Pre-Budget Submission 2019-20
Improving the Value and Sustainability of Private Healthcare

PRIVATE HEALTHCARE AUSTRALIA

Private Healthcare Australia
Better Cover. Better Access. Better Care.

ABOUT PRIVATE HEALTHCARE AUSTRALIA

Private Healthcare Australia (PHA) is the Australian private health insurance industry's peak representative body that currently has 22 registered health funds throughout Australia and collectively represents 97% of people covered by private health insurance. PHA member funds today provide health care benefits for over 13 million Australians.

Private health insurance is provided through organisations registered under the Private Health Insurance Act 2007. The financial performance of registered health funds is monitored by the Australian Prudential Regulation Authority (APRA), an independent Australian Government body, to ensure solvency and capital adequacy requirements are met.

All members of Private Healthcare Australia are registered as health benefits organisation with the Commonwealth Government and comply with Government standards and regulations on benefits and solvency.

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1 Executive Summary

Australian governments, health providers and health funds work together with the shared purpose of maintaining one of the world's most innovative and successful health systems. Our healthcare system delivers universal access, patient choice, and excellent health outcomes at relatively low cost, drawing on both public funding and patient contributions to do so.

This common purpose is pursued most determinedly when the health system is under stress. In the 1990s, for example, participation in private health insurance (PHI) fell to almost 30 percent, leading to long public waiting lists and greater public health spend at the risk of other essential public services. Well-designed incentives restored participation levels to ~50 percent, reversing these negative impacts.

We believe it is time to repeat that successful collaborative effort, which has been started by the Federal government in its private health insurance reform package of 2018.

This century, Australian healthcare costs have been rising at 5 percent annually, for the same demographic and technological reasons faced by healthcare systems globally. As a result, consumer premiums and out-of-pocket costs have increased well above CPI and wage rates. Without action, participation could drop to 30 percent by 2030–2035, and we could expect a proportionately higher risk, and higher aged membership base. We must avoid the real possibility that private healthcare retreats to a luxury market accessible only to wealthy Australians, putting pressure on public hospitals and causing consumers to miss out on specialist care.

Financial incentives for PHI participation will continue to reduce the public share of healthcare costs and these incentives must be sustained. Our research has clearly demonstrated that once means testing was introduced, the PHI rebate is a highly efficient way of funding non-emergency surgery and in-hospital mental health care.[1] On this basis, the government should consider restoring the 30% rebate for low and middle-income earners, or at very least, freezing the rebate at current levels.

Australia also needs to take on the more fundamental challenge: rising healthcare costs in both the public and the private systems. We must ensure our health system continues to deliver high quality, accessible and affordable care for all Australians. Specifically, for private health insurance, we must continue to deliver value for money by funding evidence-based care, at an affordable price.

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[1] See Attachment 1. The Relative Efficiency of the Private Health Insurance Rebate v Direct Public Health Expenditure, 2017.

We can only do that if our health system:

■ provides people with the right type, quality and timing of care

■ provides that care at the right price, and

■ pays that price in the most efficient way.

To these ends, we propose 10 reforms that address rising healthcare costs that together would reduce spend in the short term and halve healthcare system inflation to just 2 to 3 percent p.a. over the long term, while maintaining high quality care and access. We are also proposing improving the value proposition for PHI through improved cover for out-of-hospital services and a more affordable and accessible dental health system.

Providing customers with the right care

The right care means providing the services that are needed, when they're needed, to the standard they're needed. Three major reforms will assist:

1. *Remove low value care from the Medicare Benefits Schedule.* Low value care is defined as care that either has no effect, causes harm, or is not worth its cost*.* The global 'Choosing Wisely' initiative is an academic collaboration, which identifies unnecessary or harmful medical procedures and tests. PHA has commissioned from the University of Sydney a detailed analysis of low-value procedures still occurring and being funded by the MBS and PHIs[2]. Examples of low value procedures that could be removed from the MBS are arthroscopic surgery for knee osteoarthritis and hernia, saving approximately $90 million per year.

2. *Greater use of Health Technology Assessment to reduce "device" low value care.* The Prostheses List has substantial pricing differences in areas such as joint replacement. Cementless and ceramic devices are routinely two to three times the price of gold standard cemented, metal and cross link polyethylene devices (price differences not observed globally and utilisation inconsistent with the public system which is weighted to gold standard care). The Australian Orthopaedic Association NJRR, the most respected authority globally on device performance indicates the gold standard devices offer the best combined results on all patient age groups. A review commissioned on this data is expected to show in primary hip surgery alone over $90m of economic pricing waste occurs annually. An HTA informed benefit model should form a core function within an independent pricing authority. The government has employed HTA successfully in 2018 determining a cost effective price for ablation catheters for Atrial Fibrillation.

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[2] See Attachment 2 – Measuring low-value services in Medibank, Bupa, GMHBA and HCF data:2015/16 to 2016/17. Sustainable Health System Solutions Pty Ltd Sole Director and Principal, Prof Adam Elshaug

By Kelsey Chalmers and Tim Badgery-Parker

3. ***Substitute inpatient care with lower cost out-of-hospital care,*** where the same or better outcomes are available, in particular rehabilitation in home and same day admissions for psychiatric care. Removing legislative restrictions to insuring community-based (outpatient) care for specific conditions where this is preferable to hospitalisation on a system-wide basis, will offer more choice and improved outcomes at less cost, with potential annual savings of $315 million.

4. ***Reduce hospitalisations with more holistic patient-centric management of chronic and complex disease.*** As much as 35 percent of the Australian population report having at least one chronic condition. More holistic care of at-risk patients may reduce their hospitalisations by 19 percent, which could improve patient outcomes and reduce the costs associated with hospitalisation by $1 billion across both the private and public hospital system.

Paying the right price for that care

The right price means paying a price set through fair and transparent processes to be appropriate for the service or product provided. Two major reforms will help:

1. ***Establish a national independent body to manage the procurement of prostheses.*** The cost of prostheses in Australia makes up over 10 percent of hospital costs, and is growing at 7 percent per year. Yet on average Australia pays approximately 35 percent above international benchmarks for the same prosthesis. A procurement system with international reference pricing, and controls around prostheses volumes and the types of prostheses used would increase quality and safety of implantable prostheses and save $500 million annually. An analysis by PHA of reference prices in the UK, NZ and France confirms Australians are still paying significantly more than global benchmarks for the most frequently used medical devices.[3]

2. ***Restrict the second-tier safety net to smaller hospitals.*** Originally set up to protect smaller and regional hospitals, the safety net has now created a perverse incentive to establish hospital beds, including day hospitals of marginal value. This spreads the health fund dollar too thinly as particularly new day facilities are able to rely on the second-tier benefit and not truly substitute for overnight care. Restoring the second-tier default benefit to its original intent (rural and regional hospitals or groups with less than a 3 percent market share) would save $200 million annually, while consumers can be protected from rising out-of-pockets charged by uncontracted hospitals.

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[3] See Attachment 3, PHA analysis November 2018. 42 high-volume billing codes inform prostheses list value for Australians.

Paying for care in the most efficient way

An efficient system makes its payments without fraud or error, and is transparent for consumers and payors. Three reforms will improve transparency and efficiency:

1. *Publish data on service cost and quality data.* Too often, consumers and health providers cannot make optimal care decisions, as they lack accurate information on procedural outcomes, out-of-pocket costs, waiting times and other essential data. A collaborative, online platform for that data would improve decision-making by clinicians, patients, health funds, hospitals and researchers, and allow consumers to choose lower cost providers. Work commissioned by PHA from IPSOS has confirmed unexpected medical out-of-pocket costs are a highly sensitive issue with the community that represents a key concern with inpatient and outpatient private health.

2. *Clarify funding of private patients in public hospitals.* Privately insured patients use public hospitals for acute and referred care. However, the rate at which they are doing so is rising at >6 percent per year, well above the predicted increase in appropriate services. A clearer delineation of costs between PHI and Medicare is needed when a private patient is treated in a public hospital, for the benefit of all parties. Limiting funding of private patients in public hospitals to elective procedures only would reduce PHI benefit by approximately $550m per year.

3. *Collaborate with Medicare on payment integrity.* Like Medicare, PHI funds invest heavily in payment integrity to reduce error, non-compliance and fraud. Doing so in collaboration with Medicare would improve the integrity of the whole system, and save $40 million a year.

4. *Extend the efficiency of private funders of dental care:* Through contracting with dentists and vertically integrating with dental practices, private health funds have been able to deliver cost relief to consumers through reduced out-of-pocket costs. Extending the efficiencies of private funders of dental care to the public sector could deliver further system savings to the government.

The reforms mentioned above would reduce inflation and hence improve affordability of premiums for consumers. However, they would only have this effect if the current participation incentives are maintained and do not further deteriorate affordability. Hence, it is *key that the private health insurance rebate as a percentage of total premium is restored to 30% for low and middle income earners, or at least maintained at current levels*, and does not decline further as a result of the Rebate Adjustment Factor.

None of these reforms are radical, nor are they newly proposed. Other research, including that of the Productivity Commission, has identified these opportunities before. However, healthcare inflation and general economic conditions are now driving a downward spiral in PHI participation that must be arrested before it gathers pace.

Private Healthcare Australia is ready to work with the Federal Government and other stakeholders to provide the necessary information and support in achieving our common objective for the Australian healthcare system.

1.1 REPORT ON A PAGE

EXHIBIT 1

Report on a page

While health care inflation rises ...

↑5% Healthcare costs

↑2% CPI

2012   2017

- Aging population
- More chronic diseases
- More hospitalisation

... PHI participation falls

47.3% 2014

45.0% 2018

- Rising premiums
- Unexpected out-of-pockets
- Rising public system quality
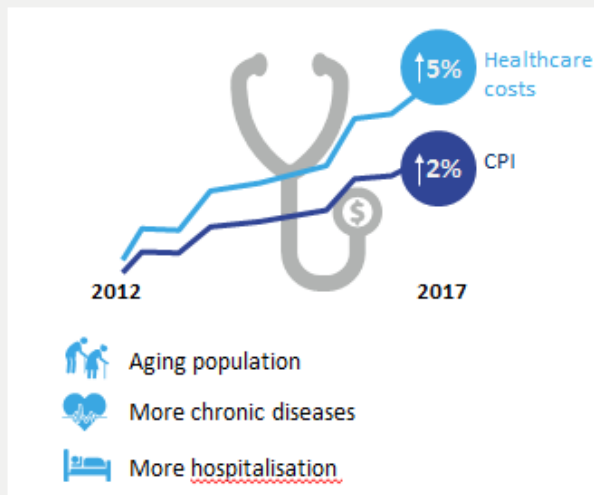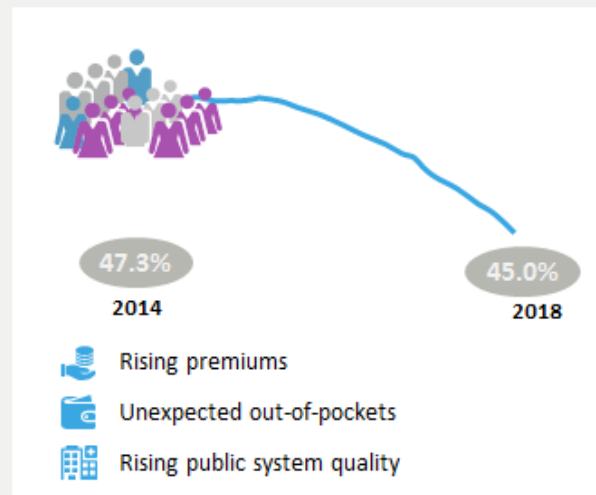
With community rating, the more healthcare costs rise, the more premiums must rise for all members, the more likely that the young and healthy will exit, further increasing premiums ...

This downward cycle could lead to participation levels as low as 30%, similar to the 1990s. This will have significant implications for the whole system, ie.:

- Public waiting lists will increase
- Government operating costs will rise
- Private health funds may have to close or consolidate
- (Regional) private health providers may be at risk

We have to break the cycle ...

