using the search terms outlined in Table 7:

- PubMed
- Embase
- The Cochrane Library

Table 7 PUBMED search terms

Search strategy	<pre> ((((((length of stay[MeSH Terms] OR length of stay[Title/Abstract])) OR (((same day[Title/Abstract] OR day case[Title/Abstract] OR day-case[Title/Abstract] OR day surger*[Title/Abstract])) OR ((Ambulat*[Title/Abstract] OR outpatient*[Title/Abstract])) OR (((Ambulatory Care[MeSH Terms] OR Ambulatory Surgical Procedures[MeSH Terms] OR outpatients[MeSH Terms]))) AND ((((("Hernia, Inguinal/surgery"[Mesh] OR "Hernia, Femoral/surgery"[Mesh] OR "Hernia, Umbilical/surgery"[Mesh])) OR (((((((inguinal[Title/Abstract] OR femoral[Title/Abstract] OR umbilical[Title/Abstract])) OR (((inguinal[MeSH Terms] OR femoral[MeSH Terms] OR umbilical[MeSH Terms]))) AND (((hernia[MeSH Terms] OR (hernia[Title/Abstract] OR hernia*[Title/Abstract])))) AND (((surgery[MeSH Terms] OR ((surger*[Title/Abstract] OR surgical*[Title/Abstract] OR procedur*[Title/Abstract] OR operati*[Title/Abstract])) OR repair*[Title/Abstract])))) </pre>
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This strategy was adapted for the Embase database with relevant keywords and Emtree terms included.

Inclusion of studies

The review included peer-reviewed studies on adult patients undergoing any surgery for repair of simple or complex inguinal, femoral or umbilical hernias which measured length of stay and reported safety or effectiveness outcomes (Table 8).

Table 8 Inclusion and exclusion criteria

Component	Inclusion/exclusion criteria
Population	Studies on adults undergoing inguinal, femoral and/or umbilical hernia repair. Studies on incisional hernia and hiatal hernia, or on children, were excluded.
Intervention	NA
Comparator	NA
Outcomes	Studies reporting length of stay. Studies reporting safety and effectiveness outcomes. Studies not reporting length of stay or effectiveness outcomes were excluded.
Publication type	Peer-reviewed studies.
Publication date	No date limit was applied to the search.

NA: not applicable.

Studies were selected for inclusion based on a step-wise approach across three phases. For phase 1, citations were downloaded into an Endnote library and screened initially by title and abstract, then by full text, according to the inclusion criteria. Screening was completed by a single researcher and checked by a second researcher. Those included from the full text review were sorted based on the specific question(s) that each study provided data on (Appendix 2). This step is referred to as phase 2. The phase 2 table was used to choose the studies to provide evidence for each question.

For phase 3, identified studies were prioritised using the NHMRC levels of evidence (NHMRC 2009). Level I evidence (systematic reviews of RCTs) were sought to be included. Where there was an absence of level I evidence, level II evidence was included; in the absence of level II evidence, level III evidence was included. Level IV evidence (case series studies without a comparator arm) was only included in this review when there was no evidence of higher quality to address a particular patient group.

Searches for clinical practice guidelines

Two searches were conducted to identify clinical practice guidelines (CPGs) providing recommendations on length of hospital stay following inguinal, femoral or umbilical hernia repair.

The first search was conducted in PubMed and Embase databases to identify guidelines published in the peer-reviewed literature. The search strategy used for the PubMed database is described in Table 9. Keywords and MeSH terms were adapted for the Embase database. No limits were applied to the search. All identified citations were downloaded into an Endnote database and reviewed against the inclusion and exclusion criteria described in Table 10.

Table 9 CPG search strategy for the PubMed database.

Population search terms	(((((inguinal hernia) OR inguinal hernia[MeSH Terms]) OR femoral hernia) OR femoral hernia[MeSH Terms]) OR umbilical hernia) OR umbilical hernia[MeSH Terms]))
Publication-type terms	((((((((((((((((((algorithm) OR CPGs) OR CPG) OR position statement) OR position statements) OR position paper) OR consensus) OR clinical recommendations) OR clinical recommendation) OR clinical standard) OR clinical standards) OR clinical protocols) OR clinical protocol) OR clinical pathways) OR clinical pathway) OR standards) OR standard) OR recommendations) OR recommendation) OR guidelines) OR guideline) OR care standards) OR care standard) OR consensus development[MeSH Terms]) OR health planning guideline[MeSH Terms]) OR planning recommendation, health[MeSH Terms]) OR practice guideline[MeSH Terms]) OR standards of care[MeSH Terms]))
Search strategy	Terms relating to the population were combined with terms relating to publication type with AND

This strategy was adapted for the Embase database with relevant keywords and Emtree terms included.

Table 10 Inclusion and exclusion criteria

Component	Inclusion/exclusion criteria
Population	Guidelines covering inguinal, femoral and/or umbilical hernia treatment. Guidelines on incisional hernia and hiatal hernia were excluded.
Intervention	NA
Comparator	NA
Outcomes	Guidelines making any recommendation or statement on the length of hospital stay associated with surgical repair of hernias. Guidelines that did not comment on length of hospital stay were excluded.
Publication type	A document was considered a guideline if: It contains the word 'guideline' or 'recommendation' in its title or introduction, or contains recommendations on same-day surgery for hernia repair; It was developed by at least two authors; It is based on a systematic identification and review of evidence and limited to study designs of Level III comparative evidence or higher. Any document not considered to be a guideline, including primary studies, literature reviews, letters, editorials and abstracts, was excluded.
Publication date	Any guideline published or reviewed since 2006 was included.

NA: not applicable.

The second search involved keyword searching relevant of websites to identify any guideline not identified in the database search. The websites searched are described in Table 11. All relevant documents were downloaded and reviewed for inclusion against the criteria described in Table 10.

Table 11 Grey-literature search for relevant CPGs

Website	Search terms
http://www.guideline.gov/	Hernia
https://www.nhmrc.gov.au/guidelines-publications	Hernia
http://www.health.gov.au/	Hernia
https://www.evidence.nhs.uk/	Hernia
https://www.cma.ca/En/Pages/clinical-practice-guidelines.aspx	Hernia
http://www.sign.ac.uk/	Hernia
http://www.g-i-n.net/	Hernia
https://www.google.com.au/	Hernia + guideline
http://www.europernherniasociety.eu/	guideline
http://www.britishherniasociety.org/	guideline
http://canadianherniasociety.ca/en/	guideline
http://herniasurge.com/	guideline
http://ssat.com/	guideline

Supplementary searches

Additional targeted searches for peer-reviewed and/or grey literature documents were conducted for question 6 and for umbilical hernia.

Question 6 grey literature search methodology

All grey literature searches were conducted in Google using the following terms:

- Barriers to same day surgery
- Hernia + length of stay factors
- Day surgery + development
- Encouraging day surgery
- Promoting day surgery
- Day surgery + promotion
- Day surgery + increasing
- Day surgery + restrictions
- Ambulatory surgery + barriers
- Ambulatory surgery + promotion
- Drivers of day surgery
- Day surgery + economics
- Day surgery + incentives

Search results were reviewed for relevance and any potentially relevant resources were downloaded or read in full to confirm eligibility.

Question 6 targeted searches in peer-reviewed bibliographic databases

A pragmatic supplementary search was performed in PubMed. Firstly, the existing keyword searches for literature on day surgery (Table 7) were repeated to identify all possible publications. This search was not limited to hernia surgery, but included any type of surgery in a day case setting. Secondly,

titles and abstracts were screened using text words relevant to levers, promotions and incentives of day surgery in the identified literature pool. Within these publications, a small sample of useful studies discussing different aspects of influential factors in day surgery were identified and retrieved for full text review. Finally, articles ‘similar’ (as defined by PubMed) to these useful studies were identified and cross-referenced with the initial literature pool.

Umbilical hernia search methodology

Medline was searched through the Ovid platform. The search strategy is presented in Table 12. From the supplementary search 234 new publications were identified; however, no studies were found that are relevant to the inclusion criteria for this review.

Table 12 Medline search terms

Search strategy	(((((((length of stay) OR length of stay[Title/Abstract])) OR (((same day[Title/Abstract] OR day case[Title/Abstract] OR day-case[Title/Abstract] OR day surger*[Title/Abstract])) OR ((Ambulat*[Title/Abstract] OR outpatient*[Title/Abstract])) OR (((Ambulatory Care) OR Ambulatory Surgical Procedures) OR outpatients))) AND (paraumbilical hernia) OR (ventral hernia) OR (umbilical hernia))) AND (((surgery) OR (((surger*[Title/Abstract] OR surgical*[Title/Abstract] OR procedur*[Title/Abstract] OR operati*[Title/Abstract])))) OR repair*[Title/Abstract]))))
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This strategy was adapted for the Embase database with relevant keywords and Emtree terms included.

Quality appraisal

Prioritised studies were evaluated for quality using established tools:

- AMSTAR for systematic reviews (Shea et al. 2007)
- Modified Downs and Black for RCTs and comparative studies (Downs and Black 1998)
- AGREE II tool for guidelines (Brouwers et al. 2010)

The quality of each included study was appraised by one reviewer and checked by a second reviewer. The quality of the studies helped establish the strength of evidence for each question.

Reporting of the results and GRADE

Due to the rapid review methodology used for this review, no statistical pooling of results was performed for clinical outcomes. Results were reported narratively for each research question.

For each clinical outcome, the GRADE tool was used to assess the quality of the evidence base used to inform the conclusions of the review (Guyatt et al. 2011). The quality of the studies according to the tools above, as well as their inconsistency, indirectness, and imprecision were used to guide the grading of the evidence.

Expert input and Working Group feedback

The Draft Report was circulated to the Working Group for comment. The final report was discussed with the Working Group at a face-to-face meeting on 23 February 2017.

Appendix 2 Extraction tables

Table 13 Phase 2 search results

Study ID	Phase 2, Q	Country	No. patients	Hernia type	Level of evidence	Included in report, Q
de Lange et al. (2010)	1	Netherlands	4354	inguinal	IV	
Devlin et al. (1977)	1	UK	350	inguinal	IV	
Devlin et al. (1986)	1	UK	696	inguinal	IV	
Ferguson & Wardle (2013)	1	UK	103	NA	NA	
Fischer & Zechmeister-Kross (2014)	1	Austria	35 studies	inguinal	SR	1
Herszage et al. (1999)	1	Argentina	1470	inguinal, umbilical	IV	
Holzheimer 2007	1	Germany	300	inguinal	IV	
Hulme-Moir & Kyle (1998)	1	New Zealand	124	inguinal	IV	
Jacquet et al. (2006)	1	France	833	inguinal	IV	
Kallianpur et al. (2007)	1	India	90	inguinal	IV	
Kornhall & Olsson (1976)	1	Sweden	109	inguinal	IV	
Krupinski et al. (1997)	1	Poland	148	inguinal	IV	
Kulacoglu et al. (2012)	1	Turkey	100	umbilical	IV	1
Kurzer et al. (2004)	1	UK	78	umbilical	IV	1
Lafferty et al. (1998)	1	UK	100	inguinal	IV	
Lau & Lee (2000)	1	HK	271	inguinal	IV	
Lau & Patail (2003)	1	HK	31	inguinal	III-2	
Lau 2004	1	HK	114	inguinal	IV	
Lau et al. (2000)	1	HK	157	inguinal	IV	
Lau et al. (2006)	1	HK	289	inguinal	II	
Lee et al. (1984)	1	USA	616	inguinal	IV	
Lingaiah et al. (2015)	1	India	40	inguinal	IV	
Lozanoa et al. (2010)	1	Spain	402	inguinal, umbilical	IV	
Maddern et al. (2004)	1	Australia	86	inguinal	IV	
Majholm et al. (2012)	1	Denmark	57,709	inguinal, umbilical	IV	
Marin et al. (1998)	1	Spain	961	inguinal	IV	
Mattila et al. (2011)	1	Finland	89	inguinal	II	
Mattila et al. (2012)	1	Finland	43	inguinal	IV	
McCloud & Evans (2003)	1	UK	796	unclear	IV	
McFarlane 2000	1	Jamaica	98	inguinal	IV	
McGrath et al. (2004)	1	Canada	152	inguinal	IV	
Menon & Brown (2003)	1	UK	32	umbilical	IV	1
Meyer et al. (2015)	1	France/ Brazil	50	inguinal	IV	
Mokete & Earnshaw (2001)	1	UK	1037	inguinal	IV	
Moreno-Egea et al. (2006)	1	Spain	300	inguinal	IV	
Ngo et al. (2010)	1	France	257	inguinal, umbilical	IV	
Obalum et al. (2008)	1	Nigeria	72	inguinal	IV	
Perez et al. (2000)	1	Spain	145	inguinal	IV	
Putnis et al. (2004)	1	UK	98	inguinal	IV	
Sawney et al. (2010)	1	Canada	98	inguinal	IV	
Treadwell et al. 2012	1	USA	151 studies	inguinal	SR	1
Voorbrood et al. (2015)	1, 4	Netherlands	336	femoral, inguinal, umbilical	IV	1, 4
Acevedo & Leon (2010)	3	Chile	2031	inguinofemoral, umbilical	III-2	3
Akinci et al. (2012)	3	Romania	1170	inguinal	IV	
Amato et al. (2013)	3	Italy	292	inguinal	IV	

Study ID	Phase 2, Q	Country	No. patients	Hernia type	Level of evidence	Included in report, Q
Clark et al. (1996)	3	UK	277	inguinal	IV	
Collopy et al. (1991)	3	Australia	141	inguinal, femoral	III-2	3
Jaffer et al. (2008)	3	UK	50	inguinal	IV	
Jutte et al. (2010)	3	Netherlands	52	inguinal	IV	
Karakaya et al. (2009)	3	Turkey	206	inguinal	IV	
Kurzer et al. (2009)	3	UK	100	inguinal	IV	
Sinha et al. (2007)	3	UK	588	inguinal	III-3	3
Henderson et al. (1989)	4	UK	2582	inguinal	IV	
Menachemi et al. (2007)	4	USA	89,193	inguinal	IV	
Toftgaard (2007)	4	Denmark	795	unclear	IV	4*
Board & Caplan (2000)	6	Australia	320	femoral, inguinal	III-3	
Caplan et al. (1999)	6	Australia	244	inguinofemoral	III-1	
Dhumale et al. (2020)	6	UK	1164	inguinal	IV	
Graham et al. (2012)	6	UK	128	inguinal	IV	
Griffiths et al. (1979)	6	UK	1309	inguinal	IV	
He and Mellor (2013)	6	USA	-	inguinal	IV	
Heikkinen et al. (1998)	6	Finland	40	inguinal	II	
Jacobs & Morrison (2008)	6	USA/ Germany	NA	inguinal	NA	
Joh et al. (2003)	6	South Korea	100	inguinal	IV	
Khajanchee et al. (2004)	6	USA	85	inguinal	NA	
Kreckler et al. (2012)	6	UK	-	inguinal	NA	
Laffaye (1989)	6	USA	43,000	unclear	IV	
Mlangeni et al. (2005)	6	Germany	20,210	inguinal	IV	
Saia et al. (2013)	6	Italy	143,910	femoral, inguinal	IV	
Shetty et al. (2004)	6	UK	427	femoral, inguinal, umbilical	IV	
Goulbourne & Ruckley (1979)	1, 3	UK	870	inguinal	IV	
Minatti et al. (2002)	1, 3	Argentina	304	unclear	III-1	
Mitchell & Harrow (1994)	1, 4, 6	USA	27,036	inguinal	IV	6
Khan & Bhutiani (2008)	1, 6	UK	108	inguinal	IV	
Russell et al. (1977)	1, 6	UK	123	inguinal	II	
Barros et al. (2008)	3, 4	Portugal	586	inguinal	IV	
Memtsoudis et al. (2005)	3, 4	USA	7953	inguinal	III-2	3
Sanjay et al. (2006)	3, 4	UK	577	inguinal	IV	
Millat et al. (1993)	3,4	France	500	inguinal	IV	4
Xirasagar & Lin (2006)	6, 4	USA / China	29,699	femoral, inguinal	III-2	6

Table 14 Extracted elements

Study ID	<ul style="list-style-type: none"> • Author • year • journal • country • publication type • setting • population size
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<p>Surgical parameters</p> <ul style="list-style-type: none">• Hernia surgery type• Same-day discharge rate• follow up , type of follow up• anaesthesia• techniques
<p>Clinical indications</p> <ul style="list-style-type: none">• unexpected prolonged stay• unexpected readmission• recurrence• complications• emergency admission
<p>Results on any of the following topics</p> <ul style="list-style-type: none">• general quality of life• cost and economic analysis• risk factors

Appendix 3 PRISMA flow charts

A PRISMA flow chart for the formal peer-reviewed search is presented in Figure 3.

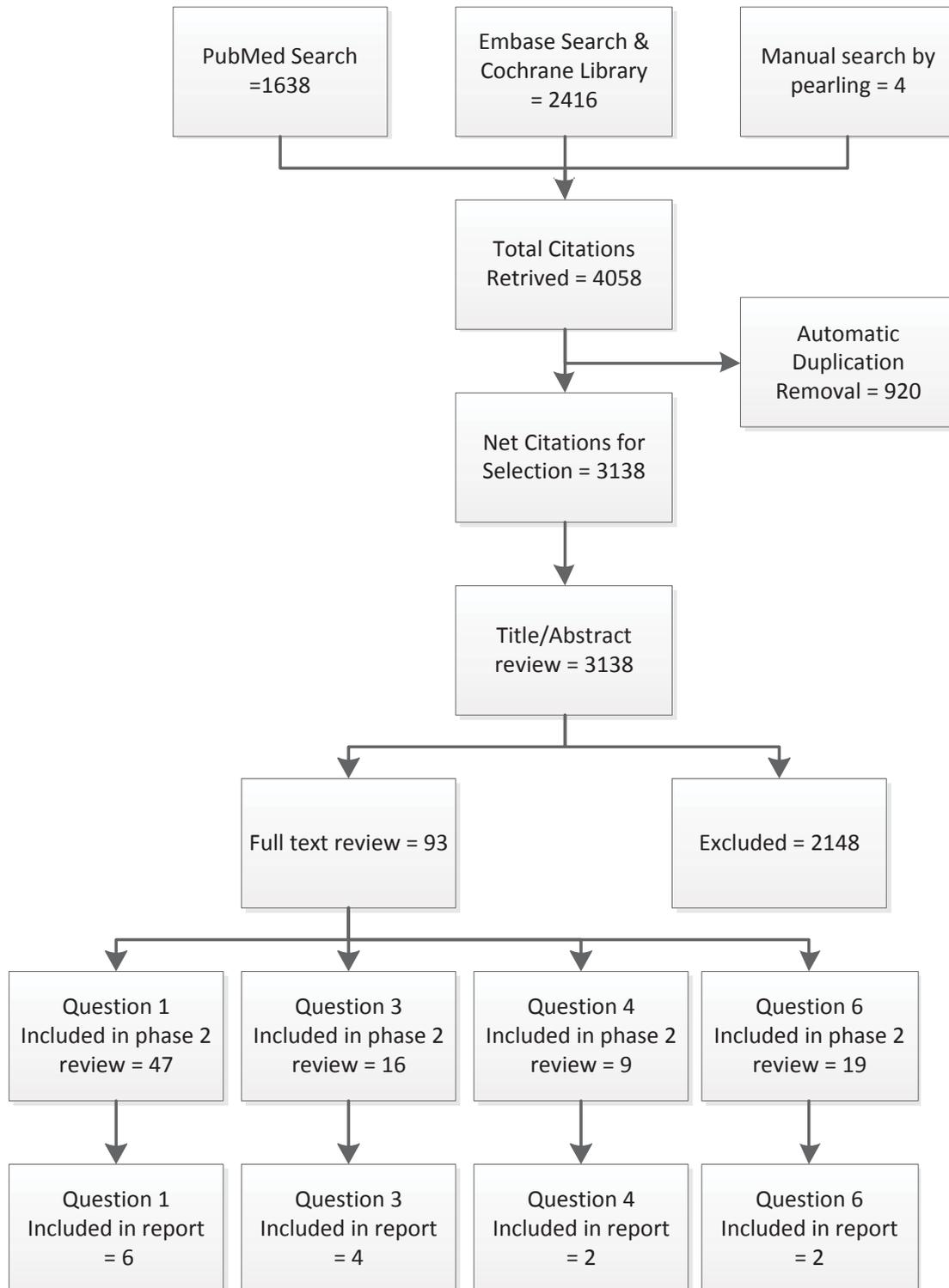


Figure 3 PRISMA flow diagram for the formal peer-reviewed search

Appendix 4 Results from research question 1

Table 15 Results from question 1

Study ID	Study design	Patient characteristics	Hernia surgery type Same-day discharge rate	Complication rate, complications (safety)	Recurrence Unexpected prolonged stay (effectiveness)
Fischer & Zechmeister-Koss (2014)	Systematic review of mixture of studies on hernia repair with a mixed level of evidence	35 studies	Inguinal = 5 studies (the other 30 studies were on other surgery types) NR	Same day 2-33%, inpatients 2-6%; complication type not given	0% (both groups) 2% (inpatients group)
Voorbrood et al. (2015)	Case series; prospective; consecutive patients	N=336 ASA I or II Unilateral	Femoral = 6, other = 346 97%	Intraoperative minor 1.2%; bleeding, coagulation	1.5% 0.3%
Kulacoglu et al. (2012)	Case series; retrospective; consecutive patients	N=100 paraumbilical	Umbilical = 100 100%	11%; SSI, haematoma, seroma, allergy to material, ecchymosis	0% 1%
Kurzer et al. (2004)	Case series; retrospective; consecutive	N=73 ASA I or II	Umbilical = 73 NR	Postoperative pain on the second day mild in 50%, moderate in 23%, wound infections 9%	0% NR
Menon & Brown (2003)	Case series; retrospective; unknown if consecutive	N=32 Uncomplicated	Umbilical = 32 100%	2 wound infection (6%)	0% NR

ASA: American Society of Anesthesiologists status; NR: not reported.

Author, year, publisher	Location	Scope	Methods	Recommendations on length of stay	Grade
Simons et al. (2016) The HerniaSurge Group	Worldwide	Groin hernia management	Literature search and consensus meetings, vote and external review.	Day surgery is recommended for the majority of groin hernia patients provided adequate aftercare is organized. Day surgery is suggested for all endoscopic repairs of simple inguinal hernias provided adequate aftercare is organized. Day surgery is suggested for selected older and ASA IIIa patients (open repair under local anaesthesia) provided adequate aftercare is organized. Day surgery for patients with complex inguinal hernias is suggested only in selected cases.	Strong Weak Weak
Bittner et al. (2014)	Worldwide	Ventral and incisional hernia. Note only ventral hernia is relevant to this report	Literature search Consensus meeting	The operation time and hospital stay must be as short as possible. Based on the shorter hospital stay, LIVHR is the preferred operative technique Laparoscopic incisional hernia repair can be recommended as a cost-effective repair	Weak Grade A Grade A Grade D

ASA: American Society of Anesthesiologists status; GPP: good practice point; LIVHR: laparoscopic incisional and ventral hernia repair; NA: not applicable; NR: not reported; TAPP: transabdominal preperitoneal; TEPP: totally extraperitoneal; UK: United Kingdom.

Table 17 Evidence base underpinning the recommendations from the CPGs

Author, year, publisher	Summary of evidence	Level of evidence
Lomato et al. (2015)	Hernia repair can mostly be done as an ambulatory surgery except in selected patients.	Level 2A Oxford Centre for Evidence Based Medicine
Bittner et al. (2011). Updated 2015 International Endohernia society	Day-case surgery may be a risk factor for acute pain.	Level 3B Oxford Centre for Evidence Based Medicine

Author, year, publisher	Summary of evidence	Level of evidence
<p>Simons et al. (2009). Updated as Miserez et al. (2014) European Hernia Society</p>	<p>2009 evidence: Inguinal hernia surgery as day surgery is as safe and effective as that in an inpatient setting, and more cost-effective. Inguinal hernia surgery can easily be performed as day surgery, irrespective of the technique used. Selected older and ASA III/IV patients are also eligible for day surgery. 2014 Update: Selected older and ASA III patients are also eligible for day surgery (open repair, local anaesthesia).</p>	<p>Level 2B Level 3 Level 1B</p>
<p>Rosenburg et al. (2011). Danish Hernia Database</p>	<p>Inguinal hernia surgery as day surgery is as safe and effective as inpatient treatment and more cost effective. This applies for all patients including selected elderly and ASA-III-patients, but may depend on local factors such as social backup etc.</p>	<p>NR</p>
<p>Saunders et al. (2013) British Hernia Society</p>	<p>Retrospective studies and small RCTs have shown day surgery is as safe and effective as in-patient stay, and less costly. In two of three studies patients were at least as content with day surgery. Day surgery is associated with lower costs than in-patient procedures. Multiple cohort studies report successful day-procedures under general, regional and local anaesthetics. Tension-free repair under local anaesthetic may be the most suitable procedure for day-surgery; case series data shows other surgical and anaesthetic techniques can be effectively used as day surgery. Initially day surgery had strict selection criteria (for example ASA I-II, age limit, anticipated length of operation less than one hour, low BMI). Such strict criteria are becoming less common and day-surgery can be considered for virtually every patient who has satisfactory home care. Pre-assessment is important to facilitate day surgery.</p>	<p>2++ or extrapolated from 1++ and 1+ studies</p>
<p>Simons et al. (2016) The HerniaSurge Group</p>	<p>The evidence base cited in the European Guidelines was also cited in the World Guidelines. Additional points: Readmission rates following inguinal hernia surgery ranged from 0.8% to 1.1% in two large Danish studies of day procedures. No reports of death or complication directly related to day surgery were identified. Following laparoscopic repair (TAPP/TEP) and posterior open-mesh repair severe bleeding may occur within the first 48 hours. As management of large haematoma is often only possible after immediate diagnosis; short stay treatment can be considered following these procedures.</p>	<p>Moderate evidence (GRADE)</p>

Author, year, publisher	Summary of evidence	Level of evidence
Bittner et al. (2014)	<p>There is insufficient data to recommend outpatient repair of complex inguinal hernia; however if after care is arranged, some cases may be suitable for ambulatory surgery.</p> <p>Operations on strangulated and acutely incarcerated hernias should not be performed as day cases.</p> <p>Barring the exclusions cited above, IH day surgery can be considered for every patient with satisfactory care at home, including stable ASA III patients</p> <p>Day surgery should also be considered for the elderly, including octogenarians. However, nonagenarians should be excluded since even elective IH repair in those over 90 has a tenfold higher mortality rate compared with younger patients. Day surgery should not be performed on patients taking anticoagulants due to the higher risk of bleeding complications.</p> <p>In elderly patients, COPD and low preoperative serum albumin are independent predictors of wound infections; CAD, COPD, low preoperative serum albumin, and steroid use are independent predictors of a longer hospital stay.</p> <p>LIVHR significantly reduces hospital stay compared with open repair.</p> <p>Hospital stays are comparable after suture fixation and tacks fixation.</p> <p>The hospital stay is significantly shorter after LIVHR than after open repair for patients with hernias larger than 15 cm.</p> <p>The hospital stay is shorter after LIVHR for primary ventral hernia than after incisional hernia.</p> <p>The cost of surgery is higher for laparoscopic procedure, but a shorter hospital stay may make laparoscopic surgery more cost effective.</p>	<p>Level 2</p> <p>Level 1a</p> <p>Level 1b</p> <p>Level 2b</p> <p>Level 3</p> <p>Level 1a</p>

ASA: American Society of Anesthesiologists status; BMI: body mass index; CAD: coronary artery disease; COPD: chronic obstructive pulmonary disease; IH: inguinal hernia; LIVHR: laparoscopic incisional and ventral hernia repair; RCT: randomised controlled trial; TAPP: transabdominal preperitoneal; TEPP: totally extraperitoneal.

Excluded clinical practice guidelines

The following guidelines were identified as relevant to hernia repair but did not include any recommendation on length of hospital stay:

Alfieri, S, Amid, PK, Campanelli, G, Izard, G, Kehlet, H, Wijsmuller, AR, Di Miceli, D & Doglietto, GB 2011, 'International guidelines for prevention and management of post-operative chronic pain following inguinal hernia surgery', *Hernia*, vol.15, pp. 239-49.

Heidelbaugh, JJ, Llanes, M & Weadock, WJ 2010, 'An algorithm for the treatment of chronic testicular pain', *Journal of Family Practice*, vol.59, pp. 330-36.

John, MECfCD & Communications, S. 2007, AHRQ Comparative Effectiveness Reviews, Surgical Management of Inguinal Hernia, Comparative Effectiveness Review Summary Guides for Clinicians, Agency for Healthcare Research and Quality (US),

Lange, JFM, Kaufmann, R, Wijsmuller, AR, Pierie, JPEN, Ploeg, RJ, Chen, DC & Amid, PK 2013, 'The 2012 international consensus algorithm for management of chronic postoperative inguinal pain', *European Surgical Research*, vol.50, pp. 32-33.

Lange, JFM, Kaufmann, R, Wijsmuller, AR, Pierie, JPEN, Ploeg, RJ, Chen, DC & Amid, PK 2015, 'An international consensus algorithm for management of chronic postoperative inguinal pain', *Hernia*, vol.19, pp. 33-43.

Poelman, MM, van den Heuvel, B, Deelder, JD, Abis, GS, Beudeker, N, Bittner, RR, Campanelli, G, van Dam, D, Dwars, BJ, Eker, HH, Fingerhut, A, Khatkov, I, Koeckerling, F, Kukleta, JF, Miserez, M, Montgomery, A, Munoz Brands, RM, Morales Conde, S, Muysoms, FE, Soltes, M, Tromp, W, Yavuz, Y & Bonjer, HJ 2013, 'EAES Consensus Development Conference on endoscopic repair of groin hernias', *Surg Endosc*, vol.27, pp. 3505-19.

Remer, EM, Casalino, DD, Arellano, RS, Bishoff, JT, Coursey, CA, Dighe, M, Fulgham, P, Israel, GM, Lazarus, E, Leyendecker, JR, Majd, M, Nikolaidis, P, Papanicolaou, N, Prasad, S, Ramchandani, P, Sheth, S, Vikram, R & Karmazyn, B 2012, 'ACR appropriateness criteria acute onset of scrotal pain - Without trauma, without antecedent mass', *Ultrasound Quarterly*, vol.28, pp. 47-51.

Sheen, AJ, Stephenson, BM, Lloyd, DM, Robinson, P, Fevre, D, Paajanen, H, de Beaux, A, Kingsnorth, A, Gilmore, OJ, Bennett, D, Maclennan, I, O'Dwyer, P, Sanders, D & Kurzer, M 2014, 'Treatment of the sportsman's groin': British Hernia Society's 2014 position statement based on the Manchester Consensus Conference', *Br J Sports Med*, vol.48, pp. 1079-87.

Society for Surgery of the Alimentary Tract 2007, 'SSAT patient care guidelines. Surgical repair of groin hernias', *J Gastrointest Surg*, vol.11, pp. 1228-30.

Treadwell, J, Tipton, K, Oyesanmi, O, Sun, F & Schoelles, K. 2012, AHRQ Comparative Effectiveness Reviews, Surgical Options for Inguinal Hernia: Comparative Effectiveness Review, Agency for Healthcare Research and Quality (US)

Appendix 6 Results from research question 3

Table 18 Results from question 3

Study ID	Study design	Patient groups studied	Same day discharge	Unexpected prolonged stay	Unexpected readmission	Emergency readmission
Memtsoudis et al. (2005)	Case series; retrospective; non-consecutive; registry data	In this cohort race, elderly, and complex surgery were risk factors	100%	7.6%	NR	NR
Acevedo & Leon (2010)	Case series; prospective; non-consecutive; registry data	Obese (BMI > 35) Slim (BMI < 35)	NR	NR	NR	Obese 0.9% Slim 1.3% (NS)
Sinha et al. (2007)	Non-randomised; comparative; retrospective consecutive	Elderly (>70 years) Younger (<65 years)	Elderly 87.5% Younger 90.5%	Elderly 12.5% Younger 9.5% (p=0.43)	Elderly 12.7% Younger 9.5% (p=0.43)	Elderly 3.9% Younger 5.5% ^a
Collopy et al. (1991)	Non-randomised; comparative; prospective; consecutive; hospital data followed by telephone survey	Regional and metropolitan patients	NR	NR	NR	NR

BMI: body mass index; NR: not reported; NS: not significant. ^a patients who needed medical assistance, none of these experienced hospital admission.

Appendix 7 Results from research question 4

Table 19 Results from question 4

Study ID	Publication Type	Patient characteristics	Same-day discharge rate	Proportion ineligible for same-day surgery	Comment
Millat et al. (1993)	Case series; prospective (unclear); consecutive patients; primary data from 17 sites	N=500 male	82%	17.8%, reasons: medical 8%, social 4.6%, patient refusal 8.4%	Being employed, having low physical requirements, being younger, and having fewer than two medical risk factors were associated with successful short-stay surgery, however as not randomised these may not be independent variables
Voorbrood et al. (2015)	Case series; prospective; consecutive patients	N=336	97%	3.8%, reasons: no show 0.5%; medical reasons 3.3%	Ineligibility resulted from erroneous diagnosis (7), asymptomatic and switched to watchful waiting (3), different hernia type requiring a different procedure (1)
Kehlet et al. (2008)	Case series; prospective; database	87,840 procedures (may include recurrent)	55% in 1998, 70% in 2005	NR	Establishment of a compulsory nation-wide database improves patient outcomes
Toftgaard (2007)	Qualitative; retrospective; survey data	Data from 18 countries	In 2003 in Australia hernia repair done as day surgery = 22.6%	NR	There is great variation in day surgery activity between countries

NR: not reported.

Appendix 8 Results from research question 5

Table 20 Extraction of relevant clinical practice guidelines for question 5

Resource ID	Title	Main themes relevant to criteria for same-day procedures to be performed in Australia
<p>Australian and New Zealand College of Anaesthetists (2016)</p>	<p>Guidelines for the perioperative care of patients selected for day stay procedures</p>	<p>Patient selection and anaesthesia factors: Should be of physical status ASA II or medically stable ASA III or IV patients Medical comorbidities assessment should be undertaken, with particular attention to difficult airways or sleep disordered breathing A BMI threshold should be established, above which the patient will be scheduled for early consultation with an anaesthetist While infants and children are suitable, they need to have specific arrangements for their treatment made</p> <p>Procedural considerations: The procedures should: Have minimal post-operative haemorrhage Have minimal risk of post-operative airway compromise Have a level of post-operative pain that can be controlled by outpatient management techniques Permit post-operative care to be managed by the patient or carer with any nursing requirements met by day surgery, home or district nursing facilities Be associated with a rapid return to normal food and fluid intake Be scheduled accounting for recovery period. For example, where a prolonged recovery is expected the procedure should be scheduled high on the list</p> <p>Recovery and discharge arrangements: The post anaesthesia care unit should be separated into 1st stage recovery and 2nd stage recovery. Patients should not leave recovery unaccompanied. The following criteria should be satisfied before a patient can be discharged home: vital signs are stable for at least one hour in a conscious state with orientation as to time, place, and relevant people mobility level is similar to pre-anaesthesia levels, allowing for surgery type pain control is adequate nausea, vomiting and dizziness are manageable is tolerating oral fluids bleeding is minimal for those at risk of urinary retention, must have passed urine written and verbal instructions for post-anaesthesia and surgical care must have been provided to patient or carer, including advice on any regular medicine where needed, and a contact place and telephone number for</p>

Resource ID	Title	Main themes relevant to criteria for same-day procedures to be performed in Australia
		<p>emergency care must have received convalescence advice analgesia has been provided when necessary a responsible adult must be available to transport the patient and stay with them overnight if inpatient transfer, the anaesthetist/surgeon will be responsible for the patient until care is transferred to another medical officer</p> <p>Adequacy of facility resources: Facilities should be licensed or meet equivalent standards Facilities should have appropriately qualified staff, an adequate number of staff, and appropriate equipment Adverse event management and reporting, infection control and drug handling consistent with national standards Ambulance access to air transfer of inpatients, and the discharge area should be convenient Facility should be reasonable close to the patient's home Must have an established system for audit of anaesthesia care outcomes</p>
<p>Australian and New Zealand College of Anaesthetists (2010)</p>	<p>Recommendations for perioperative care of patients selected for day care surgery</p>	<p>Patient requirements: A willingness to have the procedure performed, an understanding of the process, and ability to follow discharge instructions Social requirements: A responsible adult should be able to transport the patient home, stay overnight and understand after the requirements of post-anaesthesia care The patient must be residing within one hour of medical attention on the first night The patient should have ready access to a telephone in their residence</p> <p>Patient preparation: Refer to document <i>PS7 Recommendations on the Pre-Anaesthesia Consultation</i> for all patients who are to receive anaesthesia Refer to document <i>PS26 Guidelines on Consent for Anaesthesia or sedation</i> for preparation for day surgery All day cases must be scheduled with appropriate time for pre-operative anaesthetic assessment Patient assessment can be assisted by: a standard patient questionnaire, prior referral by the surgeon, preliminary nurse assessment, anaesthesia consultation prior to the day of surgery by the anaesthetist who will be present</p> <p>The patient should be provided with information including: information on the procedures to be followed in the day surgery unit instructions for fasting</p>

Resource ID	Title	Main themes relevant to criteria for same-day procedures to be performed in Australia
		<p>Sedation and anaesthesia: General, regional or local anaesthesia, sedation or a combination of these techniques may be used ANZCA Professional Standards documents should be satisfied where appropriate</p> <p>Recovery from anaesthesia: Refer to document <i>PS4 Recommendations for the Post-Anaesthesia Recovery Room</i> which is fully applicable to day surgery units Area should have comfortable reclining seats, be adequately supervised, with assess to resuscitation equipment, and patients may not leave this area unaccompanied</p> <p>Discharge from day care unit: The criteria applying to patients being discharged home as in the 2016 guideline Discharge authorised by an appropriate staff member after discharge criteria satisfied Whenever possible a telephone enquiry as to the patient's wellbeing should be made on the following day</p> <p>Audit: Each day surgery unit must have an established system for audit of the outcomes and include those outcomes in quality assurance and peer review processes</p>

ASA: American Society of Anesthesiologists status; BMI: body mass index; ANZCA: Australian and New Zealand College of Anaesthetists.

Appendix 9 Results from research question 6

Table 2.1 Extraction of relevant resources (excludes studies identified through supplementary searches)

Resource ID Country	Intended use	Main themes relevant to levers and barriers of day surgery
Caroden (2010) and Caroden et al. (2009)	PhD thesis investigating optimum theatre scheduling in a day-case environment	Scheduling: Describes the research around OR scheduling and how to optimise this in a day-care environment.
ADHA (2011)	Australian Day Hospital Association comments to the ACCC re: private health insurance	Economic barriers: Private Day Hospitals are disadvantaged in contract negotiations with insurers. There may be discrepancy in funding compared to overnight centres for identical procedures.
Quemby et al (2013)	Peer-reviewed journal article	Social factors: If 24 hour home care, access to a telephone, accommodation within 1 hour of the hospital and/or patients informed consent are not present then day surgery should not occur. Facilities: The National Day Surgery Task Force set up by the UK government in 1993 recommended that every hospital should have a dedicated day surgery unit. Dedicated day surgery lists in autonomous units provide the best model of care and avoid tension from competing interests of mixed in-patient and day-care lists. Many units fail to achieve this; however, good outcomes have been demonstrated in some units which share theatres with inpatient activity but have dedicated day surgery postoperative facilities. Management and staffing: Each day surgery unit should have a medical clinical lead, unit nurse manager, and administration support. Nurse-led discharge is the key to day-surgery. Follow-up: Nurse-led follow-up by telephone provides a valuable resource for minimising burden on primary care, increasing patient satisfaction and identifying any complications.
Barnett (2016)	Review	Social Factors: Patient must understand procedure and consent to day surgery. Patients must be within 1 hour of a medical facility, have access to a telephone, refrain from driving, operating machinery or decision making, should have appropriate care and not need to care for dependents. Management and staffing: Day surgery units should have a clinical lead with a specific interest in day surgery to develop policies and guidelines. They should be supported by a day surgery manager who is in charge of day-to-day running of the unit. Surgeons and anaesthetists should be senior clinicians to promote forward flow and reduce admission rates and complications. Staff should be multi-skilled. Facilities: Day surgery should occur in a self-contained unit with good transport options nearby.

Resource ID Country	Intended use	Main themes relevant to levers and barriers of day surgery
Castoro (2007)	WHO policy document on day surgery	<p>If a separate unit is not feasible there should be a separate nursing team to achieve rapid recovery. The unit should remain open late enough that patients at the end of the operating list have sufficient time to recover.</p> <p>Economic: There may be financial incentives to the surgeon or hospital associated with inpatient stays</p> <p>Educational: Medical students and doctors may not be trained in the benefits of day surgery and therefore be unwilling to drive change. Lack of home support: There may be a lack of adequate community support.</p> <p>Information: Patients and healthcare providers may not be aware of day surgery as an option.</p> <p>Organisational: Day surgery requires strong multidisciplinary team working and this may be difficult to achieve.</p> <p>Patient satisfaction: High levels of patient satisfaction with day surgery have been reported. This can be optimised by – good postoperative pain control, short waiting times before surgery, courtesy of staff and a friendly environment, avoidance of feeling that they are being rushed or discharged too early, follow-up telephone on the day following discharge.</p> <p>Economic outcomes: The financial benefits are well established – hospital costs are between 25–68% lower. More patients can be treated in the same amount of time reducing waiting lists, inpatient facilities are released for more complex or emergency cases. Surgery cancellation due to bed shortages is reduced. Theatres can be used more efficiently. Staffing can be reduced as fewer overnight staff is required.</p> <p>Management and staffing: The most effective organisational structure is the creation of a distinct day-surgery service led by an experienced manager. A multidisciplinary approach is required. The day-surgery unit should have its own administrative infrastructure to manage patient flows.</p> <p>Nursing requires a multi-skilled approach.</p> <p>Community support: Integration between hospitals and community support (including GPs, policy makers, community nurses, family caregivers and social services) is required for day-surgery to be effective as pre- and postoperative care is performed in the community.</p> <p>Information: Effective information is required to prepare the patient psychologically for surgery, educate the patient about pre- and postoperative care, minimise risks in the postoperative period, improve patient satisfaction and obtain informed consent for the surgery.</p> <p>Regulatory: There may be regulatory barriers to day surgery</p> <p>Economic: Reimbursement may be more advantageous if patients are kept in overnight. Patients may be required to pay more out of pocket for day surgery as opposed to having full coverage for overnight stays.</p> <p>Educational: A lack of education about day surgery may reduce medical students' and doctors' awareness of day surgery.</p>

Resource ID Country	Intended use	Main themes relevant to levers and barriers of day surgery
		<p>Facility design: Health facilities may not be configured to facilitate day surgery. This may be in terms of internal configuration (ease of patients flow) and external configuration (ease of access). Lack of community support: This may be a barrier to day surgery Organisational: Weak multidisciplinary teamwork can be a barrier to day surgery. Recommendations: Consider day surgery, rather than inpatient surgery, the norm for all elective procedures Separate flows of day-surgery patients from inpatients Design day-surgery facilities according to local needs, structurally separate from inpatient facilities whenever possible Provide day-surgery units with independent management structures and dedicated nursing staff Take advantage of motivated surgeons and anaesthetists to lead the change Achieve economies by ensuring that expansion of day surgery facilities is accompanied by reductions in inpatient capacity Invest in educational programmes for hospital and community staff Remove regulatory and economic barriers Align incentives Monitor and provide feedback on results (including patients' views)</p>

ACCC: Australian Competition and Consumer Commission; OR: odds ratio; WHO: World Health Organization.

Appendix 10 Working Group and Researchers

Working Group

- Dr David Rankin (Medibank Clinical Director)
- Dr Stephen Bunker (Medibank Clinical Research Advisor)
- Professor Guy Maddern (Surgical Director RACS Research and Evaluation incorporating ASERNIP-S)
- Mr Alex Karatassas (General Surgeon)
- Professor David Watters (General Surgeon)
- Professor David Fletcher (General Surgeon)
- A/Prof Wendy Babidge (RACS Research, Audit and Academic Surgery Director)

Researchers at RACS Research & Evaluation, incorporating ASERNIP-S

- Ms Anje Scarfe
- Dr Joanne Duncan
- Mr Ning Ma
- Dr Alun Cameron

Thanks also to Dr Yasoba Arukorale and Dr David Tivey for their assistance and advice throughout the project.

COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-49

This is the Annexure marked "DD-49" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

**Guidelines for Recognition of
Private
Hospital-Based Rehabilitation Services**

August 2016

Developed by the Consultative Committee on Private Rehabilitation

Guidelines for Recognition of Private Hospital-Based Rehabilitation Services (The Guidelines)

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Introduction

The purpose of specialist rehabilitation units in the private sector is to treat patients requiring specialist rehabilitation.

This particular group of patients, as defined in these Guidelines, requires multidisciplinary rehabilitation treatment in a specialist rehabilitation unit for the clinical intent or treatment goal of improving the functional status of a patient with an impairment, disability or handicap within a clinically appropriate timeframe.

There may be multiple entry paths (e.g. from place of residence, another hospital or hospital ward) to a specialist multidisciplinary rehabilitation service. Referral source is not an indicator of appropriateness for admission to a specialist rehabilitation service, but patients must be admitted to the services under the direction of a Consultant Physician in Rehabilitation Medicine or equivalent and be assessed as appropriate in accordance with the admission criteria in these Guidelines.

Private facilities providing multidisciplinary rehabilitation care which meet *all* the criteria in these Guidelines may be eligible for private health insurance payments.

The Guidelines have been developed in consultation with the Australasian Faculty of Rehabilitation Medicine (AFRM) a Faculty of the Royal Australasian College of Physicians. They have also been endorsed by the Consultative Committee on Private Rehabilitation (CCPR), which has independent industry Representation¹.

The industry recognizes the Functional Independence Measure (FIM) as the functional measure of choice for inpatient rehabilitation, thus ensuring industry data requirements are met as defined by the Australasian Rehabilitation Outcomes Centre (AROC).

It is intended that the Guidelines will guide hospitals and health insurers in their contract negotiations. The definition of a rehabilitation patient is also relevant and can be found in Schedule 1, Part 2, 8 of the *Private Health Insurance (Benefit Requirements) Rules* made under the *Private Health Insurance Act 2007*.

In addition, these Guidelines are a component of the quality criteria for private hospital and day hospital facilities with rehabilitation services seeking eligibility for Second Tier default benefits.

These Guidelines have been developed for the delivery of private rehabilitation services. They may also be of assistance to State and Territory health authorities in the treatment of private and public patients in public hospitals.

It is anticipated that the elements in these requirements will be reviewed biennially by the CCPR.

¹ The Consultative Committee on Private Rehabilitation is a national industry committee comprising representatives of the Australasian Faculty of Rehabilitation Medicine, Private Healthcare Australia, the Australian Private Hospitals Association, the Department of Veterans' Affairs and the Private Health Insurance Ombudsman.

Criterion 1

Rehabilitation care provided by a specialist rehabilitation team on an admitted or non-admitted patient basis in a specialist rehabilitation unit (a separate physical space).

1.1. Specialist Rehabilitation Team

1.1.1. Rehabilitation care must be provided by a multidisciplinary team which is defined as:

- a medical practitioner who is a Consultant Physician in Rehabilitation Medicine and who is a Fellow of the Australasian Faculty of Rehabilitation Medicine (Royal Australasian College of Physicians) or equivalent²;
- nursing staff skilled and experienced in rehabilitation nursing, appropriate to the rehabilitation casemix of the hospital;
- allied health professionals with relevant experience, including FIM credentialing and registered or recognised by the appropriate professional bodies, appropriate to the rehabilitation casemix of the hospital; and
- delivery of defined and documented rehabilitation programmes, reviewed as appropriate.

The Consultant Physician in Rehabilitation Medicine is responsible for the co-ordination of treatment for each patient.

1.2. Specialist Multidisciplinary Rehabilitation Service

1.2.1. Rehabilitation care should be provided in a dedicated facility/unit/ward. It is generally not recommended that overnight inpatient rehabilitation patients will be accommodated outside the dedicated rehabilitation unit/ward other than in situations of short term unavoidable operational requirements.

The design of the facility/unit will be dependent on the casemix of the facility/unit. However, the following features will be included:

- disability access to all areas including bed units, wards, dedicated rooms for individual therapy, dining rooms, toilets and accessible outside areas;
- a physiotherapy area with appropriate equipment and which has dedicated rooms for individual therapy and assessment as well as large open space for gait training and general exercise;
- an occupational therapy area that has space for group activities, rooms for individual therapy and assessment, a therapy workshop and dedicated areas for community assessment of Activities of Daily Living (ADL);

² There may be circumstances in which an alternative qualification to AFRM or equivalent is appropriate, such as where:

- patients are receiving sub-specialty rehabilitation and the qualifications and experience of the medical specialist are applicable to the casemix of the programme; or patients are receiving sub specialty specialty rehabilitation and the qualifications and experience of the medical specialist are applicable to the casemix of the programme; or
- the specialist has extensive experience in rehabilitation.is an experienced physician or surgeon experienced in multidisciplinary rehabilitation medicine.

- individual therapy or consultation areas suitable for quiet clinical consultation or mental state examination or speech therapy, assessment and treatment or psychological assessment, counselling and treatment where appropriate;
- a meeting room suitable for case conferences and family meetings;
- hydrotherapy pool conforming to the relevant Australian Design Standards (if hydrotherapy is appropriate for casemix). In circumstances where hydrotherapy is recommended for individual patients as per their treatment plans and the hospital does not have hydrotherapy pool on site, it must be able to demonstrate that safe and appropriate access to a hydrotherapy pool is available.

1.3. Equipment

1.3.1. The facility/unit's equipment will be dependent on the casemix of the facility/unit:

- parallel bars;
- ergometer, and treadmill calibrated to measure distance/units;
- gym equipment, including weights, pressures and pulleys, suitable for muscle strengthening;
- an area and equipment for provision of personal and domestic ADL training;
- range of wheelchairs and mobility aids;
- appropriate mental state and cognitive screening and assessment tools;
- appropriate speech and language assessment and treating tools;
- appropriate tools for patient and family education; and
- stairs with handrails and turning area at top of stairs.

1.4 Rehabilitation Settings

Rehabilitation services may be provided on an admitted or non-admitted basis including the continuum of services between inpatient and ambulatory settings according to the medical and functional requirements of the patient³.

This ensures the efficient running of the service and assists with early discharge home whilst maximising functional outcomes. Where overnight inpatient multidisciplinary rehabilitation is not clinically indicated, multidisciplinary rehabilitation may be offered through a full Day Rehabilitation Programme, a Half-Day Rehabilitation Programme or a Sessional Therapy Programme.

It should be noted that, within an episode of care, a patient's rehabilitation needs may vary, and that, for example, patients who are receiving a day programme may move progressively between full-day, half-day and sessional programmes. Clinical assessment will direct the appropriate selection of programmes for a patient.

For the purposes of these *Guidelines*, a *session* is defined as functional task management by an appropriately qualified health professional over a period which approximates 30 minutes.

³ Due to differing definitions of admitted and non-admitted care in different states of Australia for their respective data collections, Day Rehabilitation Programmes may be named variously as 'same day' 'day only' 'half day' or 'non-admitted' episodes of care according to the location of the facility. The relevant State legislation, guidelines or operational directives will determine whether the patient is admitted or non-admitted

1.4.1 Full-Day Rehabilitation Programme

Day Rehabilitation Programmes³ are suitable for those patients who have established rehabilitation needs, do not require overnight inpatient care, and whose rehabilitation programmes and goals require the involvement of a multidisciplinary team, under the direction of a Consultant Physician in Rehabilitation Medicine or equivalent. Day Rehabilitation Programmes provide a coordinated programme of care on an admitted or non-admitted same day basis which is documented in an individualised multidisciplinary rehabilitation plan which includes negotiated rehabilitation goals and indicative time frames. The number of sessions associated with a full-day rehabilitation programme will be more than 5 sessions.

1.4.2 Half-Day Rehabilitation Programme

Half-day Rehabilitation Programmes³ are suitable for those patients who have established rehabilitation needs, do not require overnight inpatient care, and whose rehabilitation programmes and goals require the involvement of a multidisciplinary team, under the direction of a Consultant Physician in Rehabilitation Medicine or equivalent. Half-Day Rehabilitation Programmes provide a coordinated programme of care on an admitted or non-admitted same day basis which is documented in an individualised multidisciplinary rehabilitation plan which includes negotiated rehabilitation goals and indicative time frames. The number of sessions associated with a half-day rehabilitation programme will be 3 to 5 sessions.

1.4.3 Sessional Therapy Programme

When a patient has established rehabilitation needs and goals as determined by a Consultant in Rehabilitation Medicine or equivalent, does not require overnight inpatient care and requires a single mode of therapy not involving the coordination of multidisciplinary care, such needs may be met through a Sessional Therapy Programme³. A Sessional Therapy Programme provides a single modality of therapy of up to 2 sessions in a given day which is documented in an individualised rehabilitation plan which includes negotiated rehabilitation goals and indicative time frames.

1.4.4 Inpatient Rehabilitation Programme

Inpatient Rehabilitation Programmes are suitable for those patients who have established rehabilitation needs, but who are also assessed as requiring 24 hour nursing care. Their rehabilitation programs and goals require the involvement of a multidisciplinary team, under the direction of a Consultant in Rehabilitation Medicine or equivalent and should be confirmed with the patient on admission. The multi-disciplinary service will be available 7 days per week ensuring specialist rehabilitation care is available regardless of day of admission.

Inpatient Rehabilitation Programmes provide a daily coordinated programme of care that is documented in an individualised multidisciplinary rehabilitation plan and which includes negotiated rehabilitation goals and indicative time frames.

³ Due to differing definitions of admitted and non-admitted care in different states of Australia for their respective data collections, Day Rehabilitation Programmes may be named variously as 'same day' 'day only' 'half day' or 'non-admitted' episodes of care according to the location of the facility. The relevant State legislation, guidelines or operational directives will determine whether the patient is admitted or non-admitted.

Criterion 2

Rehabilitation care provided by a multidisciplinary team which is under the clinical management of a Consultant Physician in Rehabilitation Medicine or equivalent.

2.1. Clinical Staffing

2.1.1. Rehabilitation care must be provided by a multidisciplinary team.

2.1.1.1. The multidisciplinary rehabilitation team will be under the clinical direction of a Consultant Physician in Rehabilitation Medicine or equivalent⁴.

Each programme shall be supervised by a Consultant Physician in Rehabilitation Medicine or equivalent and staffed by an appropriately qualified multidisciplinary team relevant to the therapeutic needs of the patients being treated and have access to consultative services which are appropriate to the programmes offered.

2.1.1.2. Other clinical staff, both professional and support staff, will be appropriately skilled, experienced and provided in sufficient numbers to provide individual and group therapy programmes for the casemix of patients being serviced.

2.2. Policy and Programme Review

2.2.1. A facility/unit must have:

- a comprehensive manual of policy and procedures applying to and within the facility, and there should be evidence that this is reviewed on an annual basis and updated as per accreditation requirements or legislative changes;
- a demonstrated process for reviewing programmes and patient outcomes.

⁴ There may be circumstances in which an alternative qualification to AFRM or equivalent is appropriate, such as where:

- patients are receiving sub-specialty rehabilitation and the qualifications and experience of the medical specialist are applicable to the casemix of the programme, or
- the specialist is an experienced physician or surgeon experienced in multidisciplinary rehabilitation.

2.3. Data Collection and Outcome Measures

2.3.1. A facility/unit must:

- submit rehabilitation data in AN-SNAP3⁵ format (or update versions) to the Australasian Rehabilitation Outcomes Centre (AROC) targeting 100% of all in-patient rehabilitation episodes for assessment and national benchmarking;
- ensure all rehabilitation episodes will be scored for Functional Independence Measure (FIM) by a FIM-credentialed staff member.

⁵ Australian National Sub-Acute and Non-Acute Patient classification system.

Criterion 3

Rehabilitation care provided for a person with impairment or disability and for whom there is reasonable expectation of functional gain.

3.1. Impairment Codes

3.1.1. Each patient is assigned an impairment code using the current version of the AROC Impairment Coding Guidelines. These guidelines were originally based on the UDSmr Guidelines. The 2013 AROC Guidelines is available on line:
<http://ahsri.uow.edu.au/content/groups/public/@web/@chsd/@aroc/documents/doc/uow125260.pdf>

Classifications include:

- stroke
- brain dysfunction
- neurological conditions
- spinal cord dysfunction
- amputation of limb
- arthritis
- chronic pain
- orthopaedic disorders
- cardiac
- pulmonary disorders
- burns
- congenital deformities
- major multiple trauma
- developmental disabilities
- reconditioning/restorative
- other disabling impairments.

3.1.2. The episode should be classified according to the primary clinical reason for the **current episode** of rehabilitation care. The AROC impairment code identifies the major focus of rehabilitation and the primary subject of the rehabilitation plan.

Criterion 4

Rehabilitation care for which the **primary treatment goal** is improvement in functional status.

4.1. Assessment and Admission

4.1.1. Rehabilitation care must be provided for a person who has all of the following:

- an impairment with associated functional loss;
- a reasonable expectation of functional gain; and
- the primary treatment goal is improvement in functional status.

4.1.1.1. Acceptable rehabilitation impairments are the current version of the AROC Impairment Codes as described in the AROC Impairment Coding Guidelines 2013 <http://ahsri.uow.edu.au/content/groups/public/@web/@chsd/@aroc/documents/doc/uow125260.pdf>

4.1.1.2. Prior to commencement of the rehabilitation programme, a comprehensive and documented rehabilitation assessment should be undertaken.

4.1.1.3. Appropriate outcome measures must be used to document initial assessment of functional ability for all patients.

4.1.1.4. The pre-admission assessment should also indicate that the patient has an understanding of and commitment to the rehabilitation process.

4.1.1.5. The pre-programme assessment will take into account the most appropriate hospital-based setting for rehabilitation care.

4.2. Admission Guidelines

4.2.1 Programmes offered by private rehabilitation facilities that meet these Guidelines would be expected to include the features described in Appendix 1: Standardised Nomenclature and Admission Guidelines for Rehabilitation Patients in Private Facilities.

4.2.2 Admissions to a rehabilitation programme should conform to the admission criteria of that programme as set out in Appendix I

Criterion 5

Rehabilitation care which is **evidenced in the medical record by:**

- ▶ **an individualised and documented initial and discharge assessment of functional ability by use of a recognised functional assessment measure;**
 - ▶ **an individualised multidisciplinary rehabilitation plan which includes negotiated rehabilitation goals and indicative time frames; and**
 - ▶ **hospital-specific documented programmes or treatment plan**
-

5.1. Assessing Functional Ability

5.1.1. Appropriate outcome measures must be used to document admission and discharge assessment of functional ability.

5.1.2. Utilisation of other standardised outcome instruments dependent on casemix.

5.2. Development and implementation of a Multidisciplinary Rehabilitation Programme for each individual patient.

5.2.1. A written patient specific rehabilitation plan must be developed by the multidisciplinary team and include:

- clearly stated multidisciplinary goals and outcomes of the planned rehabilitation;
- predicted period of rehabilitation (length of stay);
- functional gain;
- discharge destination;
- reflect the needs of the patient, family and carers as well as all members of the multidisciplinary team; and
- meeting industry-accepted reporting requirements (for example the relevant Clinical Indicators developed by the Australian Council on Healthcare Standards).

5.2.2. For patient review and multidisciplinary care conferences:

- there must be regular meetings whilst the patient is in a rehabilitation programme;
- there must be a documented policy for regular review of patients;
- this policy must include regular interdisciplinary case conferences which evaluate and document the progress of the patient against the established plan in the medical record. The patient, family members and carers should be kept informed and contribute to the decisions of the rehabilitation team.

5.3. Discharge Planning

5.3.1. All patients will have a comprehensive documented discharge plan. This discharge plan must

be commenced and documented on admission and activated on discharge. The discharge plan will take into account:

- the needs of the patient and family;
- home assessment where appropriate;
- relevant discharge destination end point;
- liaison with community services and communication with the referring doctor and Local Medical Officer; and
- ongoing treatment requirements and care setting.

A copy of the discharge plan will be sent to the patient's General Practitioner and will include details of medications currently prescribed for the patient.

Guidelines for Recognition of Private Hospital-Based Rehabilitation Services

APPENDIX 1

STANDARDISED NOMENCLATURE and ADMISSION GUIDELINES for REHABILITATION PATIENTS IN PRIVATE FACILITIES

Note: These Guidelines apply to rehabilitation facilities and services that meet the
Guidelines for Recognition of Private Hospital-Based Rehabilitation Services

August 2016

Orthopaedic Programme

Upper Limb	Joint Replacement
Lower Limb Complex	Spinal – post surgical

1. UPPER LIMB ORTHOPAEDIC PROGRAMME

Clinical Criteria for Admission:

1. Following upper limb orthopaedic procedures, trauma, injuries or fractures which directly result in disability which requires a rehabilitation programme targeted at developing skills in personal activities of daily living.

OR

2. Patient fitted with an upper limb orthosis – this may require a short term rehabilitation programme directed at developing skills in personal activities of daily living.

OR

3. The patient has co-morbidities which result in the need for rehabilitation

Including, but not limited to:

- a. Significant balance problems where walking aid is ordinarily held by the affected arm.
- b. Widespread generalised arthritis.
- c. Neurological or cognitive dysfunction.

OR

4. Access Indications – Because of upper limb orthopaedic procedures there are mobility and balance changes resulting in safety problems which would benefit from multidisciplinary rehabilitation treatment.

OR

5. The presence of post-operative complications which restrict function.

AND

6. The patient is able to actively participate in a rehabilitation programme with or without the aid of a carer.

2. LOWER LIMB ORTHOPAEDIC

Clinical Criteria for Admission

1. Following lower limb orthopaedic procedures, trauma, injuries or pelvic fractures which result in disability which requires a rehabilitation programme directed at developing skills in personal activities of daily living.

OR

2. Fractures requiring acquisition of specific balance or mobility skills for safety.

OR

3. Bilateral weight bearing limb fractures.

OR

4. Multiple fractures with major trauma.

OR

5. Lower limb fractures with co-morbidities which result in the need for rehabilitation;

Including, but not limited to:

- a. Widespread generalised rheumatoid or osteoarthritis.
- b. Significant balance problems – which includes Parkinson’s disease, early Alzheimer’s disease and other neurological and cognitive dysfunctions, vestibular problems, previous stroke.
- c. Factors which effect ability to weight bear with appropriate aid – such as other joint, replacements, status of upper limb joints, significant respiratory or cardiac disease.
- d. Post-operative complications.

OR

6. Access Indications – Because of lower limb orthopaedic procedures there are mobility and balance changes resulting in safety problems which would benefit from multidisciplinary rehabilitation.

AND

7. The patient is able to actively participate in a rehabilitation programme with or without the aid of a carer.

3. JOINT REPLACEMENT

Clinical criteria for Admission:

1. Lower limb joint replacement with or without local complications of the procedure which result in disability which requires a rehabilitation programme directed at developing skills in personal activities of daily living.

OR

2. Lower limb joint replacement with co-morbidities which result in the need for rehabilitation,

Including but not limited to:

- a. Widespread generalised rheumatoid or osteoarthritis.
- b. Significant balance problems – which includes Parkinson’s disease, early Alzheimer’s disease, vestibular problems, previous stroke.
- c. Factors which effect ability to weight bear with appropriate aid – such as other joint replacements, status of upper limb joints, significant respiratory or cardiac disease.
- d. Patients that have difficulty in complying with safety instructions to ensure the protection of the new joint.
- e. Neurological or cognitive dysfunctions.

OR

3. Access indications – such that the lower limb joint replacement causes mobility changes which result in balance and safety issues.

AND

4. The patient is able to actively participate in a rehabilitation programme with or without the aid of a carer.

4. SPINAL – POST SURGICAL

Clinical Criteria for Admission

1. Following spinal surgery or spinal intervention such as laminectomy

AND

2. The patient has persisting disability and dependency due to:

2.1 Post-operative complications which restrict function.

OR

2.2 Co-morbidities which result in the need for rehabilitation because of balance and safety issues.

OR

2.3 Impairment in muscle strength, joint instability (e.g. Halo brace), limited and painful range of movement, disturbance of peripheral joint sensation, postural and gait dysfunction.

OR

2.4 A condition which results in disability which requires a rehabilitation programme directed at developing skills in personal activities of daily living.

OR

2.5 Access Indications – Because of spinal intervention there are mobility and balance changes resulting in safety problems which would benefit from multidisciplinary rehabilitation.

AND

3 The patient is able to actively participate in a rehabilitation programme with or without the aid of a carer.

Neurological Programme

Non Stroke – e.g.: Parkinson’s & Extra Pyramidal Disorders	
Non Stroke - Peripheral	Traumatic brain
Non Stroke – Neurological	Non traumatic brain
Stroke	

1. NON STROKE – PARKINSON’S & EXTRA PYRAMIDAL DISORDERS

Clinical Criteria for Admission

Indications are:

1. Recent onset or deterioration in mobility and function requiring medication manipulation as an adjunct to the rehabilitation received.

OR

2. Parkinson’s disease / Extra pyramidal disorders with:

- 2.1 Recurrent falls + sequelae.

OR

- 2.2 Swallowing disorders with subsequent problems, e.g. Dietary, chest Infection.

OR

- 2.3 Communication disorder.

AND

- 4 The patient is able to actively participate in a rehabilitation programme with or without the aid of a carer.

2. NON STROKE – PERIPHERAL

Clinical Criteria for Admission

1. The patient has suffered a recent onset of neurological condition.

OR

2. The patient has suffered deterioration of functional ability in association with an established neurological condition.

Including but not limited to:

- a. Guillain-Barre' Syndrome.
- b. Other Neuropathies.
- c. Myopathies.
- d. Peripheral Nerve injuries.

AND/OR

3. The disability is assessed as being likely to respond to rehabilitation.

AND

4. The patient is able to actively participate in a rehabilitation programme with or without the aid of a carer.

3. NON STROKE – NEUROLOGICAL

Clinical Criteria for Admission

1. The patient has suffered deterioration of functional ability in association with an established neurological condition

Including but not limited to:

- a. Multiple sclerosis.
- b. Other Multi focal conditions.

This would exclude conditions that primarily manifest as dementia e.g. Alzheimer's disease

OR

2. The patient has persisting disability and dependency due to:

- 2.1. Nerve root damage.

OR

- 2.2 Spinal Cord damage including Cauda Equina syndrome involving bladder or bowel.

AND/OR

3. The disability is assessed as being likely to respond to rehabilitation.

AND

4. The patient is able to actively participate in a rehabilitation programme with or without the aid of a carer.

4 STROKE

Clinical Criteria for Admission:

1. The patient has suffered a recent onset of stroke with functional loss

OR

2. The patient has suffered deterioration of functional ability following a previous stroke.

AND/OR

3. The disability is assessed as being likely to respond to rehabilitation.

AND

4. The patient is able to actively participate in a rehabilitation programme with or without the aid of a carer.

5. TRAUMATIC BRAIN INJURY

Clinical Criteria for Admission

1. The patient has suffered a recent traumatic brain injury.

AND/OR

2. The patient's impairment (cognitive, behavioural and/or communicative impairment) is such that the functional deficit requires specific care which cannot be safely provided at home or in an outpatient setting.

AND/OR

3. The patient and/or carer requires intensive daily therapy in a multidisciplinary setting.

AND/OR

4. The disability is assessed as being likely to respond to rehabilitation.

AND

5. The patient is able to actively participate in a rehabilitation programme with or without the aid of a carer.

6. NON TRAUMATIC BRAIN INJURY

Conditions causing brain injury including but not limited to hypoxia, post-surgical infection, post sub-arachnoid haemorrhage, and following neurosurgery for brain tumour.

Clinical Criteria for Admission

1. The patient has suffered a recent brain injury or brain surgery or emerges from coma or vegetative state.

OR

2. The patient has experienced a recent or progressive deterioration in functional capability following previous non traumatic brain injury.

AND

3. The patient's impairment (cognitive, behavioural and/or communicative impairment) is such that the functional deficit requires specific care which cannot be safely provided at home or in an outpatient setting.

AND/OR

4. The patient requires intensive daily therapy in a multidisciplinary setting.

AND

5. The disability is assessed as being likely to respond to rehabilitation.

AND

6. The patient is able to actively participate in a rehabilitation programme with or without the aid of a carer.

Pain Programme

Clinical Criteria for Admission:

1. Diagnosis of chronic/intractable pain condition or patient pain levels and medication use resulting in a deficit in balance, mobility and functioning which requires multidisciplinary intervention.

AND

2. Assessment indicates the patient is in an appropriate psychological state to participate, with potential for positive response to intervention.

AND/ OR

3. Aiming to avoid surgical intervention and minimise/rationalise medication use.

AND/OR

4. The disability is assessed as being likely to respond to rehabilitation.

AND

5. The patient is able to actively participate in a rehabilitation programme with or without the aid of a carer.

Re-conditioning Programme

Clinical Criteria for Admission:

Where a rehabilitation programme aims to maximise or restore functional independence, exercise tolerance and endurance in a patient who is deconditioned:

1. Following an acute surgical intervention.

OR

2. Following an acute medical condition or exacerbation

Including, but not limited to:

- a. Septicaemia.
- b. Renal failure.
- c. Liver failure.
- d. Cardiac or respiratory illness.

OR

3. Patient is experiencing an acute exacerbation of inflammatory arthritis (e.g. As evidenced by multiple joints, ESR elevation, mobility of upper and lower limbs diminished) with concurrent disability.

OR

4. Following exacerbation of chronic illness.

OR

5. Patient is deconditioned as a result of cancer or following treatment from cancer.

AND

6. The acute episode has resulted in a functional deterioration to a level that the patient requires support and guidance with basic ADL tasks and/or increased inability to transfer and ambulate.

AND

7. The patient's disability is assessed as being likely to respond to multidisciplinary rehabilitation therapy within appropriate time frames and the rehabilitation therapy is not part of respite care.

AND

8. The patient is able to actively participate in a rehabilitation programme with or without the aid of a carer.

Amputee Programme

Clinical Criteria for Admission:

1. Below Knee Amputation (transtibial), Symes, Through Knee Amputation, Above Knee Amputation (transfemoral), Above Elbow Amputation and Below Elbow Amputation or higher complication.

OR

2. Bilateral amputations.

OR

3. Functional education and training for prosthesis.

OR

4. Any of the above amputation or fracture with other significant co-morbidities, including, but not limited to stroke, rheumatoid arthritis, cardiac diseases.

OR

5. Following amputation:

Failed stump healing or wound breakdown.

OR

Debilitating amputation-related pain.

OR

Contractures restricting mobility.

OR

Phantom pain.

AND

6. The patient is able to actively participate in a rehabilitation programme with or without the aid of a carer.

Cardiac Programme

Clinical Criteria for Admission:

Where a rehabilitation programme aims to maximise or restore functional independence, exercise tolerance and endurance:

1. Following a recent cardiac event.

AND

2. The patient is medically stable:
 - Post-operative cases afebrile for 48 hours
 - No arrhythmia changes for 48 hours
 - Wounds are sound
 - Cardiac Failure controlled and stabilised
 - Angina controlled and stabilised

AND/OR

3. There is associated persisting disability and dependency following the cardiac event e.g.:
 - Recent Stroke,
 - Respiratory Compromise,
 - Significant Comorbidities e.g. Generalised Arthritis, previous Stroke.

AND

4. The Patient's disability is assessed as being likely to respond to multidisciplinary rehabilitation, with rehabilitation goals being identified, within appropriate timeframes.

AND

5. The patient is able to actively participate in a rehabilitation programme with or without the aid of a carer.

COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-50

This is the Annexure marked "DD-50" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.



Australian Government

national
mental
health
strategy

National Standards for Mental Health Services

2010

National Standards for Mental Health Services 2010

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Australian Government

National Standards for Mental Health Services



2010

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Implementation guides

To accompany the National Standards for Mental Health Services there are three Implementation Guideline documents that provide more detail to inform the implementation of the Standards.

The implementation guides provide clear directions for mental health services on how the criteria of the Standards apply to different services.

The three guideline documents are aimed at the following service sector groups:

- public mental health services and private hospitals
- community (non government) organisations
- private office based mental health services

The guideline documents were developed with significant input and recommendations from the following areas:

- Alcohol, Tobacco and Other Drugs (ATOD)
- Aboriginal and Torres Strait Islanders
- Culturally And Linguistically Diverse (CALD)

The recommendations from these groups have been incorporated in an integrated fashion within each of the three implementation guideline documents.

An electronic copy of the implementation guideline documents can be found on the Mental Health Standing Committee website. These are available for downloading from this website at:

➤ <http://www.health.gov.au/mhsc>

Foreword

The National Standards for Mental Health Services (the Standards) were first introduced in 1996 to assist in the development and implementation of appropriate practices and guide continuous quality improvement in mental health services, which at that time were predominantly provided through State and Territory funded specialist clinical mental health services. They were welcomed by the service sector and were very influential in how services responded to the needs and expectations of consumers and carers.

Much has changed since then, with increased service provision in the community—both clinical and non-clinical, expansion of the non-government and private sectors, and greater focus on the role of the primary care sector in mental health. New services have been developed and funded through all levels of government.

In response to these changes, a review of the Standards was commenced in November 2006, in consultation with the sector, and with consumers and carers. The review consisted of a number of different phases and avenues of consultation. Significant effort was made to ensure the consultation was as inclusive as possible although it is acknowledged that some stakeholders would have preferred an even more extensive consultation process. The inclusion of a recovery standard is a new and welcomed addition. This standard in particular may further evolve as experience is gained in its implementation and measurement.

These National Standards for Mental Health Services focus on:

- how services are delivered
- whether they comply with policy directions
- whether they meet expected standards of communication and consent
- whether they have procedures and practices in place to monitor and govern particular areas—especially those which may be associated with risk to the consumer, or which involve coercive interventions.

All of the Standards, except the consumer standard, are designed to be assessed. In contrast, the consumer standard is designed to inform consumers about their rights and responsibilities and the key elements underpinning the provision of quality service that consumers can expect to receive from mental health service providers throughout the continuum of care. The consumer standard is therefore not intended to be assessed, as it contains criteria that are all assessable within the other standards.



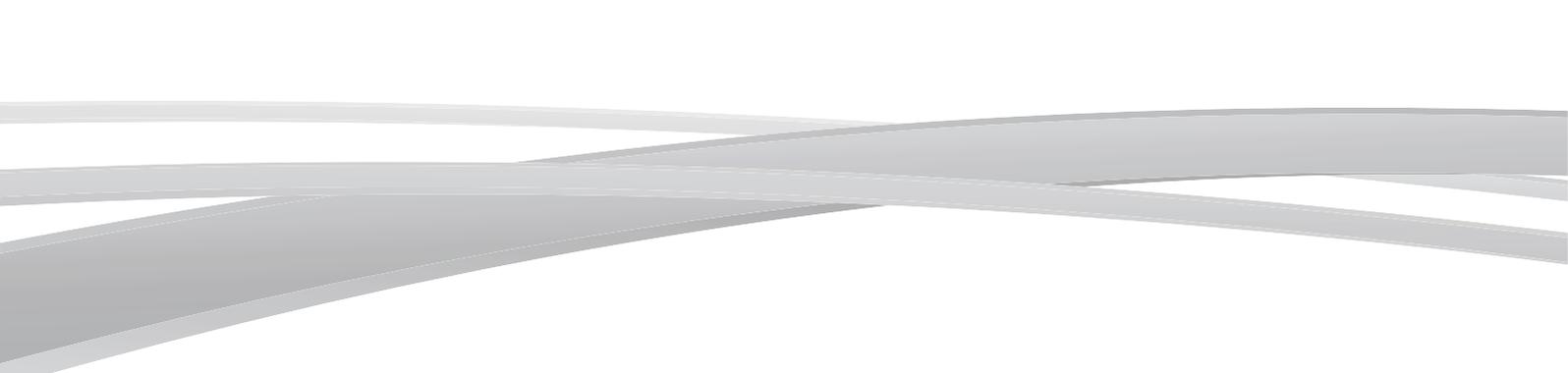
The Standards have been developed to be applied across the broad range of mental health services. This includes bed based and community mental health services, those in the clinical and non-government sectors, those in the private sector and also those in primary care and general practice. They are not intended to apply to services where mental health is not the main focus of care, such as generic community services which support people with a range of disabilities, or generic aged care services. Other practice frameworks are more appropriately applied in those settings. However, when assessing the performance of a mental health service against the Standards, it will be necessary to do this within the context of the individual mental health service i.e. the expectations will vary depending on the service type and setting.

Consideration of the Standards should also be incorporated into the delivery of services such as indigenous health services, alcohol tobacco and other drug services (ATODS) and aged care services, where they are responsible for the delivery of mental health care within the service. The Standards apply to ATOD services that are part of a mental health service. For stand-alone ATOD services, mental health services should be able to demonstrate that they are developing or have collaborative / partnership arrangements in place to ensure integration and coordination of care for consumers.

Expectation that the Standards will be incorporated across the broad range of mental health services marks a significant shift, and one that will need to be developed over time. It is anticipated that the Standards will be a 'living document' that will further evolve as services across the spectrum progressively strive to meet relevant and expected standards of care.

Across the health and community sectors, service delivery is influenced by a number of different quality, safety and performance frameworks. The Standards represent only one component of this environment which includes specific state and sector legislation, associated regulation, professional regulation, accreditation and employment conditions, purchasing and funding agreements, government policy, service development and accreditation. All of these contribute to and affect the achievement of standards. It is anticipated that the Standards will be incorporated into the relevant service accreditation programs.

However, while accreditation is one mechanism to monitor compliance, it is by no means the only one. Compliance can also be measured through reporting frameworks such as key performance indicators and licensing processes. Importantly, there must be evidence that a service has a commitment to improving the quality of care whether this is through review against the Standards, or other quality improvement processes.



Service development is uneven, and this can create a tension between expectation and current practice. Not all states and territories, or even all areas within a jurisdiction, will be at the same stage of development. Also, not all of these standards will be equally relevant to different service types. Standards that are critical in an in-patient setting, for example seclusion practice, will not be relevant to community based settings. To inform the implementation of the Standards, a series of implementation guides that more clearly outline the expectations for different sectors and service settings will be developed. In addition, where more than one standard applies to an element of service delivery, the implementation guides will provide cross-referencing of the relevant standards.

It is recognised that quality improvement is a continuous process. As services are at different stages, some criteria will be routine practice for some and aspirational for others. In considering implementation attainment and maintenance of the Standards, services will need to be cognisant of their stage of development and model of service delivery, and therefore which standards and criteria are most relevant, and which should be addressed most urgently. It is expected that consumers and carers will be involved in these deliberations.

Demonstration of the delivery of services against these standards ensures that consumers, carers and the community can be confident of what to expect from mental health services. For example, mental health services are expected to ensure that issues around consent are handled in accordance with relevant Commonwealth, state or territory jurisdictional and legislative requirements.

A number of the Standards focus on the experience of consumers and carers (rather than the mental health service) to measure the effectiveness of service delivery. Investment in staff and resources is essential for the provision of services that meet these consumer and carer standards. This includes ongoing professional development, training and support.

Implementation of the Standards will require the involvement of staff, consumers and carers to ensure shared understanding and awareness of the standards to be adopted and met by a particular service. Measurement of levels of achievement against the standards also forms a means of accountability to consumers, carers, community, staff and funders.

The Standards recognise that mental health services provide services to individual consumers, carers and where developmentally appropriate, families and also support communities. How the community is defined varies depending upon the purpose, structure and type of service. The community may be determined by a target population or, in the case of public services, a defined catchment area. The assessment of standards will be undertaken in the context of that given community as defined by the particular service and the national, state and territory mental health policies and legislation applying to similar kinds of services and communities.

Regardless of the type of mental health service, the community or clients it serves, there are a number of principles that apply to the delivery of mental health services, irrespective of the context in which they are delivered.

Key principles

These key principles are consistent with national policy and requirements for the delivery of mental health services in Australia and are embedded in the Standards. Key principles that have informed the development of the Standards include:

- Mental health services should promote an optimal quality of life for people with mental health problems and / or mental illness.
- Services are delivered with the aim of facilitating sustained recovery.
- Consumers should be involved in all decisions regarding their treatment and care, and as far as possible, the opportunity to choose their treatment and setting.
- Consumers have the right to have their nominated carer(s) involved in all aspects of their care.
- The role played by carers, as well as their capacity, needs and requirements as separate from those of consumers is recognised.
- Participation by consumers and carers is integral to the development, planning, delivery and evaluation of mental health services.
- Mental health treatment, care and support should be tailored to meet the specific needs of the individual consumer.
- Mental health treatment and support should impose the least personal restriction on the rights and choices of consumers taking account of their living situation, level of support within the community and the needs of their carer(s).

Finally the Standards describe care that will be delivered in accordance with each of the nine (9) domains from the *Key Performance Indicators for Australian Public Mental Health Services (2005)* as follows:

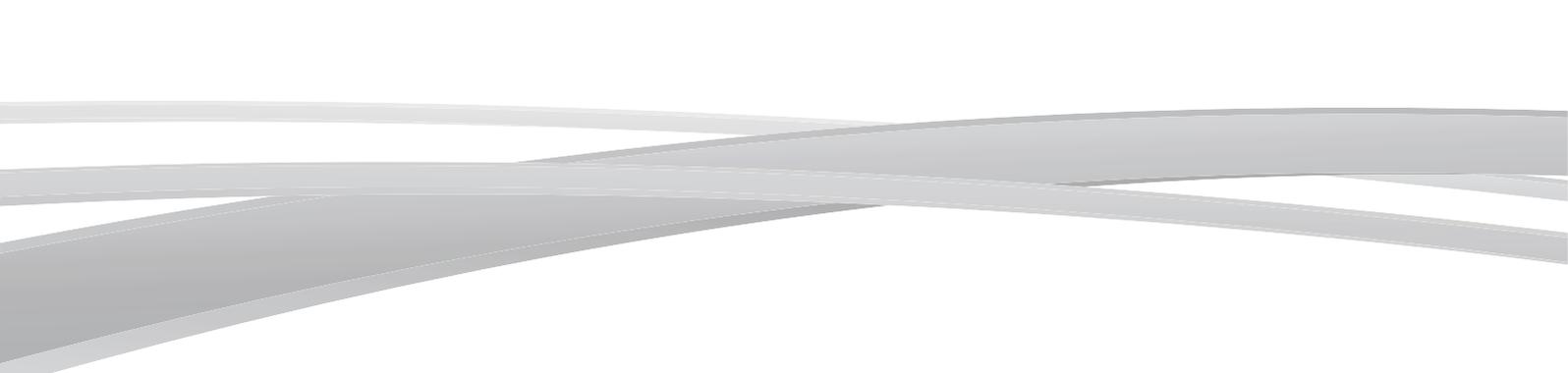
Effectiveness: care, intervention or action achieves desired outcome in an appropriate timeframe.

Appropriateness: care, intervention or action provided is relevant to the client's needs and based on established standards.

Efficiency: achieving desired results with the most cost-effective use of resources.

Accessibility: ability of people to obtain health care at the right place and right time irrespective of income, physical location and cultural background.

Continuity: ability to provide uninterrupted, coordinated care or service across programs, practitioners, organisations and levels over time.



Responsiveness: the service provides respect for all persons and is client orientated. It includes respect for dignity, cultural diversity, confidentiality, participation in choices, promptness, quality of amenities, access to social support networks, and choice of provider.

Capability: an individual's or service's capacity to provide a health service based on skills and knowledge.

Safety: the avoidance or reduction to acceptable limits of actual or potential harm from health care management or the environment in which health care is delivered.

Sustainability: system or organisation's capacity to provide infrastructure such as workforce, facilities, and equipment, and be innovative and respond to emerging needs.

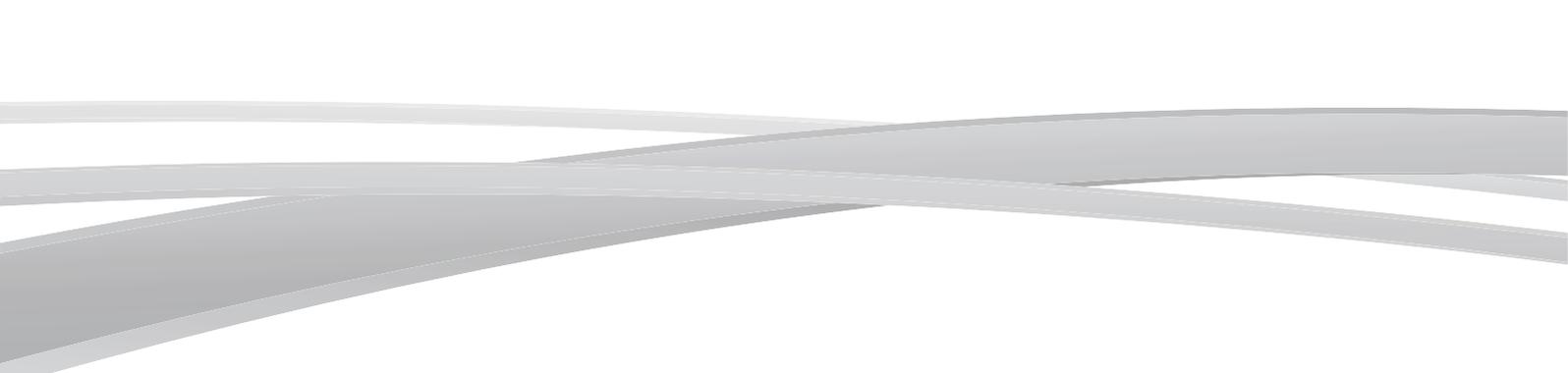
Standard 1.

Rights and responsibilities

The rights and responsibilities of people affected by mental health problems and / or mental illness are upheld by the mental health service (MHS) and are documented, prominently displayed, applied and promoted throughout all phases of care.

CRITERIA

- 1.1** The MHS upholds the right of the consumer to be treated with respect and dignity at all times.
- 1.2** All care is delivered in accordance with relevant Commonwealth, state / territory mental health legislation and related Acts.
- 1.3** All care delivered is subject to the informed consent of the voluntary consumer and wherever possible, by the involuntary consumer in accordance with Commonwealth and state / territory jurisdictional and legislative requirements.
- 1.4** The MHS provides consumers and their carers with a written statement, together with a verbal explanation of their rights and responsibilities, in a way that is understandable to them as soon as possible after entering the MHS and at regular intervals throughout their care.
- 1.5** Staff and volunteers are provided with a written statement of the rights and responsibilities of consumers and carers, together with a written code of conduct as part of their induction to the MHS.
- 1.6** The MHS communicates with consumers, carers and other service providers and applies the rights and responsibilities of involuntary patients as per relevant Commonwealth, state / territory mental health legislation and related Acts.

- 
- 1.7** The MHS upholds the right of the consumer to have their needs understood in a way that is meaningful to them and appropriate services are engaged when required to support this.
 - 1.8** The MHS upholds the right of the consumer to have their privacy and confidentiality recognised and maintained to the extent that it does not impose serious risk to the consumer or others.
 - 1.9** The MHS upholds the right of the consumer to be treated in the least restrictive environment to the extent that it does not impose serious risk to the consumer or others.
 - 1.10** The MHS upholds the right of the consumer to be involved in all aspects of their treatment, care and recovery planning.
 - 1.11** The MHS upholds the right of the consumer to nominate if they wish to have (or not to have) others involved in their care to the extent that it does not impose serious risk to the consumer or others.
 - 1.12** The MHS upholds the right of carers to be involved in the management of the consumer's care with the consumer's informed consent.
 - 1.13** The MHS upholds the right of consumers to have access to their own health records in accordance with relevant Commonwealth, state / territory legislation.
 - 1.14** The MHS enacts policy and procedures to ensure that personal and health related information is handled in accordance with Commonwealth, state / territory privacy legislation when personal information is communicated to health professionals outside the MHS, carers or other relevant agencies.
 - 1.15** The MHS upholds the right of the consumer to access advocacy and support services.
 - 1.16** The MHS upholds the right of the consumer to express compliments, complaints and grievances regarding their care and to have them addressed by the MHS.
 - 1.17** The MHS upholds the right of the consumer, wherever possible, to access a staff member of their own gender.

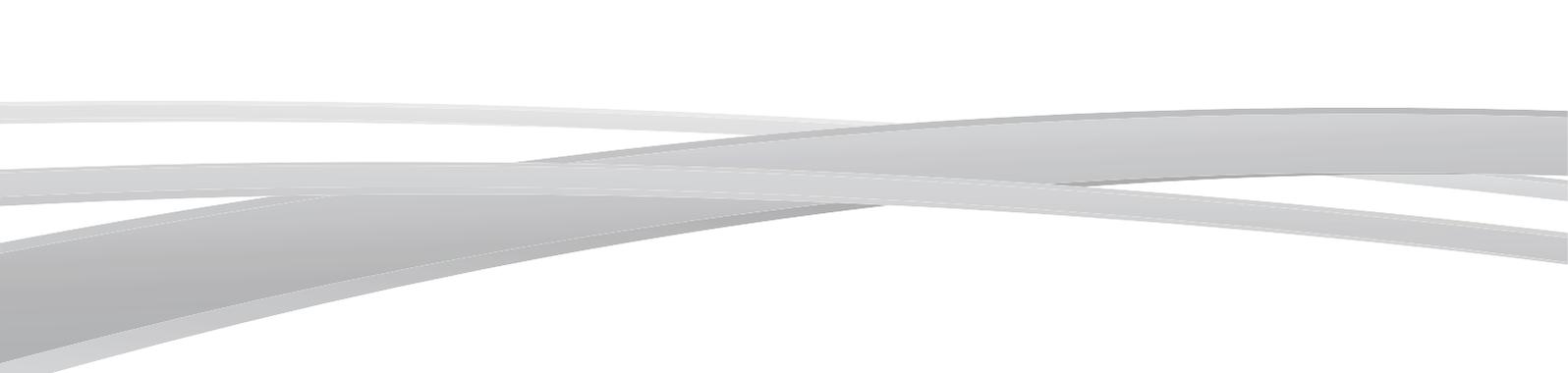
Standard 2.

Safety

The activities and environment of the MHS are safe for consumers, carers, families, visitors, staff and its community.

CRITERIA

- 2.1** The MHS promotes the optimal safety and wellbeing of the consumer in all mental health settings and ensures that the consumer is protected from abuse and exploitation.
- 2.2** The MHS reduces and where possible eliminates the use of restraint and seclusion within all MHS settings.
- 2.3** The MHS assesses and minimises the risk of deliberate self harm and suicide within all MHS settings.
- 2.4** The MHS minimises the occurrence of adverse medication events within all MHS settings.
- 2.5** The MHS complies with relevant Commonwealth and state / territory transport policies and guidelines, including the current National Safe Transport Principles.
- 2.6** The MHS meets their legal occupational health and safety obligations to provide a safe workplace and environment.
- 2.7** The MHS complies with infection control requirements.
- 2.8** The MHS can demonstrate investment in adequate staffing and resources for the safe delivery of care.
- 2.9** The MHS conducts a risk assessment of staff working conditions and has documented procedures to manage and mitigate identified risks.

- 
- 2.10** Staff are regularly trained to, wherever possible, prevent, minimise and safely respond to aggressive and other difficult behaviours.
 - 2.11** The MHS conducts risk assessment of consumers throughout all stages of the care continuum, including consumers who are being formally discharged from the service, exiting the service temporarily and / or are transferred to another service.
 - 2.12** The MHS conducts regular reviews of safety in all MHS settings, including an environmental appraisal for safety to minimise risk for consumers, carers, families, visitors and staff.
 - 2.13** The MHS has a formal process for identification, mitigation, resolution (where possible) and review of any safety issues.

Standard 3.

Consumer and carer participation

Consumers and carers are actively involved in the development, planning, delivery and evaluation of services.

CRITERIA

- 3.1** The MHS has processes to actively involve consumers and carers in planning, service delivery, evaluation and quality programs.
- 3.2** The MHS upholds the right of the consumer and their carer(s) to have their needs and feedback taken into account in the planning, delivery and evaluation of services.
- 3.3** The MHS provides training and support for consumers, carers and staff, which maximise consumer and carer(s) representation and participation in the MHS.
- 3.4** Consumers and carers have the right to independently determine who will represent their views to the MHS.
- 3.5** The MHS provides ongoing training and support to consumers and carers who are involved in formal advocacy and / or support roles within the MHS.
- 3.6** Where the MHS employs consumers and carers, the MHS is responsible for ensuring mentoring and supervision is provided.
- 3.7** The MHS has policies and procedures to assist consumers and carers to participate in the relevant committees, including payment (direct or in-kind) and / or reimbursement of expenses when formally engaged in activities undertaken for the MHS.

Standard 4.

Diversity responsiveness

The MHS delivers services that take into account the cultural and social diversity of its consumers and meets their needs and those of their carers and community throughout all phases of care.

CRITERIA

- 4.1** The MHS identifies the diverse groups (Aboriginal and Torres Strait Islander, Culturally And Linguistically Diverse (CALD), religious / spiritual beliefs, gender, sexual orientation, physical and intellectual disability, age and socio-economic status) that access the service.
- 4.2** The MHS whenever possible utilises available and reliable data on identified diverse groups to document and regularly review the needs of its community and communicates this information to staff.
- 4.3** Planning and service implementation ensures differences and values of its community are recognised and incorporated as required.
- 4.4** The MHS has demonstrated knowledge of and engagement with other service providers or organisations with diversity expertise / programs relevant to the unique needs of its community.
- 4.5** Staff are trained to access information and resources to provide services that are appropriate to the diverse needs of its consumers.
- 4.6** The MHS addresses issues associated with prejudice, bias and discrimination in regards to its own staff to ensure non-discriminatory practices and equitable access to services.

Standard 5.

Promotion and prevention

The MHS works in partnership with its community to promote mental health and address prevention of mental health problems and / or mental illness.

CRITERIA

- 5.1** The MHS develops strategies appropriate to the needs of its community to promote mental health and address early identification and prevention of mental health problems and / or mental illness that are responsive to the needs of its community, by establishing and sustaining partnerships with consumers, carers, other service providers and relevant stakeholders.
- 5.2** The MHS develops implementation plans to undertake promotion and prevention activities, which include the prioritisation of the needs of its community and the identification of resources required for implementation, in consultation with their partners.
- 5.3** The MHS, in partnership with other sectors and settings supports the inclusion of mental health consumers and carers in strategies and activities that aim to promote health and wellbeing.
- 5.4** The MHS evaluates strategies, implementation plans, sustainability of partnerships and individual activities in consultation with their partners. Regular progress reports on achievements are provided to consumers, carers, other service providers and relevant stakeholders.
- 5.5** The MHS identifies a person who is accountable for developing, implementing and evaluating promotion and prevention activities.
- 5.6** The MHS ensures that their workforce is adequately trained in the principles of mental health promotion and prevention and their applicability to the specialised mental health service context with appropriate support provided to implement mental health promotion and prevention activities.

Standard 6.

Consumers

Consumers have the right to comprehensive and integrated mental health care that meets their individual needs and achieves the best possible outcome in terms of their recovery.

(**Note:** The consumer standard is not assessable, as it contains criteria that are all assessable within the other standards.)

CRITERIA

- 6.1** Consumers have the right to be treated with respect and dignity at all times.
- 6.2** Consumers have the right to receive service free from abuse, exploitation, discrimination, coercion, harassment and neglect.
- 6.3** Consumers have the right to receive a written statement, together with a verbal explanation, of their rights and responsibilities in a way that is understandable to them as soon as possible after entering the MHS.
- 6.4** Consumers are continually educated about their rights and responsibilities.
- 6.5** Consumers have the right to receive the least restrictive treatment appropriate, considering the consumer's preference, the demands on carers, and the availability of support and safety of those involved.
- 6.6** A mental health professional responsible for coordinating clinical care is identified and made known to consumers.
- 6.7** Consumers are partners in the management of all aspects of their treatment, care and recovery planning.
- 6.8** Informed consent is actively sought from consumers prior to any service or intervention provided or any changes in care delivery are planned, where it is established that the consumer has capacity to give informed consent.

- 
- 6.9** Consumers are provided with current and accurate information on the care being delivered.
 - 6.10** Consumers have the right to choose from the available range of treatment and support programs appropriate to their needs.
 - 6.11** The right of consumers to involve or not to involve carers and others is recognised and respected by the MHS.
 - 6.12** Consumers have an individual exit plan with information on how to re-enter the service if needed.
 - 6.13** Consumers are actively involved in follow-up arrangements to maintain continuity of care.
 - 6.14** The right of consumers to have access to their own health records is recognised in accordance with relevant Commonwealth and state / territory legislation / guidelines.
 - 6.15** Information about consumers can be accessed by authorised persons only.
 - 6.16** The right of the consumer to have visitors and maintain close relationships with family and friends is recognised and respected by the MHS.
 - 6.17** Consumers are engaged in development, planning, delivery and evaluation of the MHS.
 - 6.18** Training and support is provided for consumers involved in a formal advocacy and / or support role within the MHS.

Standard 7.

Carers

The MHS recognises, respects, values and supports the importance of carers to the wellbeing, treatment, and recovery of people with a mental illness.

CRITERIA

- 7.1** The MHS has clear policies and service delivery protocols to enable staff to effectively identify carers as soon as possible in all episodes of care, and this is recorded and prominently displayed within the consumer's health record.
- 7.2** The MHS implements and maintains ongoing engagement with carers as partners in the delivery of care as soon as possible in all episodes of care.
- 7.3** In circumstances where a consumer refuses to nominate their carer(s), the MHS reviews this status at regular intervals during the episode of care in accordance with Commonwealth and state / territory jurisdictional and legislative requirements.
- 7.4** The MHS provides carers with a written statement, together with a verbal explanation of their rights and responsibilities in a way that is understandable to them as soon as possible after engaging with the MHS.
- 7.5** The MHS considers the needs of carers in relation to Aboriginal and Torres Strait Islander persons, culturally and linguistically diverse (CALD) persons, religious / spiritual beliefs, gender, sexual orientation, physical and intellectual disability, age profile and socio-economic status.
- 7.6** The MHS considers the special needs of children and aged persons as carers and makes appropriate arrangements for their support.

- 
- 7.7** The MHS has documented policies and procedures for clinical practice in accordance with Commonwealth, state / territory privacy legislation and guidelines that address the issue of sharing confidential information with carers.
 - 7.8** The MHS ensures information regarding identified carers is accurately recorded in the consumer's health record and reviewed on a regular basis.
 - 7.9** The MHS provides carers with non-personal information about the consumer's mental health condition, treatment, ongoing care and if applicable, rehabilitation.
 - 7.10** The MHS actively seeks information from carers in relation to the consumer's condition during assessment, treatment and ongoing care and records that information in the consumer's health record.
 - 7.11** The MHS actively encourages routine identification of carers in the development of relapse prevention plans.
 - 7.12** The MHS engages carers in discharge planning involving crisis management and continuing care prior to discharge from all episodes of care.
 - 7.13** The MHS provides information about and facilitates access to services that maximise the wellbeing of carers.
 - 7.14** The MHS actively seeks participation of carers in the policy development, planning, delivery and evaluation of services to optimise outcomes for consumers.
 - 7.15** The MHS provides ongoing training and support to carers who participate in representational and advocacy roles.
 - 7.16** The MHS provides training to staff to develop skills and competencies for working with carers.
 - 7.17** The MHS has documented policies and procedures for working with carers.

Standard 8.

Governance, leadership and management

The MHS is governed, led and managed effectively and efficiently to facilitate the delivery of quality and coordinated services.

CRITERIA

- 8.1** The governance of the MHS ensures that its services are integrated and coordinated with other services to optimise continuity of effective care for its consumers and carers.
- 8.2** The MHS has processes to ensure accountability for developing strategies to promote mental health and address early identification and prevention of mental health problems and / or mental illness.
- 8.3** The MHS develops and regularly reviews its strategic plan in conjunction with all relevant service providers. The plan incorporates needs analysis, resource planning and service evaluation. This should be developed with the participation of staff, stakeholders, consumers, carers and representatives of its community.
- 8.4** The MHS has processes in place to ensure compliance with relevant Commonwealth, state / territory mental health legislation and related Acts.
- 8.5** Identified resources are allocated to support the documented priorities of the MHS.
- 8.6** The recruitment and selection process of the MHS ensures that staff have the skills and capability to perform the duties required of them.
- 8.7** Staff are appropriately trained, developed and supported to safely perform the duties required of them.
- 8.8** The MHS has a policy and process to support staff during and after critical incidents.

- 
- 8.9** The MHS manages and maintains an information system that facilitates the appropriate collection, use, storage, transmission and analysis of data to enable review of services and outcomes at an individual consumer and MHS level in accordance with Commonwealth, state / territory legislation and related Acts.
 - 8.10** The MHS has an integrated risk management policy and practices to identify, evaluate, monitor, manage and communicate organisational and clinical risks.
 - 8.11** The MHS has a formal quality improvement program incorporating evaluation of its services that result in changes to improve practice.

Standard 9. Integration

The MHS collaborates with and develops partnerships within in its own organisation and externally with other service providers to facilitate coordinated and integrated services for consumers and carers.

CRITERIA

- 9.1** The MHS ensures that a person responsible for the coordination of care is available to facilitate coordinated and integrated services throughout all stages of care for consumers and carers.
- 9.2** The MHS has formal processes to support and sustain interdisciplinary care teams.
- 9.3** The MHS facilitates continuity of integrated care across programs, sites and other related services with appropriate communication, documentation and evaluation to meet the identified needs of consumers and carers.
- 9.4** The MHS establishes links with the consumers' nominated primary health care provider and has procedures to facilitate and review internal and external referral processes.
- 9.5** The MHS has formal processes to develop inter-agency and intersectoral links and collaboration.

Standard 10.

Delivery of care

10.1 SUPPORTING RECOVERY

The MHS incorporates recovery principles into service delivery, culture and practice providing consumers with access and referral to a range of programs that will support sustainable recovery.

CRITERIA

- 10.1.1** The MHS actively supports and promotes recovery oriented values and principles in its policies and practices.
- 10.1.2** The MHS treats consumers and carers with respect and dignity.
- 10.1.3** The MHS recognises the lived experience of consumers and carers and supports their personal resourcefulness, individuality, strengths and abilities.
- 10.1.4** The MHS encourages and supports the self determination and autonomy of consumers and carers.
- 10.1.5** The MHS promotes the social inclusion of consumers and advocates for their rights of citizenship and freedom from discrimination.
- 10.1.6** The MHS provides education that supports consumer and carer participation in goal setting, treatment, care and recovery planning, including the development of advance directives.
- 10.1.7** The MHS supports and promotes opportunities to enhance consumers' positive social connections with family, children, friends and their valued community.
- 10.1.8** The MHS demonstrates systems and processes for consumer and carer participation in the development, delivery and evaluation of the services.

- 10.1.9** The MHS has a comprehensive knowledge of community services and resources and collaborates with consumers and carers to assist them to identify and access relevant services.
- 10.1.10** The MHS provides access for consumers and their carer(s) to a range of carer-inclusive approaches to service delivery and support.

10.2 ACCESS

The MHS is accessible to the individual and meets the needs of its community in a timely manner.

CRITERIA

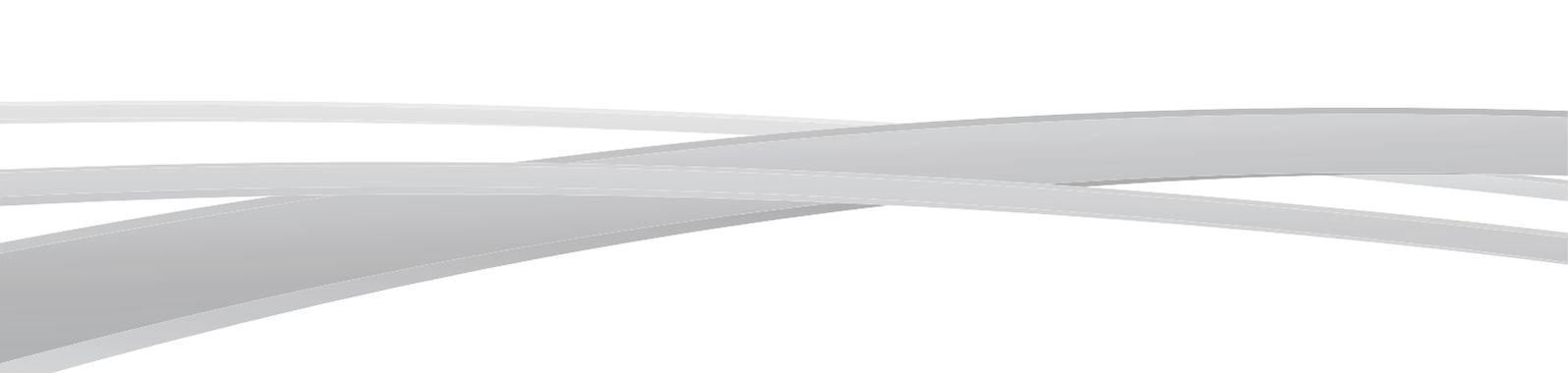
- 10.2.1** Access to available services meets the identified needs of its community in a timely manner.
- 10.2.2** The MHS informs its community about the availability, range of services and methods for establishing contact with its service.
- 10.2.3** The MHS makes provision for consumers to access acute services 24 hours per day by either providing the service itself or information about how to access such care from a 24/7 public mental health service or alternate mental health service.
- 10.2.4** The MHS, wherever possible, is located to provide ease of physical access with special attention being given to those people with physical disabilities and / or reliance on public transport.

10.3 ENTRY

The entry process to the MHS meets the needs of its community and facilitates timeliness of entry and ongoing assessment.

CRITERIA

- 10.3.1** The MHS has a written description of its entry process, inclusion and exclusion criteria and means of facilitating access to alternative care for people not accepted by the service.
- 10.3.2** The MHS makes known its entry process, inclusion and exclusion criteria to consumers, carers, other service providers, and relevant stakeholders including police, ambulance services and emergency departments.
- 10.3.3** The MHS has a documented system for prioritising referrals according to risk, urgency, distress, dysfunction and disability with timely advice and / or response to all those referred, at the time of assessment.
- 10.3.4** The entry process to the MHS is a defined pathway with service specific entry points that meet the needs of the consumer, their carer(s) and its community that are complementary to any existing generic health or welfare intake systems.
- 10.3.5** Entry to the MHS minimises delay and the need for duplication in assessment, treatment, care and recovery planning and care delivery.
- 10.3.6** Where admission to an inpatient psychiatric service is required, the MHS makes every attempt to facilitate voluntary admission for the consumer and continue voluntary status for the duration of their stay.

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- 10.3.7** When the consumer requires involuntary admission to the MHS the transport occurs in the safest and most respectful manner possible and complies with relevant Commonwealth and state / territory policies and guidelines, including the National Safe Transportation Principles.
 - 10.3.8** The MHS ensures that a consumer and their carer(s) are able to identify a nominated person responsible for coordinating their care and informing them about any changes in the care management.

10.4 ASSESSMENT AND REVIEW

Consumers receive a comprehensive, timely and accurate assessment and a regular review of progress is provided to the consumer and their carer(s).

CRITERIA

- 10.4.1** Assessments conducted and diagnoses made are evidence-based and use accepted methods and tools, as well as internationally accepted disease classification systems.
- 10.4.2** Assessments are conducted during the consumer's first contact with the MHS by appropriately qualified staff experienced and trained in assessing mental health problems, and where possible in a consumer's preferred setting with consideration of safety for all involved.
- 10.4.3** The MHS, with the consumer's informed consent includes carers, other service providers and others nominated by the consumer in assessment.
- 10.4.4** The MHS actively plans as early as possible in the course of psychiatric inpatient admission, for the discharge of the consumer from inpatient care.

10.4.5 The MHS conducts a review of a consumer's treatment, care and recovery plan when the consumer:

- requests a review
- declines treatment and support
- is at significant risk of injury to themselves or another person
- receives involuntary treatment or is removed from an involuntary order
- is transferred between service sites
- is going to exit the MHS
- is observed through monitoring of their outcomes (satisfaction with service, measure of quality of life, measure of functioning) to be in decline.

10.4.6 The MHS conducts assessment and review of the consumer's treatment, care and recovery plan, whether involuntary or voluntary, at least every three months (if not previously required for reasons stated in criteria 10.4.5 above).

10.4.7 The MHS has a procedure for appropriate follow-up of those who decline to participate in an assessment.

10.4.8 There is a current individual interdisciplinary treatment, care and recovery plan, which is developed in consultation with and regularly reviewed with the consumer and with the consumer's informed consent, their carer(s) and the treatment, care and recovery plan is available to both of them.

10.5 TREATMENT AND SUPPORT

The MHS provides access to a range of evidence based treatments and facilitates access to rehabilitation and support programs which address the specific needs of consumers and promotes their recovery.

CRITERIA

- 10.5.1** Treatment and support provided by the MHS reflects best available evidence and emphasises early intervention and positive outcomes for consumers and their carer(s).
- 10.5.2** Treatment and services provided by the MHS are responsive to the changing needs of consumers during their episodes of care that address acute needs, promote rehabilitation and support recovery.
- 10.5.3** The MHS is responsible for providing the consumer and their carer(s) with information on the range and implications of available therapies.
- 10.5.4** Any participation of the consumer in clinical trials and experimental treatments is subject to the informed consent of the consumer.
- 10.5.5** The MHS provides the least restrictive and most appropriate treatment and support possible. Consideration is given to the consumer's needs and preferences, the demands on carers, and the availability of support and safety of those involved.
- 10.5.6** Medications are prescribed, stored, transported, administered and reviewed by authorised persons in a manner consistent with Commonwealth, state / territory legislation and related Acts, regulations and professional guidelines.
- 10.5.7** The MHS actively promotes adherence to evidenced based treatments through negotiation and the provision of understandable information to the consumer.

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- 10.5.8** The views of the consumer and their carer(s), and the history of previous treatment is considered and documented prior to administration of new medication and / or other technologies.
 - 10.5.9** The MHS ensures that there is continuity of care or appropriate referral and transfer between inpatient, outpatient, day patient, community settings and other health / support services.
 - 10.5.10** The MHS ensures that medication and / or other therapies when required, are only used as part of a documented continuum of treatment strategies.
 - 10.5.11** The treatment and support provided by the MHS is developed and evaluated collaboratively with the consumer and their carer(s). This is documented in the current individual treatment, care and recovery plan.
 - 10.5.12** The MHS facilitates access to an appropriate range of agencies, programs, and / or interventions to meet the consumer's needs for leisure, relationships, recreation, education, training, work, accommodation and employment in settings appropriate to the individual consumer.
 - 10.5.13** The MHS supports and / or provides information regarding self care programs that can enable the consumer to develop or re-develop the competence to meet their everyday living needs.
 - 10.5.14** The setting for the learning or the re-learning of self care activities is the most familiar and / or the most appropriate for the skills acquired.
 - 10.5.15** Information on self care programs or interventions is provided to consumers and their carer(s) in a way that is understandable to them.
 - 10.5.16** The MHS endeavours to provide access to a range of accommodation and support options that meet the needs of the consumer and gives the consumer the opportunity to choose between these options.
 - 10.5.17** The MHS promotes access to vocational support systems, education and employment programs.

10.6 EXIT AND RE-ENTRY

The MHS assists consumers to exit the service and ensures re-entry according to the consumer's needs.

CRITERIA

- 10.6.1** The MHS ensures that on exiting the service the consumer has access to services that promote recovery and aim to minimise psychiatric disability and prevent relapse.
- 10.6.2** The consumer and their carer(s) are provided with understandable information on the range of relevant services and support available in the community.
- 10.6.3** The MHS has a process to commence development of an exit plan at the time the consumer enters the service.
- 10.6.4** The consumer and their carer(s) and other service providers are involved in developing the exit plan. Copies of the exit plan are made available to the consumer and with the consumers' informed consent, their carer(s).
- 10.6.5** The MHS provides consumers, their carers and other service providers involved in follow-up with information on the process for re-entering the MHS if required.
- 10.6.6** The MHS ensures ease of access for consumers re-entering the MHS.
- 10.6.7** Staff review the outcomes of treatment and support as well as ongoing follow-up arrangements for each consumer prior to their exit from the MHS.
- 10.6.8** The MHS, in conjunction with the treating clinician, has a procedure for appropriate follow-up of all consumers within 7 days after discharge from inpatient care wherever possible, and has a follow-up procedure for those consumers who do not keep the planned follow-up arrangements.

Glossary

Access	Ability of consumers or potential consumers to obtain required or available services when needed within an appropriate time.
Acute	A condition that requires immediate medical attention.
Adverse drug events	A particular type of adverse drug event where a drug or medication is implicated as a causal factor in the adverse event. This encompasses both harm that results from the intrinsic nature of medicine (an adverse drug reaction) as well as harm that results from medication errors or system failures associated with the manufacture, distribution or use of medicines.
Advocacy	Representing the concerns and interests of consumers and carers, speaking on their behalf, and providing training and support so they can represent themselves.
Appropriate	Care, intervention or action provided is relevant to the consumer needs and based on established standards.
Assessment	Process by which the characteristics and needs of consumers, groups or situations are evaluated or determined so they can be addressed. The assessment forms the basis of a plan for services or action.
Available	Information, services and support that is present in the catchment area of the mental health service.
Best available evidence	Pre-appraised evidence such as systematic reviews, clinical practice guidelines and critically appraised papers and topics.
CALD	Culturally and linguistically diverse.
Care	All services and interventions provided to a person with a mental health problem and / or mental illness by health and other sectors, community organisation, family and carers.
Care management	A cyclical process, in which needs are assessed, services are delivered in response, and needs are re-assessed, leading to a changed service response.

Care plan	A written statement developed for entitled persons which states the nursing and other interventions to be undertaken, the health outcomes to be achieved and the review of care which will occur at regular intervals.
Carer	<p>A person whose life is affected by virtue of close relationship with a consumer, or who has a chosen caring role with a consumer.</p> <p>Carer, in this document, may also refer to the consumer's identified family, including children and parents, as well as other legal guardians and people significant to the consumer.</p>
Clinical trial	Any research project that prospectively assigns human participants or groups to one or more health-related interventions to evaluate the effects on health outcome.
Community	How the community is defined depends on the purpose, structure and type of service. The community may be determined by a target population, such as consumers and / or clinicians who access the service or, in the case of public services, a defined catchment area.
Community living	The ability of the consumer to live independently in the community with the best possible quality of life.
Co-morbid condition	Existing simultaneously with and usually independently of another medical condition.
Confidentiality	The restriction of access to personal information to authorised persons, entities and processes at authorised times and in an authorised manner.
Consent	Consumer agreement based on an understanding of the implications of a particular activity or decision and the likely consequences for the consumer.
Consumer	A person who is currently using, or has previously used, a mental health service.

Consumer advocate	People who have been given the power by consumers to speak on their behalf, who represent the concerns and interest of the consumer as directed by the consumer, and seek the outcomes desired by the consumer. Although government and others may give power to advocates, such advocacy is token unless it is directly accountable to the consumer.
Consumer representative	A member of a government, professional body, industry or non-government organisation committee who voices consumer perspectives and takes part in the decision-making process on behalf of consumers. This person is nominated by, and is accountable to, an organisation of consumers. The role of a consumer representative is to provide a consumer perspective.
Continuity of care	Linkage of components of individualised treatment and care across health service agencies according to individual needs.
Coordinate	To bring together in a common and harmonious action or effort.
Culture	A shared system of values, beliefs and behaviour.
Data	Information collected for analysis or reference.
Data collection	A store of data captured in an organised way for a defined purpose.
Diagnosis	A decision based on the recognition of clinically relevant symptomatology, the consideration of causes that may exclude a diagnosis of another condition and the application of clinical judgment.
Disability	A concept of several dimensions relating to an impairment in body structure or function, a limitation in activities (such as mobility and communication), a restriction in participation (involvement in life situations such as work, social interaction and education), and the affected person's physical and social environment.

Discharge / exit planning

A process for ensuring transfer of care of a consumer between service providers.

Discharge planning results in a formal written discharge plan, the aim of which is to ensure continuity of services that are necessary for successful community living. The discharge plan is a negotiated enterprise between the consumer, carer or family, referring doctor, community mental health team and the inpatient unit. It includes medical information, follow-up appointments and the desired outcomes of treatment.

The process of discharge planning begins at the time of admission. Barriers to discharge are identified at the time of admission and specific planning initiated to address these barriers, for example anticipated difficulties in finding suitable accommodation.

The relevant stakeholders who are not directly involved in the discharge planning should also be notified of the anticipated discharge date, for example general practitioner and supported accommodation provider.

Diversity

A broad concept that includes age, personal and corporate background, education, function and personality. Includes lifestyle, sexual orientation, ethnicity and status within the general community.

Documentation

Process of recording information in the health record and other documents that are a source of information; a written, tangible record of care and services provided.

Early intervention

Interventions targeting people displaying the early signs and symptoms of a mental health problem or mental disorder.

Education

Systematic Instruction and learning activities to develop or bring about change in knowledge, attitudes, values or skills.

Effective

Producing the intended or expected result.

Efficiency

Achieving desired results with most cost effective use of resources.

Entry	The process provided by the mental health service which assists the consumer and their carers to make contact with the mental health service and receive appropriate assistance.
Equitable	Minimising avoidable disparities in health and its determinants, including but not limited to health care, between groups of people who have different levels of underlying social attributes.
Evaluation	Judging the value of something by gathering valid information about it in a systematic way and by making a comparison. The purpose of evaluation is to help the user of the evaluation to decide what to do, or to contribute to scientific knowledge
Exit	When the consumer no longer requires treatment, support, or any other service from the mental health service, and there has been a last review of the case with peers and the case is closed. Exit is prepared for in a collaborative manner with the consumer. This may be referred to as discharge in some services.
Exit plan	See discharge plan.
Feedback	A communication from a consumer relaying how delivered products, services and messages compare with consumer expectations.
First contact	The first time the consumer makes contact with the mental health service during any episode of care.
Follow-up	Processes and actions taken after a service has been completed.
Funders	State and territory governments, Australian government, private health funds.
Governance	The system by which organisations are directed and controlled. It ensures the power of organisations is harnessed for the agreed purpose. Governance spells out the rules and procedures for making decisions on organisational affairs.
Human resources	The personnel requirements of the organisation.
Incidence	The number of new cases (of an illness or event etc.) occurring during a given period.

Incident	An event or circumstance which led to, or could have, unintended and / or unnecessary harm to a person, and / or a complaint, loss or damage.
Individual health record	Term to cover consumer record, medical record, care record, health care record or record that documents care or service to a consumer. A health record is a legal document that outlines the total needs, care and management of consumers.
Induction	A process of bringing a new employee into the organisation. This program assimilates them into the culture, accepted practices, and performance standards of the organisation.
Infection control	Measures practised by healthcare personnel in healthcare facilities to decrease transmission and acquisition of infectious agents. This includes proper hand hygiene, scrupulous work practices and use of personal protective equipment (PPE)—masks or respirators, gloves, gowns, and eye protection. Infection control measures are based on how an infectious agent is transmitted and include standard, contact, droplet, and airborne precautions.
Information	Data elements that have been organised and analysed and that provide a basis for decision making.
Information system	A system that provides access to information using hardware, software, supplies, policies, procedures and people.

Informed consent	<p>Consent obtained freely, without coercion, threats or improper inducements, after questions asked by the consumer have been answered, after appropriate disclosure to the patient, adequate and understandable information in a form and language demonstrably understood by the patient.</p> <p>Such answers and disclosures must be sufficient to enable the consumer to make a fully informed decision based on all relevant factors including the nature of treatment involved, the range of other options and the possible outcomes and implications, risks and benefits for the consumer and others.</p> <p>In the context of mental health, this means that the client provides permission for a specific treatment to occur based on their understanding of the nature of the procedure, the risks involved, the consequences of withholding permission and their knowledge of available alternative treatments.</p>
Inpatient psychiatric service	<p>A ward / unit / facility in a general hospital, private psychiatric hospital, stand alone psychiatric hospital or some other location used primarily for the treatment of mental health problems and / or mental illness.</p>
Integration	<p>The process whereby inpatient and community components of a mental health service become coordinated as a single, specialist network and include mechanisms which link intake, assessment, crisis intervention, and acute, extended and ongoing treatment using a case management approach to ensure continuity of care.</p>
Interdisciplinary team	<p>Care or a service given with input from more than one discipline or profession.</p>
Intervention	<p>An activity or set of activities aimed at modifying a process, course of action or sequence of events, to change one or several of their characteristics such as performance or expected outcome.</p>
Involuntary	<p>Where persons are detained in hospital or compulsorily treated in the community under mental health legislation for the purpose of assessment or provision of appropriate treatment or care.</p>

Leadership	Ability to provide direction and cope with change. It involves establishing a vision, developing strategies for producing the changes needed to implement the vision, aligning people and motivating and inspiring people to overcome obstacles.
Legislation	The body of laws made by Parliament. These laws consist of Acts of Parliament and Regulations, Ordinances and / or Rules which are also called subordinate or delegated legislation.
Links	Connections, contacts and working relationships established with others.
Management	Setting targets or goals for the future through planning and budgeting, establishing processes for achieving those targets and allocating resources to accomplish those plans. Ensuring that plans are achieved by organising, staffing, controlling and problem-solving.
Medication and other medical technologies	The range of evidence-based therapeutic and diagnostic approaches which use medication and other technology as their basis, for example seclusion or ECT.
Mental health	The capacity of individuals within the groups and the environment to interact with one another in ways that promote subjective wellbeing, optimal development and use of mental abilities (cognitive, affective and relational) and achievement of individual and collective goals consistent with justice.
Mental health problems	A disruption in the interaction between the individual, the group and the environment, producing a diminished state of mental health.
Mental health professional	A person who offers services for the purpose of improving an individual's mental health or to treat mental illness. These professionals include psychiatrists, clinical psychologists, clinical social workers, occupational therapists, psychiatric nurses as well as other professionals.
Mental health promotion	Action to maximise mental health and wellbeing among populations and individuals. Mental health promotion is concerned with promoting wellbeing across entire population groups for people who are currently well, for those at-risk, and for those experiencing illness.

Mental health service (MHS) Specialised mental health services are those with the primary function to provide treatment, rehabilitation or community health support targeted towards people with a mental illness or psychiatric disability. These activities are delivered from a service or facility that is readily identifiable as both specialised and serving a mental health care function.

Mental illness A clinically diagnosable disorder that significantly interferes with an individual's cognitive, emotional or social abilities.

The diagnosis of mental illness is generally made according to the classification systems of the *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition Text Revision (DSM-IV-TR) or the *International Classification of Diseases*, Tenth Edition (ICD-10). These classification systems apply to a wide range of mental disorders (for the DSM-IV) and mental and physical disorders (for the ICD-10). Not all the DSM-IV mental disorders are within the ambit of the National Mental Health Plan 2003–2008.

In Australia, drug and alcohol problems are primarily the responsibility of the drug and alcohol service system and there is a separate, but linked, national strategy. Similarly, dementia is treated primarily in aged care settings. Both are considered important in terms of their co-morbidity with mental illness.

Monitor To check, observe critically, measure or record the progress of an activity, action or system on a regular basis to identify change.

Ongoing care The process of care that follows an admission to a health care organisation.

Onset A beginning or start.

Operational plan A plan on a short term basis that provides details of how the strategic plan will be accomplished.

Orientation The process by which staff become familiar with all aspects of the work environment and their responsibilities.

Outcome A measurable change in the health of an individual, or group of people or population, which is attributable to interventions or services.

Personal and health related information

Any information or an opinion about a person whose identity is apparent or can reasonably be ascertained from the information or opinion. Personal information can include a person's name, date of birth, address, telephone number, family members or any other information that could allow the person to be identified.

Health related information includes symptoms or observations about the person's health, prescriptions, billing details, pathology or other test results, dental records, Medicare or health insurance numbers, admission and discharge details, genetic information and any other sensitive information about things such as race, sexuality or religion when it's collected by a health service. In the context of these standards, personal and health related information, where it can lead to the identity of the consumer, is considered in the same way.

Physical

Relating to the body.

Plan

Any detailed scheme, program or method developed for the accomplishment of an objective. Detailed notes of intended proceedings.

Planning

To formulate a scheme or program for the accomplishment or attainment of an object.

Policy

A documented statement that formalises the approach to tasks and concepts which is consistent with organisational objectives.

Prevention

Interventions that occur before the initial onset of a disorder (Mrazek and Haggerty, 1994, p. 23).

Primary care provider

Staff or individuals who, in cooperation with the consumer, assume responsibility for all aspects of care in response to the diagnosis and needs of the consumer.

Procedure

A set of documented instructions conveying the approved and recommended steps for a particular act or sequence of acts.

Process

A series of actions, changes / functions that bring about an end or result.

Program	A part or function of the mental health service such as the rehabilitation team, health promotion unit, the crisis team, the living skills centre or inpatient psychiatric unit. Some mental health services may have only one team which performs all of these functions.
Promotion	See mental health promotion.
Quality	The extent to which the properties of a service or product produces a desired outcome.
Quality improvement	Ongoing response to quality assessment data about a service in ways that improve the process by which services are provided to consumers.
Recovery	A deeply personal, unique process of changing one's attitudes, values, feelings, goals, skills and / or roles. It is a way of living a satisfying, hopeful and contributing life. Recovery involves the development of new meaning and purpose in one's life as one grows beyond the catastrophic effects of psychiatric disability.
Referral processes / pathways	Systems and protocols that ensure linkages between services to support continuity of care and ensure that consumers of services are able to negotiate the system in a seamless and timely manner.
Relapse	<p>A subsequent episode of mental illness. It is a recurrence of symptoms of mental illness similar to those that have previously been experienced. The threshold of symptoms required to identify a relapse varies according to the differing perspectives of the person experiencing the symptoms, their family and carers, and service providers.</p> <p>Relapse is generally agreed to have occurred when the person experiencing the symptoms is not able to cope using their usual supports and requires a greater intensity of intervention. The word 'relapse' is viewed by many as a negative and medicalised term, and the words 'episode' or 'being unwell' may be preferred.</p>
Research	An active, diligent and systematic process of inquiry to discover, interpret or revise facts, events, behaviours, or theories, or to make practical applications with the help of such facts, laws or theories.

Restraint	A restrictive intervention that relies on external controls to limit the movement or response of a person.
Rights	Something that can be claimed as justly, fairly, legally or morally one's own. A formal description of the services that consumers can expect and demand from an organisation.
Risk	The chance of something happening that will have a (negative) impact. It is measured in terms of consequence and likelihood.
Risk assessment	The process of identification, analysis and evaluation of a risk.
Risk management	In health care, designing and implementing a program of activities to identify and avoid or minimise risks to patients, employees, visitors and the institution; to minimise financial losses (including legal liability) that might arise consequentially; and to transfer risk to others through payment of premiums (insurance).
Safety	Freedom from hazard.
Seclusion	The act of confining a patient in a room when it is not within their control to leave. It should not be confused with the practice of time out, where a patient is requested to seek voluntary social isolation for a minimum period of time.
Sentinel event	Events in which death or serious harm to a patient has occurred. They signal catastrophic system failure and have the potential to seriously undermine public confidence in the health-care system.
Service provider	A person, usually with professional qualifications, who receives remuneration for providing services to people who have a mental health problem and / or mental illness.
Services	Products of the organisation delivered to consumers or units of the organisation that deliver products to consumers.
Settings	The setting in which assistance or services are provided.
Social	Of or relating to life and relation to human beings in a community.
Staff	Term which includes employed, visiting, sessional, contracted or volunteer personnel.

Stakeholder	Individuals, organisations or groups that have an interest or share in services.
Strategic plan	Plan that is organisation-wide, that establishes an organisation's overall objectives.
Support services	Direct services and interventions provided for a person with a mental health problem and / or mental illness and associated disability aimed at reducing handicap and promoting community tenure, for example assistance with cooking and cleaning. Support services do not necessarily have a treatment or rehabilitation focus.
System	A group of interacting, interrelated or interdependent elements forming or regarded as forming a collective entity.
Therapies	The range of therapeutic approaches which reflect best available evidence and are used in mental health care, excluding medication and other technologies. Therapies could include psycho-therapeutic, psycho-educational, rehabilitative, collaborative approaches using individual and / or group methods.
Training	The teaching of vocational or practical skills and relates to specific useful skills; often referred to as professional development.
Treatment	Specific physical, psychological and social interventions provided by health professionals aimed at the reduction of impairment and disability and / or the maintenance of current level of functioning.
Triage	A system for determining the relative priority of new referrals. Might also be called intake or engagement.
Values	Principles and beliefs that guide an organisation and may involve social or ethical issues.
Voluntary admission	Admission to a mental health unit for treatment that results from the client making the decision for admission and signing the necessary agreement for inpatient treatment.
Wellbeing	The state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity. The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief or economic and social condition.

Principles of recovery oriented mental health practice

From the perspective of the individual with mental illness, recovery means gaining and retaining hope, understanding of ones abilities and disabilities, engagement in an active life, personal autonomy, social identity, meaning and purpose in life, and a positive sense of self.

It is important to remember that recovery is not synonymous with cure. Recovery refers to both internal conditions experienced by persons who describe themselves as being in recovery—hope, healing, empowerment and connection—and external conditions that facilitate recovery—implementation of human rights, a positive culture of healing, and recovery-oriented services. (Jacobson and Greenley, 2001 p. 482)

The purpose of principles of recovery oriented mental health practice is to ensure that mental health services are being delivered in a way that supports the recovery of mental health consumers.

1. UNIQUENESS OF THE INDIVIDUAL

Recovery oriented mental health practice:

- recognises that recovery is not necessarily about cure but is about having opportunities for choices and living a meaningful, satisfying and purposeful life, and being a valued member of the community
- accepts that recovery outcomes are personal and unique for each individual and go beyond an exclusive health focus to include an emphasis on social inclusion and quality of life
- empowers individuals so they recognise that they are at the centre of the care they receive.

2. REAL CHOICES

Recovery oriented mental health practice:

- supports and empowers individuals to make their own choices about how they want to lead their lives and acknowledges choices need to be meaningful and creatively explored
- supports individuals to build on their strengths and take as much responsibility for their lives as they can at any given time
- ensures that there is a balance between duty of care and support for individuals to take positive risks and make the most of new opportunities.

3. ATTITUDES AND RIGHTS

Recovery oriented mental health practice:

- involves listening to, learning from and acting upon communications from the individual and their carers about what is important to each individual
- promotes and protects individual's legal, citizenship and human rights
- supports individuals to maintain and develop social, recreational, occupational and vocational activities which are meaningful to the individual
- instils hope in an individual's future and ability to live a meaningful life.

4. DIGNITY AND RESPECT

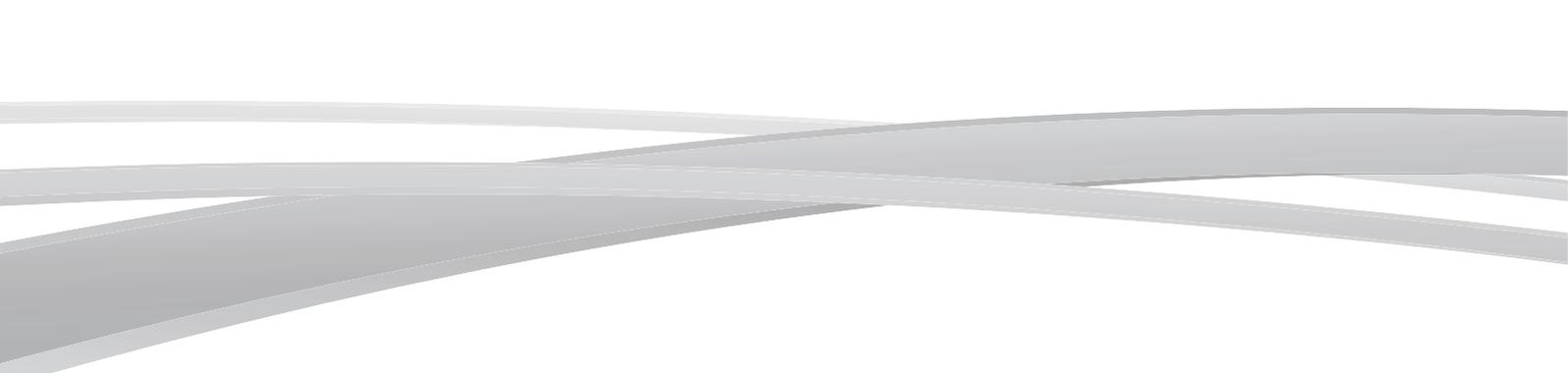
Recovery oriented mental health practice:

- consists of being courteous, respectful and honest in all interactions
- involves sensitivity and respect for each individual, particularly for their values, beliefs and culture
- challenges discrimination and stigma wherever it exists within our own services or the broader community.

5. PARTNERSHIP AND COMMUNICATION

Recovery oriented mental health practice:

- acknowledges each individual is an expert on their own life and that recovery involves working in partnership with individuals and their carers to provide support in a way that makes sense to them
- values the importance of sharing relevant information and the need to communicate clearly to enable effective engagement
- involves working in positive and realistic ways with individuals and their carers to help them realise their own hopes, goals and aspirations.



6. EVALUATING RECOVERY

Recovery oriented mental health practice:

- ensures and enables continuous evaluation of recovery based practice at several levels
- individuals and their carers can track their own progress
- services demonstrate that they use the individual's experiences of care to inform quality improvement activities
- the mental health system reports on key outcomes that indicate recovery including (but not limited to) housing, employment, education and social and family relationships as well as health and well being measures.

These Recovery Principles have been adapted from the Hertfordshire Partnership NHS Foundation Trust Recovery Principles in the UK.

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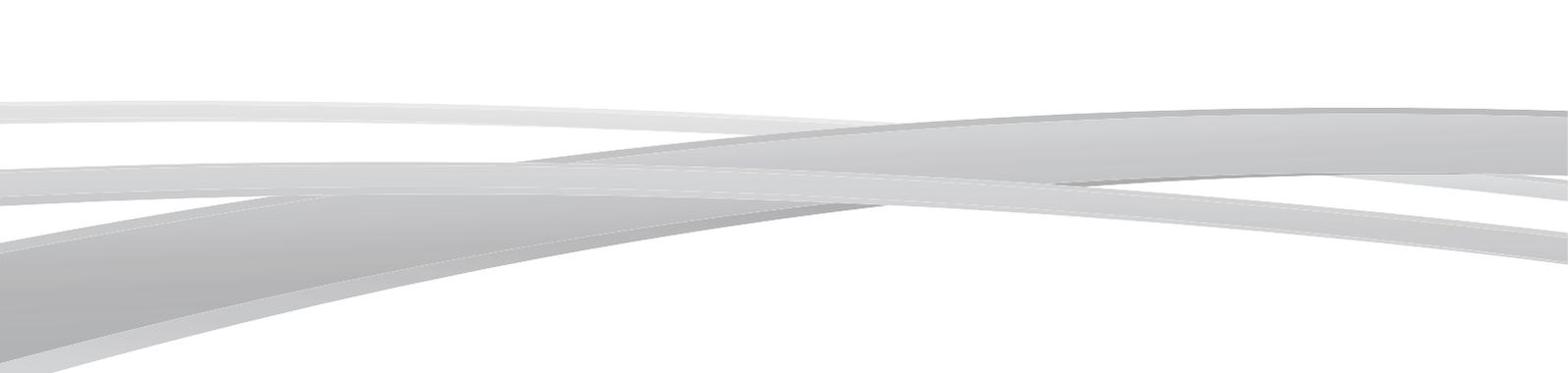
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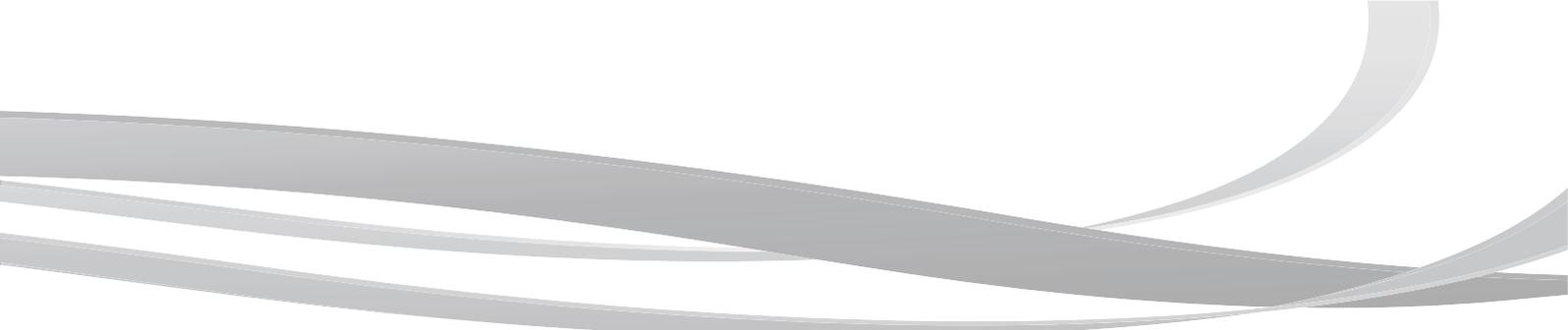
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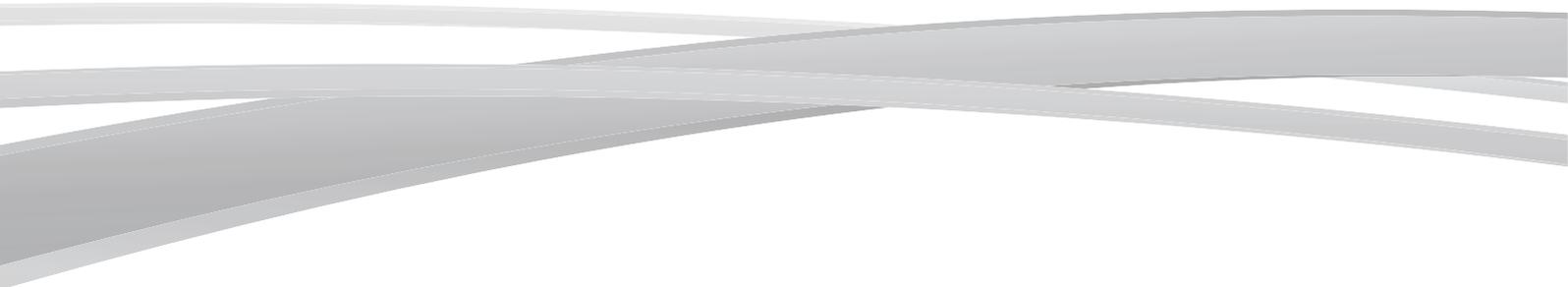
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www.health.gov.au

All information in this publication is correct as of September 2010

COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-51

This is the Annexure marked "DD-51" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

Guidelines for determining benefits for private health insurance purposes for private mental health care

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Guidelines for Determining Benefits for Private Health Insurance Purposes for Private Mental Health Care

2015 Edition

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Introduction

The private sector provides a range of mental health services that are delivered by a variety of service providers and across a number of service settings including community, office and hospital-based. Payment for private mental health services and treatments is made through a variety of mechanisms including the Medicare Benefits Schedule (MBS), the Pharmaceutical Benefits Scheme, private health insurance arrangements, individuals who fund their own care, and third party payers, including the Australian Government Department of Veterans' Affairs and compensation insurers.

Services provided by psychiatrists, GPs, psychologists, nurses, occupational therapists and social workers in private practice may attract Medicare benefits. Private health insurers may also pay benefits for a range of ancillary services. Overnight, admitted day only, outreach, outpatient and community patient services, provided by private hospitals, may attract benefits paid by private health insurers and third party payers, whilst the private medical practitioner component of services delivered while a patient receives hospital-based care and services, may continue to attract benefits through the MBS. Private health insurers also provide medical benefits for inpatient care.

These Guidelines have been endorsed by the Private Mental Health Alliance (PMHA)¹ and were developed by the PMHA's Collaborative Care Models Working Group.² They include advice that is applicable to private hospital-based psychiatric services and in some instances to those services that substitute for traditional admitted patient treatment. The Guidelines should be read in conjunction with the National Standards for Mental Health Services and the Australian Commission on Safety and Quality in Healthcare National Safety and Quality Health Service Standards.

The Guidelines cannot be prescriptive and, at present, are primarily intended to provide guidance for hospitals and private health insurers in determining health insurance benefits for private patient hospital-based mental health care. This includes same-day, half-day, overnight and services that substitute for traditional admitted patient treatment, as well as community and outpatient services, where applicable. The Guidelines may also be of assistance to State/Territory health authorities and their public hospitals in the treatment of Medicare and privately insured patients and to office-based practitioners.

1 The PMHA is a national industry alliance that resulted from the 2007 restructure of its antecedent the Strategic Planning Group for Private Psychiatric Services (SP3PPS). This industry alliance has been operating since 1996 to address issues related to funding classification, quality of care, outcome measurement, consumer and carer participation and related topics as they affect the private mental health sector. PMHA is currently comprised of representatives of the Australian Medical Association, Private Healthcare Australia, Australian Private Hospitals Association, the Private Mental Health Consumer Carer Network (Australia), and the Australian Government Department of Health and the Department of Veterans' Affairs.

2 Since the 2007 restructure, the PMHA has been further expanded to include a Collaborative Care Models Working Group. In addition to the organisations participating on PMHA, the CCMWG includes representatives from The Royal Australian and New Zealand College of Psychiatrists, the Royal Australian College of General Practitioners, the Australian College of Mental Health Nurses, the Australian Psychological Society, the Australian Association of Social Workers, and Occupational Therapy Australia.

Principles

The following key principles underpin these Guidelines.

- 1.1. Private patients have a right to high quality private mental health services focused on symptomatic and functional recovery.
- 1.2. Private patients have the right to the Doctor of their choice.
- 1.3. Health Insurance benefits and funding models will support the provision of high quality, evidence-based care.
- 1.4. It is a shared responsibility of funders, providers and treating doctors to assist consumers and carers in establishing the extent of the consumer's private health insurance cover and potential out-of-pocket expenses.
- 1.5. Consumer, carer and family participation will be included in all aspects of private mental health service provision, with the specific permission of the consumer.
- 1.6. Consideration must be given to the most appropriate, evidence-based³ and cost-effective recovery oriented treatment options delivered in the most appropriate environment.
- 1.7. The Guidelines support private mental health care services being delivered in accordance with a continuum of care and encourage hospitals and appropriately qualified practitioners to provide care in this manner.
- 1.8. Private health insurers, hospitals and mental health professionals should be strongly encouraged to co design funding models in support of the continuum of care.
- 1.9. Private mental health services should comply with the following, where applicable.
 - National Health Act 1953
 - Health Insurance Act 1973
 - Private Health Insurance Act 2007
 - Disability Discrimination Act 1992
 - Australian Government Privacy Act 1998
 - Private Health Insurance (Accreditation) Rules 2008
 - National Mental Health Policy and Plan
 - National Standards for Mental Health Services (NSMHS)

³ While it is acknowledged that evidence-based practice can be applied in the majority of cases, there will be situations where evidence-based practice cannot be applied, due to the complexity of some psychiatric problems and the nature of some forms of psychotherapeutic treatment.

- A model for data collection and analysis that enables the monitoring and evaluation of improvement in the quality of services, in accordance with the NSMHS. It is strongly recommended that such data be analysed and used within a collaborative framework that enables benchmarking with best practice.⁴
 - National Health Data Dictionary
 - National Practice Standards for the Mental Health Workforce
 - Australian Commission on Safety and Quality in Healthcare (ACSQHC) National Safety and Quality Health Service Standards
 - PMHA Principles for Collaboration, Communication and Cooperation between Private Mental Health Service Providers
 - Relevant State and Territory Mental Health Acts
 - State and Territory Private Hospital and Day Hospital Facility Licensing Acts
 - Guidelines for Approved Outreach Service under the Health Legislation Amendment Act (No 1) 2001
 - RACGP Standards for general practices
- 1.10 Hospitals, private health insurers and appropriately qualified practitioners are encouraged to develop the appropriate expertise to implement these Guidelines to achieve cost effective high quality, consumer and service outcomes, in accordance with best practice.
- 1.11 Applications for funding of private hospital-based mental health services must demonstrate there is a need for such services. Decisions regarding approval and level of funding remain a matter for negotiation between hospitals and private health insurers, and the Australian Government through its regulatory function.
- 1.12 Private hospital-based mental health services should actively engage in recognised quality assurance processes, including review of services against the National Standards for Mental Health Services, by an independent accreditation agency and implementation of quality assurance plans arising from such external review.
- 1.13 University affiliation and collaboration are encouraged in relation to research, education and training.

Service Provision

People with a mental illness or mental disorder, require access to a comprehensive range of services, with an emphasis on coordination, integration and individualised care. Mental health services should be funded and delivered according to a continuum of care model and a range of specialist treatment and support services should be available.

⁴ National Model for the Collection and Analysis of a Minimum Data Set with Outcome Measures for Private Hospital-based Psychiatric Services.

Such services may include the following.

- Early intervention.
- Crisis assessment.
- Domiciliary/community care
- Outpatient services
- Day, half-day, partial-day and evening services
- Hospital programs
- Admitted overnight services
- Maintenance and supportive care
- Patient and carer education
- Discharge planning and preventative care
- Leave as part of the process for preparing for discharge
- Self-management and recovery focussed treatment
- Hospital treatment services provided outside the hospital setting

Funding for some of these services will be provided by private health insurers, while other services will be funded through the Medicare Benefits Schedule, the Pharmaceutical Benefits Scheme, the Australian Government, State and Territory and Local Governments, third party funders, and by the patients themselves.

Private Hospital-based Services

Section 121.5 of the *Private Health Insurance Act 2007* (Act), which commenced on 1 April 2007, describes the meaning of *hospital treatment* as follows.

- (1) *Hospital treatment* is treatment (including the provision of goods and services) that:
- (a) is intended to manage a disease, injury or condition; and
 - (b) is provided to a person:
 - (i) by a person who is authorised by a hospital to provide the treatment; or
 - (ii) under the management or control of such a person; and
 - (c) either:
 - (i) is provided at a hospital; or
 - (ii) is provided, or arranged, with the direct involvement of a hospital.

The Act also provides a platform for private health insurers to cover a wide range of services provided outside the hospital including hospital-substitute treatment, and programs that help their members better manage their health, such as chronic disease management programs.

Under the Act, services are classified as either *hospital treatment* or *general treatment*.

Hospital treatment is defined under Section 121-5 of the Act as treatment that is intended to manage a disease, injury or condition that is provided to an insured person by a hospital, or arranged with the direct involvement of a hospital.

General treatment is defined under Section 121–10 of the Act as treatment that is intended to manage or prevent a disease, injury or condition, and is not *hospital treatment*.

Hospital–substitute treatment is a subset of *general treatment* and is defined under Section 69–10 of the Act. It is treatment provided by a provider that is not a declared hospital, but which substitutes for an episode of hospital treatment, i.e. it is the same treatment that is usually provided by a hospital. It is not mandatory for private health insurers to cover *Hospital–substitute treatment*. It is up to private health insurers to decide the services they pay benefits for and to determine that the services provide value for money in terms of cost outlays and health outcomes for their members. Providers that wish to provide services outside of hospital must contact private health insurers and establish an agreement before health insurance benefits can be paid.

1. Care delivery

It is strongly recommended that hospitals, where applicable to privately insured patients, meet the principles for guiding the delivery of care as recommended by the National Standards for Mental Health Services.⁵ This should include the following.

- Choice and access to a range of treatment options in consultation with the patient and, where nominated and clinically appropriate, their family or carer(s).
- Reference to the patient’s social, cultural and developmental context.
- Continuous and coordinated care delivered via a range of services across a variety of care settings.
- Comprehensive individualised care, access to treatment and support services able to meet specific needs during the various stages of the individual’s illness.
- Treatment in the most facilitative environment appropriate for the individual patient.
- Care provided must also be documented in an individual care plan and be transparent based on, for example, the use of Clinical Care Pathways, Clinical Practice Guidelines,⁶ and Clinical Notes.
- Priority must be given to the most appropriate evidence based, recovery oriented, and cost–effective treatment options for each individual patient. While it is acknowledged that Evidence–based practice can be applied in the majority of cases, there will be situations where evidence does not exist for the level of complexity of some psychiatric problems and the nature of some forms of psychotherapeutic treatment.

⁵ PMHA has endorsed the National Standards for Mental Health Services, where applicable, for implementation in private sector mental health services.

⁶ Clinical Practice Guidelines (or CPGs) are systematically developed statements intended to assist practitioners in making decisions about appropriate health care for specific clinical circumstances. Their main purpose is to improve health outcomes for patients by improving the practice of clinicians. As they become available, CPGs for psychiatric disorders are placed on the internet at <http://www.ranzcp.org>.

2. Choice of setting

The following factors need to be considered when selecting the most appropriate setting for care delivery.

- Patient acuity, level of distress and disability.
- Level of social support in the home.
- Geographical considerations.

3. Patient acuity, level of distress and disability

Patients should have:

- a diagnosed psychiatric illness classified by either ICD-10-AM or DSM-5 and have a level of distress and/or disability that demonstrably impacts on their ability to function in day-to-day living and their relationships with others; and
- require specialised intervention, treatment or support in an appropriate care setting or range of settings, with an expected measurable outcome.

It is acknowledged that early intervention for people with a mental illness, or mental disorder, is particularly important in minimising the impact of first episodes, the incidence of relapse, maximising recovery and reducing the length of hospital stay.

Direct admission to an appropriate same-day program (half or full-day), or attendances at outpatient services, where available, should be considered as an alternative to admitted overnight patient services.

3.1 Admitted overnight services

After mental health assessment by the treating psychiatrist, level of distress and/or disability is assessed as acute, severe, or serious as evidenced by but not confined to, the following.

- High risk of harm to self, or others.
- Incapacitating symptoms or distress. This may be evidenced by a highly disorganised state impacting on self-care and/or physical health, including inability to comply with treatment, resulting in a need for 24 hour care.
- The need to establish the nature of a disorder, initiate and/or stabilise complex treatment modalities, such as pharmacotherapy and Electroconvulsive Therapy (ECT).
- Significant problems in initiating treatment, or continuing treatment, in another setting. As patient acuity, dysfunction and available support change the patient should, as soon as possible, be relocated to an appropriate level in the continuum of care, in consultation with the patient and, where nominated and clinically appropriate, his or her family/carer.

Admitted overnight length-of-stay should be determined by the patient's treating psychiatrist in accordance with individual patient clinical need, and clinical best practice⁷, not by length of program.

3.2 Admitted same-day patient services

Admitted same-day services should be the setting of choice for early intervention and when the patient exhibits a level of acuity, distress, or disability that is assessed as:

- manageable risk of harm to self, or others; and
- lower indicators of severity and complexity than those necessitating admitted overnight stay; and
- able to comply with treatment and self-care; or
- able to cope with their usual environment.

As patient acuity, level of functioning and disability and available supports change, the patient should, as soon as possible, be relocated to an appropriate level in the continuum of care, in consultation with the patient and, where nominated and clinically appropriate, their family/carer(s) and with consideration of funding options.

All occasions of service must be determined on an individual basis. This may include participation in a structured program of defined interventions and duration, where it is indicated by Best Practice.

Admitted same-day services should only be provided when that treatment environment is the best for the individual patient.

3.3 Community, hospital-in-the-home, and outreach type services

Community, hospital-in-the-home and outreach type services that are provided by private hospitals should meet all applicable guidelines and be delivered by appropriately trained and qualified health professionals. Patients can receive such services as a direct substitution for admitted overnight, or admitted same-day care. It is expected that psychiatrists and hospitals will regularly communicate with each other to reassess the appropriateness of this level of care for the patient.

4. Treatment and care options

Treatment and care options should comply with any relevant clinical guidelines regarding treatment of any specific disorders (see Footnote 6).

At all times, in the selection of treatment options, the focus needs to be on individual needs and restoration or stabilisation of function, taking into account environmental factors for the patient, patient preferences and the patient's support systems.

⁷ Clinical best practice is defined in this context as those clinical interventions that have been judged to be most effective at delivering a particular clinical outcome, such as the RANZCP Clinical Practice Guidelines.

Phases of treatment include pre-admission assessment, admission, immediate assessment and intervention, continued diagnostic evaluation and refinement of treatment, clarification of treatment goals and discharge criteria, progress towards and achievement of goals, discharge, and transition to appropriate aftercare or follow up.

A full continuum of care ranges from intensive/high dependency admitted overnight treatment to day hospital, outpatient, rehabilitation, office-based, and community care.

It is expected that program modules designed to develop/increase skill levels to prevent or minimise relapses will be primarily conducted on a same-day, outpatient, half or full-day basis, where possible and clinically appropriate.

Admission, treatment and care must be under the supervision of the attending psychiatrist irrespective of care setting. Treatment and care options based on biopsychosocial principles, should be negotiated with the patient and, where nominated and clinically appropriate, their family/carer(s). It is acknowledged that there will be two possible scenarios:

1. the patient is able to make an informed decision regarding the involvement of their family/carer(s) in their treatment and care options;
- or
2. the patient is unable to make an informed decision concerning the involvement of their family/carer(s).

In the second situation, the attending psychiatrist is responsible for determining the level of involvement of family/carer(s) in the consideration of treatment and care options.

A care plan should be developed as part of the assessment process and documented prior to commencement of specialist treatment. Regular reviews of the care plan should occur at intervals appropriate to the care setting and include those members of the multidisciplinary team involved in the treatment. Care plans and reviews must always reflect the needs of the patient and include those members of the multi-disciplinary team and appropriate and relevant families/carers.

The care plan should:

- document chosen treatment and care options;
- take into account transitions in levels of care;
- include discharge planning;
- clearly state goals and outcomes, including detailed functional improvement or decline and an estimate of length/duration of treatment(s);
- be developed collaboratively and regularly reviewed with the patient, and with the patient's informed consent, their carers, and be available to them.

Care and treatment options should be selected from Evidence-based treatment choices, within a recovery oriented framework such as the following.

- Individual, group, family and other psychotherapies.
- Psychopharmacotherapy.
- Electroconvulsive Therapy (in accordance with guidelines of the RANZCP and the Australian and New Zealand College of Anaesthetists).⁸
- Specific post-natal mental health services where babies should usually accompany their mother during her admission.⁹
- Other Evidence-based treatment modalities.
- Specific rehabilitation and education services to facilitate return of function.
- Outreach services to facilitate return of function, maintain function or prevent relapse.
- Education, promotion, prevention and support services.
- Drug and alcohol program following assessment (and treatment if necessary) by a psychiatrist.

5. Quality standards

Hospitals should implement appropriate quality improvement processes taking account of relevant sections of the *National Safety and Quality Health Service (NSQHS) Standards*, the *National Standards for Mental Health Services* and the *National Practice Standards for the Mental Health Workforce* including but not limited to, the following.

- Recognised by the Australian Government Department of Health for private health insurance purposes.
- Licensed by a State/Territory as a Private Psychiatric Facility.
- Accreditation by an industry recognised body.
- Demonstrated quality improvement activities.
- Ongoing collection and benchmarking of industry agreed and validated outcome measures, both patient and clinician rated.

8 The Royal Australian and New Zealand College of Psychiatrists, *Guidelines on the Administration of Electroconvulsive Therapy (ECT)*, can be obtained from their website at: <http://www.ranzcp.org/resources/clinical-memoranda.html>. The Australian and New Zealand College of Anaesthetists, *T1 Recommendations of Minimum Facilities for Safe Administration of Anaesthesia in Operating Suites and Other Anaesthetising Locations – Interim Review 2008*, are available from their website at: <http://www.anzca.edu.au/resources/professional-documents/pdf/T1.pdf>

9 Royal Australian and New Zealand College of Psychiatrists *Position Statement #57 – Mothers, Babies and Psychiatric Inpatient Treatment*.

- Data collected are stored and reported in a manner, which ensures confidentiality and complies with relevant legislation and the *National Model for the Collection and Analysis of a Minimum Data Set with Outcome Measures for Private, Hospital-based Psychiatric Services*.
- Mechanism for clinical case review of patients.
- Ongoing peer review and/or clinical supervision as appropriate for all health professionals involved in patient care.
- Quality initiatives ratified from time-to-time by the PMHA

6. Staffing

All treatment, irrespective of care setting, is to be provided by appropriately trained and qualified health professionals who are registered, where registration is required, or otherwise members of their relevant professional bodies, with substantiated and relevant clinical experience in the forms of treatment, therapy and care they provide. These may include the following.

- *General Practitioners (GPs) and GP Registrars*, registered with Australian Health Practitioner Regulation Agency (AHPRA).
- *Psychiatrists and Psychiatric Registrars* registered with AHPRA
- *Psychologists* registered with AHPRA, including those endorsed to practice as a Clinical Psychologist.
- *Registered and Enrolled Nurses and Nurse Practitioners* registered with AHPRA.
- Mental Health Nurses credentialed by the Australian College of Mental Health Nurses (ACMHN).
- *Occupational Therapists* registered with AHPRA
- *Accredited Mental Health Social Workers* accredited with the Australian Association of Social Workers (AASW).

It is acknowledged that the medical practitioner component (for example Psychiatrist, General Practitioner, Anaesthetist, Physician) of private hospital-based treatment is provided by a private medical practitioner operating under the MBS.

6.1 Staffing levels

Each mental health unit/service will be staffed according to occupancy rates, the current severity of illness experienced by patients, special individual needs and age-specific needs and vulnerabilities.

Appropriately trained Mental Health Professionals will make up the majority (minimum 60%) of the staffing numbers.

Hours per patient day will be an average of 4 hours, with the aim of achieving 4.2 hours, per patient day over 7 days.

Therapy services provided by Mental Health Professionals should be available seven days a week for Admitted Overnight patients.

Twenty four hour cover for Admitted Overnight patients, through a roster for Consultant Psychiatrists, or hospital registrars/medical officers or both, are encouraged.

6.2 Professional Development

There must be a continuing education and development program for staff, which takes cognisance of the *National Standards for Mental Health Services* and *National Practice Standards for the Mental Health Workforce*. It is recognised that private hospitals provide training and clinical placements for a range of students including Nurses, Allied Health and Medical.

All clinical staff must be credentialed by the service and participate in regular peer evaluations and reviews. Clinical case assessments must be performed where appropriate and documented. Clinical supervision of all nursing and allied health professional staff must be undertaken on a regular basis.

All staff must be aware of, and comply with, the obligations specified under the Privacy Act 1998 (as amended).

6.3 Admitted Overnight Patient Services

Admitted Overnight Patient Services must be delivered by appropriately trained and qualified health professionals. Patients should have a structured therapeutic plan that is tailored to meet their individual and group therapy requirements.

6.4 Admitted Same-day Patient Services

Services must be delivered by appropriately trained and qualified health professionals for specific contact hours. Contact hours include:

- Participation in specialised group therapy programs that have clearly defined clinical outcome goals.
- One-to-one counselling/therapy sessions.

Contact hours should not include time allocated for meal and tea breaks, unless they are part of an eating disorders program.

Same-day Programs – full-day

A minimum number of four and a half hours of structured therapeutic contact hours per day, except where agreement has been reached for alternative arrangements.

Same-day Programs – half-day

A minimum number of two and a half hours of structured therapeutic contact per day, except where agreement has been reached for alternative arrangements.

7. Facilities

Facilities must be licensed by the relevant State/Territory health authority or approved as equivalent by the Australian Government Department of Health. Licensing arrangements vary significantly from one jurisdiction to another. The following minimum requirements are strongly recommended.

7.1 Hospitals

A hospital building or unit designed and built specifically for the purpose of providing psychiatric care, or another type of hospital building which has been converted or modified to specifically provide psychiatric care and incorporates the following.

Therapy rooms There should be sufficient purpose designed rooms to cater for the needs of all admitted overnight and same-day patients.

Therapy Group Size The **maximum** size of groups should not exceed 12 participants, unless additional facilitators are involved.

Lounge/recreation rooms Properly furnished rooms and/or areas should be set aside for admitted overnight patients and same-day patient's relaxation. Access to a safe outside leisure area. Private areas should also be set aside for admitted overnight patients to meet with relatives and friends.

Interview rooms There should be an adequate number of rooms provided for use by clinicians to interview/consult with patients on a confidential basis.

Dining rooms Fully equipped dining rooms should be provided adequate to meet the needs of the total service including admitted overnight patients and same-day patients, day patients and staff.

Electroconvulsive Therapy (ECT) If ECT is administered, separate preoperative, procedure, and post-operative rooms must be available. Hospitals must comply with State and Territory licensing requirements for ECT, where they exist, the guidelines for ECT of the Royal Australian and New Zealand College of Psychiatrists, and those of the Australian and New Zealand College of Anaesthetists (see Footnote 9).

Facilities for specialist programs Hospitals providing specialist programs, e.g. High Dependency Units, Parent/Infant Units, Alcohol Detoxification Programs must be able to demonstrate the existence of appropriate facilities and equipment. In some cases this may require the designation of specific special purpose areas within the hospital.

Wards Wards should be comfortable with adequate bathroom facilities and, in shared wards, must include screens or curtains to ensure individual privacy for each patient. Each facility should have an appropriate number of single bed wards designed and

positioned to permit observation and monitoring of progress of high risk patients.

Smoking areas Where permitted, dedicated smoking areas for patients should be functional but discourage lengthy personal interactions or individual isolation. Nicotine Replacement Therapy should be routinely offered to all patients who smoke and dedicated program/s should promote withdrawal, assist abstinence and encourage alternatives within the context of the management of their mental illness.

Alternatives to In Hospital Treatment

Under Australian legislation, contractual arrangements can be established in the private sector between providers and private health insurers for the provision of service models that substitute for traditional admitted patient treatment, overnight and day only hospital-based care (*hereafter* traditional admitted patient treatment).

These transitional models constitute a form of substitute service delivery that can improve the quality of health outcomes for some people living with a mental illness in the community. Such acute care services aim to reduce the severity of illness over time, reduce hospital admissions, re-admissions and the length of hospital stay. They include, but are not limited to such models as Hospital-in-the-Home (HITH), Outreach, and Hospital-substitute type services. These services are time limited and focus on integrating the patient back into the community with the relevant community-based supports. They are not a substitute for community-based care and care should be taken to make sure the patient does not become inappropriately dependent on these, particularly when socially isolated.

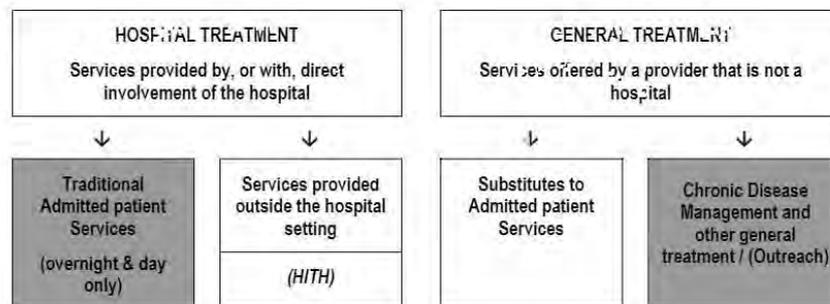
To facilitate the delivery of such services, a central lead agency that is responsible and accountable for the services provided is required. Within the private sector, the lead agency is more likely to be a private hospital. There is, however, sufficient flexibility under the legislation to enable providers that are not hospitals to undertake the provision of such services.

This section of the Guidelines is intended to assist providers, payers, consumers and carers, better understand the nature of these services and the terminology involved.

1. Legislation

As detailed earlier in these Guidelines, the *Private Health Insurance Act 2007* (the Act) is intended to provide a platform for private health insurers to provide benefits for a wide range of services and programs including those that can be substituted for traditional admitted patient treatment, and those that can help their members better manage their health, such as chronic disease management programs.

Figure 1: Comparison of Models under Hospital Treatment and General Treatment



1.1 Hospital Treatment

Under current legislation, *hospital treatment* is defined under Section 121–5 of the Act as treatment that is intended to manage a disease, injury or condition that can be provided to an insured person by a hospital, or arranged with the direct involvement of a hospital.

Two distinct models of service provision can be provided under *hospital treatment*.

- (1) Traditional overnight and day only admitted patient treatment that is conducted to achieve a continuum of care for the patient *within* the hospital setting.

Private health insurers for the purpose of paying benefits **may** consider the patient to be admitted.

- (2) Substitution of traditional admitted patient treatment with an alternative service model able to achieve a continuum of care for the patient *outside* the hospital setting.

These services are usually delivered to the patient at their home or in another appropriate setting. While a range of terms exist for these alternative models, such as HITH, the hospital is the lead agency that is both responsible and accountable for the provision of the services.

These services are usually provided by hospital-based personnel, or by personnel subcontracted by the hospital. The services include clinical assessment, monitoring, support and interventions to assist to maximise recovery and prevent relapse.

Under this model, while the hospital does not consider the patient to be an in-patient of the hospital, they are considered to be an admitted patient. This ensures continuity of care and enables the hospital to meet its clinical responsibilities and legal obligations to the patient.

Private health insurers, for the purpose of paying benefits, **may** consider the patient to be admitted.

1.2 General Treatment

General treatment is defined under Section 121–10 of the Act as treatment that is intended to manage or prevent a disease, injury or condition, and is not hospital treatment. However, while the service provider is **not** a hospital, a subset of the Act (Section 69–10), does facilitate the provision of what is described formally in the Act as *hospital-substitute treatment*. *Hospital-substitute treatment* can be offered by a provider or agency that is not a declared hospital in substitution for an episode of hospital treatment. In other words, it is intended to give providers and private health insurers the flexibility to provide the same treatment that would normally be provided by a hospital without the direct involvement of a hospital.

Under *hospital–substitute treatment*, the provider(s) would be considered both responsible and accountable for the provision of the services, but the patient is not considered to be admitted in the hospital. *Hospital–substitute treatment* may be undertaken by the provider, or by personnel subcontracted by the provider.

These services include clinical assessment, monitoring, support and interventions to assist to maximise recovery and prevent relapse. Under this model, the provider would be responsible for ensuring there is continuity of care and that the relevant clinical responsibilities and legal obligations to the patient and their health records are met.

2 Funding

It is not mandatory for private health insurers to cover these services. It is up to private health insurers to decide the services they pay benefits for and to determine that the services provide value for money in terms of cost outlays and health outcomes for their members. Providers that wish to provide services that substitute for traditional admitted patient treatment must contact private health insurers and establish an agreement before health insurance benefits can be paid. There may be agreement for a variety of different funding models to be used in these circumstances within the overall funding of the service. Insurers, for example, may consider alternative funding arrangements, such as providing benefits for a finite number of visits or alternatively having a step down arrangement for such services.

Under *hospital–substitute treatment*, services that substitute for traditional admitted patient treatment are able to be covered by the MBS. A private health insurance member may also be entitled to receive higher than 100% of the MBS fee under their membership, depending on what medical no gap arrangement they have with their insurer. The MBS is able to cover up to 75% of the MBS fee and health insurers cover the remaining gap of 25%. However, insured persons receiving hospital substitute treatment may instead elect to be billed the 35% MBS fee, and cover any gap.

3. Approaches to service delivery

Services that substitute for the traditional admitted patient treatment will vary in how they are structured and operate. They are not a substitute for community–based care.

It is critically important that substitute services for people with a mental illness are able to provide continuity of care and clear lines of communication so that multiple sources of possibly differing treatment and advice are avoided.

Cooperation with other treatment services and providers is also critical to ensure a person with a mental illness receives not only an appropriate mix of services, but is also able to transition appropriately between other services including inpatient, day only, outpatient and substitute treatment services, without unnecessary overlap or duplication. This will require appropriate linkages to be established with a variety of public sector and Non Government Organisations.

It may also require agreement between providers and the person receiving treatment about the use and sharing of their health record.

Substitute services include clinical assessment, monitoring, support and interventions to assist to maximise recovery and prevent relapse. The service is then delivered on a face-to-face basis either at the patient's home, or in another appropriate setting. Such services should be directed toward integrating the patient back into the community with the relevant community-based supports. Visits should involve face-to-face contact with an appropriately trained mental health professional and be of a clinically appropriate duration. Each visit should be recorded in the medical record. These services should generally not be conducted whilst a patient is participating in a day only program, unless under short-term exceptional circumstances.

4. Quality and Standards

Services that substitute for traditional admitted patient treatment should comply with the National Standards for Mental Health Services and the ACSQHC National Safety and Quality Health Service Standards, particularly in relation to person centred care in relation to the following.

- Services are evidence-based and directed at supporting recovery.
- Consultation with the patient and family/carer, where nominated by the patient, regarding choice of access to support and treatment services.
- Provision of services in a manner that respects social and cultural values, beliefs and practices.
- Provision of co-ordinated care across a range of settings and service providers, as appropriate.
- Provision of individualised care to meet specific needs during various stages of the patient's illness.

They should aim to meet the principles guiding care delivery recommended by the National Practice Standards for Mental Health Workforce and other relevant professional standards.

Services should collect and benchmark against agreed and validated outcome measures, both patient and clinician rated. Data collected should be stored and reported in a manner, which ensures confidentiality and complies with relevant legislation and the *National Model for the Collection and Analysis of a Minimum Data Set with Outcome Measures for Private, Hospital-based Psychiatric Services*.

Consumer feedback should be sought regarding the quality of service provision.

Substitute services should also comply with any local requirements of the lead agency providing the service and any relevant Commonwealth, State or Territory legislation.

5. Entry and Duty of Care

Patients who are assessed as appropriate for referral to a private hospital for services that substitute for the traditional admitted patient treatment following an inpatient stay should be under the care of private psychiatrist who is accredited to practice at that hospital. The treating psychiatrist should then be responsible for prescribing and reviewing the substitute treatment service.

The hospital is responsible for providing the range of services including assessment, monitoring, support, risk assessment and information on sources of emergency support, after hours support and integration back to living as independently as possible in the community. Throughout each episode of care, patients are considered to be concurrently patients of the hospital and of the treating psychiatrist.

When patients are being supported by services external to the hospital, the duty of care for those services lies with the treating psychiatrist and the external service provider.

A tracking system should be maintained that ensures all patients referred to a substitute service are followed up within 5 working days of referral.

6. Care Plan

A written Care Plan outlines the goals and strategies for management, support, and rehabilitation for the patient's particular identified mental health problem.

Following the initial assessment and referral to a substitute service, a care plan should be completed in collaboration with the patient and members of the treating team, and where nominated and clinically appropriate, the carer(s). The treating team is usually comprised of the treating psychiatrist and other clinical, medical or allied health personnel involved in the patient's regular mental health care. The multi-disciplinary nature of the team ensures the staff delivering the substitute service, have access to a range of personnel with expertise in a variety of areas. In addition, the patient's carer(s) should be consulted, where nominated, as should personnel from other support agencies to ensure information sharing, continuity of care, and transfer of care, when and if applicable. Discharge planning should be undertaken as part of the assessment and admission process and should form part of the care plan.

Services that substitute for traditional admitted patient treatment should be part of a patient's overall Care Plan. Substitute services should receive a copy of the Care Plan, which should include documentation of the following.

- Chosen treatment and care options.
- Other services/providers the patient has attended, or is currently attending.
- Goals for initial referral to the substitute service.
- Results achieved to date.
- Number of any additional visits deemed appropriate.

- Strategies to be implemented.
- Evaluation of progress.
- What community support services have been initiated, where appropriate.
- Mechanism for review by the treating psychiatrist.
- Next review by the treating psychiatrist.
- Transitions in levels of care.
- Discharge planning.
- Functional improvement.
- Estimate of length/duration of treatment(s).
- Management of crisis intervention.

Care plans should be regularly reviewed with the patient at appropriate intervals [monthly]. The review should include those members of the treating team involved in providing the substitute treatment. A care plan tracking system should be used to assist all the members of the treating team to maintain consistency in the review process.

7. Review

It is critical that the review of the patient's progress is embedded in the cycle of the substitute treatment. This will involve both the usual ongoing review at each contact with the patient and more formal regular reviews by treating team, including the psychiatrist. The care plan should be adjusted accordingly.

All members of the treating team should have an opportunity to contribute to the review and the development of the subsequent plan. Where required, the patient and their nominated carer(s) should be consulted, as should personnel from other support agencies.

The methods of review for services that substitute for traditional admitted patient treatment should be similar to those that are available to in-patients and should be geared toward addressing whether this level of care, or type of service, is still appropriate for the patient. Where this level of care is not appropriate, alternative forms of maintenance or chronic disease management should be considered. It is expected that psychiatrists and hospitals will regularly communicate with each other to reassess the appropriateness of this level of care for the patient.

8. Discharge

A patient should not be discharged from a substitute type service until alternative external support services have been put in place as required and the discharge has been approved by the treating psychiatrist.

Discharge planning is undertaken from initial contact with the development of the care plan with any specific discharge policies and procedural processes detailed therein.

While specific discharge policies and procedural processes will differ from service provider to service provider they commonly include documentation of at least the following.

- Follow-up and support arrangements including referrals to other services.
- Notification of the treating psychiatrist of discharge arrangements.
- Contact procedure to be followed if the patient fails to attend a follow-up visit.
- Transition to another level of care, such as admission to traditional admitted patient treatment, should be considered as a separate episode of care.

9. Governance

Substitute services governed by a hospital must comply with the relevant by-laws of that facility.

Services should have an integrated risk management framework in place and a formal quality assurance process.

Policies should be in place to ensure the safety of patients and staff, and to support them during and post, critical incidents.

10. Staffing

Mental Health Professionals providing the service should be experienced and competent to practice within their scope of practice. Targeted recruitment should be undertaken to ensure the service is able to maintain high quality delivery of care to mental health patients and their families outside of the hospital setting.

There should be mandatory training and education to ensure staff are familiar with evidence-based care and contemporary evidence-based practices.

Guidelines Review

These Guidelines shall be reviewed on a biennial basis by the PMHA in consultation with the following organisations.

- Private Healthcare Australia
- Australian Private Hospitals Association Australian
- Australian Medical Association
- The Royal Australian and New Zealand College of Psychiatrists
- The Royal Australian College of General Practitioners
- Australian College of Mental Health Nurses
- Australian Psychological Society
- Australian Association of Social Workers
- Occupational Therapy Australia
- Australian Government Department of Health
- Australian Government Department of Veterans' Affairs
- Private Mental Health Consumer Carer Network (Australia)

References

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2. Commonwealth of Australia. *National Standards for Mental Health Services 2010*. Canberra. Commonwealth of Australia, 2010.
3. Victorian Government. *National Practice Standard for Mental Health Workforce 2013*. Melbourne. State of Victoria, Department of Health 2013.
4. *The Health Insurance Act 1973* (Cwlth)
5. *Private Health Insurance Act 2007* (Cwlth)
6. *Private Health Insurance (Health Insurance Business) Rules 2013* (Cwlth)
7. *Private Health Insurance (Accreditation) Rules 2011* (Cwlth)
8. *Health Practitioner Regulation National Law Act*, as in force in each Australian state and territory.

COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-52

This is the Annexure marked "DD-52" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

Predictors of Intensive Care Unit Admission After Total Joint Arthroplasty

Hossam AbdelSalam, MD, Camilo Restrepo, MD, T. David Tarity, MD,
William Sangster, BS, and Javad Parvizi, MD, FRCS

Abstract: Total joint arthroplasty (TJA) is a relatively safe orthopedic procedure. However, complications do occur, and some may necessitate admission to the intensive care unit (ICU). Our purpose was to determine risk factors associated with admittance to ICU after TJA. We evaluated 22 343 primary and revision total hip and knee arthroplasties from 1999 to 2008. One hundred thirty patients were admitted to the ICU. Cases were matched 1:2 for date of surgery, surgeon, and type of surgery. The causes for admission to ICU were recorded. Independent risk factors for ICU admission were smoking, cemented arthroplasty, general anesthesia, allogenic transfusion, higher C-reactive protein, lower hemoglobin level, higher body mass index, and older age. Proper identification and management of these “at-risk” patients may decrease the incidence of ICU admittance after TJA. **Keywords:** total joint arthroplasty, intensive care unit, smoking, cemented arthroplasty, general anesthesia.

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Although total joint arthroplasty (TJA) is a very safe and well-tolerated surgery for most patients, it is not without minor and major complications [1-3]. The literature is replete with well-documented incidence reports of minor complications such as superficial wound infection, skin numbness, wound drainage, atelectasis, urinary tract infection, and anemia [2,4-8]. These complications, when present, are commonly managed by the treating orthopedic surgeon or comanaged with medical teams [9].

However, the more serious major surgical complications, reported by some to be as high as 6.3% [2], may depend on the operative site, primary or revision arthroplasty, and whether cement for prosthetic fixation is used [7,10,11]. These major surgical complications include cardiac arrest, tachyarrhythmia, myocardial infarction, congestive heart failure, hypotensive crisis, pulmonary embolism, pneumothorax, acute renal failure, cerebral vascular accidents and/or transient ischemic attack, and deep venous thrombosis [2,12,13].

The rates of both minor and major complications may not differ between academic and private practice services [14], but at least 1 study found that high-volume specialty orthopedic hospitals had less adverse outcomes such as sepsis, hemorrhage, pulmonary embolism, and deep venous thrombosis compared with general hospitals [15]. Furthermore, patient comorbidities such as hypertension, diabetes, obesity, and smoking typically reflected by a higher American Society of Anesthesiologists score [16] have been shown to increase complication rates after TJA [17-21]. Some of the patients with the aforementioned comorbidities and complications may require an unexpected admission to intensive care units (ICUs) after TJA for vigilant monitoring.

To our knowledge, there are few studies that describe the predisposing risk factors or predictors for ICU admission after TJA. Most of the literature focuses on 1 major complication after joint arthroplasty. Therefore, it may be worthwhile for the treating surgeon to highlight the major medical complications after joint arthroplasties, to know their incidences and try to reliably predict which patients have a greater likelihood of developing these complications, thus requiring ICU admission.

The objective of this study was to determine the incidence of and establish the risk factors for ICU admission after TJA. Our rationale for conduct of this study was that identification and reversal of predisposing factors for unexpected ICU admission, whenever possible, are likely to improve outcome after TJA. The study was conducted in a case-control fashion, with all patients evaluated from a single institution.

From the Rothman Institute of Orthopaedics at Thomas Jefferson University Hospital Philadelphia, Pennsylvania.

Submitted December 20, 2010; accepted September 28, 2011.

The Conflict of Interest statement associated with this article can be found at [doi:10.1016/j.arth.2011.09.027](https://doi.org/10.1016/j.arth.2011.09.027).

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Materials and Methods

With the use of our institutional electronic database and after institutional review board approval, a query from 22 343 TJA procedures performed from May 1999 to February 2008 was conducted. Of these, 130 patients (0.6%) developed a major complication and were subsequently admitted to the ICU during the same hospital stay. The records from our database in addition to the hard copy ICU charts of these patients were meticulously examined in a retrospective fashion. This cohort was matched according to date of surgery (± 4 weeks); surgeon; and procedure type, in a 1:2 ratio against 260 patients who did not develop postoperative complications necessitating admission to the ICU.

Demographics

Demographic variables including age; sex; body mass index (BMI); Charlson index for comorbidities [22]; and social history significant for alcohol, tobacco, or illicit drug abuse were evaluated for both groups (Table 1).

Table 1. Demographic Distribution, Preoperative Vital Signs and Laboratory Values, and Surgical Data

	Cases (n = 130)	Controls (n = 260)
Demographic distribution		
Age, (y) mean (SD)	72.8 (12.3)	66.1 (13.0)
Female	67 (51.5%)	173 (66.5%)
Male	63 (48.5%)	87 (33.5%)
BMI, mean (SD)	30.6 (8.8)	20.8 (6.8)
Charlson index, mean (SD)	3.9 (2.1)	2.7 (1.6)
Ever smoked	49 (37.7%)	14 (5.3%)
Preoperative vital signs and laboratory values		
Heart rate, mean (SD)	82.98 (15.81)	74.48 (10.72)
Systolic BP, mean (SD)	131.07 (24.37)	133.63 (18.39)
Diastolic BP, mean (SD)	70.16 (16.26)	75.90 (10.87)
Hemoglobin level, mean (SD)	11.64 (1.63)	13.11 (1.51)
Glucose, mean (SD)	120.56 (47.49)	107.54 (32.69)
ESR, mean (SD)	43.42 (30.36)	26.92 (12.45)
CRP, mean (SD)	4.24 (5.71)	1.98 (1.37)
Surgical data		
Hip vs knee	60 (46.2%)	120 (46.2%)
Revision	48 (36.9%)	46 (17.4%)
Bilateral	26 (20%)	38 (14.4%)
Cement	95 (73.1%)	189 (72.7%)
Primary knee	70 (73.7%)	140 (74.1%)
Revision knee	21 (22.1%)	40 (21.2%)
Revision hips	4 (4.2%)	9 (4.8%)
General anesthesia	34 (26.2%)	19 (7.2%)
Surgery duration, mean (SD)	109.20 (52.31)	68.74 (30.29)
EBL, (mL), mean (SD)	545.0 (926.2)	230.8 (292.1)
Total PAD units		
0	84 (64.6%)	114 (43.2%)
1	26 (20%)	103 (39%)
2	20 (15.4%)	45 (17.1%)
3	0	1 (0.4%)
4	0	1 (0.4%)
Total allogenic units, mean (SD)	4.92 (6.40)	0.78 (1.55)
Cell saver, mean (SD)	77.76 (167.49)	46.95 (135.05)

BP indicates blood pressure; ESR, erythrocyte sedimentation rate.

Preoperative Vital Signs and Laboratory Values

The preoperative vital signs, mean heart rate, mean systolic blood pressure, and mean diastolic pressure as well as hemoglobin level, glucose, erythrocyte sedimentation rate, and C-reactive protein (CRP) levels were reviewed for both groups, (Table 1).

Surgical Data

Surgical variables analyzed included location (hip or knee), primary or revision procedure, unilateral or bilateral procedures, the type of fixation (cemented vs cementless), the type of anesthesia, the duration of surgical procedure, estimated blood loss (EBL), preautologous donation (PAD) of blood, the number of autologous or allogenic blood transfused, and the use or not of cell saver (Table 1). All surgeries were performed using the same approach, direct lateral (Hardinge) approach for total hip arthroplasty (THA) and a midline incision and medial parapatellar arthrotomy approach for total knee arthroplasty (TKA). The average length of operation and estimated blood loss during the index surgery were 109 minutes and 545 mL, respectively, for the cases admitted to the ICU. Conversely, the length of operation and EBL for the control series were 69 minutes and 230 mL, respectively.

Statistical Analysis

All statistical analyses were performed using STATA 10.0 (College Station, TX). The variables from the 130 cases and 260 controls were intercorrelated with each other; therefore, study of each single parameter individually was not sufficient because of the paired nature of the data. Baseline and operative characteristics were compared between cases and controls using the *t* test for continuous variables and the Fisher exact test for categorical variables. The odds ratio with 95% confidence intervals and the associated *P* value were determined for each variable using a multivariable logistic regression analysis performed, which included variables found to be significant ($P < .05$) and not close to 1.00 in the preceding univariate analysis. Multivariate analyses can statistically accommodate imbalances between study groups in nonrandomized studies. All *P* values reported are 2 sided.

Results

Descriptive analysis for the variables mentioned in the "Materials and Methods" section demonstrated no statistically significant differences in the following: BMI, systolic blood pressure, arthroplasty location, unilateral vs bilateral procedures, and the use of cell saver. All other variables analyzed yielded statistically significant differences.

A multivariate analysis controlling for potential confounders was then performed. Variables included are depicted (Table 2). Body mass index was included in this analysis, as it had some statistical significance over

Table 2. Multivariate Controlling for Potential Confounders

	Odds Ratio	SE	z	P >|z|	(95% CI)	
Age *	1.085811	0.0522473	2.18	.029	1.010653	1.215732
Male	3.623346	3.093399	1.51	.132	.6798357	19.31148
Charlson index	0.7938284	0.2441919	-0.75	.453	0.4343961	1.450665
Ever smoked *	65.13127	77.56051	3.51	.000	6.311755	672.0924
Preoperative hemoglobin level *	0.6033949	0.1355704	-2.25	.025	0.3884671	0.9372362
Preoperative CRP *	1.767725	0.3350285	3.01	.003	1.219244	2.562943
Revision	0.7826181	0.9998799	-0.19	.848	0.0639804	9.573101
Cement *	55.74804	100.2756	2.24	.025	1.641152	1893.696
BMI *	1.100199	0.431867	2.43	.015	1.018729	1.188185
General anesthesia *	45.21955	85.6508	2.01	.044	1.104223	1851.807
Total PAD	0.5064138	0.235599	-1.46	.144	0.2034702	1.260405
Total allogenic units *	3.485317	1.318627	3.30	.001	1.660353	7.316173

CI indicates confidence interval.

* Independent predictors of increased risk to requiring ICU admission.

dichotomous versions of the variable such as BMI more than 25 kg/m² and BMI more than 30 kg/m².

The results of this analysis indicate that smoking history, cemented arthroplasty, general anesthesia, greater allogenic blood units transfused, higher preoperative CRP levels, lower preoperative hemoglobin levels, increased BMI, and older age are independent predictors of an increased risk for ICU admission after TJA (Table 2).

Discussion

It is estimated that the number of TJA procedures per year is well over half a million in the United States and will continue to rise given the aging population [23]. Therefore, it follows that given the prevalence of comorbidities in these patients, admission rates to the ICU are also on the rise [24]. In a study by Mantilla et al [12], increased age was found to be the strongest predictor of major complications after TJA. Our study found that older age (>65 years) was a weak (1.1× greater risk) but an independent risk factor for ICU admission. Other authors have concluded that male sex, a positive smoking history, and ethnicity (blacks at higher risk than whites) may predict who will need ICU monitoring after TJA [12,13,19,25]. Interestingly, although some demographic features reported by others were not significant in our study, obesity did result in an independent risk factor after multivariate analysis, albeit very weakly significant. The patient population had a mean BMI of 30.6 kg/m² for the study cohort and a BMI of 20.8 kg/m² for the control cohort. We recommend evaluation of a patient's BMI as a general consideration, part of the overall evaluation of a surgical candidate but would generally refrain from advocating all obese patients strongly be considered for ICU admission after TJA.

Smoking has a deleterious effect on TJA outcomes. Forty-nine patients (37.7%) in the study cohort compared with only 14 control patients (5.4%) had a positive smoking history. Smokers were 65 times more

likely than nonsmokers to be admitted to the ICU. Our results were consistent with another report in the literature by Sadr et al [21] who found that heavy tobacco use was associated with an increased risk of systemic postoperative complications ($P = .004$). In their study, previous and current smokers had a 43% and 56% increased risk of systemic complications, respectively, when compared with nonsmokers. In heavy smokers, the risk increased by 121% [21]. Similarly, Moller et al [19], in their investigation of 811 patients who had elective orthopedic surgery, found that smoking affected the rate of wound healing and cardiopulmonary complications and had an 8-fold increase in the need for admission to the ICU. We recommend preoperative counseling with patients who smoke and encourage the implementation of recent advances in cessation strategy to decrease the likelihood of admittance to ICU after TJA.

The second greatest risk factor for ICU admission after TJA from our analysis was cemented joint replacement. Although all TKAs were cemented procedures, only 70 TKA patients in the study cohort were admitted to the ICU. Sixty THA patients developed complications and were sent to the ICU. Of these, 35 were press fit cementless implants, whereas 25 cases were cemented (42%). This is in contrast to 114 (95%) of 120 THA patients in the control group who underwent cementless implantation. The adverse reactions associated with acrylic bone cement (polymethylmethacrylate) are well known and have been documented for nearly 40 years [26]. This reaction, the so-called cement implantation syndrome, may include systemic hypotension, anaphylactoid reaction, pulmonary hypertension, hypoxemia, and cardiovascular collapse [13,27-29]. In a study by Sanborn et al, 5% of all cemented arthroplasty procedures were associated with hypotension after femoral stem prosthesis placement; however; this high figure has been reduced by adequate medullary lavage, intraoperative canal suctioning, the use low-viscosity polymethylmethacrylate, and other efforts to decrease

intramedullary pressure that may lead to fat microemboli [13,30-32]. Furthermore, uncemented arthroplasty has been associated with less hemodynamic changes when compared with cemented procedures [7]. The true incidence of adverse events after cement implantation syndrome is difficult to know based on a variety of patient populations and the defined complications in the literature [33]. The surgeons at this institution routinely perform uncemented THA on all primary hips. A decision to use cement to achieve proper fixation of the femoral or acetabular components may occur depending on conditions such as preoperative analysis, poor intraoperative bone stock encountered, or inadequate fixation of a traditional press fit prosthesis during a primary or revision THA. Some caution must be taken when interpreting these results of potentially higher risk of ICU admission with cemented prostheses. Although we did elect to use the Charlson index for comorbidities, this method has limitations and may not adequately capture all potential confounding variables. Specifically, long-term steroid exposure, inflammatory arthropathies, and metabolic bone disease all affect bone stock and can influence the decision to perform cemented THA. All patients in our investigation had a diagnosis of osteoarthritis for primary TJA in both the study cohort and control group. Diagnoses among the revision TJA were as follows: aseptic loosening in 29 patients (14.6%) in the study cohort and 39 patients (15%) in the control group, periprosthetic joint infection (including irrigation and debridement, resection arthroplasty, and reimplantation) in 20 patients (15.4%) in the cohort study and 2 (0.8%) in the control group, and conversion from previous hip fracture or from hemiarthroplasty in 4 patients (3.1%) in the study cohort and 5 patients (1.9%) in the control group. Furthermore, cement fixation may be the only option for the treating surgeon to achieve stability and a predictable long-term result in the setting of pathologic bone.

General anesthesia was also found to be a predisposing factor for early postoperative complications requiring ICU admission after TJA. In our study, we found that 34 ICU patients (26.15%) had arthroplasty procedures under general anesthesia compared with only 19 control patients (7.2%). After multivariable analysis, we found that patients, for whom general anesthesia was used, were more than 45 times more likely to develop postoperative major complications and need ICU admission. This finding corroborates other studies, which suggest that regional anesthesia may be associated with less morbidity and mortality compared with general anesthesia [13]. A meta-analysis by Rodgers et al [34] found that neuraxial blockade significantly reduced the rates of deep vein thrombosis, pulmonary embolism, respiratory depression, myocardial infarction, and blood transfusion requirements. Furthermore, general anesthesia has been shown to be associated

with a greater likelihood of oxygen desaturation compared with regional anesthesia [35]. The rate of unanticipated ICU admissions after TJA is decreased when neuraxial anesthesia is used both in average and in higher risk patients [36]. We advocate the use of regional anesthesia, when not contraindicated, for the TJA patient and routinely implement this strategy presently at our institution.

Another risk factor for ICU admission after TJA from our analysis was the need for blood transfusion. Patients who were transfused allogenic blood products intraoperatively were 3.5 times more likely to be admitted to the ICU. This seems somewhat intuitive given the spectrum of complications associated with blood transfusion ranging from febrile reaction to the more serious transfusion-related acute lung injury. The need for blood transfusion also portends a more complex or challenging reconstruction. Circumstances encountered intraoperatively such as multiple changes to acetabular version or inclination, component trialing to obtain proper soft tissue balance, stability, and limb length or iatrogenic fracture correction among others may increase the operative time and blood loss. The treating surgeon should be aware that patients who require blood transfusion are more likely to be admitted to the ICU; however, this finding may also reflect the surgeon's preference for close postoperative monitoring after extensive blood loss or difficulty of reconstruction. We also advocate correcting preoperative anemia (defined as <13.5 g/dL in males and <12.0 g/dL in females), which was found to be an independent risk factor in our study. Although this finding marginally reached statistical significance, normalizing preoperative hemoglobin level may serve to decrease the need for intraoperative blood transfusion and potentially the need for ICU admissions after TJA.

Patients who had preoperative elevated levels of the acute phase reactant CRP had a slight increased risk (1.8) to be admitted to the ICU. C-reactive protein is a nonspecific marker of inflammation and often used as a marker for periprosthetic infection. At our institution, the upper limit of normal CRP is 0.8 mg/dL. The individuals in the study cohort had a mean CRP level of 4.24 mg/dL compared with the control group mean of 1.98 mg/dL. The results of this study suggest that perhaps the inflammatory cascade may trigger systemic effects that required ICU monitoring after TJA. We recommend that patients who have an increased preoperative CRP be considered for more vigilant postoperative monitoring.

This study has some limitations in addition to those defined previously in the discussion. Perhaps the most important one is its retrospective design with the inherent deficiency of variability in data collection. The other shortcoming of this study is that all patients in this study received TJA procedures in a large-volume center

by surgeons specializing in joint reconstruction that might limit the applicability of the findings to some extent. Despite the aforementioned limitations, we identified patients who are at greater risk for developing complications requiring ICU admission. The authors believe that the conclusions drawn from this investigation have relevant application to the treating adult reconstruction surgeon of varying practice volume. The overall incidence of ICU admission after TJA at this single institution, 0.6%, represents an acceptable number. This incidence is more favorable than the authors expected at the onset of this investigation. To our knowledge, the true incidence of complications or risk factors that necessitate ICU has not yet been firmly established. This study proceeds on a continuum of work that is uncovering those patients that are predisposed to complications after TJA.

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COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-53

This is the Annexure marked "DD-53" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

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Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.



Changes to MBS Cardiac Surgical Services:

Selective coronary angiography and percutaneous coronary intervention, and related items.

Date of change: 01 July 2021

Legislation: [Health Insurance Legislation Amendment \(2021 Measures No. 1\) Regulations 2021](#)

Amended items:

38200 38203 38206 38241 38272 38274 38309 57360

New items:

38244 38254 38247 38248 38249 38251 38252 38307 38308 38310
38311 38313 38314 38316 38317 38319 38320 38322 38323 57364

Deleted items:

38215 38218 38220 38222 38225 38228 38231 38234 38237 38240 38243
38246 38300 38303 38306 38312 38315 38318 59903 59912 59925

Revised structure

From 1 July 2021, Medicare Benefits Schedule (MBS) items for cardiac procedural services are changing to reflect contemporary practice. These changes are the result of MBS Review Taskforce (the Taskforce) recommendations following extensive consultation with stakeholders.

From 1 July 2021, billing practices will need to be adjusted to reflect these changes.

Overarching intent of the restructure of Coronary Artery Disease related Interventional items

Changes to cardiac interventional items for coronary artery disease involve the restructure of selective coronary angiography, percutaneous coronary intervention (PCI) items and related items. New selective coronary angiography and PCI items are restructured to provide a complete medical service, which covers all components required to perform the service as described in a single item. In most cases, this will simplify billing to a single item and reduce rebate variability for patients. Where there is a need for a specific approach which is not routinely performed as part of this complete medical service, additional 'add-on' items can be billed.



New selective coronary angiography and PCI items are based on inclusion criteria, following the principle of appropriate use criteria. Inclusion criteria are grouped into 'high risk' and 'lower risk' patient groups for diagnostic angiography and PCI, with a clear alignment of these cohorts. Inclusion of a Heart Team conference will allow consideration of 'stable' patients, who do not meet the defined inclusion criteria, ensuring access to coronary angiography and revascularisation through a consensus decision.

Restructure of Selective Coronary Angiography

The restructure of the selective coronary angiography items will introduce single items billed as a complete medical service separated into three new distinct clinical groups based on inclusion criteria. This includes those from the: high risk ischaemic heart disease group, clinically stable ischaemic heart disease group and non-ischaemic heart disease group (e.g. non-coronary pre-surgical).

These items will be mirrored for performing a selective coronary angiography for patients with grafts - recognising these are more complex investigations (new items 38247, 38249 and 38252). Therefore, it is not permissible to claim new items 38244, 38248 or 38251 for patients who have coronary bypass grafts that should be included in a diagnostic coronary angiography service.

The mirrored graft items will require the interrogation of the native arteries and all graft vessels that are present for a given patient. This would include free coronary grafts attached to the aorta and one or more internal mammary artery grafts.

Selective coronary angiography will be claimed as a complete service, which includes imaging, catheter and contrast.

If patients do not meet the clinical indications, as described in the selective coronary angiography items for the clinically stable ischaemic heart disease group, eligibility can be assessed through a Heart Team meeting (see the definition of Heart Team meeting) to ensure access for those patient's falling outside the inclusion criteria, but considered by the Heart Team meeting to have an appropriate clinical need for angiography. This provision will be closely monitored to ensure appropriate use of this indication.

A consultation will not be claimable pre-procedure where the provider has an existing relationship with the patient (subsequent attendance).

A new item for right heart catheterisation will be introduced, which is only claimable in association with the new selective coronary angiography items, for when this is clinically required in addition to left heart catheterisation, which is included in the primary selective coronary angiography items.

Existing item (38241), for use of a coronary pressure wire will be amended to clarify inclusion criteria. This item can be billed once if a single vascular territory is interrogated, twice if two vascular territories are interrogated or thrice if three vascular territories are interrogated during angiography. This service will allow for the measurement of fractional flow reserve, non-hyperaemic pressure ratios or coronary flow reserve in intermediate lesions (50%-70%).

Time restrictions

Selective angiography type	Item numbers	Time restrictions
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Acute (ACS) selective coronary angiography	38244, 38247	3 months unless another ACS episode occurs
Stable (non-acute) selective angiography	38248, 38249	Applicable each 3 months
Non-coronary pre-surgical assessment	38251, 38252	Applicable each 12 months

Abandoned T8 Surgical Procedures and Selective Coronary Angiography

The new selective coronary angiography items now have time restrictions applied whether claimed by the same or different providers. It is important for the patient that if a provider cannot complete (abandoned) a comprehensive diagnostic angiography that appropriately informs the diagnosis and treatment pathway or is discontinued due to the clinical status of the patient, item 30001 is claimed. This will allow claiming by the provider who subsequently completes the entire diagnostic angiography service taking into consideration the time restrictions for each of the selective angiography items.