	The right care...	at the right price...	in an efficient system
Problem	Our fee-for-service structure does not promote holistic and high value care, especially for chronic and complex patients	Though Australia has sufficient system scale, it is not translating into lower costs	Lack of transparency across the system, combined with inadequate protections against fraud and error, and a declining rebate incentive, are creating efficiencies in our system
Proposed reforms	1 Invest in patient-centric care 2 Substitute in-patient care 3 Remove low value care	4 Amend 2nd tier default for large players 5 Adopt national procurement system for prostheses	6 Increase transparency on out-of-pockets and quality 7 Clarify rules for private patients in public hospitals 8 Collaborate on payment integrity 9 Extend efficiency of private funders of dental and other ancillary care 10 Retain effectiveness of current PHI premium rebate

What does not work...   Capping premiums at 2%, without reforms to bring down costs

1.2 EFORM OPTIONS AND POTENTIAL ACTIONS FOR GOVERNMENT

Reform	#	Potential Action for Government
RIGHT TYPE OF CARE		
1. Remove low value care	1a	Prioritise high value areas from the MBS review for early attention
	1b	Update clinical guidelines to place the burden of proof on physicians to justify any procedures, admissions, and stays over and above what may be appropriate for a given type of procedure
2. Substitute inpatient care with lower cost out-of-hospital care	2a	Continue to support the Improved Models of Care Working Group and expand areas of review to include other treatments outside a hospital setting including but not limited to intravitreal injections; haemodialysis; chemotherapy; obstetrics and palliative care
	2b	Amend the PHI Act 2007 to release the restrictions on health funds insuring rehabilitation and same day psychiatric care outside of a hospital environment
3. Reduce hospitalisations with more patient-centric management of chronic and complex disease	3a	Improve incentives throughout the health sector to encourage hospitals to work with the primary care community, and health funds to manage patients with chronic disease more effectively
	3b	Redirect government funding from care plans that are not shown to deliver improved patient outcomes, toward programs that are outcome based and aligned with improved clinical outcomes, and reduced hospitalisation rates
	3c	Enable health funds to fund MBS GP activities that support client participation and engagement in interventions that are have been shown to effectively assist in the management of patients with chronic and complex disease
	3d	Commence a state-based trial of holistic patient-centric care for a select group of patients (e.g. the 2–3 percent of the population that account for a third of health costs) with the most complex and chronic disease
RIGHT PRICE OF CARE		
4. Establish a national independent body to manage the procurement of prostheses	4	Establish a national independent body to manage the procurement of prostheses (including the implementation of international reference pricing)
5. Restricting the second-tier default benefit to smaller hospitals	5a	Abolish second-tier default benefit except for providers in rural and regional areas with under 3 percent of private provider market share
	5b	Introduce a cap on the total charge to the consumer at no more than 100 percent of the second-tier rate
	5c	Prevent hospitals from charging the initial 85 percent cost of hospitalisation upfront to the consumer

IN AN EFFICIENT SYSTEM		
6. Publish data on service cost and quality	6	Design and develop a transparency platform to aggregate all private health insurer data on cost and quality, for use by consumers and medical professionals through a government-operated portal. Consider working with health funds to support GPs to use this in the referral process.
7. Clarify funding of private patients in public hospitals	7a	Mandate the public hospitals to immediately notify health funds when a private patient nominates to be treated as a private patient in a public hospital
	7b	Ensure informed financial consent with greater and timely transparency on the implications and actual costs of a private patient in a public hospital's decision
	7c	Ensure public hospital invoices provide the same itemised detail as private hospital invoices, details already given to the states under activity-based funding models
	7d	Ensure public hospitals do not have quotas for private patients, with health funds recording and publishing the incidence of member treatments in public hospitals, and the financial impacts
	7e	Limit the costs for private patients in public hospitals for private health insurers to elective procedures where patients elect to be treated in a public hospital (i.e. PHI would not be required to fund private patients that were admitted through an emergency department)
	7f	Publish details on elective procedure waiting lists in public hospitals by type of patient (i.e. private or public patients)
8. Collaborate with Medicare on payment integrity	8	Establish a third party 'clean room' where public and PHI payments data can be analysed as a combined set by an independent contractor with instances of incorrect MBS payments being provided to both the Department of Health and insurers to allow appropriate follow up action by each party
9. Extend efficiency of private funders of dental and other ancillary care to public programs	9	Enable private funders of ancillary care (including dental care) to compete to provide public programs of ancillary care
10. Restore the PHI rebate for low and middle income earners	10	Remove the Rebate Adjustment Factor from the rebate setting scheme such that the rebate is restored to 30% of the premium for low and middle-income earners or at very least, maintained at current levels.

2 Background on Private Health Insurance

The Australian population has timely access to effective care through the private health system, which is made available through private health insurance. However, uptake of PHI has plateaued over the past 5 years and started to decline recently, with a visible decline among younger people and significant impacts for the public health system.

After a brief snapshot of industry data, this chapter provides an overview of:

- the benefits of PHI for the health system and the Australian population
- the 1997–2000 incentives to improve participation in private health insurance, and
- the health system's need to maintain high rates of PHI participation.

2.1   A SNAPSHOT OF PHI[4]

The funds. There are currently 37 funds, of which 24 operate on a not-for-profit basis and 12 are 'restricted' funds whose members must fall within the funds demographic requirements (usually determined by vocation, e.g. Teachers Health).

The cover. In September 2018, 54 percent of the Australian population had a PHI policy (over 13.5 million people), with 45 percent having hospital cover.

The participants. PHI participation varies with income and age, but is spread quite evenly across the country.

- *Getting older.* The proportion of older PHI participants is increasing: the 60+ segment has grown from 20 percent to 25 percent over the past 10 years; whereas representation from younger segments in PHI has plateaued (participants in their 20s comprise approximately 9 percent of the PHI population).

- *Higher income.* There continues to be a linear relationship between increasing PHI participation and increasing income, with the exception of pension age PHI participants who remain insured despite their income falling following retirement.

- *Across the country.* Members of private health funds can be found across the country. There are no significant differences in PHI participation from state to state, or between metropolitan and rural areas.

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[4]   Australian Prudential Regulatory Authority, Health Insurance Statistics; data available at www.apra.gov.au (accessed between May-September 2018)

2.2   THE ROLE OF PHI IN THE AUSTRALIAN HEALTH SYSTEM

As a nation, Australia currently enjoys life expectancy above 83 years and our self-reported health scores rank among the OECD's highest.[5] For decades, the Private Health Insurance (PHI) industry has improved access, choice and health outcomes for many Australians, playing an integral role in a sustainable Australian healthcare system.

Overall, PHI serves the Australian health system in three distinct ways:

1. Increasing choice and providing consumers with the peace of mind that they will be able to access high quality medical treatment whenever and wherever they might need it, and continuity of care from their own specialist;

2. Reducing demand on the public health system (i.e. significantly reducing public expenditures and wait times)

3. Fostering innovation in healthcare services.

In these ways, the long-term sustainability of PHI significantly benefits consumers in both the private and public system.

2.2.1   Consumer benefits

Consumers who take out PHI have more control over their healthcare, being able to select their practitioners, avoiding waiting lists and having a wider range of available treatments. For these reasons, 73 percent of PHI participants either agree or strongly agree that private health insurance is essential[7].

■ *Choice and control:* selecting a practitioner from a wide range of options, choosing when and where to be treated, and so being more likely to have a better care experience. For many patients, there is a need to have one fully-trained specialist responsible for their care, rather than a trainee or shift-worker who cannot provide full continuity of care.

■ *Emotional security and reliability of care:* shorter wait times for elective surgery and broader options for rehabilitation care (e.g. through extras cover). The average reported wait for elective treatment in a public hospital (89 days) remains considerably higher than private hospitals (25 days). This does not include the 'hidden' waiting lists, which are generated by wait times for outpatient services. A report by HBF focussing on public hospital services in Western Australia found that the median 'wait-to-wait' time, that is, the amount of time a patient waits between first presenting with a health issue and getting a first consultation with a specialist, was 8.78 months.[6] This report stated overall, 63 percent of consumers report shorter wait times are the most critical change needed in the public health system.[7]

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[5] Organisation for Economic Co-operation and Development 2011, *Compendium of OECD Well-Being Indicators.*

[6]   HBF, A Comparison of Wait Times for Public and Private Hospitals, 2018.

[7]   IPSOS, Healthcare & Insurance Australia, 2017

- **Access to a wider range of services outside of public care:** PHI extras cover subsidises important services such as dental, optical and physiotherapy that are not funded through Medicare. About 88 percent of PHI consumers with extras consider this coverage to be essential.

- **Equitable access for all consumers:** PHI is regulated based on community-rated principles, such that premium price is not affected by age or prior health conditions.

2.2.2 Reducing demand on the public health system

Australians currently achieve impressive health outcomes, due in large part to their complementary public and private health systems. More than two thirds (69 percent) of health decision-makers agree that private hospital insurance takes pressure off public hospitals, enabling the public system to offer improved access to those needing public hospitals.[3]

The private insurance sector supports the public system in several areas, for instance:

- **Funding hospital admissions:** PHI funds 4 out of every 10 hospital admissions in Australia, representing 31 percent of all days of hospitalisation.[8]

- **Earlier surgical procedures:** PHI funds over 60 percent of all elective (planned, non-emergency) surgery in Australia,[9] reducing waiting times and lowering demand for public hospital beds. In turn, this earlier intervention means there are less likely to be complications in the surgery, which could otherwise have led to greater healthcare costs.

- **Setting a performance benchmark:** PHI provides competitive efficiencies in the private sector as well as performance benchmarks for the public sector. This is most clearly demonstrated in the provision of essential non-emergency surgery.

If participation rates decline at the currently forecasted rates, the ability of the PHI industry to insulate the public health system against over-utilisation and higher costs (some examples described above) could be significantly reduced, as will be further explained in Chapter 4.

2.2.3 Providing additional funding for innovation

The additional consumer choice enabled by PHI also promotes innovation and quality in healthcare services.[10] Private health funds have initiated numerous funding programs to improve preventive care strategies, care coordination and health outcomes.

Most initiatives focus on the rising prevalence of chronic disease and the corresponding challenge of access to primary care for some vulnerable groups (e.g. consumers in regional areas, low income-earners). Examples include[11]:

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[8] Australian Government Private Health Insurance Administration Council 2015, Competition *in the Australian Private Health Insurance Market. Research Paper 1*

[9] Australian Institute of Health and Welfare 2015, Admitted patient care 2013–14: Australian hospital statistics. Health services series no. 60, cat. no. HSE 156

[10] Harper, Ian et al, *Competition Policy Review: Final Report*. March 2015, 230

[11] Based on Fund interviews and publicly available data on Fund websites

- **Medibank's CareComplete** program offers integrated patient care for people with chronic and complex disease, in three ways. *CarePoint* is for patients with the highest level of chronic and complex needs: a GP supervises a care plan that includes an initial home visit, follow-up phone calls and home visits as required to assist the patient to manage their health. *CareFirst* is a behavioural change program for patients in one of five key disease areas: chronic heart failure, chronic obstructive pulmonary disease, osteoarthritis, Type 2 diabetes and cardiovascular disease. *CareTransition* focuses on the hospital discharge process and on a patient's ability to manage their own recovery post-discharge, for patients most at risk of unplanned readmissions.

- **HCF's Healthy Weight for Life** programs have demonstrated sustained weight loss and improvement in diabetes, cardiac and osteoarthritis health indicators and symptoms, reducing the severity of chronic disease amongst the 10,000 participants.

- **HCF's My Heath Guardian Program** which has improved the health status and frequency of hospitals admission in the 53,000 participants, reducing the likelihood of hospital admission or re-admission in members with targeted conditions by between 27–45 percent relative to a control group.

- **GMHBA's** Health and Wellbeing pilot for patients with chronic disease works with GP practices to alert *GMHBA* of an at-risk member likely to require extra chronic disease management support, and the GP and fund co-create an extra allied health support program.

Other initiatives are targeted to drive innovation, service quality and efficiency, examples include:

- The **Bupa Health Foundation** announced in 2017 a $1 million funding initiative for practical research into better models of care for mental health treatment in Australia, including digitally-enabled models of care.