Item 30001 applies when a procedure has commenced, but is then discontinued for medical reasons, or for other reasons which are beyond the surgeon's control (eg equipment failure).

An operative procedure commences when:

- The patient is in the procedure room or on the bed or operation table where the procedure is to be performed; and
- The patient is anaesthetised, or operative site is sufficiently anaesthetised for the procedure to commence; and
- The patient is positioned or the operative site which is prepared with antiseptic or draping.

Where an abandoned procedure eligible for a benefit under item 30001 attracts an assistant under the provisions of the items listed in Group T9 (Assistance at Operations), the fee for the surgical assistant is calculated as 50% of the assistance fee that would have applied under the relevant item from Group T9.

Practitioners claiming an assistant fee for abandoned surgery should itemise their accounts with the relevant item from group T9. Such claims should include an account endorsement "assistance at abandoned surgery" or similar.

Under the Health Insurance Act 1973 the Chief Executive Medicare does not require claims for this item to be accompanied by details of the proposed surgery and the reasons why the operation was discontinued. However, practitioners must maintain a clinical record of this information, which may be subject to audit.

Restructure of Percutaneous Coronary Intervention (PCI)



The restructure of the PCI items will introduce single items billed as a complete medical service based on inclusion criteria *and* the number of territories treated. The primary intention of this change is to encourage the completion of the coronary intervention at the same time as diagnostic angiography (if it hasn't been completed in the previous 3 months and when clinically safe to do so), thereby avoiding unnecessary re-intervention.

Vascular territories refer to the major artery and all of its associated branches, including:

- Left Anterior Descending;
- Circumflex;
- Right coronary artery.

The number of coronary vascular territories treated is defined by the territories normally supplied by the Left Anterior Descending, Circumflex and Right Coronary Arteries, or their branches, or the territory supplied via a bypass graft. The item number claimed should reflect the number of coronary vascular territories that are treated (including stenting, with or without angioplasty; or angioplasty alone) during the procedure, not the total number of diseased territories, nor the number of lesions treated within a single vascular territory, nor the total number of territories that have undergone intervention to date.

For treatment of isolated Left Main Coronary Artery Disease (no involvement of the bifurcation), a single territory should be claimed, but if the treated segment involves the bifurcation, then 2 territories may be claimed. The intermediate artery when treated in isolation is a single territory, but when treated with the Left Anterior Descending or Circumflex artery, or both, may be claimed as a maximum of two territories. Treatment of a single lesion in a bypass graft should be claimed as a single territory, regardless of how many vascular territories are supplied by that graft. If more than one lesion is treated in a single graft and those lesions are in separate portions of a sequential graft, subtending different territories, then one additional territory may be claimed (maximum claim of two territories per graft).

Inclusion criteria of PCI items align with inclusion criteria for selective coronary angiography items to allow appropriate progression to intervention when clinically required. Hence, new PCI items can be grouped into two subgroups:

- Standalone PCI – which is performed within 3 months of diagnostic coronary angiography service, the fee is reduced to reflect that a complete diagnostic coronary angiography is not required.
- PCI – where complete diagnostic angiography precedes the PCI. The fee includes an allowance for the provision of the selective coronary angiography preceding the PCI in the same service, therefore qualifying that the selective angiography has not been completed in the previous 3 months. The only exception to this rule is when a patient experiences a new acute coronary syndrome or angina that meets the criteria detailed in the explanatory note (will appear on MBS Online as note: TR.8.3).

Within these two subgroups, items are separated into two new distinct clinical groups based on inclusion criteria, those from the high risk ischaemic heart disease group and those from the clinically stable ischaemic heart disease group.



If patients do not meet the clinical indications as described in the clinically stable ischaemic heart disease group items, a provider is permitted to perform a PCI following recommendation by a Heart Team conference. This provision will be closely monitored by the Department to ensure appropriate use of this indication.

Heart Team Meetings are used in two ways:

- a) For angiography and non-complex (stable) PCI the heart team can be used for patients who do not fulfill the clinical indications as described in the item descriptor and can therefore still undergo intervention with agreement from the Heart Team.
- b) For complex triple vessel disease (non-Acute Coronary Syndrome - stable), the Heart Team meeting must involve a Cardiothoracic surgeon (items 38314, 38323) with the intent to offer the patient the best therapeutic intervention.

For non-complex stable triple vessel disease providers are encouraged to include a cardiothoracic surgeon in the Heart Team, for PCI items 38311, 38313, 38320 and 38322, however it is not compulsory.

Staging of acute PCI

Staging of acute PCI is permissible when clinically appropriate. An example of appropriate Acute Coronary Syndrome (ACS) staging could include intervention on an occluded proximal lesion in the context of an ST elevation myocardial infarction (STEMI) and a decision is made not to intervene on a distal lesion as it is difficult to determine whether it is a real lesion (possibly a thrombus) or the patient's haemodynamic status remains compromised (clinically unsafe to continue).

Requirements of subsequent stages of a staged acute PCI include:

The qualifying indication for the initial procedure is to be used as the qualifier for the relevant subsequent stages. Subsequent stages are required to be completed within 3 months of the initial procedure otherwise the patient will need to requalify under the appropriate indication (if applicable). However, it would generally be expected that subsequent stages would be completed as soon as is practicable proceeding the initial intervention.

For subsequent stages of an acute PCI it is implied that diagnostic angiography has been completed in the previous 3 months and therefore it is only permissible to claim items 38316, 38317 or 38319 for subsequent stages.

Staging of non-acute (stable) PCI

Staging of stable PCI is permissible when clinically appropriate. An example of appropriate stable staging could include intervention on the primary target lesion and a decision is made not to intervene on secondary lesions (in triple vessel disease) due to the patient's deteriorating haemodynamic status (clinically unsafe to continue).

Requirements of subsequent stages of a staged *stable* PCI include:

- The qualifying indication for the initial procedure is to be used as the qualifier for the relevant subsequent stages. Subsequent stages are expected to be completed within a reasonable time period following the initial intervention.



- For subsequent stages of a stable PCI it is implied that diagnostic angiography has been completed in the previous 3 months and therefore it is only permissible to claim items 38320, 38322 or 38323 (standalone PCI items) for subsequent stages.
- Note: For patients who meet the criteria in subclause (2)(b) of note TR.8.4 in 3 vascular territories (triple vessel disease), whether treated in an initial procedure (items 38314 or 38323) or in subsequent stages (items 38311, 38313, 38320 or 38322) it is expected that the patient must meet the criteria for (2)(b) of note TR.8.4 for each territory for each subsequent stage. This requirement ensures that the patient who has triple vessel disease must meet the criteria for (2)(b) for each territory when staged or completed in an initial procedure.

The Department will be closely monitoring claiming patterns for staged procedures, particularly where volumes for staged procedures at the same site are not consistent with the broader provider claiming base.

Multiple Providers of one episode of care (acute or stable) PCI – Separate interventional sites or Same interventional site.

- One of the primary intentions of the changes to selective coronary angiography and PCI items, is to encourage the provision of the entire intervention in a single episode of care. Therefore, the provider should consider that there will be a reasonable need to intervene (revascularise), noting that in some cases intervention is not required (e.g. pressure testing – FFR result does not support the need for stenting). However, it is recognised that some providers of interventional cardiology services only provide selective coronary angiography (diagnostic) and require a secondary provider to undertake angioplasty, stenting and/or atherectomy.

Non-interventional – selective angiography providers (clinical assessment suggests intervention required)

Acute/Unstable patients

- Acute/Unstable patients should undergo both selective coronary angiography and PCI by an accredited PCI provider in a single episode of care, unless staging is clinically required.
- Rare exceptions might include rural or remote sites that offer diagnostic angiography as a triage service prior to limited availability PCI.
- Therefore, it would be expected that the non-interventional cardiologist (non-PCI accredited) has a limited role in the management of acute/unstable patients.

Stable patients

It is accepted clinical practice that the following patient pathways for stable PCI service provision (other than a complete service by an accredited PCI cardiologist) may occur when considering the role of the non-interventional cardiologist (non-PCI accredited) as follows;

- Ad-hoc PCI: provider 1 completes the selective angiography and hands over to provider 2 to perform the PCI while the patient is still on the cardiac catheterisation table with the arterial access still in place.
 - Similar to the acute items, this scenario would likely be rare for e.g. dissection of a coronary artery caused by the angiography catheter that may convert the patient from stable to unstable.



- It is current accepted practice that the selective coronary angiography component of the service can be performed by a non-interventional cardiologist and the PCI component (when required) completed by a PCI accredited provider. However, ideally ad-hoc stable PCI should be completed by a PCI accredited provider and therefore consideration should be given to current practice site arrangements going forward.
- Delayed PCI: provider 1 completes ICA and refers the patient to provider 2, who performs the PCI later on the same day.
 - In the stable patient this scenario presents the opportunity to pause and consider whether optimal medical therapy, PCI or coronary artery bypass may be the preferred option in consultation with a PCI accredited cardiologist and/or cardiothoracic surgeon; and
 - It also allows for a further opportunity to obtain informed consent from the patient for the proposed intervention.
 - In most cases this would involve maintaining the arterial access with an indwelling arterial sheath to avoid repuncture.
- Elective PCI: provider 1 completes ICA and refers the patient to provider 2, who performs the PCI on the next day, or any subsequent day.
 - Similar to delayed PCI, however the PCI accredited cardiologist may not be available on the same day as when the selective coronary angiography was completed; or
 - A short trial of optimal medical therapy is recommended; or
 - Further non-invasive functional testing is recommended.

The Department will be closely monitoring claiming patterns, particularly at the same site where selective angiography is completed by a non-accredited cardiologist and the PCI component completed by a PCI accredited provider.

The following provides guidance for when the provider can only undertake the selective angiography component of a complete PCI service (PCI non-accredited provider):

- **Separate hospital/procedural sites (Acute/Unstable or Stable)** – The first provider undertakes the diagnostic angiography and either makes an independent decision or following discussion with the interventional cardiologist refers to the secondary provider at another site for the purposes of revascularisation (e.g. referral from a rural or regional hospital to a metropolitan hospital). In this scenario there is a clear delineation between the angiography and revascularisation services due to the different geographical locations (separate episodes of care). Example claiming is as follows:

Acute (ACS) - example

- Provider 1 – site 1 (diagnostic angiography) claims item 38244 (ACS – selective angiography).
Provider 2 – site 2 (PCI) claims item 38316 (ACS – PCI single territory)

Stable - example



- Provider 1 – site 1 (diagnostic angiography) claims item 38248 stable – selective angiography).
Provider 2 – site 2 (PCI) claims item 38320 (stable – PCI single territory)
- **Same hospital/procedural site (Stable)** - The first provider undertakes the diagnostic angiography and either makes an independent decision or following discussion with the interventional cardiologist requesting that the secondary provider undertakes the revascularisation component. Please note that the underlying intention of a complete PCI service is that the entire service, including diagnostic angiography is completed by a single provider where possible.

Abandoned T8 Surgical Procedures and Acute or Stable Percutaneous Coronary Intervention (PCI) – Excluding appropriate staging

The new **acute** PCI items have time restrictions applied whether claimed by the same or different providers. It is important for the patient that if a provider cannot complete (abandoned) the PCI and rescue PCI needs to be conducted by another provider, item 30001 is claimed. This will allow claiming by the provider who subsequently completes the rescue PCI, taking into consideration the time restrictions for each of the selective angiography items.

The new **stable** PCI items do not have time restrictions. However, it is important for the patient that if a provider cannot complete (abandoned) the PCI and rescue PCI needs to be conducted by another provider, item 30001 is claimed. This will allow claiming by the provider who subsequently completes the rescue PCI, taking into consideration the time restrictions for each of the selective angiography items.

PCI type	Item numbers	Time restrictions
Acute (ACS)/Unstable PCI	38307, 38308, 38310, 38316, 38317, 38319	3 months unless another ACS episode occurs
Stable (non-acute) PCI	38311, 38313, 38314, 38320, 38322, 38323	Nil



Claiming restrictions PCI

PCI Items	Cannot claim same day	Time dependency- cannot claim within 3 months unless new acute episode	Cannot claim within 3 months - hard block	Cannot claim within 12 months	Cannot claim within 9 months
38307	38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38308, 38310, 38311, 38313, 38314, 38316, 38317, 38319, 38320, 38322 or 38323	38244, 38247, 38307, 38308, 38310	38248, 38249,	38251, 38252	
38308	38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38310, 38311, 38313, 38314, 38316, 38317, 38319, 38320, 38322 or 38323	38244, 38247, 38307, 38308, 38310	38248, 38249,	38251, 38252	
38310	38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38308, 38311, 38313, 38314, 38316, 38317, 38319, 38320, 38322 or 38323 apply.	38244, 38247, 38307, 38308, 38310	38248, 38249	38251, 38252	
38311	38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38308, 38310, 38313, 38314, 38316, 38317, 38319, 38320, 38322 or 38323	38244, 38247	38248, 38249	38251, 38252	



Australian Government
Department of Health

PCI Items	Cannot claim same day	Time dependency- cannot claim within 3 months unless new acute episode	Cannot claim within 3 months - hard block	Cannot claim within 12 months	Cannot claim within 9 months
38313	38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38308, 38310, 38311, 38314, 38316, 38317, 38319, 38320, 38322 or 38323	38244, 38247	38248, 38249	38251, 38252	
38314	38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38308, 38310, 38311, 38313, 38316, 38317, 38319, 38320, 38322 or 38323	38244, 38247	38248, 38249	38251, 38252	
38316	38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38308, 38310, 38311, 38313, 38314, 38317, 38319, 38320, 38322 or 38323	38244, 38247	38248, 38249		38251, 38252
38317	38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 3808, 38310, 38311, 38313, 38314, 38316, 38319, 38320, 38322 or 38323	38244, 38247	38248, 38249		38251, 38252
38319	38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38308, 38310, 38311, 38313, 38314, 38316, 38317, 38320, 38322 or 38323	38244, 38247	38248, 38249		38251, 38252



Australian Government
Department of Health

PCI Items	Cannot claim same day	Time dependency- cannot claim within 3 months unless new acute episode	Cannot claim within 3 months - hard block	Cannot claim within 12 months	Cannot claim within 9 months
38320	38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38308, 38310, 38311, 38313, 38314, 38316, 38317, 38319, 38322 or 38323	38244, 38247	38248, 38249		38251, 38252
38322	38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38308, 38310, 38311, 38313, 38314, 38316, 38317, 38319, 38320 or 38323	38244, 38247	38248, 38249		38251, 38252
38323	38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38308, 38310, 38311, 38313, 38314, 38316, 38317, 38319, 38320 or 38322	38244, 38247	38248, 38249		38251, 38252



Reporting on Selective Coronary Angiography and Percutaneous Coronary Intervention items:

Providers are required to prepare a report or clinical note (this could include the operation report) for the service provided and this must include documentation demonstrating how the patient met the eligibility requirements of the item being billed. (Referenced in Note TR.8.5)

Note: TR.8.5 Reports and clinical notes

Restriction on items 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38308, 38310, 38311, 38313, 38314, 38320, 38322, 38323, 38316, 38317 and 38319

Items 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38308, 38310, 38311, 38313, 38314, 38320, 38322, 38323, 38316, 38317 and 38319 apply to a service provided to a patient only if a report or clinical note:

- (a) is prepared for the service; and
- (b) includes documentation that demonstrates how the item applies to the service, including how the patient is eligible for the service.

Patient impacts

The creation of complete medical services aims to simplify the MBS and reduce rebate variability for patients. Patients should no longer receive different Medicare rebates for the same operation, as there should be less variation in the items claimed by different providers.

Patients will receive Medicare rebates for cardiac procedural services that are clinically appropriate and reflect modern clinical practice. These changes will provide access for patients to high-value cardiac investigations and procedures, leading to improved health outcomes.

Restrictions or requirements

Providers will need to familiarise themselves with the changes to the cardiac services MBS items and any associated rules and/or explanatory notes. Providers have a responsibility to ensure that any services they bill to Medicare fully meet the eligibility requirements outlined in the legislation.

Claiming Same-Day Restriction:

“Not being a service associated with” refers to a restriction preventing the payment of a benefit when the service is performed in association, on the same occasion, with a specific MBS item or item range; another MBS item within the same group or subgroup or a similar type of service or procedure.

Claiming subsequent attendance items with items in Group T8 (items 30001 to 51171 of the MBS):

Some subsequent attendance items can't be billed on the same day with any Group T8 item equal to or greater than \$309.35 (These items include: 105, 116, 119, 386, 2806, 2814, 3010, 3014, 6009, 6011, 6013, 6015, 6019, 6052, or 16404).



Specialist subsequent attendance items (111 or CP item 117 and 120) can only be claimed on the same day as a surgical operation in Group T8 with a schedule fee of equal to or greater than \$309.35 if the procedure is urgent and not able to be predicted prior to the commencement of the attendance. Item 115 allows for co-claiming of a consultation item, if the nature of the consultation could not be predicted prior to the Group T8 procedure with a MBS fee higher than \$309.35. It is expected that these items would be rarely required. Clinician records should clearly indicate the reasons why either the consultation or procedure is necessary including the clinical risk for the patient to defer.

Multiple Operation Rule (MOR) – applies when 2 or more MBS items from Category 3, Group T8 for services performed on a patient on one occasion:

The Total schedule for all surgical items is calculated by applying the MOR. That is:

- 100% of the fee for the item with the highest schedule fee;
- plus 50% of the fee for the item with the next highest schedule fee;
- plus 25% of the fee for any further surgical items.

Applying this rule results in one total schedule fee for all surgical items billed.

(see explanatory note [TN.8.2](#) at MBS Online for more information)

Aftercare – post-operative care and treatment provided to patients after an operation:

Aftercare is the post-operative care and treatment provided to patients after a surgical operation or procedure. This includes all attendances until recovery and the final check or examination. Aftercare services can take place at a hospital, private rooms or a patient's home. MBS fees for most surgical items in MBS Group T8 include an aftercare component.

Some MBS services don't include aftercare and this is noted in their description. Group T8 items not containing this note include aftercare. Schedule fees for most surgical items include normal post-operative care. This means attendance items for normal aftercare cannot be billed. However, if the MBS description of the surgical item performed excludes aftercare in the item's description, an attendance item can be billed for providing aftercare.

Agnostic approach to the procedural intervention performed in PCI:

An agnostic approach supports the provider to decide the most appropriate intervention for the patient, allowing multiple approaches within the one item, e.g.: angioplasty performed alone or with stenting. All approaches are accounted for in the one PCI item.

Prosthesis Listing of cardiac stents is unchanged by the MBS changes. Private health insurers will be required to pay benefits for products listed on the Prosthesis List such as cardiac stents (which is not affected by the use of coronary territories in the new items), if the stents are provided to the patient with the requisite cover as part of hospital treatment.



Definition of a heart team conference: relevant to items 38248, 38249, 38311, 38313, 38320, 38322 and 57364

is a team of 3 or more participants who are cardiac specialists, where:

- i. the first participant is a specialist or consultant physician who is an **interventional cardiologist**; and
 - ii. the second participant is a specialist or consultant who is a **non-interventional cardiologist**; and
 - iii. the third participant is a **specialist or consultant physician**; and
- (a) the team assesses a patient's risk and technical suitability to receive the service; and
 - (b) the result of the heart team conference's assessment is that the team makes a recommendation about whether or not the patient is suitable for selective coronary angiography (for items 38248, 38249, 38320) or percutaneous coronary intervention (for items 38311, 38313, 38320, 38322) ; and
 - (c) the particulars of the assessment and recommendation/s, and the names of those providers making the recommendation/s are recorded in writing.

Note: For non-complex stable triple vessel disease, providers are encouraged to include a cardiothoracic surgeon in

Definition of a heart team conference: relevant to items 38314 and 38323

is a team of 3 or more participants who are cardiac specialists, where:

- i. the first participant is a specialist or consultant physician who is an **interventional cardiologist**; and
 - ii. the second participant is a specialist or consultant who is a **cardiothoracic surgeon**; and
 - iii. the third participant is a specialist or consultant who is a **non-interventional cardiologist** ; and
- (a) the team assesses a patient's risk and technical suitability to receive the service; and
 - (b) the result of the heart team conference's assessment is that the team makes a recommendation about whether or not the patient is suitable for percutaneous coronary intervention; and
 - (c) the particulars of the assessment and recommendation/s, and the names of those providers making the recommendation/s are recorded in writing.



Items relating to selective coronary angiography

Deleted item 38215 – Selective coronary angiography into native coronary arteries

This item is deleted as part of the restructure of selective coronary angiography items to simplify claiming to a single item, according to inclusion criteria and vessel complexity. This item would now be expected to be claimed under either item 38244 (for acute indications) or item 38248 (stable indications) or item 38251 (pre-operative assessment).

Deleted item 38218 – Selective coronary angiography with right or left catheterisation into native or graft coronary arteries

This item is deleted as part of the restructure of selective coronary angiography items to simplify claiming to a single item, according to inclusion criteria and vessel complexity. Left heart catheterisation is considered a routine part of angiography and included as part of all selective coronary angiography items; however, right heart catheterisation is not considered a routine part of angiography and if this procedure is required it is billed as a separate item under new item 38254.

Deleted item 38220 – Selective coronary graft angiography into free coronary graft(s) attached to the aorta

This item is deleted as part of the restructure of selective coronary angiography items to simplify claiming to a single item, according to inclusion criteria and vessel complexity.

Deleted item 38222 – Selective coronary graft angiography into direct internal mammary artery graft(s)

This item is deleted as part of the restructure of selective coronary angiography items to simplify claiming to a single item, according to inclusion criteria and vessel complexity.

Deleted item 38225 – Selective coronary angiography into native or graft coronary arteries

This item is deleted as part of the restructure of selective coronary angiography items to simplify claiming to a single item, according to inclusion criteria and vessel complexity.



Deleted item 38228 – Selective coronary angiography into native coronary and direct internal mammary artery grafts

This item is deleted as part of the restructure of selective coronary angiography items to simplify claiming to a single item, according to inclusion criteria and vessel complexity.

Deleted item 38231 – Selective coronary angiography

This item is deleted as part of the restructure of selective coronary angiography items to simplify claiming to a single item, according to inclusion criteria and vessel complexity.

Deleted item 38234 – Selective coronary angiography

This item is deleted as part of the restructure of selective coronary angiography items to simplify claiming to a single item, according to inclusion criteria and vessel complexity.

Deleted item 38237 – Selective coronary angiography

This item is deleted as part of the restructure of selective coronary angiography items to simplify claiming to a single item, according to inclusion criteria and vessel complexity.

Deleted item 38240 – Selective coronary angiography

This item is deleted as part of the restructure of selective coronary angiography items to simplify claiming to a single item, according to inclusion criteria and vessel complexity.

Deleted item 38243 – Placement of catheter(s)

This item is deleted as part of the restructure of selective coronary angiography items to simplify claiming to a single item, according to inclusion criteria and vessel complexity.

Deleted item 38246 – Selective coronary angiography with with right or left catheterisation into native or graft coronary arteries

This item is deleted as part of the restructure of selective coronary angiography items to simplify claiming to a single item, according to inclusion criteria and vessel complexity.

Deleted item 59903 – Angiocardiography

This item is deleted as it is obsolete.



Deleted item 59912 – Selective coronary arteriography

This item is deleted as part of the restructure of selective coronary angiography items to simplify claiming to a single item, according to inclusion criteria and vessel complexity.

Deleted item 59925 – Selective coronary arteriography and angiocardiography

This item is deleted as part of the restructure of selective coronary angiography items to simplify claiming to a single item, according to inclusion criteria and vessel complexity.

New selective coronary angiography items for acute indications:

New item 38244 – Selective coronary angiography into native coronary arteries (Acute indications)

Overview: New item introduced as part of the restructure of coronary angiography, providing a single item as a complete medical service for an angiography involving native coronary arteries. A consultation cannot be claimed pre-procedure where the provider already has an existing relationship with the patient.

Service/Descriptor: Displayed on the following page for ease of reading

Billing requirement: Not claimable with items 38200, 38203, 38206 38247, 38248, 38249, 38251 or 38252. Claimable once in any 3-month period unless a new acute coronary syndrome or angina occurs within this period as described in paragraph 2 (a), (b) or (c) in that period (Note TR.8.3)

MBS fee: \$920.00

Private Health Insurance Classifications:

Clinical Category: Heart and Vascular System

Procedure Type: Type A – Advanced Surgical



Item 38244 Service/Descriptor:

Note: (acute coronary syndrome) the service only applies if the patient meets the requirements of the descriptor and the requirements of Note: TR.8.2 and TR.8.5

Selective coronary angiography:

- (a) for a patient who is eligible for the service, if:

Note: TR.8.2 Patient eligibility and timing referred to in the descriptor as clause 5.10.17A:

- (1) A patient is eligible for a service to which item 38244, 38247, 38307, 38308, 38310, 38316, 38317 or 38319 applies if:
- (a) subclause (2) applies to the patient; and
 - (b) a service to which the item applies has not been provided to the patient in the previous 3 months, unless:
 - (i) the patient experiences a new acute coronary syndrome or angina, as described in paragraph (2)(a), (b) or (c), in that period; or
 - (ii) for a service to which item 38316, 38317 or 38319 applies—the service was provided to the patient in that period as a subsequent stage following an initial primary percutaneous coronary intervention procedure.
- (2) This subclause applies to a patient who has:
- (a) an acute coronary syndrome evidenced by any of the following:
 - (i) ST segment elevation;
 - (ii) new left bundle branch block;
 - (iii) troponin elevation above the local upper reference limit;
 - (iv) new resting wall motion abnormality or perfusion defect;
 - (v) cardiogenic shock;
 - (vi) resuscitated cardiac arrest;
 - (vii) ventricular fibrillation;
 - (viii) sustained ventricular tachycardia; or
 - (b) unstable angina or angina equivalent with a crescendo pattern, rest pain or other high risk clinical features, such as hypotension, dizziness, pallor, diaphoresis or syncope occurring at a low threshold; or
 - (c) either of the following, detected on computed tomography coronary angiography:
 - (i) significant left main coronary artery disease with greater than 50% stenosis or a cross sectional area of less than 6 mm²;
 - (ii) severe proximal left anterior descending coronary artery disease (with stenosis of more than 70% or a cross sectional area of less than 4 mm² before the first major diagonal branch).

- and (b) with placement of one or more catheters and injection of opaque material into native coronary arteries; and
- (c) with or without left heart catheterisation, left ventriculography or aortography; and
 - (d) including all associated imaging;



other than a service associated with a service to which 38200, 38203, 38206, 38247, 38248, 38249, 38251 or 38252 applies (Anaes)

Explanatory Note: Discussions of the results, findings or interpretation of a study are reasonably expected to be part of a formal report. Discussion of these findings with a patient does not constitute a consult. Similarly, discussion(s) during the course of a study or to determine the safety or appropriateness of the study is part of the service and should not be claimed as a consult.

New item 38247 – Selective coronary graft angiography involving native coronary vessels and graft(s) (Acute indications)

Overview: New item introduced as part of the restructure of coronary angiography, providing a single item as a complete medical service for an angiography involving graft vessels. Inclusion criteria and distinct items now apply for performing an angiogram for patients with graft vessels in recognition of the added complexity in the graft setting. A consultation cannot be claimed pre-procedure where the provider already has an existing relationship with the patient. This is the graft equivalent item of item 38244.

Service/Descriptor:

Note: (acute coronary syndrome - graft) the service only applies if the patient meets the requirements of the descriptor and the requirements of Note: TR.8.3 and TR.8.5

Selective coronary and graft angiography:

- (a) for a patient who is eligible for the service if indications referenced in Note: TR.8.3 apply; and
- (b) with placement of one or more catheters and injection of opaque material into the native coronary arteries; and
- (c) if free coronary grafts attached to the aorta or direct internal mammary artery grafts are present—with placement of one or more catheters and injection of opaque material into those grafts (irrespective of the number of grafts); and
- (d) with or without left heart catheterisation, left ventriculography or aortography; and
- (e) including all associated imaging;

other than a service associated with a service to which item 38200, 38203, 38206, 38244, 38248, 38249, 38251 or 38252 applies (Anaes)

Explanatory note: This item is only claimable when the patient has graft arteries present and has undergone angiographic investigation of the native coronary arteries and any graft arteries, which can include free coronary grafts attached to the aorta or direct internal mammary artery grafts.

Discussions of the results, findings or interpretation of a study are reasonably expected to be part of a formal report. Discussion of these findings with a patient does not constitute a consult. Similarly, discussion(s) during the course of a



study or to determine the safety or appropriateness of the study is part of the service and should not be claimed as a consult.

Billing requirement: Not claimable with items 38200, 38203, 38206, 38244, 38248, 38249, 38251 or 38252. Claimable once in any 3-month period unless a new acute coronary syndrome or angina occurs within this period as described in paragraph 2 (a), (b) or (c) in that period (Note TR.8.3)

MBS fee: \$1,473.95

Private Health Insurance Classifications:

Clinical Category: Heart and Vascular System

Procedure Type: Type A – Advanced Surgical



New selective coronary angiography items for stable indications:

New item 38248 – Selective coronary angiography involving native coronary arteries (Stable indications)

Overview: New item introduced as part of the restructure of coronary angiography, providing a single item as a complete medical service for an angiography performed involving native vessels where the patient has 'stable' indications. Specific indications are outlined in the descriptor or eligibility can also be met through recommendation by a heart team conference. A consultation cannot be claimed pre-procedure where the provider already has an existing relationship with the patient.

Service/Descriptor: Displayed on the following page for ease of reading

Billing requirement: Not claimable with items 38200, 38203, 38206, 38244, 38247, 38249, 38251 or 38252. Claimable once in any 3 month period.

MBS fee: \$920.00

Private Health Insurance Classifications:

Clinical Category: Heart and Vascular System

Procedure Type: Type A – Advanced Surgical



Item 38248 Service/Descriptor:

Note: (stable coronary syndrome) the service only applies if the patient meets the requirements of the descriptor and the requirements of Note: TR.8.3 and TR.8.5

Note: TR.8.3 Patient eligibility referred to in the item as clause 5.10.17B:

- (1) A patient is eligible for a service to which item 38248 and 28249 applies if:
 - (a) subclause (2) applies to the patient; or
 - (b) the patient is recommended for coronary angiography as a result of a heart team conference that meets the requirements of subclause (3).
- (2) This subclause applies to a patient who has:
 - (a) limiting angina or angina equivalent, despite an adequate trial of optimal medical therapy; or
 - (b) high risk features, including at least one of the following:
 - (i) myocardial ischaemia demonstrated on functional imaging;
 - (ii) ST segment elevation, sustained ST depression, hypotension or a Duke treadmill score of minus 11 or less, demonstrated by stress electrocardiogram testing;
 - (iii) computed tomography coronary angiography evidence of one or more coronary arteries with stenosis of 70% or more; or
 - (iv) left ventricular dysfunction with an ejection fraction of less than 40% or segmental wall motion abnormality at rest.
- (3) For the purposes of paragraph (1)(b), the requirements for a heart team conference are as follows:
 - (a) the conference must be conducted by a team of specialists or consultant physicians practising in the speciality of cardiology or cardiothoracic surgery, including each of the following:
 - (i) an interventional cardiologist;
 - (ii) a non interventional cardiologist;
 - (iii) a specialist or consultant physician; and
 - (b) the team must:
 - (i) assess the patient's risk and technical suitability to receive the service; and
 - (ii) make a recommendation about whether or not the patient is suitable for selective coronary angiography; and
 - (c) a record of the conference must be created, and must include the following:
 - (i) the particulars of the assessment of the patient during the conference;
 - (ii) the recommendations made as a result of the conference;
 - (iii) the names of the members of the team making the recommendations.

Selective coronary angiography:

- (b) as part of the management of the patient; and
- (c) with placement of catheters and injection of opaque material into native coronary arteries; and
- (d) with or without left heart catheterisation, left ventriculography or aortography; and
- (e) including all associated imaging;

other than a service associated with a service to which item 38200, 38203, 38206, 38244, 38247, 38249, 38251 or 38252 applies—applicable each 3 months (Anaes.)



Explanatory Note: Discussions of the results, findings or interpretation of a study are reasonably expected to be part of a formal report. Discussion of these findings with a patient does not constitute a consult. Similarly, discussion(s) during the course of a study or to determine the safety or appropriateness of the study is part of the service and should not be claimed as a consult.

New item 38249 – Selective coronary angiography native and graft coronary vessels (Stable indications)

Overview: New item introduced as part of the restructure of coronary angiography, providing a single item as a complete medical service for an angiography performed involving graft vessels where the patient has ‘stable’ indications. Specific indications are outlined in the descriptor, eligibility can also be met through recommendation by a heart team conference. A consultation cannot be claimed pre-procedure where the provider already has an existing relationship with the patient. This is the graft equivalent item of 38248.

Service/Descriptor:

Note: (stable coronary syndrome – graft) the service only applies if the patient meets the requirements of the descriptor and the requirements of Note: TR.8.3 and TR.8.5

Selective coronary and graft angiography:

- (a) for a patient who is eligible for the service if indications referenced in Note: TR.8.3 apply; and
- (b) as part of the management of the patient; and
- (c) with placement of one or more catheters and injection of opaque material into the native coronary arteries; and
- (d) if free coronary grafts attached to the aorta or direct internal mammary artery grafts are present—with placement of one or more catheters and injection of opaque material into those grafts (irrespective of the number of grafts); and
- (e) with or without left heart catheterisation, left ventriculography or aortography; and
- (f) including all associated imaging;

other than a service associated with a service to which item 38200, 38203, 38206, 38244, 38247, 38248, 38251 or 38252 applies—applicable once each 3 months (Anaes.)

Explanatory note: This item is only claimable when the patient has graft arteries present and has undergone angiographic investigation of the native coronary arteries and any graft arteries, which can include free coronary grafts attached to the aorta or direct internal mammary artery grafts.

Discussions of the results, findings or interpretation of a study are reasonably expected to be part of a formal report. Discussion of these findings with a patient does not constitute a consult. Similarly, discussion(s) during the course of a study or to determine the safety or appropriateness of the study is part of the service and should not be claimed as a consult.



Billing requirement: Not claimable with items 38200, 38203, 38206, 38244, 38247, 38248, 38251 or 38252.
Claimable once in any 3 month period

MBS fee: \$1,473.95

Private Health Insurance Classifications:

Clinical Category: Heart and Vascular System

Procedure Type: Type A – Advanced Surgical

New selective coronary angiography items for non-coronary pre-surgical assessment:

New item 38251 – Selective coronary angiography involving native coronary vessels (For pre-operative assessment)

Overview: New item introduced as part of the restructure of coronary angiography, providing a single item as a complete medical service for an angiography performed involving native vessels for pre-operative assessment or evaluation of valvular or non-coronary structural heart disease. Specific indications are outlined in the descriptor. A consultation cannot be claimed pre-procedure where the provider already has an existing relationship with the patient.

Service/Descriptor:

Note: (pre-operative assessment) the service only applies if the patient meets the requirements of the descriptor and the requirements of Note: TR.8.5

Selective coronary angiography:

- (a) for a symptomatic patient with valvular or other non-coronary structural heart disease; and
- (b) as part of the management of the patient for:
 - (i) pre-operative assessment for planning non-coronary cardiac surgery, including by transcatheter approaches; or
 - (ii) evaluation of valvular heart disease or other non-coronary structural heart disease where clinical impression is discordant with non-invasive assessment; and
- (c) with placement of catheters and injection of opaque material into native coronary arteries; and
- (d) with or without left heart catheterisation, left ventriculography or aortography; and
- (e) including all associated imaging;



other than a service associated with a service to which item 38200, 38203, 38206, 38244, 38247, 38248, 38249 or 38252 applies—applicable once each 12 months (Anaes.)

Explanatory Note: Discussions of the results, findings or interpretation of a study are reasonably expected to be part of a formal report. Discussion of these findings with a patient does not constitute a consult. Similarly, discussion(s) during the course of a study or to determine the safety or appropriateness of the study is part of the service and should not be claimed as a consult.

Billing requirement: Not claimable with items 38200, 38203, 38206, 38244, 38247, 38248, 38249 or 38252. Claimable once in any 12 month period.

MBS fee: \$920.00

Private Health Insurance Classifications:

Clinical Category: Heart and Vascular System

Procedure Type: Type A – Advanced Surgical

New item 38252 – Selective coronary angiography involving native and graft coronary vessels (For pre-operative assessment)

Overview: New item introduced as part of the restructure of coronary angiography, providing a single item as a complete medical service for an angiography performed involving native and graft vessels for pre-operative assessment or evaluation of valvular or non-coronary structural heart disease. Specific indications are outlined in the descriptor. A consultation cannot be claimed pre-procedure where the provider already has an existing relationship with the patient. This is the graft equivalent item of 38251.

Service/Descriptor:

Note: (pre-operative assessment - graft) the service only applies if the patient meets the requirements of the descriptor and the requirements of Note: TR.8.5

Selective coronary and graft angiography:

- (a) for a symptomatic patient with valvular or other non-coronary structural heart disease; and
- (b) as part of the management of the patient for:
 - (i) pre-operative assessment for planning non coronary cardiac surgery, including by transcatheter approaches; or
 - (ii) evaluation of valvular heart disease or other non-coronary structural heart disease where clinical impression is discordant with non-invasive assessment; and
- (c) with placement of one or more catheters and injection of opaque material into the native coronary arteries; and



- (d) if free coronary grafts attached to the aorta or direct internal mammary artery grafts are present—with placement of one or more catheters and injection of opaque material into those grafts (irrespective of the number of grafts); and
- (e) with or without left heart catheterisation, left ventriculography or aortography; and
- (f) including all associated imaging;

other than a service associated with a service to which item 38200, 38203, 38206, 38244, 38247, 38248, 38249 or 38251 applies—applicable once each 12 months (Anaes.)

Explanatory note: This item is only claimable when the patient has graft arteries present and has undergone angiographic investigation of the native coronary arteries and any graft arteries, which can include free coronary grafts attached to the aorta or direct internal mammary artery grafts.

Discussions of the results, findings or interpretation of a study are reasonably expected to be part of a formal report. Discussion of these findings with a patient does not constitute a consult. Similarly, discussion(s) during the course of a study or to determine the safety or appropriateness of the study is part of the service and should not be claimed as a consult.

Billing requirement: Not claimable with items 38200, 38203, 38206, 38244, 38247, 38248, 38249 or 38251. Claimable once in any 12 month period

MBS fee: \$1,473.95

Private Health Insurance Classifications:

- Clinical Category:** Heart and Vascular System
- Procedure Type:** Type A – Advanced Surgical

New items used in conjunction with coronary angiography items:

New item 38254 – Right heart catheterisation performed at the same time as selective coronary angiography

Overview: A new item introduced for use in association with selective coronary angiography items, as right heart catheterisation is not considered a routine part of all angiography procedures. This procedure is provided as a separate item to be billed when required in the selective coronary angiography setting.

Service/Descriptor: Right heart catheterisation:

- (a) performed at the same time as service to which item 38244, 38247, 38248, 38249, 38251 or 38252 applies; and
- (b) including any of the following (if performed):
 - (i) fluoroscopy;



- (ii) oximetry;
- (iii) dye dilution curves;
- (iv) cardiac output measurement;
- (v) shunt detection;
- (vi) exercise stress test

(Anaes.)

Billing requirement: Claimed in association with coronary angiography items 38244, 38247, 38248, 38249, 38251 or 38252.

MBS fee: \$463.50

Private Health Insurance Classifications:

Clinical Category: Heart and Vascular System
Procedure Type: Unlisted



Items relating to percutaneous coronary intervention (PCI)

Deleted item 38300 – Transluminal balloon angioplasty of one coronary artery

This item is being deleted as it is considered obsolete.

Deleted item 38306 – Transluminal insertion of stent or stents

This item is being deleted and is incorporated into the new PCI items.

Deleted item 38312 – Percutaneous transluminal rotational atherectomy

This item is being deleted and consolidated with items 38309, 38315 and 38318. The consolidated item will be claimed through item 38309 and will be claimable as a standalone item or in association with the PCI items if required.

Deleted item 38315 – Percutaneous transluminal rotational atherectomy

This item is being deleted and consolidated with items 38309, 38312 and 38318. The consolidated item will be claimed through item 38309 and will be claimable as a standalone item or in association with the PCI items if required.

Deleted item 38318 – Percutaneous transluminal rotational atherectomy

This item is being deleted and consolidated with items 38309, 38312 and 38315. The consolidated item will be claimed through item 38309 and will be claimable as a standalone item or in association with the PCI items if required.

Deleted item 38303 – Transluminal balloon angioplasty

This item is being deleted and is incorporated into the new PCI items.



New PCI items for use in the Acute Coronary Syndrome (ACS) setting:

New item 38307 – Selective coronary angiography and percutaneous angioplasty or transluminal insertion of stent(s) in one territory

Overview: As part of the restructure of selective coronary angiography and PCI items, this item provides a single item for performing an angiography and proceeding to a PCI involving a single vascular territory in the patient with acute coronary syndrome indications. This item is not claimable if diagnostic coronary angiography has been performed in the previous 3 months, in this instance item 38316 should be claimed.

Service/Descriptor: Displayed on the following page for ease of reading

Billing requirement: Not claimable with items 38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38308, 38310, 38311, 38313, 38314, 38316, 38317, 38319, 38320, 38322 or 38323

MBS fee: \$1,844.60

Private Health Insurance Classifications:

Clinical Category: Heart and Vascular System

Procedure Type: Type A – Advanced Surgical



Item 38307 Service/Descriptor:

Note: (acute coronary syndrome - 1 coronary territory with selective coronary angiography) the service only applies if the patient meets the requirements of the descriptor and the requirements of Note: TR.8.2 and TR.8.5

Percutaneous coronary intervention:

- (a) for a patient eligible for the service, if:

Note: TR.8.2 Patient eligibility and timing referred to in the descriptor as clause 5.10.17A:

(1) A patient is eligible for a service to which item 38244, 38247, 38307, 38308, 38310, 38316, 38317 or 38319 applies if:

- (a) subclause (2) applies to the patient; and
(b) a service to which the item applies has not been provided to the patient in the previous 3 months, unless:
(i) the patient experiences a new acute coronary syndrome or angina, as described in paragraph (2)(a), (b) or (c), in that period; or
(ii) for a service to which item 38316, 38317 or 38319 applies—the service was provided to the patient in that period as a subsequent stage following an initial primary percutaneous coronary intervention procedure.

(2) This subclause applies to a patient who has:

- (a) an acute coronary syndrome evidenced by any of the following:
(i) ST segment elevation;
(ii) new left bundle branch block;
(iii) troponin elevation above the local upper reference limit;
(iv) new resting wall motion abnormality or perfusion defect;
(v) cardiogenic shock;
(vi) resuscitated cardiac arrest;
(vii) ventricular fibrillation;
(viii) sustained ventricular tachycardia; or

(b) unstable angina or angina equivalent with a crescendo pattern, rest pain or other high risk clinical features, such as hypotension, dizziness, pallor, diaphoresis or syncope occurring at a low threshold; or

(c) either of the following, detected on computed tomography coronary angiography:

- (i) significant left main coronary artery disease with greater than 50% stenosis or a cross sectional area of less than 6 mm²;
(ii) severe proximal left anterior descending coronary artery disease (with stenosis of more than 70% or a cross sectional area of less than 4 mm² before the first major diagonal branch).

and

- (ii) for whom selective coronary angiography has not been completed in the previous 3 months; and
(b) including selective coronary angiography and all associated imaging, catheter and contrast; and
(c) including either or both:



- (i) percutaneous angioplasty;
- (ii) transluminal insertion of one or more stents; and
- (d) performed on one coronary vascular territory; and
- (e) excluding aftercare;

other than a service associated with a service to which item 38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38308, 38310, 38311, 38313, 38314, 38316, 38317, 38319, 38320, 38322 or 38323 applies

(Anaes.) (Assist.)

Explanatory note: If a staged procedure is appropriately performed over multiple days, items 38316, 38317 or 38319 must be used for subsequent stages.

For subsequent stages of an acute percutaneous coronary intervention completed up to 3 months after the initial procedure, it is expected that the patient would receive the subsequent stage/s of the intervention based on the qualifying indication for the initial procedure

The item number claimed should reflect the number of coronary vascular territories (Left Anterior Descending, Circumflex or Right Coronary Artery distribution) that are treated during the procedure, not the total number of treated territories the patient has received to date.

For isolated Left Main (no involvement of the bifurcation), a single territory should be claimed but if the treated segment involves the bifurcation then 2 territories should be claimed.

The intermediate artery when treated in isolation is single territory, when treated with the Left Anterior Descending or Circumflex or both, should be claimed as two territories.

A single lesion in a bypass graft should be claimed as single territory regardless of how many vascular territories are supplied by that graft. If the graft has multiple lesions and those lesions are in separate skip portions to a different territory, then an additional territory may be claimed.

New item 38308 – Selective coronary angiography and percutaneous angioplasty or transluminal insertion of stent(s) in two territories

Overview: As part of the restructure of selective coronary angiography and PCI items, this item provides a single item for performing an angiography and proceeding to a PCI involving two vascular territories in the patient with acute coronary syndrome indications. This item is not claimable if diagnostic coronary angiography has been performed in the previous 3 months, in this instance item 38317 should be claimed.

Service/Descriptor:

Note: (acute coronary syndrome - 2 coronary territories with selective coronary angiography) the service only applies if the patient meets the requirements of the descriptor and the requirements of Note: TR.8.3 and TR.8.5

Percutaneous coronary intervention:



- (a) for a patient:
 - (i) eligible for the service if indications referenced in Note: TR.8.3 apply; and
 - (ii) for whom selective coronary angiography has not been completed in the previous 3 months; and
- (b) including selective coronary angiography and all associated imaging, catheter and contrast; and
- (c) including either or both:
 - (i) percutaneous angioplasty; and
 - (ii) transluminal insertion of one or more stents; and
- (d) performed on 2 coronary vascular territories; and
- (e) excluding aftercare;

other than a service associated with a service to which item 38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38310, 38311, 38313, 38314, 38316, 38317, 38319, 38320, 38322 or 38323 applies

(Anaes.) (Assist.)

Explanatory note: If a staged procedure is appropriately performed over multiple days, items 38316, 38317 or 38319 must be used for subsequent stages.

For subsequent stages of an acute percutaneous coronary intervention completed up to 3 months after the initial procedure, it is expected that the patient would receive the subsequent stage/s of the intervention based on the qualifying indication for the initial procedure

The item number claimed should reflect the number of coronary vascular territories (Left Anterior Descending, Circumflex or Right Coronary Artery distribution) that are treated during the procedure, not the total number of treated territories the patient has received to date.

For isolated Left Main (no involvement of the bifurcation), a single territory should be claimed but if the treated segment involves the bifurcation then 2 territories should be claimed.

The intermediate artery when treated in isolation is single territory, when treated with the Left Anterior Descending or Circumflex or both, should be claimed as two territories.

A single lesion in a bypass graft should be claimed as single territory regardless of how many vascular territories are supplied by that graft. If the graft has multiple lesions and those lesions are in separate skip portions to a different territory, then an additional territory may be claimed.

Billing requirement: Not claimable with items 38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38310, 38311, 38313, 38314, 38316, 38317, 38319, 38320, 38322 or 38323

MBS fee: \$2,122.25



Private Health Insurance Classifications:

Clinical Category: Heart and Vascular System

Procedure Type: Type A – Advanced Surgical

New item 38310 – Selective coronary angiography and percutaneous angioplasty or transluminal insertion of stent(s) in three territories

Overview: As part of the restructure of selective coronary angiography and PCI items, this item provides a single item for performing an angiography and proceeding to a PCI involving three vascular territories in the patient with acute coronary syndrome indications. This item is not claimable if diagnostic coronary angiography has been performed in the previous 3 months, in this instance item 38319 should be claimed.

Service/Descriptor:

Note: (acute coronary syndrome - 3 coronary territories with selective coronary angiography) the service only applies if the patient meets the requirements of the descriptor and the requirements of Note: TR.8.3 and TR.8.5

Percutaneous coronary intervention:

(a) for a patient:

(i) eligible for the service if indications referenced in Note: TR.8.3 apply; and

(ii) for whom selective coronary angiography has not been completed in the previous 3 months; and

(b) including selective coronary angiography and all associated imaging, catheter and contrast; and

(c) including either or both:

(i) percutaneous angioplasty; and

(ii) transluminal insertion of one or more stents; and

(d) performed on 3 coronary vascular territories; and

(e) excluding aftercare;

other than a service associated with a service to which item 38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38308, 38311, 38313, 38314, 38316, 38317, 38319, 38320, 38322 or 38323 applies

(Anaes.) (Assist.)

Explanatory note:

If a staged procedure is appropriately performed over multiple days, items 38316, 38317 or 38319 must be used for subsequent stages.



For subsequent stages of an acute percutaneous coronary intervention completed up to 3 months after the initial procedure, it is expected that the patient would receive the subsequent stage/s of the intervention based on the qualifying indication for the initial procedure

The item number claimed should reflect the number of coronary vascular territories (Left Anterior Descending, Circumflex or Right Coronary Artery distribution) that are treated during the procedure, not the total number of treated territories the patient has received to date.

For isolated Left Main (no involvement of the bifurcation), a single territory should be claimed but if the treated segment involves the bifurcation then 2 territories should be claimed.

The intermediate artery when treated in isolation is single territory, when treated with the Left Anterior Descending or Circumflex or both, should be claimed as two territories.

A single lesion in a bypass graft should be claimed as single territory regardless of how many vascular territories are supplied by that graft. If the graft has multiple lesions and those lesions are in separate skip portions to a different territory, then an additional territory may be claimed.

Billing requirement: Not claimable with items 38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38308, 38311, 38313, 38314, 38316, 38317, 38319, 38320, 38322 or 38323.

MBS fee: \$2,399.90

Private Health Insurance Classifications:

Clinical Category: Heart and Vascular System

Procedure Type: Type A – Advanced Surgical

New PCI item for use in the Non- Acute Coronary Syndrome (stable) setting:

New item 38311 – Selective coronary angiography and percutaneous angioplasty or transluminal insertion of stent(s) in one territory

Overview: As part of the restructure of selective coronary angiography and PCI items, this item provides a single item for performing an angiography and proceeding to a PCI involving a single vascular territory in the patient with non-acute coronary syndrome (stable) indications. This item is not claimable if diagnostic coronary angiography has been performed in the previous 3 months, in this instance item 38320 should be claimed. Eligibility for this item can also be met through recommendation of a heart team conference.

Service/Descriptor: Displayed on the following page for ease of reading.

Billing requirement: Not claimable with items 38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38308, 38310, 38313, 38314, 38316, 38317, 38319, 38320, 38322 or 38323



MBS fee: \$1,844.60

Private Health Insurance Classifications:

Clinical Category: Heart and Vascular System

Procedure Type: Type A – Advanced Surgical



New Item 38311 Service/Descriptor: Note: (stable multi-vessel disease – 1 coronary territory with selective angiography) the service only applies if the patient meets the requirements of the descriptor and the requirements of Note: TR.8.4 and TR.8.5

Percutaneous coronary intervention: (a) for a patient:

- (i) eligible for the service if Note TR.8.4 applies and a service to which item 38314 applies;

Note: TR.8.4 Patient eligibility referred to in the descriptor as clause 5.10.17C:

(1) A patient is eligible for a service to which item 38311, 38313, 38314, 38320, 38322 or 38323 applies if:

- (a) subclause (2) applies to the patient; or
- (b) the patient is recommended for the service as a result of a heart team conference that meets the requirements of subclause (4).

(2) This subclause applies to a patient if:

- (a) the patient has any of the following:
 - (i) limiting angina or angina equivalent despite an adequate trial of optimal medical therapy;
 - (ii) myocardial ischaemia demonstrated on functional imaging;
 - (iii) high risk features such as ST segment elevation, sustained ST depression, hypotension or a Duke treadmill score of minus 11 or less, demonstrated by stress electrocardiogram testing; and
- (b) the patient has either of the following in a vascular territory treated:
 - (i) a stenosis of 70% or more;
 - (ii) a fractional flow reserve of 0.80 or less, or non hyperaemic pressure ratios distal to the lesions of 0.89 or less; and
- (c) for items 38314 and 38323—either:
 - (i) the patient does not have diabetes mellitus and the multi vessel coronary artery disease of the patient meets the criterion in subclause (3); or
 - (ii) despite a recommendation that surgery is preferable, the patient has expressed a preference for catheter based intervention.

(3) For the purposes of subparagraph (2)(c)(i), the criterion for the multi vessel coronary artery disease is that the disease does not involve any of the following:

- (a) stenosis of more than 50% in the left main coronary artery;
- (b) bifurcation lesions involving side branches with a diameter of more than 2.75 mm;
- (c) chronic vessel occlusions for more than 3 months;
- (d) severely angulated or calcified lesions;
- (e) a SYNTAX score of more than 23.

(4) For the purposes of paragraph (1)(b), the requirements for a heart team conference are as follows:

- (a) the conference must be conducted by a team of specialists or consultant physicians practising in the speciality of cardiology or cardiothoracic surgery, including each of the following:
 - (i) an interventional cardiologist;
 - (ii) a specialist or consultant physician;
 - (iii) for items 38314 and 38323—a cardiothoracic surgeon;
 - (iv) for items 38311, 38313, 38320 and 38322—a cardiothoracic surgeon or a non interventional cardiologist; and
- (b) the team must:
 - (i) assess the patient's risk and technical suitability to receive the service; and
 - (ii) make a recommendation about whether or not the patient is suitable for percutaneous coronary intervention; and
- (c) a record of the conference must be created, and must include the following:
 - (i) the particulars of the assessment of the patient during the conference;
 - (ii) the recommendations made as a result of the conference;
 - (iii) the names of the members of the team making the recommendations.



and

- (ii) for whom selective coronary angiography has not been completed in the previous 3 months; and
- (b) including selective coronary angiography and all associated imaging, catheter and contrast; and
- (c) including either or both:
 - (i) percutaneous angioplasty; and
 - (ii) transluminal insertion of one or more stents; and
- (d) performed on one coronary vascular territory; and
- (e) excluding aftercare;

other than a service associated with a service to which item 38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38308, 38310, 38313, 38314, 38316, 38317, 38319, 38320, 38322 or 38323 applies

(Anaes.) (Assist.)

Explanatory Note:

Stable angina or angina equivalent includes chest pain, chest discomfort and/or shortness of breath due to myocardial ischaemia.

Limiting angina includes patients with symptoms that are Canadian Cardiovascular Society (CCS) class II, III or IV.

If a staged procedure is appropriately performed over multiple days, items 38320, 38322 or 38323 should be used for subsequent stages.

For subsequent stages of a stable percutaneous coronary intervention completed up to 3 months after the initial procedure, it is expected that the patient would receive the subsequent stage/s of the intervention based on the qualifying indication for the initial procedure

The item number claimed should reflect the number of coronary vascular territories (Left Anterior Descending, Circumflex or Right Coronary Artery distribution) that are treated during the procedure, not the total number of treated territories the patient has received to date.

The number of coronary vascular territory refers to any of the 3 major arteries (Left Anterior Descending, Circumflex or Right Coronary Artery) or their branches. The item number claimed should reflect the number of coronary vascular territories that are treated during the procedure, not the total number of diseased territories.

For isolated Left Main (no involvement of the bifurcation), a single territory should be claimed but if the treated segment involves the bifurcation then 2 territories should be claimed.

The intermediate artery when treated in isolation is single territory, when treated with the Left Anterior Descending or Circumflex or both, should be claimed as two territories.

A single lesion in a bypass graft should be claimed as single territory regardless of how many vascular territories are supplied by that graft. If the graft has multiple lesions and those lesions are in separate skip portions to a different territory, then an additional territory may be claimed.



New item 38313 – Selective coronary angiography and percutaneous angioplasty or transluminal insertion of stent(s) in two territories

Overview: As part of the restructure of selective coronary angiography and PCI items, this item provides a single item for performing an angiography and proceeding to a PCI involving two vascular territories in the patient with non-acute coronary syndrome (stable) indications. This item is not claimable if diagnostic coronary angiography has been performed in the previous 3 months, in this instance item 38322 should be claimed. Eligibility for this item can also be met through recommendation of a heart team conference.

Service/Descriptor:

Note: (stable multi-vessel disease - 2 coronary territories with selective angiography) the service only applies if the patient meets the requirements of the descriptor and the requirements of Note: TR.8.4 and TR.8.5

Percutaneous coronary intervention:

- (a) for a patient:
 - (i) eligible for the service if Note TR.8.4 applies and a service to which item 38314 applies; and
 - (ii) for whom selective coronary angiography has not been completed in the previous 3 months; and
- (b) including selective coronary angiography and all associated imaging, catheter and contrast; and
- (c) including either or both:
 - (i) percutaneous angioplasty; and
 - (ii) transluminal insertion of one or more stents; and
- (d) performed on 2 coronary vascular territories; and
- (e) excluding aftercare;

other than a service associated with a service to which item 38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38308, 38310, 38311, 38314, 38316, 38317, 38319, 38320, 38322 or 38323 applies (Anaes.) (Assist.)

Explanatory Note: Stable angina or angina equivalent includes chest pain, chest discomfort and/or shortness of breath due to myocardial ischaemia.

Limiting angina includes patients with symptoms that are Canadian Cardiovascular Society (CCS) class II, III or IV.

If a staged procedure is appropriately performed over multiple days, items 38320, 38322 or 38323 should be used for subsequent stages.

For subsequent stages of a stable percutaneous coronary intervention completed up to 3 months after the initial procedure, it is expected that the patient would receive the subsequent stage/s of the intervention based on the qualifying indication for the initial procedure.



The number of coronary vascular territory refers to any of the 3 major arteries (Left Anterior Descending, Circumflex or Right Coronary Artery) or their branches. The item number claimed should reflect the number of coronary vascular territories that are treated during the procedure, not the total number of diseased territories.

For isolated Left Main (no involvement of the bifurcation), a single territory should be claimed but if the treated segment involves the bifurcation then 2 territories should be claimed.

The intermediate artery when treated in isolation is single territory, when treated with the Left Anterior Descending or Circumflex or both, should be claimed as two territories.

A single lesion in a bypass graft should be claimed as single territory regardless of how many vascular territories are supplied by that graft. If the graft has multiple lesions and those lesions are in separate skip portions to a different territory, then an additional territory may be claimed.

Billing requirement: Not claimable with items 38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38308, 38310, 38311, 38314, 38316, 38317, 38319, 38320, 38322 or 38323

MBS fee: \$2,122.25

Private Health Insurance Classifications:

Clinical Category: Heart and Vascular System

Procedure Type: Type A – Advanced Surgical

New item 38314 – Selective coronary angiography and percutaneous angioplasty or transluminal insertion of stent(s) in three territories

Overview: As part of the restructure of selective coronary angiography and PCI items, this item provides a single item for performing an angiography and proceeding to a PCI involving three vascular territories in the patient with non-acute coronary syndrome (stable) indications. This item is not claimable if diagnostic coronary angiography has been performed in the previous 3 months, in this instance item 38323 should be claimed. Eligibility for this item can also be met through recommendation of a heart team conference, where one of the cardiac specialists is a cardiothoracic surgeon.

Service/Descriptor:

Note: (stable multi-vessel disease - 3 coronary territories with selective angiography) the service only applies if the patient meets the requirements of the descriptor and the requirements of Note: TR.8.4 and TR.8.5

Percutaneous coronary intervention:

(a) for a patient:

(i) eligible for the service if Note TR.8.4 applies; and

(ii) for whom selective coronary angiography has not been completed in the previous 3 months; and

(b) including selective coronary angiography and all associated imaging, catheter and contrast; and

(c) including either or both:



- (i) percutaneous angioplasty; and
- (ii) transluminal insertion of one or more stents; and
- (c) performed on 3 coronary vascular territories; and
- (e) excluding aftercare;

other than a service associated with a service to which item 38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38308, 38310, 38311, 38313, 38316, 38317, 38319, 38320, 38322 or 38323 applies

(Anaes.) (Assist.)

Explanatory Note: Complex coronary artery disease is defined as (a) a stenosis >50% in the left main coronary artery; (b) >90% in the proximal left anterior coronary artery; (c) bifurcation lesions involving side branches with a diameter >2.75mm; (d) chronic vessel occlusions (>3 months); (e) severely angulated or severely calcified lesions; or (f) SYNTAX score >23. Such disease should only undergo PCI with a documented recommendation from a Heart Team Conference.

Stable angina or angina equivalent includes chest pain, chest discomfort and/or shortness of breath due to myocardial ischaemia.

Limiting angina includes patients with symptoms that are Canadian Cardiovascular Society (CCS) class II, III or IV.

If a staged procedure is appropriately performed over multiple days, items 38320, 38322 or 38323 should be used for subsequent stages.

For subsequent stages of a stable percutaneous coronary intervention completed up to 3 months after the initial procedure, it is expected that the patient would receive the subsequent stage/s of the intervention based on the qualifying indication for the initial procedure.

The number of coronary vascular territory refers to any of the 3 major arteries (Left Anterior Descending, Circumflex or Right Coronary Artery) or their branches. The item number claimed should reflect the number of coronary vascular territories that are treated during the procedure, not the total number of diseased territories.

For isolated Left Main (no involvement of the bifurcation), a single territory should be claimed but if the treated segment involves the bifurcation then 2 territories should be claimed.

The intermediate artery when treated in isolation is single territory, when treated with the Left Anterior Descending or Circumflex or both, should be claimed as two territories.

A single lesion in a bypass graft should be claimed as single territory regardless of how many vascular territories are supplied by that graft. If the graft has multiple lesions and those lesions are in separate skip portions to a different territory, then an additional territory may be claimed.

Billing requirement: Not claimable with items 38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38308, 38310, 38311, 38313, 38316, 38317, 38319, 38320, 38322 or 38323

MBS fee: \$2,399.90

Private Health Insurance Classifications:

Clinical Category: Heart and Vascular System



Procedure Type: Type A – Advanced Surgical

New standalone PCI items for use in the Acute Coronary Syndrome (ACS) setting:

New item 38316 – Selective coronary angiography and percutaneous angioplasty or transluminal insertion of stent(s) in one territory

Overview: As part of the restructure of selective coronary angiography and PCI items, this item provides a single item for performing a standalone PCI involving a single vascular territory in the patient with acute coronary syndrome indication and diagnostic coronary angiography has been performed in the preceding 3 months. This item mirrors item 38307 with the exclusion of the diagnostic coronary angiography component.

Service/Descriptor:

Note: (acute coronary syndrome - 1 coronary territory without selective angiography) the service only applies if the patient meets the requirements of the descriptor and the requirements of Note: TR.8.3 and TR.8.5

Percutaneous coronary intervention:

- (a) for a patient:
 - (i) eligible for the service if indications referenced in Note: TR.8.3 apply; and
 - (ii) for whom selective coronary angiography has been completed in the previous 3 months; and
- (b) including any associated coronary angiography; and
- (c) including either or both:
 - (i) percutaneous angioplasty; and
 - (ii) transluminal insertion of one or more stents; and
- (d) performed on one coronary vascular territory; and
- (e) excluding aftercare;

other than a service associated with a service to which item 38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38308, 38310, 38311, 38313, 38314, 38317, 38319, 38320, 38322 or 38323 applies

(Anaes.) (Assist.)

Explanatory note: If a staged procedure is appropriately performed over multiple days, items 38316, 38317 or 38319 must be used for subsequent stages.



For subsequent stages of an acute percutaneous coronary intervention completed up to 3 months after the initial procedure, it is expected that the patient would receive the subsequent stage/s of the intervention based on the qualifying indication for the initial procedure

The number of coronary vascular territory refers to any of the 3 major arteries (Left Anterior Descending, Circumflex or Right Coronary Artery) or their branches. The item number claimed should reflect the number of coronary vascular territories that are treated during the procedure, not the total number of diseased territories.

For isolated Left Main (no involvement of the bifurcation), a single territory should be claimed but if the treated segment involves the bifurcation then 2 territories should be claimed.

The intermediate artery when treated in isolation is single territory, when treated with the Left Anterior Descending or Circumflex or both, should be claimed as two territories.

A single lesion in a bypass graft should be claimed as single territory regardless of how many vascular territories are supplied by that graft. If the graft has multiple lesions and those lesions are in separate skip portions to a different territory, then an additional territory may be claimed.

Billing requirement: Not claimable with items 38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38308, 38310, 38311, 38313, 38314, 38317, 38319, 38320, 38322 or 38323

MBS fee: \$1,648.95

Private Health Insurance Classifications:

Clinical Category: Heart and Vascular System

Procedure Type: Type A – Advanced Surgical

New item 38317 – Selective coronary angiography and percutaneous angioplasty or transluminal insertion of stent(s) in two territories

Overview: As part of the restructure of selective coronary angiography and PCI items, this item provides a single item for performing a standalone PCI involving two vascular territories in the patient with acute coronary syndrome indication and diagnostic coronary angiography has been performed in the preceding 3 months. This item mirrors item 38308 with the exclusion of the diagnostic coronary angiography component.

Service/Descriptor:

Note: (acute coronary syndrome - 2 coronary territories without selective angiography) the service only applies if the patient meets the requirements of the descriptor and the requirements of Note: TR.8.3 and TR.8.5

Percutaneous coronary intervention:

(a) for a patient:

(i) eligible for the service if indications referenced in Note: TR.8.3 apply; and

(ii) for whom selective coronary angiography has been completed in the previous 3 months; and



(b) including any associated coronary angiography; and

(c) including either or both:

(i) percutaneous angioplasty; and

(ii) transluminal insertion of one or more stents; and

(d) performed on 2 coronary vascular territories; and

(e) excluding aftercare;

other than a service associated with a service to which item 38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38308, 38310, 38311, 38313, 38314, 38316, 38319, 38320, 38322 or 38323 applies

(Anaes.) (Assist.)

Explanatory note: If a staged procedure is appropriately performed over multiple days, items 38316, 38317 or 38319 must be used for subsequent stages.

For subsequent stages of an acute percutaneous coronary intervention completed up to 3 months after the initial procedure, it is expected that the patient would receive the subsequent stage/s of the intervention based on the qualifying indication for the initial procedure

The number of coronary vascular territory refers to any of the 3 major arteries (Left Anterior Descending, Circumflex or Right Coronary Artery) or their branches. The item number claimed should reflect the number of coronary vascular territories that are treated during the procedure, not the total number of diseased territories.

For isolated Left Main (no involvement of the bifurcation), a single territory should be claimed but if the treated segment involves the bifurcation then 2 territories should be claimed.

The intermediate artery when treated in isolation is single territory, when treated with the Left Anterior Descending or Circumflex or both, should be claimed as two territories.

A single lesion in a bypass graft should be claimed as single territory regardless of how many vascular territories are supplied by that graft. If the graft has multiple lesions and those lesions are in separate skip portions to a different territory, then an additional territory may be claimed.

Billing requirement: Not claimable with items 38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38308, 38310, 38311, 38313, 38314, 38316, 38319, 38320, 38322 or 38323

MBS fee: \$2,088.80

Private Health Insurance Classifications:

Clinical Category: Heart and Vascular System

Procedure Type: Type A – Advanced Surgical



New item 38319 – Selective coronary angiography and percutaneous angioplasty or transluminal insertion of stent(s) in three territories

Overview: As part of the restructure of selective coronary angiography and PCI items, this item provides a single item for performing a standalone PCI involving three vascular territories in the patient with acute coronary syndrome indication, as diagnostic coronary angiography has been performed in the preceding 3 months. This item mirrors item 38310 with the exclusion of the diagnostic coronary angiography component.

Service/Descriptor:

Note: (acute coronary syndrome - 3 coronary territories without selective angiography) the service only applies if the patient meets the requirements of the descriptor and the requirements of Note: TR.8.3 and TR.8.5

Percutaneous coronary intervention:

- (a) for a patient:
 - (i) eligible for the service if indications referenced in Note: TR.8.3 apply; and
 - (ii) for whom selective coronary angiography has been completed in the previous 3 months; and
- (b) including any associated coronary angiography; and
- (c) including either or both:
 - (i) percutaneous angioplasty; and
 - (ii) transluminal insertion of one or more stents; and
- (d) performed on 3 coronary vascular territories; and
- (e) excluding aftercare;

other than a service associated with a service to which item 38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38308, 38310, 38311, 38313, 38314, 38316, 38317, 38320, 38322 or 38323 applies

(Anaes.) (Assist.)

Explanatory note: If a staged procedure is appropriately performed over multiple days, items 38316, 38317 or 38319 must be used for subsequent stages.

For subsequent stages of an acute percutaneous coronary intervention completed up to 3 months after the initial procedure, it is expected that the patient would receive the subsequent stage/s of the intervention based on the qualifying indication for the initial procedure

The number of coronary vascular territory refers to any of the 3 major arteries (Left Anterior Descending, Circumflex or Right Coronary Artery) or their branches. The item number claimed should reflect the number of coronary vascular territories that are treated during the procedure, not the total number of diseased territories.

For isolated Left Main (no involvement of the bifurcation), a single territory should be claimed but if the treated segment involves the bifurcation then 2 territories should be claimed.



The intermediate artery when treated in isolation is single territory, when treated with the Left Anterior Descending or Circumflex or both, should be claimed as two territories.

A single lesion in a bypass graft should be claimed as single territory regardless of how many vascular territories are supplied by that graft. If the graft has multiple lesions and those lesions are in separate skip portions to a different territory, then an additional territory may be claimed.

Billing requirement: Not claimable with items 38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38308, 38310, 38311, 38313, 38314, 38316, 38317, 38320, 38322 or 38323

MBS fee: \$2,366.45

Private Health Insurance Classifications:

Clinical Category: Heart and Vascular System

Procedure Type: Type A – Advanced Surgical

New standalone PCI items for use in the non- Acute Coronary Syndrome (stable) setting:

New item 38320 – Selective coronary angiography and percutaneous angioplasty or transluminal insertion of stent(s) in one territory

Overview: As part of the restructure of selective coronary angiography and PCI items, this item provides a single item for performing a standalone PCI involving a single vascular territory in the patient with non-acute coronary syndrome (stable) indications, as a diagnostic angiography has been performed in the preceding 3 months. This item mirrors item 38311 with the exclusion of the diagnostic angiography component. Eligibility for this item can also be met through recommendation of a heart team conference.

Service/Descriptor:

Note: (stable multi-vessel disease - 1 coronary territory without selective angiography) the service only applies if the patient meets the requirements of the descriptor and the requirements of Note: TR.8.4 and TR.8.5

Percutaneous coronary intervention:

- (a) for a patient:
 - (i) eligible for the service if Note TR.8.4 applies and a service to which item 38323 applies; and
 - (ii) for whom selective coronary angiography has been completed in the previous 3 months; and
- (b) including any associated coronary angiography; and
- (c) including either or both:
 - (i) percutaneous angioplasty; and



- (ii) transluminal insertion of one or more stents; and
- (d) performed on one coronary vascular territory; and
- (e) excluding aftercare;

other than a service associated with a service to which item 38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38308, 38310, 38311, 38313, 38314, 38316, 38317, 38319, 38322 or 38323 applies (Anaes.) (Assist.)

Explanatory Note: Stable angina or angina equivalent includes chest pain, chest discomfort and/or shortness of breath due to myocardial ischaemia.

Limiting angina includes patients with symptoms that are Canadian Cardiovascular Society (CCS) class II, III or IV.

If a staged procedure is appropriately performed over multiple days, items 38320, 38322 or 38323 should be used for subsequent stages.

For subsequent stages of a stable percutaneous coronary intervention completed up to 3 months after the initial procedure, it is expected that the patient would receive the subsequent stage/s of the intervention based on the qualifying indication for the initial procedure.

The number of coronary vascular territory refers to any of the 3 major arteries (Left Anterior Descending, Circumflex or Right Coronary Artery) or their branches. The item number claimed should reflect the number of coronary vascular territories that are treated during the procedure, not the total number of diseased territories.

For isolated Left Main (no involvement of the bifurcation), a single territory should be claimed but if the treated segment involves the bifurcation then 2 territories should be claimed.

The intermediate artery when treated in isolation is single territory, when treated with the Left Anterior Descending or Circumflex or both, should be claimed as two territories.

A single lesion in a bypass graft should be claimed as single territory regardless of how many vascular territories are supplied by that graft. If the graft has multiple lesions and those lesions are in separate skip portions to a different territory, then an additional territory may be claimed.

Billing requirement: Not claimable with items 38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38308, 38310, 38311, 38313, 38314, 38316, 38317, 38319, 38322 or 38323

MBS fee: \$1,648.95

Private Health Insurance Classifications:

Clinical Category: Heart and Vascular System

Procedure Type: Type A – Advanced Surgical



New item 38322 – Selective coronary angiography and percutaneous angioplasty or transluminal insertion of stent(s) in two territories

Overview: As part of the restructure of selective coronary angiography and PCI items, this item provides a single item for performing a standalone PCI involving two vascular territories in the patient with non-acute coronary syndrome (stable) indications, as a diagnostic angiography has been performed in the preceding 3 months. This item mirrors item 38313 with the exclusion of the diagnostic coronary angiography component. Eligibility for this item can also be met through recommendation of a heart team conference.

Service/Descriptor:

Note: (stable multi-vessel disease - 2 coronary territories without selective angiography) the service only applies if the patient meets the requirements of the descriptor and the requirements of Note: TR.8.4 and TR.8.5

Percutaneous coronary intervention:

- (a) for a patient:
 - (i) eligible for the service if Note TR.8.4 applies and a service to which item 38323 applies; and
 - (ii) for whom selective coronary angiography has been completed in the previous 3 months; and
- (b) including any associated coronary angiography; and
- (c) including either or both:
 - (i) percutaneous angioplasty; and
 - (ii) transluminal insertion of one or more stents; and
- (d) performed on 2 coronary vascular territories; and
- (e) excluding aftercare;

other than a service associated with a service to which item 38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38308, 38310, 38311, 38313, 38314, 38316, 38317, 38319, 38320 or 38323 applies (Anaes.) (Assist.)

Explanatory Note: Stable angina or angina equivalent includes chest pain, chest discomfort and/or shortness of breath due to myocardial ischaemia.

Limiting angina includes patients with symptoms that are Canadian Cardiovascular Society (CCS) class II, III or IV.

If a staged procedure is appropriately performed over multiple days, items 38320, 38322 or 38323 should be used for subsequent stages.

For subsequent stages of a stable percutaneous coronary intervention completed up to 3 months after the initial procedure, it is expected that the patient would receive the subsequent stage/s of the intervention based on the qualifying indication for the initial procedure.



The number of coronary vascular territory refers to any of the 3 major arteries (Left Anterior Descending, Circumflex or Right Coronary Artery) or their branches. The item number claimed should reflect the number of coronary vascular territories that are treated during the procedure, not the total number of diseased territories.

For isolated Left Main (no involvement of the bifurcation), a single territory should be claimed but if the treated segment involves the bifurcation then 2 territories should be claimed.

The intermediate artery when treated in isolation is single territory, when treated with the Left Anterior Descending or Circumflex or both, should be claimed as two territories.

A single lesion in a bypass graft should be claimed as single territory regardless of how many vascular territories are supplied by that graft. If the graft has multiple lesions and those lesions are in separate skip portions to a different territory, then an additional territory may be claimed.

Billing requirement: Not claimable with items 38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38308, 38310, 38311, 38313, 38314, 38316, 38317, 38319, 38320 or 38323

MBS fee: \$2,088.80

Private Health Insurance Classifications:

Clinical Category: Heart and Vascular System

Procedure Type: Type A – Advanced Surgical

New item 38323 – Selective coronary angiography and percutaneous angioplasty or transluminal insertion of stent(s) in three territories

Overview: As part of the restructure of selective coronary angiography and PCI items, this item provides a single item for performing a standalone PCI involving three vascular territories in the patient with non-acute coronary syndrome (stable) indications, as an ICA has been performed in the preceding 3 months. This item mirrors item 38314 with the exclusion of the diagnostic coronary angiography component. Eligibility for this item can also be met through recommendation of a heart team conference.

Service/Descriptor:

Note: (stable multi-vessel disease - 3 coronary territories without selective angiography) the service only applies if the patient meets the requirements of the descriptor and the requirements of Note: TR.8.4 and TR.8.5

Percutaneous coronary intervention:

- (a) for a patient:
 - (i) eligible for the service if Note TR.8.4 applies; and
 - (ii) for whom selective coronary angiography has been completed in the previous 3 months; and
- (b) including any associated coronary angiography; and
- (c) including either or both:



- (i) percutaneous angioplasty; and
- (ii) transluminal insertion of one or more stents; and
- (d) performed on 3 coronary vascular territories; and
- (e) excluding aftercare;

other than a service associated with a service to which item 38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38308, 38310, 38311, 38313, 38314, 38316, 38317, 38319, 38320 or 38322 applies (Anaes.) (Assist.)

Explanatory Note: Complex coronary artery disease is defined as (a) a stenosis >50% in the left main coronary artery; (b) >90% in the proximal left anterior coronary artery; (c) bifurcation lesions involving side branches with a diameter >2.75mm; (d) chronic vessel occlusions (>3 months); (e) severely angulated or severely calcified lesions; or (f) SYNTAX score >23. Such disease should only undergo PCI with a documented recommendation from a Heart Team Conference.

Stable angina or angina equivalent includes chest pain, chest discomfort and/or shortness of breath due to myocardial ischaemia.

Limiting angina includes patients with symptoms that are Canadian Cardiovascular Society (CCS) class II, III or IV.

If a staged procedure is appropriately performed over multiple days, items 38320, 38322 or 38323 should be used for subsequent stages.

For subsequent stages of a stable percutaneous coronary intervention completed up to 3 months after the initial procedure, it is expected that the patient would receive the subsequent stage/s of the intervention based on the qualifying indication for the initial procedure.

The number of coronary vascular territory refers to any of the 3 major arteries (Left Anterior Descending, Circumflex or Right Coronary Artery) or their branches. The item number claimed should reflect the number of coronary vascular territories that are treated during the procedure, not the total number of diseased territories.

For isolated Left Main (no involvement of the bifurcation), a single territory should be claimed but if the treated segment involves the bifurcation then 2 territories should be claimed.

The intermediate artery when treated in isolation is single territory, when treated with the Left Anterior Descending or Circumflex or both, should be claimed as two territories.

A single lesion in a bypass graft should be claimed as single territory regardless of how many vascular territories are supplied by that graft. If the graft has multiple lesions and those lesions are in separate skip portions to a different territory, then an additional territory may be claimed.

Billing requirement: Not claimable with items 38200, 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38307, 38308, 38310, 38311, 38313, 38314, 38316, 38317, 38319, 38320 or 38322

MBS fee: \$2,366.45

Private Health Insurance Classifications:

Clinical Category: Heart and Vascular System



Procedure Type: Type A – Advanced Surgical

Computed Tomography of the Coronary Arteries (CTCA)

Amended item 57360 – Computed tomography of the coronary arteries where patient is not known to have coronary artery disease

Overview: This item is amended for specialist investigation of coronary arteries where the patient is not known to have coronary artery disease.

Service/Descriptor: Computed tomography of the coronary arteries performed on a minimum of a 64 slice (or equivalent) scanner if:

- (a) the request is made by a specialist or consultant physician; and
- (b) for a patient not known to have coronary artery disease who:
 - (i) has stable or acute symptoms consistent with coronary ischaemia; and
 - (ii) is at low to intermediate risk of an acute coronary event, including having no significant cardiac biomarker elevation and no electrocardiogram changes indicating acute ischaemia

Applicable not more than once in a 5 year period (R) (Anaes.)

Explanatory Note: Please note that an administrative update will be provided 1 November 2021 advising when item 57360 can be claimed within 5 years of a previous service to which item 57360 applies.

- The clause ‘for a patient who is not known to have coronary artery disease’ is defined as those patients who do not already have documented significant obstructive coronary artery disease that is being treated by the requesting provider.
- Patients with typical or atypical angina symptoms (as per NICE criteria) or known coronary artery disease should be referred for functional testing and/or referred to a cardiologist or consultant physician for management.
- Heart rate during CTCA should be less than 65 beats per minute wherever possible, and sublingual GTN should be administered immediately prior to scanning where clinically appropriate.

MBS fee: \$710.50 (no change)

Private Health Insurance Classifications:

Clinical Category: Heart and Vascular System

Procedure Type: Unlisted



New item 57364 – Computed tomography of the coronary arteries for investigation of non-coronary artery related indications

Overview: Introduction of a new item for computed tomography angiography for investigation of non-coronary artery related indications, including newly diagnosed left ventricular systolic dysfunction, patients who are undergoing non-coronary cardiac surgery, or as an alternative treatment to selective coronary angiography (provided the patient meets the criteria for the items listed in 38247, 38249, or 38252).

Service/Descriptor:

Note: the service only applies if the patient meets the requirements of the descriptor and the requirements of Note: TR.8.3 (item 38247), TR.8.2 (item 38249) or 38252 if subclause (iv) applies.

Computed tomography of the coronary arteries performed on a minimum of a 64 slice (or equivalent) scanner, if:

- (a) the service is requested by a specialist or consultant physician; and
- (b) at least one of the following apply to the patient:
 - (i) the patient has stable symptoms and newly recognised left ventricular systolic dysfunction of unknown aetiology;
 - (ii) the patient requires exclusion of coronary artery anomaly or fistula;
 - (iii) the patient will be undergoing non coronary cardiac surgery;
 - (iv) the patient meets the criteria to be eligible for a service to which item 38247, 38249 or 38252 applies, but as an alternative to selective coronary angiography will require an assessment of the patency of one or more bypass grafts

(R) (Anaes)

Explanatory Note:

Heart rate during CTCA should be less than 65 beats per minute wherever possible, and sublingual GTN should be administered immediately prior to scanning where clinically appropriate.

The presence of coronary calcium alone does not preclude CTCA.

Discussions of the results, findings or interpretation of a study are reasonably expected to be part of a formal report. Discussion of these findings with a patient does not constitute a consult. Similarly, discussion(s) during the course of a study or to determine the safety or appropriateness of the study is part of the service and should not be claimed as a consult.

MBS fee: \$710.50

Private Health Insurance Classifications:

Clinical Category: Support List

Procedure Type: Type C



Amended item 38241 – Use of a coronary pressure wire during selective coronary angiography

Overview: This item has been amended to align with the changes in selective coronary angiography and PCI items. The changes clarify inclusion criteria, providing access to use of a pressure wire per vascular territory during angiography or percutaneous coronary intervention.

Service/Descriptor: Use of a coronary pressure wire, if the service is:

- (a) performed during selective coronary angiography, percutaneous angioplasty or transluminal insertion of one or more stents; and
- (b) to measure fractional flow reserve, non-hyperaemic pressure ratios or coronary flow reserve in intermediate coronary artery or graft lesions (stenosis of 50 to 70%); and
- (c) to determine whether revascularisation is appropriate if previous functional imaging:
 - (i) has not been performed; or
 - (ii) has been performed but the results are inconclusive or do not apply to the vessel being interrogated; and
- (d) performed on one or more coronary vascular territories (Anaes.)

Billing requirement: This item can be claimed once if a single vascular territory is interrogated, twice if two vascular territories are interrogated or thrice if three vascular territories are interrogated during angiography.

MBS fee: \$488.70

Private Health Insurance Classifications:

Clinical Category: Heart and Vascular System

Procedure Type: Unlisted

Other items – using transcatheter approach

Amended item 38200 – Right heart catheterisation for use in the non-coronary setting

Overview: This item has been amended to provide access to right heart catheterisation for use in the non-coronary setting (outside of angiography). Same day claiming restrictions have been added to this item to restrict claiming with selective coronary angiography items.

Service/Descriptor: Right heart catheterisation with any one or more of the following:

- (a) fluoroscopy;



- (b) oximetry;
- (c) dye dilution curves;
- (d) cardiac output measurement by any method;
- (e) shunt detection;
- (f) exercise stress test;

other than a service associated with a service to which item 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38254 or 38368 applies (Anaes.)

Explanatory Note: Discussions of the results, findings or interpretation of a study are reasonably expected to be part of a formal report. Discussion of these findings with a patient does not constitute a consult. Similarly, discussion(s) during the course of a study or to determine the safety or appropriateness of the study is part of the service and should not be claimed as a consult.

For investigations performed by a specialist paediatric cardiologist, co-claiming of a consultation with the investigation is permitted even when a consultation was not specifically requested when:

- the paediatric patient was referred for an investigation; and
- the paediatric patient was not known to the provider; and
- the paediatric patient was not under the care of another paediatric cardiologist; and
- the findings on the investigation appropriately warranted a consultation.

The paediatric co-claiming exception should not be applied to cardiologists treating or investigating adult congenital heart disease.

Billing requirement: Not claimable with items 38203, 38206, 38244, 38247, 38248, 38249, 38251, 38252, 38254 or 38368

MBS fee: \$463.50

Private Health Insurance Classifications:

Clinical Category: Heart and Vascular System

Procedure Type: Type A – Surgical and Type B – Non-band specific

Amended item 38203 – Left heart catheterisation for use in the non-coronary setting

Overview: This item has been amended to provide access to left heart catheterisation for use in the non-coronary setting (outside of angiography). Same day claiming restrictions have been added to this item to restrict claiming with selective coronary angiography items.



Service/Descriptor: Left heart catheterisation by percutaneous arterial puncture, arteriotomy or percutaneous left ventricular puncture, with any one or more of the following:

- (a) fluoroscopy;
- (b) oximetry;
- (c) dye dilution curves;
- (d) cardiac output measurements by any method;
- (e) shunt detection;
- (f) exercise stress test;

other than a service associated with a service to which item 38200, 38206, 38244, 38247, 38248, 38249, 38251, 38252 or 38254 applies (Anaes.)

Explanatory Note: Discussions of the results, findings or interpretation of a study are reasonably expected to be part of a formal report. Discussion of these findings with a patient does not constitute a consult. Similarly, discussion(s) during the course of a study or to determine the safety or appropriateness of the study is part of the service and should not be claimed as a consult.

For investigations performed by a specialist paediatric cardiologist, co-claiming of a consultation with the investigation is permitted even when a consultation was not specifically requested when:

- the paediatric patient was referred for an investigation; and
- the paediatric patient was not known to the provider; and
- the paediatric patient was not under the care of another paediatric cardiologist; and
- the findings on the investigation appropriately warranted a consultation.

The paediatric co-claiming exception should not be applied to cardiologists treating or investigating adult congenital heart disease.

Billing requirement: Not claimable with items 38200, 38206, 38244, 38247, 38248, 38249, 38251, 38252 or 38254

MBS fee: \$553.10

Private Health Insurance Classifications:

Clinical Category: Heart and Vascular System

Procedure Type: Type A – Surgical



Amended item 38206 – Right heart catheterisation with left heart catheterisation

Overview: This item has been amended to provide access to right heart catheterisation with left heart catheterisation for use in the non-coronary setting (outside of angiography). Same day claiming restrictions have been added to this item to restrict claiming with the selective coronary angiography items.

Service/Descriptor: Right heart catheterisation with left heart catheterisation via the right heart or by another procedure, with any one or more of the following:

- (a) fluoroscopy;
- (b) oximetry;
- (c) dye dilution curves;
- (d) cardiac output measurements by any method;
- (e) shunt detection;
- (f) exercise stress test;

other than a service associated with a service to which item 38200, 38203, 38244, 38247, 38248, 38249, 38251, 38252 or 38254 applies (Anaes.)

Explanatory Note: Discussions of the results, findings or interpretation of a study are reasonably expected to be part of a formal report. Discussion of these findings with a patient does not constitute a consult. Similarly, discussion(s) during the course of a study or to determine the safety or appropriateness of the study is part of the service and should not be claimed as a consult.

For investigations performed by a specialist paediatric cardiologist, co-claiming of a consultation with the investigation is permitted even when a consultation was not specifically requested when:

- the paediatric patient was referred for an investigation; and
- the paediatric patient was not known to the provider; and
- the paediatric patient was not under the care of another paediatric cardiologist; and
- the findings on the investigation appropriately warranted a consultation.

The paediatric co-claiming exception should not be applied to cardiologists treating or investigating adult congenital heart disease.

Billing requirement: Not claimable with items 38200, 38203, 38244, 38247, 38248, 38249, 38251, 38252 or 38254

MBS fee: \$668.70

Private Health Insurance Classifications:



Clinical Category: Heart and Vascular System

Procedure Type: Type A – Surgical

Amended item 38272 – Atrial septal defect or patent foramen ovale closure

Overview: This item has been amended to provide clarity around clinical indications for use and to include associated heart catheterisation as part of the procedure. In addition, same day co-claiming restrictions with the distinct heart catheterisation items have been applied.

Service/Descriptor: Atrial septal defect or patent foramen closure:

- (a) for congenital heart disease in a patient with documented evidence of right heart overload or paradoxical embolism; and
- (b) using a septal occluder or similar device, by transcatheter approach; and
- (c) including right or left heart catheterisation (or both);

other than a service associated with a service to which item 38200, 38203, 38206 or 38254 applies (Anaes.) (Assist.)

Explanatory Note:

This item may be claimed without evidence of right heart overload in highly rare paediatric conditions such as abnormal development of the right heart. Additionally, in patients under 16 years old, risk of paradoxical embolism is sufficient.

Billing requirement: Not claimable with items 38200, 38203, 38206 or 38254

MBS fee: \$949.25

Private Health Insurance Classifications:

Clinical Category: Heart and Vascular System

Procedure Type: Type A – Advanced Surgical and Type B – Non-band specific

Amended item 38274 – Ventricular septal defect

Overview: This item is amended to exclude imaging services as this would be provided by a different provider and billed separately.

Service/Descriptor: Ventricular septal defect, transcatheter closure of, with cardiac catheterisation, excluding imaging (H) (Anaes.) (Assist.)

MBS fee: \$777.60

Private Health Insurance Classifications:



Clinical Category: Heart and Vascular System

Procedure Type: Type A –Surgical

Amended item 38309 – Percutaneous transluminal rotational atherectomy

Overview: This item has been amended to include the consolidation of 4 atherectomy items (items 38309, 38312, 38315 and 38318) into a single atherectomy item, for use in conjunction with PCI items.

Service/Descriptor: Percutaneous transluminal rotational atherectomy of one or more coronary arteries, including all associated imaging, if:

- (a) the target stenosis within at least one coronary artery is heavily calcified and balloon angioplasty with or without stenting is not feasible without rotational atherectomy; and
- (b) the service is performed in conjunction with a service to which item 38307, 38308, 38310, 38311, 38313, 38314, 38316, 38317, 38319, 38320, 38322 or 38323 applies

Applicable only once on each occasion the service is performed (Anaes.) (Assist.)

Explanatory Note:

Percutaneous transluminal coronary rotational atherectomy is suitable for revascularisation of stenoses in heavily calcified coronary arteries in the absence of significant lesion angulation or vessel tortuosity in patients for whom coronary artery bypass graft surgery is not indicated.

Item 38309 describes an episode of service and can only be claimed once in a single episode.

Billing requirement: Only claimable once in an episode of care and claimed in association with a service to which items 38307, 38308, 38310, 38311, 38313, 38314, 38316, 38317, 38319, 38320, 38322 or 38323 apply.

MBS fee: \$1,250.70 (previously \$913.10 – the fee includes a weighted average of all 4 items being consolidated)

Private Health Insurance Classifications:

Clinical Category: Heart and Vascular System

Procedure Type: Type A – Advanced Surgical

Where can I find more information?

The full item descriptor(s) and information on other changes to the MBS will be available on 1 July 2021 on the MBS Online website at [MBS Online](#). You can also subscribe to future MBS updates by visiting [MBS Online](#) and clicking 'Subscribe'.

For questions relating to implementation, or to the interpretation of the changes to cardiac surgical MBS items prior to 1 July 2021, please email cardiacservices@health.gov.au. For questions after implementation on 1 July 2021, please email [askMBS](#).

For questions regarding the proposed PHI classifications, please email PHI@health.gov.au.



The Department of Health provides an email advice service for providers seeking advice on interpretation of the MBS items and rules and the Health Insurance Act and associated regulations. If you have a query relating exclusively to interpretation of the Schedule, you should email [askMBS](#).

Subscribe to '[News for Health Professionals](#)' on the Department of Human Services website and you will receive regular news highlights.

If you are seeking advice in relation to Medicare billing, claiming, payments, or obtaining a provider number, please go to the Health Professionals page on the Department of Human Services website or contact the Department of Human Services on the Provider Enquiry Line – 13 21 50.

The data file for software vendors is expected to become available by early June 2021 and can be accessed via the MBS Online website under the [Downloads](#) page.

Please note that the information provided is a general guide only. It is ultimately the responsibility of treating practitioners to use their professional judgment to determine the most clinically appropriate services to provide, and then to ensure that any services billed to Medicare fully meet the eligibility requirements outlined in the legislation.

This sheet is current as of the Last updated date shown above, and does not account for MBS changes since that date.

COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-54

This is the Annexure marked "DD-54" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

HONEYSUCKLE HEALTH PRIVACY POLICY

This Privacy Policy was last updated July 2021.

1. Introduction

Honeysuckle Health Pty Ltd respects the privacy rights of our customers and other organisations with whom we interact with. We are committed to complying with all applicable privacy laws including the Privacy Act 1988 (Cth), Australian Privacy Principles and applicable State legislation.

Within this Privacy Policy, “we”, “our”, “us” and “Honeysuckle Health” refers to Honeysuckle Health Pty Ltd, ABN 55637339694.

This Privacy Policy tells you how Honeysuckle Health handles personal information.

2. Collection of Personal Information

I. What Personal Information Do We Collect?

Personal information means information or opinion that reasonably identifies you as an individual. The types of personal information we collect include your name, contact details and gender.

The types of personal information (including sensitive information) we collect will depend on your relationship and interaction with us. This includes whether you are:

- a Honeysuckle Health customer name, contact details, gender
- an authorised representative of a Honeysuckle Health customer – name and contact details
- job applicant – name, contact details and other information in your job application; or
- another third party (such as an existing or potential business partner) name, contact details, and the details of the business

Sensitive information is a subset of personal information that includes your health information (including medical history), genetic information, information about your racial or ethnic origin, political opinion, religious beliefs, sexual orientation and criminal record.

The types of sensitive health information that we may collect from you includes details about your medical conditions, treatment and care. We may also collect information on your cultural background when this is relevant to your care (e.g. to ensure culturally appropriate practices, and to identify cultural-specific programs that may be available to you).

II. How We Collect Your Personal Information

a. Information we collect from you

We collect your personal information during the course of providing you with health services. This includes where we enrol you in one of our health management programs.

Wherever possible, we will seek to obtain your consent prior to collecting your personal and sensitive health information.

This collection may occur in a variety of ways, including through the forms you complete in electronic or hard copy form, on our website or through email, when you enrol for our digital health programs on the relevant apps or where you provide us with information over the telephone.

You may nominate a representative to speak with Honeysuckle Health on your behalf and discuss your personal information and sensitive health information with us. Provided that you and your nominated representative both provide consent, we may collect, use and disclose your personal information and sensitive health information to your nominated representative.

b. Information about Authorised Representatives that we collect from Honeysuckle Health Customers

We may collect the personal information of nominated representatives. We collect this information in order for us to be able to verify the identity of the nominated representative and communicate with them about a patient's care.

c. Information we collect from third parties

We may collect personal information about you from third parties such as your doctor, treating hospital, health insurer, or other health service provider, if it is not reasonable or practicable to collect this information from you, or with your consent. This may also include other people or organisations who might be representing you, or any person assisting or representing us.

d. Publicly available resources

We may also collect your personal information from publicly available sources such as internet search engines and social networking services. When we do so, we ensure that we have a legal basis for using your personal information, such as to enable us to contact you and offer our products and services to you.

e. Information we collect from search engines and applications

Like many companies, we use technology and tools that tell us when a computer or device has visited or accessed our website content. Those tools include services from search engines and other companies that help us to tailor our products and services to better suit our customers and potential customers. Search engines provide facilities to allow you to indicate your preferences in relation to the use of those tools in connection with computers and other devices controlled or used by you. Our mobile applications may also collect precise location information from your device if you consent to the collection of this information, and we will always respect your preferences including if you choose to withdraw your consent at any time.

We strive to collect personal information directly from you with your knowledge and consent. However, if you do not consent and we do not have your personal information, we may not be able to process your requests or employment application or provide our services to you including providing health management programs or other assistance.

3. Remaining anonymous

You have the right to remain anonymous or use a pseudonym when interacting with us. However, it may not always be possible for us to provide a service to you if you choose to remain anonymous – for example, when need to liaise with your health insurer or treatment team we assess your suitability for a particular healthcare program or service. We will inform you if you are unable to remain anonymous when dealing with us.

4. Purposes for which we collect, hold, and use Your Personal Information

How we use your personal information depends on our relationship and interaction with you. Below are the main purposes for which we collect and use your information:

- to identify you, and respond to and process your requests for information
- to determine your eligibility to provide or receive a Honeysuckle Health product or service;
- to provide health management programs;
- to manage, deliver and administer services and programs that you participate in
- to offer and provide personalised health information, support and services;
- to provide you with communications and invitations and offers for products and services including new products or services that we or our third party business partners believe may be of interest to you, and to assist in developing new products and services (see further below); and
- to provide you with advice relating to your needs

Authorised Representative

- To verify your identity as the authorised representative for the Honeysuckle Health customer; and
- In the course of collecting, using and disclosing the personal information of the patient to whom you represent.

Third Parties / Business Partners

- to carry out a business or professional relationship we may have with you.

Job Applicant

- if you apply for employment with us, to consider your application and contact you.

Health Service Provider

- where you are a health service provider, to create and provide access for customers and other third parties to directory services.

We also use your personal information for the following internal purposes:

- to evaluate the effectiveness of our health management programs and the service we provide to our customers;
- to prepare internal reports for the purposes of improving our products, services and internal operations;
- to manage complaints and disputes, and report to dispute resolution bodies;
- to manage, train and develop our employees and representatives;
- to perform quality audits;

- to amend records to remove personal information; and
- for other everyday business purposes that involve the use of personal information.

We ensure that we have an appropriate legal basis to use your personal information in these ways, including:

- for our usual business functions and activities (such as managing our business operations, developing and improving the products and services we offer, company re-structure or selling part of our business);
- where we have clearly explained a proposed use and you have provided your consent; and
- where we have a legal or regulatory obligation that we must comply with or is in the substantial public interest (such as to prevent fraud or money laundering) or we need to use your personal information to establish, exercise or defend legal rights (such as debt recovery) or whenever courts are acting in their judicial capacity.

We do not conduct direct marketing, but we do conduct follow-up communications about the service/s you received. You may opt out of these follow-up communications at any time.

5. Use and Disclosure of Personal Information

We use and disclose your personal information and sensitive health information to relevant individuals, organisations and other contracted entities as is necessary for us to provide our services to you.

For example, we may disclose your personal information to:

- a person acting on your behalf including a person authorised by you or to whom you have granted a delegated authority;
- your private health insurer (if applicable);
- your medical specialists, your general practitioner and other allied health specialists;
- service providers that we use to carry out activities on our behalf, for example auditors, IT vendors and mailhouses;
- to others who may be involved in your care for example hospital discharge planners;
- where relevant, a third-party purchaser of our business or assets;
- where relevant, local registration boards and professional and industry bodies and associations, or to external dispute resolution bodies; and
- in additional ways you may also agree to.