- **HCF Research Foundation** funds initiatives focused on providing high quality care and improved patient outcomes. The $1 million annual funding has supported activities such as identification and minimisation of low value care; improve health outcomes for highly specialised care groups such as neonates in intensive care and in-hospital burns victims, and a comprehensive range of projects focused on improving end-of life care.

- **Bupa's Hatch Maternity Pilot** is a gap-free private maternity service launched in Brisbane in December 2017. The pilot is designed to ensure new parents receive no out-of-pocket costs for midwifery and obstetrician fees. It is part of Bupa's ongoing campaign to help address affordability and value for money in private health insurance.

- **HCF Catalyst Program** – supporting innovation in health technology and service startups and scaleups through investment of $2.5 million in a world class accelerator program.

- **Healthshare**, which demonstrates indicative, costs for common procedures and participation in HCF, Medibank and AHSA Medicover Gap arrangements. This is being extended to include information on gaps by doctor in FY19 to enable referring GPs and patients to have transparency on likely costs at point of selection of treating specialists.

- **Whitecoat** is a search and comparison website helping Australians make better purchasing decisions when choosing a healthcare provider. Over four million Australians have taken advantage of Whitecoat since it was launched in 2013. It includes over

210,000 listed healthcare professionals across 40 different provider types. In 2016, Bupa and HBF joined NIB as joint-venture partners.

■ Establishment of **fund-owned dental care centres** and preferred provider networks with participating private dental practices. This allows members to access gap-free dental care and addresses key consumer concerns around out-of-pockets.

2.3 INCENTIVES TO ATTRACT CONSUMER CONTRIBUTION INTO HEALTHCARE SYSTEM

After Medicare was introduced in 1984, PHI participation fell steadily for over a decade, until the resulting load on the public system became too great. This was exacerbated by poor economic conditions, including the recession and banking collapse in the late 1980s to early 1990s. The result was double digit premium increases for the PHIs and a blowout in wait times and poor quality outcomes reported in public hospitals.[12] The response was three financial incentives that remain essential to this day.

■ Within a year of Medicare's introduction, more than half of PHI consumers aged under 35 dropped their hospital cover and stopped contributing into private healthcare. Participation continued to drop, in turn causing the community-rated premiums to rise by 75 percent during the early 1990s, further reducing participation to its all-time low of 30 percent in 1997.[13]

■ The public hospital system was forced to take up the slack. By the early 1990s, there was a public outcry surrounding public hospital waiting lists. By 1997, more than 1 in 10 patients were unable to receive surgery in the medically recommended timeframe: 12–14 percent of Category 1 patients were required to wait over the 30 days recommendation of the Australian Institute of Health and Welfare.[14]

To reduce the load on the public system, the government developed three financial incentives to increase PHI participation.

■ The **Medicare Levy Surcharge** is a 1–1.5 percent surcharge payable by consumers who earn taxable income above $90,000 and who do not take out PHI with hospital cover. The impact of the surcharge is clearly visible: PHI participation in the $70,000 to $90,000 income bracket is 71 percent, and rises to 90 percent in the $90,000 to $105,000 bracket.[15] In 2016, 295,000 people opted to pay the surcharge (15 percent of the population to which it applies).[16]

■ The **premium rebate** reduces the amount payable by those with PHI by a percentage of their premium, with the rebate determined by the insured's age and, from 2012, their income. The rebate entitlement is reduced each year by the Rebate Adjustment Factor

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[12] 'Hospital Injuries Kill up to 14,000'. The Australian, 2 June 1995.

[13] Industry Commission on Private Health Insurance, Report No. 57, 28 February 1997

[14] Australian Institute of Health and Welfare, *Waiting Times for Elective Surgery in Australia 1997–98*, Canberra, AIHW, 2000

[15] Analysis based on ATO Income Distribution Statistics, FY2015–16

[16] Analysis based on ATO Income Distribution Statistics, FY2015–16

(RAF), and has been reduced from ~30 percent in 2012 to ~25 percent now for most members: see Exhibit 2**.**

■ **Lifetime health cover loading** adds 2 percent to lifetime PHI premiums for every year after the age of 30 that a person chooses *not* to take out PHI membership. This incentive was very successful when introduced: participation of those aged 30–34 rose by 85 percent in the first year.[17]

EXHIBIT 2

Overview of Rebate entitlement and Medical Levy Surcharge — ILLUSTRATIVE

— Rebate entitlement % — MLS %

Rebate Entitlement
(% average rebate entitlement)

Medicare Levy Surcharge
(% of taxable income deducted if PHI is not taken out)

Base Tier | Tier 1 | Tier 2 | Tier 3

Individual in Base Tier only receives the Rebate; does not attract the Surcharge

Individual in Tier 3 does not receive the Rebate; only attracts the Surcharge

Taxable Income ($)

15,000 30,000 45,000 60,000 75,000 90,000 105,000 120,000 135,000 150,000 165,000 180,000 195,000

These three incentives were bold reforms when they were introduced, but are now accepted as being efficient, equitable and cost-effective policies to maintain PHI participation at sustainable levels, and so reduce costs for the public system. Their immediate effect was to increase participation by 15 percentage points: one year after the Lifetime health cover loading was introduced in 2000, PHI participation was restored to 47 percent. They continue to underpin demand for PHI participation among high-income and younger consumers, helping to maintain the community-rating structure of PHI, and reserve more public resources for more vulnerable uninsured groups. Each dollar of rebate spent draws in between $1.60 and $2.40 additional funding from the insured consumer for their healthcare.[18] If that consumer were not insured, the public cost of their public healthcare would be higher than the incentive paid (in addition to the other economic benefits of early

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[17]
Comparison of 30–34 age group raw participation numbers between September 1999 and September 2000, based on APRA Statistics, *Membership and Trends* (2018)

[18]
Range reflects fact that some members receiving the rebate would without the rebate also consider entering into private health

treatment). For this reason, a redirection of public expenditure from the incentive to the public system will reduce the efficiency of total government spend.

The value of the PHI rebate has been significantly reduced since its introduction as a 30% rebate on health fund premiums for all members introduced in 1998.

In recent years there have been multiple variations to the regulations governing the rebate aimed at controlling government outlays in this area. These include:

- means-testing introduced in the 2009-10 Budget;
- indexation to CPI, uncoupling the rebate from premium increases legislated in 2012;
- removal of the rebate from LHC loadings, announced in 2009-10 Budget; and
- freezing of the income thresholds for rebate eligibility and the MLS at 2014-15 levels through 2017-18.

The net effect of these measures is to slow the growth of PHI rebate outlays, and in fact, taking into account a decline in numbers of people with rebate-eligible policies, expenditure on the rebate is expected to decline not increase with time.

The evidence we are submitting here suggests that with the exception of means-testing, the PHI rebate should be restored as an efficient means to fund non-emergency surgery, mental health, dental and other community-based allied health care.

3 Current challenges

Australia's healthcare system delivers universal access, patient choice and excellent health outcomes, funded by both public funding and patient contributions in a way that is highly regarded internationally. Twenty years ago, we needed well-designed reforms to maintain that co-funding. More recently, declining PHI participation is again putting unwelcome pressure on the public system.

As healthcare costs rise faster than CPI and wages, consumers[19] are paying higher premiums and out-of-pocket costs. At the same time, state government infrastructure investment is increasing the size, and improving the look and feel of public hospitals[20]. As a result, the proportion of Australians with private health cover has fallen to the lowest level in 8 years.

This chapter looks at the parallel trends of rising healthcare costs and declining PHI participation, and argues those trends are putting Australia's health system at risk. In the Australian health system, there is detailed regulatory review and Ministerial approval of health fund premium increases. There has been much discussion in policy circles about the merits of the Minister imposing a cap on premium increases. While a cap on premiums may help consumers in the short term, it will likely have negative consequences in the medium and longer terms.

3.1 HEALTHCARE COSTS ARE PERCEIVED TO BE HIGH AND RISING

As Australia's healthcare system is generally high quality, it makes sense to focus comment and reform on the challenges of affordability and access. The cost of healthcare flows through to the cost of health insurance premiums, which consumers believe are too high and rising too fast.[20] While financial incentives may reduce the relative cost of those premiums (or increase the relative cost of not taking up private health insurance), they cannot be successful in the long term if the underlying cost of healthcare grows at a rate society cannot afford.

3.1.1 Healthcare costs are rising faster than inflation

Like other developed countries, Australia is seeing its healthcare costs rise well above CPI and wages. Healthcare is increasing its share of both government spend and consumer spend.

In the decade to 2014, Australia's total healthcare expenditure (that is, recurrent and capital expenditure combined) grew at 5 percent per annum. That rate was about 2.2 percent faster than GDP, so that its share of GDP rose to 9.4 percent, just above the average for OECD

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[19] APRA Health Insurance Statistics, www.apra.gov.au (accessed between May-September 2018)

[20] IPSOS, Healthcare & Insurance Australia, 2017

countries.[21] The total spend was $95 billion in 2004 and grew in real terms to $155 billion in 2014.

The drivers of the rising cost of healthcare are well documented.[22] Demographic factors include our aging population and the increasing prevalence of chronic disease. Health system factors include a shift from outpatient to inpatient settings, where more doctors are available and more treatments are offered; more investigations of presenting symptoms due to the availability of more diagnostic tools; and a fee-for-service system.

Much of this rising healthcare spend is an expression of consumer and national choice. It reflects our national wealth, good health as a personal and national priority, the desire to sustain both personal and national productivity, and an investment to reduce future healthcare costs. It also reflects the fact that previous life-limiting illnesses are now treatable, and so life expectancy is improving.

Nonetheless, both public and private systems should always be seeking to achieve the same or better outcomes for lower costs where possible, with the savings returned in reduced taxes or premiums, or re-invested in other areas of care.

3.1.2 Costs for the health insurance industry are rising faster than inflation

Private system costs are subject to the same underlying drivers as the public healthcare system. Healthcare services are typically divided into hospital episodes and other treatments: see Exhibit 3. Benefits paid by insurers for hospital episodes grew by an average 4.8 percent per member per year from 2013 to 2017 inclusive, while benefits for other treatments grew at 4.5 percent per member per year – both well above the 2 percent annual inflation of non-health goods23. This section explores what is driving those increasing payments by insurers, in particular the rising costs of more frequent hospital episodes.

For both types of services, each member is claiming more services (that is, higher 'utilisation' of services), and the cost of services is rising. In the five years to 2017, the number of hospital episodes grew at 3 percent per member per year, and their cost at 1.8 percent per year. The number of other treatments grew at 2.4 percent per member per year, and their cost at 2.1 percent per year[23].

Importantly, the overall rise in benefit payments is occurring despite an increase in members taking up lower levels of insurance cover and choosing higher excesses. This means the average policy-holder is now covered for fewer treatments or hospital episodes, or must pay higher excesses to access them. While these policies mean PHI providers are paying less of the cost of a health service, the consumer is paying more. These 'out-of-pocket' expenses

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[21] Australian Institute of Health and Welfare 2016. Australia's health 2016. Australia's health series no. 15. Cat. no. AUS 199. Canberra: AIHW.

[22] **For example:** The Productivity Commission (2017), Shifting the Dial: 5 Year Productivity Review; Australian Institute of Health and Welfare, 25 years of health expenditure in Australia: 1989-1990 to 2013-2014

[23] APRA Health Insurance Statistics, www.apra.gov.au (accessed between May-September 2018)

are having as much of an impact on consumer PHI decisions as the premiums themselves: see section 3.2.

EXHIBIT 3

PHI benefits per member have been growing at 4.8%, driven by increasing utilisation
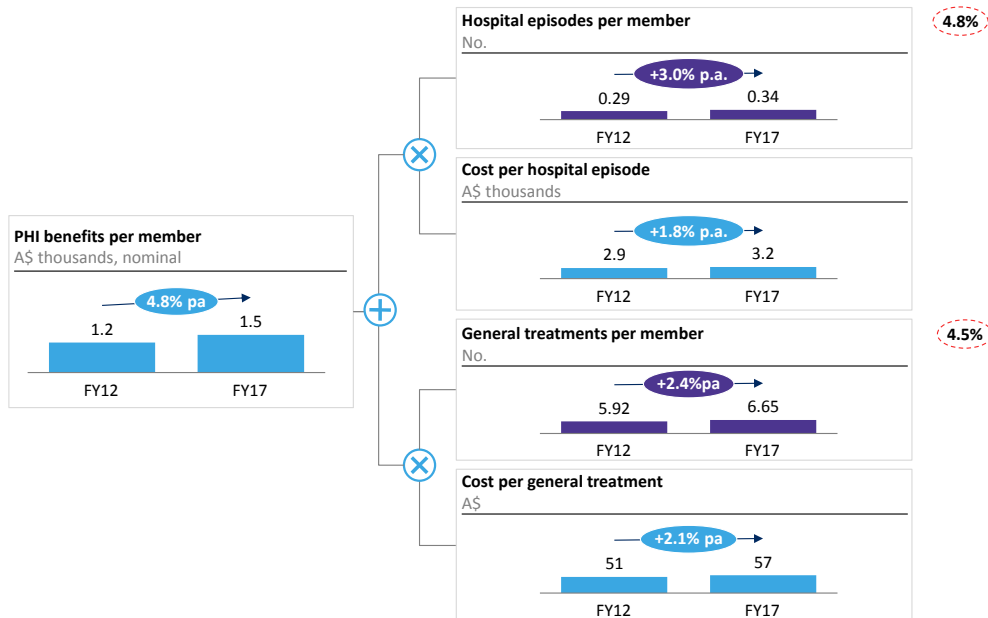
1 Includes total number of members with a hospital product (either combined or hospital only - >99% of hospital products have ancillary coverage)

SOURCE: APRA Private Health Insurance Statistics

3.1.3 Increased utilisation of hospital services

The main reason more hospital episodes are being claimed by private health participants is on average those participants are becoming older, and are more likely to have higher healthcare needs. This is driving increased utilisation in the healthcare system.

Furthermore, perverse incentives as well as increasing patient complexity are causing a shift from outpatient to inpatient care. These include the shifting of outpatient services provided by state governments which are 'free' services, to private providers. Private outpatient services are often fragmented and attract co-payments. The current legislative barriers to health funds contributing to help cover out-of-hospital treatment are significant.

The average age of PHI members has been steadily increasing over the past 15 years. Members aged 70 and older represented 8 percent of the PHI population in 2003, but 12 percent in 2018. While utilisation understandably rises as members get older, the current issue is utilisation is rising significantly for the *same* age cohort: see Exhibit 5. For example,

utilisation in the 85–89 age group rose by 29 percent in the five years to 2017, compared to just 0–2 percent increase for everyone in the 0–55 year age groups in the same period.[24] Significantly, almost one third of PHI hospital spend is claimed by members with multiple or severe chronic diseases, despite their representing only 2–3 percent of PHI membership.[25]

EXHIBIT 4

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

— % benefits   ■ Benefits per person
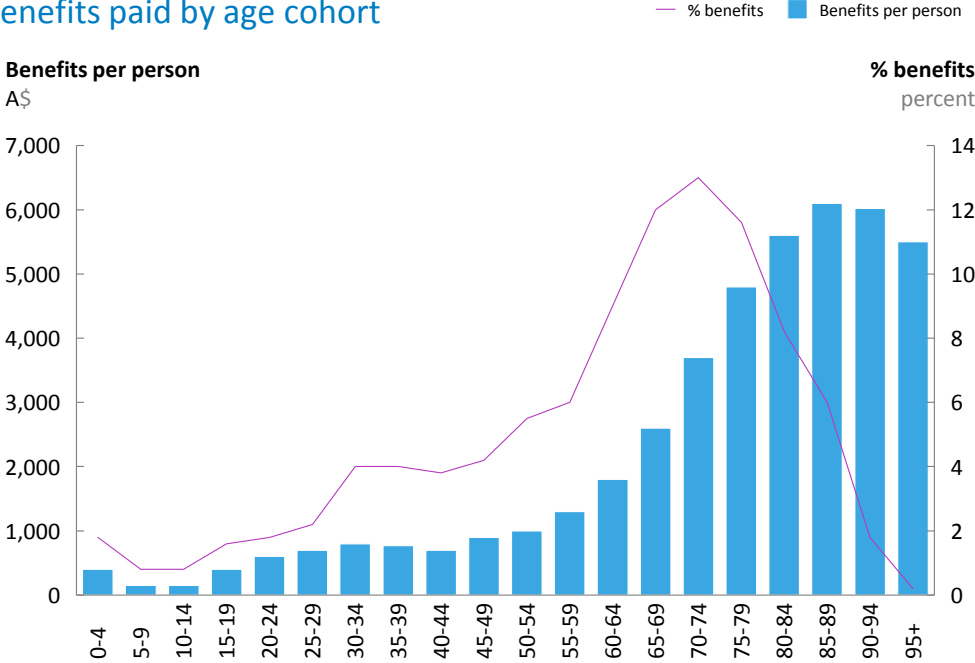
SOURCE: AIHW Quarterly Statistics, March 2018

Healthcare costs are likely to continue to rise

With no systemic changes, healthcare costs will continue to rise above CPI for the next 5 to 10 years. The forces that may dampen the rise in costs are far outweighed by those supporting the rises.

For the past two years, the rise in PHI benefit payments has slowed slightly to about 4 percent per member per year. Part of that is due to Federal government reforms that lowered the cost of prostheses, and part is due to the consumer shift to lower cover policies and delaying surgery because of the fear of out-of-pocket costs.

While that rate may continue for another year or two, stronger long-term trends will push health inflation back to its historic level of around 5 percent per year. The trends of an aging population, chronic disease, costly technology and inpatient servicing will continue to raise

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[24]   APRA Health Insurance Statistics, www.apra.gov.au (accessed between May-September 2018)
[25]   Data provided by private health funds

the number of episodes. The PHI membership will continue to age, with fewer younger members and more older ones.

As a result, healthcare costs will likely continue to outgrow wage increases, meaning it will take up a larger proportion of disposable income. That rate of increase is already testing the affordability of PHI cover, as we explore in the next section.

EXHIBIT 5

Projected benefit inflation

Historical and projected components of benefit inflation, %

Legend: Benefits per member • Consumer Price Index
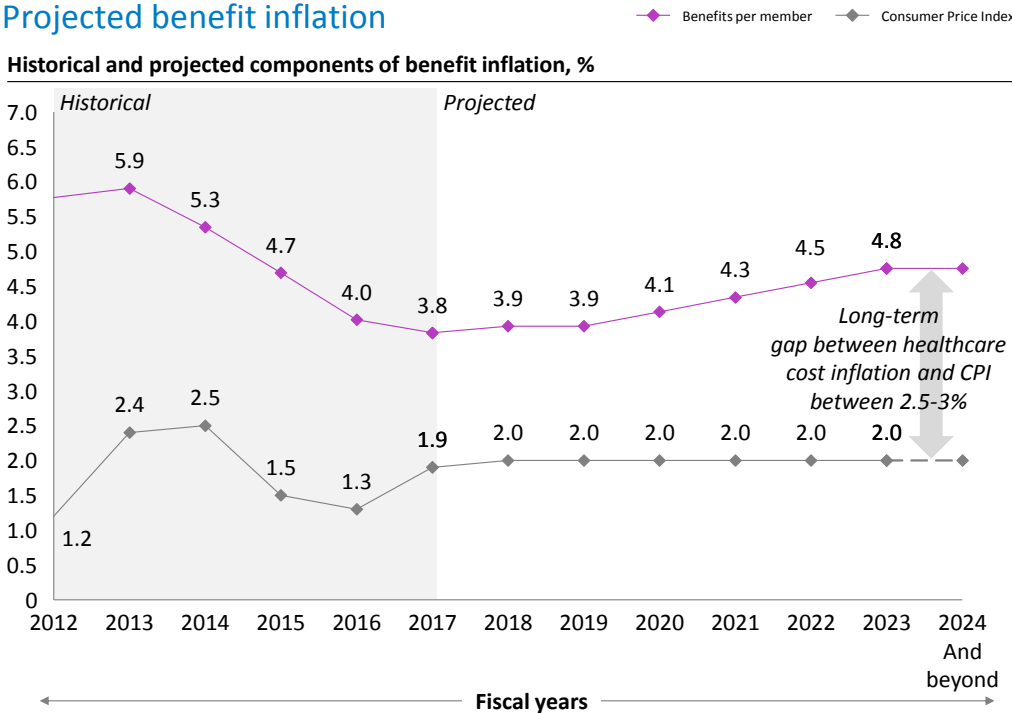
SOURCE: APRA, ABS

3.2   PARTICIPATION IS DECLINING

Over half of the Australian population (13.5 million people) choose to be covered by PHI. However, that participation has levelled off over the last 4 years, and those having hospital cover has started to decline. The choice to decline PHI cover is driven primarily by cost, and is exercised primarily by younger and healthier people.

3.2.1   Participants are facing ever-increasing costs

Joining, lapsing or downgrading private health insurance is driven primarily by financial considerations. Consumers weigh the benefits of private health against the value of the public system, as well as other goods or services they could spend their money on.

The affordability of healthcare has been reduced by years of rising premiums, increasing (and unexpected) out-of-pocket costs and the decline in the government rebate. As well,

slow wage growth and increasing housing, energy, fuel and education costs have added to the pressure.[26]

■ **The average premium rise for each level of hospital cover has been ~5.5 percent per year** over the last 5 years, driven by member benefit payouts which have grown at more than double CPI. Participants have also chosen to downgrade their cover, so that the average rise for all paid premiums has been slightly lower at 4.8 percent for the period.[27]

■ **Rebate adjustments have increased effective premiums by an additional 1 percent per year.** In 2012, the government introduced means-testing and an adjustment factor to limit its total spend on PHI rebates. As a result, the average effective premium payable by consumers has risen even faster than the nominal premium rate.

■ **Out-of-pocket expenses are rising, and lack transparency.** Though out-of-pocket costs (OOPs) are a long-standing issue for PHI members, the number who cite medical OOPs as a reason to drop out of PHI has more than tripled over the past 5 years, now reaching 32 percent of participants.

   While most services are covered under 'no' or 'known' gap arrangements, members must pay OOPs for the remaining 14 per cent of services. Patients incur multiple OOPs for the same procedure, since the surgeon, assistant surgeon and anaesthetist each bill the patient separately. OOPs have generally increased in line with overall healthcare inflation (though variation exists), and as an example could be as high as $3,000 for knee surgery.[28]

   Consumer research shows that it is the lack of transparency rather than the costs themselves that tempts them to downgrade or lapse their cover. Of a sample of consumers who had recently paid OOPs, 29 percent had negative feelings for their insurer when they were made aware of OOP costs in advance. However, that proportion jumped to 61 percent for the one-third of consumers who were unaware the costs were coming[29]

The decline in affordability of private healthcare comes at a time that government has been investing a significant amount of capital in public hospital system infrastructure. While such investment is unlikely to be sustainable in the long run, it has created an additional incentive for consumers to either remain in the public system or lapse their private cover.

3.2.2 Participation is declining as a result, particularly for those under 35

An increasing number of Australians are finding it difficult to join or keep their private health membership. Fifty seven percent of Australians without PHI cite lack of affordability as the main reason they do not have it. More than a third of insured Australians are finding

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[26] ABS Household Expenditure Survey, 2015–2016

[27] APRA Health Insurance Statistics, www.apra.gov.au (accessed between May-September 2018)

[28] Hospital Casemix Protocol data, 2017

[29] IPSOS, Consumer Research, July-August 2018

they cannot comfortably afford it, with 8 percent (representing 400,000 people) having 'real difficulty' paying[30].

These concerns are reflected in recent declines in both PHI membership and a downgrading of cover.

■ **Overall participation is declining.** Faced with higher premiums and medical OOPs, many participants are either lapsing or downgrading their cover. In the 4 years to 2018, the proportion of the Australian population with PHI hospital cover has declined from 47 percent to 45.1 percent. In just the three months to June 2018, almost 60,000 PHI members lapsed their cover.