We may also use and disclose your personal information and sensitive health information to comply with an Australian Law or if required by a court or tribunal order.

We may also use and disclose your personal information to the extent that we have another legitimate purpose such as to manage our business operations or to conduct data analytics to improve our offerings. We may also share with others and disclose deidentified personal information (including aggregated, anonymous or pseudonymised information) for business and marketing purposes.

We may use or disclose your personal information in circumstances where we consider that there is an immediate threat to the health or safety of our yourself, our patients, staff or the wider public.

6. Security of your Personal Information

We have systems and processes in place to securely store your personal information and sensitive health information. Some of our systems for storing your information include:

- electronic storage through computer systems
- paper records; and
- cloud storage.

We take steps to protect your personal information and sensitive health information from misuse, interference or loss and unauthorised access, modification and disclosure with appropriate safeguards and security measures. The measures that we take include:

- only allowing authorised personnel access to your personal and sensitive health information;
- ensuring your data is stored and accessed in a secure and safe manner;
- when we engage a third-party service provider, we leverage infrastructure hosted in Asia-Pacific public cloud regions, and in normal operating circumstances this will mean that your data is stored in Australia. We conduct supplier assurance activities to ensure your data is managed responsibly.

When you share information with us (such as over the internet, or sending us an email), it is at your own risk as factors beyond our control include the security of the device and/or program you use to communicate with us. If you reasonably believe that there has been unauthorised use or disclosure of your personal information, please contact us (see below).

Our website may contain links or references to other websites not subject to this Privacy Policy. You should check their own privacy policies before providing your personal information.

7. Disclosure to overseas recipients

We may need to provide your personal information and sensitive health information to an overseas service provider in circumstances where technical support is required. In such circumstances, we strictly control and limit how they can access your personal information. We also have contractual measures in place to ensure that the overseas recipient will comply with the Privacy Act and the Australian Privacy Principles.

8. Accessing and correcting your personal information

We use our best endeavours to ensure that the personal information we collect, use and disclose is accurate. Please let us know if there are any errors, or if there are changes to any of your personal information, such as a change of address.

Under the Privacy Act, we are required to provide you with access to the personal information we hold about you. You are also entitled to make an amendment request if you consider that the information we hold about you is inaccurate or incorrect.

We may require proof of identity before processing your access or correction request. We will respond to your request as soon as we reasonably can, including notifying you if we are unable to provide access (such as when we no longer hold the information) or if we are permitted by applicable law to refuse access.

Generally, we cannot impose a charge for making an access to your own personal information, unless permitted to do so by an Australian law, Court or Tribunal order. We may however charge you a reasonable fee for the retrieval costs associated with providing you with access.

9. Privacy Enquiries and Complaints

If you have any questions, concerns or complaints regarding the way that your personal information has been collected or handled by Honeysuckle Health, you can contact a customer care consultant on:

Email: enquiries@honeysucklehealth.com.au

Mail: Level 1, 6 Newcomen Street, Newcastle, NSW 2300.

Where required, our customer service consultants will escalate the matter to their team leader and/or our Privacy Officer. We will establish in consultation with you a reasonable process, including time frames provided by applicable laws, for seeking to resolve your complaint.

If you are not satisfied with our response you can contact or make a complaint to the Office of the Australian Information Commissioner.

Email: enquiries@oaic.gov.au

Telephone: 1300 363 992 (from overseas +61 2 9284 9749)

10. Changes to this Privacy Policy

This Privacy Policy is current at April 2021. We may review and change this Privacy Policy from time to time.

Previous changes:

Version	Month	Change
1.5	July 2021	Update to include digital health programs and apps as ways information is collected.
1.4	April 2021	Update to the language in the Disclosure to overseas recipients
1.3	October 2020	Wording on data storage locations to reflect potential disaster recovery / capacity issue scenarios. Added heading numbering
1.2	September 2020	Update of titles for health programs and applicability of the collection notice
1.1	August 2020	Include information handling procedures related to a nominated representative
1.0	April 2020	Initial version

COMMONWEALTH OF AUSTRALIA

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Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-55

This is the Annexure marked "DD-55" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

Framework: Data Governance

- Strategic Data Vision
- What is Data Governance?
- Aims of Data Governance
- Data Governance Principles
- Roles and Responsibilities
- Data Classification and Handling
- Data Access
- Data Usage
 - Lineage of Data
- Data Asset Identification and Ownership
- Data Quality
- Data Transfer
- Data Breach
- Legal and Regulatory Compliance
- Data Retention and Disposal
- Document Controls
- Reviews

Strategic Data Vision

Honeysuckle Health requires a best of breed data governance framework to ensure competitive advantage in a dynamic and fast paced environment. This framework should ensure that data is consistently stored, handled and ultimately leveraged to maximise its value to the organisation.

For Honeysuckle Health to meet it's strategic goals data must be leveraged to allow;

- the generation of insights,
- prediction of future healthcare risk,
- privacy preserving data linkages across multiple datasets,
- data-driven decision making of individuals and healthcare providers,
- and deliver healthcare interventions

Many aspects of data governance are key to ISO27001 certification and as a result a subset of artefacts will be audited annually while obtaining this certification.

What is Data Governance?

Data governance is the formal orchestration of people, process, and technology to enable an organization to leverage data as an enterprise asset.

Effective data governance will be key to Honeysuckle Health's ability to maximize the value of their own data while at the same time minimising the risk of adverse outcomes.

Aims of Data Governance

- Enable consistent, high quality business products and decisions based on trustworthy data
- Meet regulatory requirements by documenting the lineage of the data assets and the access controls related to the data
- Improve data security by establishing data ownership and related responsibilities
- Define and verify data distribution policies including the roles and accountabilities of involved internal and external entities
- Eliminate re-work by having data assets that are trusted, standardised and capable of serving multiple purposes
- Train management and staff to adopt common approaches to data issues

Data Governance Principles

1. **Integrity** - Data Governance participants will practice integrity with their dealings with each other; they will be truthful and forthcoming when discussing drivers, constraints, options, and impacts for data-related decisions.
2. **Transparency** - Data Governance and Stewardship processes will exhibit transparency; it should be clear to all participants and auditors how and when data-related decisions and controls were introduced into the processes.
3. **Auditability** - Decisions, processes, and controls related to Data Governance will be auditable; they will be accompanied by documentation to support compliance-based and operational auditing requirements.
4. **Accountability** - Data Governance will define accountabilities for cross-functional data-related decisions, processes, and controls.
5. **Stewardship** - Data Governance will define accountabilities for stewardship activities that are the responsibilities of individual contributors, as well as accountabilities for groups of Data Stewards.

6. **Checks-and-Balances** - Data Governance will define accountabilities in a manner that introduces checks-and-balances between business and technology teams as well as between those who create/collect information, those who manage it, those who use it, and those who introduce standards and compliance requirements.
7. **Standardisation** - Data Governance will introduce and support standardization of enterprise data.
8. **Change Management** - Data Governance will support proactive and reactive Change Management activities for reference data values and the structure/use of master data and metadata.

Roles and Responsibilities

Name	Description / Purpose
Head of Data & Technology	<ul style="list-style-type: none"> • Demonstrate and communicate management commitment for effective data governance • Approve major initiatives to enhance data governance
Information Security Manager	<ul style="list-style-type: none"> • Ensure that a register of information assets is maintained
Information Security Team	<ul style="list-style-type: none"> • Formulation of policy and procedure to support Honeysuckle Health's data governance requirements
Owners / Trustees	<ul style="list-style-type: none"> • Fostering a culture of value and protection of personal information in their business area
Stewards	<ul style="list-style-type: none"> • Data evangelism, find ways to create new ROI from data assets
Analysts / Scientists	<ul style="list-style-type: none"> • Consideration of correct usage of data
Software Developers / Data Engineers	<ul style="list-style-type: none"> • Considerations regarding the safe use, transmission and storage of data • Secure software development to protect data
Consumers	<ul style="list-style-type: none"> • Consideration of correct usage of data
All Staff / Contractors	<ul style="list-style-type: none"> • Awareness of data governance and relevant information security policies • Reporting data breaches to the Information Security Team

Data Classification and Handling

All Honeysuckle Health data sources are to be classified according to the [Information Classification and Handling policy](#) which also details the requirements for the handling of information.

Data Access

Access to Honeysuckle Health data is controlled according to the [Access Control Policy](#).

Any systems containing Confidential data are required to log all queries/data accessed in an auditable fashion.

Data Usage

Conditions relating to the usage of client data for various purposes is covered in the [Privacy Impact Assessment](#), statements of work, customer and vendor contracts.

These documents cover for example the approved use cases for personally identifiable data points which are far more restrictive than the de-identified datasets.

Some external dataset such as the Medicare Benefits Schedule, Prostheses Schedule and purchased IHPA ICD10/ACHI code lists also have restrictions on their usage which is made available to staff as required.

Lineage of Data

To fully understand how we are using various data sets and the source of data that makes it into the aggregate tables in our data warehouse a data lineage graph must be maintained across all data transformation projects.

To achieve this Honeysuckle Health will:

- Develop a convention for the naming of objects in the data warehouse that includes a way of identifying the owner of the data (E.G. "customer_")
- Create unique databases for each unique data source (E.G. Client, internal, purchased data set) that follow the agreed naming convention
- Utilise an industry standard build tool that can create lineage documentation through automation
- Where appropriate separate data transformation projects into logical code repositories
- Combine all data transformation projects into 1 central documentation source that includes data lineage graphs for all projects.

Data Asset Identification and Ownership

To spread responsibility of making sure that data is used correctly an ownership program will be established in line with our ISMS processes for information asset identification. A unique information asset will be identified for each dataset (E.g. customer, third party, internal) this owner will be responsible for the development and transformation of that data inside the data warehouse.

Honeysuckle Health will maintain an ISO 27001 compliant [Information Asset Register](#) to support the identification of assets and their owners.

Ownership for datasets will be included as a part of the metadata in the data lineage documentation to allow for easy identification. A process for the handover of data ownership will be developed to allow for the business to remain agile.

Data Quality

The quality and outcomes of the products and services that Honeysuckle Health offers is heavily dependent of the quality of the data that we have to work with. Either from customers, collected through our data collection platform or created through the delivery of Health Programs. Honeysuckle Health need to have a standardised and measurable way of maintaining the quality of our data. To meet this requirement Honeysuckle Health will:

- Develop a Data Quality Framework that considers the following dimensions:
 - Completeness
 - Consistency
 - Conformity
 - Accuracy
 - Integrity
 - Timeliness
- Regularly review the framework for consistency and alignment with business requirements

Data Transfer

[Information Security policies](#) have been defined to govern the way Honeysuckle Health staff are to share information with external and internal parties. These can be found in our [IT & Network Operations Policy](#).

Honeysuckle Health will work directly with external parties to agree on a secure data transfer method that meets the following requirements:

- Data is encrypted during transmission and at rest
- Access to data is strictly controlled
- Audit trails are maintained on both sides of the transfer process

Data Breach

Data breach events will be handled according to the Honeysuckle [Health Joint Data Breach Response](#) plan.

This plan covers the agreed roles, responsibilities and actions that are required by Honeysuckle Health, Honeysuckle Health shareholders and clients if an instance of data breach should occur.

Legal and Regulatory Compliance

We work across several jurisdictions in our delivery of services. Each state in Australia has their own privacy legislation. At a minimum all data usage must comply with:

- [Australian Privacy Act 1988](#)
- [Australian Privacy Principles](#)

All staff are required to complete compliance training to ensure familiarity with the relevant legislation.

As Honeysuckle Health begins to operate in more jurisdictions an appropriately skilled consultant will be engaged to outline any differences or risks to be aware of in terms of legal and regulatory compliance.

Data Retention and Disposal

There will be varying retention requirements for different information assets throughout the company. These will primarily be driven by legislative requirements or contractual obligations. The following is not an exhaustive list of information assets by the type of data that they contain.

Our [Data Retention and Disposal Policy](#) details out requirements for retention and destruction of data.

Document Controls

Status	APPROVED
Approval by	@ Felipe Flores
Approval date	Sept 2021
Executive owner	Head of Data, Analytics & Technology
Next review	Sept 2022
Distribution	Company Intranet

Reviews

i Changes to this document are governed directly by the Honeysuckle Health board as detailed in the Shareholder Agreement and as such follows a different approval procedure to our other policies.

This process can be found [here](#).

Date	Performed by	Actions taken (Jira Ticket / ISMS.online Activity)
18 Jan 2021	@ Daniel Clements	 ISMSI-135 - Getting issue details... STATUS
17 Sep 2021	@ Daniel Clements	Changes after team discussion including @ Gerad Crow (Deactivated), @ Antoine Desmet, @ Blessing Matore, @ Felipe Flores, @ Daniel Clements  MOYA-134 - Getting issue details... STATUS
Sept 20, 2021	@ Felipe Flores	Approved
04 Mar 2022	@ Sukanya Mukherjee	Updated

COMMONWEALTH OF AUSTRALIA

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Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-56

This is the Annexure marked "DD-56" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

Information Security Policies

Overview

It is critical that our clients and customers have confidence in the way we handle confidential information when providing them with services. We do this by leveraging industry standard security solutions and best practices, keeping our customers well informed, and quickly responding to security issues when they arise.

This information security policy outlines the behaviour required by us all to protect the information of our clients, customers and the company. We ask that you take time to understand its contents and act accordingly.

Management's direction

Information security is important to us. Providing access to correct information in a timely manner to those authorised to access them enables our organisation to achieve its strategic objectives.

We are committed to implementing the policies, standards and procedures that will define our approach to managing the security of our information. These artefacts support our Information Security Management System (ISMS), that is closely aligned with industry standard ISO 27001:2013.

Our security objectives

Security objectives set measurable goals that can be monitored in order to evaluate the successful implementation of our policies. We have identified the following security objectives aligned with our ISMS objectives:

- Customers maintain confidence in the business
- Company growth is underpinned by secure processes and governance
- Processes are scalable as the business grows
- A culture of good security practice supports business
- Conformance expectations are met efficiently

Compliance with Regulation / Legislation

We are committed to complying with the applicable legislator and regulatory requirements in line with legislation and regulators detailed in Clause 4 of our ISMS Framework documentation.

Commitment to Continual Improvement

Honeysuckle Health recognise that a good management system requires continual improvement through performance evaluation and regular review.

Application

This policy is mandatory for all employees, contractors, consultants and other individuals performing work for us or on our behalf and is supported by a set of policies that apply to specific audience. Please refer to the table below:

Policy	Audience	Alignment with ISO Annex A
Information security (this policy) InfoSec Policy: Acceptable Use of IT InfoSec Policy: Information classification and handling InfoSec Policy: Remote Working InfoSec Policy: Clear Desk / Screen InfoSec Policy: Data privacy	All staff	A.5 A.6 A.8.2 A.9.3 A.11.2.8 A.11.2.9

InfoSec Policy: Asset management InfoSec Policy: Access control InfoSec Policy: Security operations InfoSec Policy: Supplier management InfoSec Policy: IT and Network Operations	IT department	A.8.1 A.8.3 A.9.1 A.9.2 A.9.4 A.10 A.12 A.13 A.14.1 A.15 A.16 A.18 except 18.1.4
InfoSec Policy: Secure application development	Developers	A.14.2 A.14.3
InfoSec Policy: Physical security	Facility manager	A.11 except 11.2.8 and 11.2.9
InfoSec Policy: Personnel security InfoSec Policy: Security aspects of business continuity InfoSec Policy: Employee Screening InfoSec Policy: Employee Departure Procedure	HR and managers	A.7 A.17
InfoSec Policy: Data privacy	Customers, Partners, and Staff	A.18.1.4

Roles and responsibilities

Information security is everyone's responsibility, but some may have more responsibilities than others. The table below provides the details.

Role	Responsibilities
Leadership team, as the ISMS sponsor	<ul style="list-style-type: none"> To manage organisation-wide risks, which include information security risks. To ensure that a culture of security exists within the organisation
Information Security Manager, as the ISMS owner	To ensure that security controls continually reflect security policies across the organisation
Managers	To regularly review the policies for changes to compliance requirements
All personnel	To ensure that information security policies are adhered to

Policy framework

To be able to communicate them adequately, policies must be succinct and stable over time. Consequently, they will be supported by additional documents that will be relevant for you to read at the appropriate time.

Type	
Standards	Define an authorised approach to implementing a policy. For example: <ul style="list-style-type: none"> Disk wiping standard OS build standard
Procedures	Define an established method used to achieve a particular result. For example: <ul style="list-style-type: none"> Password reset
Guidelines	Provide additional details and context on a specific topic. For example: <ul style="list-style-type: none"> How to spot a phishing email

Compliance

Violation or failure to comply with this policy may result in disciplinary action. Any breach of this policy must be reported to the leadership team.

Exceptions

If you believe there is a business justification at an acceptable risk to this or any supporting policy, you may seek such exception by contacting the leadership team.

Policy Approval

Approved By	Head of Data & Technology
Executive Owner	Chief Executive Officer
Last Approved	September 2021
Next Review	Per below table
Distribution	Company Intranet

Reviews

This policy and the supporting policies will be reviewed at least once every year to ensure that they are suitable, adequate and effective.

The review and approval process will be documented using the Comala workflow system enabled on this page. The review history can be found linked to the draft object in the Draft Honeysuckle Health Policies space.

Changelog

Date	Performed by	Actions taken (Jira links)
20 Nov 2020	@ Daniel Clements	Approved
24 Feb 2021	@ James Freund	https://honeysucklehealth.atlassian.net/browse/IS-66
20 Apr 2021	@ John Scott (Deactivated)	Approved
29 Sep 2021	@ Sukanya Mukherjee	Updated Approved By to Head of Data & Technology
30 Sep 2021	@ Felipe Flores	Approved

Read Confirmations

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Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-57

This is the Annexure marked "DD-57" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

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Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

MinterEllison

23 December 2020

Application for authorisation under section 88(1) of the *Competition and Consumer Act 2010* (Cth)

Lodged by: Honeysuckle Health Pty Ltd

on behalf of itself and nib health funds limited

Confidential version

1. **Background**
- 1.1 This application is made to the Australian Competition and Consumer Commission (**ACCC**) by **Honeysuckle Health Pty Ltd (HH)** on behalf of itself and nib health funds limited (**nib**) (**Applicants**).
- 1.2 HH provides services to healthcare payers in Australia and New Zealand. These services currently include health analytics (e.g. measurement of impact of health interventions, population risk stratification and provider benchmarking), health management programs (e.g. telephonic programs to support patients transition from hospital and manage chronic diseases) and contract negotiation and management services for nib. HH is a joint venture between nib and Cigna. Both Cigna and nib own 50% of HH.
- 1.3 Cigna is a global health services company dedicated to improving the health, wellbeing and peace of mind of the customers it serves. All products and services are provided exclusively by or through operating subsidiaries of Cigna Corporation. Such products and services include an integrated suite of health services, such as medical, dental, behavioural health, pharmacy, vision, supplemental benefits, and other related products including group life, accident and disability insurance. nib is an Australian private health insurer with approximately 10% market share in Australia and provides health insurance products to three main market segments - Australian residents, international workers and international students. nib underwrites insurance products for several other brands including GU Health, Suncorp (APIA, AAMI and Suncorp) and Qantas.
- 1.4 From 1 October 2020, nib appointed HH to act as its agent to provide data analytics, contract negotiation, procurement and administration services in relation to nib's contracts with hospitals, medical specialists, general practitioners and allied health professionals (the contracting services). HH and nib seek authorisation for HH to provide the contracting services to additional health care payers and form a joint buying group (**HH Buying Group**) for the purposes of collective bargaining with providers to purchase health services. The Proposed Conduct does not involve a collective boycott. This application is made for the benefit of any healthcare payer who joins the HH Buying Group (**Participant**) which may include:
 - a) private health insurers registered under the *Private Health Insurance (Prudential Supervision) Act 2015* (Cth);
 - b) international medical and travel insurance companies;
 - c) government and semi-government payers of healthcare services such as workers' compensation and transport accident scheme operators and Department of Veterans Affairs scheme (**DVA**); and
 - d) any other payer of health services as notified by HH to the ACCC(**healthcare payers**).
- 1.5 In the short term, the most likely Participants are private health insurers. Currently, the four largest health insurers, Medibank, Bupa, HCF and HBF, undertake the contracting services as an internal function.¹ The remaining health insurers engage in collective bargaining through one of two buying groups, the Australian Health Services Alliance (**AHSA**) and the Australian Regional Health Group (**ARHG**). Of the 36 private health insurers, the AHSA represents 27 and the ARHG represents four. The Applicant anticipates that private health insurers that currently outsource their contracting services to AHSA or ARHG are the healthcare payers that are most likely to join the HH Buying Group. The major health insurers are unlikely to join the HH Buying Group but may be interested in purchasing bespoke parts of the contracting services to supplement their internal contracting function. nib was previously a member of AHSA and it withdrew from AHSA in 2011 when it built its own internal contracting function.

¹ Honeysuckle Health's understanding is that HBF contract directly with hospitals in WA and indirectly through the AHSA for all other states

- 1.6 Health insurers pay benefits for health services under health insurance policies issued to individuals. Customers generally make claims for benefits on-the-spot with a Provider at the time they are receiving treatment (eg. through electronic claiming system or at a private hospital). The Provider receives benefits directly from the insurer and may collect any additional amounts from the Customer (known as 'gaps').
- 1.7 Under contracting arrangements between health insurers and Providers, Providers generally agree not to charge a gap to the Customer (for some or all services) and health insurers agree to pay more in benefits. This creates a network of Providers that health insurers can promote as being health services where their Customers can receive a no gap or known gap experience.
- 1.8 For other types of healthcare payers such as international medical, travel and life insurance companies, as well as government and semi-government payers of healthcare services (Other Healthcare Payers), payment to Providers usually occurs pursuant to the terms of the insurance policy or the liability scheme, and the fee is usually paid in full by these types of healthcare payers. Accordingly, there is less likely to be a 'gap' exposure for consumers and therefore, less likely for these types of insurers to negotiate contract arrangements with Providers. As a result, we do not expect these types of healthcare payers to form a material portion of the HH Buying Group.

2. Parties to the proposed conduct

2.1 Applicant for authorisation:

- (a) Honeysuckle Health Pty Ltd (ACN 637 339 694)

Address (registered address)	Contact person	Description of business activities
1/6 Newcomen St, Newcastle NSW 2300	Rhod McKensy Chief Executive Officer +61 406 380 017 r.mckensy@honeysucklehealth.com.au	Honeysuckle Health provides services to health payers in Australia and New Zealand including the contracting services, health data analytics, health measurement programs and health management programs.

- (b) nib health funds limited (ACN 000 124 381)

Address (registered address)	Contact person	Description of business activities
22 Honeysuckle Drive, Newcastle NSW 2300	Roslyn Toms General Counsel +61 408 733 740 R.Toms@nib.com.au	nib is an Australian health insurer with approximately 10 per cent market share in Australia. It provides insurance to three predominant markets: Australian residents, international workers and international students. nib underwrites GU Health, Suncorp and Qantas health insurance.

2.2 Email address for service of documents in Australia

Noelia Boscana, Partner, MinterEllison

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T +61 3 8608 2676 M +61 402 025 080

2.3 Details of other classes of persons on whose behalf authorisation is sought

2.4 The class of persons who may engage in the Proposed Conduct other than the Applicant, are healthcare payers who wish to become Participants.

2.5 Description of the Proposed Conduct

Structure of HH Buying Group

2.6 HH is seeking authorisation to undertake the contracting services, for healthcare payers in relation to hospitals, medical specialists, general practitioners and allied health professionals (**Providers**), as further described below (the **Proposed Conduct**).

2.7 HH intends to negotiate a bilateral participation agreement with each Participant to undertake the contracting services in relation to some or all of the Providers. Participants can opt to purchase some or all of the different categories of contracting services.

2.8 In relation to negotiated contracts (with hospitals and medical specialists), HH proposes to implement the Proposed Conduct by using nib's existing contracts with Providers, with the consent of the Providers. HH will negotiate with Providers to purchase their services on behalf of the Participants using the same base agreement that the Provider has negotiated with nib. HH will then negotiate new contracts on behalf of Participants as the nib-based contracts expire or enter into contracts with new Providers. The Participants will unilaterally determine whether to enter into an agreement with each Provider based on the negotiated terms and conditions. If they choose to do so, Participants will execute an agreement with the Provider. HH will not be party to the agreement. HH will then undertake contract administration services for that agreement.

2.9 If Participants do not wish to enter into an agreement on the negotiated terms and conditions, Participants will still be permitted to negotiate directly with Providers and enter into agreements independently of the HH Buying Group on their own terms and conditions. This could either be completed between the provider and the fund or, alternatively, with HH acting as an agent for the fund but outside of the buying group terms, conditions and offer. Furthermore, the Proposed Conduct will not prevent Providers from offering healthcare services to other insurers, buying groups or healthcare payers that are not participating in the HH buying group, and will not restrict the terms and conditions on which the Provider is entitled to enter those agreements. Providers will also not be prevented from contracting with Participants individually, or with a different set of participants than that proposed by the HH buying group.

2.10 For contracts with Providers based on standard terms and conditions (medical gap scheme and general treatment networks), HH proposes to extend these schemes to the Participants and would provide sufficient notice to Providers to enable Providers to operationalise the change.

2.11 Authorisation is not sought for the HH Buying Group to engage in the collective boycott of any services of a Provider.

Nature of contracting relationships with Providers

2.12 The Proposed Conduct will involve the provision of four broad categories of contracts including hospital contracting, medical specialist contracting, medical gap scheme and general treatment contracting. These are described in detail below.

Hospital contracting

2.13 Hospital contracting involves agreements between healthcare payers and private hospitals (occasionally public hospitals) under which the parties agree on the rates and other terms and

conditions for the provision of hospital treatment to the healthcare payer's customers (**Customers**). In the private health insurance industry, the agreements are referred to as hospital purchaser provider agreements (**HPPAs**). Under HPPAs, hospitals agree not to charge out-of-pocket costs to Customers and are used by health insurers to provide financial certainty to its Customers.

- 2.14 nib has a network of private hospitals that have HPPAs with nib and HH is providing contracting services for that network on behalf of nib.

Medical specialist contracting

- 2.15 Medical specialist contracting refers to agreements between healthcare payers and medical specialists such as radiologists, pathologists and surgeons. The parties agree on rates and other terms and conditions for the provision of the medical specialists' professional services during the hospital admission of Customers. In the private health insurance industry, the agreements are referred to as medical purchaser provider agreements (**MPPAs**). MPPAs are used by health insurers to provide financial certainty to its Customers in relation to potential out-of-pocket costs for professional services. The network of MPPAs that nib currently has in place falls into two categories – MPPAs with radiologists and pathologists and the MPPAs for the Clinical Partners Program.

- 2.16 nib's MPPAs with radiologists and pathologists are entered into with radiologists and pathologists that provide services such as x-rays, ultrasounds and blood tests to Customers during their admission at a private hospital that is part of nib's network (ie. nib has an HPPA with that private hospital). These services are not included in the scope of services that are provided to Customers by the private hospital. They are services provided directly to the Customer by the radiologist or pathologist under separate contractual arrangements with the Customer. Without an MPPA, Customers may incur out-of-pocket expenses for the radiology and pathology services received during a hospital admission.

- 2.17 Under nib's Clinical Partners program, nib has entered into MPPAs with orthopaedic surgeons, anaesthetists and assistant surgeons for the provision of their professional services for orthopaedic joint replacements provided to Customers. Under these MPPAs, the medical specialists agree on fees paid by nib for their services and agree not to charge Customers any gap for their professional services. The medical specialists are paid a higher fee than what they would otherwise be entitled under nib's medical gap scheme. The medical specialists also agree on data sharing and quality target requirements. Unlike nib's medical gap scheme, Clinical Partners Providers cannot choose to opt-out of the program on a patient-by-patient basis. This provides certainty that all nib customers will have a no gap experience with these medical specialists.

Medical gap scheme

- 2.18 Under medical gap schemes, health insurers offer to pay medical specialists a set fee for each type of professional service they provide to Customers in hospital, in accordance with a standard set of terms and conditions. The set fees are higher than what insurers are otherwise required to pay under the PHI Act and medical specialists agree not to charge Customers an out-of-pocket amount or agree to limit the amount the Customer is charged at a fixed amount (eg. \$500) in the case of known gap schemes.
- 2.19 Medical specialists registered under a medical gap scheme are permitted to opt-in or opt-out of the scheme on a case by case basis (per treatment and Customer). By opting-in, the medical specialist agrees to be bound by the terms and conditions of the medical gap scheme.
- 2.20 Currently, HH acts on behalf of nib in the management and administration of the nib MediGap scheme (no-gap scheme) that applies to nib, Qantas and Suncorp-branded health insurance policies and the GU Health Medical Gap Network (no-gap or known gap scheme) that applies to GU Health-branded health insurance policies.

General treatment networks

- 2.21 General treatment networks are arrangements with Providers for services that are not provided in hospital. These providers generally include physiotherapists, dentists, optometrists and chiropractors which are covered under the 'extras' component of private health insurance products. It also includes a network of general practitioners and medical specialists providing professional services out-of-hospital for international students and international workers covered under international health products (health insurers are prohibited from covering these services for Australian residents).
- 2.22 Providers that are registered with a general treatment network, agree to a standard set of terms and conditions and schedule of rates for each type of service.

HH acts on behalf of nib in the management and administration of its general treatment network branded as the First Choice Network. nib has two bespoke agreements with optical and dental providers under which the providers operate nib-branded centres. HH also manages these agreements.

Nature of Proposed Conduct

- 2.23 In relation to the four types of contracts, the Proposed Conduct will involve HH engaging in the following types of services:
- (a) for hospital and medical specialist contracting, contract negotiations with Providers;
 - (b) for the medical gap scheme and general treatment network, management and administration of the schemes; and
 - (c) for all four types of contracting, data analytics, contract management and dispute resolution.

Data analytics and contract negotiations

- 2.24 HH will initially engage in collective negotiations with Providers that currently have HPPAs and MPPAs with nib in order to agree to new contracts with the Participants based on the Provider's existing agreement with nib.
- 2.25 On an ongoing basis, HH will negotiate new HPPAs and MPPAs on behalf of nib and all Participants as the current agreements expire or with new Providers. HH will act as the lead agent in the negotiations after consultation with the Participants. This will involve:
- (a) aggregation of Participant claims data for the Provider and undertaking data analytics to establish benchmarks relating to quality of service, price and application of services (see further details below);
 - (b) conducting collective commercial negotiations on behalf of Participants based on information of the HH Buying Group. HH will negotiate one set of terms and conditions including price schedules, business rules for payment of benefits and quality and performance targets for all Participants for each HPPA or MPPA with a Provider; and
 - (c) once HH receives instructions that a Participant wishes to enter into an HPPA or MPPA on the negotiated terms and conditions, coordinate the execution of the HPPA or MPPA between the Participant and the Provider (or execute the contract if HH has signing authority).
- 2.26 The HH Buying Group will be voluntary and the Participants will unilaterally determine whether to enter into an HPPA or MPPA based on the terms and conditions negotiated by HH.

Extension and management of medical gap scheme and general treatment network

- 2.27 HH will initially engage with Providers registered in the nib MediGap Scheme, GU Health Medical Gap Network and the First Choice Network to notify them of the extension of these schemes to the Participants.

- 2.28 HH intends to replace the nib Medigap scheme and the GU Health Medical Gap Network with a new HH scheme which will have some variations in the terms and conditions.
- 2.29 For general treatment networks, HH intends to create new specific networks tailored to meet a Participant or group of Participants' individual requirements such as the requirement to have a strong network of Providers in a regional area or to have a fee structure that is more suited to the manner in which some Participants pay benefits.
- 2.30 On an ongoing basis, HH will manage the medical gap scheme and general treatment networks, review the schedules of rates and terms and conditions and actively manage the registered Providers of the schemes and networks. This includes ensuring adherence to requirements around registration, qualification and other terms and conditions of the schemes and networks.

Contract management and dispute resolution

- 2.31 HH will offer to provide the Participants with contract administration and management services and dispute resolution services on behalf of nib and all Participants for the contracting services that they engaged HH to undertake which may include:
- (a) all HPPAs and MPPAs that were entered into by the Participants based on the terms and conditions negotiated by HH; and
 - (b) the agreements between Participants and Providers registered in the medical gap scheme and/or general treatment network,

(Managed Agreements).

- 2.32 This will involve HH acting as agent for the HH Buying Group to facilitate:
- (a) administration of, and compliance with, the terms and conditions of the Managed Agreements;
 - (b) dispute resolution and management of disputes between Participants and Providers arising under the Managed Agreements;
 - (c) management and investigation of Customer complaints relating to Providers party to the Managed Agreements;
 - (d) collection and management of data submission from Providers to Participants under the Managed Agreements; and
 - (e) reporting and oversight of the parties' adherence to terms and conditions of the Managed Agreements and performance and quality targets.

Data analytics

- 2.33 HH will provide the Participants with data analytic services as part of contract negotiations but also on an ongoing basis to assess the performance of each Provider and benchmark their performance for each Participant against the aggregated data for the HH Buying Group including an assessment of:
- (a) Provider quality (e.g. rate of hospital acquired complication, length of hospital stay, unplanned readmission to theatre, conversion to ICU, etc.)
 - (b) Provider Compliance (e.g. accuracy of claims, compliance with the contract terms, complaints, etc.);
 - (c) benefits paid to the Provider by Participants (e.g. cost per episode against national peer groups, change in cost over time, cost variability reporting across the Provider network, etc);

- (d) access to the Provider's services (e.g. network coverage, member access issues, etc); and
 - (e) efficiency and value of treatment provided by the Provider (e.g. establishment of quality scoring of Providers and ranking of value and efficiency against quality).
- 2.34 Subject to confidentiality and privacy obligations, HH would also share information pertaining to one Participant with the HH Buying Group to the extent the information is related to the Managed Agreements or services provided by HH to the Participants. This may include the sharing of information on issues such as a breach of contract by a Provider or the discovery of fraudulent claims made by a Provider in relation to the Managed Agreement of one Participant which would be relevant to other Participants who contract with that Provider.
- 2.35 Provisions of the CCA which may apply to the Proposed Conduct
- 2.36 The relevant provisions of the CCA which may apply to the Proposed Conduct include:
- (a) making or giving effect to a contract, arrangement or understanding that may include a cartel provision (Division 1 of Part IV);
 - (b) making or giving effect to a contract, arrangement or understanding that has the purpose or would have the effect, or likely effect, of substantially lessening competition (section 45(1)(a) and (b));
 - (c) engaging with one or more persons in a concerted practice that has the purpose or has or is likely to have the effect, of substantially lessening competition (section 45(1)(c));
 - (d) a corporation that has a substantial degree of power in a market engaging in conduct that has the purpose, or has or is likely to have the effect, of substantially lessening competition (section 46(1)); and / or
 - (e) engaging in the practice of exclusive dealing (section 47(1)).
- 2.37 Rationale for the Proposed Conduct
- 2.38 The rationale for the Proposed Conduct is to enable Participants to streamline contract negotiation, procurement and management procedures. The streamlined processes will improve efficiencies by virtue of the reduced transactional and administrative costs, and increase information sharing and data analytical capabilities resulting in better health outcomes and reduced premiums for Customers.
- 2.39 Term of authorisation sought and reasons for seeking this period of time
- 2.40 Authorisation for the Proposed Conduct is sought for 10 years from the date of final determination by the ACCC.
- 2.41 Given it is common practice for HPPAs and MPPAs to be 3 years duration, authorisation for 10 years will enable the HH Buying Group to continue to operate across two renewal cycles. It will also allow sufficient time for HH to implement innovative models of funding of healthcare that focus on driving quality and providing value, and for Participants and their Customers to realise the cost, quality and efficiency benefits of engaging in the HH Buying Group.
- 2.42 Provide documents submitted to the applicant's board or prepared by or for the applicant's senior management for purposes of assessing or making a decision in relation to the proposed conduct and any minutes or record of the decision made
- 2.43 None.
- 2.44 Names of persons or classes of persons who may be impacted by the Proposed Conduct and details of how / why they might be impacted

2.45 The class of persons potentially affected by the Proposed Conduct are:

- (a) private health insurers that do not join the HH Buying Group;
- (b) private hospitals;
- (c) medical specialists and general practitioners; and
- (d) allied health providers such as physiotherapists, dentists, optometrists, chiropractors.

Please refer to section 4 below as to how each class of persons may be impacted.

3. Market information and concentration

3.1 Describe the products and/or services, and the geographic areas, supplied by the applicants. Identify all products and services in which two or more parties to the proposed conduct overlap (compete with each other) or have a vertical relationship (e.g. supplier-customer).

3.2 The Applicants submit that the relevant markets are:

- (a) national market for private health insurance;
- (b) national market for international medical and travel insurance;
- (c) State-based or localised market for hospital services;
- (d) localised market for medical specialist services for each specialty practice; and
- (e) localised market for each type of allied health service (eg. physiotherapists, dentists, optometrists, chiropractors, etc).

3.3 nib and the Participants compete with each other as purchasers of health services in the markets set out in paragraphs (c) to (e) above and as suppliers of private health insurance.

Private health insurance market

3.4 The market share of each private health insurer, measured as a share of total hospital policies as at June 2019 are set out in the table below.² The table also sets out which party undertakes contracting services for each private health insurer.³

Insurer	Party that undertakes contracting services	National Market Share Hospital Policies June 2019
Medibank	Medibank	26.0%
Bupa	Bupa	25.1%
HCF	HCF	11.7%
nib	HH	9.5%
HBF	HBF and AHSA	6.9% ⁴
Australian Unity	AHSA	2.9%
Teachers Health	AHSA	2.7%

² *Operations of Private Health Insurers Annual Report 2018-2019*, published by APRA on 5 November 2019.

³ Sourced from market knowledge and information available on AHSA's and ARHG's websites respectively.

⁴ HBF contract directly with hospitals in WA and indirectly through the AHSA for all other States and Territories. HBF's policyholders in WA represent a national market share of 6.14%. HBF's policyholders in other States and Territories represent a national market share of 0.72%.

GMHBA	AHSA	2.5%
Defence Health	AHSA	2.2%
CBHS Health	AHSA	1.7%
HIF	AHSA	0.8%
Westfund	AHSA	0.7%
Queensland Teachers	AHSA	0.6%
health.com.au	AHSA	0.6%
Health Partners	AHSA	0.6%
CUA	AHSA	0.6%
Peoplecare	AHSA	0.5%
Queensland Country Health	AHSA	0.5%
Railway & Transport	AHSA	0.4%
Doctors' Health Fund	AHSA	0.4%
Police Health	AHSA	0.3%
Navy Health	AHSA	0.3%
MO Health	AHSA	0.2%
Phoenix Health	AHSA	0.2%
National Health Benefits Australia	AHSA	0.1%
Health Care Insurance	AHSA	0.1%
Transport Health	AHSA	0.1%
ACA Health	AHSA	0.1%
Nurses & Midwives Health	AHSA	0.1%
Reserve Bank Health	AHSA	0.0%
Emergency Services Health	AHSA	0.0%
CBHS Corporate Health	AHSA	0.0%
Latrobe Health	ARHG	0.8%
St Lukes Health	ARHG	0.5%
Mildura District Hospital Fund	ARHG	0.2%
Cessnock District Health	ARHG	0.0%

3.5 Market shares as purchasers of health services is shown in the table below. Note that our understanding is that HBF contract directly with hospitals in WA and indirectly through the AHSA for all other States and Territories.

Party undertaking contracting services	Participating health insurers' market share based on 2019 hospital policies
Medibank	26.0%
Bupa	25.1%
AHSA	20.0%
HCF	11.7%
Honeysuckle Health	9.5%
HBF	6.1%
ARHG	1.5%

3.6 We have also provided in Annexure A market shares based on total policies and revenue.

Market for Other Healthcare Payers

3.7 A useful lens through which to define the market for private healthcare is examining the sources of health expenditure funds. The Australian Institute of Health and Welfare (**AIHW**) publish detailed data on this topic. A key table from their 2018-2019 health expenditure data is shown below.

Table A3: Total health expenditure, current prices, by area of expenditure and source of funds, 2018-19 (\$ million)

Area of expenditure	Government						Non-government				Total health expenditure
	Australian Government				State and local	Total	HIF	Individuals	Other	Total	
	DVA	Health and other	Premium rebates	Total							
Hospitals	1,321	23,702	3,332	28,354	33,280	61,634	9,689	3,689	4,036	17,415	79,049
Public hospital services	579	23,582	342	24,504	32,229	56,732	995	1,444	2,630	5,068	61,801
Private hospitals	741	120	2,989	3,851	1,051	4,902	8,694	2,246	1,407	12,347	17,248
Primary health care	1,333	25,783	1,049	28,165	10,508	38,672	3,051	21,351	2,474	26,876	65,549
Unreferred medical services	688	9,322	..	10,009	..	10,009	..	833	1,416	2,249	12,259
Dental services	80	796	718	1,594	840	2,435	2,089	6,051	52	8,192	10,627
Other health practitioners	256	1,789	313	2,359	7	2,366	910	2,039	502	3,451	5,817
Community health and other	..	1,841	..	1,841	8,371	10,212	1	133	245	379	10,590
Public health	..	1,361	..	1,361	1,290	2,651	..	15	193	208	2,859
Benefit-paid pharmaceuticals	309	9,941	..	10,250	..	10,250	..	1,479	..	1,479	11,729
All other medications	..	732	17	750	..	750	51	10,800	67	10,917	11,667
Referred medical services	..	14,388	612	15,000	..	15,000	1,780	3,382	..	5,162	20,161
Other services	204	2,731	931	3,867	3,929	7,796	2,709	3,438	219	6,365	14,162
Patient transport services	144	125	96	365	3,083	3,448	280	488	96	864	4,312
Aids and appliances	2	624	262	888	..	888	761	2,937	120	3,818	4,706
Administration	59	1,982	574	2,614	846	3,460	1,668	12	3	1,684	5,144
Research	2	5,009	..	5,012	873	5,885	..	2	410	413	6,298
Total recurrent expenditure	2,860	71,612	5,924	80,397	48,591	128,988	17,229	31,862	7,140	56,231	185,219
Capital expenditure	..	188	..	188	4,377	4,565	..	..	5,882	5,882	10,447
Medical expenses tax rebate	..	50	..	50	..	50	..	-50	..	-50	..
Total health expenditure	2,860	71,851	5,924	80,635	52,968	133,603	17,229	31,812	13,022	62,063	195,666

.. not applicable

— rounded to zero

Source: <https://www.aihw.gov.au/reports/health-welfare-expenditure/health-expenditure-australia-2018-19/data>

3.8 Focusing on the \$17,248 million expenditure on private hospitals, reallocating the Premium rebates column (which represents the Australian Government's contribution to private health insurance premiums through the Australian Government Rebate) back to health insurance and including a breakdown of the "Other" column from Table 3.16 of the same report to include Workers compensation insurers and transport accident insurers produces the following table:

Private hospital funder	\$ millions	Share
Private health insurers	11,683	67.7%
Individuals	2,246	13.0%
State and local government	1,051	6.1%
DVA	741	4.3%
Workers' compensation insurers	400	2.3%
Transport accident insurers	256	1.5%
Other Federal government	120	0.7%
Unknown	751	4.4%
	17,248	100.0%

- 3.9 Private health insurers and individuals account for 80.7% of revenue received by private hospital operators. DVA represents 4.3%, workers compensation insurers throughout Australia 2.3% and transport accident insurers 1.5%. There is a remaining Unknown percentage of 4.4%.

Market for travel insurance and short-term International Private Medical Insurance

- 3.10 Included in either the Individuals spend of \$2.2 billion or the Unknown spend of \$751 million, is hospitalisation for overseas tourists and short-term overseas workers. Typically, tourists and short-term workers take out insurance in their home country before travelling to Australia. Given their lack of scale in the Australian market, the overseas domiciled insurer will usually not have negotiated network access arrangements in Australia.
- 3.11 If the traveller requires medical services whilst in Australia, they will be required to pay the “rack rate” for the service out-of-pocket and then seek reimbursement from their insurer when they arrive home. One of the issues this creates is a bad debt risk for the hospital provider. Due to the lack of a certainty of payment, hospital providers embed within the “rack rate” a loading to offset the risk of the overseas visitor leaving the country without paying their bill. For international travel insurers, without the volume and local knowledge to develop networks, the increased “cost of production” is passed through to travellers in the form of higher insurance premiums.
- 3.12 nib has been approached by a number of these companies over the last 4-5 years seeking to negotiate “network access” arrangements. The size of these potential contracts is small - combined these groups would represent less than 0.5% of the total market for private hospital services.

Department of Veterans Affairs (DVA) scheme

- 3.13 Under the DVA scheme, eligible veterans are able to receive hospital services free with no gap expenses. The DVA arrangements represent a 4.3% share of the total expenditure on private hospitals and involve contracting directly with private hospitals through a tender process for the provision of the healthcare services. For GPs and medical specialists, the DVA maintains their own no-gap scheme. This involves contracting individually with these types of Providers.
- 3.14 DVA policyholders are not required to make any co-payment to medical specialists or hospitals. The average age of the DVA population is rapidly increasing and, consequently this segment of the market is reducing in activity and relevance with hospital providers. As this reduction continues it will place increasing price pressure on DVA as they lose market share and power to obtain competitive rates.

Workers compensation schemes

- 3.15 Each of the eight Australian states and territories has their own workers' compensation scheme and the Commonwealth has three separate schemes. As per the table above, workers compensation schemes in total represent 2.3% of total private hospital funding. New South Wales has the largest scheme and would represent approximately 0.7% of total private hospital funding.

- 3.16 Each scheme manages their own contracts with medical and hospital providers. For example, the NSW scheme, administered by icare, has recently experienced significant increases in medical costs. icare is required to pay surgical fees that are gazetted by the State Insurance Regulatory Authority (**SIRA**). These gazetted rates are set by SIRA at 150% of the Australian Medical Association's (**AMA**) recommended rate.
- 3.17 This is higher than any other Australian workers compensation scheme and much higher than private health insurer and DVA scheme. For example, nib's Medigap scheme is set at an average of 50% of the AMA's recommended rates and the DVA scheme is set at 52%.
- 3.18 Ultimately these higher specialist fees are passed through to NSW companies in the form of higher workers' compensation premiums.

Transport Accident Schemes

- 3.19 Each Australian state runs its own compulsory transport accident insurance scheme. In NSW, Queensland, South Australia and the ACT, drivers can choose from a panel of compulsory third party (**CTP**) providers. In the other States, transport accident schemes are provided by a state-owned or government-licensed insurer. As per the table above, transport accident insurers represent 1.5% of total private hospital funding. Similar to workers compensation schemes, transport accident insurers typically manage their own contracts with medical and hospital providers.

Private hospital market

- 3.20 The table below shows the market shares of private hospital provider large groups.⁵

Hospital Provider Group	Market share
Ramsay	21.6%
Healthscope	13.7%
Healthcare	9.3%
St John of God	5.5%
St Vincents Health	3.4%
Mater Misericordiae Limited	3.1%
Little Company of Mary	3.1%

- 3.21 Describe the relevant industry or industries. Where relevant, describe the sales process, the supply chains of any products or services involved, and the manufacturing process.
- 3.22 Please refer to section 1 (Background).
- 3.23 In respect of the overlapping products and/or services identified, provide estimated market shares for each of the parties where readily available.
- 3.24 Please refer to section 3 for market shares of nib and potential Participants.
- 3.25 In assessing an application for authorisation, the ACCC takes into account competition faced by the parties to the proposed conduct. Describe the factors that would limit or prevent any ability for the parties involved to raise prices, reduce quality or choice, reduce innovation, or coordinate rather than compete vigorously. For example, describe: existing competitors, likely entry by new

⁵ Compiled by nib based on publicly available sources.

competitors, any countervailing power of customers and/or suppliers; and any other relevant factors.

- 3.26 Please refer to section 6 (Public Detriments) for an analysis of each health services market and any potential impacts on competition from the Proposed Conduct.
- 3.27 In relation to the market for private health insurance, insurers are highly regulated and any increase in premiums is subject to approval by the Commonwealth Minister for Health on an annual basis. The Minister has an expectation that the industry will limit premium increases to a target percentage which places pressure on health insurers to keep costs down and they have limited ability to increase premiums in response to health inflation. Therefore, coordination among competitors in the HH Buying Group will not lead to premium increases for Consumers and will in fact do the opposite and drive down costs (administrative and benefit outlays) to support Participants in keeping premium increases low.

4. Public benefits

- 4.1 Describe the benefits to the public that are likely to result from the proposed conduct. Provide information, data, documents or other evidence relevant to the ACCC's assessment of the public benefits.
- 4.2 The Proposed Conduct will generate public benefits in the form of transaction costs savings and efficiencies for healthcare payers, healthcare providers and members, encouraging transition towards value based contracting and information sharing resulting in better health outcomes for consumers at a lower cost resulting in more efficient pricing for hospital services and ultimately, reduced premiums for consumers. As private health insurers constitute the vast majority of purchasers of private health care (around 70% of private hospital services according to AIHW data), we will focus on public benefits in the private health insurance industry.

Transaction costs savings and increased efficiencies

- 4.3 Authorisation for HH to engage in collective bargaining will result in significant transactional and administrative cost savings for Participants. nib's network of Providers consists of:
- (a) 565 private hospitals;
 - (b) 21,764 medical specialists;
 - (c) 3,049 general treatment clinics and over 15,900 providers.

This requires nib to:

- (d) negotiate over 500 contracts per year; and
 - (e) manage over 3,500 agreements.
- 4.4 The negotiation of HPPAs in particular can be time consuming and at times, protracted with some HPPAs taking up to 16 months to negotiate and the average large hospital group negotiation taking between 6 to 8 months. The process involves complex negotiation on legislative issues, terms and conditions relating to payment structures, audit, recoveries and obligations by both parties as well as the associated business rules and clauses which detail the nature of how payments are made for health care services (which are volatile in nature due to each individual's condition). Some hospital group HPPAs involve up to 70 hospitals. In addition to negotiating the general contractual terms, each hospital in a hospital group will have an individual rate schedule (list of prices for hospital treatment) and each is negotiated individually with the requisition commercial modelling to be done at the individual level and then "rolled up" to understand both party's (fund and hospital groups) material change in value of the contract. As the business rules and contractual terms impact this modelling the processes generally involves a number of in-person meetings (in particular at commencement of negotiation) before weekly meetings to cover off specific areas and issues. A working document (contract) is created and a separate issues log maintained on the negotiation. The working document is exchanged periodically between the

parties and is marked up with comments, issues, requested changes etc. Once the contract terms are close to finalisation the rate modelling commences with each hospital and these rate schedules are exchanged in a similar manner to allow each organisation to model the predicted impact in change of terms (contract clauses), payment models for each service (daily rate to Diagnosis Related Grouping) and price. The modelling is generally conducted on an agreed period of 12 months of previous activity. Once all parties are satisfied with the outcome the negotiation is finalised and contracts executed. On issues which cannot be resolved, these are generally escalated by one or both parties to more senior staff and or executives to resolve. Once a position has been agreed at this higher level it is then briefed back to the negotiation teams who work together to ensure it is adequately reflected in the contractual terms.

- 4.5 Historically, nib's health services contracting function required approximately 25 staff and cost approximately \$5 million per annum to operate. The size and cost of this function is largely independent of the size of the health insurer. Any health insurer that has national coverage and maintains its own health services contracting function would need to support a function of a similar size due to the breadth of the Provider networks.
- 4.6 The HH Buying Group would reduce the need for duplication of the resources and processes involved in the contracting services and reduce costs for Participants. Economies of scale and scope would be realised as each Participant joins the HH Buying Group and greater efficiencies achieved. Under the HH Buying Group, it is proposed that the fee for Participants would correlate with transactional costs so that any savings that arise as Participant numbers increase, would be distributed between Participants under the Participation Agreement through reduced fees.
- 4.7 The formation of the HH Buying Group to perform the contracting services will create significant administrative cost savings as each Participant does not need to replicate the same infrastructure. As HH is currently undertaking this function, the marginal cost of HH performing the contracting services for each Participant would be low. HH would distribute the cost of undertaking nib's contracting services across the Participants, thereby significantly reducing each Participant's costs and presenting an opportunity for transaction cost savings and increased efficiencies. We have set out in Annexure B an example of how the participation fee for the HH Buying Group would decline as Participants join.
- 4.8 These efficiencies can be realised with health insurers that are already part of the AHSA or ARHG buying groups. HH modelling suggests that the participation fee for the HH Buying Group will be competitive with the AHSA's or ARHG's membership fees and would provide a broader scope of services particularly in relation to data analytics. In any case, the HH participation fees would be substantially lower than running an effective internal function. We have set out in Annexure C the basis of the modelling undertaken by HH in comparing the competitiveness of the participation fee for the HH Buying Group with other buying groups.
- 4.9 The Proposed Conduct will also create the following benefit for the Providers (albeit more limited if most of the Participants were previous members of AHSA or ARHG):
 - (a) simplifies backend billing processes as the Participants would have the same contract, rates and billing rules which results in significant reduction to the operational and administrative costs for Providers;
 - (b) consistent funding agreements enable Providers to more easily establish care pathways and work with medical specialists on improving the quality and cost of health care; and
 - (c) reduced cost to negotiate and manage relationships with health insurers. Negotiation of agreements, particularly HPPAs, create a significant burden and cost to Providers and having reduced numbers of negotiations allow Providers to reduce the costs associated with establishing, negotiating and managing contracts with health insurers.

Greater choice of buying group

- 4.10 The HH Buying Group would provide health insurers with an alternative buying group to the AHSA and provide greater choice. ARHG is not a viable alternative to AHSA for health insurers because

of their lack of scale and ability to implement more sophisticated contracting mechanisms. Increased competition between different buying groups would also foster greater innovation and incentivise the buying groups to provide better value and quality of services to its participants.

- 4.11 The HH Buying Group would provide a differentiated model of funding such as value-based contracting, as further described below, and a buying group model that has been authorised by the ACCC.

Better health outcomes at a lower cost

- 4.12 HH intends to work collaboratively with Providers to implement more efficient "value-based" contracting relationships. In relation to hospital contracting, this type of contracting involves comparing health outcomes with costs of services to determine the value of the service. The agreed contracting price for healthcare services will be informed by the value of the service, rather than on the existing cost base. This transition from "fee-for-service" to "value-based" contracting aligns with many other health systems globally which have seen improvements in health outcomes and reduced costs from the transition. As an example, in the United States, Cigna created its first commercial value-based model in 2008. Today, 67% of Cigna's claim spend in the United States has shifted to value-based models. Cigna continues to grow its value-based models and expects to have over 1,000 value-based arrangements across hospitals, specialists, and general practitioner groups in 2021.
- 4.13 As a result of its shift to value-based contracting, Cigna has been able to improve cost outcomes and quality outcomes over time. From 2010 to 2018, Cigna had the lowest reported medical cost trend in the US at 3.6% (key competitors were between 5.5% and 6.0%). By 2021, Cigna is ambitiously targeting to manage medical cost trend to the same level as CPI. Value-based reimbursement arrangements have been a key component of that success.
- 4.14 More specifically, Cigna has seen very strong results in its top performing value-based arrangements:
- 11% better quality scores than market for primary care providers;
 - 14% improved costs for specialist groups; and
 - 2% lower readmission rates for hospitals.
- 4.15 Value based contracting takes many forms. In its most simple form, HH would initially compare the value of services from a particular Provider against peers in the local region, state as well as nationally. Based on the outcomes and quality of care achieved by the Provider, the cost of the services would be adjusted (either through price or structure) to match the value being delivered by the Provider. If the Provider achieves higher than standard quality outcomes, then the insurers would pay more to the Provider and if the standard quality outcomes were below average, insurers would pay less for these services. The mechanism for this adjustment would form part of the commercial negotiations process and could take a number of forms including price adjustment to reflect the quality of service, payment of performance incentives if agreed benchmark outcomes are exceeded or changes to payment structures which drive improved efficiency to match the outcomes associated with the Provider.
- 4.16 Current approaches to contracting generally focus solely on cost of care of the services and most funds, and buying groups such as the AHSA and ARHG, have historically focused on cost of care to determine payment structure and price of services. Larger funds tend to have greater access to the complex analytics and data science required to support the development of value-based funding models. Through the HH Buying Group for small and medium funds, it will effectively improve and normalise the Participants' ability to manage benefit outlay and match larger more mature competitors in accessing value based contracting services.
- 4.17 Health systems that have moved to value-based contracting, which by definition, better aligns incentives between the payer and provider, have seen both improvements in health outcomes and lower costs. This shift is fundamentally underpinned by broad data and mature and sophisticated

data science capabilities. The establishment of outcomes data is complex by its nature and requires the collection of sufficient data for statistical relevance (which is difficult, if not exclusionary requirement for small insurers), the establishment of outcome measures and quality based on relevant clinical and international literature, and the normalisation and risk adjustment of the patient population to ensure like-for-like comparison in the provision of services.

- 4.18 HH intends to collect and aggregate claims data and Hospital Casemix Protocol (HCP) data of Participants to establish benchmarks on the outcome of services in relation to both procedures and Diagnosis Related Grouping (DRG). This outcomes-based data would then be normalised and risk-adjusted for the variances in patient population (e.g. age, co-morbidities and demographic factors including gender) and a relative outcome scale established for each Provider at a procedure level. This would include quality data and information such as Hospital Acquired Complications as well as efficiency data such as excessive bed days or excessive use of Medicare Benefits Schedule (**MBS**) item numbers.
- 4.19 Once the quality scoring is established, HH will be able to use this benchmarking to assign a relative value score to each Provider at a procedure or DRG level as well as an aggregated weighted average for the Provider. This will then inform the basis for price and payment structure negotiations of HPPAs and will drive improved outcomes for Participants through more appropriate pricing at a procedure level for hospitals service purchased. Ultimately this will drive improved outcomes for Customers as they benefit from improvements in the quality of service from Providers or through more sustainable and affordable private health insurance due to better control by Participants of benefit outlay.
- 4.20 Additionally, the Proposed Conduct will encourage greater involvement by Providers in the lifecycle of the contracting process. The potential size and calibre of the HH Buying Group will drive uptake of value-based contracting by encouraging healthcare providers to be more engaged in innovative funding models that improve outcomes for Customers.
- 4.21 In relation to general treatment networks, such as dental networks, the ability to collectively acquire these services on behalf of a number of insurers will see improved volume provided to the Providers of these services who have been selected based on quality criteria, while pairing this with better pricing and value for Customers and the healthcare payers. As the health insurance products which cover these services typically pay a percentage of the cost, any price negotiation and discount is of benefit to both the payer and Customers who hold the insurance policy.
- 4.22 The key advantage of driving value-based contracting through the HH Buying Group rather than nib alone is that HH will be able to get more buy-in from Providers if HH is representing a larger Customer base. Value-based funding, by its nature, allows Providers to be more innovative and considered in the application of care. This allows a Provider to ensure that quality is maintained or increased while efficiency and cost of service delivery is improved. To make this viable for Provider to invest in, and operationally develop, providers require a reasonable volume of care to occur through these mechanisms. By forming a buying group for the development and purchasing of value-based funding mechanism, HH will provide enough scale to Providers to validate the investment and opportunity.
- 4.23 Likewise, the scale of smaller health insurance funds is likely to be insufficient to develop and implement value-based funding as stand-alone funds. By forming the HH buying group this will provide opportunity to small Participant funds to be involved in more modern and effective health procurement funding models which will ultimately translate into better affordability for members.

Access to data analytics and Information

- 4.24 Generally, only larger health insurers have access to the body of information and data analytics capabilities required to support the development of value-based contracting. The Proposed Conduct will provide Participants, who are likely to be smaller health insurers, with access to data analytics tools and technology. HH's data analytics undertaken as part of its contracting services will use claims and HCP data of all Participants. This will reduce information asymmetry and allow smaller insurers to obtain insights from information analysed across all Participants, that

they would otherwise not have. This will assist smaller insurers to more effectively engage in the contracting process and increase access for them to value-based contracting.

- 4.25 In addition to the benefits in relation to hospital services, data analytics and information sharing would allow HH to develop reliable and efficient networks of medical specialists and extras providers across various speciality groups and geographic networks. Increased information sharing and access to data analytics will increase use of efficient providers who deliver improved standards of care and allow participant funds the ability to provide better and more transparent information to members, which will result in a better informed and empowered consumer of health care services.

No gap experience for Customers

- 4.26 The uncertainty around the extent of gaps that Customers face in the private healthcare system is one of the major concerns or causes of dissatisfaction for Customers. For example, according to IPSOS' 2019 Healthcare & Insurance Australia Study, the most important driver for customer satisfaction with respect to their health insurer is 'Rebates on Services' (i.e. out-of-pocket costs) with the average fund scoring 5.8 out of 9 on this aspect. This uncertainty is partly derived from the multitude of contractual relationships that are created when a Customer receives hospital treatment – separate contracts between the Customer and the private hospital, medical specialist, anaesthetist, assistant surgeon, radiologist, pathologist, etc.
- 4.27 The HH Buying Group would broaden access to nib's Clinical Partners Program which is a unique industry offering where nib engages with the surgeon, assistant surgeon and anaesthetists to bring a zero-gap experience for Customers for knee and hip replacements. The HH Buying Group would allow this offering to be made available to Customers of Participants. It also provides HH with a larger Customer base to be able to engage with a broader group of medical specialists so that the program can be expanded to cover more types of treatment (the program currently only covers hip and knee replacements) and more geographical areas.
- 4.28 The development and expansion of the Clinical Partners Program will focus on efficient and effective Providers who provide quality standards of care based on the available hospital quality and outcomes data. The establishment of MPPAs with these Providers will drive more volume to them (as health insurers will be able to actively promote the financial certainty for Customers and referrers) and will also serve to place pressure on non-participants specialists to moderate their out-of-pocket practices due to the risk of loss of patient volume. Ultimately, in both instances the Customer is better protected from excessive out-of-pocket exposure when undergoing large and complex surgical procedures.
- 4.29 The HH Buying Group would also have the additional scale to expand its network of private hospitals with HPPAs and health professionals participating in the medical gap scheme and general treatment network which would also contribute to more no gap experiences for Customers.
- 4.30 The public benefit of an expanded Clinical Partners Program and the creation of potentially further no gap funding initiatives is that a greater number of Customers would have the benefit of the certainty of a no gap hospital or health experience. It would also go some way towards addressing a key concern of Customers and encourage further Australians to use the private healthcare system, alleviating the pressure on the public system.

Countervailing hospital bargaining power

- 4.31 Some Providers have much stronger bargaining power in the negotiation of agreements with healthcare payers which can impede the parties from achieving efficient pricing outcomes for health services. This is particularly the case in the private hospital market where the 5 largest hospital provider groups account for over 50% of the market.
- 4.32 Some of the smaller private hospitals can also have a high degree of bargaining power due to their iconic status and reputation, or due to their location in regional and remote communities.

- 4.33 This leads to inconsistencies in pricing for the same hospital procedure across different hospitals with the more powerful hospital groups being paid higher prices without any commensurate in value for the Customer. Two examples of this are procedures for cataracts (MBS item 42702) and oocyte retrieval (MBS item 13212) where the median cost charged by large hospital groups is 181% and 149% of the national median cost respectively.
- 4.34 This results in hospital pricing that is above the competitive and efficient price for treatment in particular hospitals.
- 4.35 The Proposed Conduct will enable the HH Buying Group to improve its bargaining position to countervail the power of some of the hospital groups which would lead to more efficient hospital pricing.

Reduced healthcare costs and premiums for members

- 4.36 The public benefits outlined above have the combined effect of increasing the value of the benefits paid by healthcare payers for health services and reducing overall spend particularly in relation to hospital benefits. This will be achieved in the short term through more efficient pricing and in the longer term through increased quality of care which will reduce the volume of health services being purchased. In FY19 the private health insurance industry paid \$15.7 billion in hospital benefits which represented 74%6 of all benefits paid by private health insurers for that period.
- 4.37 The reduction in healthcare costs is of particular importance to the smaller health insurers who are likely to be Participants and have more limited access to capital. It would ease the current pressure on health insurers struggling with escalating healthcare costs and inflation coupled with increased cost of regulatory compliance and changes to capital adequacy requirements.
- 4.38 The flow on effect of reductions in benefit outlays and transactional costs savings from the HH Buying Group is that it reduces pressure on premium increases for health insurance policies by the Participants, whilst also improving patient outcomes through value-based contracting and incentivised performance based outcomes. Reduced premium increases encourages participation in private health insurance and reduces pressure on the public health system.

Public benefits for Other Healthcare Providers

- 4.39 Hospital and medical purchasing is at a significantly lower scale for other purchasers of private medical services compared to private health insurers. This creates an opportunity to partner with these purchasers to increase their sophistication and better align incentives with health care providers.
- 4.40 Similar to insurers, Other Healthcare Providers will benefit from transaction costs savings as a result of the Proposed Conduct particularly those that have ongoing arrangements with health service providers akin to insurers. This will enable schemes such as the Department of Veteran's Affairs hospital cover scheme to pass on greater benefits to veterans, or reduce general expenditure. Furthermore, for those that do not have arrangements with health service providers and instead rely on the established rates for services will gain access to more efficient pricing models.
- 4.41 Importantly, and as noted above in respect of private health insurers, the Other Healthcare Providers will benefit from the data analytics and associated "value-based" contracting models. Only larger private health insurers will have access to the quantity and quality of data required to effectively engage with data analytics and achieve meaningful results. The Other Healthcare Providers will be able to benefit from the data sharing, and third party data analytics, in circumstances where they otherwise would not have the relevant data, finance or experience to implement. Furthermore, as a result of the Proposed Conduct the Other Healthcare Payers will be

⁶ *Operations of Private Health Insurers Annual Report 2018-2019*, published by APRA on 5 November 2019.

able to consider implementing "value-based" contracting with the ultimate goal of offering better quality of care, and accordingly improving the health of its members.

5. Public detriment (including likely competitive effects)

5.1 Describe any detriments to the public likely to result from the proposed conduct, including those likely to result from any lessening of competition. Provide information, data, documents, or other evidence relevant to the ACCC's assessment of the detriments.

5.2 The potential public detriments from the Proposed Conduct would be minimal (if any) in the markets for health services and would be outweighed by the public benefits set out above. The health insurers that are most likely to be Participants are members of existing buying groups. As insurers would be switching from one buying group to another, it would not substantially change the current market dynamics in the market for health services. The key difference being that nib would be a party to the HH Buying Group.

5.3 The other key reason that potential public detriments would be minimal is that the Providers have statutory rights (assigned from members) to be paid benefits from insurers and Medicare and do not rely wholly on agreements with health insurers. We consider each type of contracting service in turn.

5.4 In relation to the market for the supply of private health insurance to consumers, the potential public detriments from the Proposed Conduct (if any) would be very limited. The Proposed Conduct will not impact the way healthcare payers compete with one another in relation to the setting of premiums, the products they provide, or their sales strategy, rather it will only impact the way that healthcare payers engage with suppliers of health services as described above and the reduction in health care costs. Accordingly, there the Proposed Conduct will have very little impact on the way private health insurance is supplied to consumers other than easing the pressure on premium increases due to cost reductions. This position is supported by the fact that buying groups in respect of health services already exist and have not impacted or acted as a detriment to competition in the supply of private health insurance.

Hospital contracting

5.5 The market for private hospital services is likely to be State-based or local market as consumers are unlikely to travel long distances to acquire hospital services. As purchasers of hospital services, the HH Buying Group would potentially have a stronger bargaining position than if nib or each Participant negotiated agreements with private hospitals individually.

5.6 We have set out below the market share figures on a State and Territory basis for each private health insurer or buying group based on hospital policies as disclosed in APRA's *Operations of private health insurers annual report 2019*.

Contracting Group	NSW (including ACT)	NT	QLD	SA	TAS	VIC	WA	National
Medibank	22.60%	40.90%	30.70%	19.40%	26.90%	31.10%	21.40%	26.10%
Bupa	22.90%	36.20%	31.40%	47.80%	32.70%	23.10%	10.90%	25.10%
HCF	20.10%	5.90%	8.00%	8.90%	4.80%	7.50%	4.70%	11.70%
nib	15.20%	3.20%	6.80%	4.10%	3.00%	8.50%	3.90%	9.50%
HBF	0.80%	1.70%	0.70%	0.50%	0.70%	1.10%	49.70%	6.90%
AHSA	17.20%	11.60%	21.50%	18.40%	31.30%	27.00%	5.30%	19.20%
ARHG	1.20%	0.30%	0.90%	0.70%	0.60%	1.70%	3.90%	1.60%

In the unlikely event that every member of AHSA joined the HH Buying Group, market shares by State and Territory are likely to be as set out below.

Insurer	NSW (including ACT)	NT	QLD	SA	TAS	VIC	WA	National
HH Buying Group	34.0%	17.0%	29.6%	23.7%	14.4%	34.7%	13.2%	29.5%
Medibank	22.6%	40.9%	30.7%	19.4%	26.9%	31.1%	21.4%	26.1%
Bupa	22.9%	36.2%	31.4%	47.8%	32.7%	23.1%	10.9%	25.1%
HCF	20.1%	5.9%	8.0%	8.9%	4.8%	7.5%	4.7%	11.7%
HBF	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	49.7%	6.1%
ARHG	0.4%	0.1%	0.2%	0.2%	21.2%	3.6%	0.0%	1.5%

5.7 The most impacted State-based markets would be New South Wales and Victoria if all of AHSA's members joined the HH Buying Group as it would give the HH Buying Group the highest market share in those States.

5.8 The increased market share of the HH Buying Group would to some extent, countervail the strong bargaining position of the large hospital groups such as Ramsay and Healthscope that allows for supra-competitive prices for hospital services. We submit that the increase in HH Buying Group's market share will allow it to leverage its position in order to put pressure on hospital pricing so that it falls below supra-competitive and inefficient levels. The HH Buying Group is unlikely to have sufficient bargaining power or incentive to drive hospital pricing below competitive prices. Due to the national network of hospitals operated by the large hospital groups, the HH Buying Group will continue to be reliant on having an HPPA with them. This will also be the case for smaller iconic hospitals that the HH Buying Group must have in the hospital network due to demand from Customers.

5.9 Health insurers are effectively subject to a price floor under the PHI Act and Rules for hospital treatment. The legislative regime requires health insurers to pay benefits for hospital treatment at either the specified rates in the *Private Health Insurance (Benefit Requirements) Rules (Rules)* or rates calculated under the Rules for second-tier eligible hospitals. The latter rates are calculated by taking 85% of the average rate for that treatment in the insurer's HPPAs with comparable hospitals. If a hospital does not have an HPPA with the HH Buying Group, insurers must still pay these minimum benefit amounts. Customers of the HH Buying Group would still have the option of purchasing services from that hospital but are more likely to incur out-of-pocket expenses.

5.10 Based on nib's experience in moving from AHSA membership to undertaking its own HPPA negotiations, the Applicants submit that the increase is likely to assist the HH Buying Group to negotiate additional obligations relating to quality of treatment, performance, reporting and have more engagement from hospitals on innovative funding models. The Applicants expect that greater market share would incentivise hospitals to engage more collaboratively with the HH Buying Group during HPPA negotiations.

Medical specialist contracting

5.11 The impact of the HH Buying Group would be minimal in the market for medical specialist services which would be localised geographic areas of competition and a separate market for each specialty of practice.

5.12 The negotiation of MPPAs with medical specialists involves negotiating the rates that medical specialists would accept for not charging a gap to Customers.

5.13 The HH Buying Group is likely to increase the proportion of potential Customers of the medical specialist that are being represented in the MPPA negotiations. The Applicants submit, again on the basis of nib's experience as an AHSA member, that this will not change the negotiation dynamics in relation to price but is more likely to lead to greater engagement on innovative funding models such as the Clinical Partners Program. This is because MPPAs are not critical to

medical specialists but are seen as an optional arrangement. If a medical specialist was not prepared to enter into an MPPA with the HH Buying Group, they have statutory rights (assigned from members) to be paid for their professional services which would generally comprise of benefits paid by Medicare (75% of the Medicare Benefits Schedule fee for the service), benefits paid by the insurer (25% of the Medicare Benefits Schedule fee or more if the medical specialist participates in a medical gap scheme) and out-of-pocket expenses paid by the Customer (if any). Therefore, in MPPA negotiations, insurers often do not have strong bargaining power when negotiating with medical specialists despite the differential in size of the organisations as medical specialists are simply agreeing to cap their fees and relinquish their right to charge out-of-pocket expenses.

Medical gap scheme and general treatment network

- 5.14 In relation to the medical gap scheme and general treatment network, the HH Buying Group would not be negotiating agreements with Providers. Due to the large number of individual health providers in the industry (circa 50,000), the HH Buying Group will be managing schemes based on a standard schedule of rates and terms and conditions. nib's current scheme is determined on a state basis for dental and physiotherapy networks and a national basis for other types of general treatment networks and its medical gap scheme. Therefore, any changes to the buying power in the local markets for medical specialists or general treatment providers due to the HH Buying Group would not impact the setting of prices or terms and conditions for the medical gap scheme and general treatment network.
- 5.15 These schemes are voluntary, and Providers have the option to register to be part of these networks and receive additional benefits for agreeing to 'no gap' arrangements and other terms and conditions. General treatment providers also have the option of not being part of an insurer's network and will still be paid benefits in accordance with the policies of the health insurers. As discussed above, medical specialists have the option not to register with the medical gap schemes and continue to have statutory rights (assigned from members) to be paid benefits from Medicare and health insurers. Health insurers are incentivised to provide attractive rates to Providers under the medical gap scheme and general treatment networks to encourage participation.
- 5.16 The only agreements that are negotiated in this space are agreements relating to the operation of an insurer's branded optical or dental centres or potentially, agreements with networks of providers such as dentists that may be bespoke and negotiated. HH's involvement in the negotiation and management of such contracts would be undertaken on an individual basis for the relevant insurers.
- 5.17 The Applicants submit that the Proposed Conduct will have minimal (if any) detrimental impact on Customers or other classes of persons and that the substantial public benefits from the Proposed Conduct as set out in this application will result in a net public benefit.

Other Healthcare Payers

- 5.18 In relation to Other Healthcare Payers, the Applicant submits that there will no public detriments emerging from the Proposed Conduct. The relative bargaining power of the Other Healthcare Payers is small, accordingly their ability to achieve commercial and competitive results in negotiations with Providers is limited, resulting in some cases of inefficient pricing. Should the Other Healthcare Payers participate in the HH buying group, any increase in bargaining power will allow them to increase their bargaining power and accordingly, their negotiating position. As noted above, given the countervailing bargaining power of Providers is large any marginal increase in bargaining power for these types of healthcare payers will not significantly impact competition.
- 5.19 Similarly, travel and medical insurers make up a small percentage of the healthcare payer market. Accordingly, their joining the buying group will not materially alter the competitive position of Providers in such a way as to improperly displace the countervailing bargaining power in the market.

- 5.20 The Applicant recognises that government and semi-government healthcare payers form a large part of the healthcare payer market. However, in practice these schemes invest in and create their own Provider networks, and are subject to extensive public policy constraints when tendering and making agreements. Accordingly, in the Applicant's view these healthcare payers are less likely to join the HH Buying Group.

Future without the Proposed Conduct

- 5.21 In a future without the Proposed Conduct, nib will continue to use the contracting services offered by HH. nib along with other healthcare payers will, on an ongoing basis, incur high amounts of transaction costs associated with the time consuming and protracted negotiation of HPPAs. Similarly, Providers will continue to incur the administrative and cost burdens associated with the operational side of backend billing and the repeated negotiation and management of contracts with health insurers.
- 5.22 Other Healthcare Payers will also continue to pay inefficient prices and incur excessive transaction costs, resulting in increased premiums for customers and greater administrative costs for Providers. Significantly, without the Proposed Conduct healthcare payers will face great difficulty in implementing the more efficient "value based" contracting relationships. Smaller healthcare payers particularly will not have access to the type and scale of data required to transition away from a "fee for service" model. This is because the lack of data sharing will result in there being no data to form the basis of the price and payment structure of value based contracting. As a result, healthcare payers, Providers and customers will benefit from the more efficient quality and price of healthcare services. In addition, without the Proposed Conduct, the multitude of contractual relationships that exist when a customer attends a hospital will remain and accordingly, the basis on which the customer will be required to pay a gap will remain unclear resulting in continuing uncertainty for customers relating to the pricing of healthcare services.
- 5.23 Accordingly, in a future without the Proposed Conduct, the current costs model and associated expenses will remain for healthcare payers, Providers and customers. Healthcare payers will have less choice about which buying groups to participate in, reducing competition between buying groups, and will be less inclined to implement improved and innovative funding and service models, reducing the potential for cost savings. Without the scale provided by the HH Buying Group, HH may have greater difficulties engaging with Providers to implement and invest resources in transitioning to innovative funding models, particularly where Providers have guaranteed funding streams under private health insurance legislation and through Medicare.

6. Contact details of relevant market participants

- 6.1 Identify and/or provide names and, where possible, contact details (phone number and email address) for likely interested parties such as actual or potential competitors, key customers and suppliers, trade or industry associations and regulators.

6.2 Please see contact details in the Annexure D.

7. Additional information

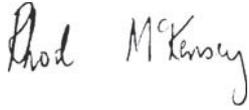
- 7.1 Provide any other information or documents you consider relevant to the ACCC's assessment of the application

7.2 None.

8. Declaration by applicant

- 8.1 The undersigned declare that, to the best of their knowledge and belief, the information given in response to questions in this form is true, correct and complete, that complete copies of documents required by this form have been supplied, that all estimates are identified as such and are their best estimates of the underlying facts, and that all the opinions expressed are sincere.

- 8.2 The undersigned undertake(s) to advise the ACCC immediately of any material change in circumstances relating to the application.
- 8.3 The undersigned are aware the giving false or misleading information is a serious offence and are aware of the provisions of sections 137.1 and 149.1 of the Criminal Code (Cth).



.....

Rhod McKensy

Chief Executive Officer, Honeysuckle Health Pty Ltd

This 23rd day of December 2020

Annexure A – Alternate market share figures

The market share figures in this Annexure A are based on APRA's *Operations of private health insurers annual report 2019*.

Market Share based on total of Hospital and Extras Policies

Insurer	Party that undertakes contracting services	National Market Share Total Policies June 2019
Medibank	Medibank	26.9%
Bupa	Bupa	25.8%
HCF	HCF	11.1%
nib	nib	9.1%
HBF - WA	HBF	6.7%
HBF – other States and Territories	AHSA	0.7%
Australian Unity	AHSA	2.7%
Teachers Health	AHSA	2.4%
GMHBA	AHSA	2.3%
Defence Health	AHSA	2.1%
CBHS	AHSA	1.5%
HIF	AHSA	0.8%
Westfund	AHSA	0.8%
Health Partners	AHSA	0.7%
Latrobe Health	ARHG	0.7%
CUA	AHSA	0.6%
health.com.au	AHSA	0.6%
TUH	AHSA	0.6%
Peoplecare	AHSA	0.5%
St Luke's	ARHG	0.5%
QCH	AHSA	0.4%
rt health	AHSA	0.4%
Police	AHSA	0.3%
Navy Health	AHSA	0.3%
Doctors Health	AHSA	0.3%
Mildura District Hospital Fund	ARHG	0.2%
myOwn	AHSA	0.2%
Phoenix	AHSA	0.1%
Healthcare Insurance	AHSA	0.1%
Transport Health	AHSA	0.1%

onemedifund	AHSA	0.1%
ACA Health	AHSA	0.1%
Nurses & Midwives	AHSA	0.1%
Hunter Health	ARHG	0.0%
Reserve Bank	AHSA	0.0%
CBHS Corporate	AHSA	0.0%
Emergency Services Health	AHSA	0.0%

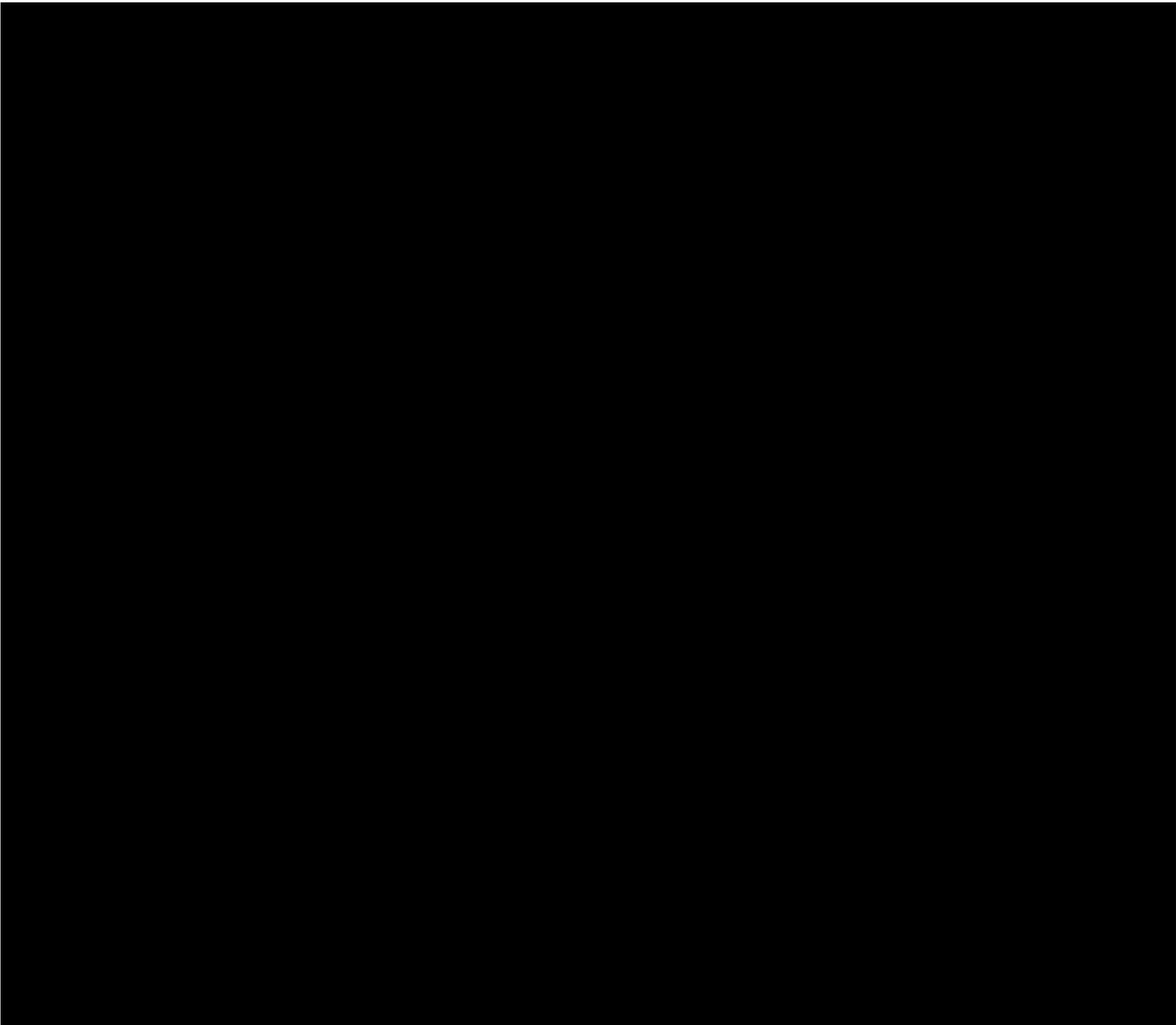
Party that undertakes contracting services	Participating health insurers' market share based on June 2019 Total Policies
Medibank	26.9%
Bupa	25.8%
AHSA	19.0%
HCF	11.1%
nib	9.1%
HBF	6.7%
ARHG	1.4%

Market Shares based on Premium Revenue

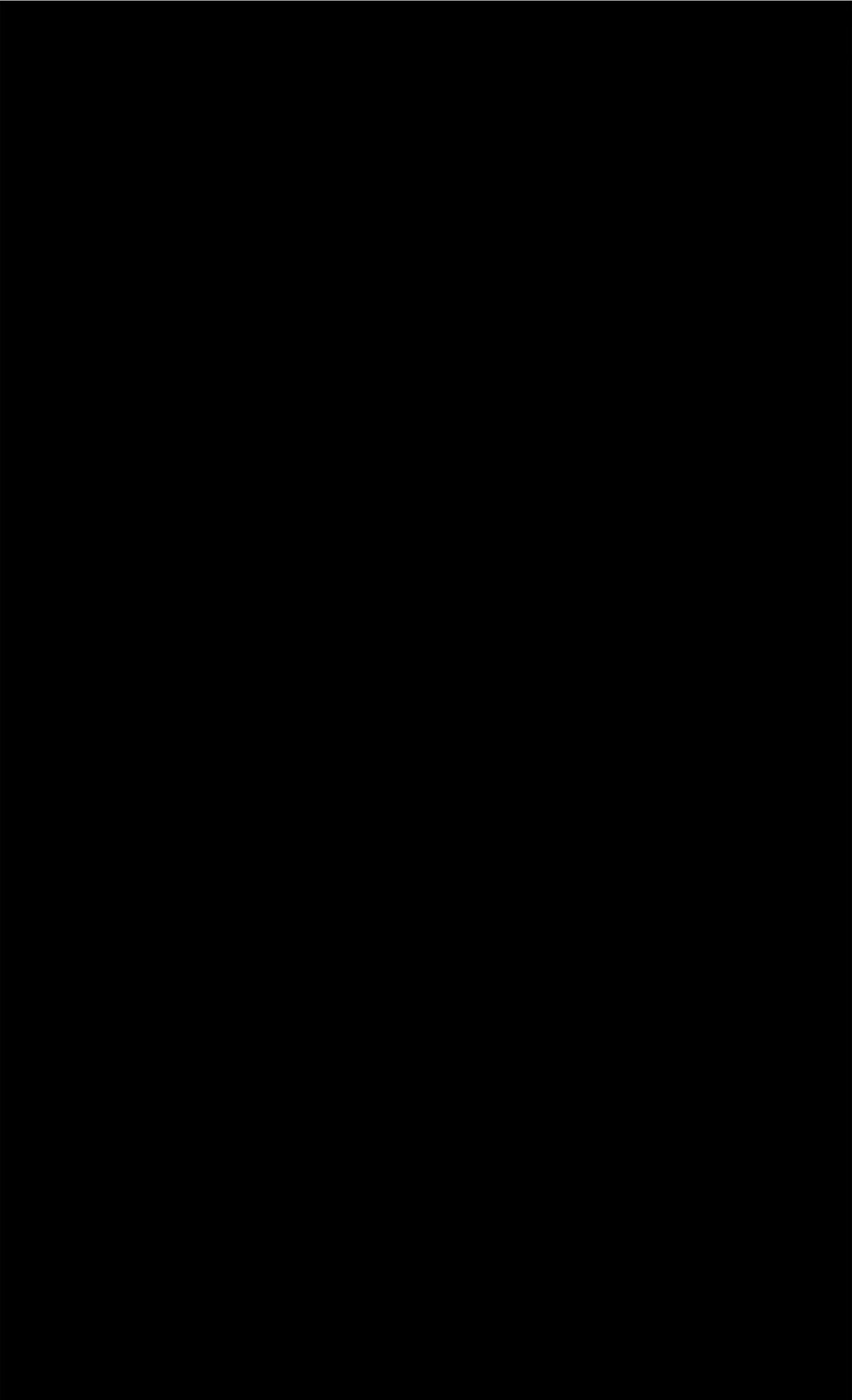
Insurer	Party that undertakes contracting services	National Market Share Total Premium Revenue FY19
Bupa	Bupa	26.6%
Medibank	Medibank	25.7%
HCF	HCF	11.3%
nib	nib	8.2%
HBF - WA	HBF	6.1%
HBF – other States and Territories	AHSA	0.7%
Teachers Health	AHSA	2.8%
Australian Unity	AHSA	2.8%
Defence Health	AHSA	2.3%
GMHBA	AHSA	2.3%
CBHS	AHSA	1.8%
Westfund	AHSA	0.8%
TUH	AHSA	0.8%
HIF	AHSA	0.7%
Latrobe Health	ARHG	0.7%

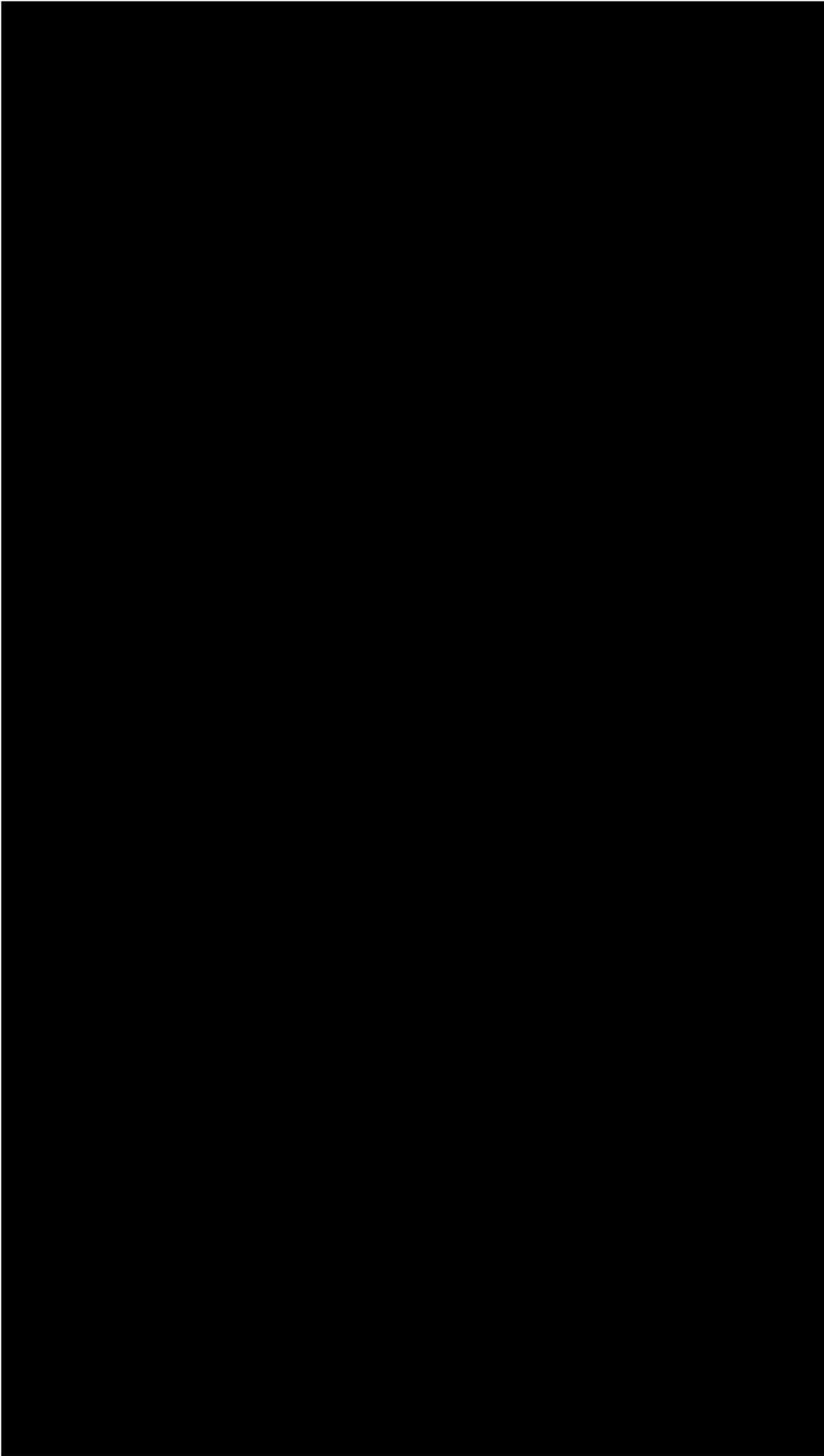
Health Partners	AHSA	0.7%
Peoplecare	AHSA	0.6%
CUA	AHSA	0.6%
St Luke's	ARHG	0.6%
Police	AHSA	0.5%
QCH	AHSA	0.5%
health.com.au	AHSA	0.5%
rt health	AHSA	0.5%
Doctors Health	AHSA	0.4%
Navy Health	AHSA	0.4%
Mildura District Hospital Fund	ARHG	0.2%
Phoenix	AHSA	0.2%
onemedifund	AHSA	0.1%
myOwn	AHSA	0.1%
Healthcare Insurance	AHSA	0.1%
ACA Health	AHSA	0.1%
Transport Health	AHSA	0.1%
Reserve Bank	AHSA	0.1%
Nurses & Midwives	AHSA	0.1%
Hunter Health	ARHG	0.0%
Emergency Services Health	AHSA	0.0%
CBHS Corporate	AHSA	0.0%

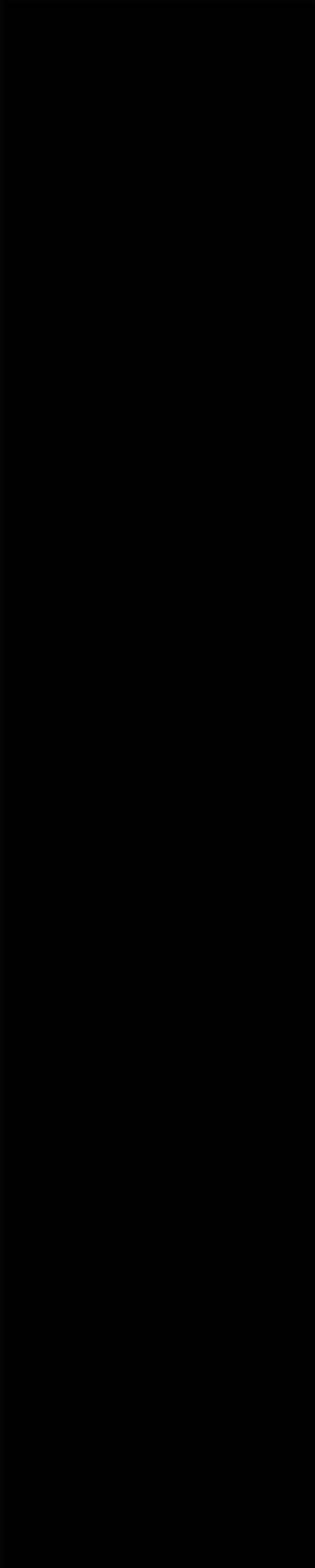
Party that undertakes contracting services	Participating Australian health insurers' market share based on Total Premium Revenue for FY19
Bupa	26.6%
Medibank	25.7%
AHSA	20.6%
HCF	11.3%
nib	8.2%
HBF	6.1%
ARHG	1.5%



Annexure D – Contact details of interested parties







COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-58

This is the Annexure marked "DD-58" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

MinterEllison

8 April 2021

BY EMAIL

Michael Pappa
Analyst, Competition Exemptions
Australian Competition & Consumer Commission
Level 17 | 2 Lonsdale Street
MELBOURNE VIC 3000

Dear Michael

Application for authorisation AA1000542-1: Questions for Applicants

We refer to your email of 31 March 2021, in which you sought responses to a number of questions to assist the ACCC in its assessment of the application for authorisation by nib health funds limited (**nib**) and Honeysuckle Health Ltd (**HH**) (together, the **Applicants**) dated 23 December 2020 (**Application**).

We have set out below the Applicants' responses to these questions, some of which contain information that is confidential to the Applicants. This confidential information has been highlighted in yellow. The Applicants request that the ACCC treat the highlighted information as strictly confidential and that it be redacted from this document prior to publication on the ACCC's public register.

Capitalised terms used in this letter are defined in the Application.

Parties to the Proposed Conduct

1. In their response to submissions from interested parties dated 19 February 2021, the Applicants acknowledge the concern that the Buying Group could represent 100% of all healthcare payers. The Applicants go on to state it would be reasonable for the ACCC to impose conditions to address this such as requiring HH to notify the ACCC of new participants in the buying group.

As an alternative to imposing conditions, and noting that the Applicants consider it extremely unlikely that the Buying Group would represent 100% of all healthcare payers, please advise whether the Applicants would be willing to address this issue at this stage of the process? For example, by amending the application to narrow the parties to the proposed conduct, or limiting the scope of the parties by reference to certain criteria.

- 1.1 The Applicants are willing to address the issue that the HH Buying Group could represent 100% of all healthcare payers by amending the Application to narrow the scope of the Proposed Conduct in relation to certain healthcare payers. We refer to the amended Application at Attachment A which addresses this issue.

2. **Please advise whether any healthcare payers have indicated that they are likely to join the Buying Group. If possible, it would be useful for us to know the identities of any parties who are likely to join.**



3. Please indicate whether any international medical and travel insurance companies currently participate in any Australian buying groups?

- 3.1 The Applicants are unaware of any buying groups for international medical and travel insurance companies. nib has agreements with some travel insurance companies under which it manages international travellers' access to health services if they become ill or are injured while travelling in Australia which includes accessing nib's network of providers for activation of services at the agreed nib rates.

Public benefits

4. Please provide an indication of how many participants would be required to join to make the HH Buying Group viable and increase the likelihood of the claimed public benefits being realised?

- 4.1 The Applicants submit that it is not possible to quantify in precise terms the number of participants required to increase the likelihood of any claimed public benefits being realised. However, in indicative terms, the Applicants make the following observations about the scope of participation that may be relevant in relation to the three categories of Proposed Conduct set out below.
- 4.2 In relation to the hospital contracting component of the Proposed Conduct, the Applicants consider that increasing the market share from the current 9.5% of the private health insurance market (nib's existing national market share) to 25% for the HH Buying Group would substantially increase the ability to realise the numerous claimed public benefits. This would enable a sufficient portion of the market to have a stronger value-based aspect, which the Applicants consider would deliver downward pressure on premium rate rises and ensure aspects of low value care are reduced and/or eliminated.
- 4.3 In relation to medical specialist contracting such as the Clinical Partners Program, the Applicants estimate that a minimum of approximately 20% of the private health insurance market is required to realise the claimed public benefits. The Applicants consider that for medical specialists to engage in discussions on new care pathways, they will need comfort that any proposed new models of care would apply to a reasonable number of their patients and should, ideally, apply to the majority of patients to allow them to consistently apply care. If the Clinical Partners Program covered a small proportion of patients, this would not diminish the return to the relevant medical specialist for those patients covered, but may translate into a barrier to engage effectively with specialists to onboard them to the new models of care.
- 4.4 In relation to the medical gap scheme and general treatment networks, the key public benefit is providing healthcare payers with access to efficient prices at low transaction costs which will reduce healthcare costs and ultimately, premiums for consumers. This public benefit would

increase incrementally as participants join and is not dependent on the number of participants that join the HH Buying Group.