■ **Downgrading is increasing.** Rather than drop their cover completely, many members are choosing a lower tier of cover, and pay more excess. For example, one fund reports that its lowest-tier hospital cover now covers 35 percent of all members, up by 50 percent in just 5 years.

■ **Fewer Australians in their 20s are taking up PHI.** Historically, young adults have dropped their membership when they are no longer eligible for their family policy, and then returned to PHI by the end of their 20s. However, over the past 5 years the proportion of 25–29-year-olds with PHI cover has *fallen* by 15 percent[31].

■ **Fewer consumers aged 30–34 are responding to the LHC Loading policy.** When the Lifetime Health Cover Loading was introduced in July 2000, there was an immediate rise in participation in the 30–34 age segment.[32] The jump in participation from 24–29-year-olds up to 30–34-year-olds is still large, but the jump was 72 percent ten years ago and is only 42 percent now: see Exhibit 6.

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[30] IPSOS, Consumer Research, July-August 2018

[31] APRA Health Insurance Statistics, www.apra.gov.au (accessed between May-September 2018)

[32] 85 percent increase in raw participation within 1 year of releasing the LHC. Comparison of 30–34 age group raw participation numbers between September 1999 and September 2000, based on APRA Statistics, *Membership and Trends* (2018).

EXHIBIT 6

Drop in young people entering private health

— 25-29 entering 30-34 bracket   — 20-24 entering 25-29 bracket

Change in participation over 5 years, as participants move to new age cohort, %

72%

42%

10%

-15%

2003-
2008

2013-
2018
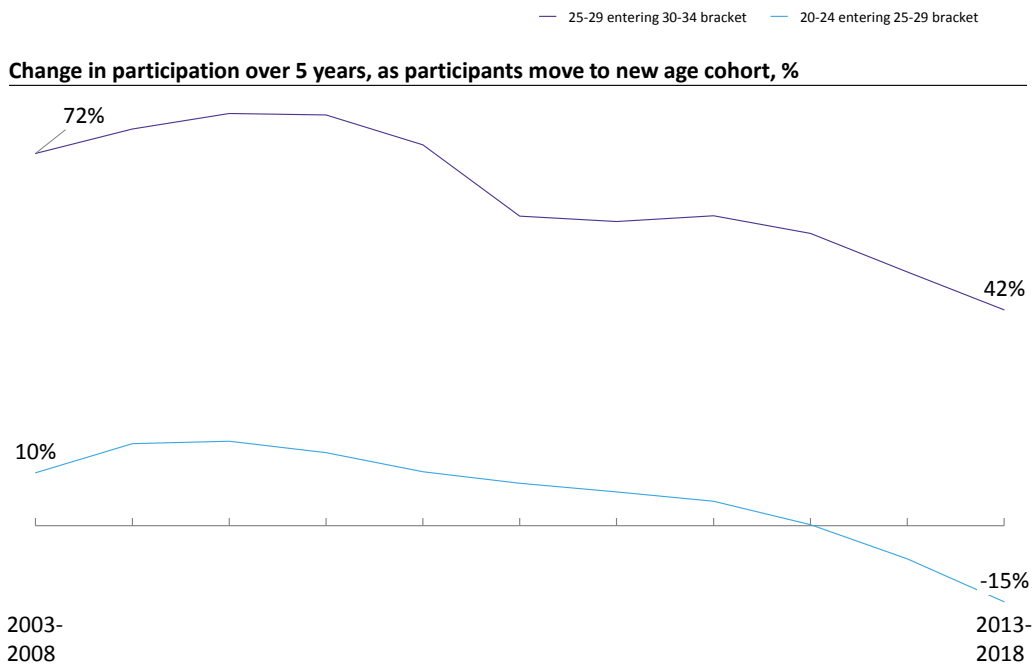
6

SOURCE: APRA Private Health Insurance Statistical Trends June 2018 – Membership

Maintaining PHI beyond wealthier and older Australians

Increasing healthcare costs and declining PHI participation are intimately related, and are joined by rising PHI premiums. While health fund overheads account for about 9 percent of overall premiums, they account for about 11 percent of premium increases. It is the increasing claim benefits that account for almost 90 percent of premium increases, and which ensure that those premiums are rising at double the CPI rate of inflation[33]. This means that PHI cover is less affordable and, all else being equal, participation will decline.

The community rating principle of Australia's health insurance system plays an accepted yet important role in this dynamic. Any increase in healthcare costs is reflected in the premiums of all PHI members, no matter if the increase is limited to a specific age or health cohort. Both consumers and practitioners often misunderstand this principle: about one-third of both groups mistakenly believe premiums can be aligned to a person's medical history.[34]

If health cost inflation and premiums continue to rise, private health insurance membership risks becoming the preserve of older and wealthier Australians, who will be locked into spiralling premium costs, which will further reduce participation. Once this spiral gains traction, it will be very difficult to reverse it without significant regulatory intervention.

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[33] Simon Lim, Why is Health Insurance getting more expensive?, Actuaries Institute, February 2018
[34] Healthshare Consumer Research, August 2018.

Under current macro-economic and regulatory conditions, PHI participation could decline to ~30 percent between 2030–2035 (see Exhibit 7). The public system would be responsible for between 15 percent and 20 percent more of the Australian population who are no longer privately insured. Meanwhile, the private system will lose its ability to innovate, or set additional performance benchmarks for the public system in the key areas of non-emergency surgery and chronic mental care. There will also be significant flow-on effects to private specialist medical practice which will not be sustainable at the same levels it is today.

The earlier that we act to prevent a future spiralling of PHI premiums, the more likely it will be that Australia can maintain a private health system, and so keep costs down in the public health system. As we will see in the next section, premium-capping without accompanying reforms to reduce health cost inflation, will only kick the can down the road.

EXHIBIT 7

This dynamic could lead to participation as low as 30% by 2030-2035

PRELIMINARY

Historical hospital coverage (insured persons as % of population)

Projection[1]
- - - 0.5% wage growth scenario[1]
——— 2% wage growth scenario[2]
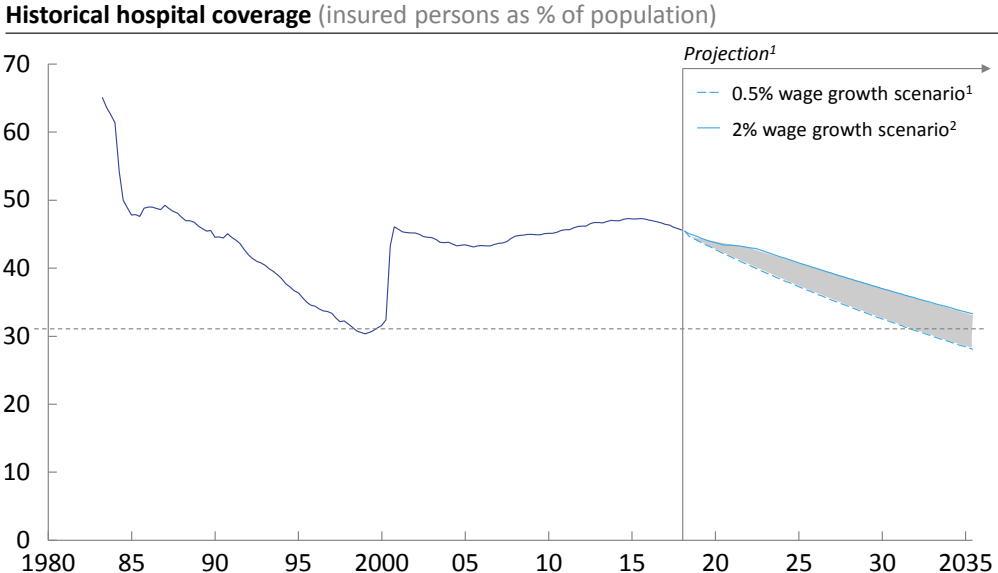
1 Hospital coverage rates projected to FY23 using elasticity factor and extrapolated. Downward range obtained by using a lower wage inflation in line with historical 5-year median household income inflation (~0.5%); 2 Also includes 2% premium cap for 2 years as of April 2020

SOURCE: APRA Private Health Insurance Statistical Trends March 2018 – Membership, APRA data (Benefits per episode, membership), Hospital Case mix Protocol data for OOPs

4 Implications of rising healthcare costs and reduced participation for the health system

The previous chapter reviewed how rising healthcare costs has led to declining participation in private health insurance, and how more and more younger and healthier people have chosen to rely on the public system. This chapter now considers the implications of this dynamic – on both the private and the public systems – as healthcare costs continue to rise.

We assume that without any intervention, healthcare costs and hence premiums and out-of-pocket costs will keep increasing between 4–5 percent annually, which will likely be far above the annual wage growth. In addition, the rebate will cover less premium costs each year, reducing to ~20 percent for most PHI members by 2025.

These trends lead inexorably to poor outcomes for both the public and private sectors:

- **Participation in private hospital cover continues to decline**, from the current c.45 percent down to 40 percent around 2023–2025 and then to ~30 percent between 2030–2035. Capping premium growth may have a limited, temporary impact, but is more likely to lead to increased out-of-pockets costs for consumers which, with a likely rebound of premiums and reducing rebate, will keep the decline in participation in line with pre-cap projections.

- **Government capex and operating costs will rise** when PHI participation declines to 40 percent and an additional 1.5 million people shift to the public system (excluding population growth, which would add even more). First, the government will have the unenviable choice of either spending an extra $3.6 billion on additional public infrastructure, or allowing wait times to lengthen. Either way, government will be faced with hospital operating costs rising by 7.2 percent per year.

- **The outlook is little better for the private system.** Unable to increase premiums by as much as rising healthcare costs, PHIs have limited options to close the gap to healthcare inflation: reduce the benefits they pay out; reduce their overhead (administration) costs; reduce their operating margins; or run down their capital reserves. None of these options are sustainable, and could lead to closures of both private providers and insurers.

While the direction and endpoints are clear, the timing of these outcomes will depend on macro-economic conditions, in particular wage growth.

4.1 PUBLIC WAIT LISTS AND COSTS RISE SUBSTANTIALLY

If PHI participation declines only to 40 percent, it would still mean 1.5 million additional people becoming fully dependent on the public hospital system (given a 2017 population), having a significant impact on both waiting times and government spending.

4.1.1 Wait times will lengthen substantially without substantial capital spending

Governments will likely have to spend heavily to avoid unacceptably long wait times in the public sector.

■ **Recent wait time successes will be reversed.** In the past 5 years, wait times have come down by an *average 2–6 percent p.a.* across the country. With 1.5 million additional people in the public system (as a result of participation in private health insurance falling to 40 percent), that positive trend will soon reverse and wait times could increase by more than 90 percent: see Exhibit 8. For example, a person needing a total knee replacement would wait an extra month – unless more money is spent to increase public hospital capacity. This assumes also that a proportion of specialists currently operating in the private system will follow the patient flow to the public system. If not enough specialists do follow the patients, these wait times could extend further. The reality of 'hidden wait lists' that is, the time spent waiting for an initial outpatient appointment in a public hospital, is also likely to worsen.

EXHIBIT 8 – WAIT TIMES WILL INCREASE IN THE PUBLIC SYSTEM

Resulting in an increase in waiting list times

PRELIMINARY

■ Total knee replacement   ■ Total hip replacement   ■ Herniotomy   ■ Cholecystecomy

Waiting list times for selected common surgeries
No. days
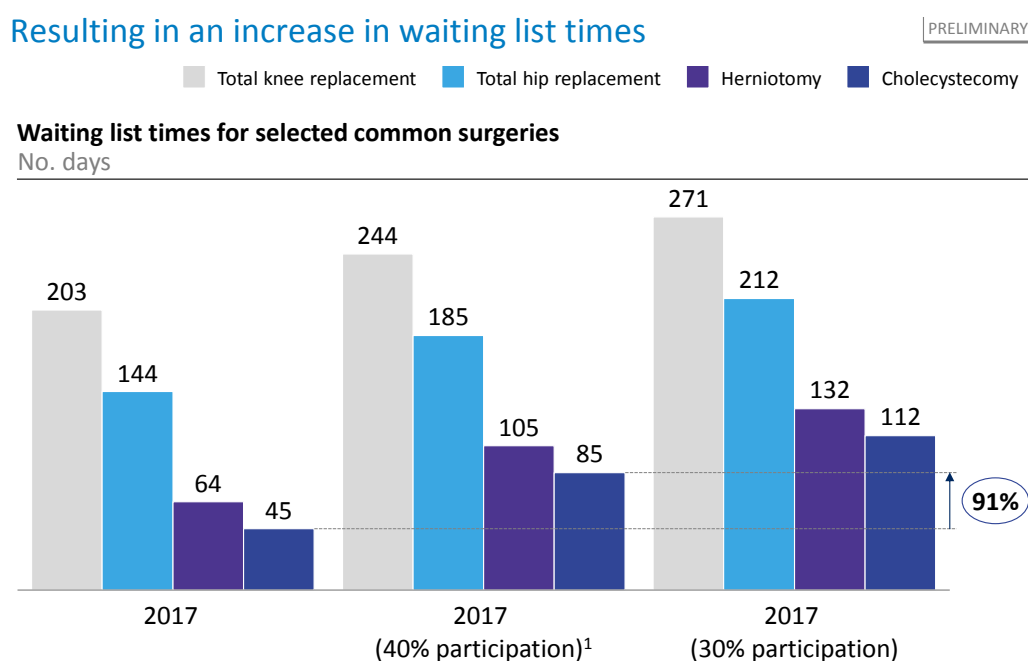
1 Private hospital utilisation for these procedures in FY17 used for private patients moving to the public system. All input variables held constant (i.e. numbers of surgeries completed per day). 2017 baseline used for 30-40% participation scenarios to exclude impact of population growth

SOURCE: My hospitals - Elective surgery data, AIHW, APRA Private Health Insurance Statistics, Hospital Casemix Protocol: Annual

- **Alternatively, the government could increase its annual capex spend by 13 percent.** If the government wanted to keep current wait times constant, it would need to add an additional 3,600 public beds before 2025, when PHI participation would fall to 40 percent. At an estimated $1 million per bed, this would require $3.6 billion in capital expenditure, or an annual 13 percent increase of ~$500 million on top of existing spend.

- **Specialist supply may be an additional constraint in regional areas.** It is not unlikely that due to the decrease in private health participation, private hospitals may be closed due to insufficient utilisation. In regional areas, specialists who work in both the local public and private hospital, may relocate if the local private hospital closes down.

To keep waiting times constant, at least 3600 new beds would need to be added

Total no. of beds required[1]
No. beds

Current beds	New beds required (40% coverage)	Total new beds
61,743	3,616	65,359 (+6%)

Additional Capital Expenditure required
$ millions

Current annual spend	New beds required (40% coverage)	Total new spend
3,857	517	4,374 (+13%)
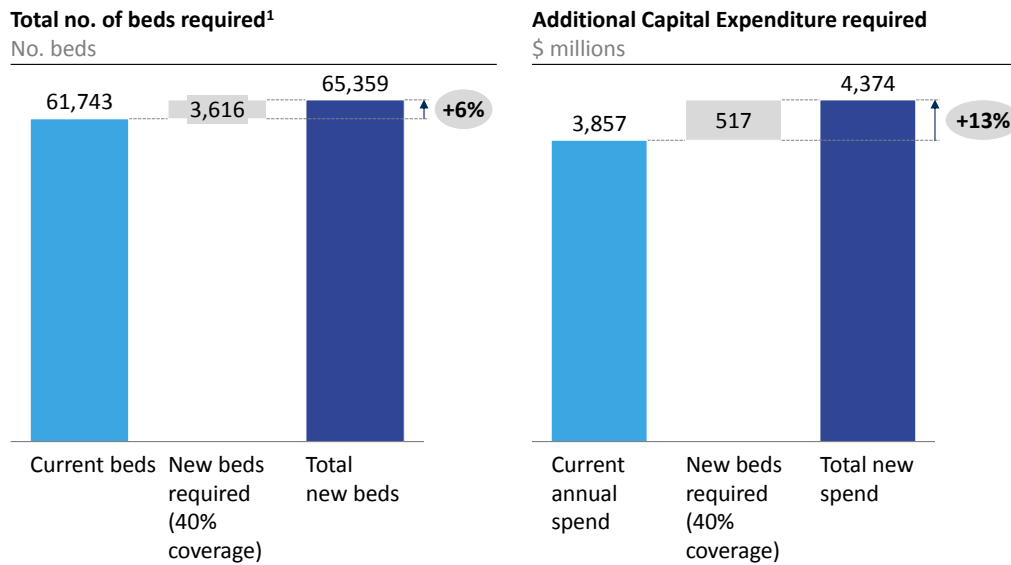
9

1 No. of beds required does not include the increase required for pure growth in population over this time, only increase in no. of people fully dependent on the public hospital system due to decreased coverage. Current private hospital utilisation rates used to estimate total no. of bed days, and average LOS in public hospital taken to be 3.2 days. Each additional public hospital bed estimated to cost $1M (conservative)

SOURCE: My hospitals - Elective surgery data, AIHW – Australia's Hospitals at a glance 2016-17, APRA Private Health Insurance Statistics

4.1.2 Public operating costs could rise by 7.2 percent p.a., well ahead of healthcare inflation

Each year, Australian governments spend an average $424 on private hospital care for each privately insured member, both directly and through rebates. Consumers then spend an additional $815 on that care: see Exhibit 10. Another way of saying this is that every dollar the government spend on the PHI tax rebate attracts $1.60 to $2.40 in additional consumer contributions. This leverage takes into account the fact that some members may keep

private health for several years after they lose the rebate incentive. This compares to an average annual government (state and federal) spend of $3530 on public hospital care for each uninsured citizen.

Certainly, it is difficult to compare per-person costs for private and public hospitals due to the different case-mix and the higher level of emergency admissions in public hospitals. Nonetheless, normalising for both emergency admissions and personal contributions, we calculate that the shift of private patients into public care will lead to public hospital operating costs rising by an additional 0.7 percent a year. This would come on top of the agreed 6.5 percent p.a. cap on Commonwealth funding in the National Hospital Agreement.[35] State governments would have to make up the shortfall.

EXHIBIT 10

Breakdown of sources of funding to private and public hospitals

$ per capita[1]
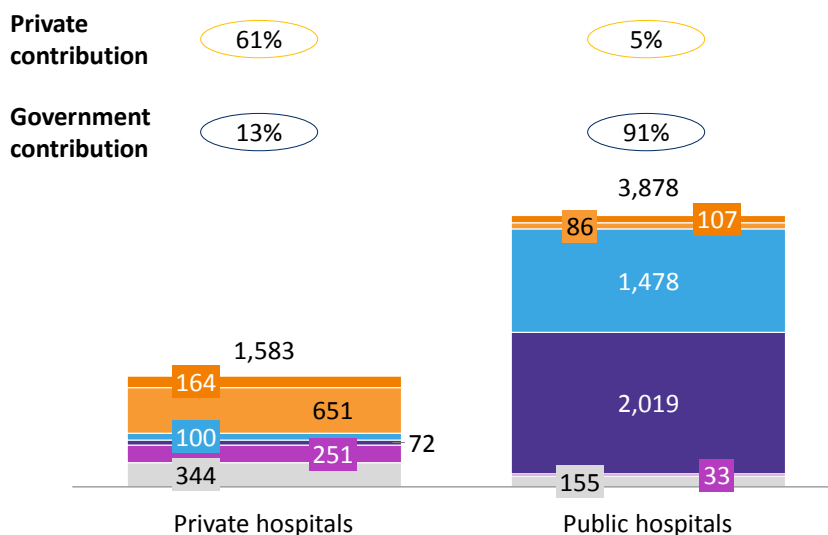
1 Per capita calculated by total spend divided by number of privately insured members of Australian population
2 Other includes Patient transport services, Aids and appliances, and Administration
SOURCE: AIHW Health Expenditure Australia 2015-16

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[35] Includes increased members due to population growth.

EXHIBIT 11

And federal funding of public hospitals could increase more than 7% annually

⌐¬ From additional members coming out of private

Projected public hospital health inflation[1]
$ billions

7.2% p.a.

	2017	2025	2035

- 2017: 46
- 2025: 81 (5 / 77)
- 2035: 163 (19 / 144)
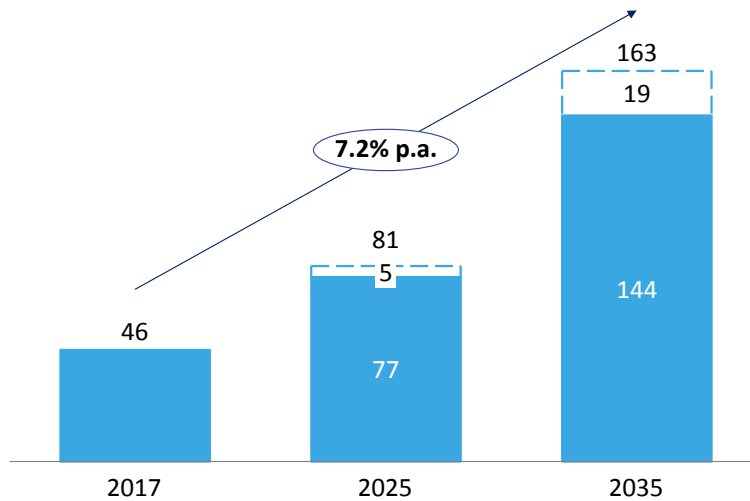
11

1 Includes Federal and State funding; assumes underlying health inflation of public hospital government funding at 6.5%,

SOURCE: APRA Private Health Insurance Statistics, AIHW Australia's Health Expenditure 2015-16

4.2   A WEAKENING OF THE PRIVATE HEALTH SECTOR

As we have seen, participation in hospital coverage is declining and this is likely to continue in the years to come without reforms to curb health cost inflation. As costs per capita are rising, this would require funds to further increase premiums, despite the funds' preference to keep premiums low to improve affordability. In the current system however, they have limited options to absorb or reduce the increasing healthcare inflation: they could reduce their overheads, reduce their profit margins or draw down on their capital base. As this section shows, neither of those options are a sustainable response, and more people will shift back to the public system, putting that system under stress. In the end, only reducing healthcare inflation can maintain the viability of both the private and public systems.

4.2.1   PHI revenue growth is declining due to downgrading

Healthcare insurance premiums are set annually by the Federal Minister of Health after review by regulators of submissions from the private health funds. The growth in these 'headline' premium rates have been reduced to an industry-wide average of 3.95 percent in 2018, and a further reduction to 3.25% percent in 2019. Due to the one-off reduction in prostheses prices, which is spread over four years, this is roughly in line with the healthcare inflation in each year.

However, the headline premium rates are different from the actual premiums received by funds. Over the past 5 years, members have downgraded their cover year on year, reducing the average premium received per member: see Exhibit 12. This means the PHI funds revenue growth over the past 5 years has been as much as 1.5 percent below headline premium growth, making the gap between healthcare inflation and premium growth wider than typically believed. Applying a similar discount to a proposed 2 percent cap in annual premium rises would mean that actual PHI revenue growth would fall to 0.45–1.3 percent, just one-fifth of forecast health inflation.