- 4.5 The Applicants also highlight that the nature and quantity of public benefits able to be derived from these various components of Proposed Conduct is on a continuum, which may depend on the various circumstances at play and may vary over time.
- 5. Are private health insurers likely to seek to join more than one buying group, eg by joining the applicants' group while remaining in an existing buying group? Why/why not?**

- 5.1 The Applicants do not consider that current members of AHSA or ARHG would be able to join the HH Buying Group for only some contracting services and retain AHSA or ARHG for other services. The Applicants understand that AHSA and ARHG have relatively stringent rules on participation, which are essentially based on an "all or nothing" approach. If a participant is not willing to purchase all of their contracting services from AHSA, the Applicants understand that they would not be permitted to continue participating in that buying group. The AHSA standard HPPA is a tri-partite agreement (named a Business Partnership Agreement or BPA) and AHSA holds express rights as a party of this agreement to terminate the contract even if the health insurer and/or the hospital's preference is that the agreement remain in place. The Applicants understand that AHSA is willing to exercise those termination rights if a participant does not comply with the rules of the buying group, for example, by not purchasing exclusively from AHSA.

- 5.2 nib is aware of a circumstance where a health insurer made an alternative purchasing decision for a particular contracting service and AHSA responded by actively terminating all agreements that the health insurer had with AHSA and the relevant Providers, requiring the health insurer to extricate itself from AHSA. When nib acquired GU Health, AHSA set a six month limit on the transition for nib from AHSA hospital contracts to nib hospital contracts, after which time the AHSA would actively terminate any remaining HPPAs on foot.

- 5.3 On this basis, the Applicants consider it very unlikely that the AHSA would permit a fund to purchase certain contracting services from the AHSA, and other services from another buying group because the BPAs currently in place effectively act as a "lock-in" mechanism for the AHSA.

- 5.4 This is not the model that HH intends to put in place. HH's proposed model will give participants a greater degree of flexibility and HH would not be a party to agreements with Providers in its own right with separate termination rights. HH intends to allow participants to purchase some of its contracting services (e.g. the Clinical Partners Program) and to purchase other services directly from Providers or through another buying group.

- 6. Assuming that private health insurers will only participate in one buying group, please comment on the proposition that the claimed public benefit of improved bargaining power for the HH Buying Group would result in reduced bargaining power for the existing buying groups (AHSA and ARHG).**

- 6.1 The Applicants do not consider that a reduction in the number of participants in AHSA and ARHG would necessarily reduce their bargaining power in negotiations with Providers. Firstly, this is because the Applicants do not anticipate that the introduction of the HH Buying Group would lead to AHSA's current national market share in the private health insurance market of 20% to reduce drastically to below the current market share of nib at 9.5%. Secondly, a key determinant of bargaining power with Providers is being able to demonstrate value for them and offer innovative funding models that benefit all parties. The Applicants submit that since nib's acquisition of GU Health from Australian Unity (an AHSA fund), nib has negotiated more robust hospital contracts and achieved better rates and value for hospitals and consumers than the AHSA. This demonstrates that capability is just as important as market share in relation to achieving outcomes in the hospital contracting space, and introduction of the HH Buying Group would drive existing buying groups to continue to improve their capability. The Applicants submit that the authorisation of the Application would allow the HH Buying Group to combine capability with AHSA's level of market share, which would realise greater public benefits than currently exists.

- 6.2 Even if the existing buying groups are not able to maintain their bargaining power through continuous improvement, the Applicants do not consider that this will result in the overall dilution of public benefits. As discussed in part 2 of the Applicants' response to submissions from interested parties dated 9 March 2021, the HH Buying Group would provide an alternative and unique opportunity for health insurers that are currently part of an existing buying group. The diverse and innovative public benefits to be realised by the HH Buying Group are additional to

those provided by existing buying groups and would not diminish the overall available public benefits. Further, the Applicants consider that increased competition in the buying group market is likely to improve the performance of all parties and drive better outcomes for Customers. **The Applicants have been informed that the AHSA has already responded to the news of the development of a competitor buying group with a revised strategy and an increased focus on the needs of their members.**

7. Which of the claimed public benefits would be exclusively achieved through the HH Buying Group that are not currently realised through the two existing buying groups?

7.1 The Applicants consider that the innovative contracting services and contracting funding available through the HH Buying Groups will result in significant public benefits that are not currently realised through the AHSA and ARHG. As described in the Application, the HH Buying Group will offer value-based contracting which will result in better health outcomes for consumers at a lower cost. HH and nib have displayed evidence of value-based contracting through the medical contracting approach adopted in the Clinical Partners Program. Under this Program, nib engages with medical specialists including surgeons and anaesthetists to provide a zero-gap offering for Customers for knee and hip replacements. As discussed below, the Applicants intend to broaden access to the Program and make it available to Customers of Participants in the HH Buying Group.

7.2 The public benefits to be realised by these innovative functions and contracting services can be achieved by virtue of the HH Buying Group's access to sophisticated data analytics, which the Applicants consider are superior to existing offerings. HH is a health data science company with significant capability in data science, analytics and forecasting. It is able to use these skills and tools in its provision of value-based contracting, for example by analysing the quality of healthcare provided based on hospital quality and outcomes data.

8. The Applicants submit that the HH Buying Group would broaden access to nib's Clinical Partners Program and would allow this offering to be made available to customers of participants in the HH Buying Group. Please clarify how this would work in practice.

8.1 The Applicants propose to broaden access to the Clinical Partners Program by negotiating with the medical specialists participating in the program to add members of the new participants of the HH Buying Group to the program. The medical specialists would sign an MPPA with the new participant on the same terms and conditions that nib has in place with the specialists. The medical specialist will be paid the same rates as under the nib MPPA and members of the new participants in the HH Buying Group would have access to the no-gap experience for their hospital treatment.

8.2 If a participant does not purchase hospital contracting services from HH and has its own network of private hospitals (e.g. Medibank, Bupa or HCF), the MPPA would apply in relation to hospitals in respect of which the participant also has an HPPA. We refer to the diagram attached to this letter at Attachment B, which sets out the steps involved in the expansion of the Clinical Partners Program.

8.3 The expansion of the Clinical Partners Program does not require any change to the terms and conditions of the new participants' health insurance policies. Under health insurance policies, members are generally entitled to benefits for in-hospital medical services at 25% of the MBS fee. 75% of the MBS fee is payable by Medicare. As medical specialists generally charge above the MBS fee, any further benefits paid by health insurers to cover these amounts are dependent on agreements between the health insurers and medical specialists (either under a medical gap scheme or MPPAs).

8.4 The broadening of access to the Clinical Partners Program will provide HH with a larger customer base which will ultimately facilitate the engagement with a broader group of medical specialists so that the program can be expanded to cover additional types of treatment, and more geographical areas. Contrary to the submissions of interested parties, the Applicants submit that the success of the Clinical Partners Program has proven that value-based care is achievable in Australia, and is worthwhile. The program has achieved high quality health outcomes for consumers and has had the dual benefit of reducing health care system costs to the funder and to the consumer. The Applicants consider that the expansion of the Program by including other healthcare payers will broaden the public benefits by facilitating access to the no-gap services to more consumers, and ensuring a high quality of care.

Please let us know if you would like to discuss any aspect of this letter.

Yours faithfully
MinterEllison

A handwritten signature in blue ink, appearing to read 'NB', enclosed within a faint, light blue circular stamp or watermark.

Contact: Noelia Boscana
noelia.boscana@minterellison.com
OUR REF: 1313530

MinterEllison

8 April 2021

Application for authorisation under section 88(1) of the *Competition and Consumer Act 2010* (Cth)

Lodged by: Honeysuckle Health Pty Ltd

on behalf of itself and nib health funds limited

Confidential version

1. **Background**
- 1.1 This application is made to the Australian Competition and Consumer Commission (**ACCC**) by **Honeysuckle Health Pty Ltd (HH)** on behalf of itself and nib health funds limited (**nib**) (**Applicants**).
- 1.2 HH provides services to healthcare payers in Australia and New Zealand. These services currently include health analytics (e.g. measurement of impact of health interventions, population risk stratification and provider benchmarking), health management programs (e.g. telephonic programs to support patients transition from hospital and manage chronic diseases) and contract negotiation and management services for nib. HH is a joint venture between nib and Cigna. Both Cigna and nib own 50% of HH.
- 1.3 Cigna is a global health services company dedicated to improving the health, wellbeing and peace of mind of the customers it serves. All products and services are provided exclusively by or through operating subsidiaries of Cigna Corporation. Such products and services include an integrated suite of health services, such as medical, dental, behavioural health, pharmacy, vision, supplemental benefits, and other related products including group life, accident and disability insurance. nib is an Australian private health insurer with approximately 10% market share in Australia and provides health insurance products to three main market segments - Australian residents, international workers and international students. nib underwrites insurance products for several other brands including GU Health, Suncorp (APIA, AAMI and Suncorp) and Qantas.
- 1.4 From 1 October 2020, nib appointed HH to act as its agent to provide data analytics, contract negotiation, procurement and administration services in relation to nib's contracts with hospitals, medical specialists, general practitioners and allied health professionals (the **contracting services**). HH and nib seek authorisation for HH to provide the contracting services to additional health care payers and form a joint buying group (**HH Buying Group**) for the purposes of collective bargaining with providers to purchase health services. The Proposed Conduct does not involve a collective boycott. This application is made for the benefit of any healthcare payer who joins the HH Buying Group (**Participant**) which may include:
- a) private health insurers registered under the *Private Health Insurance (Prudential Supervision) Act 2015* (Cth) [except for certain private health insurers in the circumstances specified in paragraph 2.24](#);
 - b) international medical and travel insurance companies;
 - c) government and semi-government payers of healthcare services such as workers' compensation and transport accident scheme operators and Department of Veterans Affairs scheme (**DVA**); and
 - d) any other payer of health services as notified by HH to the ACCC
- (**healthcare payers**).

1.5 In the short term, the most likely Participants are private health insurers. Currently, the four largest health insurers, Medibank, Bupa, HCF and HBF, undertake the contracting services as an internal function.¹ The remaining health insurers engage in collective bargaining through one of two buying groups, the Australian Health Services Alliance (**AHSA**) and the Australian Regional Health Group (**ARHG**). Of the 36 private health insurers, the AHSA represents 27 and the ARHG represents four. The Applicant anticipates that private health insurers that currently outsource their contracting services to AHSA or ARHG are the healthcare payers that are most likely to join the HH Buying Group. The major health insurers are unlikely to join the HH Buying Group but may be interested in purchasing bespoke parts of the contracting services to supplement their

¹ Honeysuckle Health's understanding is that HBF contract directly with hospitals in WA and indirectly through the AHSA for all other states

internal contracting function. nib was previously a member of AHSA and it withdrew from AHSA in 2011 when it built its own internal contracting function.

4.5

- 1.6 Health insurers pay benefits for health services under health insurance policies issued to individuals. Customers generally make claims for benefits on-the-spot with a Provider at the time they are receiving treatment (eg. through electronic claiming system or at a private hospital). The Provider receives benefits directly from the insurer and may collect any additional amounts from the Customer (known as 'gaps').
- 1.7 Under contracting arrangements between health insurers and Providers, Providers generally agree not to charge a gap to the Customer (for some or all services) and health insurers agree to pay more in benefits. This creates a network of Providers that health insurers can promote as being health services where their Customers can receive a no gap or known gap experience.
- 1.8 For other types of healthcare payers such as international medical, travel and life insurance companies, as well as government and semi-government payers of healthcare services (Other Healthcare Payers), payment to Providers usually occurs pursuant to the terms of the insurance policy or the liability scheme, and the fee is usually paid in full by these types of healthcare payers. Accordingly, there is less likely to be a 'gap' exposure for consumers and therefore, less likely for these types of insurers to negotiate contract arrangements with Providers. As a result, we do not expect these types of healthcare payers to form a material portion of the HH Buying Group.

2. Parties to the proposed conduct

2.1 Applicant for authorisation:

(a) Honeysuckle Health Pty Ltd (ACN 637 339 694)

Address (registered address)	Contact person	Description of business activities
1/6 Newcomen St, Newcastle NSW 2300	Rhod McKensy Chief Executive Officer +61 406 380 017 r.mckensy@honeysucklehealth.com.au	Honeysuckle Health provides services to health payers in Australia and New Zealand including the contracting services, health data analytics, health measurement programs and health management programs.

(b) nib health funds limited (ACN 000 124 381)

Address (registered address)	Contact person	Description of business activities
22 Honeysuckle Drive, Newcastle NSW 2300	Roslyn Toms General Counsel +61 408 733 740 R.Toms@nib.com.au	nib is an Australian health insurer with approximately 10 per cent market share in Australia. It provides insurance to three predominant markets: Australian residents, international workers and international students.

2.2 Email address for service of documents in Australia

Noelia Boscana, Partner, MinterEllison

noelia.boscana@minterellison.com

T +61 3 8608 2676 M +61 402 025 080

2.3 Details of other classes of persons on whose behalf authorisation is sought

2.4 The class of persons who may engage in the Proposed Conduct other than the Applicant, are healthcare payers who wish to become Participants [except for certain private health insurers in the circumstances specified in paragraph 2.24](#).

2.5 Description of the Proposed Conduct

Structure of HH Buying Group

2.6 HH is seeking authorisation to undertake the contracting services, for healthcare payers in relation to hospitals, medical specialists, general practitioners and allied health professionals (**Providers**), as further described, [and with the limitations specified](#) -below (the **Proposed Conduct**).

2.7 HH intends to negotiate a bilateral participation agreement with each Participant to undertake the contracting services in relation to some or all of the Providers. Participants can opt to purchase some or all of the different categories of contracting services.

2.8 In relation to negotiated contracts (with hospitals and medical specialists), HH proposes to implement the Proposed Conduct by using nib's existing contracts with Providers, with the consent of the Providers. HH will negotiate with Providers to purchase their services on behalf of the Participants using the same base agreement that the Provider has negotiated with nib. HH will then negotiate new contracts on behalf of Participants as the nib-based contracts expire or enter into contracts with new Providers. The Participants will unilaterally determine whether to enter into an agreement with each Provider based on the negotiated terms and conditions. If they choose to do so, Participants will execute an agreement with the Provider. HH will not be party to the agreement. HH will then undertake contract administration services for that agreement.

2.9 If Participants do not wish to enter into an agreement on the negotiated terms and conditions, Participants will still be permitted to negotiate directly with Providers and enter into agreements independently of the HH Buying Group on their own terms and conditions. This could either be completed between the provider and the fund or, alternatively, with HH acting as an agent for the fund but outside of the buying group terms, conditions and offer. Furthermore, the Proposed Conduct will not prevent Providers from offering healthcare services to other insurers, buying groups or healthcare payers that are not participating in the HH buying group, and will not restrict the terms and conditions on which the Provider is entitled to enter those agreements. Providers will also not be prevented from contracting with Participants individually, or with a different set of participants than that proposed by the HH buying group.

2.10 For contracts with Providers based on standard terms and conditions (medical gap scheme and general treatment networks), HH proposes to extend these schemes to the Participants and would provide sufficient notice to Providers to enable Providers to operationalise the change.

2.11 Authorisation is not sought for the HH Buying Group to engage in the collective boycott of any services of a Provider.

Nature of contracting relationships with Providers

- 2.12 The Proposed Conduct will involve the provision of four broad categories of contracts including hospital contracting, medical specialist contracting, medical gap scheme and general treatment contracting. These are described in detail below.

Hospital contracting

- 2.13 Hospital contracting involves agreements between healthcare payers and private hospitals (occasionally public hospitals) under which the parties agree on the rates and other terms and conditions for the provision of hospital treatment to the healthcare payer's customers (**Customers**). In the private health insurance industry, the agreements are referred to as hospital purchaser provider agreements (**HPPAs**). Under HPPAs, hospitals agree not to charge out-of-pocket costs to Customers and are used by health insurers to provide financial certainty to its Customers.
- 2.14 nib has a network of private hospitals that have HPPAs with nib and HH is providing contracting services for that network on behalf of nib.

Medical specialist contracting

- 2.15 Medical specialist contracting refers to agreements between healthcare payers and medical specialists such as radiologists, pathologists and surgeons. The parties agree on rates and other terms and conditions for the provision of the medical specialists' professional services during the hospital admission of Customers. In the private health insurance industry, the agreements are referred to as medical purchaser provider agreements (**MPPAs**). MPPAs are used by health insurers to provide financial certainty to its Customers in relation to potential out-of-pocket costs for professional services. The network of MPPAs that nib currently has in place falls into two categories – MPPAs with radiologists and pathologists and the MPPAs for the Clinical Partners Program.
- 2.16 nib's MPPAs with radiologists and pathologists are entered into with radiologists and pathologists that provide services such as x-rays, ultrasounds and blood tests to Customers during their admission at a private hospital that is part of nib's network (ie. nib has an HPPA with that private hospital). These services are not included in the scope of services that are provided to Customers by the private hospital. They are services provided directly to the Customer by the radiologist or pathologist under separate contractual arrangements with the Customer. Without an MPPA, Customers may incur out-of-pocket expenses for the radiology and pathology services received during a hospital admission.
- 2.17 Under nib's Clinical Partners program, nib has entered into MPPAs with orthopaedic surgeons, anaesthetists and assistant surgeons for the provision of their professional services for orthopaedic joint replacements provided to Customers. Under these MPPAs, the medical specialists agree on fees paid by nib for their services and agree not to charge Customers any gap for their professional services. The medical specialists are paid a higher fee than what they would otherwise be entitled under nib's medical gap scheme. The medical specialists also agree on data sharing and quality target requirements. Unlike nib's medical gap scheme, Clinical Partners Providers cannot choose to opt-out of the program on a patient-by-patient basis. This provides certainty that all nib customers will have a no gap experience with these medical specialists.

Medical gap scheme

- 2.18 Under medical gap schemes, health insurers offer to pay medical specialists a set fee for each type of professional service they provide to Customers in hospital, in accordance with a standard set of terms and conditions. The set fees are higher than what insurers are otherwise required to pay under the PHI Act and medical specialists agree not to charge Customers an out-of-pocket amount or agree to limit the amount the Customer is charged at a fixed amount (eg. \$500) in the case of known gap schemes.

- 2.19 Medical specialists registered under a medical gap scheme are permitted to opt-in or opt-out of the scheme on a case by case basis (per treatment and Customer). By opting-in, the medical specialist agrees to be bound by the terms and conditions of the medical gap scheme.
- 2.20 Currently, HH acts on behalf of nib in the management and administration of the nib MediGap scheme (no-gap scheme) that applies to nib, Qantas and Suncorp-branded health insurance policies and the GU Health Medical Gap Network (no-gap or known gap scheme) that applies to GU Health-branded health insurance policies.

General treatment networks

- 2.21 General treatment networks are arrangements with Providers for services that are not provided in hospital. These providers generally include physiotherapists, dentists, optometrists and chiropractors which are covered under the 'extras' component of private health insurance products. It also includes a network of general practitioners and medical specialists providing professional services out-of-hospital for international students and international workers covered under international health products (health insurers are prohibited from covering these services for Australian residents).
- 2.22 Providers that are registered with a general treatment network, agree to a standard set of terms and conditions and schedule of rates for each type of service.
- 2.23 HH acts on behalf of nib in the management and administration of its general treatment network branded as the First Choice Network. nib has two bespoke agreements with optical and dental providers under which the providers operate nib-branded centres. HH also manages these agreements.

Excluded health insurers for certain contracting services

- 2.24 The Applicants do not seek authorisation for the following conduct which is not part of the Proposed Conduct:

(a) the provision of any of the contracting services by HH to:

(i) HBF Health Limited (HBF) in relation to its contractual arrangements with healthcare providers in Western Australia;

(ii) Medibank Private Limited (Medibank), Bupa HI Pty Limited (Bupa) and The Hospitals Contribution Fund of Australia Limited (HCF) in relation to their contractual arrangements in all States and Territories,

except for the provision of medical specialist contracting services described in paragraphs 2.15 to 2.17.

- 2.25 For the avoidance of doubt, the Proposed Conduct does include:

(a) the provision of contracting services by HH to HBF in relation to its contractual arrangements with healthcare providers in all States and Territories other than Western Australia. The Applicants understand that HBF currently engages AHSA to provide these services; and

(b) the provision of medical specialist contracting services to HBF, Medibank, Bupa and HCF such as including these funds in the Clinical Partners Program. This would give these funds the option of entering into MPPAs on the same terms and conditions as nib with some or all of the medical specialists involved in the Clinical Partners Program. The medical specialists would then extend the provision of a zero-gap experience for members of these funds.

Nature of Proposed Conduct

~~2.23~~2.26 In relation to the four types of contracts, the Proposed Conduct will involve HH engaging in the following types of services:

- (a) for hospital and medical specialist contracting, contract negotiations with Providers;
- (b) for the medical gap scheme and general treatment network, management and administration of the schemes; and
- (c) for all four types of contracting, data analytics, contract management and dispute resolution.

Data analytics and contract negotiations

~~2.24~~2.27 HH will initially engage in collective negotiations with Providers that currently have HPPAs and MPPAs with nib in order to agree to new contracts with the Participants based on the Provider's existing agreement with nib.

~~2.25~~2.28 On an ongoing basis, HH will negotiate new HPPAs and MPPAs on behalf of nib and all Participants as the current agreements expire or with new Providers. HH will act as the lead agent in the negotiations after consultation with the Participants. This will involve:

- (a) aggregation of Participant claims data for the Provider and undertaking data analytics to establish benchmarks relating to quality of service, price and application of services (see further details below);
- (b) conducting collective commercial negotiations on behalf of Participants based on information of the HH Buying Group. HH will negotiate one set of terms and conditions including price schedules, business rules for payment of benefits and quality and performance targets for all Participants for each HPPA or MPPA with a Provider; and
- (c) once HH receives instructions that a Participant wishes to enter into an HPPA or MPPA on the negotiated terms and conditions, coordinate the execution of the HPPA or MPPA between the Participant and the Provider (or execute the contract if HH has signing authority).

~~2.26~~2.29 The HH Buying Group will be voluntary and the Participants will unilaterally determine whether to enter into an HPPA or MPPA based on the terms and conditions negotiated by HH.

Extension and management of medical gap scheme and general treatment network

~~2.27~~2.30 HH will initially engage with Providers registered in the nib MediGap Scheme, GU Health Medical Gap Network and the First Choice Network to notify them of the extension of these schemes to the Participants.

~~2.28~~2.31 HH intends to replace the nib Medigap scheme and the GU Health Medical Gap Network with a new HH scheme which will have some variations in the terms and conditions.

~~2.29~~2.32 For general treatment networks, HH intends to create new specific networks tailored to meet a Participant or group of Participants' individual requirements such as the requirement to have a strong network of Providers in a regional area or to have a fee structure that is more suited to the manner in which some Participants pay benefits.

~~2.30~~2.33 On an ongoing basis, HH will manage the medical gap scheme and general treatment networks, review the schedules of rates and terms and conditions and actively manage the registered Providers of the schemes and networks. This includes ensuring adherence to requirements around registration, qualification and other terms and conditions of the schemes and networks.

Contract management and dispute resolution

~~2.34~~2.34 HH will offer to provide the Participants with contract administration and management services and dispute resolution services on behalf of nib and all Participants for the contracting services that they engaged HH to undertake which may include:

- (a) all HPPAs and MPPAs that were entered into by the Participants based on the terms and conditions negotiated by HH; and
- (b) the agreements between Participants and Providers registered in the medical gap scheme and/or general treatment network,

(Managed Agreements).

~~2.32~~2.35 This will involve HH acting as agent for the HH Buying Group to facilitate:

- (a) administration of, and compliance with, the terms and conditions of the Managed Agreements;
- (b) dispute resolution and management of disputes between Participants and Providers arising under the Managed Agreements;
- (c) management and investigation of Customer complaints relating to Providers party to the Managed Agreements;
- (d) collection and management of data submission from Providers to Participants under the Managed Agreements; and
- (e) reporting and oversight of the parties' adherence to terms and conditions of the Managed Agreements and performance and quality targets.

Data analytics

~~2.33~~2.36 HH will provide the Participants with data analytic services as part of contract negotiations but also on an ongoing basis to assess the performance of each Provider and benchmark their performance for each Participant against the aggregated data for the HH Buying Group including an assessment of:

- (a) Provider quality (e.g. rate of hospital acquired complication, length of hospital stay, unplanned readmission to theatre, conversion to ICU, etc.)
- (b) Provider Compliance (e.g. accuracy of claims, compliance with the contract terms, complaints, etc.);
- (c) benefits paid to the Provider by Participants (e.g. cost per episode against national peer groups, change in cost over time, cost variability reporting across the Provider network, etc);
- (d) access to the Provider's services (e.g. network coverage, member access issues, etc); and
- (e) efficiency and value of treatment provided by the Provider (e.g. establishment of quality scoring of Providers and ranking of value and efficiency against quality).

~~2.34~~2.37 Subject to confidentiality and privacy obligations, HH would also share information pertaining to one Participant with the HH Buying Group to the extent the information is related to the Managed Agreements or services provided by HH to the Participants. This may include the sharing of information on issues such as a breach of contract by a Provider or the discovery of fraudulent claims made by a Provider in relation to the Managed Agreement of one Participant which would be relevant to other Participants who contract with that Provider.

~~2.35~~2.38 Provisions of the CCA which may apply to the Proposed Conduct

~~2.36~~2.39 The relevant provisions of the CCA which may apply to the Proposed Conduct include:

- (a) making or giving effect to a contract, arrangement or understanding that may include a cartel provision (Division 1 of Part IV);
- (b) making or giving effect to a contract, arrangement or understanding that has the purpose or would have the effect, or likely effect, of substantially lessening competition (section 45(1)(a) and (b));
- (c) engaging with one or more persons in a concerted practice that has the purpose or has or is likely to have the effect, of substantially lessening competition (section 45(1)(c));
- (d) a corporation that has a substantial degree of power in a market engaging in conduct that has the purpose, or has or is likely to have the effect, of substantially lessening competition (section 46(1)); and / or
- (e) engaging in the practice of exclusive dealing (section 47(1)).

~~2.37~~2.40 Rationale for the Proposed Conduct

~~2.38~~2.41 The rationale for the Proposed Conduct is to enable Participants to streamline contract negotiation, procurement and management procedures. The streamlined processes will improve efficiencies by virtue of the reduced transactional and administrative costs, and increase information sharing and data analytical capabilities resulting in better health outcomes and reduced premiums for Customers.

~~2.39~~2.42 Term of authorisation sought and reasons for seeking this period of time

~~2.40~~2.43 Authorisation for the Proposed Conduct is sought for 10 years from the date of final determination by the ACCC.

~~2.41~~2.44 Given it is common practice for HPPAs and MPPAs to be 3 years duration, authorisation for 10 years will enable the HH Buying Group to continue to operate across two renewal cycles. It will also allow sufficient time for HH to implement innovative models of funding of healthcare that focus on driving quality and providing value, and for Participants and their Customers to realise the cost, quality and efficiency benefits of engaging in the HH Buying Group.

~~2.42~~2.45 Provide documents submitted to the applicant's board or prepared by or for the applicant's senior management for purposes of assessing or making a decision in relation to the proposed conduct and any minutes or record of the decision made

~~2.43~~2.46 None.

~~2.44~~2.47 Names of persons or classes of persons who may be impacted by the Proposed Conduct and details of how / why they might be impacted

~~2.45~~2.48 The class of persons potentially affected by the Proposed Conduct are:

- (a) private health insurers that do not join the HH Buying Group;
- (b) private hospitals;
- (c) medical specialists and general practitioners; and
- (d) allied health providers such as physiotherapists, dentists, optometrists, chiropractors.

Please refer to section 4 below as to how each class of persons may be impacted.

3. Market information and concentration

- 3.1 Describe the products and/or services, and the geographic areas, supplied by the applicants. Identify all products and services in which two or more parties to the proposed conduct overlap (compete with each other) or have a vertical relationship (e.g. supplier-customer).
- 3.2 The Applicants submit that the relevant markets are:
- national market for private health insurance;
 - national market for international medical and travel insurance;
 - State-based or localised market for hospital services;
 - localised market for medical specialist services for each specialty practice; and
 - localised market for each type of allied health service (eg. physiotherapists, dentists, optometrists, chiropractors, etc).
- 3.3 nib and the Participants compete with each other as purchasers of health services in the markets set out in paragraphs (c) to (e) above and as suppliers of private health insurance.

Private health insurance market

- 3.4 The market share of each private health insurer, measured as a share of total hospital policies as at June 2019 are set out in the table below.² The table also sets out which party undertakes contracting services for each private health insurer.³

Insurer	Party that undertakes contracting services	National Market Share Hospital Policies June 2019
Medibank	Medibank	26.0%
Bupa	Bupa	25.1%
HCF	HCF	11.7%
nib	HH	9.5%
HBF	HBF and AHSA	6.9% ⁴
Australian Unity	AHSA	2.9%
Teachers Health	AHSA	2.7%
GMHBA	AHSA	2.5%
Defence Health	AHSA	2.2%
CBHS Health	AHSA	1.7%
HIF	AHSA	0.8%
Westfund	AHSA	0.7%
Queensland Teachers	AHSA	0.6%
health.com.au	AHSA	0.6%
Health Partners	AHSA	0.6%
CUA	AHSA	0.6%

² *Operations of Private Health Insurers Annual Report 2018-2019*, published by APRA on 5 November 2019.

³ Sourced from market knowledge and information available on AHSA's and ARHG's websites respectively.

⁴ HBF contract directly with hospitals in WA and indirectly through the AHSA for all other States and Territories. HBF's policyholders in WA represent a national market share of 6.14%. HBF's policyholders in other States and Territories represent a national market share of 0.72%.

Peoplecare	AHSA	0.5%
Queensland Country Health	AHSA	0.5%
Railway & Transport	AHSA	0.4%
Doctors' Health Fund	AHSA	0.4%
Police Health	AHSA	0.3%
Navy Health	AHSA	0.3%
MO Health	AHSA	0.2%
Phoenix Health	AHSA	0.2%
National Health Benefits Australia	AHSA	0.1%
Health Care Insurance	AHSA	0.1%
Transport Health	AHSA	0.1%
ACA Health	AHSA	0.1%
Nurses & Midwives Health	AHSA	0.1%
Reserve Bank Health	AHSA	0.0%
Emergency Services Health	AHSA	0.0%
CBHS Corporate Health	AHSA	0.0%
Latrobe Health	ARHG	0.8%
St Lukes Health	ARHG	0.5%
Mildura District Hospital Fund	ARHG	0.2%
Cessnock District Health	ARHG	0.0%

3.5 Market shares as purchasers of health services is shown in the table below. Note that our understanding is that HBF contract directly with hospitals in WA and indirectly through the AHSA for all other States and Territories.

Party undertaking contracting services	Participating health insurers' market share based on 2019 hospital policies
Medibank	26.0%
Bupa	25.1%
AHSA	20.0%
HCF	11.7%
Honeysuckle Health	9.5%
HBF	6.1%
ARHG	1.5%

3.6 We have also provided in Annexure A market shares based on total policies and revenue.

Market for Other Healthcare Payers

3.7 A useful lens through which to define the market for private healthcare is examining the sources of health expenditure funds. The Australian Institute of Health and Welfare (AIHW) publish detailed data on this topic. A key table from their 2018-2019 health expenditure data is shown below.

Table A3: Total health expenditure, current prices, by area of expenditure and source of funds, 2018–19 (\$ million)

Area of expenditure	Government					Non-government					Total health expenditure
	Australian Government				State and local	Total	HIF	Individuals	Other	Total	
	DVA	Health and other	Premium rebates	Total							
Hospitals	1,321	23,702	3,332	28,354	33,280	61,634	9,689	3,689	4,036	17,415	79,049
Public hospital services	579	23,582	342	24,504	32,229	56,732	995	1,444	2,630	5,068	61,801
Private hospitals	741	120	2,989	3,851	1,051	4,902	8,694	2,246	1,407	12,347	17,248
Primary health care	1,333	25,783	1,049	28,165	10,508	38,672	3,051	21,351	2,474	26,876	65,549
Unreferred medical services	688	9,322	..	10,009	—	10,009	..	833	1,416	2,249	12,259
Dental services	80	796	718	1,594	840	2,435	2,089	6,051	52	8,192	10,627
Other health practitioners	256	1,789	313	2,359	7	2,366	910	2,039	502	3,451	5,817
Community health and other	..	1,841	—	1,841	8,371	10,212	1	133	245	379	10,590
Public health	..	1,361	..	1,361	1,290	2,651	..	15	193	208	2,859
Benefit-paid pharmaceuticals	309	9,941	..	10,250	..	10,250	..	1,479	..	1,479	11,729
All other medications	..	732	17	750	..	750	51	10,800	67	10,917	11,667
Referred medical services	..	14,388	612	15,000	..	15,000	1,780	3,382	..	5,162	20,161
Other services	204	2,731	931	3,867	3,929	7,796	2,709	3,438	219	6,365	14,162
Patient transport services	144	125	96	365	3,083	3,448	280	488	96	864	4,312
Aids and appliances	2	624	262	888	..	888	761	2,937	120	3,818	4,706
Administration	59	1,982	574	2,614	846	3,460	1,668	12	3	1,684	5,144
Research	2	5,009	..	5,012	873	5,885	..	2	410	413	6,298
Total recurrent expenditure	2,860	71,612	5,924	80,397	48,591	128,988	17,229	31,862	7,140	56,231	185,219
Capital expenditure	..	188	..	188	4,377	4,565	..	..	5,882	5,882	10,447
Medical expenses tax rebate	..	50	..	50	..	50	..	-50	..	-50	—
Total health expenditure	2,860	71,851	5,924	80,635	52,968	133,603	17,229	31,812	13,022	62,063	195,666

.. not applicable
— rounded to zero

Source: <https://www.aihw.gov.au/reports/health-welfare-expenditure/health-expenditure-australia-2018-19/data>

3.8 Focusing on the \$17,248 million expenditure on private hospitals, reallocating the Premium rebates column (which represents the Australian Government's contribution to private health insurance premiums through the Australian Government Rebate) back to health insurance and including a breakdown of the "Other" column from Table 3.16 of the same report to include Workers compensation insurers and transport accident insurers produces the following table:

Private hospital funder	\$ millions	Share
Private health insurers	11,683	67.7%
Individuals	2,246	13.0%
State and local government	1,051	6.1%
DVA	741	4.3%
Workers' compensation insurers	400	2.3%
Transport accident insurers	256	1.5%
Other Federal government	120	0.7%
Unknown	751	4.4%
	17,248	100.0%

3.9 Private health insurers and individuals account for 80.7% of revenue received by private hospital operators. DVA represents 4.3%, workers compensation insurers throughout Australia 2.3% and transport accident insurers 1.5%. There is a remaining Unknown percentage of 4.4%.

Market for travel insurance and short-term International Private Medical Insurance

- 3.10 Included in either the Individuals spend of \$2.2 billion or the Unknown spend of \$751 million, is hospitalisation for overseas tourists and short-term overseas workers. Typically, tourists and short-term workers take out insurance in their home country before travelling to Australia. Given their lack of scale in the Australian market, the overseas domiciled insurer will usually not have negotiated network access arrangements in Australia.
- 3.11 If the traveller requires medical services whilst in Australia, they will be required to pay the “rack rate” for the service out-of-pocket and then seek reimbursement from their insurer when they arrive home. One of the issues this creates is a bad debt risk for the hospital provider. Due to the lack of a certainty of payment, hospital providers embed within the “rack rate” a loading to offset the risk of the overseas visitor leaving the country without paying their bill. For international travel insurers, without the volume and local knowledge to develop networks, the increased “cost of production” is passed through to travellers in the form of higher insurance premiums.
- 3.12 nib has been approached by a number of these companies over the last 4-5 years seeking to negotiate “network access” arrangements. The size of these potential contracts is small - combined these groups would represent less than 0.5% of the total market for private hospital services.

Department of Veterans Affairs (DVA) scheme

- 3.13 Under the DVA scheme, eligible veterans are able to receive hospital services free with no gap expenses. The DVA arrangements represent a 4.3% share of the total expenditure on private hospitals and involve contracting directly with private hospitals through a tender process for the provision of the healthcare services. For GPs and medical specialists, the DVA maintains their own no-gap scheme. This involves contracting individually with these types of Providers.
- 3.14 DVA policyholders are not required to make any co-payment to medical specialists or hospitals. The average age of the DVA population is rapidly increasing and, consequently this segment of the market is reducing in activity and relevance with hospital providers. As this reduction continues it will place increasing price pressure on DVA as they lose market share and power to obtain competitive rates.

Workers compensation schemes

- 3.15 Each of the eight Australian states and territories has their own workers’ compensation scheme and the Commonwealth has three separate schemes. As per the table above, workers compensation schemes in total represent 2.3% of total private hospital funding. New South Wales has the largest scheme and would represent approximately 0.7% of total private hospital funding.
- 3.16 Each scheme manages their own contracts with medical and hospital providers. For example, the NSW scheme, administered by icare, has recently experienced significant increases in medical costs. icare is required to pay surgical fees that are gazetted by the State Insurance Regulatory Authority (**SIRA**). These gazetted rates are set by SIRA at 150% of the Australian Medical Association’s (**AMA**) recommended rate.
- 3.17 This is higher than any other Australian workers compensation scheme and much higher than private health insurer and DVA scheme. For example, nib’s Medigap scheme is set at an average of 50% of the AMA’s recommended rates and the DVA scheme is set at 52%.
- 3.18 Ultimately these higher specialist fees are passed through to NSW companies in the form of higher workers' compensation premiums.

Transport Accident Schemes

- 3.19 Each Australian state runs its own compulsory transport accident insurance scheme. In NSW, Queensland, South Australia and the ACT, drivers can choose from a panel of compulsory third party (**CTP**) providers. In the other States, transport accident schemes are provided by a state-owned or government-licensed insurer. As per the table above, transport accident insurers represent 1.5% of total private hospital funding. Similar to workers compensation schemes,

transport accident insurers typically manage their own contracts with medical and hospital providers.

Private hospital market

3.20 The table below shows the market shares of private hospital provider large groups.⁵

Hospital Provider Group	Market share
Ramsay	21.6%
Healthscope	13.7%
Healthe Care	9.3%
St John of God	5.5%
St Vincents Health	3.4%
Mater Misericordiae Limited	3.1%
Little Company of Mary	3.1%

3.21 Describe the relevant industry or industries. Where relevant, describe the sales process, the supply chains of any products or services involved, and the manufacturing process.

3.22 Please refer to section 1 (Background).

3.23 In respect of the overlapping products and/or services identified, provide estimated market shares for each of the parties where readily available.

3.24 Please refer to section 3 for market shares of nib and potential Participants.

3.25 In assessing an application for authorisation, the ACCC takes into account competition faced by the parties to the proposed conduct. Describe the factors that would limit or prevent any ability for the parties involved to raise prices, reduce quality or choice, reduce innovation, or coordinate rather than compete vigorously. For example, describe: existing competitors, likely entry by new competitors, any countervailing power of customers and/or suppliers; and any other relevant factors.

3.26 Please refer to section 6 (Public Detriments) for an analysis of each health services market and any potential impacts on competition from the Proposed Conduct.

3.27 In relation to the market for private health insurance, insurers are highly regulated and any increase in premiums is subject to approval by the Commonwealth Minister for Health on an annual basis. The Minister has an expectation that the industry will limit premium increases to a target percentage which places pressure on health insurers to keep costs down and they have limited ability to increase premiums in response to health inflation. Therefore, coordination among competitors in the HH Buying Group will not lead to premium increases for Consumers and will in fact do the opposite and drive down costs (administrative and benefit outlays) to support Participants in keeping premium increases low.

4. Public benefits

4.1 Describe the benefits to the public that are likely to result from the proposed conduct. Provide information, data, documents or other evidence relevant to the ACCC’s assessment of the public benefits.

⁵ Compiled by nib based on publicly available sources.

- 4.2 The Proposed Conduct will generate public benefits in the form of transaction costs savings and efficiencies for healthcare payers, healthcare providers and members, encouraging transition towards value based contracting and information sharing resulting in better health outcomes for consumers at a lower cost resulting in more efficient pricing for hospital services and ultimately, reduced premiums for consumers. As private health insurers constitute the vast majority of purchasers of private health care (around 70% of private hospital services according to AIHW data), we will focus on public benefits in the private health insurance industry.

Transaction costs savings and increased efficiencies

- 4.3 Authorisation for HH to engage in collective bargaining will result in significant transactional and administrative cost savings for Participants. nib's network of Providers consists of:
- (a) 565 private hospitals;
 - (b) 21,764 medical specialists;
 - (c) 3,049 general treatment clinics and over 15,900 providers.

This requires nib to:

- (d) negotiate over 500 contracts per year; and
 - (e) manage over 3,500 agreements.
- 4.4 The negotiation of HPPAs in particular can be time consuming and at times, protracted with some HPPAs taking up to 16 months to negotiate and the average large hospital group negotiation taking between 6 to 8 months. The process involves complex negotiation on legislative issues, terms and conditions relating to payment structures, audit, recoveries and obligations by both parties as well as the associated business rules and clauses which detail the nature of how payments are made for health care services (which are volatile in nature due to each individual's condition). Some hospital group HPPAs involve up to 70 hospitals. In addition to negotiating the general contractual terms, each hospital in a hospital group will have an individual rate schedule (list of prices for hospital treatment) and each is negotiated individually with the requisition commercial modelling to be done at the individual level and then "rolled up" to understand both party's (fund and hospital groups) material change in value of the contract. As the business rules and contractual terms impact this modelling the processes generally involves a number of in-person meetings (in particular at commencement of negotiation) before weekly meetings to cover off specific areas and issues. A working document (contract) is created and a separate issues log maintained on the negotiation. The working document is exchanged periodically between the parties and is marked up with comments, issues, requested changes etc. Once the contract terms are close to finalisation the rate modelling commences with each hospital and these rate schedules are exchanged in a similar manner to allow each organisation to model the predicted impact in change of terms (contract clauses), payment models for each service (daily rate to Diagnosis Related Grouping) and price. The modelling is generally conducted on an agreed period of 12 months of previous activity. Once all parties are satisfied with the outcome the negotiation is finalised and contracts executed. On issues which cannot be resolved, these are generally escalated by one or both parties to more senior staff and or executives to resolve. Once a position has been agreed at this higher level it is then briefed back to the negotiation teams who work together to ensure it is adequately reflected in the contractual terms.
- 4.5 Historically, nib's health services contracting function required approximately 25 staff and cost approximately \$5 million per annum to operate. The size and cost of this function is largely independent of the size of the health insurer. Any health insurer that has national coverage and maintains its own health services contracting function would need to support a function of a similar size due to the breadth of the Provider networks.
- 4.6 The HH Buying Group would reduce the need for duplication of the resources and processes involved in the contracting services and reduce costs for Participants. Economies of scale and scope would be realised as each Participant joins the HH Buying Group and greater efficiencies

achieved. Under the HH Buying Group, it is proposed that the fee for Participants would correlate with transactional costs so that any savings that arise as Participant numbers increase, would be distributed between Participants under the Participation Agreement through reduced fees.

- 4.7 The formation of the HH Buying Group to perform the contracting services will create significant administrative cost savings as each Participant does not need to replicate the same infrastructure. As HH is currently undertaking this function, the marginal cost of HH performing the contracting services for each Participant would be low. HH would distribute the cost of undertaking nib's contracting services across the Participants, thereby significantly reducing each Participant's costs and presenting an opportunity for transaction cost savings and increased efficiencies. We have set out in Annexure B an example of how the participation fee for the HH Buying Group would decline as Participants join.
- 4.8 These efficiencies can be realised with health insurers that are already part of the AHSA or ARHG buying groups. HH modelling suggests that the participation fee for the HH Buying Group will be competitive with the AHSA's or ARHG's membership fees and would provide a broader scope of services particularly in relation to data analytics. In any case, the HH participation fees would be substantially lower than running an effective internal function. We have set out in Annexure C the basis of the modelling undertaken by HH in comparing the competitiveness of the participation fee for the HH Buying Group with other buying groups.
- 4.9 The Proposed Conduct will also create the following benefit for the Providers (albeit more limited if most of the Participants were previous members of AHSA or ARHG):
- (a) simplifies backend billing processes as the Participants would have the same contract, rates and billing rules which results in significant reduction to the operational and administrative costs for Providers;
 - (b) consistent funding agreements enable Providers to more easily establish care pathways and work with medical specialists on improving the quality and cost of health care; and
 - (c) reduced cost to negotiate and manage relationships with health insurers. Negotiation of agreements, particularly HPPAs, create a significant burden and cost to Providers and having reduced numbers of negotiations allow Providers to reduce the costs associated with establishing, negotiating and managing contracts with health insurers.

Greater choice of buying group

- 4.10 The HH Buying Group would provide health insurers with an alternative buying group to the AHSA and provide greater choice. ARHG is not a viable alternative to AHSA for health insurers because of their lack of scale and ability to implement more sophisticated contracting mechanisms. Increased competition between different buying groups would also foster greater innovation and incentivise the buying groups to provide better value and quality of services to its participants.
- 4.11 The HH Buying Group would provide a differentiated model of funding such as value-based contracting, as further described below, and a buying group model that has been authorised by the ACCC.

Better health outcomes at a lower cost

- 4.12 HH intends to work collaboratively with Providers to implement more efficient "value-based" contracting relationships. In relation to hospital contracting, this type of contracting involves comparing health outcomes with costs of services to determine the value of the service. The agreed contracting price for healthcare services will be informed by the value of the service, rather than on the existing cost base. This transition from "fee-for-service" to "value-based" contracting aligns with many other health systems globally which have seen improvements in health outcomes and reduced costs from the transition. As an example, in the United States, Cigna created its first commercial value-based model in 2008. Today, 67% of Cigna's claim spend in the United States has shifted to value-based models. Cigna continues to grow its value-based models

and expects to have over 1,000 value-based arrangements across hospitals, specialists, and general practitioner groups in 2021.

- 4.13 As a result of its shift to value-based contracting, Cigna has been able to improve cost outcomes and quality outcomes over time. From 2010 to 2018, Cigna had the lowest reported medical cost trend in the US at 3.6% (key competitors were between 5.5% and 6.0%). By 2021, Cigna is ambitiously targeting to manage medical cost trend to the same level as CPI. Value-based reimbursement arrangements have been a key component of that success.
- 4.14 More specifically, Cigna has seen very strong results in its top performing value-based arrangements:
- 11% better quality scores than market for primary care providers;
 - 14% improved costs for specialist groups; and
 - 2% lower readmission rates for hospitals.
- 4.15 Value based contracting takes many forms. In its most simple form, HH would initially compare the value of services from a particular Provider against peers in the local region, state as well as nationally. Based on the outcomes and quality of care achieved by the Provider, the cost of the services would be adjusted (either through price or structure) to match the value being delivered by the Provider. If the Provider achieves higher than standard quality outcomes, then the insurers would pay more to the Provider and if the standard quality outcomes were below average, insurers would pay less for these services. The mechanism for this adjustment would form part of the commercial negotiations process and could take a number of forms including price adjustment to reflect the quality of service, payment of performance incentives if agreed benchmark outcomes are exceeded or changes to payment structures which drive improved efficiency to match the outcomes associated with the Provider.
- 4.16 Current approaches to contracting generally focus solely on cost of care of the services and most funds, and buying groups such as the AHSA and ARHG, have historically focused on cost of care to determine payment structure and price of services. Larger funds tend to have greater access to the complex analytics and data science required to support the development of value-based funding models. Through the HH Buying Group for small and medium funds, it will effectively improve and normalise the Participants' ability to manage benefit outlay and match larger more mature competitors in accessing value based contracting services.
- 4.17 Health systems that have moved to value-based contracting, which by definition, better aligns incentives between the payer and provider, have seen both improvements in health outcomes and lower costs. This shift is fundamentally underpinned by broad data and mature and sophisticated data science capabilities. The establishment of outcomes data is complex by its nature and requires the collection of sufficient data for statistical relevance (which is difficult, if not exclusionary requirement for small insurers), the establishment of outcome measures and quality based on relevant clinical and international literature, and the normalisation and risk adjustment of the patient population to ensure like-for-like comparison in the provision of services.
- 4.18 HH intends to collect and aggregate claims data and Hospital Casemix Protocol (HCP) data of Participants to establish benchmarks on the outcome of services in relation to both procedures and Diagnosis Related Grouping (DRG). This outcomes-based data would then be normalised and risk-adjusted for the variances in patient population (e.g. age, co-morbidities and demographic factors including gender) and a relative outcome scale established for each Provider at a procedure level. This would include quality data and information such as Hospital Acquired Complications as well as efficiency data such as excessive bed days or excessive use of Medicare Benefits Schedule (**MBS**) item numbers.
- 4.19 Once the quality scoring is established, HH will be able to use this benchmarking to assign a relative value score to each Provider at a procedure or DRG level as well as an aggregated weighted average for the Provider. This will then inform the basis for price and payment structure negotiations of HPPAs and will drive improved outcomes for Participants through more

appropriate pricing at a procedure level for hospitals service purchased. Ultimately this will drive improved outcomes for Customers as they benefit from improvements in the quality of service from Providers or through more sustainable and affordable private health insurance due to better control by Participants of benefit outlay.

- 4.20 Additionally, the Proposed Conduct will encourage greater involvement by Providers in the lifecycle of the contracting process. The potential size and calibre of the HH Buying Group will drive uptake of value-based contracting by encouraging healthcare providers to be more engaged in innovative funding models that improve outcomes for Customers.
- 4.21 In relation to general treatment networks, such as dental networks, the ability to collectively acquire these services on behalf of a number of insurers will see improved volume provided to the Providers of these services who have been selected based on quality criteria, while pairing this with better pricing and value for Customers and the healthcare payers. As the health insurance products which cover these services typically pay a percentage of the cost, any price negotiation and discount is of benefit to both the payer and Customers who hold the insurance policy.
- 4.22 The key advantage of driving value-based contracting through the HH Buying Group rather than nib alone is that HH will be able to get more buy-in from Providers if HH is representing a larger Customer base. Value-based funding, by its nature, allows Providers to be more innovative and considered in the application of care. This allows a Provider to ensure that quality is maintained or increased while efficiency and cost of service delivery is improved. To make this viable for Provider to invest in, and operationally develop, providers require a reasonable volume of care to occur through these mechanisms. By forming a buying group for the development and purchasing of value-based funding mechanism, HH will provide enough scale to Providers to validate the investment and opportunity.
- 4.23 Likewise, the scale of smaller health insurance funds is likely to be insufficient to develop and implement value-based funding as stand-alone funds. By forming the HH buying group this will provide opportunity to small Participant funds to be involved in more modern and effective health procurement funding models which will ultimately translate into better affordability for members.

Access to data analytics and Information

- 4.24 Generally, only larger health insurers have access to the body of information and data analytics capabilities required to support the development of value-based contracting. The Proposed Conduct will provide Participants, who are likely to be smaller health insurers, with access to data analytics tools and technology. HH's data analytics undertaken as part of its contracting services will use claims and HCP data of all Participants. This will reduce information asymmetry and allow smaller insurers to obtain insights from information analysed across all Participants, that they would otherwise not have. This will assist smaller insurers to more effectively engage in the contracting process and increase access for them to value-based contracting.
- 4.25 In addition to the benefits in relation to hospital services, data analytics and information sharing would allow HH to develop reliable and efficient networks of medical specialists and extras providers across various speciality groups and geographic networks. Increased information sharing and access to data analytics will increase use of efficient providers who deliver improved standards of care and allow participant funds the ability to provide better and more transparent information to members, which will result in a better informed and empowered consumer of health care services.

No gap experience for Customers

- 4.26 The uncertainty around the extent of gaps that Customers face in the private healthcare system is one of the major concerns or causes of dissatisfaction for Customers. For example, according to IPSOS' 2019 Healthcare & Insurance Australia Study, the most important driver for customer satisfaction with respect to their health insurer is 'Rebates on Services' (i.e. out-of-pocket costs) with the average fund scoring 5.8 out of 9 on this aspect. This uncertainty is partly derived from the multitude of contractual relationships that are created when a Customer receives hospital

treatment – separate contracts between the Customer and the private hospital, medical specialist, anaesthetist, assistant surgeon, radiologist, pathologist, etc.

- 4.27 The HH Buying Group would broaden access to nib's Clinical Partners Program which is a unique industry offering where nib engages with the surgeon, assistant surgeon and anaesthetists to bring a zero-gap experience for Customers for knee and hip replacements. The HH Buying Group would allow this offering to be made available to Customers of Participants. It also provides HH with a larger Customer base to be able to engage with a broader group of medical specialists so that the program can be expanded to cover more types of treatment (the program currently only covers hip and knee replacements) and more geographical areas.
- 4.28 The development and expansion of the Clinical Partners Program will focus on efficient and effective Providers who provide quality standards of care based on the available hospital quality and outcomes data. The establishment of MPPAs with these Providers will drive more volume to them (as health insurers will be able to actively promote the financial certainty for Customers and referrers) and will also serve to place pressure on non-participants specialists to moderate their out-of-pocket practices due to the risk of loss of patient volume. Ultimately, in both instances the Customer is better protected from excessive out-of-pocket exposure when undergoing large and complex surgical procedures.
- 4.29 The HH Buying Group would also have the additional scale to expand its network of private hospitals with HPPAs and health professionals participating in the medical gap scheme and general treatment network which would also contribute to more no gap experiences for Customers.
- 4.30 The public benefit of an expanded Clinical Partners Program and the creation of potentially further no gap funding initiatives is that a greater number of Customers would have the benefit of the certainty of a no gap hospital or health experience. It would also go some way towards addressing a key concern of Customers and encourage further Australians to use the private healthcare system, alleviating the pressure on the public system.

Countervailing hospital bargaining power

- 4.31 Some Providers have much stronger bargaining power in the negotiation of agreements with healthcare payers which can impede the parties from achieving efficient pricing outcomes for health services. This is particularly the case in the private hospital market where the 5 largest hospital provider groups account for over 50% of the market.
- 4.32 Some of the smaller private hospitals can also have a high degree of bargaining power due to their iconic status and reputation, or due to their location in regional and remote communities.
- 4.33 This leads to inconsistencies in pricing for the same hospital procedure across different hospitals with the more powerful hospital groups being paid higher prices without any commensurate in value for the Customer. Two examples of this are procedures for cataracts (MBS item 42702) and oocyte retrieval (MBS item 13212) where the median cost charged by large hospital groups is 181% and 149% of the national median cost respectively.
- 4.34 This results in hospital pricing that is above the competitive and efficient price for treatment in particular hospitals.
- 4.35 The Proposed Conduct will enable the HH Buying Group to improve its bargaining position to countervail the power of some of the hospital groups which would lead to more efficient hospital pricing.

Reduced healthcare costs and premiums for members

- 4.36 The public benefits outlined above have the combined effect of increasing the value of the benefits paid by healthcare payers for health services and reducing overall spend particularly in relation to hospital benefits. This will be achieved in the short term through more efficient pricing and in the longer term through increased quality of care which will reduce the volume of health

services being purchased. In FY19 the private health insurance industry paid \$15.7 billion in hospital benefits which represented 74%⁶ of all benefits paid by private health insurers for that period.

- 4.37 The reduction in healthcare costs is of particular importance to the smaller health insurers who are likely to be Participants and have more limited access to capital. It would ease the current pressure on health insurers struggling with escalating healthcare costs and inflation coupled with increased cost of regulatory compliance and changes to capital adequacy requirements.
- 4.38 The flow on effect of reductions in benefit outlays and transactional costs savings from the HH Buying Group is that it reduces pressure on premium increases for health insurance policies by the Participants, whilst also improving patient outcomes through value-based contracting and incentivised performance based outcomes. Reduced premium increases encourages participation in private health insurance and reduces pressure on the public health system.

Public benefits for Other Healthcare Providers

- 4.39 Hospital and medical purchasing is at a significantly lower scale for other purchasers of private medical services compared to private health insurers. This creates an opportunity to partner with these purchasers to increase their sophistication and better align incentives with health care providers.
- 4.40 Similar to insurers, Other Healthcare Providers will benefit from transaction costs savings as a result of the Proposed Conduct particularly those that have ongoing arrangements with health service providers akin to insurers. This will enable schemes such as the Department of Veteran's Affairs hospital cover scheme to pass on greater benefits to veterans, or reduce general expenditure. Furthermore, for those that do not have arrangements with health service providers and instead rely on the established rates for services will gain access to more efficient pricing models.
- 4.41 Importantly, and as noted above in respect of private health insurers, the Other Healthcare Providers will benefit from the data analytics and associated "value-based" contracting models. Only larger private health insurers will have access to the quantity and quality of data required to effectively engage with data analytics and achieve meaningful results. The Other Healthcare Providers will be able to benefit from the data sharing, and third party data analytics, in circumstances where they otherwise would not have the relevant data, finance or experience to implement. Furthermore, as a result of the Proposed Conduct the Other Healthcare Payers will be able to consider implementing "value-based" contracting with the ultimate goal of offering better quality of care, and accordingly improving the health of its members.

5. Public detriment (including likely competitive effects)

- 5.1 Describe any detriments to the public likely to result from the proposed conduct, including those likely to result from any lessening of competition. Provide information, data, documents, or other evidence relevant to the ACCC's assessment of the detriments.
- 5.2 The potential public detriments from the Proposed Conduct would be minimal (if any) in the markets for health services and would be outweighed by the public benefits set out above. The health insurers that are most likely to be Participants are members of existing buying groups. As insurers would be switching from one buying group to another, it would not substantially change the current market dynamics in the market for health services. The key difference being that nib would be a party to the HH Buying Group.
- 5.3 The other key reason that potential public detriments would be minimal is that the Providers have statutory rights (assigned from members) to be paid benefits from insurers and Medicare and do not rely wholly on agreements with health insurers. We consider each type of contracting service in turn.

⁶ *Operations of Private Health Insurers Annual Report 2018-2019*, published by APRA on 5 November 2019.

- 5.4 In relation to the market for the supply of private health insurance to consumers, the potential public detriments from the Proposed Conduct (if any) would be very limited. The Proposed Conduct will not impact the way healthcare payers compete with one another in relation to the setting of premiums, the products they provide, or their sales strategy, rather it will only impact the way that healthcare payers engage with suppliers of health services as described above and the reduction in health care costs. Accordingly, there the Proposed Conduct will have very little impact on the way private health insurance is supplied to consumers other than easing the pressure on premium increases due to cost reductions. This position is supported by the fact that buying groups in respect of health services already exist and have not impacted or acted as a detriment to competition in the supply of private health insurance.

Hospital contracting

- 5.5 The market for private hospital services is likely to be State-based or local market as consumers are unlikely to travel long distances to acquire hospital services. As purchasers of hospital services, the HH Buying Group would potentially have a stronger bargaining position than if nib or each Participant negotiated agreements with private hospitals individually.
- 5.6 We have set out below the market share figures on a State and Territory basis for each private health insurer or buying group based on hospital policies as disclosed in APRA's *Operations of private health insurers annual report 2019*.

Contracting Group	NSW (including ACT)	NT	QLD	SA	TAS	VIC	WA	National
Medibank	22.60%	40.90%	30.70%	19.40%	26.90%	31.10%	21.40%	26.10%
Bupa	22.90%	36.20%	31.40%	47.80%	32.70%	23.10%	10.90%	25.10%
HCF	20.10%	5.90%	8.00%	8.90%	4.80%	7.50%	4.70%	11.70%
nib	15.20%	3.20%	6.80%	4.10%	3.00%	8.50%	3.90%	9.50%
HBF	0.80%	1.70%	0.70%	0.50%	0.70%	1.10%	49.70%	6.90%
AHSA	17.20%	11.60%	21.50%	18.40%	31.30%	27.00%	5.30%	19.20%
ARHG	1.20%	0.30%	0.90%	0.70%	0.60%	1.70%	3.90%	1.60%

In the unlikely event that every member of AHSA joined the HH Buying Group, market shares by State and Territory are likely to be as set out below.

Insurer	NSW (including ACT)	NT	QLD	SA	TAS	VIC	WA	National
HH Buying Group	34.0%	17.0%	29.6%	23.7%	14.4%	34.7%	13.2%	29.5%
Medibank	22.6%	40.9%	30.7%	19.4%	26.9%	31.1%	21.4%	26.1%
Bupa	22.9%	36.2%	31.4%	47.8%	32.7%	23.1%	10.9%	25.1%
HCF	20.1%	5.9%	8.0%	8.9%	4.8%	7.5%	4.7%	11.7%
HBF	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	49.7%	6.1%
ARHG	0.4%	0.1%	0.2%	0.2%	21.2%	3.6%	0.0%	1.5%

- 5.7 The most impacted State-based markets would be New South Wales and Victoria if all of AHSA's members joined the HH Buying Group as it would give the HH Buying Group the highest market share in those States.

- 5.8 The increased market share of the HH Buying Group would to some extent, countervail the strong bargaining position of the large hospital groups such as Ramsay and Healthscope that allows for supra-competitive prices for hospital services. We submit that the increase in HH Buying Group's market share will allow it to leverage its position in order to put pressure on hospital pricing so that it falls below supra-competitive and inefficient levels. The HH Buying Group is unlikely to have sufficient bargaining power or incentive to drive hospital pricing below competitive prices. Due to the national network of hospitals operated by the large hospital groups, the HH Buying Group will continue to be reliant on having an HPPA with them. This will also be the case for smaller iconic hospitals that the HH Buying Group must have in the hospital network due to demand from Customers.
- 5.9 Health insurers are effectively subject to a price floor under the PHI Act and Rules for hospital treatment. The legislative regime requires health insurers to pay benefits for hospital treatment at either the specified rates in the *Private Health Insurance (Benefit Requirements) Rules (Rules)* or rates calculated under the Rules for second-tier eligible hospitals. The latter rates are calculated by taking 85% of the average rate for that treatment in the insurer's HPPAs with comparable hospitals. If a hospital does not have an HPPA with the HH Buying Group, insurers must still pay these minimum benefit amounts. Customers of the HH Buying Group would still have the option of purchasing services from that hospital but are more likely to incur out-of-pocket expenses.
- 5.10 Based on nib's experience in moving from AHSA membership to undertaking its own HPPA negotiations, the Applicants submit that the increase is likely to assist the HH Buying Group to negotiate additional obligations relating to quality of treatment, performance, reporting and have more engagement from hospitals on innovative funding models. The Applicants expect that greater market share would incentivise hospitals to engage more collaboratively with the HH Buying Group during HPPA negotiations.

Medical specialist contracting

- 5.11 The impact of the HH Buying Group would be minimal in the market for medical specialist services which would be localised geographic areas of competition and a separate market for each specialty of practice.
- 5.12 The negotiation of MPPAs with medical specialists involves negotiating the rates that medical specialists would accept for not charging a gap to Customers.
- 5.13 The HH Buying Group is likely to increase the proportion of potential Customers of the medical specialist that are being represented in the MPPA negotiations. The Applicants submit, again on the basis of nib's experience as an AHSA member, that this will not change the negotiation dynamics in relation to price but is more likely to lead to greater engagement on innovative funding models such as the Clinical Partners Program. This is because MPPAs are not critical to medical specialists but are seen as an optional arrangement. If a medical specialist was not prepared to enter into an MPPA with the HH Buying Group, they have statutory rights (assigned from members) to be paid for their professional services which would generally comprise of benefits paid by Medicare (75% of the Medicare Benefits Schedule fee for the service), benefits paid by the insurer (25% of the Medicare Benefits Schedule fee or more if the medical specialist participates in a medical gap scheme) and out-of-pocket expenses paid by the Customer (if any). Therefore, in MPPA negotiations, insurers often do not have strong bargaining power when negotiating with medical specialists despite the differential in size of the organisations as medical specialists are simply agreeing to cap their fees and relinquish their right to charge out-of-pocket expenses.

Medical gap scheme and general treatment network

- 5.14 In relation to the medical gap scheme and general treatment network, the HH Buying Group would not be negotiating agreements with Providers. Due to the large number of individual health providers in the industry (circa 50,000), the HH Buying Group will be managing schemes based on a standard schedule of rates and terms and conditions. nib's current scheme is determined on a state basis for dental and physiotherapy networks and a national basis for other types of general treatment networks and its medical gap scheme. Therefore, any changes to the buying power in

the local markets for medical specialists or general treatment providers due to the HH Buying Group would not impact the setting of prices or terms and conditions for the medical gap scheme and general treatment network.

- 5.15 These schemes are voluntary, and Providers have the option to register to be part of these networks and receive additional benefits for agreeing to 'no gap' arrangements and other terms and conditions. General treatment providers also have the option of not being part of an insurer's network and will still be paid benefits in accordance with the policies of the health insurers. As discussed above, medical specialists have the option not to register with the medical gap schemes and continue to have statutory rights (assigned from members) to be paid benefits from Medicare and health insurers. Health insurers are incentivised to provide attractive rates to Providers under the medical gap scheme and general treatment networks to encourage participation.
- 5.16 The only agreements that are negotiated in this space are agreements relating to the operation of an insurer's branded optical or dental centres or potentially, agreements with networks of providers such as dentists that may be bespoke and negotiated. HH's involvement in the negotiation and management of such contracts would be undertaken on an individual basis for the relevant insurers.
- 5.17 The Applicants submit that the Proposed Conduct will have minimal (if any) detrimental impact on Customers or other classes of persons and that the substantial public benefits from the Proposed Conduct as set out in this application will result in a net public benefit.

Other Healthcare Payers

- 5.18 In relation to Other Healthcare Payers, the Applicant submits that there will no public detriments emerging from the Proposed Conduct. The relative bargaining power of the Other Healthcare Payers is small, accordingly their ability to achieve commercial and competitive results in negotiations with Providers is limited, resulting in some cases of inefficient pricing. Should the Other Healthcare Payers participate in the HH buying group, any increase in bargaining power will allow them to increase their bargaining power and accordingly, their negotiating position. As noted above, given the countervailing bargaining power of Providers is large any marginal increase in bargaining power for these types of healthcare payers will not significantly impact competition.
- 5.19 Similarly, travel and medical insurers make up a small percentage of the healthcare payer market. Accordingly, their joining the buying group will not materially alter the competitive position of Providers in such a way as to improperly displace the countervailing bargaining power in the market.
- 5.20 The Applicant recognises that government and semi-government healthcare payers form a large part of the healthcare payer market. However, in practice these schemes invest in and create their own Provider networks, and are subject to extensive public policy constraints when tendering and making agreements. Accordingly, in the Applicant's view these healthcare payers are less likely to join the HH Buying Group.

Future without the Proposed Conduct

- 5.21 In a future without the Proposed Conduct, nib will continue to use the contracting services offered by HH. nib along with other healthcare payers will, on an ongoing basis, incur high amounts of transaction costs associated with the time consuming and protracted negotiation of HPPAs. Similarly, Providers will continue to incur the administrative and cost burdens associated with the operational side of backend billing and the repeated negotiation and management of contracts with health insurers.
- 5.22 Other Healthcare Payers will also continue to pay inefficient prices and incur excessive transaction costs, resulting in increased premiums for customers and greater administrative costs for Providers. Significantly, without the Proposed Conduct healthcare payers will face great difficulty in implementing the more efficient "value based" contracting relationships. Smaller healthcare payers particularly will not have access to the type and scale of data required to

transition away from a "fee for service" model. This is because the lack of data sharing will result in there being no data to form the basis of the price and payment structure of value based contracting. As a result, healthcare payers, Providers and customers will benefit from the more efficient quality and price of healthcare services. In addition, without the Proposed Conduct, the multitude of contractual relationships that exist when a customer attends a hospital will remain and accordingly, the basis on which the customer will be required to pay a gap will remain unclear resulting in continuing uncertainty for customers relating to the pricing of healthcare services.

- 5.23 Accordingly, in a future without the Proposed Conduct, the current costs model and associated expenses will remain for healthcare payers, Providers and customers. Healthcare payers will have less choice about which buying groups to participate in, reducing competition between buying groups, and will be less inclined to implement improved and innovative funding and service models, reducing the potential for cost savings. Without the scale provided by the HH Buying Group, HH may have greater difficulties engaging with Providers to implement and invest resources in transitioning to innovative funding models, particularly where Providers have guaranteed funding streams under private health insurance legislation and through Medicare.

6. Contact details of relevant market participants

- 6.1 Identify and/or provide names and, where possible, contact details (phone number and email address) for likely interested parties such as actual or potential competitors, key customers and suppliers, trade or industry associations and regulators.

6.2 Please see contact details in the Annexure D.

7. Additional information

- 7.1 Provide any other information or documents you consider relevant to the ACCC's assessment of the application

7.2 None.

8. Declaration by applicant

- 8.1 The undersigned declare that, to the best of their knowledge and belief, the information given in response to questions in this form is true, correct and complete, that complete copies of documents required by this form have been supplied, that all estimates are identified as such and are their best estimates of the underlying facts, and that all the opinions expressed are sincere.
- 8.2 The undersigned undertake(s) to advise the ACCC immediately of any material change in circumstances relating to the application.
- 8.3 The undersigned are aware the giving false or misleading information is a serious offence and are aware of the provisions of sections 137.1 and 149.1 of the Criminal Code (Cth).



.....
Rhod McKensy

Chief Executive Officer, Honeysuckle Health Pty Ltd

This eighth day of April 2021

Annexure A – Alternate market share figures

The market share figures in this Annexure A are based on APRA's *Operations of private health insurers annual report 2019*.

Market Share based on total of Hospital and Extras Policies

Insurer	Party that undertakes contracting services	National Market Share Total Policies June 2019
Medibank	Medibank	26.9%
Bupa	Bupa	25.8%
HCF	HCF	11.1%
nib	nib	9.1%
HBF - WA	HBF	6.7%
HBF – other States and Territories	AHSA	0.7%
Australian Unity	AHSA	2.7%
Teachers Health	AHSA	2.4%
GMHBA	AHSA	2.3%
Defence Health	AHSA	2.1%
CBHS	AHSA	1.5%
HIF	AHSA	0.8%
Westfund	AHSA	0.8%
Health Partners	AHSA	0.7%
Latrobe Health	ARHG	0.7%
CUA	AHSA	0.6%
health.com.au	AHSA	0.6%
TUH	AHSA	0.6%
Peoplecare	AHSA	0.5%
St Luke's	ARHG	0.5%
QCH	AHSA	0.4%
rt health	AHSA	0.4%
Police	AHSA	0.3%
Navy Health	AHSA	0.3%
Doctors Health	AHSA	0.3%
Mildura District Hospital Fund	ARHG	0.2%
myOwn	AHSA	0.2%
Phoenix	AHSA	0.1%
Healthcare Insurance	AHSA	0.1%
Transport Health	AHSA	0.1%

onemedifund	AHSA	0.1%
ACA Health	AHSA	0.1%
Nurses & Midwives	AHSA	0.1%
Hunter Health	ARHG	0.0%
Reserve Bank	AHSA	0.0%
CBHS Corporate	AHSA	0.0%
Emergency Services Health	AHSA	0.0%

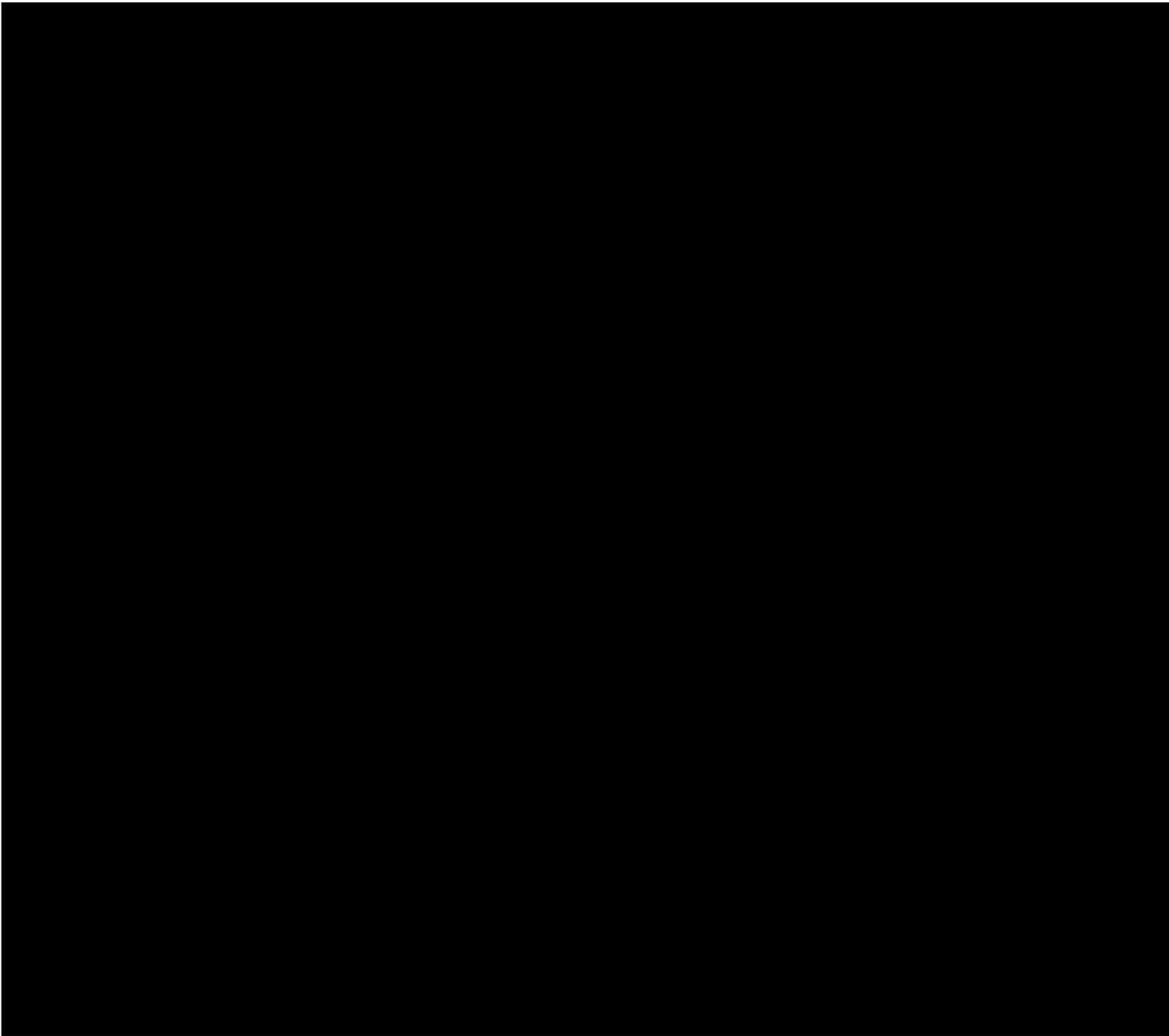
Party that undertakes contracting services	Participating health insurers' market share based on June 2019 Total Policies
Medibank	26.9%
Bupa	25.8%
AHSA	19.0%
HCF	11.1%
nib	9.1%
HBF	6.7%
ARHG	1.4%

Market Shares based on Premium Revenue

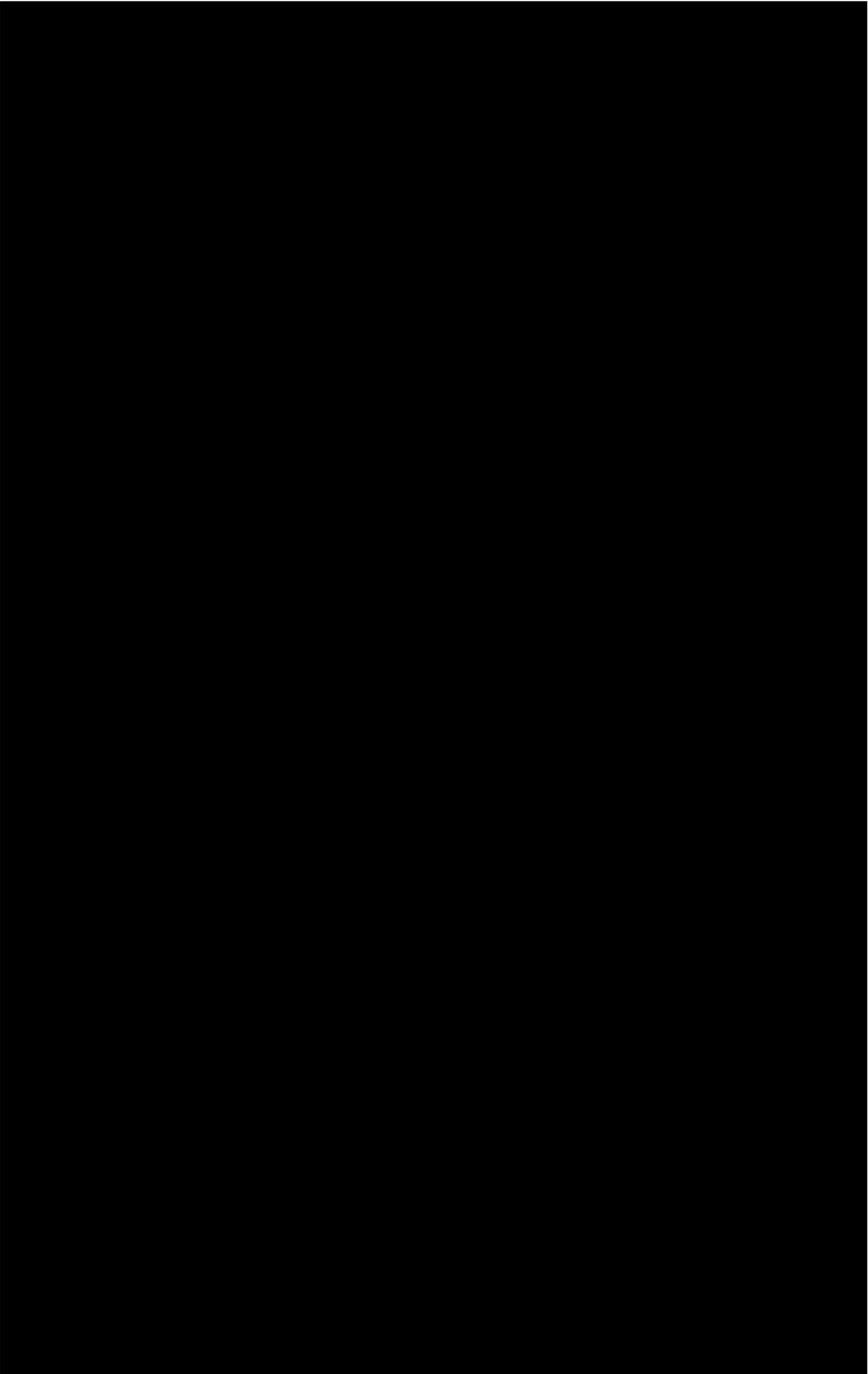
Insurer	Party that undertakes contracting services	National Market Share Total Premium Revenue FY19
Bupa	Bupa	26.6%
Medibank	Medibank	25.7%
HCF	HCF	11.3%
nib	nib	8.2%
HBF - WA	HBF	6.1%
HBF – other States and Territories	AHSA	0.7%
Teachers Health	AHSA	2.8%
Australian Unity	AHSA	2.8%
Defence Health	AHSA	2.3%
GMHBA	AHSA	2.3%
CBHS	AHSA	1.8%
Westfund	AHSA	0.8%
TUH	AHSA	0.8%
HIF	AHSA	0.7%
Latrobe Health	ARHG	0.7%

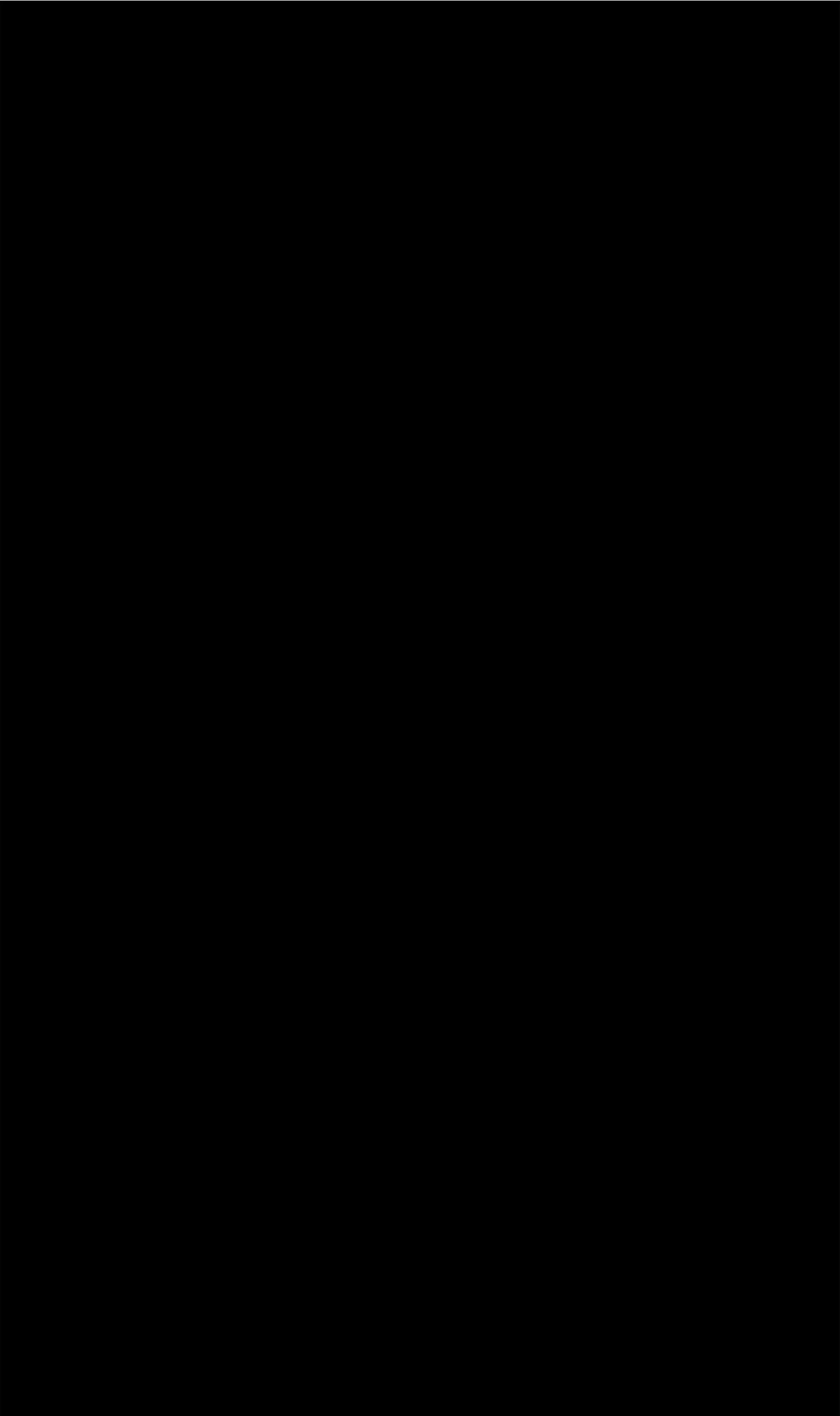
Health Partners	AHSA	0.7%
Peoplecare	AHSA	0.6%
CUA	AHSA	0.6%
St Luke's	ARHG	0.6%
Police	AHSA	0.5%
QCH	AHSA	0.5%
health.com.au	AHSA	0.5%
rt health	AHSA	0.5%
Doctors Health	AHSA	0.4%
Navy Health	AHSA	0.4%
Mildura District Hospital Fund	ARHG	0.2%
Phoenix	AHSA	0.2%
onemedifund	AHSA	0.1%
myOwn	AHSA	0.1%
Healthcare Insurance	AHSA	0.1%
ACA Health	AHSA	0.1%
Transport Health	AHSA	0.1%
Reserve Bank	AHSA	0.1%
Nurses & Midwives	AHSA	0.1%
Hunter Health	ARHG	0.0%
Emergency Services Health	AHSA	0.0%
CBHS Corporate	AHSA	0.0%

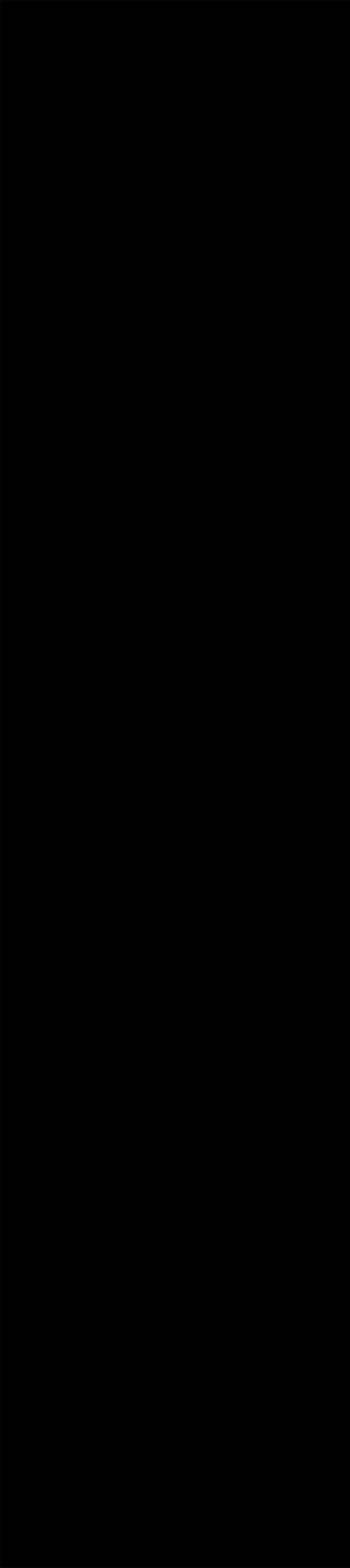
Party that undertakes contracting services	Participating Australian health insurers' market share based on Total Premium Revenue for FY19
Bupa	26.6%
Medibank	25.7%
AHSA	20.6%
HCF	11.3%
nib	8.2%
HBF	6.1%
ARHG	1.5%



Annexure D – Contact details of interested parties



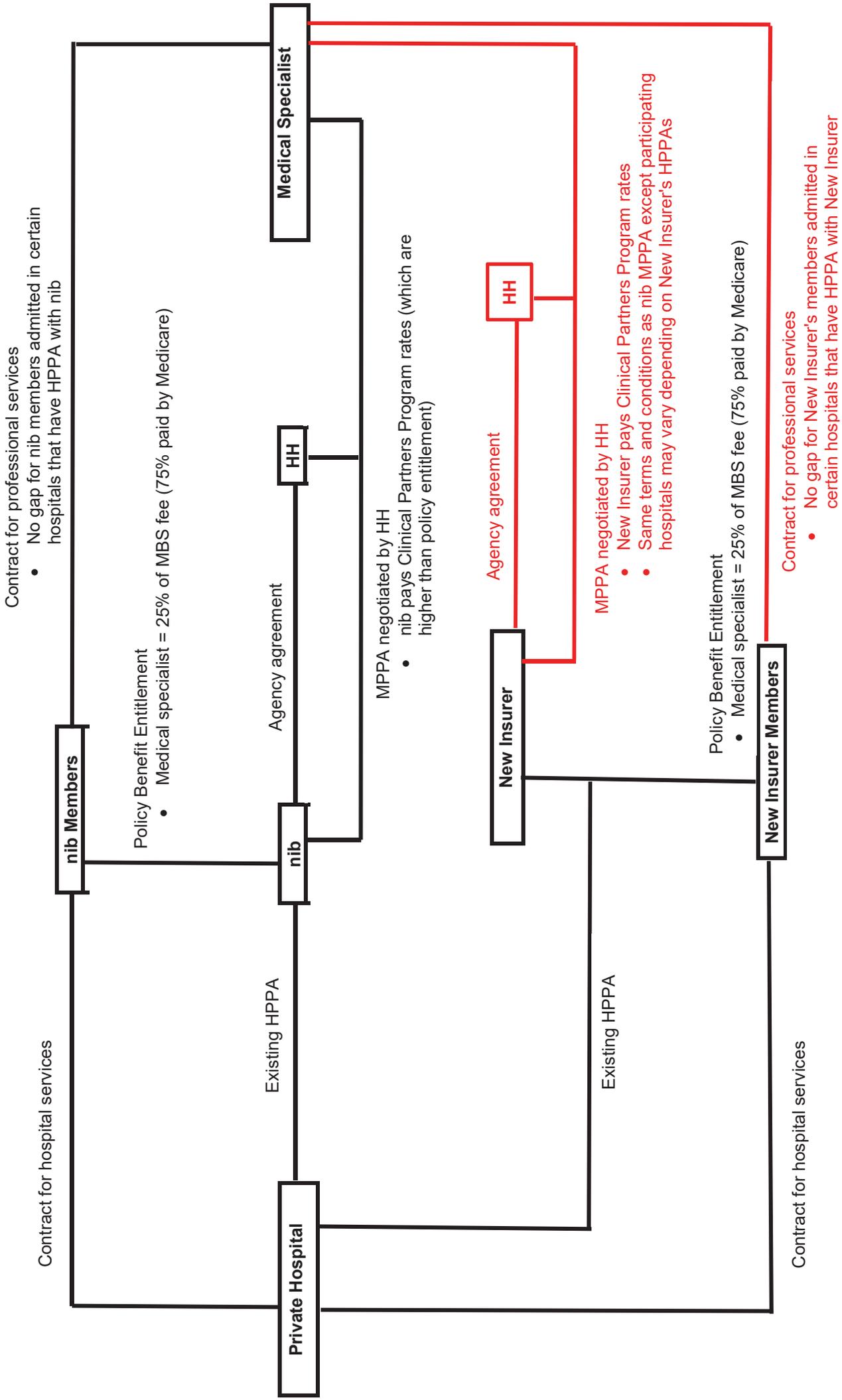




Attachment B

Clinical Partners Program: how New Insurer joins

*red lines show new contracts when New Insurer joins



COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-59

This is the Annexure marked "DD-59" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

MinterEllison

6 May 2021

Application for authorisation under section 88(1) of the *Competition and Consumer Act 2010* (Cth)

Lodged by: Honeysuckle Health Pty Ltd

on behalf of itself and nib health funds limited

Confidential version

1. **Background**
- 1.1 This application is made to the Australian Competition and Consumer Commission (**ACCC**) by **Honeysuckle Health Pty Ltd (HH)** on behalf of itself and nib health funds limited (**nib**) (**Applicants**).
- 1.2 HH provides services to healthcare payers in Australia and New Zealand. These services currently include health analytics (e.g. measurement of impact of health interventions, population risk stratification and provider benchmarking), health management programs (e.g. telephonic programs to support patients transition from hospital and manage chronic diseases) and contract negotiation and management services for nib. HH is a joint venture between nib and Cigna. Both Cigna and nib own 50% of HH.
- 1.3 Cigna is a global health services company dedicated to improving the health, wellbeing and peace of mind of the customers it serves. All products and services are provided exclusively by or through operating subsidiaries of Cigna Corporation. Such products and services include an integrated suite of health services, such as medical, dental, behavioural health, pharmacy, vision, supplemental benefits, and other related products including group life, accident and disability insurance. nib is an Australian private health insurer with approximately 10% market share in Australia and provides health insurance products to three main market segments - Australian residents, international workers and international students. nib underwrites insurance products for several other brands including GU Health, Suncorp (APIA, AAMI and Suncorp) and Qantas.
- 1.4 From 1 October 2020, nib appointed HH to act as its agent to provide data analytics, contract negotiation, procurement and administration services in relation to nib's contracts with hospitals, medical specialists, general practitioners and allied health professionals (the **contracting services**). HH and nib seek authorisation for HH to provide the contracting services to additional health care payers and form a joint buying group (**HH Buying Group**) for the purposes of collective bargaining with providers to purchase health services. The Proposed Conduct does not involve a collective boycott. This application is made for the benefit of any healthcare payer who joins the HH Buying Group (**Participant**) which may include:
 - a) private health insurers registered under the *Private Health Insurance (Prudential Supervision) Act 2015* (Cth) except for certain private health insurers in the circumstances specified in paragraph 2.8;
 - b) international medical and travel insurance companies;
 - c) government and semi-government payers of healthcare services such as workers' compensation and transport accident scheme operators and Department of Veterans Affairs scheme (**DVA**); and
 - d) any other payer of health services as notified by HH to the ACCC(**healthcare payers**).
- 1.5 In the short term, the most likely Participants are private health insurers. Currently, the four largest health insurers, Medibank, Bupa, HCF and HBF, undertake the contracting services as an internal function.¹ The remaining health insurers engage in collective bargaining through one of two buying groups, the Australian Health Services Alliance (**AHSA**) and the Australian Regional Health Group (**ARHG**). Of the 36 private health insurers, the AHSA represents 27 and the ARHG represents four. The Applicant anticipates that private health insurers that currently outsource their contracting services to AHSA or ARHG are the healthcare payers that are most likely to join the HH Buying Group. The major health insurers are unlikely to join the HH Buying Group but may be interested in purchasing bespoke parts of the contracting services to supplement their

¹ Honeysuckle Health's understanding is that HBF contract directly with hospitals in WA and indirectly through the AHSA for all other states

internal contracting function. nib was previously a member of AHSA and it withdrew from AHSA in 2011 when it built its own internal contracting function.

- 1.6 Health insurers pay benefits for health services under health insurance policies issued to individuals. Customers generally make claims for benefits on-the-spot with a Provider at the time they are receiving treatment (eg. through electronic claiming system or at a private hospital). The Provider receives benefits directly from the insurer and may collect any additional amounts from the Customer (known as 'gaps').
- 1.7 Under contracting arrangements between health insurers and Providers, Providers generally agree not to charge a gap to the Customer (for some or all services) and health insurers agree to pay more in benefits. This creates a network of Providers that health insurers can promote as being health services where their Customers can receive a no gap or known gap experience.
- 1.8 For other types of healthcare payers such as international medical, travel and life insurance companies, as well as government and semi-government payers of healthcare services (Other Healthcare Payers), payment to Providers usually occurs pursuant to the terms of the insurance policy or the liability scheme, and the fee is usually paid in full by these types of healthcare payers. Accordingly, there is less likely to be a 'gap' exposure for consumers and therefore, less likely for these types of insurers to negotiate contract arrangements with Providers. As a result, we do not expect these types of healthcare payers to form a material portion of the HH Buying Group.

2. Parties to the proposed conduct

2.1 Applicant for authorisation:

- (a) Honeysuckle Health Pty Ltd (ACN 637 339 694)

Address (registered address)	Contact person	Description of business activities
1/6 Newcomen St, Newcastle NSW 2300	Rhod McKensy Chief Executive Officer +61 406 380 017 r.mckensy@honeysucklehealth.com.au	Honeysuckle Health provides services to health payers in Australia and New Zealand including the contracting services, health data analytics, health measurement programs and health management programs.

- (b) nib health funds limited (ACN 000 124 381)

Address (registered address)	Contact person	Description of business activities
22 Honeysuckle Drive, Newcastle NSW 2300	Roslyn Toms General Counsel +61 408 733 740 R.Toms@nib.com.au	nib is an Australian health insurer with approximately 10 per cent market share in Australia. It provides insurance to three predominant markets: Australian residents, international workers and international students. nib underwrites GU Health, Suncorp and Qantas health insurance.

2.2 Email address for service of documents in Australia

Noelia Boscana, Partner, MinterEllison

noelia.boscana@minterellison.com

T +61 3 8608 2676 M +61 402 025 080

2.3 Details of other classes of persons on whose behalf authorisation is sought

2.4 The class of persons who may engage in the Proposed Conduct other than the Applicant, are healthcare payers who wish to become Participants except for certain private health insurers in the circumstances specified in paragraph 2.8.

2.5 Description of the Proposed Conduct

2.6 The Applicants seek authorisation for the following conduct, with the exception of the conduct in paragraph 2.8 (**Proposed Conduct**):

- (a) the creation of a joint buying group consisting of the following payers of health services (**HH Buying Group**):
 - (i) private health insurers registered under the *Private Health Insurance (Prudential Supervision) Act 2015* (Cth) except for certain private health insurers in the circumstances specified in paragraph 2.8;
 - (ii) international medical and travel insurance companies;
 - (iii) government and semi-government payers of healthcare services such as workers' compensation and transport accident scheme operators and Department of Veterans Affairs scheme; and
 - (iv) any other payer of health services notified by HH to the ACCC,

(**Participants**); and
- (b) the provision of some or all of the following services by HH to some or all of the Participants collectively through the HH Buying Group, and the acquisition of those services by the Participants from HH, in relation to arrangements between the Participants and hospitals, medical specialists, general practitioners, allied health professionals or other health providers (**Providers**) for the funding of health services:
 - (i) contract negotiations and drafting;
 - (ii) contract administration and management;
 - (iii) dispute resolution;
 - (iv) data analytics;
 - (v) administration and management of medical gap schemes and the general treatment networks;
 - (vi) performance and compliance assessment of Providers; or
 - (vii) any other service notified by HH to the ACCC,

(**contracting services**).

- 2.7 All reference to 'health services' or 'healthcare services' in paragraph 2.6 above or in this application also include any goods that may be provided as part of the provision of such services.
- 2.8 The Applicants do not seek authorisation for HH to provide any contracting services (other than the contracting services relating to the Broad Clinical Partners Program defined in paragraph 2.9) to:
- (a) HBF Health Limited (**HBF**) in relation to its contractual arrangements with Providers in Western Australia; or
 - (b) Medibank Private Limited (**Medibank**), Bupa HI Pty Limited (**Bupa**), and the Hospitals Contribution Fund of Australia Limited (**HCF**) in relation to their contractual arrangements in all States and Territories.
- 2.9 For the avoidance of doubt, the Applicants seek authorisation for HH to provide contracting services that relate to HH's program under which HH enters into agreements with medical specialists to ensure that customers are not charged out-of-pocket costs for medical services provided during an episode of hospital treatment (for joint replacement surgery or otherwise) (**Broad Clinical Partners Program**) to the following Participants:
- (a) HBF in relation to its contractual arrangements with healthcare providers in all States and Territories other than Western Australia; and
 - (b) Medibank, Bupa and HCF.
- 2.10 The Applicants are open to the imposition of a condition on the exception in paragraph 2.8 that requires the Applicants to ensure that prior to agreeing to provide contracting services relating to the Broad Clinical Partners Program to HBF, Medibank, Bupa or HCF, it must ensure that the addition of that Participant will not result in HH providing the Broad Clinical Partner Program services to more than 80% of the national private health insurer market measured as a share of total hospital policies, based on the latest market share statistics published by APRA.
- 2.11 Authorisation is not sought for the HH Buying Group to engage in the collective boycott of any services of a Provider.