Members are also increasingly downgrading their coverage

Historical distribution of members across levels of coverage[1]
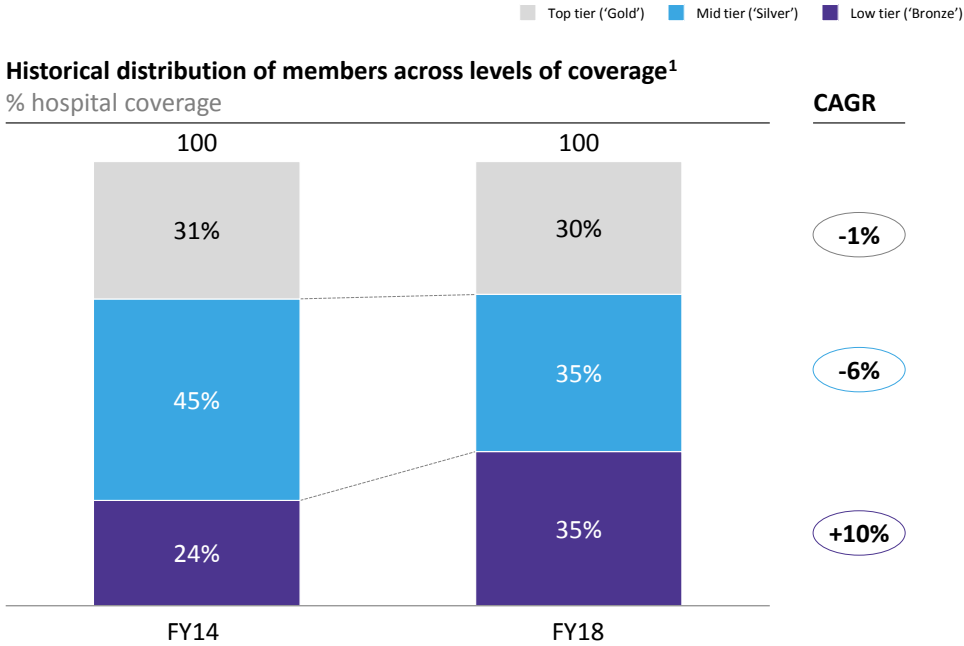
1 Proportions adjusted to 100%, excluding general only membership
SOURCE: Fund data

EXHIBIT 13

Resulting in lower premium revenue growth than headline numbers

■ Industry-weighted policy premium growth[1]   ◆ Growth in premium revenue per member

Industry average headline and premium revenue growth rates per total members

Premium growth
%
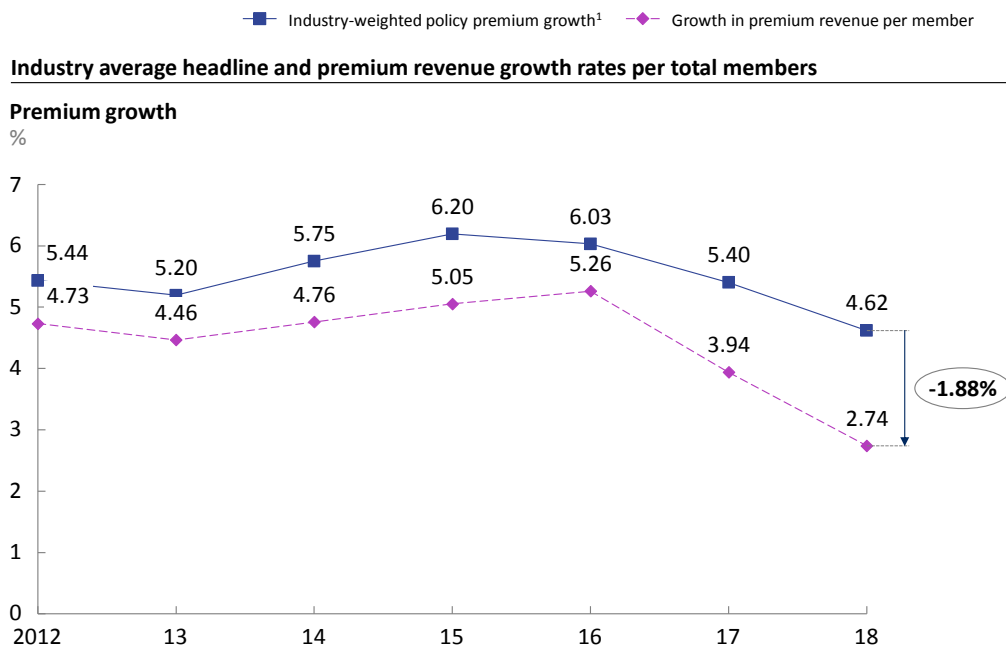
1 Headline industry-weighted average growth rate figure adjusted from April to June year-end (3 months of growth rate announced in the April immediately prior + 9 months of the growth rate announced in April the year preceding)

SOURCE: Department of Health, APRA data - Total Premium Revenue

4.2.2 Reducing fund overheads would have little impact

A possible avenue for health funds to absorb the gap between premium growth and healthcare inflation is to reduce their management, administration and marketing costs. However, it is important to note that on average approximately 90 percent of a fund's historical costs increases have been the result of benefit outlays, and as a result, further reductions in overhead costs will have limited impact in reducing healthcare cost inflation. The industry median for those overhead costs in FY17 was around 9 percent of revenues, after a steady decline over past decades. Most of the remaining overhead costs (63 percent) consist of staff costs, including call centres, which largely do work as required by industry regulators (like complaints handling and the implementation of government reforms).

Funds are continuing to improve their customer service offering and their efficiency, hence a continuing reduction in overhead could be expected. However, even if funds with a higher overhead level could reduce their costs to the industry median, it would only reclaim 0.3 percent of PHI revenue losses, or just ~10 percent of the 'gap' between the long-term forecast of 4–5 percent healthcare inflation and <2 percent revenue growth.

4.2.3 Fund margins are already tight

If health funds are unable to significantly reduce their overheads, any reduction in premiums or rises in healthcare costs will directly reduce their net margins (for-profit PHI funds), or the contribution to reserves (for non-profit funds).[36] Net margins in the PHI industry are not as large as they are perhaps perceived to be. In 2017, the industry-wide margin was 5.1 percent (of revenues), a level below that of the general insurance industry and roughly at par with major healthcare providers.

More importantly, eight PHI funds – or one quarter of all funds – currently have operating losses: see Exhibit 14. Some of these funds have taken the voluntary decision to maintain premium affordability in the short term. However, it illustrates that premium restraint in the face of continuing healthcare inflation can quickly create a loss-making situation for funds. In fact, a continuation of below-inflation premium growth may bring five more funds into negative net margin territory by 2023. Even worse, a temporary cap of 2 percent premium growth, without any accompanying reforms to reduce costs, would move a total of 22 health funds into the red. Clearly, these are unsustainable outcomes for most funds, and would likely lead to fund closures and industry consolidation.

EXHIBIT 14 – ONE THIRD OF PHI FUNDS HAD AN OPERATING LOSS IN FY17

Several funds are already running negative net profit margins

Net profit margin by fund, FY2017
%

All major funds have NPM < 8%. The fund with net margin of 14% is a small fund

Weighted industry average ◀ 5.1

Small regional health fund with net margin of -11%
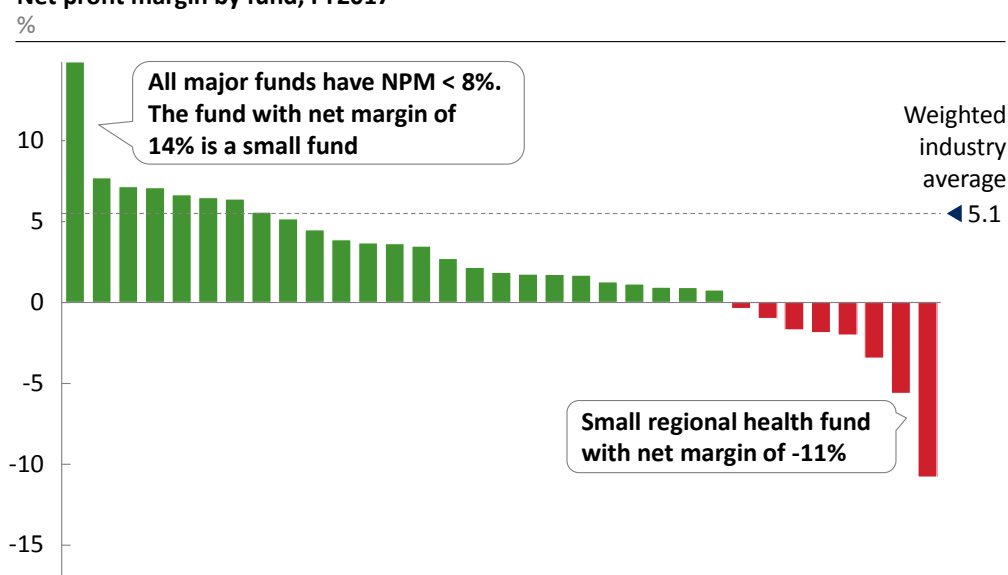
Note: Analysis excludes Nurses & Midwives Health; Emergency Services Health; CBHS Corporate Health; and MO Health, which were new entrants to the industry in FY2017 and had premium revenues for the period of < A$500k

SOURCE: APRA Private Health Insurance Statistics

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[36] Going forward, 'net margins' is the term used for both for-profit and not-for-profit funds.

4.2.4 Capital adequacy requirements may prevent margin cuts

The regulation of Australian PHI funds includes capital adequacy requirements monitored and enforced by the Australian Prudential Regulation Authority (APRA). Each fund has a capital management policy and unique arrangements to ensure that it meets mandatory prudential standards.

These arrangements are confidential but typically include two important tests:

■ **capital adequacy:** a fund must maintain a more than 98 percent probability that it will meet its prudent liabilities over the next 12 months, and

■ **solvency:** a fund must be able to compensate for stressed net cash outflows at the 98th percentile.

As we are not able to analyse each fund's capital management policy, we have calculated what an average fund position would be with the average margin reductions seen in the last section. On the healthcare inflation and premium growth used in this submission, at least 7 funds will not meet the capital adequacy standard over the five years to 2023. This is supported by APRA's concern that limiting premium increases to 2 percent per annum "is going to be challenging to a number of insurers".[37]

4.3   AUSTRALIA MUST CURB HEALTH INFLATION

Our analysis suggests that, whatever happens to premiums, Australia's health system will be under unacceptable strain if we cannot slow down health inflation. If premiums are allowed to track health inflation of 4.8 percent per annum, they will continue to outstrip both CPI and wages growth, which could remain at around 2 percent[38]. PHI premiums will become more and more unaffordable for Australians on average income. PHI participation will be the preserve of older and wealthier Australians, who will be locked into spiralling premium costs, which will further reduce participation. The public system could have to cater for 70 percent more people than it does now, leading to unacceptable tax rises or cuts to services in other areas. Yet if premiums are constrained, even to the current range between 3 and 4 percent per annum, we would only be buying time. Health funds will be forced to find ways to close the inflation gap, all of which would either reduce the consumer value proposition of PHI or the capital adequacy of the funds.

The only sustainable solution to reducing costs to PHI consumers is to reduce costs of healthcare through system reforms, and to reduce regulatory constraints preventing funds from improving their offering to members in different health settings eg low-co-payment options for outpatient services in key treatment areas where this has become a gap in access. The earlier we act, the more likely it will be that Australia can maintain a broad-based private health system that provides choice and keeps costs down for the public health system.

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[37] APRA official Peter Kohlhagen, quoted in *The Australian*, August 27

[38] Royal Bank of Australia, Economic Forecast August 2018

5 Reforms to curb healthcare inflation

Australia's healthcare costs will tend to rise due to our aging population, rising chronic disease and complex multimorbidity, and higher expectations for care quality. However, certain structural characteristics of our system severely constrain health fund ability to limit those rises. These include set prosthesis pricing, second-tier default benefits, payments for services rather than for outcomes, and a lack of transparency in out-of-pocket charges. The result is healthcare inflation that is consistently two to three times higher than CPI and wage growth, with a corresponding upward pressure on PHI premiums.

Amendments to the National Health Act 1953, introduced by then Health Minister Carmen Lawrence and passed in 1995, permitted health funds to enter into contractual agreements with hospitals known as Hospital Purchaser-Provider Agreements or HPPAs. The effect of HPPAs has been to better enable health funds to control rising hospital costs and insist on quality, at very least the funds are able to get a better deal for hospital care (the main portion of claims expenditure) than the member negotiating as an individual.

However since that time government and regulator interventions have acted to compel health funds to provide cover, even in circumstances which have unnecessarily inflated prices, or which have even resulted in poor clinical care. These actions have been fuelled by two forces. These are firstly misguided attempts to reduce or remove consumer co-payments without proper price controls, and secondly a reaction to claims from some medical peak bodies of 'US-style managed care' occurring in Australia. The second is more a political slogan than a real threat, as the US system referred to differs from Australia in three key ways - there is no routine pre-approval of claims by Australian health funds, health funds do not directly employ medical specialists, and for the most part health funds finance national networks rather than a narrow network of approved providers. It is likely a move to a 1990's style US managed care system would be unconstitutional in Australia.