Structure of HH Buying Group

- 2.12 HH intends to negotiate a bilateral participation agreement with each Participant to undertake the contracting services in relation to some or all of the Providers. Participants can opt to purchase some or all of the different categories of contracting services.
- 2.13 In relation to negotiated contracts (with hospitals and medical specialists), HH proposes to implement the Proposed Conduct by using nib's existing contracts with Providers, with the consent of the Providers. HH will negotiate with Providers to purchase their services on behalf of the Participants using the same base agreement that the Provider has negotiated with nib. HH will then negotiate new contracts on behalf of Participants as the nib-based contracts expire or enter into contracts with new Providers. The Participants will unilaterally determine whether to enter into an agreement with each Provider based on the negotiated terms and conditions. If they choose to do so, Participants will execute an agreement with the Provider. HH will not be party to the agreement. HH will then undertake contract administration services for that agreement.
- 2.14 If Participants do not wish to enter into an agreement on the negotiated terms and conditions, Participants will still be permitted to negotiate directly with Providers and enter into agreements independently of the HH Buying Group on their own terms and conditions. This could either be completed between the provider and the fund or, alternatively, with HH acting as an agent for the fund but outside of the buying group terms, conditions and offer. Furthermore, the Proposed Conduct will not prevent Providers from offering healthcare services to other insurers, buying groups or healthcare payers that are not participating in the HH buying group, and will not restrict the terms and conditions on which the Provider is entitled to enter those agreements. Providers

will also not be prevented from contracting with Participants individually, or with a different set of participants than that proposed by the HH buying group.

- 2.15 For contracts with Providers based on standard terms and conditions (medical gap scheme and general treatment networks), HH proposes to extend these schemes to the Participants and would provide sufficient notice to Providers to enable Providers to operationalise the change.

Nature of contracting relationships with Providers

- 2.16 The Proposed Conduct will involve the provision of four broad categories of contracts including hospital contracting, medical specialist contracting, medical gap scheme and general treatment contracting. These are described in detail below.

Hospital contracting

- 2.17 Hospital contracting involves agreements between healthcare payers and private hospitals (occasionally public hospitals) under which the parties agree on the rates and other terms and conditions for the provision of hospital treatment to the healthcare payer's customers (**Customers**). In the private health insurance industry, the agreements are referred to as hospital purchaser provider agreements (**HPPAs**). Under HPPAs, hospitals agree not to charge out-of-pocket costs to Customers and are used by health insurers to provide financial certainty to its Customers.
- 2.18 nib has a network of private hospitals that have HPPAs with nib and HH is providing contracting services for that network on behalf of nib.

Medical specialist contracting

- 2.19 Medical specialist contracting refers to agreements between healthcare payers and medical specialists such as radiologists, pathologists and surgeons. The parties agree on rates and other terms and conditions for the provision of the medical specialists' professional services during the hospital admission of Customers. In the private health insurance industry, the agreements are referred to as medical purchaser provider agreements (**MPPAs**). MPPAs are used by health insurers to provide financial certainty to its Customers in relation to potential out-of-pocket costs for professional services. The network of MPPAs that nib currently has in place falls into two categories – MPPAs with radiologists and pathologists and the MPPAs for the Clinical Partners Program.
- 2.20 nib's MPPAs with radiologists and pathologists are entered into with radiologists and pathologists that provide services such as x-rays, ultrasounds and blood tests to Customers during their admission at a private hospital that is part of nib's network (ie. nib has an HPPA with that private hospital). These services are not included in the scope of services that are provided to Customers by the private hospital. They are services provided directly to the Customer by the radiologist or pathologist under separate contractual arrangements with the Customer. Without an MPPA, Customers may incur out-of-pocket expenses for the radiology and pathology services received during a hospital admission.
- 2.21 Under nib's Clinical Partners program, nib has entered into MPPAs with orthopaedic surgeons, anaesthetists and assistant surgeons for the provision of their professional services for orthopaedic joint replacements provided to Customers. Under these MPPAs, the medical specialists agree on fees paid by nib for their services and agree not to charge Customers any gap for their professional services. The medical specialists are paid a higher fee than what they would otherwise be entitled under nib's medical gap scheme. The medical specialists also agree on data sharing and quality target requirements. Unlike nib's medical gap scheme, Clinical Partners Providers cannot choose to opt-out of the program on a patient-by-patient basis. This provides certainty that all nib customers will have a no gap experience with these medical specialists.

Medical gap scheme

- 2.22 Under medical gap schemes, health insurers offer to pay medical specialists a set fee for each type of professional service they provide to Customers in hospital, in accordance with a standard set of terms and conditions. The set fees are higher than what insurers are otherwise required to pay under the PHI Act and medical specialists agree not to charge Customers an out-of-pocket amount or agree to limit the amount the Customer is charged at a fixed amount (eg. \$500) in the case of known gap schemes.
- 2.23 Medical specialists registered under a medical gap scheme are permitted to opt-in or opt-out of the scheme on a case by case basis (per treatment and Customer). By opting-in, the medical specialist agrees to be bound by the terms and conditions of the medical gap scheme.
- 2.24 Currently, HH acts on behalf of nib in the management and administration of the nib MediGap scheme (no-gap scheme) that applies to nib, Qantas and Suncorp-branded health insurance policies and the GU Health Medical Gap Network (no-gap or known gap scheme) that applies to GU Health-branded health insurance policies.

General treatment networks

- 2.25 General treatment networks are arrangements with Providers for services that are not provided in hospital. These providers generally include physiotherapists, dentists, optometrists and chiropractors which are covered under the 'extras' component of private health insurance products. It also includes a network of general practitioners and medical specialists providing professional services out-of-hospital for international students and international workers covered under international health products (health insurers are prohibited from covering these services for Australian residents).
- 2.26 Providers that are registered with a general treatment network, agree to a standard set of terms and conditions and schedule of rates for each type of service.
- 2.27 HH acts on behalf of nib in the management and administration of its general treatment network branded as the First Choice Network. nib has two bespoke agreements with optical and dental providers under which the providers operate nib-branded centres. HH also manages these agreements.

Nature of contracting services

- 2.28 In relation to the four types of contracts, the Proposed Conduct will involve HH engaging in the following types of services:
- (a) for hospital and medical specialist contracting, contract negotiations with Providers;
 - (b) for the medical gap scheme and general treatment network, management and administration of the schemes; and
 - (c) for all four types of contracting, data analytics, contract management and dispute resolution.

Data analytics and contract negotiations

- 2.29 HH will initially engage in collective negotiations with Providers that currently have HPPAs and MPPAs with nib in order to agree to new contracts with the Participants based on the Provider's existing agreement with nib.
- 2.30 On an ongoing basis, HH will negotiate new HPPAs and MPPAs on behalf of nib and all Participants as the current agreements expire or with new Providers. HH will act as the lead agent in the negotiations after consultation with the Participants. This will involve:
- (a) aggregation of Participant claims data for the Provider and undertaking data analytics to establish benchmarks relating to quality of service, price and application of services (see further details below);

- (b) conducting collective commercial negotiations on behalf of Participants based on information of the HH Buying Group. HH will negotiate one set of terms and conditions including price schedules, business rules for payment of benefits and quality and performance targets for all Participants for each HPPA or MPPA with a Provider; and
- (c) once HH receives instructions that a Participant wishes to enter into an HPPA or MPPA on the negotiated terms and conditions, coordinate the execution of the HPPA or MPPA between the Participant and the Provider (or execute the contract if HH has signing authority).

2.31 The HH Buying Group will be voluntary and the Participants will unilaterally determine whether to enter into an HPPA or MPPA based on the terms and conditions negotiated by HH.

Extension and management of medical gap scheme and general treatment network

2.32 HH will initially engage with Providers registered in the nib MediGap Scheme, GU Health Medical Gap Network and the First Choice Network to notify them of the extension of these schemes to the Participants.

2.33 HH intends to replace the nib Medigap scheme and the GU Health Medical Gap Network with a new HH scheme which will have some variations in the terms and conditions.

2.34 For general treatment networks, HH intends to create new specific networks tailored to meet a Participant or group of Participants' individual requirements such as the requirement to have a strong network of Providers in a regional area or to have a fee structure that is more suited to the manner in which some Participants pay benefits.

2.35 On an ongoing basis, HH will manage the medical gap scheme and general treatment networks, review the schedules of rates and terms and conditions and actively manage the registered Providers of the schemes and networks. This includes ensuring adherence to requirements around registration, qualification and other terms and conditions of the schemes and networks.

Contract management and dispute resolution

2.36 HH will offer to provide the Participants with contract administration and management services and dispute resolution services on behalf of nib and all Participants for the contracting services that they engaged HH to undertake which may include:

- (a) all HPPAs and MPPAs that were entered into by the Participants based on the terms and conditions negotiated by HH; and
- (b) the agreements between Participants and Providers registered in the medical gap scheme and/or general treatment network,

(Managed Agreements).

2.37 This will involve HH acting as agent for the HH Buying Group to facilitate:

- (a) administration of, and compliance with, the terms and conditions of the Managed Agreements;
- (b) dispute resolution and management of disputes between Participants and Providers arising under the Managed Agreements;
- (c) management and investigation of Customer complaints relating to Providers party to the Managed Agreements;
- (d) collection and management of data submission from Providers to Participants under the Managed Agreements; and

- (e) reporting and oversight of the parties' adherence to terms and conditions of the Managed Agreements and performance and quality targets.

Data analytics

- 2.38 HH will provide the Participants with data analytic services as part of contract negotiations but also on an ongoing basis to assess the performance of each Provider and benchmark their performance for each Participant against the aggregated data for the HH Buying Group including an assessment of:
- (a) Provider quality (e.g. rate of hospital acquired complication, length of hospital stay, unplanned readmission to theatre, conversion to ICU, etc.)
 - (b) Provider Compliance (e.g. accuracy of claims, compliance with the contract terms, complaints, etc.);
 - (c) benefits paid to the Provider by Participants (e.g. cost per episode against national peer groups, change in cost over time, cost variability reporting across the Provider network, etc);
 - (d) access to the Provider's services (e.g. network coverage, member access issues, etc); and
 - (e) efficiency and value of treatment provided by the Provider (e.g. establishment of quality scoring of Providers and ranking of value and efficiency against quality).
- 2.39 Subject to confidentiality and privacy obligations, HH would also share information pertaining to one Participant with the HH Buying Group to the extent the information is related to the Managed Agreements or services provided by HH to the Participants. This may include the sharing of information on issues such as a breach of contract by a Provider or the discovery of fraudulent claims made by a Provider in relation to the Managed Agreement of one Participant which would be relevant to other Participants who contract with that Provider.
- 2.40 Provisions of the CCA which may apply to the Proposed Conduct
- 2.41 The relevant provisions of the CCA which may apply to the Proposed Conduct include:
- (a) making or giving effect to a contract, arrangement or understanding that may include a cartel provision (Division 1 of Part IV);
 - (b) making or giving effect to a contract, arrangement or understanding that has the purpose or would have the effect, or likely effect, of substantially lessening competition (section 45(1)(a) and (b));
 - (c) engaging with one or more persons in a concerted practice that has the purpose or has or is likely to have the effect, of substantially lessening competition (section 45(1)(c)); and / or
 - (d) engaging in the practice of exclusive dealing (section 47(1)).
- 2.42 Rationale for the Proposed Conduct
- 2.43 The rationale for the Proposed Conduct is to enable Participants to streamline contract negotiation, procurement and management procedures. The streamlined processes will improve efficiencies by virtue of the reduced transactional and administrative costs, and increase information sharing and data analytical capabilities resulting in better health outcomes and reduced premiums for Customers.
- 2.44 Term of authorisation sought and reasons for seeking this period of time

- 2.45 Authorisation for the Proposed Conduct is sought for 10 years from the date of final determination by the ACCC.
- 2.46 Given it is common practice for HPPAs and MPPAs to be 3 years duration, authorisation for 10 years will enable the HH Buying Group to continue to operate across two renewal cycles. It will also allow sufficient time for HH to implement innovative models of funding of healthcare that focus on driving quality and providing value, and for Participants and their Customers to realise the cost, quality and efficiency benefits of engaging in the HH Buying Group.
- 2.47 Provide documents submitted to the applicant's board or prepared by or for the applicant's senior management for purposes of assessing or making a decision in relation to the proposed conduct and any minutes or record of the decision made
- 2.48 None.
- 2.49 Names of persons or classes of persons who may be impacted by the Proposed Conduct and details of how / why they might be impacted
- 2.50 The class of persons potentially affected by the Proposed Conduct are:
- (a) private health insurers that do not join the HH Buying Group;
 - (b) private hospitals;
 - (c) medical specialists and general practitioners; and
 - (d) allied health providers such as physiotherapists, dentists, optometrists, chiropractors.

Please refer to section 4 below as to how each class of persons may be impacted.

3. Market information and concentration

- 3.1 Describe the products and/or services, and the geographic areas, supplied by the applicants. Identify all products and services in which two or more parties to the proposed conduct overlap (compete with each other) or have a vertical relationship (e.g. supplier-customer).
- 3.2 The Applicants submit that the relevant markets are:
- (a) national market for private health insurance;
 - (b) national market for international medical and travel insurance;
 - (c) State-based or localised market for hospital services;
 - (d) localised market for medical specialist services for each specialty practice; and
 - (e) localised market for each type of allied health service (eg. physiotherapists, dentists, optometrists, chiropractors, etc).
- 3.3 nib and the Participants compete with each other as purchasers of health services in the markets set out in paragraphs (c) to (e) above and as suppliers of private health insurance.
- Private health insurance market*
- 3.4 The market share of each private health insurer, measured as a share of total hospital policies as at June 2019 are set out in the table below.² The table also sets out which party undertakes contracting services for each private health insurer.³

² *Operations of Private Health Insurers Annual Report 2018-2019*, published by APRA on 5 November 2019.

³ Sourced from market knowledge and information available on AHSA's and ARHG's websites respectively.

Insurer	Party that undertakes contracting services	National Market Share Hospital Policies June 2019
Medibank	Medibank	26.0%
Bupa	Bupa	25.1%
HCF	HCF	11.7%
nib	HH	9.5%
HBF	HBF and AHSA	6.9% ⁴
Australian Unity	AHSA	2.9%
Teachers Health	AHSA	2.7%
GMHBA	AHSA	2.5%
Defence Health	AHSA	2.2%
CBHS Health	AHSA	1.7%
HIF	AHSA	0.8%
Westfund	AHSA	0.7%
Queensland Teachers	AHSA	0.6%
health.com.au	AHSA	0.6%
Health Partners	AHSA	0.6%
CUA	AHSA	0.6%
Peoplecare	AHSA	0.5%
Queensland Country Health	AHSA	0.5%
Railway & Transport	AHSA	0.4%
Doctors' Health Fund	AHSA	0.4%
Police Health	AHSA	0.3%
Navy Health	AHSA	0.3%
MO Health	AHSA	0.2%
Phoenix Health	AHSA	0.2%
National Health Benefits Australia	AHSA	0.1%
Health Care Insurance	AHSA	0.1%
Transport Health	AHSA	0.1%
ACA Health	AHSA	0.1%
Nurses & Midwives Health	AHSA	0.1%
Reserve Bank Health	AHSA	0.0%
Emergency Services Health	AHSA	0.0%
CBHS Corporate Health	AHSA	0.0%
Latrobe Health	ARHG	0.8%

⁴ HBF contract directly with hospitals in WA and indirectly through the AHSA for all other States and Territories. HBF's policyholders in WA represent a national market share of 6.14%. HBF's policyholders in other States and Territories represent a national market share of 0.72%.

St Lukes Health	ARHG	0.5%
Mildura District Hospital Fund	ARHG	0.2%
Cessnock District Health	ARHG	0.0%

3.5 Market shares as purchasers of health services is shown in the table below. Note that our understanding is that HBF contract directly with hospitals in WA and indirectly through the AHSA for all other States and Territories.

Party undertaking contracting services	Participating health insurers' market share based on 2019 hospital policies
Medibank	26.0%
Bupa	25.1%
AHSA	20.0%
HCF	11.7%
Honeysuckle Health	9.5%
HBF	6.1%
ARHG	1.5%

3.6 We have also provided in Annexure A market shares based on total policies and revenue.

Market for Other Healthcare Payers

3.7 A useful lens through which to define the market for private healthcare is examining the sources of health expenditure funds. The Australian Institute of Health and Welfare (**AIHW**) publish detailed data on this topic. A key table from their 2018-2019 health expenditure data is shown below.

Table A3: Total health expenditure, current prices, by area of expenditure and source of funds, 2018-19 (\$ million)

Area of expenditure	Government					Non-government				Total health expenditure	
	DVA	Health and other	Premium rebates	Total	State and local	Total	HIF	Individuals	Other		Total
Hospitals	1,321	23,702	3,332	28,354	33,280	61,634	9,689	3,689	4,036	17,415	79,049
Public hospital services	579	23,582	342	24,504	32,229	56,732	995	1,444	2,630	5,068	61,801
Private hospitals	741	120	2,989	3,851	1,051	4,902	8,694	2,246	1,407	12,347	17,248
Primary health care	1,333	25,783	1,049	28,165	10,508	38,672	3,051	21,351	2,474	26,876	65,549
Unreferred medical services	688	9,322	..	10,009	—	10,009	..	833	1,416	2,249	12,259
Dental services	80	796	718	1,594	840	2,435	2,089	6,051	52	8,192	10,627
Other health practitioners	256	1,789	313	2,359	7	2,366	910	2,039	502	3,451	5,817
Community health and other	..	1,841	—	1,841	8,371	10,212	1	133	245	379	10,590
Public health	..	1,361	..	1,361	1,290	2,651	..	15	193	208	2,859
Benefit-paid pharmaceuticals	309	9,941	..	10,250	..	10,250	..	1,479	..	1,479	11,729
All other medications	..	732	17	750	..	750	51	10,800	67	10,917	11,667
Referred medical services	..	14,388	612	15,000	..	15,000	1,780	3,382	..	5,162	20,161
Other services	204	2,731	931	3,867	3,929	7,796	2,709	3,438	219	6,365	14,162
Patient transport services	144	125	96	365	3,083	3,448	280	488	96	864	4,312
Aids and appliances	2	624	262	888	..	888	761	2,937	120	3,818	4,706
Administration	59	1,982	574	2,614	846	3,460	1,668	12	3	1,684	5,144
Research	2	5,009	..	5,012	873	5,885	..	2	410	413	6,298
Total recurrent expenditure	2,860	71,612	5,924	80,397	48,591	128,988	17,229	31,862	7,140	56,231	185,219
Capital expenditure	..	188	..	188	4,377	4,565	..	..	5,882	5,882	10,447
Medical expenses tax rebate	..	50	..	50	..	50	..	-50	..	-50	—
Total health expenditure	2,860	71,851	5,924	80,635	52,968	133,603	17,229	31,812	13,022	62,063	195,666

.. not applicable
— rounded to zero

Source: <https://www.aihw.gov.au/reports/health-welfare-expenditure/health-expenditure-australia-2018-19/data>

- 3.8 Focusing on the \$17,248 million expenditure on private hospitals, reallocating the Premium rebates column (which represents the Australian Government's contribution to private health insurance premiums through the Australian Government Rebate) back to health insurance and including a breakdown of the "Other" column from Table 3.16 of the same report to include Workers compensation insurers and transport accident insurers produces the following table:

Private hospital funder	\$ millions	Share
Private health insurers	11,683	67.7%
Individuals	2,246	13.0%
State and local government	1,051	6.1%
DVA	741	4.3%
Workers' compensation insurers	400	2.3%
Transport accident insurers	256	1.5%
Other Federal government	120	0.7%
Unknown	751	4.4%
	17,248	100.0%

- 3.9 Private health insurers and individuals account for 80.7% of revenue received by private hospital operators. DVA represents 4.3%, workers compensation insurers throughout Australia 2.3% and transport accident insurers 1.5%. There is a remaining Unknown percentage of 4.4%.

Market for travel insurance and short-term International Private Medical Insurance

- 3.10 Included in either the Individuals spend of \$2.2 billion or the Unknown spend of \$751 million, is hospitalisation for overseas tourists and short-term overseas workers. Typically, tourists and short-term workers take out insurance in their home country before travelling to Australia. Given their lack of scale in the Australian market, the overseas domiciled insurer will usually not have negotiated network access arrangements in Australia.
- 3.11 If the traveller requires medical services whilst in Australia, they will be required to pay the "rack rate" for the service out-of-pocket and then seek reimbursement from their insurer when they arrive home. One of the issues this creates is a bad debt risk for the hospital provider. Due to the lack of a certainty of payment, hospital providers embed within the "rack rate" a loading to offset the risk of the overseas visitor leaving the country without paying their bill. For international travel insurers, without the volume and local knowledge to develop networks, the increased "cost of production" is passed through to travellers in the form of higher insurance premiums.
- 3.12 nib has been approached by a number of these companies over the last 4-5 years seeking to negotiate "network access" arrangements. The size of these potential contracts is small - combined these groups would represent less than 0.5% of the total market for private hospital services.

Department of Veterans Affairs (DVA) scheme

- 3.13 Under the DVA scheme, eligible veterans are able to receive hospital services free with no gap expenses. The DVA arrangements represent a 4.3% share of the total expenditure on private hospitals and involve contracting directly with private hospitals through a tender process for the provision of the healthcare services. For GPs and medical specialists, the DVA maintains their own no-gap scheme. This involves contracting individually with these types of Providers.
- 3.14 DVA policyholders are not required to make any co-payment to medical specialists or hospitals. The average age of the DVA population is rapidly increasing and, consequently this segment of the market is reducing in activity and relevance with hospital providers. As this reduction

continues it will place increasing price pressure on DVA as they lose market share and power to obtain competitive rates.

Workers compensation schemes

- 3.15 Each of the eight Australian states and territories has their own workers' compensation scheme and the Commonwealth has three separate schemes. As per the table above, workers compensation schemes in total represent 2.3% of total private hospital funding. New South Wales has the largest scheme and would represent approximately 0.7% of total private hospital funding.
- 3.16 Each scheme manages their own contracts with medical and hospital providers. For example, the NSW scheme, administered by icare, has recently experienced significant increases in medical costs. icare is required to pay surgical fees that are gazetted by the State Insurance Regulatory Authority (**SIRA**). These gazetted rates are set by SIRA at 150% of the Australian Medical Association's (**AMA**) recommended rate.
- 3.17 This is higher than any other Australian workers compensation scheme and much higher than private health insurer and DVA scheme. For example, nib's Medigap scheme is set at an average of 50% of the AMA's recommended rates and the DVA scheme is set at 52%.
- 3.18 Ultimately these higher specialist fees are passed through to NSW companies in the form of higher workers' compensation premiums.

Transport Accident Schemes

- 3.19 Each Australian state runs its own compulsory transport accident insurance scheme. In NSW, Queensland, South Australia and the ACT, drivers can choose from a panel of compulsory third party (**CTP**) providers. In the other States, transport accident schemes are provided by a state-owned or government-licensed insurer. As per the table above, transport accident insurers represent 1.5% of total private hospital funding. Similar to workers compensation schemes, transport accident insurers typically manage their own contracts with medical and hospital providers.

Private hospital market

- 3.20 The table below shows the market shares of private hospital provider large groups.⁵

Hospital Provider Group	Market share
Ramsay	21.6%
Healthscope	13.7%
Healthcare	9.3%
St John of God	5.5%
St Vincents Health	3.4%
Mater Misericordiae Limited	3.1%
Little Company of Mary	3.1%

- 3.21 Describe the relevant industry or industries. Where relevant, describe the sales process, the supply chains of any products or services involved, and the manufacturing process.
- 3.22 Please refer to section 1 (Background).

⁵ Compiled by nib based on publicly available sources.

- 3.23 In respect of the overlapping products and/or services identified, provide estimated market shares for each of the parties where readily available.
- 3.24 Please refer to section 3 for market shares of nib and potential Participants.
- 3.25 In assessing an application for authorisation, the ACCC takes into account competition faced by the parties to the proposed conduct. Describe the factors that would limit or prevent any ability for the parties involved to raise prices, reduce quality or choice, reduce innovation, or coordinate rather than compete vigorously. For example, describe: existing competitors, likely entry by new competitors, any countervailing power of customers and/or suppliers; and any other relevant factors.
- 3.26 Please refer to section 6 (Public Detriments) for an analysis of each health services market and any potential impacts on competition from the Proposed Conduct.
- 3.27 In relation to the market for private health insurance, insurers are highly regulated and any increase in premiums is subject to approval by the Commonwealth Minister for Health on an annual basis. The Minister has an expectation that the industry will limit premium increases to a target percentage which places pressure on health insurers to keep costs down and they have limited ability to increase premiums in response to health inflation. Therefore, coordination among competitors in the HH Buying Group will not lead to premium increases for Consumers and will in fact do the opposite and drive down costs (administrative and benefit outlays) to support Participants in keeping premium increases low.

4. Public benefits

- 4.1 Describe the benefits to the public that are likely to result from the proposed conduct. Provide information, data, documents or other evidence relevant to the ACCC's assessment of the public benefits.
- 4.2 The Proposed Conduct will generate public benefits in the form of transaction costs savings and efficiencies for healthcare payers, healthcare providers and members, encouraging transition towards value based contracting and information sharing resulting in better health outcomes for consumers at a lower cost resulting in more efficient pricing for hospital services and ultimately, reduced premiums for consumers. As private health insurers constitute the vast majority of purchasers of private health care (around 70% of private hospital services according to AIHW data), we will focus on public benefits in the private health insurance industry.

Transaction costs savings and increased efficiencies

- 4.3 Authorisation for HH to engage in collective bargaining will result in significant transactional and administrative cost savings for Participants. nib's network of Providers consists of:
- (a) 565 private hospitals;
 - (b) 21,764 medical specialists;
 - (c) 3,049 general treatment clinics and over 15,900 providers.

This requires nib to:

- (d) negotiate over 500 contracts per year; and
 - (e) manage over 3,500 agreements.
- 4.4 The negotiation of HPPAs in particular can be time consuming and at times, protracted with some HPPAs taking up to 16 months to negotiate and the average large hospital group negotiation taking between 6 to 8 months. The process involves complex negotiation on legislative issues, terms and conditions relating to payment structures, audit, recoveries and obligations by both parties as well as the associated business rules and clauses which detail the nature of how

payments are made for health care services (which are volatile in nature due to each individual's condition). Some hospital group HPPAs involve up to 70 hospitals. In addition to negotiating the general contractual terms, each hospital in a hospital group will have an individual rate schedule (list of prices for hospital treatment) and each is negotiated individually with the requisition commercial modelling to be done at the individual level and then "rolled up" to understand both party's (fund and hospital groups) material change in value of the contract. As the business rules and contractual terms impact this modelling the processes generally involves a number of in-person meetings (in particular at commencement of negotiation) before weekly meetings to cover off specific areas and issues. A working document (contract) is created and a separate issues log maintained on the negotiation. The working document is exchanged periodically between the parties and is marked up with comments, issues, requested changes etc. Once the contract terms are close to finalisation the rate modelling commences with each hospital and these rate schedules are exchanged in a similar manner to allow each organisation to model the predicted impact in change of terms (contract clauses), payment models for each service (daily rate to Diagnosis Related Grouping) and price. The modelling is generally conducted on an agreed period of 12 months of previous activity. Once all parties are satisfied with the outcome the negotiation is finalised and contracts executed. On issues which cannot be resolved, these are generally escalated by one or both parties to more senior staff and or executives to resolve. Once a position has been agreed at this higher level it is then briefed back to the negotiation teams who work together to ensure it is adequately reflected in the contractual terms.

- 4.5 Historically, nib's health services contracting function required approximately 25 staff and cost approximately \$5 million per annum to operate. The size and cost of this function is largely independent of the size of the health insurer. Any health insurer that has national coverage and maintains its own health services contracting function would need to support a function of a similar size due to the breadth of the Provider networks.
- 4.6 The HH Buying Group would reduce the need for duplication of the resources and processes involved in the contracting services and reduce costs for Participants. Economies of scale and scope would be realised as each Participant joins the HH Buying Group and greater efficiencies achieved. Under the HH Buying Group, it is proposed that the fee for Participants would correlate with transactional costs so that any savings that arise as Participant numbers increase, would be distributed between Participants under the Participation Agreement through reduced fees.
- 4.7 The formation of the HH Buying Group to perform the contracting services will create significant administrative cost savings as each Participant does not need to replicate the same infrastructure. As HH is currently undertaking this function, the marginal cost of HH performing the contracting services for each Participant would be low. HH would distribute the cost of undertaking nib's contracting services across the Participants, thereby significantly reducing each Participant's costs and presenting an opportunity for transaction cost savings and increased efficiencies. We have set out in Annexure B an example of how the participation fee for the HH Buying Group would decline as Participants join.
- 4.8 These efficiencies can be realised with health insurers that are already part of the AHSA or ARHG buying groups. HH modelling suggests that the participation fee for the HH Buying Group will be competitive with the AHSA's or ARHG's membership fees and would provide a broader scope of services particularly in relation to data analytics. In any case, the HH participation fees would be substantially lower than running an effective internal function. We have set out in Annexure C the basis of the modelling undertaken by HH in comparing the competitiveness of the participation fee for the HH Buying Group with other buying groups.
- 4.9 The Proposed Conduct will also create the following benefit for the Providers (albeit more limited if most of the Participants were previous members of AHSA or ARHG):
 - (a) simplifies backend billing processes as the Participants would have the same contract, rates and billing rules which results in significant reduction to the operational and administrative costs for Providers;

- (b) consistent funding agreements enable Providers to more easily establish care pathways and work with medical specialists on improving the quality and cost of health care; and
- (c) reduced cost to negotiate and manage relationships with health insurers. Negotiation of agreements, particularly HPPAs, create a significant burden and cost to Providers and having reduced numbers of negotiations allow Providers to reduce the costs associated with establishing, negotiating and managing contracts with health insurers.

Greater choice of buying group

- 4.10 The HH Buying Group would provide health insurers with an alternative buying group to the AHSA and provide greater choice. ARHG is not a viable alternative to AHSA for health insurers because of their lack of scale and ability to implement more sophisticated contracting mechanisms. Increased competition between different buying groups would also foster greater innovation and incentivise the buying groups to provide better value and quality of services to its participants.
- 4.11 The HH Buying Group would provide a differentiated model of funding such as value-based contracting, as further described below, and a buying group model that has been authorised by the ACCC.

Better health outcomes at a lower cost

- 4.12 HH intends to work collaboratively with Providers to implement more efficient "value-based" contracting relationships. In relation to hospital contracting, this type of contracting involves comparing health outcomes with costs of services to determine the value of the service. The agreed contracting price for healthcare services will be informed by the value of the service, rather than on the existing cost base. This transition from "fee-for-service" to "value-based" contracting aligns with many other health systems globally which have seen improvements in health outcomes and reduced costs from the transition. As an example, in the United States, Cigna created its first commercial value-based model in 2008. Today, 67% of Cigna's claim spend in the United States has shifted to value-based models. Cigna continues to grow its value-based models and expects to have over 1,000 value-based arrangements across hospitals, specialists, and general practitioner groups in 2021.
- 4.13 As a result of its shift to value-based contracting, Cigna has been able to improve cost outcomes and quality outcomes over time. From 2010 to 2018, Cigna had the lowest reported medical cost trend in the US at 3.6% (key competitors were between 5.5% and 6.0%). By 2021, Cigna is ambitiously targeting to manage medical cost trend to the same level as CPI. Value-based reimbursement arrangements have been a key component of that success.
- 4.14 More specifically, Cigna has seen very strong results in its top performing value-based arrangements:
 - 11% better quality scores than market for primary care providers;
 - 14% improved costs for specialist groups; and
 - 2% lower readmission rates for hospitals.
- 4.15 Value based contracting takes many forms. In its most simple form, HH would initially compare the value of services from a particular Provider against peers in the local region, state as well as nationally. Based on the outcomes and quality of care achieved by the Provider, the cost of the services would be adjusted (either through price or structure) to match the value being delivered by the Provider. If the Provider achieves higher than standard quality outcomes, then the insurers would pay more to the Provider and if the standard quality outcomes were below average, insurers would pay less for these services. The mechanism for this adjustment would form part of the commercial negotiations process and could take a number of forms including price adjustment to reflect the quality of service, payment of performance incentives if agreed benchmark outcomes

are exceeded or changes to payment structures which drive improved efficiency to match the outcomes associated with the Provider.

- 4.16 Current approaches to contracting generally focus solely on cost of care of the services and most funds, and buying groups such as the AHSA and ARHG, have historically focused on cost of care to determine payment structure and price of services. Larger funds tend to have greater access to the complex analytics and data science required to support the development of value-based funding models. Through the HH Buying Group for small and medium funds, it will effectively improve and normalise the Participants' ability to manage benefit outlay and match larger more mature competitors in accessing value based contracting services.
- 4.17 Health systems that have moved to value-based contracting, which by definition, better aligns incentives between the payer and provider, have seen both improvements in health outcomes and lower costs. This shift is fundamentally underpinned by broad data and mature and sophisticated data science capabilities. The establishment of outcomes data is complex by its nature and requires the collection of sufficient data for statistical relevance (which is difficult, if not exclusionary requirement for small insurers), the establishment of outcome measures and quality based on relevant clinical and international literature, and the normalisation and risk adjustment of the patient population to ensure like-for-like comparison in the provision of services.
- 4.18 HH intends to collect and aggregate claims data and Hospital Casemix Protocol (HCP) data of Participants to establish benchmarks on the outcome of services in relation to both procedures and Diagnosis Related Grouping (DRG). This outcomes-based data would then be normalised and risk-adjusted for the variances in patient population (e.g. age, co-morbidities and demographic factors including gender) and a relative outcome scale established for each Provider at a procedure level. This would include quality data and information such as Hospital Acquired Complications as well as efficiency data such as excessive bed days or excessive use of Medicare Benefits Schedule (**MBS**) item numbers.
- 4.19 Once the quality scoring is established, HH will be able to use this benchmarking to assign a relative value score to each Provider at a procedure or DRG level as well as an aggregated weighted average for the Provider. This will then inform the basis for price and payment structure negotiations of HPPAs and will drive improved outcomes for Participants through more appropriate pricing at a procedure level for hospitals service purchased. Ultimately this will drive improved outcomes for Customers as they benefit from improvements in the quality of service from Providers or through more sustainable and affordable private health insurance due to better control by Participants of benefit outlay.
- 4.20 Additionally, the Proposed Conduct will encourage greater involvement by Providers in the lifecycle of the contracting process. The potential size and calibre of the HH Buying Group will drive uptake of value-based contracting by encouraging healthcare providers to be more engaged in innovative funding models that improve outcomes for Customers.
- 4.21 In relation to general treatment networks, such as dental networks, the ability to collectively acquire these services on behalf of a number of insurers will see improved volume provided to the Providers of these services who have been selected based on quality criteria, while pairing this with better pricing and value for Customers and the healthcare payers. As the health insurance products which cover these services typically pay a percentage of the cost, any price negotiation and discount is of benefit to both the payer and Customers who hold the insurance policy.
- 4.22 The key advantage of driving value-based contracting through the HH Buying Group rather than nib alone is that HH will be able to get more buy-in from Providers if HH is representing a larger Customer base. Value-based funding, by its nature, allows Providers to be more innovative and considered in the application of care. This allows a Provider to ensure that quality is maintained or increased while efficiency and cost of service delivery is improved. To make this viable for Provider to invest in, and operationally develop, providers require a reasonable volume of care to occur through these mechanisms. By forming a buying group for the development and purchasing of value-based funding mechanism, HH will provide enough scale to Providers to validate the investment and opportunity.

- 4.23 Likewise, the scale of smaller health insurance funds is likely to be insufficient to develop and implement value-based funding as stand-alone funds. By forming the HH buying group this will provide opportunity to small Participant funds to be involved in more modern and effective health procurement funding models which will ultimately translate into better affordability for members.

Access to data analytics and Information

- 4.24 Generally, only larger health insurers have access to the body of information and data analytics capabilities required to support the development of value-based contracting. The Proposed Conduct will provide Participants, who are likely to be smaller health insurers, with access to data analytics tools and technology. HH's data analytics undertaken as part of its contracting services will use claims and HCP data of all Participants. This will reduce information asymmetry and allow smaller insurers to obtain insights from information analysed across all Participants, that they would otherwise not have. This will assist smaller insurers to more effectively engage in the contracting process and increase access for them to value-based contracting.
- 4.25 In addition to the benefits in relation to hospital services, data analytics and information sharing would allow HH to develop reliable and efficient networks of medical specialists and extras providers across various speciality groups and geographic networks. Increased information sharing and access to data analytics will increase use of efficient providers who deliver improved standards of care and allow participant funds the ability to provide better and more transparent information to members, which will result in a better informed and empowered consumer of health care services.

No gap experience for Customers

- 4.26 The uncertainty around the extent of gaps that Customers face in the private healthcare system is one of the major concerns or causes of dissatisfaction for Customers. For example, according to IPSOS' 2019 Healthcare & Insurance Australia Study, the most important driver for customer satisfaction with respect to their health insurer is 'Rebates on Services' (i.e. out-of-pocket costs) with the average fund scoring 5.8 out of 9 on this aspect. This uncertainty is partly derived from the multitude of contractual relationships that are created when a Customer receives hospital treatment – separate contracts between the Customer and the private hospital, medical specialist, anaesthetist, assistant surgeon, radiologist, pathologist, etc.
- 4.27 The HH Buying Group would broaden access to nib's Clinical Partners Program which is a unique industry offering where nib engages with the surgeon, assistant surgeon and anaesthetists to bring a zero-gap experience for Customers for knee and hip replacements. The HH Buying Group would allow this offering to be made available to Customers of Participants. It also provides HH with a larger Customer base to be able to engage with a broader group of medical specialists so that the program can be expanded to cover more types of treatment (the program currently only covers hip and knee replacements) and more geographical areas.
- 4.28 The development and expansion of the Clinical Partners Program will focus on efficient and effective Providers who provide quality standards of care based on the available hospital quality and outcomes data. The establishment of MPPAs with these Providers will drive more volume to them (as health insurers will be able to actively promote the financial certainty for Customers and referrers) and will also serve to place pressure on non-participants specialists to moderate their out-of-pocket practices due to the risk of loss of patient volume. Ultimately, in both instances the Customer is better protected from excessive out-of-pocket exposure when undergoing large and complex surgical procedures.
- 4.29 The HH Buying Group would also have the additional scale to expand its network of private hospitals with HPPAs and health professionals participating in the medical gap scheme and general treatment network which would also contribute to more no gap experiences for Customers.
- 4.30 The public benefit of an expanded Clinical Partners Program and the creation of potentially further no gap funding initiatives is that a greater number of Customers would have the benefit of the

certainty of a no gap hospital or health experience. It would also go some way towards addressing a key concern of Customers and encourage further Australians to use the private healthcare system, alleviating the pressure on the public system.

Countervailing hospital bargaining power

- 4.31 Some Providers have much stronger bargaining power in the negotiation of agreements with healthcare payers which can impede the parties from achieving efficient pricing outcomes for health services. This is particularly the case in the private hospital market where the 5 largest hospital provider groups account for over 50% of the market.
- 4.32 Some of the smaller private hospitals can also have a high degree of bargaining power due to their iconic status and reputation, or due to their location in regional and remote communities.
- 4.33 This leads to inconsistencies in pricing for the same hospital procedure across different hospitals with the more powerful hospital groups being paid higher prices without any commensurate in value for the Customer. Two examples of this are procedures for cataracts (MBS item 42702) and oocyte retrieval (MBS item 13212) where the median cost charged by large hospital groups is 181% and 149% of the national median cost respectively.
- 4.34 This results in hospital pricing that is above the competitive and efficient price for treatment in particular hospitals.
- 4.35 The Proposed Conduct will enable the HH Buying Group to improve its bargaining position to countervail the power of some of the hospital groups which would lead to more efficient hospital pricing.

Reduced healthcare costs and premiums for members

- 4.36 The public benefits outlined above have the combined effect of increasing the value of the benefits paid by healthcare payers for health services and reducing overall spend particularly in relation to hospital benefits. This will be achieved in the short term through more efficient pricing and in the longer term through increased quality of care which will reduce the volume of health services being purchased. In FY19 the private health insurance industry paid \$15.7 billion in hospital benefits which represented 74%⁶ of all benefits paid by private health insurers for that period.
- 4.37 The reduction in healthcare costs is of particular importance to the smaller health insurers who are likely to be Participants and have more limited access to capital. It would ease the current pressure on health insurers struggling with escalating healthcare costs and inflation coupled with increased cost of regulatory compliance and changes to capital adequacy requirements.
- 4.38 The flow on effect of reductions in benefit outlays and transactional costs savings from the HH Buying Group is that it reduces pressure on premium increases for health insurance policies by the Participants, whilst also improving patient outcomes through value-based contracting and incentivised performance based outcomes. Reduced premium increases encourages participation in private health insurance and reduces pressure on the public health system.

Public benefits for Other Healthcare Providers

- 4.39 Hospital and medical purchasing is at a significantly lower scale for other purchasers of private medical services compared to private health insurers. This creates an opportunity to partner with these purchasers to increase their sophistication and better align incentives with health care providers.
- 4.40 Similar to insurers, Other Healthcare Providers will benefit from transaction costs savings as a result of the Proposed Conduct particularly those that have ongoing arrangements with health service providers akin to insurers. This will enable schemes such as the Department of Veteran's

⁶ *Operations of Private Health Insurers Annual Report 2018-2019*, published by APRA on 5 November 2019.

Affairs hospital cover scheme to pass on greater benefits to veterans, or reduce general expenditure. Furthermore, for those that do not have arrangements with health service providers and instead rely on the established rates for services will gain access to more efficient pricing models.

- 4.41 Importantly, and as noted above in respect of private health insurers, the Other Healthcare Providers will benefit from the data analytics and associated "value-based" contracting models. Only larger private health insurers will have access to the quantity and quality of data required to effectively engage with data analytics and achieve meaningful results. The Other Healthcare Providers will be able to benefit from the data sharing, and third party data analytics, in circumstances where they otherwise would not have the relevant data, finance or experience to implement. Furthermore, as a result of the Proposed Conduct the Other Healthcare Payers will be able to consider implementing "value-based" contracting with the ultimate goal of offering better quality of care, and accordingly improving the health of its members.

5. Public detriment (including likely competitive effects)

- 5.1 Describe any detriments to the public likely to result from the proposed conduct, including those likely to result from any lessening of competition. Provide information, data, documents, or other evidence relevant to the ACCC's assessment of the detriments.
- 5.2 The potential public detriments from the Proposed Conduct would be minimal (if any) in the markets for health services and would be outweighed by the public benefits set out above. The health insurers that are most likely to be Participants are members of existing buying groups. As insurers would be switching from one buying group to another, it would not substantially change the current market dynamics in the market for health services. The key difference being that nib would be a party to the HH Buying Group.
- 5.3 The other key reason that potential public detriments would be minimal is that the Providers have statutory rights (assigned from members) to be paid benefits from insurers and Medicare and do not rely wholly on agreements with health insurers. We consider each type of contracting service in turn.
- 5.4 In relation to the market for the supply of private health insurance to consumers, the potential public detriments from the Proposed Conduct (if any) would be very limited. The Proposed Conduct will not impact the way healthcare payers compete with one another in relation to the setting of premiums, the products they provide, or their sales strategy, rather it will only impact the way that healthcare payers engage with suppliers of health services as described above and the reduction in health care costs. Accordingly, there the Proposed Conduct will have very little impact on the way private health insurance is supplied to consumers other than easing the pressure on premium increases due to cost reductions. This position is supported by the fact that buying groups in respect of health services already exist and have not impacted or acted as a detriment to competition in the supply of private health insurance.

Hospital contracting

- 5.5 The market for private hospital services is likely to be State-based or local market as consumers are unlikely to travel long distances to acquire hospital services. As purchasers of hospital services, the HH Buying Group would potentially have a stronger bargaining position than if nib or each Participant negotiated agreements with private hospitals individually.
- 5.6 We have set out below the market share figures on a State and Territory basis for each private health insurer or buying group based on hospital policies as disclosed in APRA's *Operations of private health insurers annual report 2019*.

Contracting Group	NSW (including ACT)	NT	QLD	SA	TAS	VIC	WA	National
Medibank	22.60%	40.90%	30.70%	19.40%	26.90%	31.10%	21.40%	26.10%
Bupa	22.90%	36.20%	31.40%	47.80%	32.70%	23.10%	10.90%	25.10%
HCF	20.10%	5.90%	8.00%	8.90%	4.80%	7.50%	4.70%	11.70%
nib	15.20%	3.20%	6.80%	4.10%	3.00%	8.50%	3.90%	9.50%
HBF	0.80%	1.70%	0.70%	0.50%	0.70%	1.10%	49.70%	6.90%
AHSA	17.20%	11.60%	21.50%	18.40%	31.30%	27.00%	5.30%	19.20%
ARHG	1.20%	0.30%	0.90%	0.70%	0.60%	1.70%	3.90%	1.60%

In the unlikely event that every member of AHSA joined the HH Buying Group, market shares by State and Territory are likely to be as set out below.

Insurer	NSW (including ACT)	NT	QLD	SA	TAS	VIC	WA	National
HH Buying Group	34.0%	17.0%	29.6%	23.7%	14.4%	34.7%	13.2%	29.5%
Medibank	22.6%	40.9%	30.7%	19.4%	26.9%	31.1%	21.4%	26.1%
Bupa	22.9%	36.2%	31.4%	47.8%	32.7%	23.1%	10.9%	25.1%
HCF	20.1%	5.9%	8.0%	8.9%	4.8%	7.5%	4.7%	11.7%
HBF	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	49.7%	6.1%
ARHG	0.4%	0.1%	0.2%	0.2%	21.2%	3.6%	0.0%	1.5%

- 5.7 The most impacted State-based markets would be New South Wales and Victoria if all of AHSA's members joined the HH Buying Group as it would give the HH Buying Group the highest market share in those States.
- 5.8 The increased market share of the HH Buying Group would to some extent, countervail the strong bargaining position of the large hospital groups such as Ramsay and Healthscope that allows for supra-competitive prices for hospital services. We submit that the increase in HH Buying Group's market share will allow it to leverage its position in order to put pressure on hospital pricing so that it falls below supra-competitive and inefficient levels. The HH Buying Group is unlikely to have sufficient bargaining power or incentive to drive hospital pricing below competitive prices. Due to the national network of hospitals operated by the large hospital groups, the HH Buying Group will continue to be reliant on having an HPPA with them. This will also be the case for smaller iconic hospitals that the HH Buying Group must have in the hospital network due to demand from Customers.
- 5.9 Health insurers are effectively subject to a price floor under the PHI Act and Rules for hospital treatment. The legislative regime requires health insurers to pay benefits for hospital treatment at either the specified rates in the *Private Health Insurance (Benefit Requirements) Rules (Rules)* or rates calculated under the Rules for second-tier eligible hospitals. The latter rates are calculated by taking 85% of the average rate for that treatment in the insurer's HPPAs with comparable hospitals. If a hospital does not have an HPPA with the HH Buying Group, insurers must still pay these minimum benefit amounts. Customers of the HH Buying Group would still have the option of purchasing services from that hospital but are more likely to incur out-of-pocket expenses.
- 5.10 Based on nib's experience in moving from AHSA membership to undertaking its own HPPA negotiations, the Applicants submit that the increase is likely to assist the HH Buying Group to

negotiate additional obligations relating to quality of treatment, performance, reporting and have more engagement from hospitals on innovative funding models. The Applicants expect that greater market share would incentivise hospitals to engage more collaboratively with the HH Buying Group during HPPA negotiations.

Medical specialist contracting

- 5.11 The impact of the HH Buying Group would be minimal in the market for medical specialist services which would be localised geographic areas of competition and a separate market for each specialty of practice.
- 5.12 The negotiation of MPPAs with medical specialists involves negotiating the rates that medical specialists would accept for not charging a gap to Customers.
- 5.13 The HH Buying Group is likely to increase the proportion of potential Customers of the medical specialist that are being represented in the MPPA negotiations. The Applicants submit, again on the basis of nib's experience as an AHSA member, that this will not change the negotiation dynamics in relation to price but is more likely to lead to greater engagement on innovative funding models such as the Clinical Partners Program. This is because MPPAs are not critical to medical specialists but are seen as an optional arrangement. If a medical specialist was not prepared to enter into an MPPA with the HH Buying Group, they have statutory rights (assigned from members) to be paid for their professional services which would generally comprise of benefits paid by Medicare (75% of the Medicare Benefits Schedule fee for the service), benefits paid by the insurer (25% of the Medicare Benefits Schedule fee or more if the medical specialist participates in a medical gap scheme) and out-of-pocket expenses paid by the Customer (if any). Therefore, in MPPA negotiations, insurers often do not have strong bargaining power when negotiating with medical specialists despite the differential in size of the organisations as medical specialists are simply agreeing to cap their fees and relinquish their right to charge out-of-pocket expenses.

Medical gap scheme and general treatment network

- 5.14 In relation to the medical gap scheme and general treatment network, the HH Buying Group would not be negotiating agreements with Providers. Due to the large number of individual health providers in the industry (circa 50,000), the HH Buying Group will be managing schemes based on a standard schedule of rates and terms and conditions. nib's current scheme is determined on a state basis for dental and physiotherapy networks and a national basis for other types of general treatment networks and its medical gap scheme. Therefore, any changes to the buying power in the local markets for medical specialists or general treatment providers due to the HH Buying Group would not impact the setting of prices or terms and conditions for the medical gap scheme and general treatment network.
- 5.15 These schemes are voluntary, and Providers have the option to register to be part of these networks and receive additional benefits for agreeing to 'no gap' arrangements and other terms and conditions. General treatment providers also have the option of not being part of an insurer's network and will still be paid benefits in accordance with the policies of the health insurers. As discussed above, medical specialists have the option not to register with the medical gap schemes and continue to have statutory rights (assigned from members) to be paid benefits from Medicare and health insurers. Health insurers are incentivised to provide attractive rates to Providers under the medical gap scheme and general treatment networks to encourage participation.
- 5.16 The only agreements that are negotiated in this space are agreements relating to the operation of an insurer's branded optical or dental centres or potentially, agreements with networks of providers such as dentists that may be bespoke and negotiated. HH's involvement in the negotiation and management of such contracts would be undertaken on an individual basis for the relevant insurers.

- 5.17 The Applicants submit that the Proposed Conduct will have minimal (if any) detrimental impact on Customers or other classes of persons and that the substantial public benefits from the Proposed Conduct as set out in this application will result in a net public benefit.

Other Healthcare Payers

- 5.18 In relation to Other Healthcare Payers, the Applicant submits that there will no public detriments emerging from the Proposed Conduct. The relative bargaining power of the Other Healthcare Payers is small, accordingly their ability to achieve commercial and competitive results in negotiations with Providers is limited, resulting in some cases of inefficient pricing. Should the Other Healthcare Payers participate in the HH buying group, any increase in bargaining power will allow them to increase their bargaining power and accordingly, their negotiating position. As noted above, given the countervailing bargaining power of Providers is large any marginal increase in bargaining power for these types of healthcare payers will not significantly impact competition.
- 5.19 Similarly, travel and medical insurers make up a small percentage of the healthcare payer market. Accordingly, their joining the buying group will not materially alter the competitive position of Providers in such a way as to improperly displace the countervailing bargaining power in the market.
- 5.20 The Applicant recognises that government and semi-government healthcare payers form a large part of the healthcare payer market. However, in practice these schemes invest in and create their own Provider networks, and are subject to extensive public policy constraints when tendering and making agreements. Accordingly, in the Applicant's view these healthcare payers are less likely to join the HH Buying Group.

Future without the Proposed Conduct

- 5.21 In a future without the Proposed Conduct, nib will continue to use the contracting services offered by HH. nib along with other healthcare payers will, on an ongoing basis, incur high amounts of transaction costs associated with the time consuming and protracted negotiation of HPPAs. Similarly, Providers will continue to incur the administrative and cost burdens associated with the operational side of backend billing and the repeated negotiation and management of contracts with health insurers.
- 5.22 Other Healthcare Payers will also continue to pay inefficient prices and incur excessive transaction costs, resulting in increased premiums for customers and greater administrative costs for Providers. Significantly, without the Proposed Conduct healthcare payers will face great difficulty in implementing the more efficient "value based" contracting relationships. Smaller healthcare payers particularly will not have access to the type and scale of data required to transition away from a "fee for service" model. This is because the lack of data sharing will result in there being no data to form the basis of the price and payment structure of value based contracting. As a result, healthcare payers, Providers and customers will benefit from the more efficient quality and price of healthcare services. In addition, without the Proposed Conduct, the multitude of contractual relationships that exist when a customer attends a hospital will remain and accordingly, the basis on which the customer will be required to pay a gap will remain unclear resulting in continuing uncertainty for customers relating to the pricing of healthcare services.
- 5.23 Accordingly, in a future without the Proposed Conduct, the current costs model and associated expenses will remain for healthcare payers, Providers and customers. Healthcare payers will have less choice about which buying groups to participate in, reducing competition between buying groups, and will be less inclined to implement improved and innovative funding and service models, reducing the potential for cost savings. Without the scale provided by the HH Buying Group, HH may have greater difficulties engaging with Providers to implement and invest resources in transitioning to innovative funding models, particularly where Providers have guaranteed funding streams under private health insurance legislation and through Medicare.

6. Contact details of relevant market participants

6.1 Identify and/or provide names and, where possible, contact details (phone number and email address) for likely interested parties such as actual or potential competitors, key customers and suppliers, trade or industry associations and regulators.

6.2 Please see contact details in the Annexure D.

7. Additional information

7.1 Provide any other information or documents you consider relevant to the ACCC's assessment of the application

7.2 None.

8. Declaration by applicant

8.1 The undersigned declare that, to the best of their knowledge and belief, the information given in response to questions in this form is true, correct and complete, that complete copies of documents required by this form have been supplied, that all estimates are identified as such and are their best estimates of the underlying facts, and that all the opinions expressed are sincere.

8.2 The undersigned undertake(s) to advise the ACCC immediately of any material change in circumstances relating to the application.

8.3 The undersigned are aware the giving false or misleading information is a serious offence and are aware of the provisions of sections 137.1 and 149.1 of the Criminal Code (Cth).



.....
Rhod McKensy

Chief Executive Officer, Honeysuckle Health Pty Ltd

This 6th day of May 2021

Annexure A – Alternate market share figures

The market share figures in this Annexure A are based on APRA's *Operations of private health insurers annual report 2019*.

Market Share based on total of Hospital and Extras Policies

Insurer	Party that undertakes contracting services	National Market Share Total Policies June 2019
Medibank	Medibank	26.9%
Bupa	Bupa	25.8%
HCF	HCF	11.1%
nib	nib	9.1%
HBF - WA	HBF	6.7%
HBF – other States and Territories	AHSA	0.7%
Australian Unity	AHSA	2.7%
Teachers Health	AHSA	2.4%
GMHBA	AHSA	2.3%
Defence Health	AHSA	2.1%
CBHS	AHSA	1.5%
HIF	AHSA	0.8%
Westfund	AHSA	0.8%
Health Partners	AHSA	0.7%
Latrobe Health	ARHG	0.7%
CUA	AHSA	0.6%
health.com.au	AHSA	0.6%
TUH	AHSA	0.6%
Peoplecare	AHSA	0.5%
St Luke's	ARHG	0.5%
QCH	AHSA	0.4%
rt health	AHSA	0.4%
Police	AHSA	0.3%
Navy Health	AHSA	0.3%
Doctors Health	AHSA	0.3%
Mildura District Hospital Fund	ARHG	0.2%
myOwn	AHSA	0.2%
Phoenix	AHSA	0.1%
Healthcare Insurance	AHSA	0.1%
Transport Health	AHSA	0.1%

onemedifund	AHSA	0.1%
ACA Health	AHSA	0.1%
Nurses & Midwives	AHSA	0.1%
Hunter Health	ARHG	0.0%
Reserve Bank	AHSA	0.0%
CBHS Corporate	AHSA	0.0%
Emergency Services Health	AHSA	0.0%

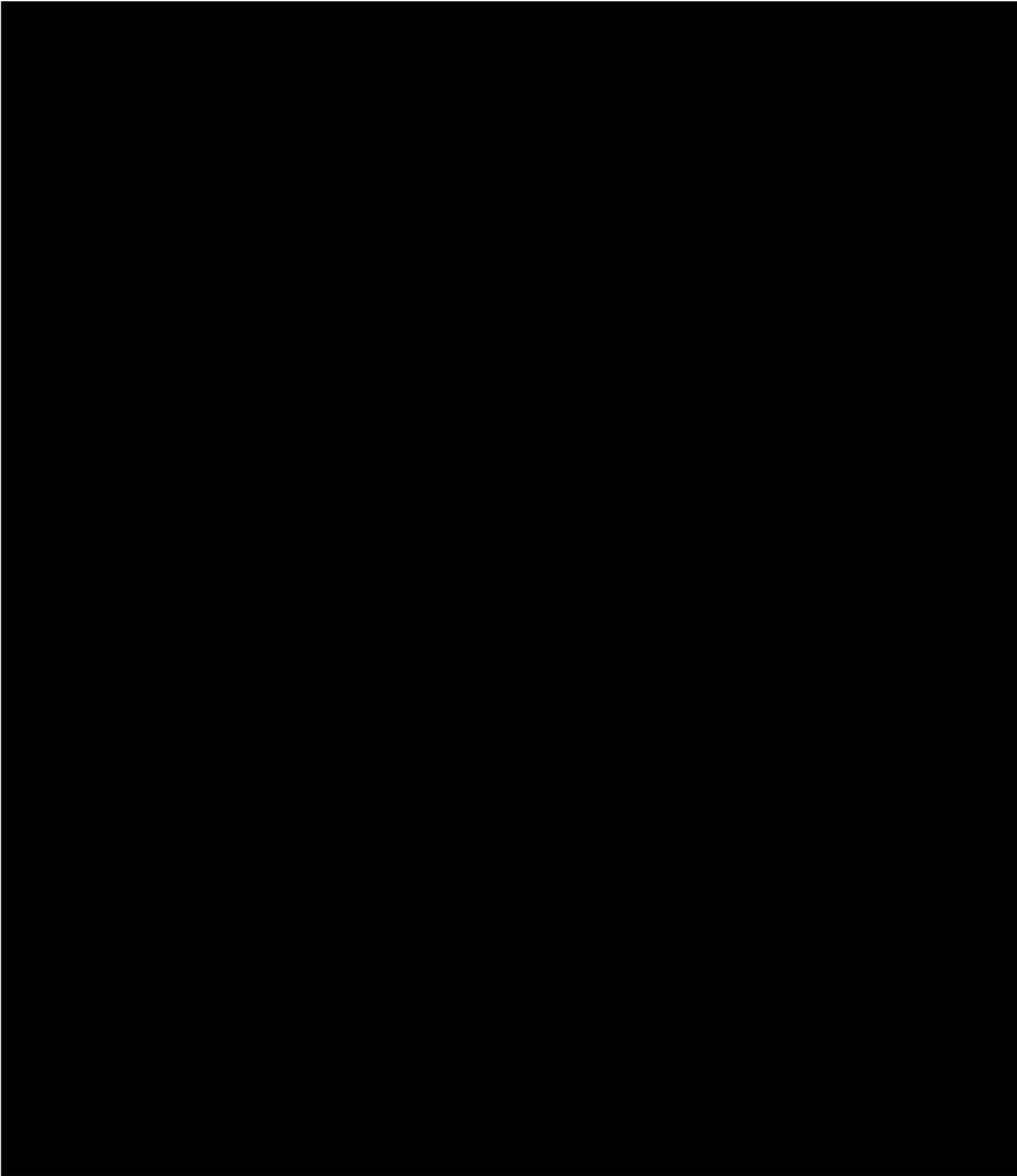
Party that undertakes contracting services	Participating health insurers' market share based on June 2019 Total Policies
Medibank	26.9%
Bupa	25.8%
AHSA	19.0%
HCF	11.1%
nib	9.1%
HBF	6.7%
ARHG	1.4%

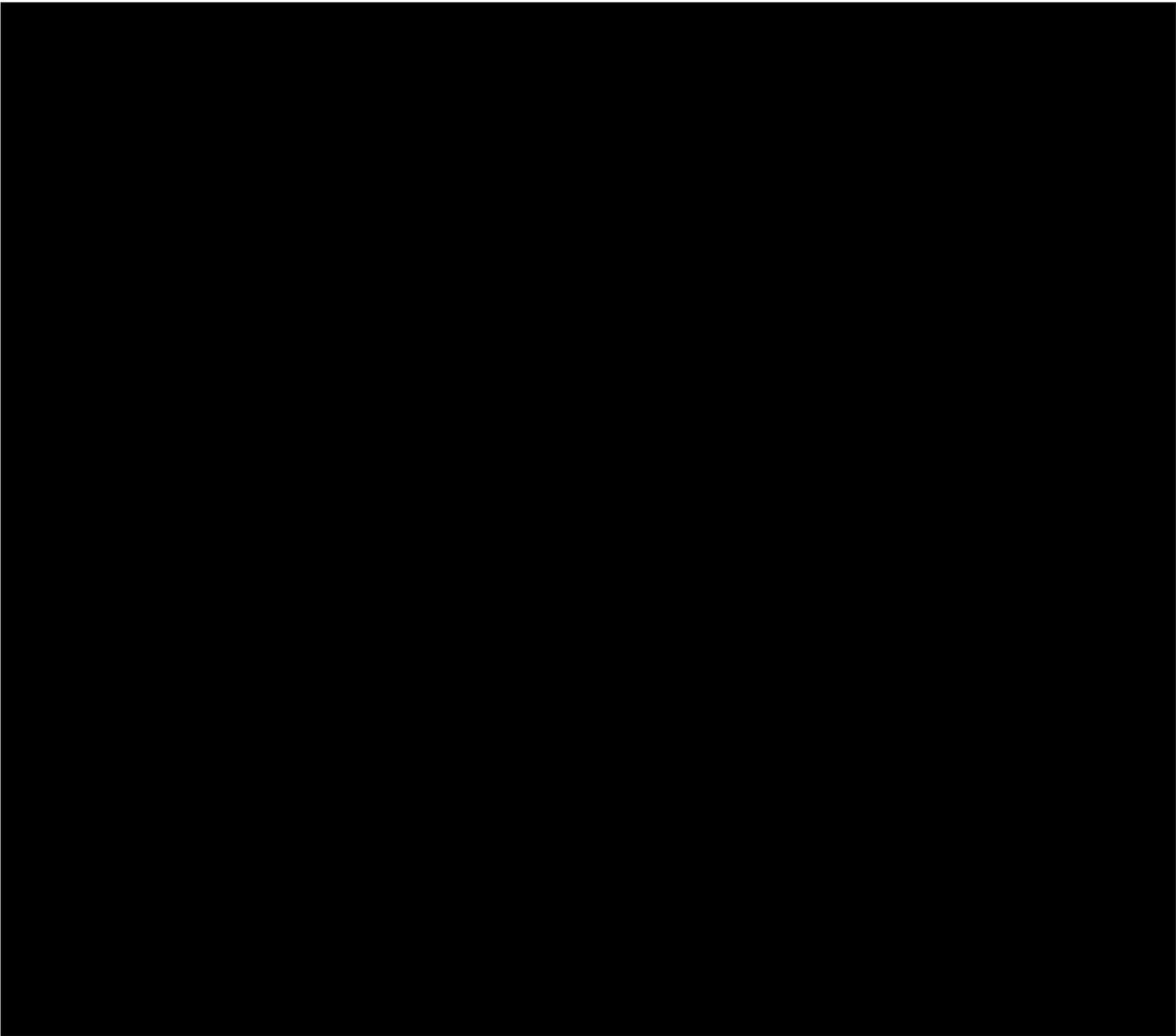
Market Shares based on Premium Revenue

Insurer	Party that undertakes contracting services	National Market Share Total Premium Revenue FY19
Bupa	Bupa	26.6%
Medibank	Medibank	25.7%
HCF	HCF	11.3%
nib	nib	8.2%
HBF - WA	HBF	6.1%
HBF – other States and Territories	AHSA	0.7%
Teachers Health	AHSA	2.8%
Australian Unity	AHSA	2.8%
Defence Health	AHSA	2.3%
GMHBA	AHSA	2.3%
CBHS	AHSA	1.8%
Westfund	AHSA	0.8%
TUH	AHSA	0.8%
HIF	AHSA	0.7%
Latrobe Health	ARHG	0.7%

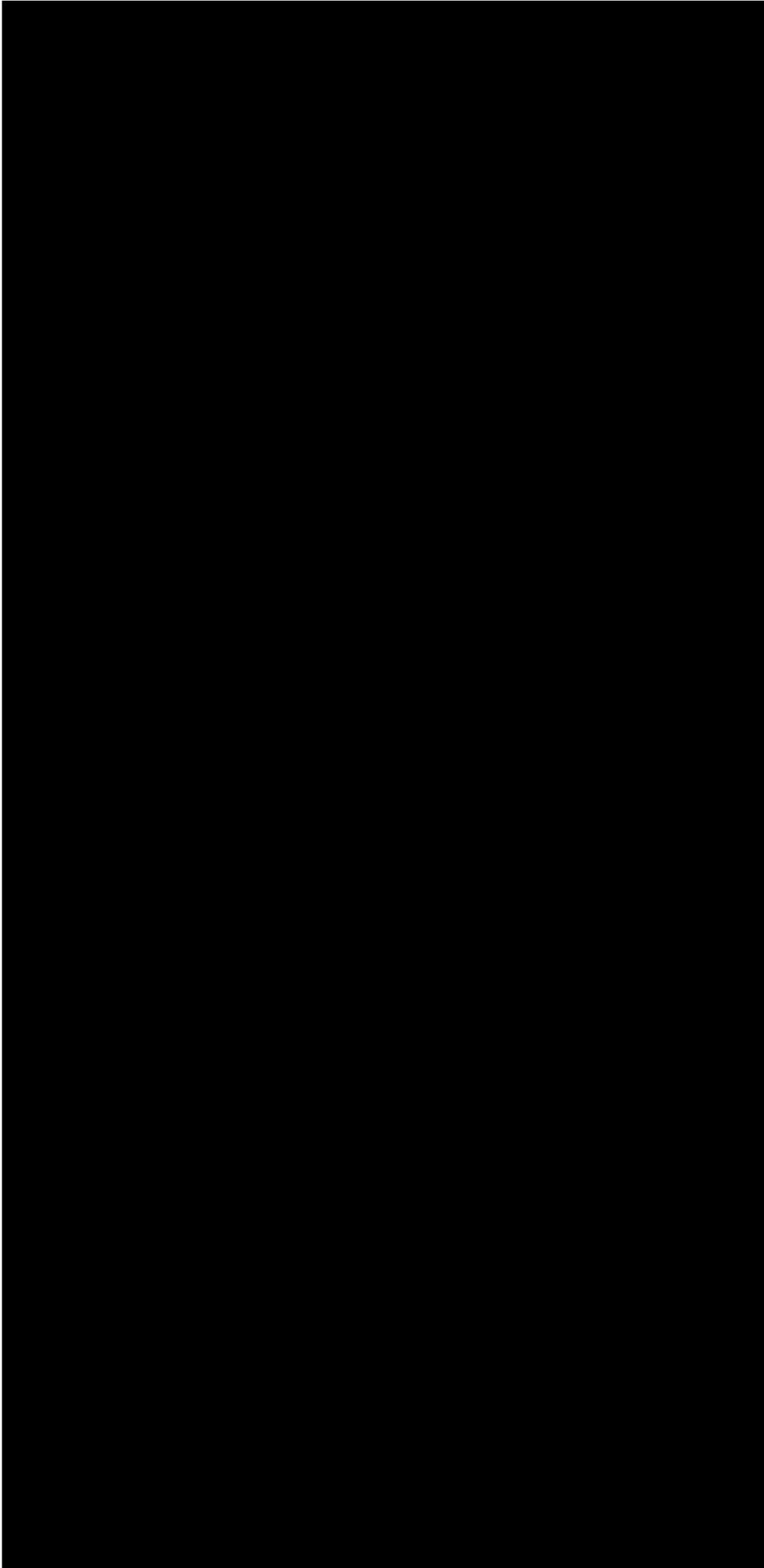
Health Partners	AHSA	0.7%
Peoplecare	AHSA	0.6%
CUA	AHSA	0.6%
St Luke's	ARHG	0.6%
Police	AHSA	0.5%
QCH	AHSA	0.5%
health.com.au	AHSA	0.5%
rt health	AHSA	0.5%
Doctors Health	AHSA	0.4%
Navy Health	AHSA	0.4%
Mildura District Hospital Fund	ARHG	0.2%
Phoenix	AHSA	0.2%
onemedifund	AHSA	0.1%
myOwn	AHSA	0.1%
Healthcare Insurance	AHSA	0.1%
ACA Health	AHSA	0.1%
Transport Health	AHSA	0.1%
Reserve Bank	AHSA	0.1%
Nurses & Midwives	AHSA	0.1%
Hunter Health	ARHG	0.0%
Emergency Services Health	AHSA	0.0%
CBHS Corporate	AHSA	0.0%

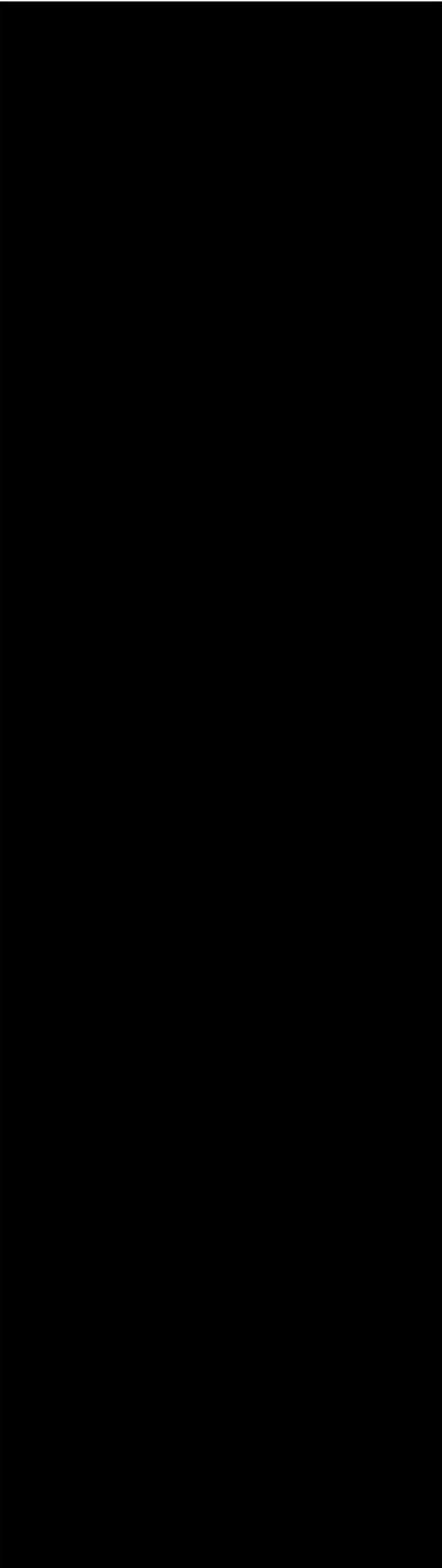
Party that undertakes contracting services	Participating Australian health insurers' market share based on Total Premium Revenue for FY19
Bupa	26.6%
Medibank	25.7%
AHSA	20.6%
HCF	11.3%
nib	8.2%
HBF	6.1%
ARHG	1.5%





Annexure D – Contact details of interested parties





COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-60

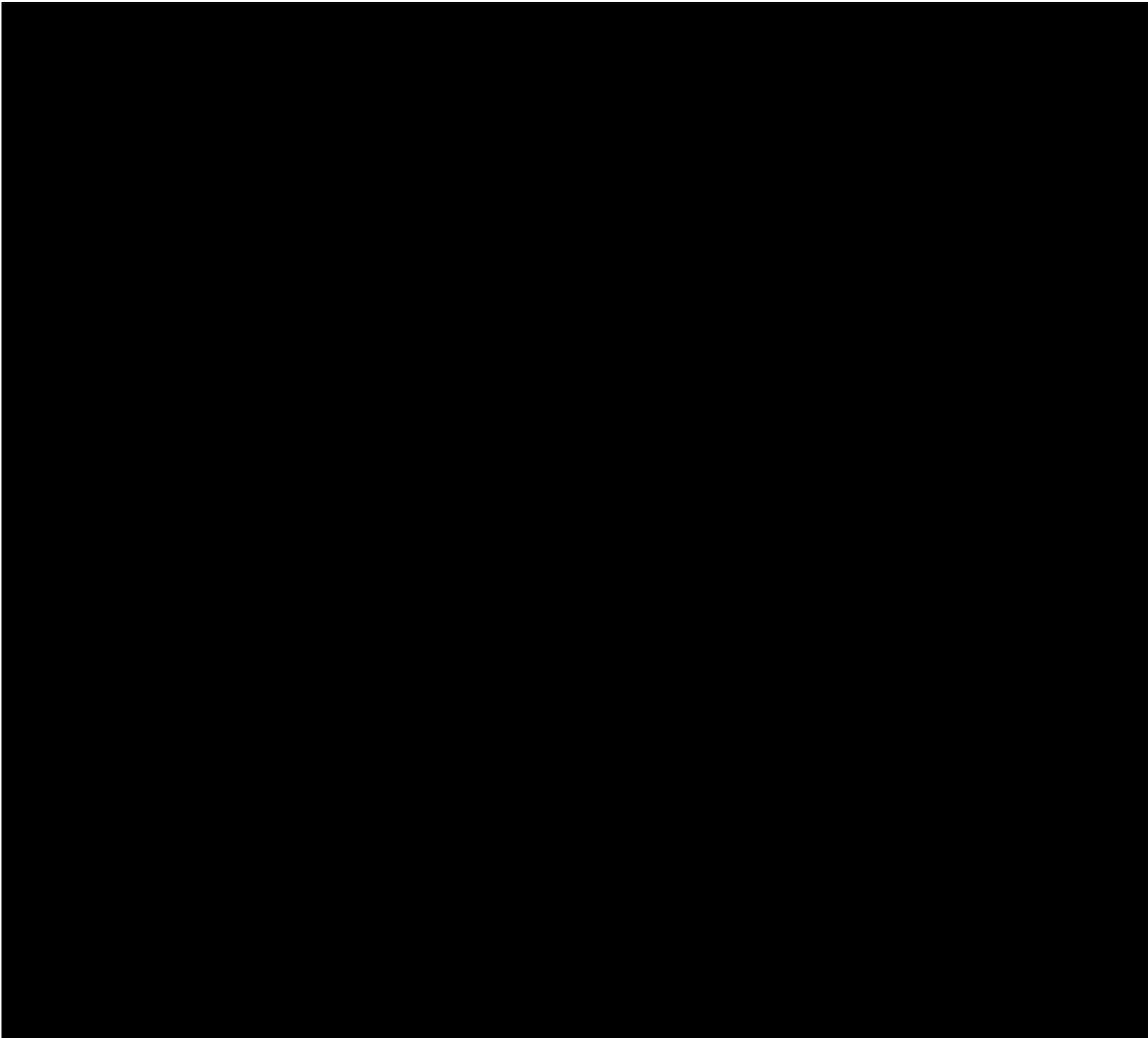
This is the Annexure marked "DD-60" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.



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ANNEXURE CERTIFICATE

DD-61

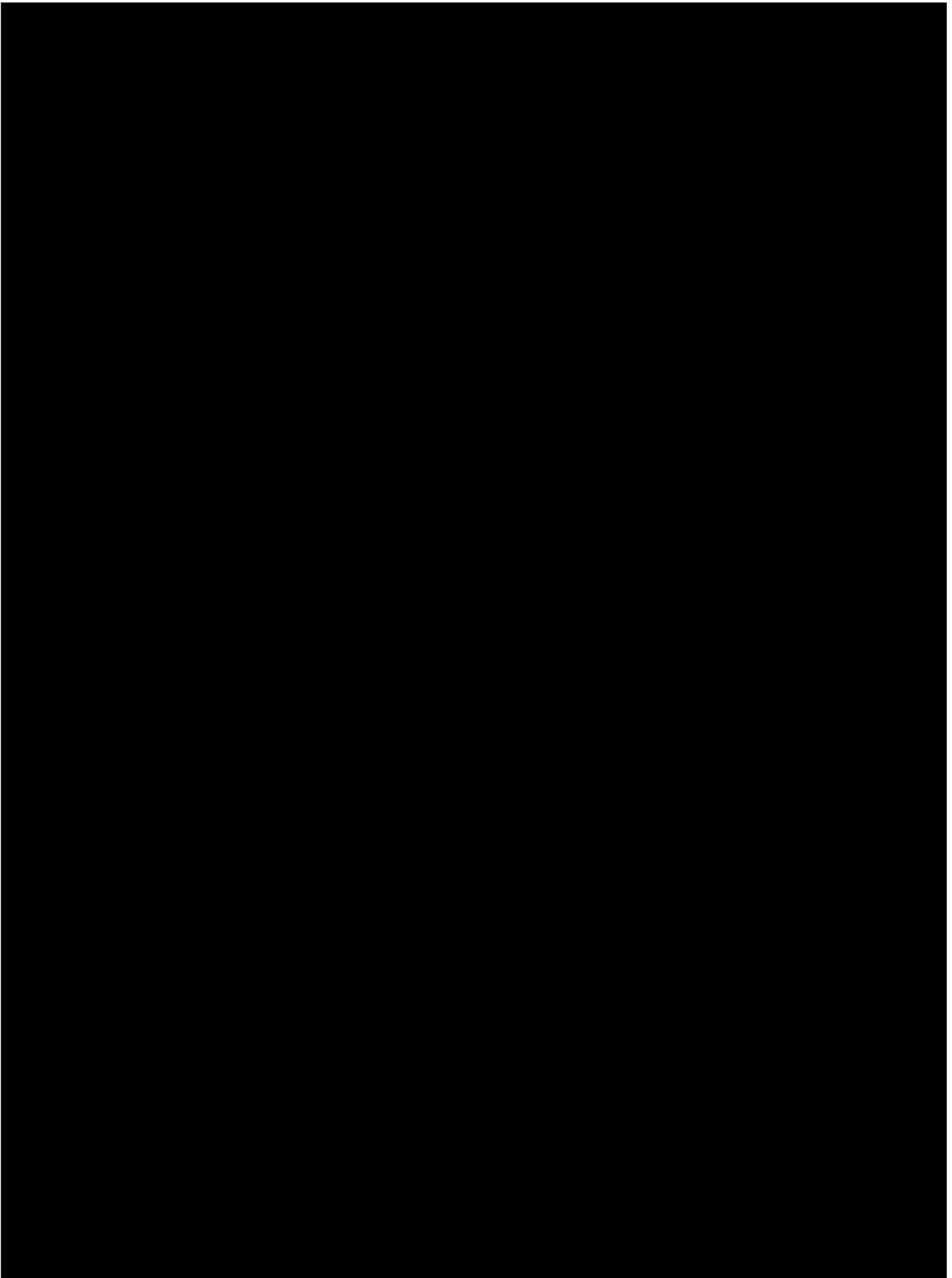
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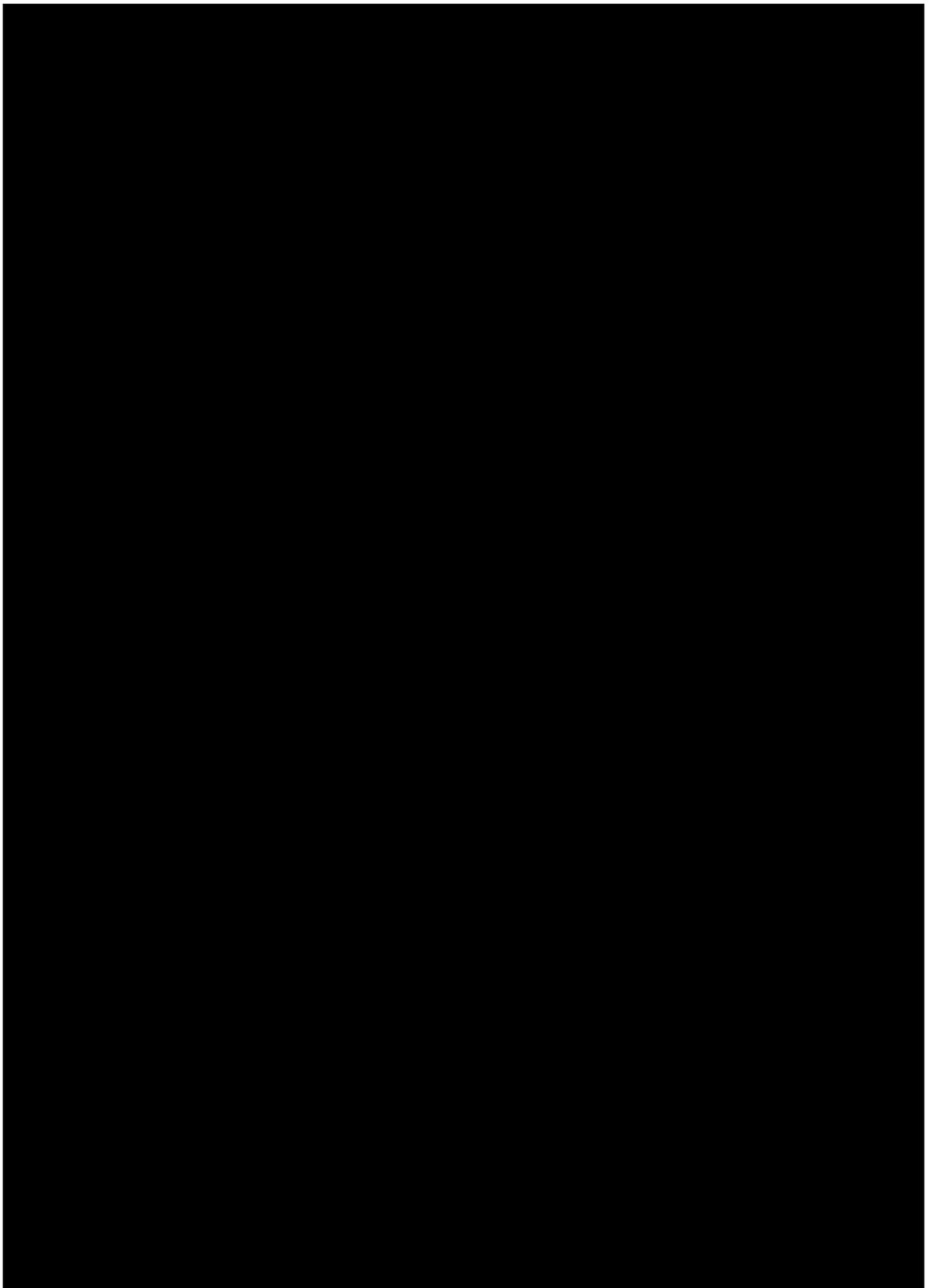
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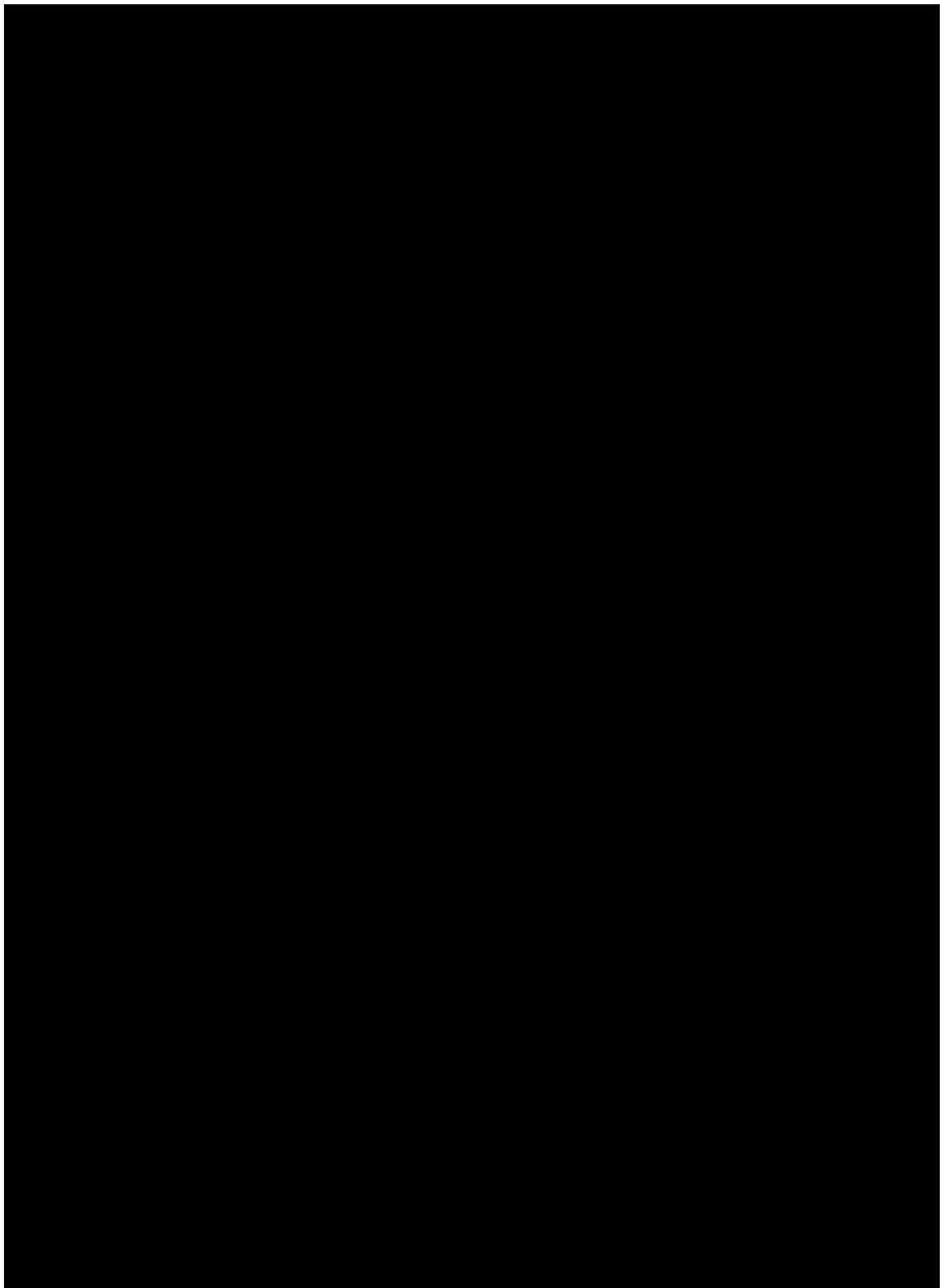
AR

.....
Signature of witness

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ANNEXURE CERTIFICATE

DD-62

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Before me:

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.....
Signature of witness

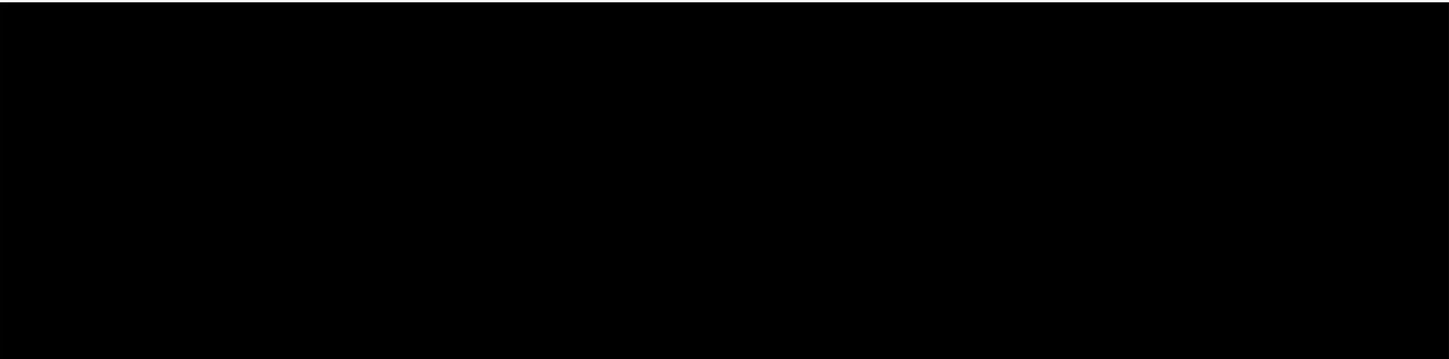
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An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

Feb 2021

nib health funds limited

**MEDICAL PURCHASER PROVIDER AGREEMENT
Short Stay No Gap**

Medical Purchaser Provider Agreement – Clinical Partners

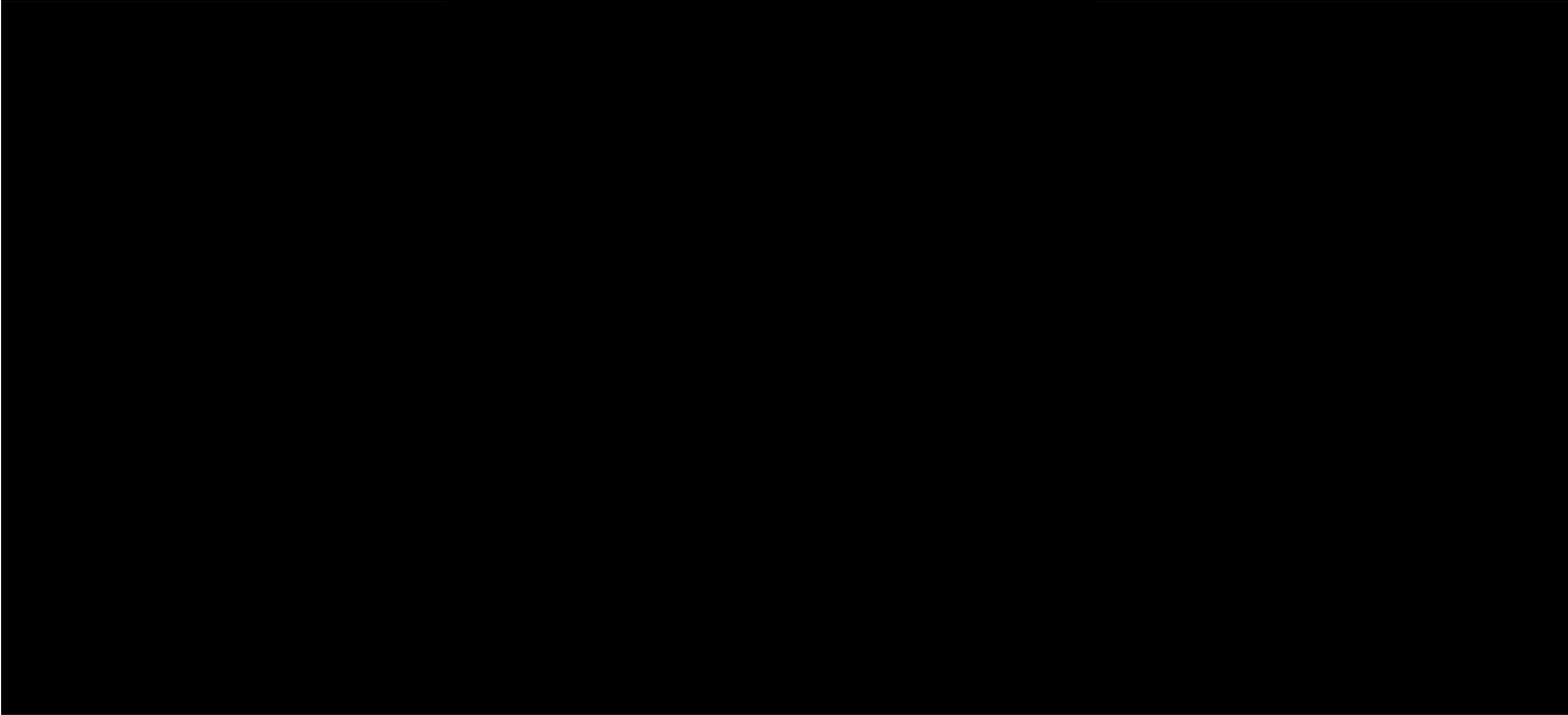


7. Provider's Undertakings8

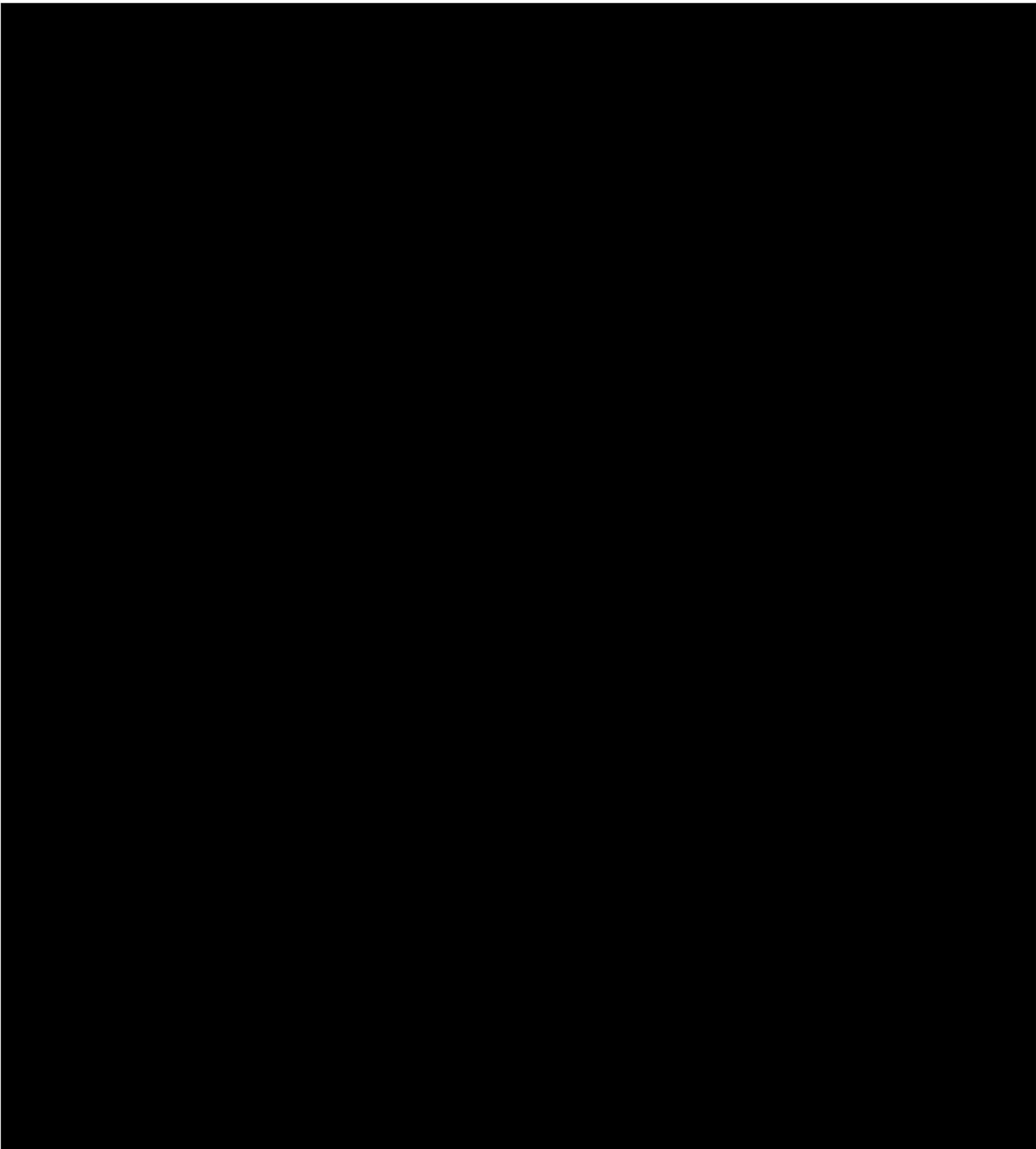
9. nib's Undertakings and Acknowledgments9

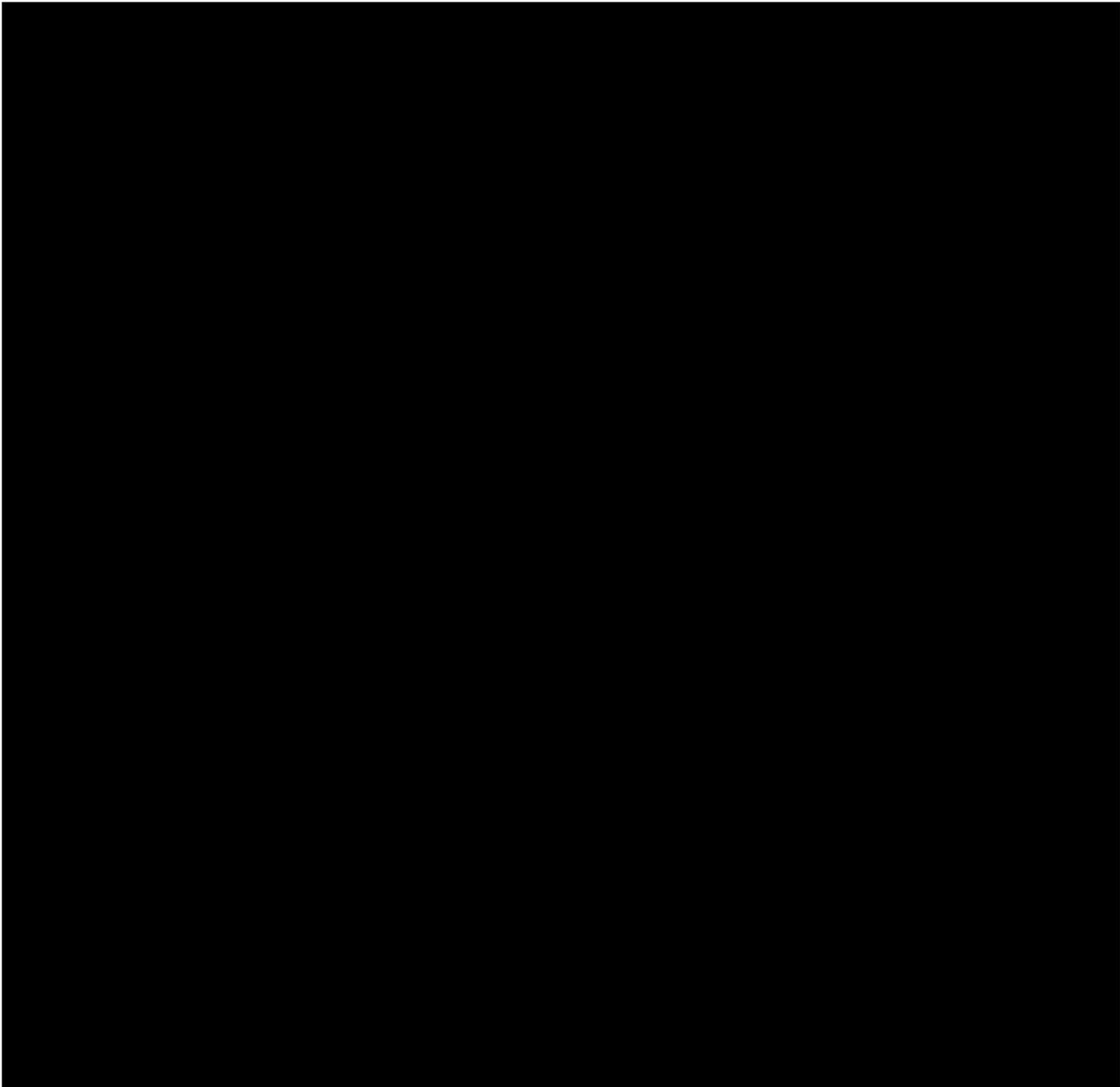
10. INDEPENDENCE10

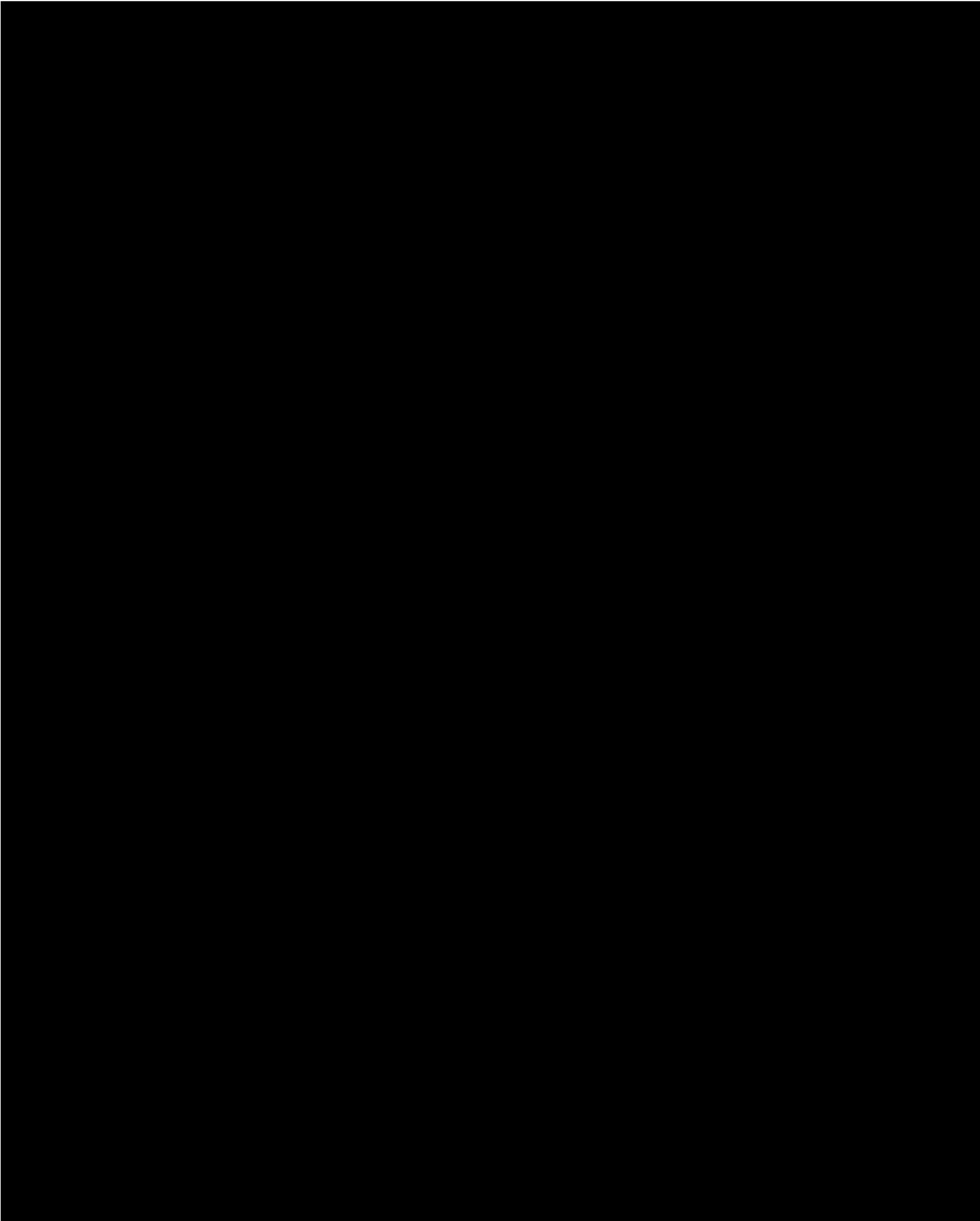
11. Fees FOR SPECIFIED SERVICES10

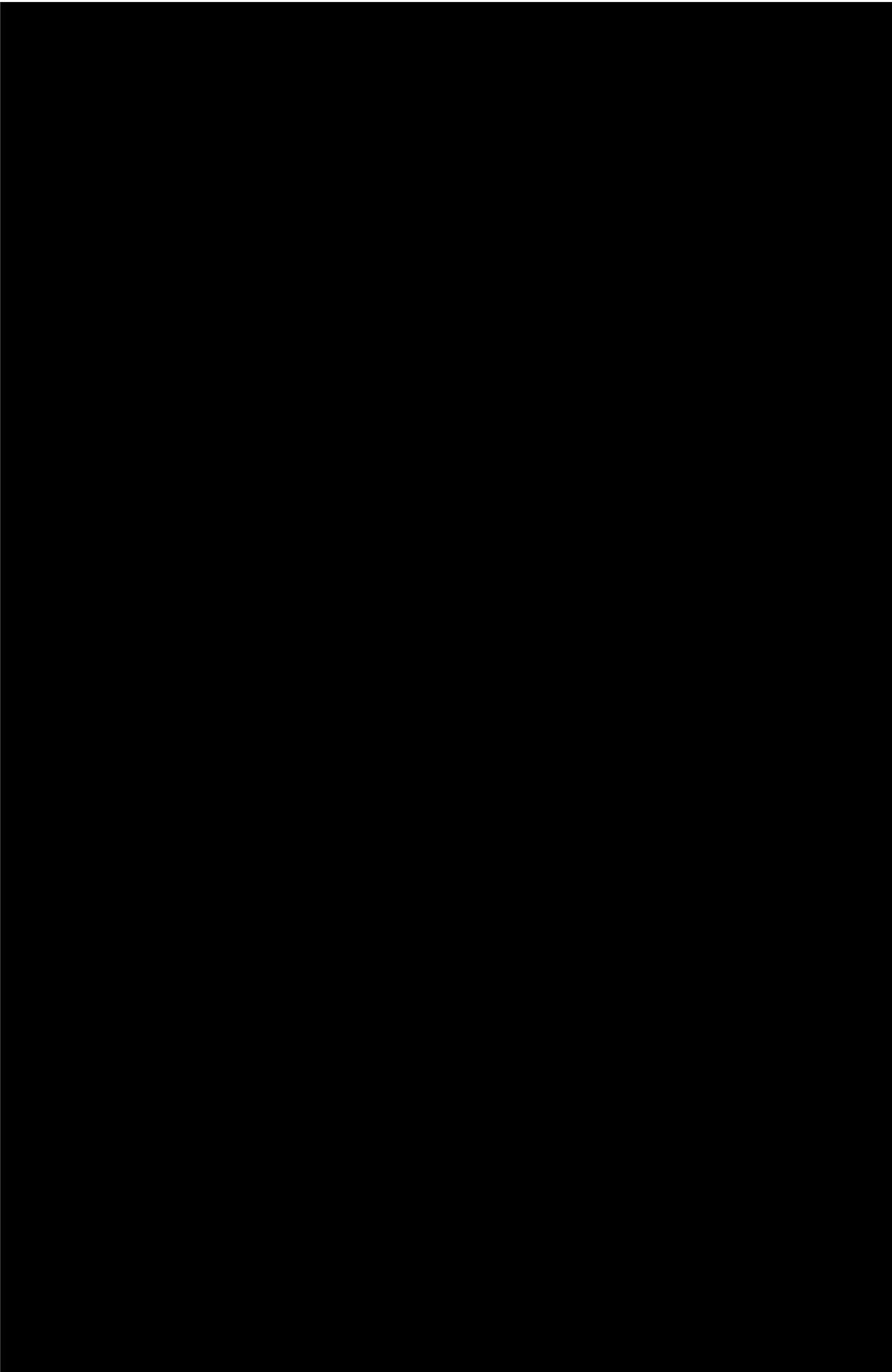


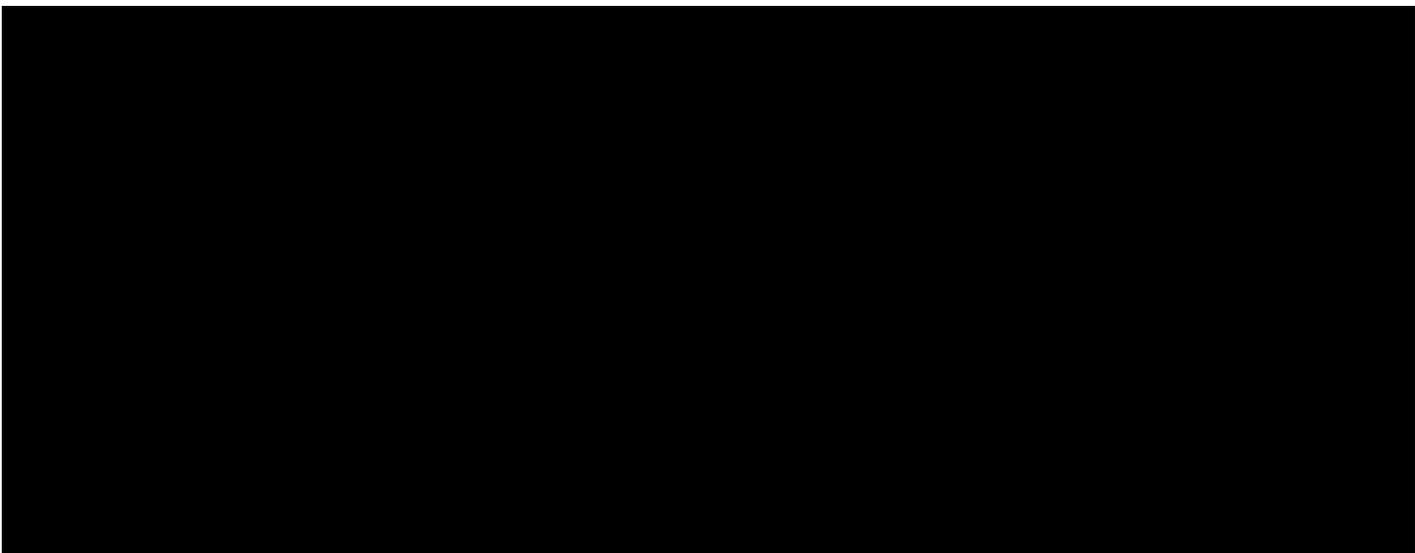
Medical Purchaser Provider Agreement – Clinical Partners







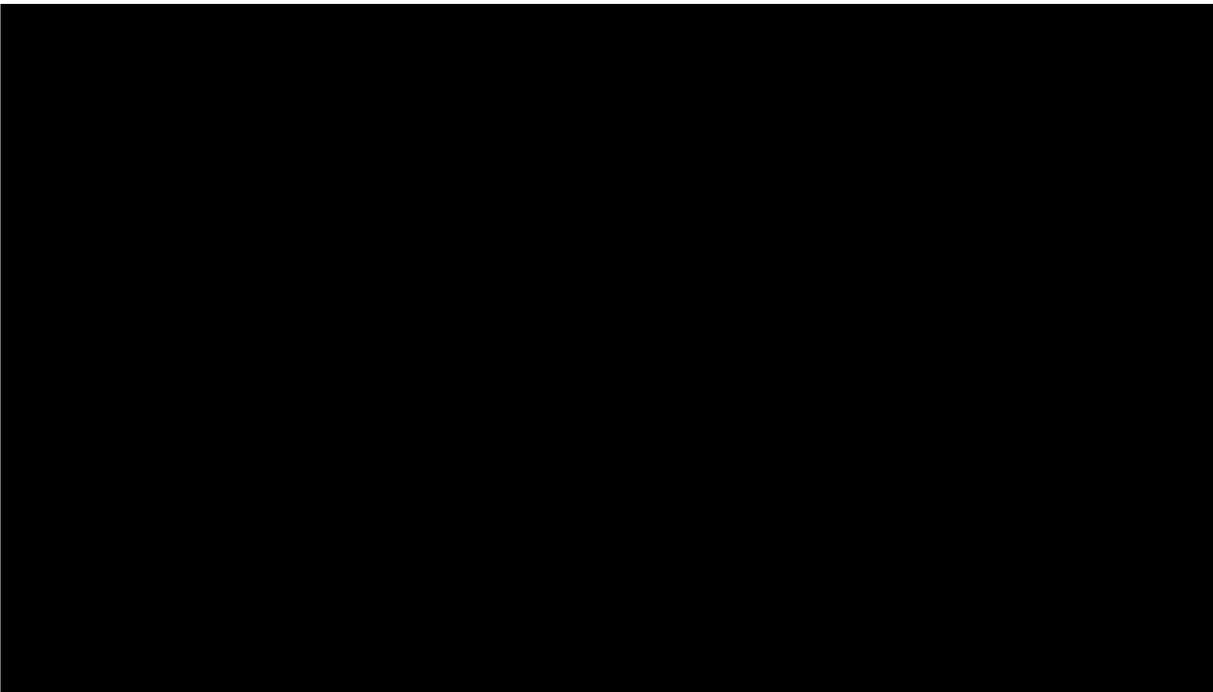
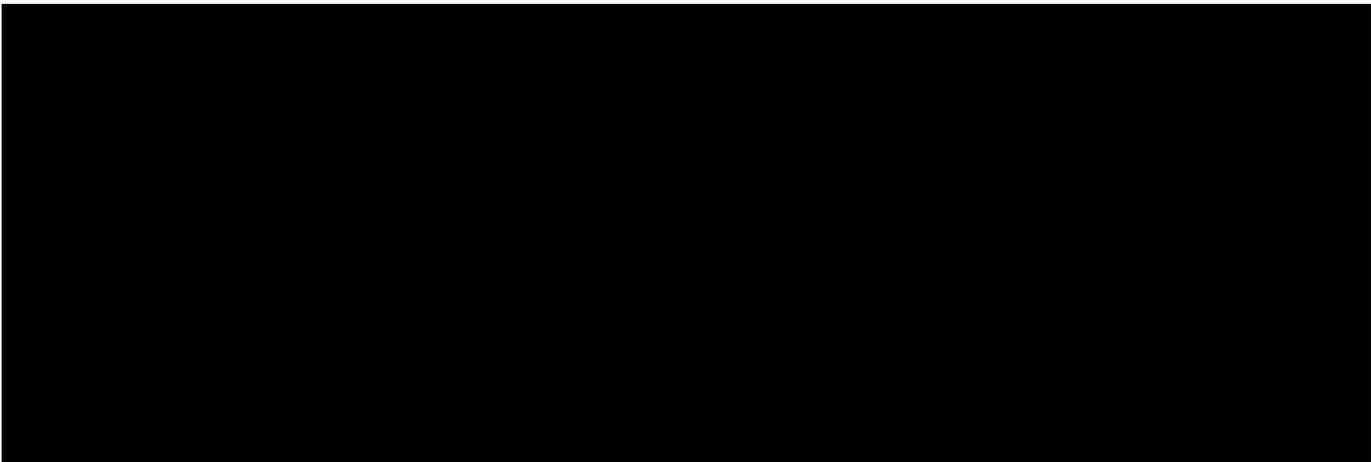


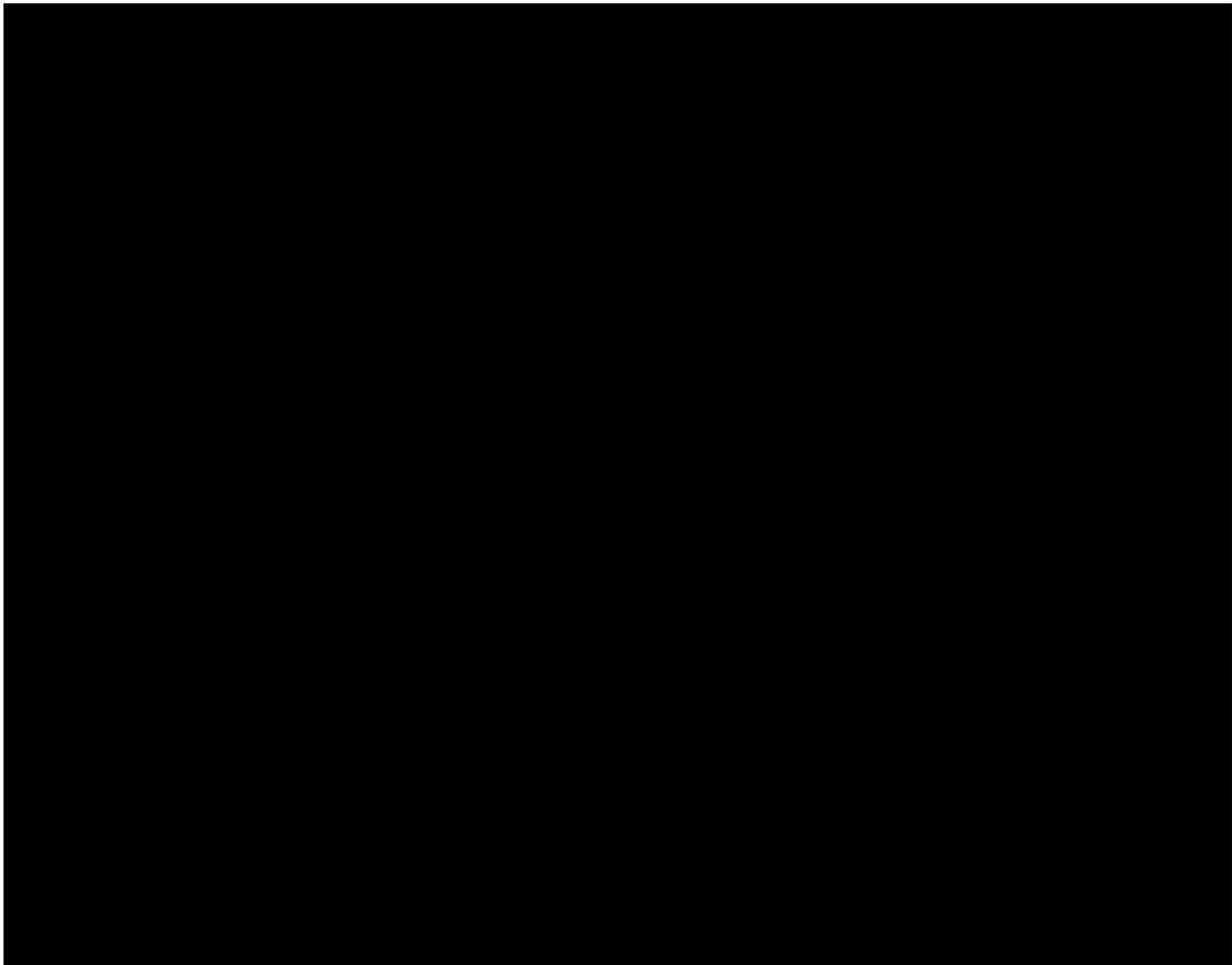


7. PROVIDER'S UNDERTAKINGS

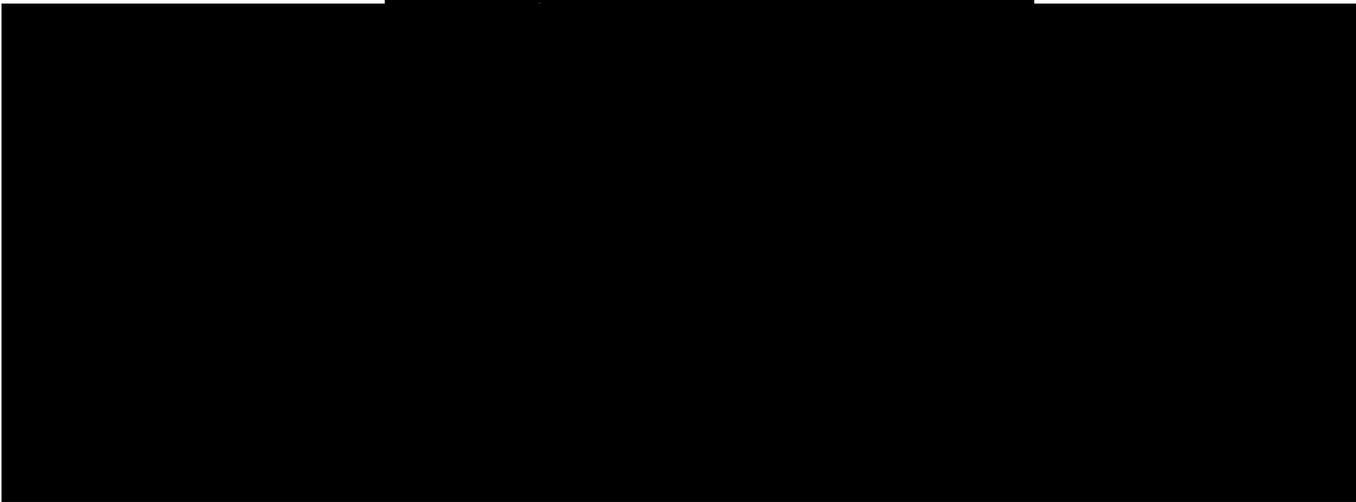
7.1. Provider General Obligations

The Provider must:

- 
- (g) admit all clinically appropriate Eligible Customers to undertake the post-surgery 'at home' Patient Rehabilitation Support Program;
- 



9. nib's UNDERTAKINGS AND ACKNOWLEDGMENTS



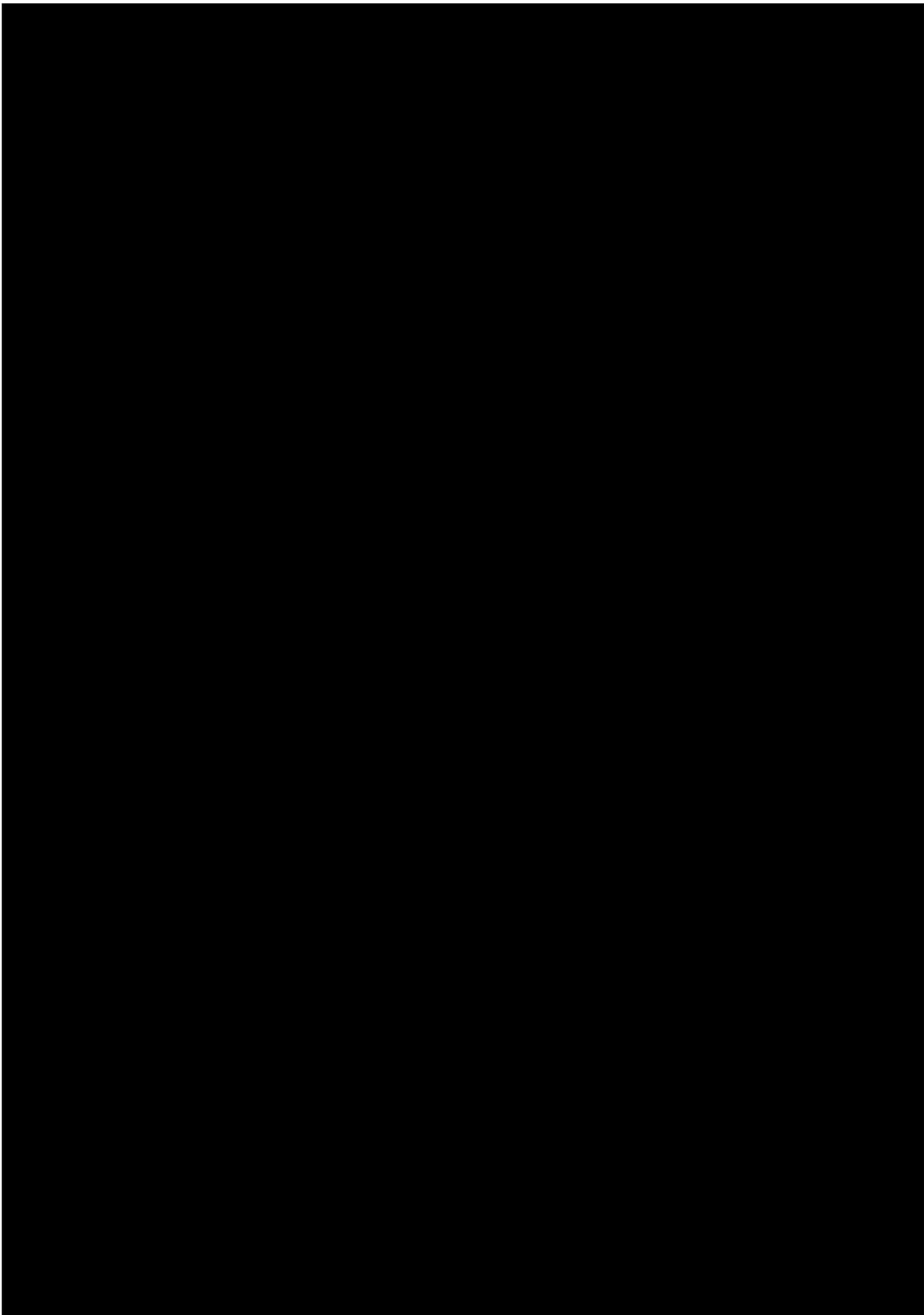
9.2. nib must pay to the Provider any amount which it is obliged in accordance with an Eligible Customer's entitlement to Benefits within twenty one (21) days of the date upon which it receives an invoice properly submitted in accordance with this MPPA.

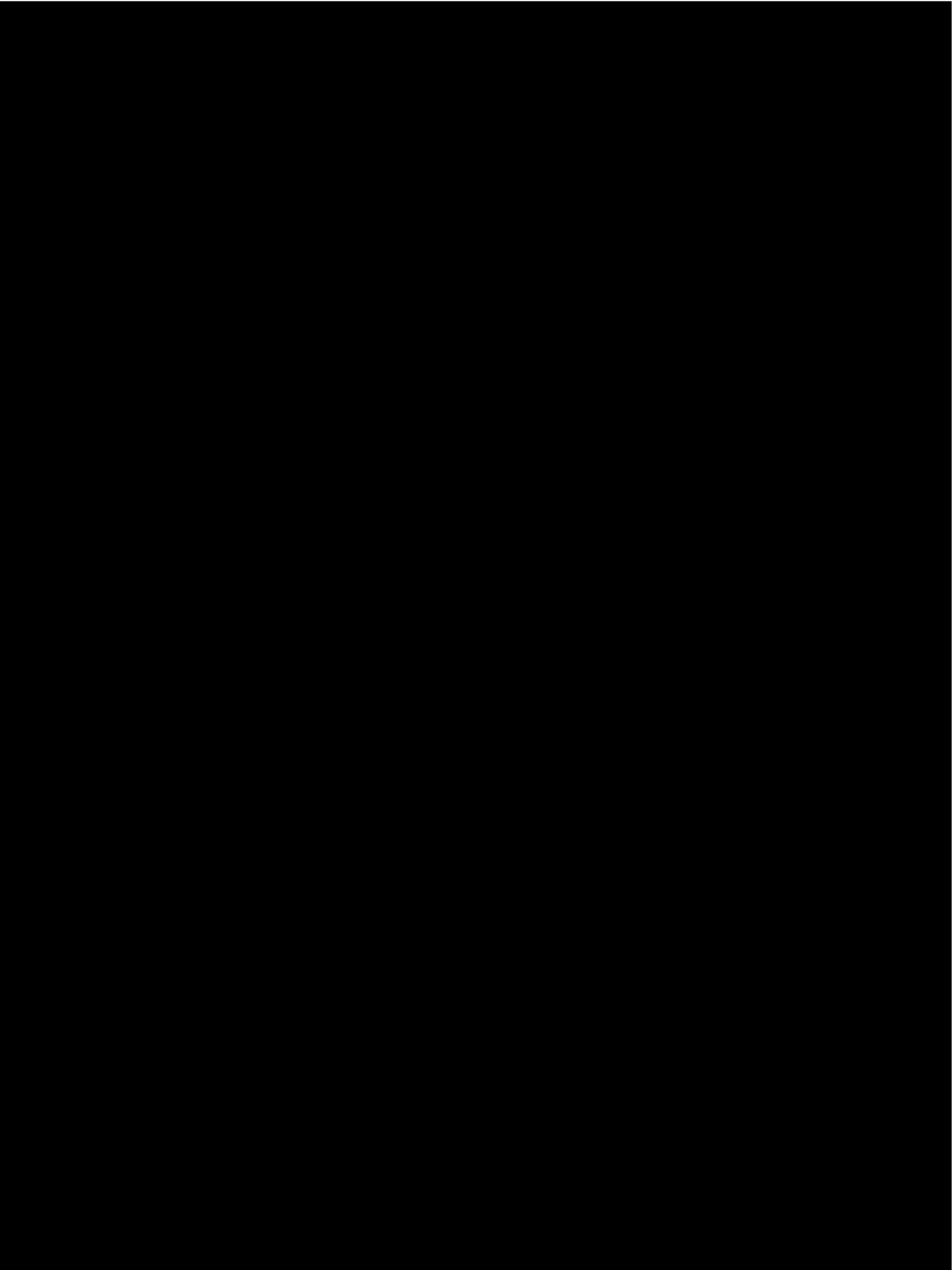
10. INDEPENDENCE

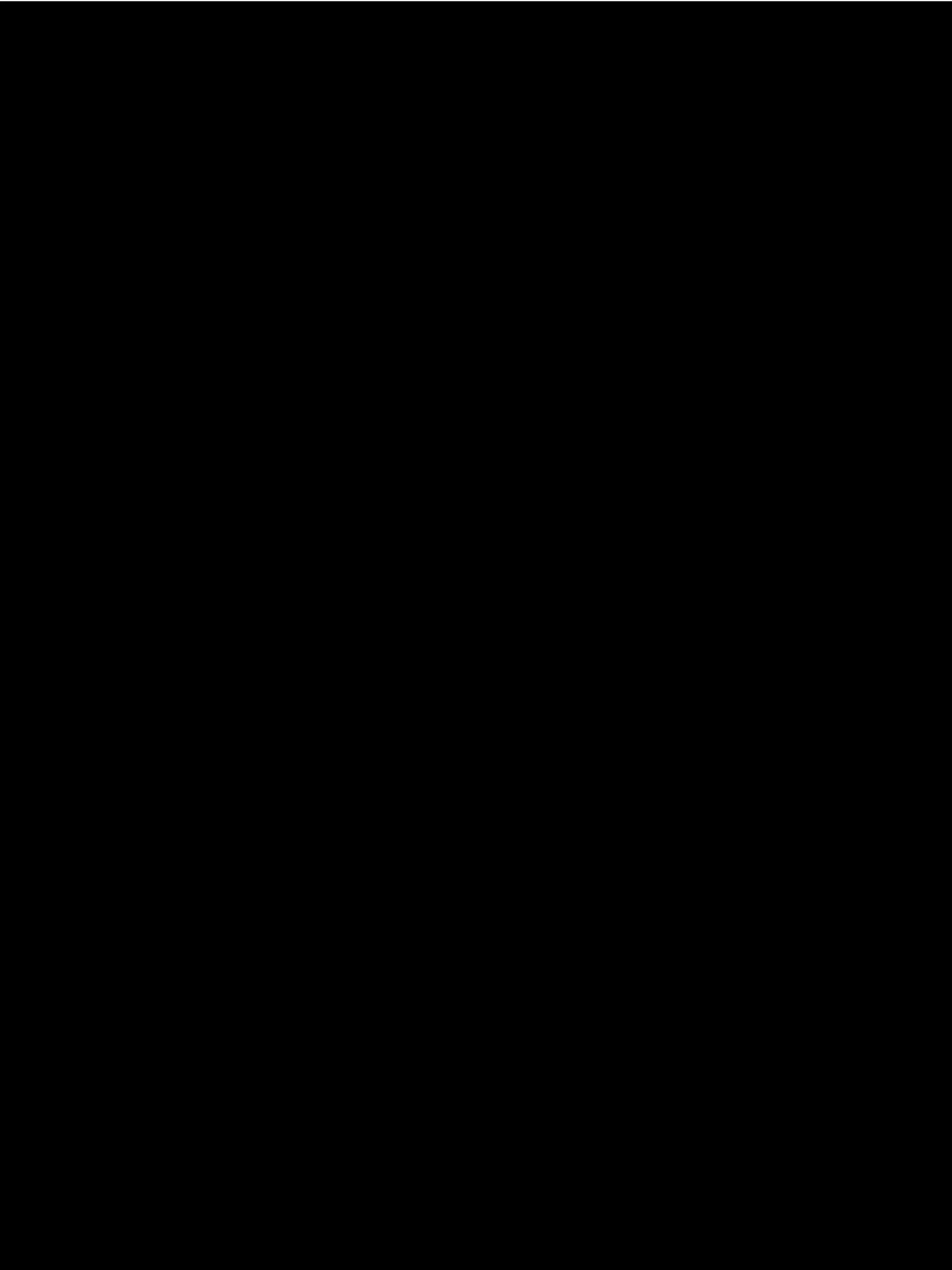
- 10.1. nib is not a health professional or practice and does not provide treatment to the Eligible Customer and shall at no time be deemed to provide any such treatment or services to the Provider's patients.
- 10.2. nib will not interfere with and acknowledges the independence of the Provider providing Specified Services to Eligible Customers under this MPPA. Nothing in this MPPA limits the Provider's professional freedom, within the scope of accepted clinical practice, to identify and provide appropriate treatments.
- 10.3. Without limiting the Provider's independence as set out in clause 10.2, the Provider agrees to follow clinical guidelines as nib may reasonably require from time to time, for the purpose of nib administering the Fund and the payment of claims under the Fund.

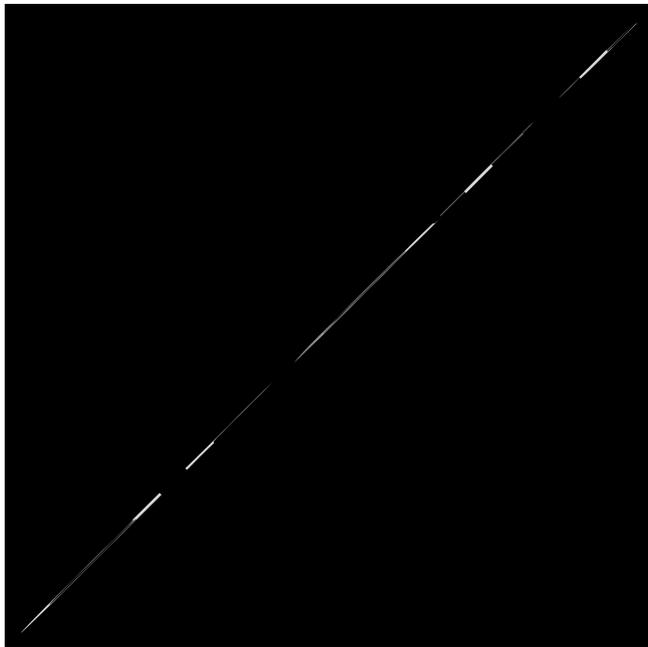
11. FEES FOR SPECIFIED SERVICES

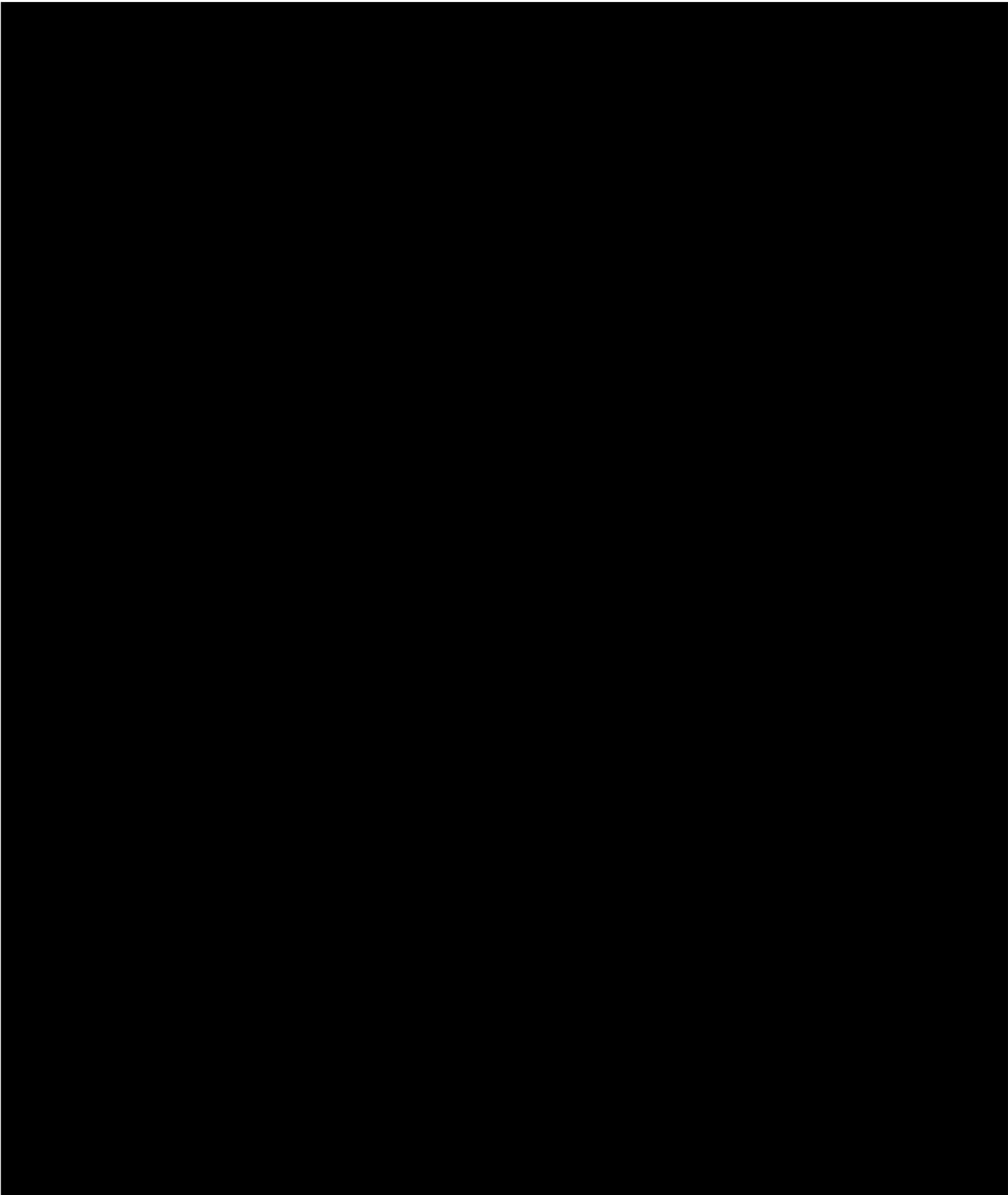
- 11.1. nib shall pay the Provider for Specified Services, the Benefits nib is required to pay for the relevant Professional Service in accordance with this MPPA.
- 11.2. The Provider accepts the Benefits paid by nib for the Professional Service as full and final payment of that service and the Provider must not charge the Eligible Customer any out-of-pocket charges for that service.
- 11.3. The Provider shall not, and must ensure that they do not, without prior written approval of nib, charge an Eligible Customer or nib:
 - (a) fees for Specified Services not listed in SCHEDULE 2 -; or
 - (b) a higher fee for Specified Services than the Maximum Fee; or
 - (c) any additional fees, charges or any amounts (other than those listed in SCHEDULE 2 -) in relation to a Specified Service including any deposits, booking, administration, technology or facility fees or any other such fees related to that Specified Service.











SCHEDULE 2 - Specified Services and Fees

Background

nib has created a new 'no-gap' funding arrangement with the Provider in regards to the Specified Services (primarily joint replacement surgery) and the commissioning of 'at home' patient support (the Program), which nib will offer to Eligible Members.

Program objectives

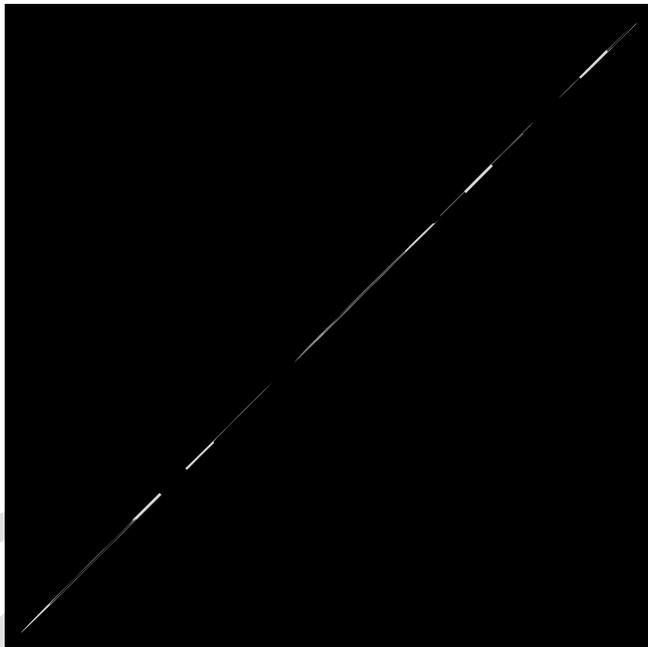
The initial phase of the Program will be conducted with select Providers and Eligible Members that are located in a catchment area to be determined by nib. The objectives of the Program are:

- a) the **primary objective** of the Program is to ensure that Eligible Members will have access to high-quality clinical practitioners in the catchment area to perform specialised joint replacement surgery, and in doing so, nib's Eligible Members will incur no out-of-pocket expenses for that surgery;
- b) the **secondary objective** of the Program is to establish a high-quality post-surgery 'at-home' patient rehabilitation and support program, and make that program available to the relevant Eligible Members, where clinically appropriate.

A list of the relevant Specified Services and Maximum Fees are set out as follows:

Specified Services

MBS item	Specified Service	Maximum Fee
1. 49518	KNEE, total replacement arthroplasty of	
2. 49521	KNEE, total replacement arthroplasty of, requiring major bone grafting to femur or tibia, including obtaining of graft	
3. 49318	HIP, total replacement arthroplasty of, including minor bone grafting	
4. 49321	HIP, total replacement arthroplasty of, including major bone grafting, including obtaining of graft	
5. 49519	KNEE, total replacement arthroplasty of, including associated minor grafting, if performed - bilateral	
6. 49319	HIP, total replacement arthroplasty of, including associated minor grafting, if performed - bilateral	



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ANNEXURE CERTIFICATE

DD-63

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Before me:

AR

.....
Signature of witness

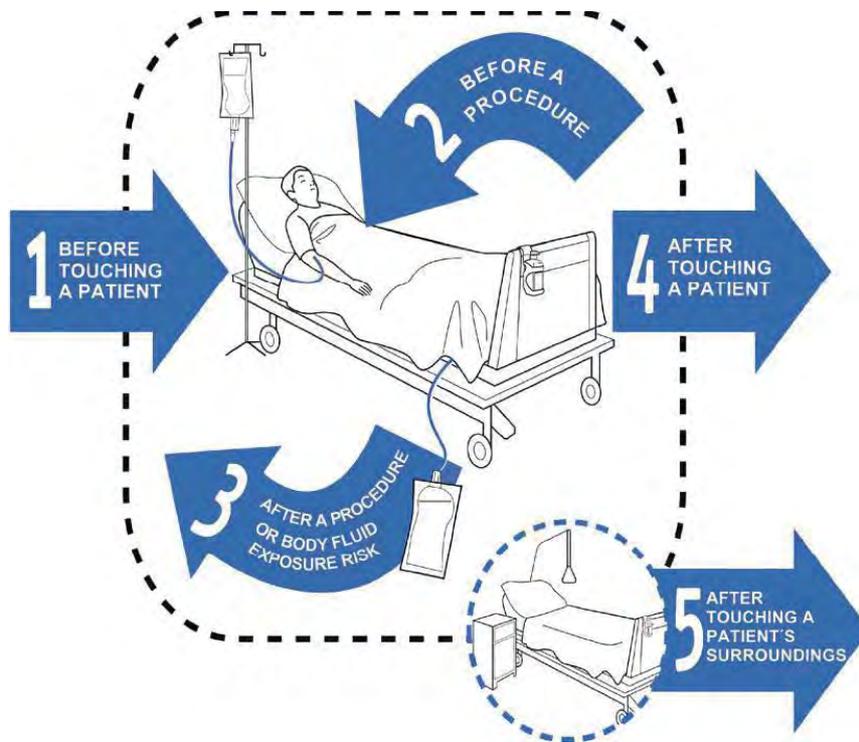
ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.



NHHI

National Hand Hygiene Initiative

National Hand Hygiene Initiative Manual



October 2019

This resource was originally developed by Hand Hygiene Australia under a contract with the Australian Commission on Safety and Quality in Health Care for coordination of the National Hand Hygiene Initiative.

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1 Background

The Australian Commission on Safety and Quality in Health Care (the Commission) established the National Hand Hygiene Initiative (NHHI) in 2008 as part of a suite of initiatives to prevent and reduce healthcare-associated infections in Australia. The Commission contracted with Hand Hygiene Australia (HHA) at this time to coordinate and support implementation of the NHHI, in conjunction with the states and territories, and the private sector.

With the support of HHA and public and private health service organisations, there has been substantial progress in regard to increasing hand hygiene compliance in Australia. HHA has provided significant and valuable support for the NHHI through a range of educational resources, the support of auditing through resource development and training, and in the support of hand hygiene compliance reporting.

After 10 years, and significant success, HHA and the Commission have both agreed that the NHHI coordination and support role will be provided by the Commission. The Commission thanks HHA for its support for health service organisations during this time.

A stakeholder consultation process will form part of a review to advise on the way in which the NHHI can best contribute to the overall requirements of infection prevention and control strategies into the future. The Commission will consider the outcome of this consultation process, and the options for future arrangements, in liaison with states and territories and the private sector to ensure that there is continuity and sustainability of the NHHI. The review provides the opportunity to ensure that the NHHI remains responsive to the future needs of health service organisations.

From 1 November 2019 the Commission is coordinating and supporting all aspects of the NHHI.

For more information go to: <https://www.safetyandquality.gov.au/our-work/healthcare-associated-infection/hand-hygiene>.

1.1 About this Manual

This manual is part of the toolkit for implementing the NHHI. It contains recommendations based on the [World Health Organization \(WHO\) Guidelines on Hand Hygiene in Health Care](#), modified for the Australian setting. It includes information on hand hygiene and infection prevention and control practices associated with hand hygiene.

This manual does not address surgical hand hygiene. See [WHO Guidelines on Hand Hygiene in Health Care](#) for further information.

For more information on infection prevention and control in the Australian health care system see:

- [Australian Guidelines for the Prevention and Control of Infection in Healthcare](#)
- [National Safety and Quality Health Service Standards](#)
- [Australasian College of Infection Prevention and Control](#)

1.2 The effect of hand hygiene on healthcare-associated infection

There is convincing evidence that improved hand hygiene can reduce infection rates. Between 1977 and 2011, there were more than 20 hospital-based studies, including systematic reviews, on the impact of hand hygiene on the risk of HAI were published. Despite study limitations, almost all studies showed an association between improved hand hygiene practices and reduced infection and cross transmission rates. Research published in 2018, describing the effects of the NHHI after eight years, provides even stronger evidence of the association between improved compliance and decreased incidence of HAIs.

It is important to note that, although the introduction of an alcohol-based handrub was a key factor for improvement in nearly all the studies, improved hand hygiene compliance and reductions in HAIs are due to the overall effect of a multi-modal approach to improving hand hygiene promotion strategies. This includes the introduction of alcohol-based handrub, a marked and sustainable increase in hand hygiene compliance, and a significant reduction in HAIs.

1.3 Historical perspective on hand hygiene

Hand washing with soap and water has been used to improve personal hygiene for centuries. However, the link between hand washing and the spread of disease was only established in the mid 1800's.

Below is a summary of key historical events of relevance to hand hygiene and infection prevention and control:

- 1800's: an Austrian doctor, Ignaz Semmelweis, is considered to be the first person who established that hospital-acquired diseases were transmitted via the hands of healthcare workers (HCWs)
- 1980's: first national hand hygiene guidelines published in the USA
- 2000: Didier Pittet et al published a landmark study proving that a hand hygiene culture change program involving the introduction of alcohol-based handrub, education of staff and hand hygiene promotion can significantly improve HCW hand hygiene compliance, and in turn reduce HAIs
- 2002: alcohol-based handrub is defined as the gold standard of care for hand hygiene practices in healthcare settings, whereas hand washing is reserved for particular situations

only

- 2005: WHO released the Advanced Draft of the WHO Guidelines on Hand Hygiene in Health Care, which was based on the most extensive review of literature on hand hygiene in healthcare to date; in 2009, the final WHO Guidelines were released
- 2008: the Commission established the NHHI following endorsement by all Australian health ministers
- 2012: the NSQHS Standards (first edition) were released by the Commission, NSQHS Standard 3: Preventing and Controlling Healthcare Associated Infections included actions requiring health service organisations to have a hand hygiene program consistent with the NHHI and jurisdictional requirements
- 2017: Second edition of the NSQHS Standards released, which maintain the requirements in relation to hand hygiene programs in healthcare organisations
- 2018: HHA published the results of a study investigating the effects of the NHHI after eight years, which showed an association between the improvement of hand hygiene compliance rates in Australia's largest public hospitals and a decline in the incidence of healthcare-associated *Staphylococcus aureus* bacteraemia (SAB).

1.4 Transmission of organisms by hands

Transmission of healthcare-associated organisms from one patient to another via healthcare workers' (HCWs) hands requires five sequential steps:

1. Organisms are present on the patient's skin, or have been shed onto inanimate objects immediately surrounding the patient
2. Organisms must be transferred on the hands of HCWs
3. Organisms must be capable of surviving for at least several minutes on HCWs' hands
4. Hand hygiene by the HCW must be inadequate or entirely omitted, or the agent used for hand hygiene inappropriate
5. The contaminated hand or hands of the caregiver must come into direct contact with another patient or with an inanimate object that will come into direct contact with the patient.

Healthcare workers must perform hand hygiene before and after every patient contact to prevent patients becoming colonised with healthcare-associated organisms from other patients and the hospital environment. Emphasis must also be placed on preventing the transfer of organisms from a contaminated body site to a clean body site during patient care. Hand hygiene should also be performed after contact with inanimate objects, including medical charts and equipment in the immediate vicinity of the patient.

1.5 Barriers to hand hygiene

Poor hand hygiene practice among HCWs is strongly associated with HAI transmission and is a major factor in the spread of antibiotic-resistant organisms within hospitals.

Despite this, efforts to improve the rate of hand hygiene compliance have generally been ineffective or their efficacy poorly sustained. Numerous barriers to appropriate hand hygiene have been reported including:

- Hand hygiene agents causing skin irritation and dryness
- The perception that patient needs take priority over hand hygiene
- Hand washing sinks/basins inconveniently located and/or not available

- The perception that glove use dispenses with the need for additional hand hygiene
- Insufficient time for hand hygiene, due to high workload and understaffing
- Inadequate knowledge of guidelines, protocols or technique for hand hygiene
- Lack of positive role models and social norms
- Lack of recognition of the risk of cross-transmission of microbial pathogens
- Until recently, lack of scientific information showing a definitive impact of improved hand hygiene on healthcare associated infection rates
- Simple forgetfulness.

1.6 Other barriers to hand hygiene

1.6.1 Jewellery and watches

The wearing of jewellery and watches should not inhibit the ability of the HCW to perform correct hand hygiene. Several studies have shown that skin underneath rings is more heavily colonised than comparable areas of skin on fingers without rings. Wearing rings increases the carriage rate of gram-negative bacteria and Enterobacterales on the hands of HCWs.

Hand hygiene policies and education should include a section on appropriate jewellery to be worn in the workplace. The consensus recommendation from WHO is to strongly discourage the wearing of finger and wrist jewellery during healthcare. The wearing of a simple flat band during routine care may be acceptable, but in high risk settings all rings or other jewellery should be removed.

1.6.2 Fingernails, nail polish and artificial nails

Numerous studies have documented that subungual areas (under the nail) of the hand harbour high concentrations of bacteria. Freshly applied nail polish does not increase the number of bacteria recovered from periungual skin, but chipped nail polish may support the growth of larger numbers of organisms on fingernails. Even after careful hand washing or surgical scrubs, HCWs often harbour substantial numbers of potential pathogens in the subungual spaces.

Healthcare workers who wear artificial nails are more likely to harbour gram-negative pathogens on their fingertips than are those who have natural nails, both before and after hand washing. Whether the length of natural or artificial nails is a substantial risk factor is unknown, because the majority of bacterial growth occurs along the proximal 1 mm of the nail adjacent to the subungual skin. Long, sharp fingernails, either natural or artificial, can puncture gloves easily. They may also limit a HCW's performance in hand hygiene practices, and tear or scratch a patient's skin.

Artificial/painted nails refers to all types of nail coverings, including, but not limited to, polish, shellac, signature nail systems and acrylic nails.

Each healthcare facility should develop policies on the wearing of artificial fingernails or nail polish by healthcare workers.

The consensus recommendations from WHO are that HCWs do not wear artificial fingernails, extenders or nail polish when having direct contact with patients, and natural nails should be kept short ($\leq 0.5\text{cm}$ long).

1.7 The National Hand Hygiene Initiative

The NHHI is multi-faceted, and includes the use of alcohol-based handrub, monitoring hand hygiene compliance, education regarding hand hygiene and alcohol-based handrub, and measuring infection rates. Whilst the educational message is applicable to all healthcare settings, monitoring compliance and infection rates is specific to hospitals.

Key features of the NHHI include the following:

1.7.1 Use of alcohol-based handrub

Alcohol-based handrub should be placed at point-of-care including on the ends of patient beds, on trolleys and in clinical areas. Clear signage regarding appropriate use should be present. Ensuring alcohol-based handrub is readily available at the point-of-care can reduce many of the potential barriers to good hand hygiene.

Education should be provided clearly stating the advantages of alcohol-based handrub. Primarily, that it takes approximately 15–20 seconds to decontaminate hands, is less irritating and drying than soap and water, and does not require the use of paper towels. See Chapter 3 regarding specific alcohol-based handrub product selection.

1.7.2 Ensuring uniform hand hygiene education

To assist with improving HCWs' general knowledge about hand hygiene and infection prevention and control, a range of hand hygiene [online learning modules](#) has been designed for specific HCWs.

Executive endorsement of the hand hygiene learning modules as a compulsory requirement for all staff and students has proven successful in many institutions for improving hand hygiene compliance. The program assists with education, even in situations where there are high rates of staff turnover.

The delivery of any broader infection prevention and control education within a healthcare facility should also be used as an opportunity to reinforce the importance of hand hygiene.

The Commission also provides a suite of e-learning [infection prevention and control modules](#). These modules cover the fundamental principles of infection prevention and control and are freely available on the Commission's website.

1.7.3 Monitoring and performance feedback

Hand hygiene compliance is the established outcome for assessing the effectiveness of a hand hygiene program within facilities participating in the NHHI. Hand hygiene compliance auditing is conducted by auditors trained and validated as part of the standardised NHHI training program, using the same auditing tools. This allows for data comparison between Australian healthcare facilities.

For the purposes of national reporting, hand hygiene compliance auditing in health care facilities is currently measured continuously across three audit periods each year.

The number of acute inpatient beds at each facility will dictate the number of

observations to be undertaken once an initial pilot period has been completed (see Section 7.3). Local auditing of hand hygiene compliance can be conducted any time, according to the needs of each organisation, in addition to the national audits.

The standardised hand hygiene compliance audit form or mobile data entry via <https://nhhi.safetyandquality.gov.au/mobile> on a mobile device should be used for all audits (see Appendices 1, 2, 3, 4).

Hand hygiene compliance auditing may not be an appropriate outcome measure for facilities in the non-acute, primary care or mental health settings. A number of additional assessment tools are available for use when compliance auditing is not a suitable outcome measure.

1.7.4 Ensuring culture change

It is imperative that a hand hygiene program is not only about collection of hand hygiene audit data. To ensure culture change and improved hand hygiene behaviours of healthcare staff, a hand hygiene program must include appropriate access to hand hygiene facilities, training and education, promotion, auditing and feedback of results as a minimum. All components are equally important to achieve lasting changes. Healthcare organisations can track their progress and plan for improvement by using the WHO Hand Hygiene Self-Assessment Framework (see Section 8.3).

1.8 Outcomes of the first two years of the National Hand Hygiene Initiative

After two years 521 hospitals around Australia were participating in the NHHI with a national hand hygiene compliance rate of 68.3%. However, hand hygiene compliance before patient contact was 10%–15% lower than after patient contact. Among sites new to the [5 Moments audit tool](#), hand hygiene compliance improved from 43.6% at baseline to 67.8% ($P < 0.001$). Hand hygiene compliance was highest among nursing staff (73.6%) and lowest among medical staff (52.3%) after 2 years.

National incidence rates of methicillin-resistant SAB were stable for the 18 months before the NHHI commenced (July 2007 to 2008; $P = 0.366$), but declined after implementation (2009–2010; $P = 0.008$). Annual national rates of hospital-onset SAB per 10,000 patient-days were 1.004 and 0.995 in 2009 and 2010 respectively, of which about 75% were due to methicillin-susceptible *S. aureus*.

The NHHI was associated with widespread sustained improvements in hand hygiene compliance among Australian HCWs. Although specific linking of changes in SAB rates to the NHHI was not possible, further declines in national SAB rates were expected.

1.9 Effects of the Australian National Hand Hygiene Initiative after eight years on infection control practices, health-care worker education, and clinical outcomes: a longitudinal study

Eight years after the implementation of the NHHI, a longitudinal study of the effects of the national, standardised culture-change program showed that the NHHI had been associated with significant sustained improvement in hand hygiene compliance and a decline in the incidence of healthcare-associated SAB (HA-SAB).

The study showed that between 2009 and 2017, increases were observed in healthcare facility participation nationally from 105 hospitals in 2009 to 937 hospitals in 2017. Increases were also observed in overall hand hygiene compliance (36,213 [63.6%] of 56,978 Moments [95% CI 63.2–63.9] in 2009, compared with 494,673 [84.3%] of 586,559 Moments [84.2–84.4] in 2017; $p < 0.0001$).

Compliance also increased for each Moment type and for each HCW occupational group, including for medical staff (4,377 [50.5%] of 8,669 Moments [95% CI 49.4–51.5] in 2009 compared with 53,620 [71.7%] of 74,788 Moments [71.4–72.0]; $p < 0.0001$). Over the same period 1,989,713 NHHI online-learning programs were completed.

Over this period of time, improved hand hygiene compliance in Australia's major public hospitals ($n=132$) was associated with declines in the incidence of HA-SAB (incidence rate ratio 0.85; 95% CI 0.79–0.93; $p \leq 0.0001$): for every 10% increase in hand hygiene compliance, the incidence of HA-SAB decreased by 15%.

1.10 Who should participate in the National Hand Hygiene Initiative?

The NHHI is designed for all healthcare facilities. Product placement, staff education and program promotion are relevant in all healthcare settings whether an acute tertiary facility, or the local GP clinic. However, the hand hygiene compliance auditing has been designed specifically for acute healthcare facilities.

Routine hand hygiene compliance auditing is not recommended as an outcome measure in the non-acute, primary care, or mental health setting. However, all facilities should be aware of their jurisdictional requirements when planning a hand hygiene program, which may include auditing in these areas. If auditing is required, then it is recommended that it be performed in areas where one-on-one care is provided to a patient by a HCW, and areas where procedures are conducted.

Other program evaluation tools are recommended for use in the non-acute, primary care, or mental health services. These might include: staff hand hygiene knowledge surveys, hand hygiene technique audits, product placement/availability audits, and reports of online-learning program completion by staff. Visit the [NHHI website](#) for relevant audit tools.

WHO has published [Hand Hygiene in Outpatient and Home-based Care and Long-term Care Facilities: A Guide to the Application of the WHO Multimodal Hand Hygiene Improvement Strategy and the "My Five Moments for Hand Hygiene" Approach](#). This document explains the evidence of how the 5 Moments for Hand Hygiene can be incorporated into the non-acute setting. It also gives detailed examples in non-acute settings of how to audit according to the 5

1.10.1 National Safety and Quality Health Service Standards and the National Hand Hygiene Initiative

The primary aims of the National Safety and Quality Health Service (NSQHS) Standards are to protect the public from harm and to improve the quality of health service provision.

The [Preventing and Controlling Healthcare-Associated Infection Standard](#) includes Action 3.8, which requires health service organisations to have a hand hygiene program that:

- Is consistent with the current National Hand Hygiene Initiative, and jurisdictional requirements
- Addresses noncompliance or inconsistency with the current NHHI.

Supporting workbooks and implementation guides and a range of other information for health service organisations, dental practices, and mental health facilities is available on the Commission's [NHHI web page](#).

2 The 5 Moments for Hand Hygiene

2.1 Aim

To ensure all staff involved in the 5 Moments for Hand Hygiene culture change program understand the concepts of the 5 Moments for Hand Hygiene.

2.2 What are the 5 Moments for Hand Hygiene?

The [5 Moments for Hand Hygiene](#) is based on a theoretical model of how infectious agents can be transferred between a HCW and patients. It is inclusive of all occasions where a patient's safety can be endangered by the care given by a HCW, where opportunity exists for transfer of infectious agents between HCW, patient and the healthcare environment.

The levels of evidence that support the 5 Moments for Hand Hygiene are as follows:

- 1A - Strongly recommended for implementation and strongly supported by well- designed experimental, clinical, or epidemiological studies
- 1B - Strongly recommended for implementation and supported by some experimental, clinical, or epidemiological studies and a strong theoretical rationale.

The 5 Moments for Hand Hygiene and associated levels of evidence are:

- **Moment 1:** Before touching a patient (1B)
- **Moment 2:** Before a procedure (1B)
- **Moment 3:** After a procedure or body fluid exposure risk (1A)
- **Moment 4:** After touching a patient (1B)
- **Moment 5:** After touching a patient's surroundings (1B).

2.2.1 Key terms within the 5 Moments for Hand Hygiene

Patient

Includes any part of the patient, their clothes, or any medical device that is connected to the patient.

If the patient were to get up out of bed and walk off, what would still be attached? These items become part of the "patient".

Procedure

Is an act of care for a patient where there is a risk of direct introduction of a pathogen

into the patient's body.

Body fluid exposure risk

Any situation where contact with body fluids may occur. Such contact may pose a contamination risk to either healthcare worker or the environment.

Patient zone

Includes the patient and the patient's immediate surroundings.

The patient zone is a space dedicated to an individual patient for that patient's stay. This area is cleaned between the discharge of one patient and the arrival of the next to minimise the risk of transmission of organisms between patients. Assumptions are generally made that within the patient zone the patient flora rapidly contaminates the entire patient zone; and the patient zone is cleaned between patients.

Within the patient zone there are two critical sites: the clean site (for example, intravenous [IV] access point) that needs to be protected against microorganisms; and the body fluid site (for example, indwelling catheter) that leads to the HCW's hands being exposed to body fluid.

Healthcare zone

Refers to all regions outside of the patient zone. This includes the curtains, partitions and doors between separate patient areas.

The healthcare zone can include shared patient areas as these areas are not cleaned between patients. Assumptions are generally made that within the healthcare zone there are organisms foreign and potentially harmful to all patients, and that transmission of these pathogens to the patient results in exogenous infection.

Curtains

Patient bed curtains are outside the patient zone and are frequently contaminated with microorganisms foreign to the patient inside.

Touching the curtains after caring for a patient is considered to be equivalent to leaving the patient zone.

Hand hygiene should be performed between touching the curtains and touching the patient and vice versa.

2.3 The 5 Moments for Hand Hygiene: detail

Moment 1 – Before touching a patient

WHEN:

Perform hand hygiene on *entering the patient zone before touching the patient*

WHY:

To protect the patient against acquiring foreign organisms from the hands of the HCW.

Hand Hygiene Before:

Examples:

Touching a patient in any way:	Shaking hands, assisting a patient to move, touching any medical device <i>connected</i> to the patient (e.g. IV pump, indwelling catheter), allied health interventions
Any personal care activities:	Bathing, dressing, brushing hair, putting on personal aids such as glasses
Any non-invasive observations:	Checking the patient's pulse rate, blood pressure, oxygen saturation, or temperature. chest auscultation, abdominal palpation, applying ECG electrodes, cardiocography
Any non-invasive treatment:	Applying an oxygen mask or nasal cannulae, fitting slings/braces, application of incontinence aids (including condom drainage)
Preparation and administration of oral medications:	Oral medications, nebulised medications
Oral care and feeding	Feeding a patient, brushing teeth or dentures

TO PREVENT: Patient colonisation with healthcare microorganisms

Healthcare workers are likely to have microorganisms on their hands. Performing hand hygiene before touching a patient prevents these microorganisms being transferred to the patient during patient contact.

Moment 2 – Before a procedure

WHEN:

Immediately before a procedure. Once hand hygiene has been performed, nothing else in the patient's environment should be touched prior to the procedure starting

WHY:

To protect the patient from potential organisms (including their own) from entering their body during a procedure.

Hand Hygiene Before:

Examples:

Insertion of a needle into a patient's skin, or into an invasive medical device:

Venepuncture, blood glucose level, arterial blood gas, subcutaneous or intramuscular injections, IV flush

Preparation and administration of any medications given via an invasive medical device, or preparation of a sterile field:

IV medication, nasogastric (NG), tube feeds, percutaneous endoscopic (PEG) feeds, baby NG/gavage feeds, set up of a dressing trolley

Administration of medications where there is direct contact with mucous membranes:

Eye drop instillation, suppository insertion, vaginal pessary insertion

Insertion of, or disruption to, the circuit of an invasive medical device:

Procedures involving the following: endotracheal tube, tracheostomy, nasopharyngeal airway devices, suctioning of airways, urinary catheter, colostomy/ileostomy, vascular access systems, invasive monitoring devices, wound drains, PEG tubes, NG tubes, secretion aspiration

Any assessment, treatment and patient care where contact is made with non-intact skin or mucous membranes:

Wound dressings, burns dressings, surgical procedures, digital rectal examination, invasive obstetric and gynaecological examinations and procedures, digital assessment of newborn palate

TO PREVENT: Endogenous and exogenous infections in patients

Healthcare workers are likely to have microorganisms on their hands, or may pick up microorganisms from the patient's skin, performing hand hygiene immediately before a procedure prevents these microorganisms entering the patient's body during the procedure.

Moment 3 – After a procedure or body fluid exposure risk

WHEN:

Hand hygiene immediately after a procedure or body fluid exposure risk as hands could be contaminated with body fluid

Even if you have had gloves on you should still perform hand hygiene after removing them as gloves are not always a complete impermeable barrier. Hands may also have been contaminated in the process of removing the gloves.

WHY:

To protect yourself and the healthcare surroundings from becoming contaminated by the transmission of potential organisms from the patient.

Hand Hygiene After:

Examples:

After any Procedure:

See Moment 2

After any potential body fluid exposure:

Contact with a used urinary bottle / bedpan, contact with sputum either directly or indirectly via a cup or tissue, contact with used specimen jars / pathology samples, cleaning dentures, cleaning spills of blood, urine, faeces or vomit from patient surroundings, after touching the outside of a drain tube or drainage bottle

Contact with any of the following:
blood, saliva, mucous, semen, tears, wax, breast milk, colostrum urine, faeces, vomitus, pleural fluid, cerebrospinal fluid, ascites fluid, lochia, meconium, pus, bone marrow, bile, organic body samples e.g. biopsy samples, cell samples

TO PREVENT: Colonisation/Infection in HCWs, contamination of the healthcare environment, and transmission of microorganisms from a colonised site to a clean site on the same patient or another patient.

After touching a patient, the HCW will have the patient's microorganisms on their hands; these microorganisms can be transmitted to the next patient/surface that the HCW touches.

Moment 4 – After touching a patient

WHEN:

After touching a patient. Perform hand hygiene before you leave the patient zone.

WHY:

To protect yourself and the healthcare surroundings from becoming contaminated with potential organisms from the patient.

Hand Hygiene After:

EXAMPLES:

After any Moment 1 except where there has been a potential exposure to body fluids:

See Moment 1 and 2

TO PREVENT: Colonisation/Infection in HCW, and contamination of the healthcare environment

After touching a patient, the HCW has the patient's microorganisms on their hands; these microorganisms can be transmitted to the next patient/surface the healthcare worker touches.

Moment 5 – After Touching a Patient's Surroundings

WHEN:

Hand hygiene *after touching a patient's surroundings* even when the patient has not been touched. Always perform hand hygiene before leaving the patient's room.

WHY:

To protect yourself and the healthcare surroundings from becoming contaminated with potential organisms from the patient's surroundings.

Hand Hygiene After:

EXAMPLES:

After touching the patient's immediate surroundings when the patient has **not** been touched:

Patient surroundings include: bed, bedrails, linen, table, bedside chart, bedside locker, call bell/TV remote control, light switches, personal belongings (including books, mobility aids) chair, foot stool, monkey bar

TO PREVENT: Colonisation/Infection in HCWs, and contamination of the healthcare environment

After touching the patient's environment, the HCW will have microorganisms on their hands; these microorganisms can be transmitted to the next patient/surface the HCW touches.

2.4 Two patients within the same patient zone

Two or more patients may be in such close contact that they occupy the same physical space and touch each other frequently. For example, a mother and her newborn child, or twins occupying the same cot. The two close patients may be viewed as occupying a single patient zone. Hand hygiene is still required when entering or leaving the common patient zone, and before and after procedures on the individual patients, but the indication for hand hygiene when moving between the two patients is little preventative value because they are likely to share the same microbial flora.

3 Alcohol-based handrubs

3.1 Aim

To successfully implement and sustain a hand hygiene program a major factor is to ensure the choice of hand hygiene solution is acceptable to the users, and that all logistical issues in product installation have been addressed.

A well-planned and well-executed installation of hand hygiene products is an essential step in any program to enhance hand hygiene adherence.

Before deciding on the selection and placement of alcohol-based handrub for your facility, it may be useful to provide healthcare workers with the opportunity to evaluate these products.

To gain better compliance, the selection strategy requires input from a multi-disciplinary team.

3.2 Why use an alcohol-based handrub?

Research has demonstrated that alcohol-based handrubs are better than traditional soap and water because they:

- Result in a **significantly** greater reduction in bacterial numbers than soap and water in many clinical situations, (see Figure 3.2 below)
- Require **less time** than handwashing
- Are gentler on skin and cause **less skin irritation** and dryness than frequent soap and water washes, since all handrubs contain skin emollient (moisturisers)
- Can be made readily **accessible** to healthcare workers
- Are more cost effective.

Both soap and alcohol-based handrub products are necessary for the introduction of a hand hygiene program; a soap and water wash is required if hands are visibly soiled, and either product can be used if hands are visibly clean.

As wet hands can more readily acquire and spread microorganisms, the proper drying of hands is an integral part of routine hand hygiene. Single-use paper towels are the most effective way to dry hands and reduce the risk of the transmission of viruses. Evidence indicates that paper towels help minimise the spread of viruses including ones associated with various diseases, including those causing gastro-intestinal infections such as Norovirus and Rotavirus.

In a study published in 2016, Kimmitt identified that jet air dryer produced over 60

times more viral plaques than a warm air dryer and over 1300 times more than paper towels. Air dryers should not be placed in clinical or patient areas due to the possible risks associated with their use. Hand dryers may be considered in non-clinical areas, such as public toilets.

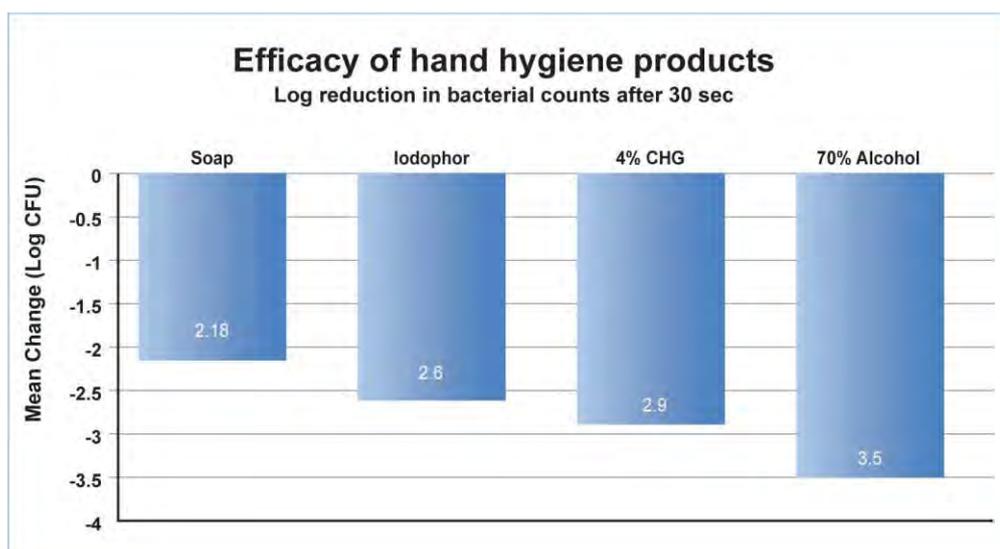
3.2.1 Alcohol-based handrub is the product of choice

Alcohol-based handrub is the gold standard of care for hand hygiene practice in healthcare settings, whereas hand washing is reserved for situations when the hands are visibly soiled, or when caring for a patient with *Clostridioides difficile* or a non-enveloped virus (for example, norovirus).

Alcohol-based handrub is the hand hygiene product of choice for all standard aseptic technique procedures. Surgical scrub is required for surgical aseptic technique. For definitions on standard vs. surgical aseptic technique see Section 3.1.6 of the 2019 [Australian Guidelines for the Prevention and Control of Infections in Healthcare](#).

Alcohol-based handrub is also the recommended product for the prevention of intravascular catheter related infections.

Figure 3.2 Effectiveness of different hand hygiene products



Original data from: Ayliffe GAJ et al. J Hosp Infection. 1988; 11:226

With the exception of non-medicated soaps, every new formulation for hand hygiene should be tested for its antimicrobial efficacy to demonstrate that:

- It has superior efficacy over normal soap, or
- It meets an agreed performance standard.

3.3 Product selection

When selecting an alcohol-based handrub product, it is recommended that:

- The product meets the EN1500 testing standard for bactericidal effect (see Section 3.4.1)

- The Product has Therapeutic Goods Administration (TGA) approval as a hand hygiene product for a healthcare setting.

Other factors that should also be considered include:

- Dermal tolerance
- Practical considerations, such as availability, convenience, functioning of dispenser, and ability to prevent contamination
- Aesthetic preferences such as fragrance, colour, texture and ease of use
- Cost issues.

Please note that the above information on product selection is a recommendation only. The NHHI does not promote specific products. Product selection is ultimately the choice of each healthcare facility.

The following information is the current evidence available to assist healthcare facilities in choosing an appropriate alcohol-based handrub.

3.4 Alcohol-based handrub performance testing (in vivo laboratory based tests)

3.4.1 EN 1500 (European Committee for Standardisation)

Testing requires 18–22 subjects, and a culture of *Escherichia coli*. Subjects are randomly assigned to two groups, where one uses the test handrub, and the other a standard reference solution (60% v/v isopropanol). The groups then reverse roles (cross over design). The mean acceptable reduction with a test formulation shall not be significantly inferior to that with the reference handrub.

3.4.2 ASTM E-1174-13 (ASTM International – used by USA and Canada)

Testing requires two groups of 54 subjects. The indicator organism (*Serratia marcescens* or *E. coli*) is applied and rubbed over hands. The test handrub is then applied. The efficacy criteria are a 2- \log_{10} reduction of the indicator organism on each hand within five minutes after the first use, and a 3- \log_{10} reduction of the indicator organism on each hand within 5 minutes after the tenth use.

3.4.3 Comparison of alcohol-based handrub test procedures

The performance criteria in the above tests are not the same; therefore, a product could meet one criterion but not the other. The level of reduction in microbial counts needed to produce a meaningful drop in the hand-borne spread of HAIs remains unknown.

It is recommended that products tested using the EN 1500 criteria are selected, as this test more closely reflects the use of an alcohol-based handrub in a typical clinical situation. The efficacy criteria for the ASTM E-1174-13 are extremely low, with non-medicated soap and water being able to achieve a 3- \log_{10} reduction of the indicator organism within 1 minute. Furthermore, five minutes is too long to wait between patients after using an alcohol-based handrub.

3.5 The activity of alcohol-based handrubs

The activity of alcohol-based handrubs against bacteria, fungi and viruses is affected by a number of factors, as detailed in Table 5, and including:

3.5.1 Type of alcohol

Isopropanol and ethanol both have in-vitro activity against bacteria, fungi and viruses. When tested at the same concentration, isopropanol is more efficacious than ethanol; however, ethanol has greater activity against viruses than isopropanol.

3.5.2 Alcohol-only alcohol-based handrub *versus* alcohol-chlorhexidine alcohol-based handrub

Although alcohols are rapidly germicidal when applied to the skin, they have no appreciable persistent or residual activity. The addition of a low concentration of chlorhexidine to an alcohol-based handrub results in significantly greater residual activity than alcohol alone and therefore potentially improves efficacy.

Notably, most published clinical studies that have demonstrated reductions in HAIs with the use of alcohol-based handrub, have been associated with the use of alcohol-based handrub that contains at least 70% alcohol (isopropanol), 0.5% chlorhexidine and a skin emollient.

To date there has been one published clinical study showing that alcohol-only alcohol-based handrub is effective in reducing HAIs (indeed, it is one of the formulations recommended by WHO). However, this study was conducted in a developing healthcare setting using a product that has higher concentrations of alcohol than what is currently available on the Australian market.

3.5.3 Alcohol concentration

There is a clear positive association between the extent of bacterial reduction and the concentration of alcohol contained in alcohol-based handrub products.

Furthermore, the concentration for maximum efficacy is different for isopropanol than ethanol. For example, alcohol-based handrub containing 60% isopropanol is associated with similar cutaneous bactericidal activity as alcohol-based handrub that contains 77% ethanol.

When comparing alcohol concentrations, it is important to look at the unit of measure, not just the numerical value of the concentration. Alcohol concentrations can be reported in a number of ways:

- Volume/Volume (V/V)
- Weight/Weight (w/w)
- Weight/Volume (w/V)

These different measures of alcohol concentration are not equivalent. For example, a sample of ethanol labelled with a concentration of 70% V/V is equivalent to an ethanol sample labelled as 62.39% w/w.

Significant differences in the efficacy of alcohol-based handrubs appear to be due to a product's overall concentration of alcohol with higher concentrations being more effective.

3.5.4 Alcohol absorption

The selection of an alcohol-based handrub may be influenced by religious factors. According to some religions, alcohol consumption is prohibited. Recent studies have demonstrated minimal rates of cutaneous alcohol absorption such that there should be no concern for healthcare workers. An Australian study suggested that isopropanol might be less likely to be absorbed than ethanol. Thus, healthcare workers concerned about absorption for religious reasons may elect to use an alcohol-based handrub that contains isopropanol rather than ethanol. An awareness of commonly held religious and cultural beliefs is vital when introducing new concepts to today's multicultural healthcare community.

When implementing a hand hygiene campaign with an alcohol-based handrub in a healthcare setting where religious groups are represented, it is important to include focus groups on this topic to allow HCWs raise concerns about the use of alcohol-based handrubs, help them to understand the evidence underlying this recommendation, and to identify possible solutions to overcome obstacles. The same process should be used when implementing alcohol-based handrubs into areas where there may be concerns about misuse of alcohol.

3.5.5 Solutions versus gels versus foams

Laboratory studies have found that alcohol-based handrub solutions are more effective than alcohol-based handrub gels that contain an equivalent concentration of alcohol. Historically, gels contain approximately 10% less effective alcohol than a similar solution. For example, an alcohol-based handrub gel containing 60% alcohol has similar effective alcohol activity as a 50% alcohol-based handrub solution.

Technically it has proven difficult to develop alcohol-based handrub gels that contain $\geq 70\%$ alcohol without the gel becoming less viscous and more solution-like. Thus, the first generations of gel formulations have reduced antimicrobial efficacy compared with solutions.

There is some evidence to suggest gels are preferred to solutions, and have a trend towards improved compliance. Evidence suggests that the efficacy of alcohol-based gels may depend mainly on concentration and type of alcohol in the formulation, rather than on product consistency.

Alcohol-based handrub foams are also available, but to date are used less frequently. There is currently minimal clinical evidence available for the use of alcohol-based foams.

Recommendations for product selection are outlined in Section 3.3; it does not matter if the product chosen is a solution, gel or foam.

3.5.6 Alcohol-based handrub volume and drying time

The volume of hand rub dispensed is important. One ml of alcohol has been shown to be substantially less effective than 3 ml. The effective volume of alcohol-based handrub (2–3 ml; 1–2 squirts from most alcohol-based handrub dispensers) generally takes 15–20 seconds to dry on hands. Hence, alcohol-based handrub drying time is a convenient indicator that sufficient alcohol-based handrub has been applied. It is important to follow the recommendations of the manufacturer, which are usually found on the alcohol-based handrub bottle.

In clinical practice often smaller volumes are used than what is recommended in the

testing of alcohol-based handrubs. Unless high concentration products are used, there is no significant reduction in contaminants with small volumes of alcohol-based handrub.

It is essential that the team in charge of implementing the alcohol-based handrub educate their staff about the correct use of the product. Specific education is required to ensure the correct dose is administered: it is important to follow manufacturer's instructions for use, and to recognise that the number of squirts required for the alcohol-based handrub to be effective may differ between products, or the size of the healthcare worker's hands. Alcohol-based handrub should never be applied to gloves or to inanimate objects as a cleaning agent.

3.5.7 If hands are wet when alcohol-based handrub is applied

The antimicrobial efficacy of alcohol is very sensitive to dilution with water and is therefore vulnerable to inactivation, especially if only small volumes of alcohol-based handrub are applied. For instance, if 60% isopropanol were rubbed onto wet hands in two portions of 3 ml (each for 1 minute), the mean log bacterial reduction achieved is 3.7, as compared to 4.3 with dry hands. Thus, it is recommended that alcohol-based handrub be applied to dry hands.

Group	Gram-positive bacteria	Gram-negative bacteria	Mycobacteria	Fungi	Viruses	Speed of action	Comments
Alcohols	+++	+++	+++	+++	+++	Fast	Optimum concentration 60-90%; non-persistent activity
Chlorhexidine (2% and 4% aqueous)	+++	++	+	+	+++	Intermediate	Persistent activity; rare allergic reactions
Iodine Compounds	+++	+++	+++	++	+++	Intermediate	Causes skin burns; usually too irritating for hand hygiene
Iodophors	+++	+++	+	++	++	Intermediate	Less irritating than iodine; acceptance varies
Phenol Derivatives	+++	+	+	+	+	Intermediate	Activity neutralised by non-ionic surfactants
Triclosan	+++	++	+	-	+++	Intermediate	Acceptability on hands varies
Quarternary ammonium compounds	+	++	-	-	+	Slow	Used only in combination with alcohols; ecologic concerns

3.6 Alcohol-based handrub limitations

3.6.1 Bacterial spores

Alcohol has virtually no activity against bacterial spores. Washing hands with soap and water is preferred in this situation because it is the best method of physically removing spores from the hands. However, the vegetative form of *Clostridium difficile* (CDI) is highly sensitive to alcohol-based handrub.

The November 2018 [ASID/ACIPC position statement – Infection Control Guidelines for Patients with *Clostridium difficile* Infection in healthcare facilities](#) recommends the primary use of alcohol-based handrub in accordance with the WHO 5 Moments for Hand Hygiene when caring for patients with CDI. Gloves should be used during the care of patients with CDI, to minimise spore contamination, and if hands become soiled, or gloves have not been used, then hands must be washed with soap and water.

3.6.2 Non-enveloped (non-lipophilic) viruses

Alcohol has poor activity against some non-enveloped viruses; for example, rotavirus, norovirus, polio, Hepatitis A. However, there is conflicting evidence suggesting that alcohol-based handrub is more effective than soaps in reducing virus titres on finger pads. Thus, unless gloves have been worn, soap and water hand hygiene is preferred.

3.6.3 Other organisms

Alcohol has a poor activity against tropical parasites, and protozoan oocysts. Hand washing is preferred.

3.6.4 Alcohol tolerance

In an article published in August 2018 some findings were reported regarding the tolerance of *Enterococcus faecium* to alcohol. The study found that some strains of *E.faecium* collected after 2010 were more tolerant to a 23% alcohol solution when compared to older *E.faecium* strains, suggesting a potential increase of tolerance to low concentrations of alcohol. As highlighted in a letter to the editor published in The Lancet Infectious Diseases in September 2018, these study findings are likely to have minimal implication in terms of hand hygiene and the use of alcohol-based hand rubs as these formulations contain much higher alcohol concentrations; for example, 60%–90%. It should be noted that in the same study the authors found no difference between newer and older isolates in bacterial log reduction found when exposed to a 70% alcohol solution. The study findings emphasise the importance of ensuring appropriate selection of alcohol-based handrub for the clinical setting as well as maintaining high rates of hand hygiene compliance. For product recommendations, see Section 3.3.

3.7 Repeated alcohol-based handrub use

There is no maximum number of times that alcohol-based handrub can be used before hands need to be washed with soap and water.

3.8 Glove use

Inappropriate glove use often undermines efforts to sustain correct hand hygiene according to the 5 Moments and has been shown to increase the risk of transmission of HAIs. Wearing gloves does not replace the need for hand hygiene.

Wearing gloves does not replace the need for hand hygiene.

Gloves do not provide complete protection against hand contamination. Microorganisms may gain access to the HCWs' hands via small defects in gloves, or by contamination of the hands during glove removal. Microorganisms colonising patients may be recovered from the hands of approximately 30% of HCWs who wear gloves during patient contact.

Gloves can protect both patients and HCWs from exposure to infectious agents that may be carried on hands. As part of standard precautions single use gloves must be worn for:

- Contact with sterile sites and non-intact skin or mucous membranes
- Any activity that has been assessed as carrying a risk of exposure to blood, body substances, secretions and excretions.

The recommendation to wear gloves during an entire episode of care for a patient who requires contact precautions, without considering indications for their removal, such as for hand hygiene, could lead to the transmission of microorganisms. Hayden and colleagues found that HCWs seldom enter patient rooms without touching the environment, and that 52% of HCWs whose hands were free of vancomycin-resistant Enterococci (VRE) upon entering rooms contaminated their hands or gloves with VRE after touching the environment without touching the patient.

Hand hygiene products and gloves should be made available inside isolation/contact precaution rooms to allow for appropriate hand hygiene to occur during the care of a patient.

When should gloves be changed?

- Between episodes of care for different patients, to prevent transmission of microorganisms
- During the care of a single patient, to prevent cross-contamination between body sites
- If the patient interaction involves touching portable computer keyboards or other mobile equipment that is transported from room to room.

Sterile gloves must be used for surgical aseptic procedures and contact with sterile sites. Single use gloves should always be discarded.

Hand hygiene is required with glove use:

- Hand hygiene should be performed before putting on gloves
- Hand hygiene should be performed after removing gloves
- Gloves should be removed to perform hand hygiene during the care of a single patient as indicated by the 5 Moments for Hand Hygiene
- Single use gloves should not be washed, but discarded.

Prolonged and indiscriminate use of gloves should be avoided as it may cause adverse reactions and skin sensitivity.

For more information on gloves, refer to the [Australian Guidelines for the Prevention and Control of Infection in Healthcare](#) (Section 3.3 Personal Protective Equipment).

Always ask yourself:

- Why am I wearing gloves?
- Am I wearing gloves instead of cleaning my hands?
- Who am I trying to protect?
- Would frequent hand hygiene be better?

3.9 Alcohol-based handrub placement for improved hand hygiene compliance

Critical to the success of the program is having alcohol-based handrub readily available to HCWs in their work area and near the patient, at the point of care. Dispensers act as a visual cue for hand hygiene behaviour, and their strategic and ubiquitous placement makes the product highly accessible for frequent use. Placement of alcohol-based handrub needs to be consistent and reliable. Clinical staff should assist with the decision-making process, as they generally best understand the workflow in their area. Although this may be time consuming the benefit of behavioural adherence will be marked.

Where possible, alcohol-based handrub should be placed at the foot of every bed, or within each patient cubicle. An article by Traore (2007) concluded that “availability of a handrub at the point of care increased hand hygiene compliance independently of the type of product used, time of day, professional category and other confounders”.

The placement of alcohol-based handrub can have a significant effect on the hand hygiene compliance of HCWs. Medical staff have been found to have a hand hygiene compliance rate of 54% when the alcohol-based handrub was in their line of sight on entering a patient’s room, compared to 11.5% when they couldn’t see the alcohol-based handrub dispenser. When designing new healthcare facilities, consideration should be given to appropriate placement of alcohol-based handrubs.

The placement of dispensers next to sinks is strongly discouraged as this can cause confusion for some HCWs who may think they need to rinse their hands with water after using alcohol-based handrub.

Where alcohol-based handrub should be placed

Ensuring alcohol-based handrub is available at the point-of-care improves hand hygiene compliance.

Point-of-care is the place where three elements come together:

- The patient
- The HCW
- The care or treatment involving contact with the patient.

A hand hygiene product should be easily accessible generally within arm's reach of where patient care or treatment is taking place. Products should be accessible without having to leave the patient zone.

The placement of alcohol-based hand rub needs to be aligned with a risk assessment of the patient population. For further information please refer to the [alcohol-based handrub](#) section of the NHHI website for the generic risk assessment form.

The following alcohol-based handrub placement locations are suggested:

- On the end of every patient bed (fixed or removable brackets)
- Affixed to mobile work trolleys (for example, intravenous, medication and dressing trolleys)
- High staff traffic areas (for example, nurse's station, pan room, medication room and patient room entrance)
- Other multi-use patient-care areas, such as examination rooms and outpatient consultation rooms
- Entrances to each ward, outpatient clinic or Department
- Public areas (for example, waiting rooms, receptions areas, hospital foyers, near elevator doors in high traffic areas).

A clear decision needs to be made about whose responsibility it will be to replace empty alcohol-based handrub bottles. Workplace agreements or job descriptions may need to be changed to accommodate prompt replacement of these bottles. Never pour alcohol-based handrub from one bottle into another as this may lead to contamination of the bottle and its contents, and will mix different production batches. Most alcohol-based handrub approved for use within Australian healthcare facilities are registered as a pharmaceutical product, with a batch number to enable tracking of the product should it be required.

3.10 Safe alcohol-based handrub placement

There are a number of risks to patients and staff associated with the use of alcohol-based handrub. However, the benefits in terms of its use far outweigh the risks. A risk assessment should be undertaken and a management plan put in place. This particularly applies to clinical areas managing patients with alcohol use disorders, and patients at risk of self-harm (see Appendix 5).

3.10.1 Placement recommendations

- The maximum size of an individual alcohol-based handrub dispenser should not exceed 500mls
- No more than 80 individual alcohol-based handrub dispensers (each with a maximum capacity of 500ml) should be installed within a single smoke compartment
- In corridors that are at least 1.8m wide, there should be at least 150cm between each alcohol-based handrub dispenser
- Dispensers should not project more than 15cm into corridor egress
- Wall mounted brackets should be located at a height of between 92cms and 122 cm above the floor (avoid placing at eye level)
- Dispensers should not be located over carpeted areas, unless the area is protected by active sprinklers
- Dispensers should not be located over, or directly adjacent to ignition sources (for example, electrical switches, power points, call buttons, or monitoring equipment)
- Alcohol-based handrub dispensers should be separated from heat sources and electric motors
- Dispensers should be installed according to manufacturer's recommendations and to minimise leaks or spills
- Regular maintenance of dispensers and brackets should occur in accordance with manufacturer's guidelines
- Product usage signs should be clearly visible and laminated
- Regular monitoring of each area is recommended for misuse, or removal of product
- Each facility should take adequate care regarding the placement of each dispenser so as to protect vulnerable populations, for example in psychiatric units, drug and alcohol units, paediatric units and units caring for cognitively impaired patients
- Alcohol-based handrub bottles should be designed so as to minimise evaporation due to the volatile nature of alcohols
- Site-specific instructions should be developed to manage adverse events, such as alcohol-based handrub ingestion, eye splashes or allergic reactions.

3.10.2 Clinical area placement considerations

Special consideration is necessary when locating alcohol-based handrub in clinical areas where ingestion or accidental splashing of alcohol-based handrub is a particular risk. Accidental ingestion of alcohol-based handrub has been reported, but is uncommon.

Such areas include:

- Paediatrics – in general, alcohol-based handrub should be located within the point-of-care when caring for children (See Section 3.11)
- Mental Health/Dementia Units – alcohol-based handrub should be located within the point-of-care when caring for mentally ill patients, patients

undergoing alcohol- or drug-withdrawal, or where there are cognitively impaired patients

- Public areas - alcohol-based handrub placement in high traffic areas requires clear signage addressing appropriate use and the need for parents to carefully supervise their children

Bracket design is important since alcohol-based handrub placement may be affected if alcohol-based handrub brackets are ill-fitting (for example, varying sizes of bed rails can affect the efficacy of some alcohol-based handrub brackets). Consider brackets that are removable, or product that can be removed from brackets easily in case short term patient demands warrant it. Take into account bracket availability and installation costs, since these expenses can be substantial.

Small personal bottles that HCWs carry with them may be more appropriate in some of the above areas.

3.11 Soap and water hand hygiene placement

The design of healthcare facilities can influence the transmission of HAIs. Easy access to hand hygiene products can assist in promotion of their use.

The Australasian Health Facility Guidelines have been written to “help disseminate current industry knowledge regarding good health facility design and accepted clinical practice”. These guidelines contain practical information and resources regarding health facility infrastructure, with specific guidance on hand hygiene, hand basin types and uses, and hand hygiene schedule and placement in Part D.

3.12 Paediatric exposure to alcohol

Alcohol-based handrub can be placed in paediatric wards/facilities. The placement of alcohol-based handrub within neonatal intensive care unit (NICU), special care nursery (SCN), maternity wards, and on cots should follow the recommendations above for product placement at point-of-care.

The placement within general paediatric wards should remain within the point-of-care, except where a child may have an intellectual disability or cognitive impairment or where the child could intentionally or unintentionally harm themselves. Personal bottles of alcohol-based handrub could be used in any area where alcohol-based handrub cannot be placed at the point-of-care.

Recent research has shown increasing use of alcohol-based handrubs in the home and community settings, which have corresponded with an increase in the number of calls to poisons centres regarding children misusing the products. However, Miller et al in 2009 report that alcohol-based handrubs appear relatively safe when misused by children under six years of age as the exposure invariably occurred as a brief ‘taste’ or accidental ocular or dermal exposure, resulting in little or no toxicity. This is supported by anecdotal evidence from Australian Poisons Centres, and recent publications from an American Poison’s centre.

Further research has shown that use of an alcohol-based handrub by children in day care centres is safe. Even though children put their hands in their mouth or in contact with other mucous membranes directly after alcohol-based handrub use, there was

nil measurable alcohol detected by breathalyser in any of the children tested.

3.13 Alcohol-based handrub and sterilisation departments

AS/NZS 4187:2014 is the Australian standard for sterilisation departments. Section 5.6.12 Hand Hygiene states that there should be sufficient hand hygiene facilities available and accessible in all work areas. The hand hygiene products for use can be **either** alcohol-based hand rubs or liquid soaps. Hand creams shall not be used when performing reprocessing activities.

3.14 Staff preference

The level of HCW acceptance of alcohol-based handrubs is a crucial factor in the success of any hand hygiene program. The following features can influence alcohol-based handrub acceptability:

- Product availability: product should be readily available within the point of care (for example, bedside) and in all patient-care areas
- The emollient agent(s) in the alcohol-based handrub should prevent skin drying and irritant skin reactions, but not leave a sticky residue on hands
- Risk of skin irritation and dryness. Proactive and sympathetic management of this problem is vital (see Section 3.15)
- Drying characteristics: in general, alcohol-based handrub solutions have lower viscosity than gels and therefore tend to dry quicker
- Fragrance and colour: these may increase the initial appeal but may cause allergic reactions, and are therefore discouraged
- There is some evidence to suggest that gels are preferred to solutions, however it is important for staff to evaluate products themselves prior to implementation where possible.

3.15 Hand care issues

Intact skin is a first line defence mechanism against infection. Damaged skin can not only lead to infection in the host, but can also harbour higher numbers of microorganisms than intact skin and hence increase the risk of transmission to others. Damaged skin on HCWs is an important issue and needs to be seriously addressed.

The vast majority of skin problems among HCWs that are related to hand hygiene are due to irritant contact dermatitis. Irritant contact dermatitis is primarily due to frequent and repeated use of hand hygiene products - especially soaps, other detergents, and paper towel use, which result in skin drying. The initial use of alcohol-based handrub among such healthcare workers often results in a stinging sensation. However, recent studies have suggested that the ongoing use of emollient-containing alcohol-based handrub leads to improvement in irritant contact dermatitis in approximately 70% of affected healthcare workers. Also, the use of an oil-containing lotion or a barrier cream three times a shift can substantially protect the hands of vulnerable healthcare workers against drying and chemical irritation,

preventing skin breakdown.

It is important to ensure that the selected alcohol-based handrub, soaps, and moisturising lotions are chemically compatible to minimise skin reactions among staff.

The following information was developed and provided by The Occupational Dermatology Research & Education Centre, Skin & Cancer Foundation Inc.:

Occupational contact dermatitis is an inflammatory skin condition which occurs when workplace substances damage the skin. Usually the hands of healthcare workers are affected, although other exposed skin may be involved, such as the arms, face and neck.

There are three main types of contact dermatitis: irritant contact dermatitis (ICD), allergic contact dermatitis (ACD) and contact urticaria.

Irritant contact dermatitis (ICD) is the most common form of dermatitis experienced by healthcare workers. It often starts with dryness in the web spaces between the fingers.

Common causes of ICD affecting healthcare workers include:

- Repeated exposure to water, including hand washing and scrubbing
- Skin cleaners, antiseptic washes, detergents, liquid and bar soaps
- Drying of the skin using paper towels
- Heat from hot water
- Sweating, especially when wearing occlusive gloves for extended periods of time
- Glove powder
- Low humidity: hands often get drier in winter

Once ICD has developed, the penetration of allergens (substances that cause allergy) through the damaged skin barrier is facilitated. Similarly, the damaged skin barrier is more prone to transmit infection, so it is important to both prevent ICD and treat it early. The use of alcohol hand rubs reduces the exposure of the skin to irritants when compared to traditional hand washing (incorporating warm water, use of skin cleansers and paper towels), and can reduce the likelihood of developing ICD.

Allergic contact dermatitis (ACD) is a delayed type of allergy that causes dermatitis on areas of the skin exposed to allergens. Allergy is very individual; one person may be allergic to a substance that another person can use without problems.

ACD can occur at any time, after someone has been using the same product for many years or for just a few weeks. Dermatitis generally develops some hours or even 1-2 days after contact with the allergen, but does not occur the very first time an individual is exposed to the substance. People may not have had a history of allergies before and in fact are probably less likely to be 'allergic' types. The clinical features of ACD cannot be reliably differentiated from ICD.

ACD will often complicate pre-existing ICD, when the skin barrier has become damaged. Once an allergy to a substance has developed, it is generally life-long.

Special note: The preservative methylisothiazolinone is currently causing very high rates of ACD. All healthcare workers with contact dermatitis should check the ingredients of their own products and avoid it where possible. Methylisothiazolinone may be found in some liquid soaps, shampoos, sunscreens, hair products, moisturisers and disposable wipes, particularly baby wipes.

Contact urticaria is a different type of allergic skin reaction, occurring immediately rather than being delayed. Allergy to latex, or natural rubber protein, is a form of contact urticaria and healthcare workers are exposed to latex in many brands of disposable gloves but also in other medical products.

Powdered latex gloves also increase the risk for latex allergy as the powder facilitates the transfer of the latex allergen to the skin and also aerolises it, so latex proteins that have attached to the powder can be inhaled, or enter the skin via cracks and splits in the skin.

Factors that may contribute to dermatitis include:

- Fragrances and preservatives. Commonly the cause of contact allergies; these should be kept to a minimum or eliminated when selecting an alcohol-based handrub
- Washing hands regularly with soap and water immediately before or after using an alcohol-based handrub is not only unnecessary, but may lead to dermatitis
- Donning gloves while hands are still wet from either hand washing or applying alcohol-based handrub increase the risk of skin irritation
- Using hot water for hand washing
- Failure to use supplementary moisturisers
- Quality of paper towels.

The management of hand care problems associated with the use of hand hygiene products requires early recognition and a systematic approach to ensure success.

Strategies for minimising occupational hand dermatitis include:

- Use of a hand hygiene product that contains skin emollient to minimise the risk of skin irritation and drying. Several studies have demonstrated that such products are tolerated better by healthcare workers and are associated with better skin condition when compared to plain or antimicrobial soap
- Use the hand hygiene and hand care products supplied by the healthcare facility. The suite of products should be compatible, and less likely to cause irritation due to chemical interaction
- Educating staff on the correct use of hand hygiene products
- Educating staff on caring for their hands, including the regular use of skin moisturisers both at work and at home - such moisturising skin-care products need to be compatible with alcohol-based handrub
- Providing a supportive attitude towards staff with skin problems.

Alcohol-based handrub produces the lowest incidence of irritant contact dermatitis of all the hand hygiene products currently available. True allergy to alcohol-based handrub is rare and allergy to alcohol alone has not been reported to date.

Although some reports have suggested that irritant contact dermatitis can occur in up to 30% of healthcare workers; the incidence of this problem among a recent study of Victorian healthcare workers was extremely low (0.47%), representing one cutaneous adverse event per 72 years of healthcare worker exposure. Minimisation of irritant contact dermatitis is essential for improved hand hygiene compliance.

Healthcare workers should notify the hand hygiene representative if skin irritation occurs following the use of alcohol-based handrub. All complaints should be taken seriously and a review process instigated.

All healthcare facilities should have access to referral for follow up that may include: an Occupational Dermatologist, local Doctor, or emergency department for HCWs with persistent skin problems. See Appendix 6 for an example of a skin care questionnaire for healthcare workers; alternatively go to [the generic skin care assessment form](#).

3.15.1 WHO consensus recommendations on skin care

The WHO consensus recommendations on skin care:

- Include information regarding hand care practices designed to reduce the risk of irritant contact dermatitis and other skin damage in education program for HCWs
- Provide alternative hand hygiene products for HCWs with confirmed allergies or adverse reactions to standard products used in the healthcare setting
- Provide HCWs with hand lotions or creams to minimise the occurrence of irritant contact dermatitis associated with hand antiseptics or hand washing
- Advise that, when alcohol-based handrub is available in the healthcare facility for hygienic hand antiseptics, the use of antimicrobial soap is not recommended
- Recommend that soap and alcohol-based handrub should not be used concomitantly.

For levels of evidence on consensus recommendations please see WHO Guidelines on Hand Hygiene in Health Care.

3.16 Fire safety

A number of studies have confirmed the safety of alcohol-based handrub. Despite many years of use, there have been no documented fires directly related to the presence of alcohol-based handrub in hospital wards in Australia, and only one documented in the USA. To further reduce the risk of fire following the application of alcohol-based handrub, hands should be rubbed together until dry and all alcohol is evaporated (See Appendix 5).

3.17 Ingestion

Accidental and intentional ingestion of alcohol-based products used for hand hygiene have been reported. Alcohol toxicity can occur after ingestion, but the effects depend on the amount ingested, and the age/size of the person ingesting it.

Symptoms and signs of alcohol intoxication include: dizziness, lack of coordination, hypoglycaemia, abdominal pain, nausea, vomiting, and haematemesis. Signs of severe toxicity include respiratory depression, hypotension and coma.

With careful consideration of alcohol-based handrub product placement, and securing product in fixed or lockable brackets in high risk areas (for example, mental health, alcohol detoxification units), the risk of this potential problem can be minimised.

As with any intervention, the availability and use of alcohol-based handrub, while being associated with major benefits in terms of reduced risk of acquiring HAIs, may also occasionally be associated with some small risks. Thus, a carefully considered Risk Management strategy should be employed for the safe use of these products (see Appendix 5).

3.18 Storage and safety

Ensure a material safety data sheet (MSDS) for alcohol-based handrub is available in areas where product is stored (check with local occupational, health and safety regulations).

All alcohol-based handrub products are flammable with flash-points ranging from 21°C to 24°C, depending on the type and concentration of alcohol present. They should be stored away from high temperatures or flames.

When considering the requirements for minor storage, the total quantities of all flammable liquids must be considered. Minor storage of all flammable liquids should be consistent with AS1940:2017 (the storage and handling of flammable and combustible liquids).

For further product safety information contact your product supplier or local fire service.

3.19 Cost

The promotion of hand hygiene is highly cost effective, and the introduction of a waterless system for hand hygiene is a cost-effective measure. While the purchase price of alcohol-based handrub is an important factor in product selection, it is far less important than the acceptability of the alcohol-based handrub to healthcare workers. There is little point having a cheap alcohol-based handrub available that has poor healthcare worker acceptance and is therefore rarely used, resulting in poor rates of hand hygiene compliance.

The key driver for alcohol-based handrub selection should not be simple purchase cost. However, a study in the dental setting has reported that use of alcohol-based handrub is more cost-effective than antimicrobial soap, and the expenditure on alcohol-based handrub products when compared with excess hospital costs associated with healthcare associated infection can easily be justified.

Cost is an important consideration on set-up, and the ongoing funding source within the health service needs to be clearly identified for the sustainable success of the program.

3.20 Detergent wipes for hand hygiene

Detergent wipes or alcohol wipes should not be used for hand hygiene as they are no more effective than washing hands with soap and water. Detergent impregnated wipes are the recommended cleaning product for shared patient equipment. They should be used to wipe over equipment between patients, for example the blood pressure cuff.

3.21 Non-alcohol based handrubs

Use of handrubs other than alcohol-based handrubs is not recommended. This is because of the superiority of alcohol-based handrubs in terms of acceptability and tolerability by HCWs, and activity against a broad range of microorganisms.

In addition, products should meet the EN1500 testing standard for bactericidal activity and be approved by the TGA for hand hygiene use in healthcare settings.

4 Hand Hygiene Promotion and Healthcare Worker Education

4.1 Aim

To develop and maintain an ongoing education program to initiate and sustain hand hygiene behaviour change. All HCWs and support staff should be included in educational activities.

Education is critical to the success of the culture change program and careful planning is essential.

To achieve a high rate of hand hygiene compliance, healthcare workers need education, clear guidelines, some understanding of modes of disease transmission, and acceptable hand hygiene products.

4.2 Education about hand hygiene and the patient

Patients who develop HAIs can potentially have a lengthy recovery process, require further treatment, delayed return to work, and suffer emotional and financial burdens.

Patients receiving care in the healthcare environment expect clean hands on the people caring for them, however most would feel uncomfortable asking a healthcare worker if they had clean hands, or to clean them before beginning their care. Hand hygiene should be performed in front of your patient so that they know you have clean hands prior to their care.

Although HAIs cannot be entirely eliminated, there are strategies which have been proven to significantly reduce their occurrence.

The [Australian Charter of Healthcare Rights](#) states that all people have a right to receive safe and high quality health care that meets national standards and be cared for in an environment that is safe and makes them feel safe. Hand hygiene is one strategy to meet this requirement.

Hand hygiene is the single most important strategy to reduce HAIs and applies to everyone - staff, patients and their visitors.

4.3 Online Learning Management System (LMS)

Hand hygiene education and assessment can play a key role in sustaining good hand hygiene practice and maintaining the NHHI. The implementation of education and assessment will vary between healthcare facilities. An online hand hygiene learning package has been shown to be effective in supporting this process.

The NHHI online learning modules have been developed to increase knowledge regarding hand hygiene practices.

All modules and associated information can be accessed [here](#).

The online learning modules include a series of educational slides, followed by questions, and provide immediate feedback after each section is answered. Users can only move to the next section after they have selected the correct answers. A user is considered “educated in basic hand hygiene theory” on completion of a module.

4.3.1 Hand hygiene online modules

There are a number of online learning modules to assist with education on hand hygiene for different professional groups. The modules developed include:

Allied health module

Target audience: All allied health professionals. An allied health professional is a general term that covers most health professionals who are not doctors, dentists or nurses.

Dental module

Target audience: All dental/oral health staff and students

Medical module

Target audience: All medical practitioners

Non-clinical module

Target audience: Healthcare facility support staff. This includes all staff and volunteers who enter patient areas, but do not provide clinical care for patients.

Nursing/midwifery module

Target audience: All staff performing nursing/midwifery duties.

Renal/dialysis module

Target audience: All staff working within the dialysis clinical setting

Royal Australasian College of Surgeons module

Target audience: All candidates in a surgical training program provided by the Royal Australasian College of Surgeons.

Standard theory module

Target audience: Any person requiring hand hygiene knowledge who does not associate with the other packages available.

Student health practitioner

Target audience: All students who will work as a part of their training within clinical areas of a healthcare facility.

There is also a hand dermatitis learning module, which is hosted on behalf of the Occupational Dermatology Research & Education Centre, at the Skin & Cancer Foundation, Melbourne. This module is aimed at healthcare workers and student health practitioners who would like to learn more about hand care in the clinical environment.

4.3.2 Individual users of the learning management system

The NHHI LMS is freely accessible to anyone wishing to complete online training in hand hygiene.

In order to access a training module, each individual is required to register as a learner the first time they use the system. Once registered, each learner will be provided with a unique login in order to access their training modules, training history, and certificates.

For further information, please see the [LMS Instructions for Learners](#).

4.3.3 Registration of organisations to use the learning management system

Any healthcare facility can become a registered organisation for the NHHI LMS. Registering an organisation provides the ability to report on numbers of staff who have completed the education package.

For information on registering your healthcare organisation, please review the [NHHI online learning frequently asked questions](#).

It is recommended that a hand hygiene learning module be included in the mandatory training competencies for all HCWs. Links to the NHHI LMS could be made available to staff via local training systems, or during orientation programs for new staff.

Ideally new employees should complete a hand hygiene learning module on commencement of employment, or as soon as possible after. This condition could be written into employment contracts, and made a requirement for all student healthcare workers prior to commencement of clinical placements.

Monitoring the completion of these modules can be monitored by the LMS administrators for each individual organisation.

4.3.4 Administrators of the learning management system

On registration of an organisation in the NHHI LMS, an individual is required to be nominated as administrator. This person will have access to the reporting and administration tasks for an individual organisation. There can be more than one individual nominated for this role.

The person who is nominated as the administrator may differ depending on the size of the healthcare organisation. This may be the hand hygiene lead, the education

and training officer, human resources, quality department, or an administrative assistant.

There are two levels of administrator in the NHHI LMS:

4.3.4.1 Organisation administrator

The organisation administrator has access to reporting and administrative tasks for an organisation in the NHHI LMS.

If you have organisation administrator access, please see the [Instructions for Organisation Administrators](#) for further information.

4.3.4.2 Region administrator

The *region administrator* has access to reporting and administrative tasks for one or more organisations in the same region in the NHHI LMS. A region is a group of healthcare organisations (for example a health service with multiple hospitals).

If you have *region administrator* access, please see the [Instructions for Region Administrators](#) for further information.

4.3.5 Troubleshooting

For assistance with questions from learners regarding the NHHI LMS, see:

[Having trouble logging in?](#)

[Frequently Asked Questions](#)

4.4 Education for all healthcare workers

Healthcare worker education is a key component of any multi-modal intervention strategy. Basic education sessions for all healthcare workers should include the following:

- Definition, impact and burden of HAIs
- Common pathways for disease transmission, specifically the role of hands
- Prevention of HAIs and the role of hand hygiene
- 5 Moments for Hand Hygiene – with key messages
 - When to perform hand hygiene
 - How to perform hand hygiene, using alcohol-based handrub or soap and water
 - Use of alcohol-based handrubs
 - Use at point of care
 - Use of clinical scenarios to teach the 5 Moments will improve understanding and uptake in clinical work.

4.4.1 Delivery of hand hygiene education

There can be a high turnover of staff in healthcare facilities. Therefore, as well as introductory education sessions, a program with regular updates should be planned. These could take the form of specific orientation programs, in-service lectures or special workshops. Where possible, hand hygiene coordinators should work with education departments in their facility to identify the most appropriate methods specific to the audience and facility.

On a day-to-day basis in healthcare facilities, many opportunities arise for informal education. These opportunities may include:

- Medical and nursing rounds
- Nurse Unit Manager/clinical unit meetings
- Ward "walkabouts"
- Increased presence on the ward by the hand hygiene program coordinator and infection prevention and control staff
- Program staff acting as a resource for all staff
- Working one-on-one with staff to improve hand hygiene practices
- Corridor/tearoom conversation
- Prompt feedback of hand hygiene compliance results, including rewards/incentives for good results
- Individual HCW performance feedback is encouraged during the audit cycle. This will promote individual behaviour change. If individual feedback is given it is important to stop auditing that individual for that session.

High profile promotional activities are also recommended to raise awareness of hand hygiene. For example, these can be planned to coincide with World Hand Hygiene Day on 5 May each year, or International Infection Prevention Week during October each year.

4.4.2 Using hand hygiene compliance data to target education

Hand hygiene compliance data should be utilised as an educational tool for all healthcare workers. Hand hygiene compliance reports (see Section 7.8 on Reporting Results) give individual facilities the ability to develop targeted education aimed at specific HCW groups or departments. These reports include data on the hand hygiene performance of a number of HCW groups, and will assist with identifying priority areas for education.

Hand hygiene compliance rates are both a useful outcome measure for the hand hygiene program, and a valuable educational tool for HCWs. Reporting local hand hygiene audit results to HCWs is an essential element of a multi-modal strategy. Timely feedback and discussion assists in engaging HCWs in effective cultural change and in developing locally relevant improvement initiatives.

The overall ward reports should be given to the managers of the wards, with subsequent reporting to all ward staff followed by further training as indicated from the audits.

The overall facility reports should be presented to the healthcare organisation management at regular intervals, and should become a standard agenda item for hospital executive and quality and safety meetings.

4.4.3 Staff ownership

Staff ownership of the program should be encouraged and supported through:

- Regular and timely feedback to ward staff of hand hygiene compliance rates – national, state and hospital rates, but specifically their own ward data
- Recognition of each ward/department's achievements
- Enthusiastic ward/department staff should be appointed as hand hygiene "liaison officers" or "ward champions" to take responsibility for hand hygiene promotion in the ward/department
- Ensuring each ward/department nominates a staff member to be accountable for the hand hygiene portfolio (see Section 4.4.1)
- The use of education tools and displays
- Provision of audit tools to ward staff to assess product availability (Appendix 7)
- Staff completion of the NHHI online learning modules. It is recommended that all employees complete the appropriate package on employment and on an annual basis
- Ward-based promotional activities

4.4.1 Hand hygiene program liaison officers

The appointment of ward/department-based hand hygiene liaison officers or champions is helpful in linking the ward and the hand hygiene program and assist with the NHHI.

This role involves:

- Acting as role models for all staff
- Motivating staff
- Facilitating involvement and ownership of the project by healthcare workers in each ward
- Presenting outcome data to staff
- Monitoring product placement and availability by conducting audits
- Assisting with promotional activities in their ward
- Assisting HCWs in their ward to complete the online learning package
- Educating new staff in hand hygiene, including ward/department orientation to hand hygiene product placement, correct usage and storage
- (Optional) hand hygiene compliance auditing as long as the hand hygiene liaison person has been trained as an auditor and is able to be released from their normal duties to conduct audits.

4.5 Education of medical staff

Some of the strategies suggested above may not be appropriate for medical staff. Numerous published studies suggest that medical staff repeatedly under-perform in hand hygiene compliance and can be difficult to reach with education to generate behaviour change. Results from the NHHI demonstrate that medical staff have lower hand hygiene compliance than most other healthcare workers.

Hand hygiene medical champions should become involved and encourage medical staff to act as role models for all others. Although a multi-modal approach is likely to be most effective, one-on-one discussions with key/high profile medical officers are especially valuable, particularly for senior medical staff.

Successful programs should:

- Identify those willing to be role models
- Discuss any potential challenges to implementation with medical staff
- Identify medical opinion leaders, clinical champions and department/unit heads
- Regular attendance by infection prevention and control staff at medical ward rounds, enables informal hand hygiene education to senior and junior medical staff during these rounds
- As with all HCWs, medical staff should be regularly assessed for their rates of HHC and be provided with rapid feedback of results
- Regular scientific presentations at surgical and medical meetings, including

Grand Rounds are especially important

- Target interns and resident medical officers during formal education sessions and orientations that are a required component of all medical training programs
- Encourage all medical staff to complete an online learning module annually.

There are two online learning modules tailored specifically for medical and surgical staff which can be found [here](#).

4.6 Education of student healthcare practitioners

Performing hand hygiene in a healthcare setting is a learned behaviour. To achieve genuine hand hygiene culture change it is imperative that healthcare student education becomes a high priority. The student health practitioner hand hygiene online education module consists of:

- A hand hygiene module giving evidence-based education on all aspects of hand hygiene in healthcare
- Links to extended scope hand hygiene information
- A hand hygiene program implementation checklist for teaching facilities.

Hand hygiene education should ideally be part of the core educational content of all health-related courses. It is important to include students and their mentors in all your hand hygiene education sessions in all healthcare settings.

4.7 Hand hygiene educational tools

There is an array of [NHHI promotional materials](#) available to assist educational sessions as outlined above:

- [Hand hygiene online learning modules](#)
- [Video clips](#)
- A 10 min educational video on “The 5 Moments Explained”, which includes a demonstration of each of the 5 Moments individually, or as a continuous video “The 5 Moments in Action”:
- [Generic slide presentations](#):
 - Targeting specific groups of HCWs on hand hygiene
 - The 5 Moments

4.8 Education of auditors

The education sessions suggested above will not be adequate to equip staff to audit compliance with the 5 Moments for Hand Hygiene. This requires specific training, and may not be suitable for some groups of HCWs (for example, non-clinical staff).

Auditor training can only be provided by the Commission’s endorsed NHHI provider or a coordinator who has passed the required assessments at a Gold Standard Auditor training workshop. Refer to Section 5.6 for details on auditor training.

4.9 Promotion of hand hygiene

Promotion of hand hygiene in each hospital can be undertaken in many ways. The following are a few popular suggestions:

4.8.1 *Talking Walls* campaign

A popular method to assist with staff ownership is the Geneva *Talking Walls* Model.

The principle of *Talking Walls* is to use art and humour to reinforce the principles of infection control and prevention through improved hand hygiene among staff. Staff from each ward can be invited to help design a poster featuring their own hand hygiene message. The resulting posters can then be placed throughout the hospital acknowledging the ward's creativity. This promotes program ownership and reinforces the NHHI by directly involving local HCWs.

4.8.2 Other promotional activities

Many promotional activities can be conducted for little or no cost to the hospital.

- Awards for the best performing ward/HCW category
 - Measure and graph hand hygiene compliance for each ward/department or HCW category around the organisation and award prizes for the best performance, or most improved
 - If you have a network of hospitals together the award could be at a hospital level
- Program Awareness via:
 - Internal magazines/newsletters
 - Pay slip notices
 - Screen savers
- Rewarding individual hand hygiene compliance
 - During hand hygiene observation sessions, awarding staff observed to be highly compliant with hand hygiene with praise/stickers/chocolates
- Competitions
 - Quizzes, crosswords, word search
 - Slogan competitions
- Involve local community
 - Encourage schools/kindergartens to promote hand hygiene
 - Patient involvement in the hand hygiene program

5 Local Implementation of the National Hand Hygiene Initiative

5.1 Aim

To form a multidisciplinary team to lead the implementation of the NHHI at each healthcare facility.

5.2 Program implementation model

Once your facility has identified the need to participate in the NHHI and the hand hygiene compliance auditing program, the following steps are recommended for program implementation:

- Choosing a steering committee, including a hand hygiene coordinator and medical champion who, along with the infection prevention and control team and/or the safety and quality team, will be the core team responsible for the project
- The coordinator should have an understanding of hand hygiene and infection control issues and ideally a broader experience in quality and safety; he/she should be able to access high level management staff within the facility
- The hand hygiene coordinator should attend a Gold Standard Auditor training workshop. Bookings can be made via the [NHHI website](#).
- After successful completion of auditor training a new organisation will be set up for your facility in the NHHI [Hand Hygiene Compliance Application](#) (HHCApp) database to enable hand hygiene compliance data collection
- Choose auditing staff (see Section 5.5) who have time available to assist in the auditing process and are able to attend auditor training
- Conduct a baseline hand hygiene compliance audit in a pilot ward (see Section 5.7 on department selection)
- Introduce an alcohol-based handrub or evaluate a current product on selected pilot wards.
- Place hand hygiene product in the pilot department as per product placement information (see Section 3.9–3.11)
- Educate all staff on the pilot wards on the 5 Moments for Hand Hygiene (see Chapter 2)
- Audit the pilot department and evaluate the impact of the program by comparing

pre and post implementation hand hygiene compliance audit data

- Expand the hand hygiene education and product placement to the departments chosen for NHHI hand hygiene compliance data submission
- Expand the hand hygiene education and product placement to the whole of the healthcare facility
- Monitor the key outcome measure of hand hygiene compliance
- Use the hand hygiene compliance data to guide the hand hygiene program improvement cycle (see Chapter 8)
- Use the WHO Self-Assessment Tool for Program Evaluation (see Section 8.3)

5.3 Forming a hand hygiene project team

The hospital executive can demonstrate commitment and support for the hand hygiene program through interest, participation and regular reporting on the hand hygiene program at executive meetings, and to the hospital board.

5.3.1 Selecting a steering committee

Identifying key members of a health service is a critical element for engaging clinical and non-clinical staff in the project, and for supporting the core hand hygiene program team.

It is important that an executive sponsor is identified and that they are a part of the steering committee. Staff from the departments of infection prevention and control, infectious diseases, microbiology and pharmacy (where available) should have an active role in the program implementation throughout the organisation, and should be the key drivers of the steering committee.

The following list identifies some potential members for this committee:

Project Officer/Program Coordinator	Microbiology laboratory representative	Clinical education representative
Executive member/sponsor	Medical and/or surgical representative	Patient representative/consumer
Medical Champion	Quality Improvement representative	Supply/Stores Department
Infection Control Consultant(s)	Human resources	Allied Health
Pharmacist	OH&S representative	Environmental Services representative
Infectious Diseases Physician(s)	HH program representative from each pilot ward (ward champion)	Public relations/corporate development representative

5.3.2 Allocate roles and responsibilities for the steering committee

Areas for consideration include:

- Line of reporting for committee members
- Staff and patient education
- Hand hygiene program marketing
- Collection of hand hygiene compliance data
- Hand hygiene product selection, including alcohol-based handrub
- Hand hygiene product placement: a well organised and executed plan for installation of hand hygiene products is an essential step in any program to enhance hand hygiene adherence in healthcare settings
- Implementation of policies and procedures including hand hygiene guidelines, participation in hand hygiene education, work, health and safety (WHS) management of alcohol-based handrub (Appendix 5).

5.4 Development of policies and protocols

To embed the change in hand hygiene practices into the culture of each healthcare institution a number of policies need to be developed:

- Hand hygiene policy recommending the use of alcohol-based handrub by all HCWs
- Education of healthcare workers with formal assessment of knowledge about hand hygiene; support for this by hospital executive can greatly assist with its implementation
- Clear documented guidelines about wearing jewellery and acrylic/false nails in clinical areas due to increased risk of microbial colonisation
- Guidelines for management of healthcare workers with dermatitis potentially associated with hand hygiene product use (see Appendix 6)
- Clear guidelines on placement of alcohol-based handrub in healthcare facilities (see Section 3.9–3.11)
- Work, health and safety policy on storage of alcohol-based handrub (as per alcohol-based handrub MSDS from company supplying product) (see Section 3.18)
- Work health and safety risk assessment for product placement (see Appendix 5)
- Protocols for management of accidental ingestion, or splash injury from alcohol-based hand rub.
- Education and evaluation of hand hygiene auditors on knowledge of hand hygiene compliance assessment (see Section 5.6), including yearly requirements for re-validation

- Identify staff in the facility responsible for replacing empty alcohol-based handrub containers, and those responsible for the installation, maintenance and replacement of brackets for alcohol-based handrub.

Alcohol-based handrub products within at the point of care will improve hand hygiene compliance, but multidisciplinary strategies are required to implement and monitor hand hygiene recommendations in the long term.

For other infection prevention guidelines please refer to the [Australian Guidelines for the Prevention and Control of Infection in Healthcare](#).

For information on a 'bare below the elbows' policy see Section 9.4.

5.5 Selecting auditors

Careful thought and planning is required to choose the most suitable people to conduct hand hygiene compliance audits. The appropriate people will vary between facilities.

The number of auditors needed to collect the required amount of hand hygiene compliance data for submission to the Commission's NHHI database will vary depending on healthcare facility size (see Section 7.3).

Points to consider when selecting auditors include:

- Have time available to conduct audits
- Have a background as a clinical health professional
- Availability to attend NHHI auditor training
- Have a good understanding of auditing/feedback/education processes
- Acknowledge and understand safety and privacy concerns of patients and staff
- Have the ability to provide immediate feedback to staff for good hand hygiene practices, and educate on correct hand hygiene practice
- Auditors from a variety of health professions could promote widespread acceptance/ownership/participation in activities to improve hand hygiene within their area

5.6 Hand hygiene auditor training

There are two types of training offered as part of the NHHI: Gold Standard Auditor (GSA) and General Auditor (GA) training.

To ensure consistency of the auditing program and to ensure validation of auditors, GSA training is only available via specific workshops, which will be coordinated by the Commission.

Table 5.6

	Taught by	Can provide hand hygiene education	Can conduct audits	Can train new general auditors
Gold Standard	ACSQHC	Yes	Yes	Yes
General Auditor	Gold Standard	Yes	Yes	No

5.6.1 Auditor training requirements

5.6.1.1 Gold Standard Auditor

To become a GSA, participation is required in a workshop run by either the Commission, or a specific jurisdictional coordinator. GSA workshop content is standardised nationally.

The states and territories participation in GSA training to date should allow for sufficient audit capacity to the end of 2019. Following the transfer of support for the NHHI to the Commission from 1 November 2019, further consultation with the states and territories and the private sector will occur to determine the existing number and distribution of GSAs and a method for projecting the demand for GSAs. The Commission will then establish a training model, which will aim to increase access and develop a sustainable approach to meeting requirements of each jurisdiction. In the meantime, requests for GSA training in 2020 can be made via the NHHI [website](#), or by contacting your jurisdictional coordinator.

Once qualified as a GSA, attendees are given login access to the training resources via the [NHHI LMS](#), which allows access to all teaching materials and marking guides required to conduct GA workshops in their own facilities. If you are a qualified GSA and do not have a login please contact the [NHHI Helpdesk](#).

You are required to provide proof of your currency as a validated GSA before access can be given to the training resources.

5.6.1.2 General Auditor

The mandatory content of the GA training program is identical to parts of the GSA training, as all auditors need to collect data in a standardised manner to ensure the validity of data.

To be a GA, individuals must:

- Complete the Auditor pre-workshop online learning module on the NHHI learning management system (<https://nhhi.southrock.com>),
- Attend and pass a workshop conducted by a GSA. There is a minimum of 5 hours content that must be presented.

See the [Auditor training](#) section of the NHHI website for detailed instructions.

5.6.1.3 Successful completion requirements

All workshop attendees must pass a written and DVD quiz. The pass mark is $\geq 90\%$. Attendees must also show competence in hand hygiene compliance auditing in the practical session.

Gold Standard Auditors must follow a standardised procedure for non-successful participants to gain auditor qualifications. This procedure is available to GSAs via the [Auditor Training](#) pages of the NHHI website.

5.6.2 Inter-rater reliability and validation

Inter-rater reliability should be addressed in the auditor training programs by pairing hand hygiene auditors for observations of the same session and then comparing observations recorded, using the trained and validated person as the gold standard.

Each hand hygiene auditor should be paired with each of the other validated auditors (if more than two observers). Until there is $>90\%$ inter-rater agreement in all recordings (for example, type of HCW, HCW activity, hand hygiene Moment, hand hygiene performance), the official data collection process should not begin.

Intra-rater reliability should be addressed through use of the NHHI 5 Moments training DVD. This DVD should be observed on at least two occasions, with data recorded on the appropriate DVD quiz form or mobile device. The rate of agreement for all recordings is then calculated. If there is less than 90% agreement, hand hygiene observers should seek further training.

If regular auditing is not done, practice sessions are recommended prior to each data collection period to ensure reliable results. Careful attention is required to ensure that observations are recorded correctly and there is consistent reporting, not only by the individual auditors (intra-rater reliability) but also between the various auditors (inter-rater reliability). The hand hygiene team should discuss issues as they arise and reach a united approach.

5.6.3 Annual auditor validation

Annual validation is a method of ensuring all auditors remain up-to-date with their knowledge of the 5 Moments definitions and audit practices. This in turn ensures valid and reliable data being submitted as a part of the NHHI.

All trained auditors, both GSAs and GAs, need to complete annual validation to

maintain their auditor status. This is a NHHI requirement, and if not met will result in the auditor being removed from the HHCApp, and unable to enter data.

It is the responsibility of each hand hygiene program lead to ensure all auditors in their organisation(s) are validated. It is also the responsibility of each GSA to ensure that auditors they have trained have completed their annual validation online learning program and are registered on the [NHHI Auditor Register](#).

This validation is standard for both GSA and GA and requires:

- The annual collection of a minimum of 100 moments; the 100 moments must be entered into HHCApp against the auditor's name.

Hand Hygiene Lead instructions:

- Run the Auditors and Sessions report in HHCApp to provide a list of all auditors attached to your organisation.
- Select the previous 12 months using the Start and End Date.
- Leave the Audit periods at 'All'.
- Check the box to include auditors with no data.
- Review the 'total moments' column.

- The annual completion of the Annual Auditor Validation module. This is required 12 months after the successful completion of the Auditor PreWorkshop Quiz, which is a mandatory component of an auditor training workshop, and can be accessed via: [NHHI Online Learning Modules](#)

Hand Hygiene Lead instructions:

- Run Custom Role Reports 'Any Status/All Learners/Multiple Courses/Result in the NHHI learning management system
- Select 'Annual Auditor Validation' and 'Auditor PreWorkshop' Quizzes
- Select the previous 12 months in the completion date field.
- See [LMS Reporting Instructions](#) for further assistance

5.6.4 Lapsed auditor revalidation

If a period of 12 months or more has elapsed between auditing periods for any auditor, then prior to submitting data they are required to

- Complete the Annual Auditor Validation online learning program
- Contact their facility GSA/hand hygiene program manager. If you are the only auditor in your facility, contact your NHHI jurisdictional co-ordinator
- Undertake a NHHI training DVD quiz
- Forward completed quiz to their hand hygiene lead or NHHI jurisdictional co-ordinator
- Undertake auditing in the clinical setting alongside a current auditor

Auditors who do not collect any data following their training for a period of two years are required to attend another auditor training workshop.

5.7 Selection of departments for auditing

Selection of one department is recommended to start the pilot implementation of the program. It is important to choose a department where motivation and interest is high, and the improvement gain is likely to be substantial, thus impacting on the roll out to subsequent areas.

By piloting the program in one department, any initial problems with product placement or supply, staff motivation and education can be addressed prior to rolling out the program to the rest of the hospital.

Several factors need to be considered when determining which departments should be audited. As hand hygiene is the single most important element of strategies to prevent HAIs, departments known to have greater potential for high infection rates should be targeted. Improvements in hand hygiene compliance rates in these areas will have the greatest impact on the prevention of infection and provide a safer environment for patients. Generally, these departments also have the greatest staff/patient activity and interaction, which results in higher numbers of Moments being audited in shorter time periods.

Auditing departments where there is little staff/patient activity and interaction (for example, non-acute settings) will result in a small number of moments being observed and resources required to undertake auditing may be better utilised measuring other aspects of a hand hygiene program such as product placement and education.

The selection of departments should occur in conjunction with the appropriate committee at the hospital (for example, infection prevention and control, hand hygiene, quality improvement) and with executive approval.

Once a hand hygiene program has been established and hand hygiene compliance is audited regularly, hospitals should ensure all wards/departments participate in the program throughout the year. Auditing and reporting results to each ward/department encourages ownership of the program by the whole hospital.

5.7.1 Department selection for hand hygiene compliance auditing

All eligible departments should be audited a minimum of once per year (ideally each National Audit Period). At least 100–200 moments should be collected for each high risk area each year.

Eligible departments:

Eligible areas provide acute care. For the purposes of the NHHI, they are further stratified into high risk and standard risk:

High risk eligible departments include:

Critical care, neonatal care, oncology/haematology, transplantation, renal. High risk departments may also include those with known or suspected high rates of HAIs, high prevalence of patients with multi-resistant organisms, crowded accommodation, and previous low hand hygiene compliance.

Standard eligible departments include:

Surgical, medical, mixed, maternity, paediatrics, acute aged care, perioperative, emergency departments, radiology, sub-acute.

Other departments that can be included:

The following departments within an acute organisation could be included in National Audits (based on a risk assessment): Ambulatory care, dental, mental health, palliative care, and long term care.

Departments that should not be included:

CSSD, kitchen, laundry, other areas where there are no patients.

6 Auditing hand hygiene compliance

6.1 Aim

To accurately assess hand hygiene compliance in accordance with published guidelines using a standardised hand hygiene observation assessment tool.

6.2 Auditing with the 5 Moments for Hand Hygiene tool

Hand hygiene compliance auditing is the established outcome measure for assessing the effectiveness of a hand hygiene program within the NHHI. Hand hygiene compliance is a valid and reliable measure within the acute care sector, in both public and private hospitals throughout Australia. Data are currently submitted to the NHHI database by the majority of Australian acute hospitals.

The NHHI hand hygiene compliance auditing method is by direct observation of HCWs. Direct observation by trained and validated observers is the gold standard to monitor compliance with the 5 Moments for Hand Hygiene.

Table # Rules for auditing the 5 Moments

Rules	Extended Definition
Moment 1	HH Moment 1 is recorded only once the HCW touches the patient.
Moment 2	HH Moment 2 is recorded <u>immediately</u> prior to any procedure <ul style="list-style-type: none"> Once Hand Hygiene has been performed, nothing in the patient's environment can be touched prior to the procedure starting.
Moment 3	HH Moment 3 is recorded <u>immediately</u> after a procedure of body fluid exposure risk: <ul style="list-style-type: none"> Nothing else should be touched prior to performing hand hygiene Touching the outside of a drain or drainage bag (eg urinary catheter, wound drain, chest tube drain, CSF drain), even when the circuit is not broken, is considered a body fluid exposure risk Can be recorded as a stand alone HH Moment when there is a body fluid exposure risk, but no patient contact - e.g. cleaning a spill of vomit, urine or faeces.
Moment 4	HH Moment 4 is recorded after touching the patient <ul style="list-style-type: none"> Touching the patient surroundings after touching the patient is recorded as a single Moment 4. If after Moment 3 there is touching of the patient surroundings before leaving the patient zone this is recorded as a Moment 4.
Moment 5	HH Moment 5 is recorded when the HCW leaves the patient zone after touching the patient's immediate surroundings and the patient has not been touched. <ul style="list-style-type: none"> When multiple items in the patient surroundings are touched, only one Moment 5 is recorded.
Notes	
Before/After Moments	Generally for every 'before' Moment there should be an 'after' Moment recorded, unless the auditor does not witness the action. <ul style="list-style-type: none"> Moment 1 is generally followed either a Moment 3 or Moment 4 Moment 2 is generally followed by Moment 3 Moment 5 is a stand alone Moment as there is no patient contact. There are a few situations when two "afters" may be recorded sequentially, however you will <u>never</u> have a M1 and a M2 in a row.
Action missed if not observed	The HCW must be observed to perform HH as they approach the patient. If HH is not observed it should be recorded as a "missed" action (i.e. HH not performed).
Only audit what you observe	No "before" Moment can be recorded if auditing commences after a HCW is already touching a patient, or in the process of performing a procedure. No "after" Moment can be recorded unless the Moment is observed.
Curtains	Patient bed curtains are outside the patient zone and are frequently contaminated. Touching the curtains is equivalent to leaving the patient zone. HH should be performed between touching the curtains and touching the patient, and vice versa.
Double Moments	Two moments for HH can occur simultaneously e.g. when moving directly from one patient to another without touching anything in between. In this situation, a single HH action covers the two moments for HH, as Moments 4 and 1 coincide. When moving from touching a patient to performing a procedure on that same patient Moments 4 and Moment 2 coincide. When auditing in either situation, both Moments should be recorded as individual Moments on the data collection form.
When not to record a Moment	HHC is audited by HCW compliance with the 5 Moments; it is not audited by HCW performing a HH action. HH actions not corresponding to a recognised Moment are not recorded, e.g. when a HCW walks into a patient's room, does HH and walks out without touching anything. In this case no Moment had occurred, despite HH taking place, so no Moment can be recorded.

HH = Hand Hygiene; HCW = Healthcare Worker; HHC = Hand Hygiene Compliance

6.3 One action - two Moments

Often two moments for hand hygiene will coincide. Typically, this occurs when moving directly from one patient to another without touching anything in between. In this situation a single hand hygiene action will cover two moments for hand hygiene, as Moments 4 and 1 coincide:

For example, moving from touching one patient to another patient:

- Hand hygiene is performed after touching patient A = Moment 4
- HCW goes to the next patient area and touches patient B on the shoulder = Moment 1
- The one hand hygiene action after touching a patient counts as the hand hygiene for before touching a patient also.

Another example is when moving from touching a patient to performing a procedure on that same patient:

- After touching the patient, hand hygiene performed = Moment 4
- HCW changes the IV fluid bag on the same patient = Moment 2
- The one hand hygiene action after touching the patient counts as the hand hygiene before the procedure.

When auditing in either situation, both Moments are recorded as separate Moments on the audit tool.

If the hand hygiene action (rub/wash) is missed in either of the above situations the Moments are still recorded the same, however both the actions will be entered as "missed".

6.4 When not to record a Moment

Hand hygiene compliance is audited by Moments; it is not audited by hand hygiene action.

It is important to understand that hand hygiene actions not corresponding to an opportunity (or reason for hand hygiene), and therefore are additional and not required, should not be audited by the observer. For example, HCW walks into a patient's room, does hand hygiene then walks out without touching anything – no Moment is recorded.

6.5 Overcoming bias in auditing

Observer bias is introduced by inter-observer variation in the observation. The NHHI training schedule of validation of auditors has been created to minimise this bias.

Selection bias is introduced by selecting HCWs, care settings, and observation times with specific hand hygiene behaviour. In practical terms, this bias can be

minimised by randomly choosing locations (from your set reporting wards) and times of the day to audit.

When HCWs know hand hygiene compliance is being measured, they often initially attempt to behave correctly. This is known as the Hawthorne effect. Evidence suggests that the Hawthorn effect may only increase compliance in areas that already have good compliance rates, but there will be no noticed effect on wards starting with low compliance. This indicates that people who know when hand hygiene should occur will improve their practice under auditing conditions. However, people who don't know the correct hand hygiene Moment to perform cannot improve their performance without further education.

However, with repeated observations, HCWs generally grow accustomed to the observer and are less affected by their presence, particularly if they know the auditor and are comfortable being observed.

6.6 Preparation for collection of hand hygiene compliance data

To ensure valid and reliable data collection, only people trained and validated by the NHHI auditor training program are able to collect data for submission to the NHHI database.

6.6.1 Equipment required to conduct a hand hygiene audit

The following equipment is required to conduct an audit:

- Mobile device with internet access to [NHHI HHCApp](#) or
- [Copies of NHHI audit forms](#) (see Appendix 1)
- [NHHI coding sheet](#) (see Appendix 2)
- [NHHI audit ward summary sheet](#) (see Appendix 9)

6.6.2 Healthcare worker (HCW) parent codes required for auditing

Table 6.6.2.1: Standard codes

HCW Code	Type of HCW	Extended Definition
N	Nurse/Midwife	All nurses – RN, Div 1, Div 2/EN, Midwives, Agency Staff, Domiciliary nurses, Psychiatric
DR	Medical Doctor	All doctors – Consultants, Registrars, Residents, Interns, Visiting Consultants, GPs
PC	Personal Care staff	PSA, AIN, PCW, wardsmen, orderly, warders, ward/nursing assistants
AH	Allied Health	Physiotherapists, Occupational therapists, Dieticians, Speech Pathologists, Radiographers, Pharmacists, P&O, Allied Health Assistants, Podiatrists, Music/Play therapists, Audiologists, Plaster technicians, ECG technicians
D	Domestic staff	Staff engaged in the provision of food and cleaning services, maintenance people
AC	Administrative and Clerical staff	Ward clerks, admissions officers
BL	Invasive Technician	Phlebotomists, Dialysis technicians
SN, SAH, SDR, SPC	Students	Students of N, AH, DR, PC
O	Other	Persons not categorised elsewhere
AMB	Ambulance	Ambulance workers, patient transport

Table 6.6.2.2: Dental codes

HCW Code	Type of HCW	Extended Definition
DO	Dentist	All dentists, specialist dentists
DT	Dental Therapist	Dental therapists, dental hygienist, dental prosthetist, oral health therapists
DA	Dental Assistant	Dental assistant, dental nurse
DL	Dental Technician	Dental technician, laboratory staff (no patient contact)
S	Student	Student, in front of any of the above codes e.g. SDO includes persons undertaking study to become a dentist etc.

6.6.3 Adding personalised healthcare worker codes

Organisation administrators can add their own HCW codes into the HHCApp system. These codes will need to be listed under one of the HCW parent codes (see Section 6.7.2). For example, data could be collected specifically on surgical registrars by adding “Surgical Registrar” under the parent code of DR. This allows for facilities to run local reports for specific groups of HCWs.

Please see the [HHCApp Instructions for Use](#) for detailed instructions on how to add personalised HCW codes.

6.7 Conducting a NHHI hand hygiene compliance audit

This section details the steps required to conduct a hand hygiene compliance audit:

6.7.1 Timing of audits

Three NHHI hand hygiene compliance audits are conducted each year (see Section 7.3). It is recommended that auditing commences at least six to eight weeks prior to the due date for data submission. This allows time for feedback/reporting of results, education, or any other interventions to improve hand hygiene compliance to be implemented in the eight weeks prior to the next audit cycle.

Some facilities are required to report hand hygiene compliance results on a monthly basis, and are therefore required to audit on an ongoing basis throughout the year. If this is the case it is still important to feedback results and to implement new interventions at regular times throughout the year. If you need to report monthly, please consider reporting on your progress with your interventions/action plans rather than just “data” each month, then after the close of an audit period, report on your data (three times a year).

6.7.2 Time to complete a hand hygiene compliance audit

To achieve valid results, hand hygiene compliance should be assessed on a defined minimum number of hand hygiene observations (Moments). The time taken to complete the required number of observations will vary depending on the level of clinical activity in the observed area, the experience of the auditor, and the time of day the audit is conducted.

The data collection schedule will be influenced by the number of acute beds in each facility (see Section 7.3), the number of trained staff available to undertake hand hygiene observations, and the option taken for the selection of wards (See Section 5.7). Hand hygiene compliance rates should be reflective of a cross-section of the facility’s healthcare workers, rather than just repeated or prolonged observations on a small number of healthcare workers.

6.7.3 Preparation of the wards

Unit managers should be notified prior to commencing compliance auditing. Wards/departments should be asked to ensure alcohol-based handrub products are in all the appropriate places before auditing commences. If there are barriers to hand hygiene (for example, no available alcohol-based handrub, soap or paper towels), this should be recorded in the notes section of the audit tool, then reported to the shift or unit manager prior to leaving the area.

6.7.4 Conducting a hand hygiene compliance audit

The following steps are involved when conducting a hand hygiene audit:

- Arrive at target ward/department and introduce yourself to the shift manager and inform them of your role
- Always perform hand hygiene upon entering a ward to audit. It is very important to lead by example
- Hand hygiene auditors are encouraged to be open and honest about what they

are doing, and show the audit tool and how the data collected is de-identified; this may be for staff, patients or visitors

- There needs to be at least one patient and one HCW present in a room to start auditing; if neither are present, move to another room
- Auditors need to position themselves to view the patient bed, sink, and alcohol-based handrub area; however, they must remain out of the workflow area of the observed staff. The presence or absence of a convenient location from which to observe patient beds and hand hygiene facilities may impact on which patient bays are selected for observation
- When a patient's bed curtains are drawn, permission should be sought from the relevant HCW and patient to allow auditors to continue to view activities in the area. Although there may be some occasions when this is not appropriate, these are rare. Observing HCW activities behind closed curtains in the ICU is often necessary
- Hand hygiene compliance should be assessed on all categories of HCWs who enter observed ward bays; try not to observe the same HCW for the entire audit session
- The number of HCWs observed at one time depends on their level of activity and the competency of the auditor. More than one HCW can be observed simultaneously, provided their hand hygiene Moments can be accurately observed and recorded. If this is not possible, then the compliance of additional HCWs should not be recorded until the index HCW has left the bay, or has ceased activity. It is better to record fewer Moments accurately than many Moments inaccurately.
- A hand hygiene Moment is only documented when the field observer can accurately observe the HCW and the Moment that has been completed. If an auditor is unsure whether the observed HCW performed hand hygiene, then such Moments should not be recorded. The only exception is when a HCW is observed to enter a room and go directly to the patient.
- A Moment finishes when a HCW:
 - Moves from one patient to another
 - Leaves the room on completion of patient care
 - Touches the curtain partition in a multi-patient room
 - Moves from touching a patient to doing a procedure or vice versa.
- A Moment can finish in another area outside a patient room if patient care is not yet completed; for example, transporting a bedpan to the pan room
- The observational audit session has no specific time frame, it can be conducted for as long or as little time as the auditor has allocated

- At the conclusion of an audit session the following needs to be completed:
 - Thank the shift manager and highlight any problems that need addressing immediately; for example, no hand hygiene product available
 - If data is collected on a mobile device a report can be generated immediately to provide feedback to the ward.

There can be circumstances where it is not appropriate to conduct a hand hygiene observation session; these include:

- Emergency situations where hand hygiene is secondary to patient safety (for example, when any hospital 'code' is called)
- End-of-life care
- If the patient, or patient's family object
- During private discussions between HCWs and patient/ patient's family.

6.8 How to use the hand hygiene audit tool

All hand hygiene compliance data should be recorded for each of the 5 Moments either via a mobile device that syncs data directly into the NHHI HHCAApp database, or on the standard NHHI paper data collection form (see Appendix 1) and later manually entered.

The NHHI hand hygiene compliance audits can only be conducted by trained and validated staff. Data collection can be via paper or mobile device. However, the use of mobile devices for data collection is strongly recommended, as this removes duplication of data entry.

6.8.1 Data collection via a mobile device

If using a mobile device, user instructions can be found on the [NHHI website](#).

In particular, please read the mobile device troubleshooting guide. Versions are available for both [Apple](#) and [Android](#) devices.

Access to the mobile data entry site is via a mobile phone/tablet device, using this URL: <https://nhhi.safetyandquality.gov.au/mobile>

There are multiple data validation codes within the mobile data entry system that will ensure that the required information is entered correctly.

To enable practice using either version of HHCAApp, without harming your data set, you can use the following practice login:

Auditor Username: Ignaz

Password: Ignaz1

Each trained auditor requires an individual login to enter hand hygiene data. Logins must never be shared.

6.8.2 Paper based data collection – Using the NHHI Audit Tool

For each session fill in the demographic details on arrival at target ward

- Health Service = Hospital or facility name
- Session number = The audit number for that particular ward which is then transferred to the hand hygiene ward summary sheet (see Appendix 9)
 - The first audit on a specific ward will be session number 1
 - The second audit on the same ward will be session number 2
 - The first audit on a different ward will be session number 1 on that ward
- Start and Finish times are for your own personal statistics to enable you to calculate the amount of time it takes to conduct each audit. This information can then be reported to your senior management to assist with staffing requirements.

For each Moment observed the following should be recorded on the audit form:

- HCW code – needs to be filled in every time a Moment is observed
- Moment – fill in the Moment observed.
 - Only one Moment should be filled in per box. If multiple Moments are observed, a new box needs to be filled in for each moment (see Appendix 3)
- Action – needs to be filled in for every Moment observed or missed:
 - If no hand hygiene action is observed then it is recorded as a missed action
 - If the HCW performs hand hygiene then proceeds to touch their face/nose/mouth or touches items in the healthcare environment prior to touching the patient then this should be recorded as a missed hand hygiene action
 - If a HCW is observed to do hand hygiene incorrectly (for example, one handed, minimal volume alcohol-based handrub or no soap) this should be recorded as a missed action
- Gloves – are only recorded if the HCW puts gloves on in a Before Moment (1 or 2), takes gloves off in an after Moment (3, 4, or 5), or continues from one Moment to another with the same pair of gloves:
 - Even if gloves are worn for patient care, hand hygiene still needs to be performed and recorded before and after glove use
 - If no gloves are worn, then the “gloves” box is left blank.

6.8.3 Tips for accurate data collection and entry

On a mobile device each new auditing session should be started on the Sessions page by pressing the Add Session button.

For paper-based data collection each session on each ward should be recorded on a new data collection form.

6.8.4 At the conclusion of the ward visit:

For mobile data collection:

- Ensure you press the Done button, and press OK to the message asking if you have finished with this session.
- Sync your data
- Logout by pressing the Logout button and accept and confirm the logout.

For paper based data collection:

- Check that all demographic fields on each NHHI 5 Moments audit sheet are correct and legible
- Check that there is a HCW/Moment/Action (+/- Gloves) in each box, if one item is missing that Moment needs to be crossed out as it is incomplete and it cannot be used
- Add up total number of Moments, and the total number of correct Moments (rub or wash) collected and write the total on the bottom right corner of audit sheet (see [Appendix 1](#))
- Fill in HHA ward summary sheet for each session on each ward ensuring that all fields are filled in (see [Appendix 9](#)).

6.9 Patient safety and privacy during hand hygiene audits

Any unsafe practices that are observed during hand hygiene auditing should be addressed immediately or reported to the appropriate manager for follow-up; otherwise, compliance rates should be reported after an audit has been fully completed.

Observation does not justify infringing the principle of patient privacy. Auditors should show discretion regarding where they place themselves and their movements whilst conducting audits. It is recommended that patients be informed on admission that hand hygiene audits are regularly conducted as a quality improvement activity. Patients or their family may request they not be involved in an audit.

6.10 Hand hygiene and healthcare workflows

No HCW deliberately chooses not to perform hand hygiene as it is required for patient, staff and environmental safety. Non-compliance with hand hygiene according to the 5 Moments may be as a result of the HCW's environment or workflow. If a HCW doesn't have the right equipment, or hand hygiene product easily available they will be unable to perform hand hygiene as required.

Two common clinical activities where hand hygiene compliance is often suboptimal have been mapped out below. This process mapping identifies workflows to maximise hand hygiene compliance by making it easier for staff to comply with the 5 Moments for Hand Hygiene. Examples available on the NHHI website include:

Blood Collection

- Practice Guidelines
- Audit Guidelines

Dialysis

- Practice Guidelines
- Audit Guidelines

When auditing hand hygiene compliance, it is worthwhile to note if there are particular activities of patient care where hand hygiene is regularly suboptimal. To address this, ask the relevant staff to assist you to map out the required task (see above examples), and to design a solution themselves to make hand hygiene by the 5 Moments easier to comply with. Involving staff in this process promotes a sense of ownership of hand hygiene and hand hygiene improvement.

7 Data submission, validation and reporting

7.1 Aim

To enable correct data entry, data submission to HHA, and accurate reporting of hand hygiene compliance results.

To ensure all data collected is validated as a correct representation of hand hygiene compliance.

7.2 Hand Hygiene Compliance Application

The HHCApp has been developed for use by Australian hospitals to conveniently report their hand hygiene compliance rates as part of the NHHI. The HHCApp is an online web-based application for hand hygiene monitoring, consistent with the WHO hand hygiene observation method.

The HHCApp is the portal to the NHHI database for data entry and reporting of all hand hygiene audit data. Data can only be collected and entered by trained and validated hand hygiene auditors. Once auditor training has been completed the trainer is responsible for supplying a personalised login for each auditor to use to enter data into the HHCApp.

All new healthcare facilities joining the NHHI need to contact the Commission to be set up in the HHCApp database and to be given login access. A pre-requisite to being given access to HHCApp is having a trained auditor at the facility who is able to manage data collection and reporting.

There are two options for data entry into HHCApp:

[HHCApp Desktop](#)

The desktop version allows the user to enter hand hygiene compliance data that has been collected on paper. If a user has administrator access, HHCApp desktop can also be used to access reports and administrator functions.

[HHCApp Mobile](#)

The mobile version allows an auditor to enter hand hygiene data in real time as they audit. **HHCApp Mobile is not an App**; it is a webpage that can be accessed via the internet browser of a mobile device. If using this option to enter data, please ensure you login to begin, and when finished, sync your data and use the 'logout' button on completion to minimise errors.

7.3 Requirements for national data submission

National hand hygiene compliance audits should be undertaken at three **set** times each year.

National Audit Periods:

Audit One: 1 November to 31 March

Audit Two: 1 April to 30 June

Audit Three: 1 July to 31 October

Entry of data via the HHCApp is required by the last day of each audit period. No late data entry will be accepted.

Data can only be collected by trained and valid hand hygiene auditors.

Each organisation needs to ensure that the data they submit is correct. Failure to verify data may result in hand hygiene compliance data not being accepted into the NHHI data set.

The hand hygiene lead for each organisation is required to press the 'submit for approval' button in HHCApp to demonstrate that data collection has been completed. Data submission can be completed anytime in the lead up to the final day of the audit period, but must be completed by the last day. For further information: [How to submit a completed audit](#)

Please note: By pressing the 'submit for approval' button you are closing off the audit for your organisation, which does not allow for further data entry for that audit period.

7.3.1 Acute hospital data submission

Both public and private acute hospitals are required to follow the department selection process (See Section 5.7.1), collect the required number of moments as per Table 7.3.1.1 below, and then submit their data to the NHHI three times a year. See: [Guidelines for Data Submission](#).

Table 7.3.1.1

Number of acute inpatient beds	Minimum Total number hand hygiene moments per audit
> 400	2,450
301 to 400	2,100
201 to 300	1,750
151 to 200	800
101 to 150	600
51 to 100	200
25 to 50	100
<25 **	50

** Auditing in hospitals with <25 beds is dependent on jurisdictions. See Table 7.3.1.2 below.

Table 7.3.1.2

Jurisdiction	Auditing required in hospitals <25 beds
New South Wales	Yes
Victoria	Yes
Queensland	No
South Australia	No – refer to jurisdictional representative for options
Western Australia	No – further information here
Tasmania	Yes
Northern Territory	Yes
Australian Capital Territory	Yes

7.3.2 Day hospital data submission

Day hospitals are required to collect the required number of moments as per Table 7.3.2.1 below, and then submit their data to the NHHI three times a year. See the recommendations for data collection in [day hospitals](#) and [Guidelines for Data Submission](#).

Table 7.3.2.1 Day hospital size categories and required number of moments by hospital size

Day Hospital Size	Definition	Required number of hand hygiene audits per year	Required number of hand hygiene observations per facility
Large	Standalone facility performing >5,000 procedures per annum	3	350
Medium	Standalone facility performing 2,000 - 5,000 procedures per annum	3	200
Small	Standalone facility performing <2,000 procedures per annum	3	100

7.3.3 Standalone/Satellite Dialysis/Oncology data submission

Standalone/satellite dialysis/oncology centres are required to collect the required number of moments as per Table 7.3.3.1 below, and submit their data to the NHHI three times a year. See the recommendations for data collection in [dialysis/oncology centres](#) and [Guidelines for Data Submission](#).

Table 7.3.3.1 Standalone/Satellite Dialysis/Oncology size categories and required number of moments per category

Peer Group	Definition	Required number of hand hygiene audits per year	Required number of hand hygiene observations per facility per audit
Large	Facility performing $\geq 5,000$ procedures per annum	3	200
Small	Facility performing $< 5,000$ procedures per annum	3	100

7.3.4 Dental data submission

Where sites deem hand hygiene auditing to be appropriate Table 7.3.4.1 below provides guidance regarding the collection of representative hand hygiene compliance data by solo, group and hospital based dental services as part of the NHHI. See also [Guidelines for Data Submission](#).

Table 7.3.4.1 Dental service description and required number of moments by size

Peer Group	Definition	Required number of hand hygiene audits per year	Required number of hand hygiene observations per facility per audit
Solo practice, solo practitioner or very small oral health service	An oral health/dental practice with a single dentist or an oral health service with a single dental chair/surgery	Hand hygiene compliance auditing not appropriate	
Small oral health service/dental practice	Oral health/dental practice with a total of 2 - 5 dental chairs/surgeries in one or more locations	3	50
Medium sized oral health service/dental practice	Oral health/dental practice with between 6 and 10 dental chairs/surgeries in one or more locations	3	100
Large oral health service/ dental hospital	Any dental oral health services/dental hospitals with more than 10 dental chairs/surgeries in one or more locations	3	200

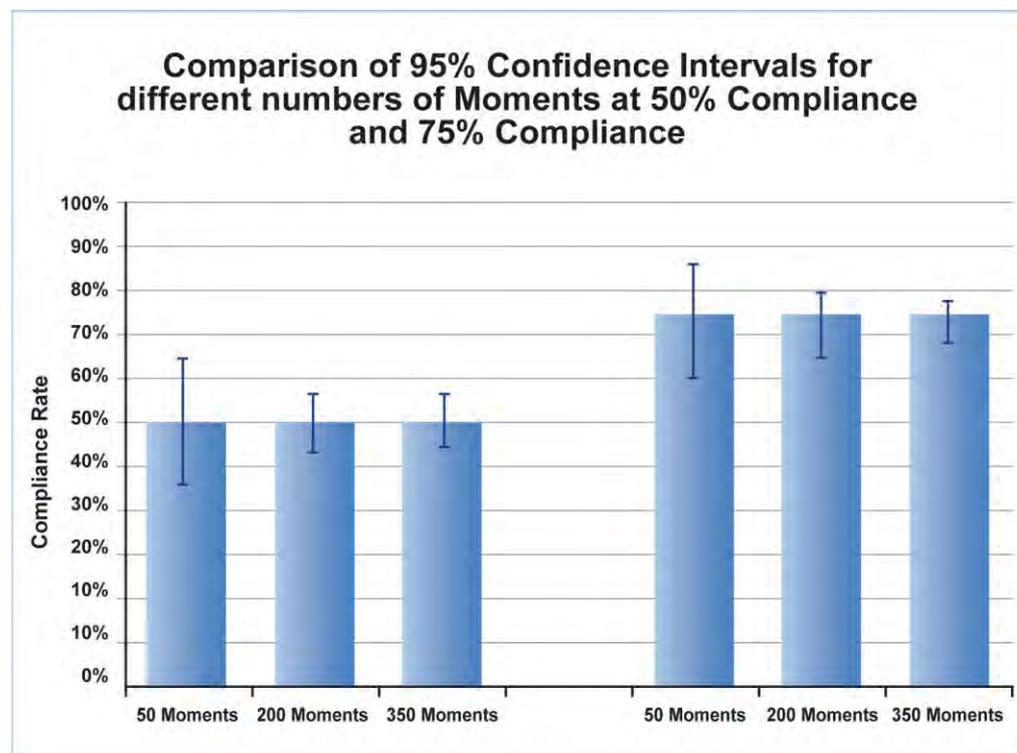
7.4 Rationale for number of Moments to be collected

Compliance data will be used for comparison, be it at a ward, hospital, jurisdictional or national level. When data is used for comparison, it is important to note that a higher number of Moments audited will generate a more reliable compliance rate.

For example, consider a ward that has audited 50 moments, generating a compliance rate of 50%, and an exact binomial 95% confidence interval (95%CI) of 36% to 64%. This means the real compliance rate could be anywhere between 36% and 64%. If another ward audits 350 Moments and generates a compliance rate of 50%, the 95%CI is 45% to 55%. In this latter case, because the 95% confidence interval is narrower, we have more confidence that the real rate is close to 50%.

It is recommended that 95% confidence intervals are included when reporting compliance rates. See Chart 7.4.1 below for a further demonstration on the effect on confidence intervals when the numbers of Moments are increased.

Chart 7.4.1 Confidence Intervals and Moments Audited



7.5 HHCApp roles and administration

Several roles are available in HHCApp with differing functionality. The role assigned determines what each user can see and do and at what level. Users cannot access data or administrative functions above the level that they are assigned.

7.5.1 User Roles

Jurisdictional Administrators – can access all data and perform all administrative functions for their state.

Region Group/Region/Organisation Group Administrators – can access all data and perform all administrative functions for all organisations within their region group, region or organisation group.

Organisation Administrators – can access data and perform administrative function for their organisation(s) only.

Auditors – can audit only.

Reporters – can access reports for their department, organisation or region.

Data entry – can enter data for their department or organisation.

Role	Action					
	Data Entry	Reports	Departments <ul style="list-style-type: none"> • Add • Remove • Inactivate 	HCW Type <ul style="list-style-type: none"> • Add • Remove • Inactivate 	Audit Periods <ul style="list-style-type: none"> • Add • Submit 	Auditors <ul style="list-style-type: none"> • Add • Remove • Reset logins
State Administrator	✓	✓	✓	✓	✓	✓
Region Group Administrator	✓	✓	✓	✓	✓	✓
Region Administrator	✓	✓	✓	✓	✓	✓
Organisation Group Administrator	✓	✓	✓	✓	✓	✓
Organisation Administrator	✓	✓	✓	✓	✓	✓
Auditor	✓	✗	✗	✗	✗	✗
Reporter	✗	✓	✗	✗	✗	✗
Data Entry	✓	✗	✗	✗	✗	✗

Quick Start Guide

Review the [Quick Start Guide for the HHCApp](#).

7.5.1.1 Primary Contacts

Organisations that have more than one Organisation Administrator need to assign a Primary Contact. This indicates the hand hygiene program lead.

7.5.1.2 Automatic Update of Users

There are two automatic updates that occur overnight for all HHCApp users:

Deletion of user

HHCApp users who meet the following criteria will be deleted from HHCApp:

- Created >1 year
- No data
- Never logged in OR hasn't logged in for >1 year

If you need to reinstate a deleted user please contact the [NHHI Helpdesk](#).

Removal of role

HHCApp users who meet the following criteria will have their 'role' removed (for example, auditor is one of the assigned roles in HHCApp):

- Created > 1 year ago
- Has session data but no data added for >18 months
- Never logged in OR Hasn't logged in for >18 months.

Administrators in HHCApp are able to reinstate auditor roles once the auditor has passed the [lapsed auditor pathway](#).

7.5.2 Managing Users

Organisations are responsible for users attached to their organisation, and the roles that they are assigned to. Appropriate consideration of data governance needs to be given when allocating roles within HHCApp.

Users only require one login which remains with them if they move to another facility. This login should be personalised and not generic.

Administrators can also export a list of users using the 'Users' tab at the top right of the HHCApp home page.

For further information on how to manage users in HHCApp please see the [HHCApp instructions](#) webpage.

Please note: The Organisation Administrator is responsible for ensuring all Auditors attached to their organisation meet the [Annual Auditor Validation](#) requirements.

7.5.3 Managing Departments

Organisations are responsible for the set-up, and management of wards/departments within their organisations. Currently, there are 22 Department Types; see [Data Definitions](#) webpage.

Careful consideration must be given to any changes to departments in HHCApp.

The following steps are suggested:

- Create a new department if your organisation has expanded and a new department is being opened.
- Edit the name of a department if a department has changed name, but the case mix remain the same. This is important for historical reporting and ensuring the data is still for the same department.
- Archive (inactivate) a department if the department has closed

OR

If the case mix has changed significantly, archive the department and create a new department.

Parent departments can be created to give the ability to group a number of departments for reporting purposes.

For further information on how to manage departments in HHCApp please visit the [HHCApp web page](#).

7.5.4 Managing HCW types

There are set national HCW types listed in HHCApp for all organisations, based on classifications set by the Australian Institute of Health and Welfare (AIHW) data dictionary. Currently there are 21 Parent HCW Types; details can be found on the [Data Definitions](#) webpage.

Administrators are able to create 'local' categories for stratified local reporting if required. For example, AH (Allied Health) can be split into PT (Physiotherapy), OT (Occupational Therapy) etc.

For further information on how to manage HCW types in HHCApp please see the [HHCApp webpage](#).

7.5.5 Managing Audit Periods

National audit periods are automatically added to each organisation providing that organisation submitted data in the previous audit period. If an audit period was missed, the national audit period will need to be added manually by the organisation.

An Organisation Administrator can also add 'Local Audits'. Data entered into a local audit is for local use only and is not included in the national data set.

For further information on how to manage Audits in HHCApp please see the [HHCApp webpage](#).

7.6 Data validation

Each individual who is responsible for the submission of hand hygiene compliance data to the NHHI should validate their healthcare facility data prior to submission to eliminate errors.

Data validation is required to be completed before final submission of data to the NHHI database. While an audit is active in HHCAApp, changes can be made to data if errors are found. Once an audit is submitted and the status in HHCAApp is pending approval, then changes can only be made after discussion with your jurisdictional coordinator, or the Commission.

The following should be used as a guide to assist recognition of data errors, whether it is data input, auditor, or other errors.

7.6.1 Correct number of moments

The first data validation check is to ensure that the right number of moments have been collected for your facility. Please refer to Section 7.3 to find the required number of moments for submission per organisation.

If you work at an acute hospital you may need to collect a specific number of moments for each ward, depending on your choice of ward selection (see Section 5.7.1).

7.6.1.1 For those with Organisation Administrator access

Login via [HHCAApp](#) desktop (rather than the [HHCAApp mobile](#))

From the home screen, under the Reports heading banner

- Click on “Compliance rate by Department”

In the search filters - select:

- National Audit Period - the current audit period
- Organisation – the required facility (This is only applicable if you are an organisation administrator at multiple facilities)
- Check the box ‘Include departments with no data’.
- Click Run Report

This report details the overall facility Total Moments, and below that, each department’s Total Moments. Does it match your required number of moments overall? Does it match your required number of moments per ward? Are there departments that have significantly higher HHC than other departments, and can this be explained by known hand hygiene practices or may it be due to auditor differences?

If the required number of moments have not been met check that data hasn’t been entered for a “local” audit period instead of a “National” audit)

From the home screen, under the Reports heading banner

- Click on “Compliance rate by department”

In the search filters select:

- Local Audit Period – select all available in turn
- Organisation – The required facility (This is only applicable if you are an organisation administrator at multiple facilities)
- Click Run Report
- If there is data here that should be a part of the National audit then:
 - Click on Sessions from the top horizontal menu
 - In the search filters select Audit type – Local
 - Click on the specific session
 - In the Session Details section – Change the audit filter to “current National audit name
 - Click Save.

Check that data hasn’t been entered against the wrong department by running the Compliance rate by department report as described at the start of this section. If there is data entered against a department that wasn’t part of the facility data collection this audit period then:

- Click on Sessions in the top horizontal menu
- Click on the department name where the data has been entered inaccurately
- In the Session Details section - Change the department filter to “the required department”
- Click Save

If data you believe has been collected is not found please contact the Commission via handhygiene@safetyandquality.gov.au

7.6.1.2 For those with Region or Organisation Group Administrator access

Login via [HHCApp](#) desktop (rather than the [HHCApp mobile](#))

From the home screen, under the Reports heading banner

- Click on “Compliance rate by Organisation”

In the search filters - select:

- National Audit Period - The current audit period
- Click Run Report

This report details the overall group “Total Moments”, and below that each organisation “Total Moments”. Are all members of your group visible in this report? If a facility in your group is not visible in the report this is due to no data being entered for that facility for the data period searched. Secondly, have all of your organisations submitted their required number of moments?

7.6.2 Compliance rate by individual auditor

- The Auditor and sessions report can be run at an organisational level or above. This report provided details on the data collected by each auditor at an organisation, including number of moments collected and compliance rate collected by an individual auditor.

The auditor and sessions report can be used to:

- Confirm auditors have collected 100 moments in a year for annual auditor validation
- Identify if a review of auditing processes is required

A review of auditing processes should be conducted if the following are identified:

- An auditor has >95% hand hygiene compliance
- Any auditors with hand hygiene compliance significantly higher or lower than the majority of auditors

To review auditing processes:

- Consider department type where data is collected; for example, high hand hygiene compliance and all data collected in NICU, low hand hygiene compliance and all data collected in emergency department, or high hand hygiene compliance but all other auditors that audited the same wards had similar results.
- Ensure auditor is currently validated
- Conduct side by side audit with auditor
- Follow-up with extra theory if required.

7.6.3 Further data validation checks

7.6.3.1 Compliance rate by Moment report

When reviewing the Compliance Rate by Moment report the general spread of Moments is: a larger amount of Moment 1 and Moment 4 data, approximately 10–15% Moment 2 data, approximately 10–15% Moment 3 data, and a variable amount of Moment 5 data.

Look for any anomalies, for example Moments that have 100% compliance; is this an accurate reflection of your organisation's practices?

Also review the Moment by HCW data - do you have administrative/clerical (AC) doing procedures? Which auditor collected this data?

7.6.3.2 Compliance rate by healthcare worker

When reviewing the Compliance Rate by HCW report, look for any anomalies including: HCW groups that have 100% compliance, is this an accurate reflection of your organisation's practices?

7.7 Data Submission

Once data validation has been completed or the organisation, it is a requirement of each organisation to formally submit the data to the NHHI database.

Only users with Organisational Administrator (or higher) access are able to submit the data. Data submission is completed by pressing the “submit for approval” button.

Please see these [instructions](#) on how to complete the submission process.

Once data submission is completed, the “status” of the audit changes from “active” to “pending approval”. No further data can be entered for the audit. If an auditor tries to sync mobile data at this stage the data will be synced as local data, with the audit name in the following format: AuditorName_temp_audit_date_time.

After completion of data validation at a jurisdictional and national level the audit status changes to “complete”.

7.8 Reporting results

Feedback of results to all concerned is fundamental to any data collection process. Feedback is an essential part of every quality cycle, and feedback of improved audit results assists in maintaining local support and enthusiasm for the hand hygiene program. More importantly feedback of poor compliance rates that remain unchanged requires intervention to avoid a complacent workforce.

[Guidelines](#) are available for step by step instructions on how to generate reports from the NHHI HHCApp.

Reports for organisations can be produced at any time from HHCApp. The hand hygiene organisation administrator can choose to report by national audit period, local audit period, or by a specific date range e.g. Monthly.

7.8.1 Standard Reports

The following reports are available to all users with reporting access:

- **Compliance rate by State** – only available to users with access to a jurisdiction.
- **Compliance rate by Region Group** – only available to users with access to a Region Group; for example, health service level within a jurisdiction.
- **Compliance rate by Region** – only available to users with access to a Region; for example, a specific group of organisations within a Region Group.
- **Compliance rate by Organisation Group** – only available to users with access to an Organisation Group; for example, a specific group of organisations that are across more than one jurisdiction.
- **Compliance rate by Organisation** – only available if you have access to multiple organisations.

- **Compliance rate by Department** – an organisation report with hand hygiene compliance for all departments on one report. This report can be filtered for 'Department Type'.
- **Compliance rate by HCW Type** – a report with hand hygiene compliance for each HCW type on one report. Can be run at an organisation level, or for a specific department.
- **Compliance rate by Moment** – report with hand hygiene compliance for each Moment on one report. Can be run at an organisation level, or for a specific department. This report can also be filtered for 'HCW type'.
- **Compliance rate by Department Type** – groups hand hygiene compliance data by department type, rather than individual departments; for example, all medical department hand hygiene compliance combined.
- **Combined Compliance rate by Moment and HCW type** – includes both the HCW type report and Moment report into one file.
- **Auditor and sessions** – this report provides details on the data collected by each auditor at an organisation, including number of moments collected and compliance rate collected by an individual auditor.
- **Action by Moment** – a report detailing which hand hygiene action was used for each moment, rub, wash, missed. Can be run at an organisation level, or for a specific department.
- **Export CSV Line Data** – this report provides a file of the raw line data for each moment.
- **Required Moments** – this report provides a one line summary for each organisation including the number of moments required, the number submitted and the difference between the two.
- **Poster report** – this report provides a one page summary of hand hygiene for the selected region/organisation/department relevant to the user's level of access. The report details overall hand hygiene compliance, hand hygiene compliance by moment, and hand hygiene compliance by HCW in the selected area. This report is useful as a summary report for management, or as a poster to display hand hygiene results for the public.
- **Zero reports** – most of the above reports now have the option to include entities without data. This allows for gaps in data collection to be easily found.

7.8.2 Custom Reports

If the standard reports do not provide the hand hygiene data in a format you require you may be able to create the report you require using the custom reports.

The following reports are available to all users with reporting access:

Snapshot report

- Step 1 – Choose the date range of the data for the report
- Step 2 – Choose which data set you require
- Step 3 – Decide how you want the data presented

Trend report

- Allows reporting change in performance over time

7.9 State/territory reporting of hand hygiene compliance

Hand hygiene compliance rates for each jurisdiction are released by the relevant health departments in each state/territory. Please contact your HHA jurisdictional coordinator for further details.

7.10 National reporting of hand hygiene compliance

Overall rates of hand hygiene compliance (including 95% confidence intervals) will be reported nationally three times per year. All data submitted is analysed by the Commission, fed back to each jurisdiction and submitted to the AIHW.

Data entered into HHCApp is only reported by the Commission as national aggregate data. No identifying data is published by the Commission.

7.11 National hand hygiene benchmark

The national hand hygiene benchmark is set by the Australian Health Ministers' Advisory Council (AHMAC). Since 2017, the benchmark has been 80%.

The 2017 benchmark of 80% relates to all 5 Moments for Hand Hygiene. All health services, especially those with lower rates of Moments 1 and 2 are encouraged to take action to raise compliance in these critical areas.

Since 2010, the rate of compliance for individual health services across Australia has been reported on the [MyHospitals](#) website.

8 Sustaining a hand hygiene program

8.1 Aim

To maintain and continuously improve a hand hygiene program.

8.2 Key features of long-term sustainability include the following:

8.2.1 Hospital-wide rollout

For this program to be successful the enthusiastic and continued support of your facility executive is essential. Healthcare worker acceptance and ownership of the NHHI program assists sustainability.

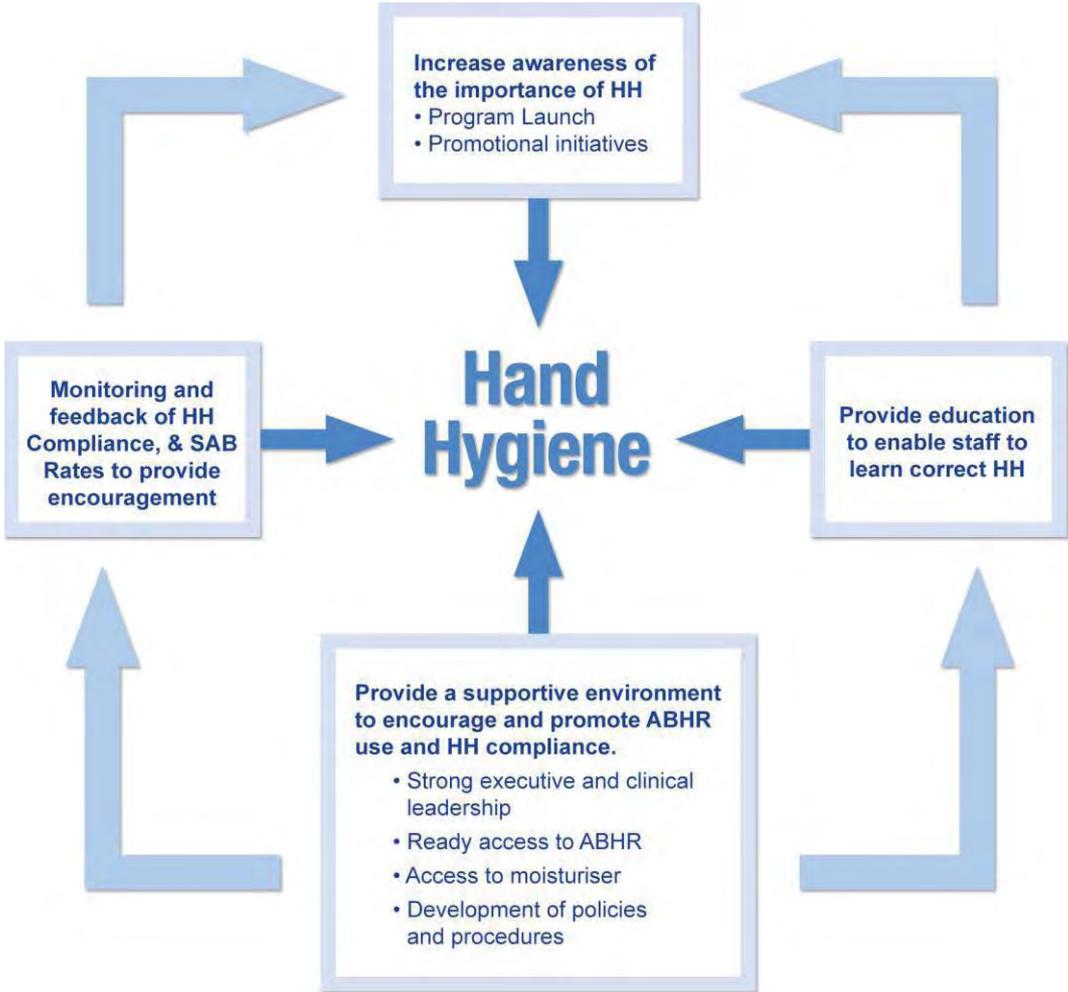
Ongoing tasks of hand hygiene project team:

1. Initiate reporting of hand hygiene compliance results as a regular infection control or quality report to the chief executive officer/health facility board
2. Extend program to wards that have not been audited for the national program
 - Ensure healthcare facility ownership by progressing the hand hygiene education and auditing program to **all** wards/departments. For continued improvement and sustainability of the hand hygiene program, it is imperative that all departments are included in the program.
3. Report results back to wards
 - As per any quality activity, it is important after conducting an audit to feedback the results to the relevant groups; for example, hand hygiene compliance rate per ward or HCW group. This will encourage ownership of the program at an individual level (see Section 7 on how to run data reports)
4. Evaluate hand hygiene program performance
 - See Section 8.3

8.2.2 Region/jurisdiction level involvement

The support of all Australian health ministers for the objectives of the NHHI and the hand hygiene benchmark provide the framework for participation by all healthcare facilities in the program.

Figure 8.2.2.1 Hand hygiene culture change



8.2.3 Hand hygiene culture change and sustainability of the hand hygiene program

Once a hand hygiene program is firmly established within a healthcare facility it is important to review and continually refresh it. When relaunching your program, please remember that the hand hygiene program is **not** just about hand hygiene auditing, or completing an online learning package. It is a program of education, monitoring and feedback that results in a behavioural and cultural change across all staff.

The following section suggests ways, as detailed in Figure 8.2.2.1, to create sustainability within the hand hygiene program:

8.2.3.1 Increase the awareness and importance of hand hygiene

It is important to evaluate and relaunch a hand hygiene program every one to two years to revitalise existing staff enthusiasm and to capture the attention of new staff. The [WHO Hand Hygiene Self-Assessment Framework is a useful tool for hand hygiene program evaluation](#).

See Section 8.3 for further detail.

The following are questions to ask, or suggestions to follow, to relaunch a hand hygiene program:

- Have you written an improvement plan? Did you write this in conjunction with the Self-Assessment Framework and your hand hygiene compliance reports?
- Have you reviewed your hand hygiene program data? Is your hand hygiene compliance increasing over time? Are your infection rates decreasing over time?
- From your hand hygiene data: what areas need addressing for the relaunch? Which HCW group or particular Moment has the lowest compliance? This will help to prioritise education requirements
- Re-engage with your major stakeholders about the importance of the hand hygiene program; for example, chief executive officer, heads of departments
- Promote awareness of the hand hygiene program to all staff via newsletters or payslip messages etc.
- Provide latest evidence based practice updates.

8.2.3.2 Provide education

Aim to provide education to **all** healthcare worker groups annually, with additional education sessions regularly throughout the year to target clinical staff and high risk groups.

Utilise the [NHHI promotional resources](#) or resources provided by your jurisdiction, including:

- Video in-service – The 5 Moments Explained
- Online learning modules for various HCW groups
- There are also many other educational resources on the NHHI website, including the PowerPoint presentations aimed at specific healthcare worker groups.

8.2.3.3 Provide a supportive environment to encourage and promote alcohol-based handrub use and hand hygiene compliance

- Conduct staff surveys on awareness of the hand hygiene program, and ask staff for suggested improvements.
- Conduct [product availability surveys](#)
 - Product availability should be reviewed regularly to ensure correct placement and full containers
 - Over time the frequency can be decreased, with an annual survey recommended.

8.2.3.4 Using the hand hygiene evaluations for culture change

In a facility where the hand hygiene program is being implemented for the first time, data indicating gaps in good practices and knowledge, or a poor perception of the problem, can be used to raise awareness and convince HCWs that there is a need for improvement.

This feedback helps to promote local area ownership of hand hygiene issues, and should encourage changes to practice where indicated from the feedback. Discussing hand hygiene compliance data at the local level should promote the development of local initiatives to address the specific issues.

Subsequently, after implementation, regular and timely reporting of data is crucial to demonstrate improvement; thereby sustaining the motivation to perform good practices and making continuous individual and institutional efforts. See Section 7 on how to generate hand hygiene compliance reports.

The hand hygiene compliance reports can be used to compare healthcare worker categories against each other. It could be used as a competition for staff to improve their hand hygiene compliance; for example, nurses versus medical staff, students versus qualified staff. They may be used to stimulate competition between wards, or, if in a network, hospital against hospital. This will encourage ownership of the program by these groups. The hand hygiene compliance reports could be used to target education for those with lower scores, or to give prizes for the best performances.

8.2.3.5 Improving culture-change in specific settings; an Emergency Department example

Hand hygiene practices in the emergency department setting represent a unique challenge with distinct environment, staff and patient factors compared with inpatient wards.

Interventions, including the placement of hand hygiene products within the point-of-care and staff education may be more complex in this setting.

The WHO Hand Hygiene Self-Assessment framework has been adapted to support the improvement of hand hygiene compliance in the ED setting. See: [Emergency Department Self-Assessment Framework](#).

Self-assessment frameworks may also be developed for use in other specific settings in the future.

8.3 WHO Self-Assessment Framework

According to the [WHO Self-Assessment Framework](#), an ideal hand hygiene culture change program should include:

- An easily available and continuous supply of alcohol-based handrub that meets the recommendations of HHA
- Appropriate availability of sinks, soap, and paper towel
- Mandatory hand hygiene training of all healthcare workers on commencement of employment, with ongoing education throughout the year
- Staff available to conduct hand hygiene education throughout the facility
- Validated staff to conduct hand hygiene compliance assessments (where applicable)
- Regular hand hygiene compliance audits (where applicable)
- Regular feedback of hand hygiene compliance audit/program measures, including immediate feedback and data trends over time, to:
 - healthcare workers
 - facility leaders
- Hand hygiene promotional materials throughout the facility
- Establishment of a hand hygiene project team that has dedicated time to regularly promote hand hygiene
- Clear commitment from the CEO, Director of Nursing, and Medical Director
- Patient engagement programs
- Initiatives to support local continuous improvement; for example online learning programs, hand hygiene newsletters.

8.3.1 Is your facility a hand hygiene leader?

The WHO has developed an additional section to the Self-Assessment Framework, for organisations that wish to be considered a leader in hand hygiene. The section includes criteria for a very comprehensive hand hygiene program that can be held as an example for other facilities to aspire to.

Facilities may wish to review these leadership criteria as part of their hand hygiene program evaluation.

9 Other useful interventions

9.1 Aim

Other infection prevention interventions are available to complement the successful implementation, and sustainability of a hand hygiene culture change program.

9.2 Additional audit tools to complement the hand hygiene program

In the NHHI hand hygiene compliance tool, neither the duration of the hand hygiene action, nor other quality aspects of hand hygiene such as the quantity of product used, technique of hand hygiene, donning/doffing of gloves, type of gloves used, length of fingernails, or presence of jewellery are assessed. Once the hand hygiene program has been well established in your facility these are items you may wish to address whilst conducting the hand hygiene compliance audit, but they will not be reportable to the NHHI database.

A number of additional audit tools available for each healthcare facility on the [NHHI website](#).

9.3 Bare below the elbows

Some hand hygiene culture change programs advocate a 'Bare below the Elbows' policy for all HCWs. Whilst there is currently limited evidence to promote this as a formal recommendation, WHO recommends that long sleeves be avoided. Long sleeves have been found to be contaminated with organisms, and can impede appropriate hand hygiene.

9.4 Hand hygiene in shared patient areas

There are many shared patient areas within healthcare facilities; for example, waiting rooms, group based therapy rooms. Staff within these areas may move between patients regularly.

If a HCW has contact with patients within a shared area then the principles of the 5 Moments for Hand Hygiene remain.

Patients should also be instructed to perform hand hygiene on entering and leaving a

shared area.

Personal alcohol-based handrub packs for staff may be more appropriate in these areas.

If patients are sharing equipment appropriate cleaning protocols should be followed. However, this may not be practicable where equipment is passed between patients quickly; for example, passing a ball in an exercise class. Ensure that all shared equipment is cleaned between sessions/groups.

Glossary

The following terms are referred to throughout this manual:

Alcohol-based handrub

A TGA-listed alcohol-containing preparation designed for reducing the number of viable micro-organisms on the hands without the use or aid of running water, and which is listed on the ARTG as a medicinal product.

Alcohol wipes

An alcohol-containing wipe used to clean non-soiled shared patient equipment in between each patient use e.g. Blood pressure cuffs.

Aseptic technique

An aseptic technique aims to prevent microorganisms on hands, surfaces and equipment from being introduced to susceptible sites. Therefore, unlike sterile techniques, aseptic techniques can be achieved in typical ward and home settings.

Bacteraemia

The presence of bacteria in the blood.

Body fluids

Any substance secreted by the body with the exception of sweat. These include: blood, lochia, saliva, secretions from mucous membranes, pus, gastric and respiratory secretions, semen, tears, wax, breast milk, colostrum, urine, faeces, meconium, vomitus, pleural fluid, cerebrospinal fluid, ascites fluid, biliary fluid, bone marrow, pus, organic body samples – for example, biopsy samples, organ and cell samples.

Body fluid exposure risk

Any situation where contact with body fluids may occur. Such contact may pose a contamination risk to either healthcare worker or the environment.

Contact

The touching of any patient or their immediate surroundings or performing any procedure.

Curtains

Patient bed curtains are outside the patient zone and are frequently contaminated with microorganisms foreign to the patient inside.

Touching the curtains after caring for a patient is considered to be equivalent to leaving the patient zone.

Hand hygiene should be performed between touching the curtains and touching the patient and vice versa.

Decontaminate hands

Application of either an antimicrobial soap/solution and water or an alcohol-based hand rub product, to the surface of the hands. This process reduces microbial counts on hands.

Detergent wipes

A detergent-containing wipe used for cleaning lightly soiled shared patient equipment in between each patient use.

Emollient/humectant

Ingredient(s) added to hand hygiene products to moisturise and protect the skin from frequent product use.

Glove use

Glove use by HCWs is recommended for two main reasons: to prevent microorganisms which may be infecting, commensally carried, or transiently present on healthcare worker's hands from being transferred to patients and from one patient to another; and to reduce the risk of healthcare workers acquiring infections from patients.

Hand care

Actions to reduce the risk of skin damage or irritation. For example, using a moisturiser regularly throughout the day.

Hand hygiene

A general term applying to processes aiming to reduce the number of microorganisms on hands. This includes: application of a waterless antimicrobial agent (e.g. alcohol-based handrub) to the surface of the hands; and use of soap/solution (plain or antimicrobial) and water (if hands are visibly soiled), followed by patting dry with single-use towels.

Hand hygiene action

A hand hygiene action can be undertaken either by rubbing with an alcohol-based handrub, or hand washing with soap and water.

Hand hygiene compliance

Is a measurement of appropriate hand hygiene. It is defined when hand hygiene is considered necessary and is classified according to one of the 5 Moments.

If the action is performed when there is no indication and it has no impact in terms of preventing microbial transmission, then it is not considered to be an act of hand hygiene compliance.

The number of Moments constitutes the denominator for assessing hand hygiene compliance. The actual hand hygiene actions undertaken are compared to the number of *Moments* observed to calculate the rate of hand hygiene compliance.

Hand hygiene non-compliance is defined when there is an indication for hand hygiene (a Moment) and yet no hand hygiene was undertaken.

Hand hygiene moments

Moments are based on those defined by the WHO Guidelines on Hand Hygiene. Some minor modifications have been made for Australian healthcare settings. A Moment is when there is a perceived or actual risk of pathogen transmission from one surface to another via the hands. Healthcare workers' hands will come in contact with many different types of surfaces while undertaking a succession of tasks.

The 5 Moments for hand hygiene are:

- Moment 1:** Before touching a patient
- Moment 2:** Before a procedure
- Moment 3:** After a procedure or body fluid exposure risk
- Moment 4:** After touching a patient
- Moment 5:** After touching a patient's surroundings

Hand hygiene opportunity

In Australia the term 'Moment' is used.

However, the WHO define a hand hygiene opportunity as the time between the moment when hands becoming colonised after touching a patient/surface and the moment in which hands touch the next patient/surface; i.e. the opportunity when hand hygiene should be performed.

Hand hygiene product

Any product used for the purpose of hand hygiene, including soap and water

Hand washing

The application of soap and water to the surface of the hands.

Healthcare-associated infections (HAIs)

Infections acquired in healthcare facilities ('nosocomial' infections) and infections that occur as a result of healthcare interventions ('iatrogenic' infections), and which may manifest after people leave the healthcare facility.

Healthcare zone

Refers to all regions outside of the patient zone. This includes the curtains, partitions and doors between separate patient areas.

The healthcare zone can include shared patient areas as these areas are not cleaned between patients. Assumptions are generally made that within the healthcare zone there are organisms that are potentially harmful to all patients, and that transmission of these pathogens to the patient results in exogenous infection.

Healthcare workers

All people delivering healthcare services, including students and trainees, who have contact with patients or with blood or body substances.

Immunocompromised

Having an immune system that has been impaired by disease or treatment

Inter-rater (or observer) reliability

A measure of agreement or consistency of ratings by two or more observers on a series of common subjects.

Intra-rater reliability

A measure of agreement or consistency of two or more ratings by a single observer on a series of common subjects.

Invasive medical device

Devices which, in whole or part, enter the body through an orifice or through any surface of the body. This includes penetrating skin, mucous membranes, organs or internal cavities of the body. Examples include surgical instruments, implantable devices, dental equipment, intravascular devices, medical and therapeutic devices.

Methicillin-resistant *Staphylococcus aureus* (MRSA)

Strains of *Staphylococcus aureus* that are resistant to many of the antibiotics commonly used to treat infections. Epidemic strains also have a capacity to spread easily from person-to-person.

Methicillin-susceptible *Staphylococcus aureus*

Staphylococcus aureus that is susceptible to methicillin/flucloxacillin.

Work, Health and Safety (WH&S)

Is an area concerned with protecting the safety, health and welfare of people engaged in work or employment. The goal of all work, health and safety programs is to foster a safe work environment.

Outcome measure

A feature used to describe the effects of care on the health status of patients and populations (for example, infection rate).

Patient

A person who is receiving care in a health service organisation.

Patient contact

Involves touching the patient and their immediate surroundings, or performing any procedure on the patient.

Patient surroundings

All inanimate surfaces that are touched by or in physical contact with the patient (such as bed rails, bedside table, bed linen, invasive devices, dressings, personal belongings and food) and surfaces frequently touched by healthcare workers while caring for the patient (such as monitors, knobs and buttons).

Patient zone

Includes the patient and the patient immediate surroundings.

The patient zone is the area dedicated to an individual patient for their care. The patient zone is cleaned after one patient leaves, and before the next patient arrives.

Assumptions are generally made that within the patient zone the patient flora rapidly contaminates the entire patient zone; and the patient zone is cleaned between patients.

Point-of-care

The place where three elements come together: the patient, the healthcare worker, and the care or treatment involving contact with the patient or his/her surroundings. A hand hygiene product should be easily accessible and as close as possible – within arm's reach of where patient care or treatment is taking place. Point-of-care products should be accessible without having to leave the patient zone.

Procedure

An act of care for a patient where there is a risk of direct introduction of a pathogen to the patient.

Process measure

An index of the degree to which a service or procedure is performed correctly and

appropriately, e.g. timing of surgical antibiotic prophylaxis, measuring how many times staff wash their hands.

Recommendation

A guideline; sample suggestion; to advise.

Reliability

The extent to which a measurement is consistent and free from error.

SAB

Staphylococcus aureus bacteraemia

Separations

A separation from a healthcare facility occurs anytime a patient leaves due to discharge, death, or transfer

Standard aseptic technique

Clinical procedures managed with standard aseptic non-touch technique will characteristically be technically simple, short in duration (approximately less than 20 minutes), and involve relatively few and small key sites and key parts. Standard aseptic technique requires a main general aseptic field and non-sterile gloves. The use of critical micro-aseptic fields and a non-touch technique is essential to protect key parts and key sites.

Sterile task

A task performed in such a way as to avoid microbial contamination or inoculation.

Structured observation

A method to quantify healthcare worker behaviour using a format that is structured in a manner that is likely to avoid bias and improve consistency. Structured observations provide information on what people actually do, rather than on what they say they do or did. They also provide information on the associated activities and behaviours that precede and follow hand hygiene compliance.

Surgical aseptic technique

Surgical aseptic technique is demanded when procedures are technically complex, involve extended periods of time, large open key sites or large or numerous key parts. To counter these risks, a main critical aseptic field and sterile gloves are required and often full barrier precautions. Surgical aseptic technique should still utilise critical micro aseptic fields and non-touch technique where practical to do so.

Surgical hand preparation

The process of eliminating transient and reducing resident flora prior to surgery. This comprises removal of hand jewellery, performing hand hygiene with liquid soap if

hands are visibly soiled, removing debris from underneath fingernails and scrubbing hands and forearms using a suitable antimicrobial formulation.

Validity

Refers to the accuracy of a measure. It is the extent to which a measuring instrument actually measures what it is supposed to measure.

WHO

World Health Organization

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Appendices

1. Hand hygiene compliance assessment form
2. Hand hygiene compliance Form Coding Sheet
3. Sample of a Completed hand hygiene compliance assessment form
4. HHCApp Instructions for Use
5. HHA OH&S Risk Assessment
6. Skin Care Questionnaire
7. Moments for Hand Hygiene Auditor Training
8. Hand hygiene Ward Summary Sheet

COMMONWEALTH OF AUSTRALIA

Competition and Consumer Act 2010 (Cth)

IN THE AUSTRALIAN COMPETITION TRIBUNAL

File No: ACT 4 of 2021 and ACT 5 of 2021

Re: Application for review of authorisation AA1000542 lodged by nib Health Funds Ltd and Honeysuckle Health Pty Ltd and the determination made by ACCC on 21 September 2021.

Applicants: National Association of Practising Psychiatrists and Rehabilitation Medicine Society of Australia and New Zealand

ANNEXURE CERTIFICATE

DD-64

This is the Annexure marked "DD-64" referred to in the affidavit of David Du Plessis affirmed at Newcastle in New South Wales on June 2022.

Before me:

AR

.....
Signature of witness

ADELAIDE NANCY ROSENTHAL, 447 COLLINS STREET, MELBOURNE VIC 3000
An Australian Legal Practitioner within the meaning of the Legal Profession Uniform Law (Victoria).
A person authorised under section 19(1) of the Oaths and Affirmations Act 2018 to take an affidavit.

Risk Assessment and Prediction Tool (RAPT)

Instructions for use

The RAPT form is completed by the patient.

Take the RAPT form when you:

- Visit your orthopaedic surgeon
- Attend the Pre-admission Clinic
- The form can be stored in your hospital medical record

Risk Assessment and Prediction Tool (RAPT)

Background

Developed by Dr. Leonie Oldmeadow at the Alfred Hospital in Victoria in 2001 to predict the discharge destination of patients undergoing elective hip and knee arthroplasty surgery.

Predictions based on objective factors provide confidence in decision making regarding discharge for patients and staff.

Purpose of the tool

- The ability to indicate before surgery, the most likely discharge destination after surgery, which allows appropriate patients to prepare themselves and their families for their return home.
- Assists in aligning patient's expectations about what is needed following surgery.
- Allows the acute hospital to commence early discharge planning for discharge destination goal
- RAPT helps to identify patients who will need the most help after discharge;
- Score <6—Admit to overnight rehabilitation program
- Score 6-9—Additional intervention to discharge directly home (e.g. Rehabilitation in the Home)
- Score >9—Discharge directly home.

To be completed by the patients undergoing elective Hip or Knee replacement surgery prior to discussion with your orthopaedic surgeon or attending Pre-admission Clinic

Name.....

DOB.....

Address.....

Surgeon.....

	Value	Score
1. What is your age group?	50-65 years 66-75 years >75 years	=2 =1 =0
2. Gender?	Male Female	=2 =1
3. How far on average can you walk? (a block is 200 metres)	Two blocks or more (+/-rest) 1-2 blocks (+/-rest) Housebound (most of time)	=2 =1 =0
4. Which gait aid do you use? (more often than not)	None Single-point stick Crutches/frame	=2 =1 =0
5. Do you use community supports? (home help, meals on wheels, district nursing)	None or one per week Two or more per week	=1 =0
6. Will you live with someone who can care for you after your operation?	Yes No	=3 =0
Your score (out of 12)		

Key: Destination at discharge from acute care predicted by score.

- Scores <6 — extended inpatient rehabilitation
- Score 6-9 — additional intervention to discharge directly home (e.g. *Rehabilitation in the Home*)
- Score >9 — directly home.

Patient's preference	Prediction Score	Agreed destination
.....
Patient Signature:	Date:	
..... /..... /.....	