Both the government and the private health sector have debated these issues for some time. Recently some steps have been taken to make PHI simpler and more affordable. The government's October 2017 reforms will reduce prostheses costs, classify policies for greater transparency, and discount premiums for 18 to 29-year-olds. The industry has continued to reduce overheads, invest in preventative care, and reduce its operating margins.

While these efforts are welcome, they are not yet enough. We need to address the structural characteristics that will otherwise continue to drive up healthcare costs, and force more and more people onto the public system. For example, the Productivity Commission has highlighted that existing regulations prevent insurers from investing to reduce the future costs of hospital treatment and insurance, and unduly limits the types of products and services by which private health insurers might keep consumer costs down.[39]

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[39] The Productivity Commission (2017), Shifting the Dial: 5 Year Productivity Review.

This chapter focuses on structural reforms that are achievable in the short term and would materially reduce overall healthcare system costs.

Financial incentives for PHI participation will continue to reduce the public share of healthcare costs. However, we also need take on the more fundamental challenge: rising healthcare costs in both the public and the private systems. We can only do that if our health system:

■ provides people with the right type, quality and timing of care (targeting unnecessary low-value care and reducing inpatient care where appropriate outpatient alternatives are available)

■ provides that care at the right price (targeting prostheses costs and eliminating default benefits for all but rural and regional hospitals), and

■ pays that price in the most efficient way (targeting transparency, payment integrity and public-private transfers).

To these ends, we propose 10 reforms that together would reduce system costs, with improved care, access and affordability: see Exhibit 15. Some of these reforms would start alleviating cost inflation quite quickly, while others would act over time to rein in costs and ensure the longer-term sustainability of our co-funded system. In total, the proposed reforms could almost halve healthcare inflation to a manageable 2.6 percent by 2030, if all reforms were fully implemented.

EXHIBIT 15

Reforms could address cost inflation if fully implemented

Impact of Reforms on PHI benefit outlays
PHI benefits outlays, $ billion
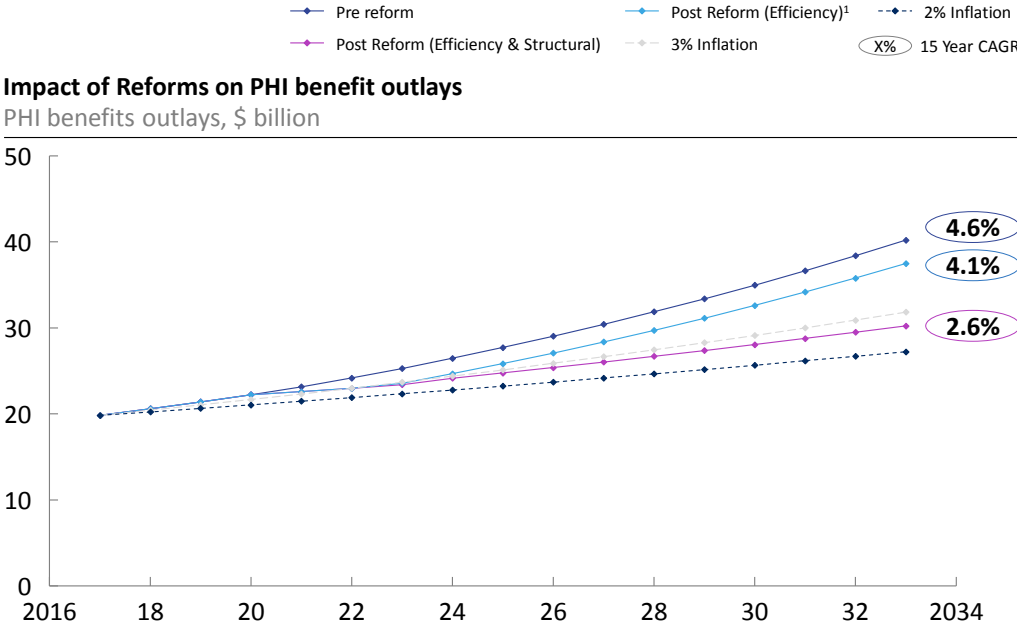
1 Efficiency based reforms include prostheses pricing; low value care; substitute inpatient care; and private patients in public hospitals; whilst structural reforms include patient-centric care for chronic disease; amend second tier default; payment integrity; and transparency

SOURCE: APRA Private Health Insurance Statistics

Providing customers with the right care

The right care means providing the services that are needed, when they're needed, to the standard they're needed. Three major reforms will assist:

1. *Remove low value care from the Medicare Benefits Schedule.* Low value care is defined as care that either has no effect, causes harm, or is not worth its cost*.* Examples of low value procedures that could be removed from the MBS are arthroscopic surgery for knee osteoarthritis and hernia, saving approximately $90 million per year.

2. *Substitute inpatient care with lower cost out-of-hospital care,* where the same or better outcomes are available, in particular rehabilitation in home and same day admissions for psychiatric care. Removing legislative restrictions to insuring community-based care will offer more choice and improved outcomes at less cost, with potential annual savings of $315 million.

3. *Reduce preventable hospitalisations with more holistic patient-centric management of chronic and complex disease.* As much as 35 per cent of the Australian population report having at least one chronic condition. More holistic care of at-risk patients may reduce their hospitalisations by 19 percent, which would reduce PHI benefit outlays by up to $1 billion annually.

Paying the right price for that care

The right price means paying a price set through fair and transparent processes to be appropriate for the service or product provided. Two major reforms will help:

1. *Establish a national independent body to manage the procurement of prostheses.* The cost of prostheses in Australia make up over 10 percent of hospital costs, and are growing at 7 percent per year. Yet on average Australia pays approximately 35 percent above international benchmarks for the same prosthesis, even after one-off benefit reductions announced by government. A procurement system with international reference pricing and price disclosure would increase quality and safety of implantable prostheses and save $500 million annually.

2. *Restrict the second-tier safety net to rural and regional hospitals.* Originally set up to protect smaller and regional hospitals, the safety net has become a floor price which significantly reduces the ability of health funds to negotiate cost-effective agreements. In addition, it creates an incentive to introduce marginal day surgery services in areas where they are surplus to requirements and where they induce demand, rather than genuinely substitute for overnight hospital admissions. This spreads the health fund member's dollar far too thinly, and risks the quality of service. Restoring the second-tier default benefit to its original purpose would save $200 million annually, while consumers can be protected from rising out-of-pockets charged by uncontracted hospitals. It would also enable the funds to better invest in high-quality providers with economies of scale.

Paying for care in the most efficient way

An efficient system makes its payments without fraud or error, and is transparent for consumers and payors. Three reforms will improve transparency and efficiency:

1. *Publish data on service cost and quality data.* Too often, consumers and health providers cannot make optimal care decisions, as they lack accurate information on procedural outcomes, out-of-pocket costs, waiting times and other essential data. A collaborative, online platform for that data would improve decision-making by clinicians, patients, health funds, hospitals and researchers, and could be expected over time to reduce out-of-pocket costs for consumers. Ideally, this will be used by GPs to assist consumers in their decision-making about specialist referrals.

2. *Clarify funding of private patients in public hospitals.* Privately insured patients will sensibly use public hospitals for acute and referred care. However, the rate at which they are doing so is rising at >6 percent per year, well above the predicted increase in appropriate services. A clearer delineation of costs between PHI and Medicare is needed when a private patient is treated in a public hospital, for the benefit of all parties. Limiting funding of private patients in public hospitals to elective procedures only would reduce PHI benefit by approximately $550m per year.

3. *Collaborate with Medicare on payment integrity.* Like Medicare, PHI funds invest heavily in payment integrity to reduce error, non-compliance and fraud. Doing so with Medicare would improve the integrity of the whole system, and save $40 million a year.

4. *Extending the efficiency of private funders of dental care:* Through contracting with dentists and vertically integrating with dental practices, private health funds have been able to deliver cost relief to consumers through reduced out-of-pocket costs. Extending the efficiencies of private funders of dental care to public sector could deliver further system savings to the government. We suggest contracting out Commonwealth dental health program funding and enabling health funds to tender as service providers, which already have a strong track record of delivering efficiencies and low-cost high quality consumer outcomes in this area.

The reforms mentioned above would reduce inflation and hence improve affordability of premiums for consumers. However, they would only have this effect if the current participation incentives are maintained and do not further deteriorate affordability. Hence, it is ***key that the private health insurance rebate as a percentage of total premium is restored to 30 percent for low and middle income earners, or at very least maintained at current levels***, and does not decline further as a result of the Rebate Adjustment Factor.

None of these reforms are radical, nor are they newly proposed. Study after study into healthcare inflation has consistently identified these opportunities. However, healthcare inflation is now driving a downward spiral in PHI participation that must be arrested before it gathers pace.

5.1 RIGHT TYPE OF CARE

Providing Australians with the right type of care would provide them with the healthcare they need at the optimal time and setting to achieve the best clinical outcome. Implemented well, the right type of care would also deliver better consumer choice and lower healthcare system costs.

There are three opportunities to help deliver the right type of care:

■ Remove low value care from the Medicare Benefits Schedule (care that either has no effect, causes harm, or is not worth its cost).

■ Substitute inpatient care with lower cost out-of-hospital care when this achieves better clinical outcomes, and

■ Reduce preventable hospitalisations with more holistic patient-centric management of chronic and complex disease.

5.1.1 Remove low value care from the Medicare Benefits Schedule

Removing care from the MBS that either has no effect, causes harm, or is not worth its cost, may improve consumer choice and clinical outcomes, and save ~$80 million annually.

Several independent studies have come to the same conclusion: services that contribute little to patient outcomes should be removed from the Medicare Benefits Schedule (MBS). Under Australian law, health funds must cover hospital episodes where MBS claims have been paid, and mostly only become aware these admissions have occurred after the fact when the claim has been submitted. Private Healthcare Australia in conjunction with Sustainable Health System Solutions has looked at the range of procedures defined as low-value by the global Choosing Wisely initiative still performed in private hospitals. The Productivity Commission estimates that 10 percent of healthcare spending either has no effect, causes harm or is not worth its cost,[40] noting that 'unjustified clinical variations, including the use of practices and medicines contraindicated by evidence remain excessive, an indicator of inadequate diffusion of best practice, insufficient accountability by practitioners, and a permissive funding system that pays for low services.[41]

The Atlases of Health Variation researched and published in Australia by the Australian Commission for Safety and Quality in Healthcare provide an indication of where low-value or even harmful care is occurring. For example, the recently launched third Atlas found, in 2015, between 42% and 60% of planned caesarean sections performed before 39 weeks' gestation did not have a medical or obstetric indication, and between 10% and 22% of caesarean sections performed before 37 weeks did not have a medical or obstetric indication. This is harmful care for which benefits should not be paid. In addition, the Atlas found that, in 2016–17, 274,559 gastroscopies and colonoscopies were performed during

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[40] The Productivity Commission (2017), Shifting the Dial: 5 Year Productivity Review.
[41] The Productivity Commission (2017), Shifting the Dial: 5 Year Productivity Review.

the same hospitalisation, representing 1,044 hospitalisations per 100,000 people of all ages. Both investigations are indicated in only a limited number of conditions, so the high rates reported suggest inappropriate use. This is an example of wasteful care, which may also be harmful if adverse events occur as a result of the intervention.[42]

The identification and removal of low-value care is not an exercise in provider-bashing, but an opportunity to improve quality, reduce harm and reinvest health system resources where they can be most productive. Low-value care occurs across the whole system and is not unique to the private sector. In the case of the PHA study, data from the largest health funds has shown a relatively small number of providers are generating most of the low-value care. There is likely more than a single root cause for this, including poor flow of feedback data to providers, supplier-induced demand as providers attempt to maintain historic levels of income, training issues like failure to maintain continuous professional development, and systemic perverse incentives generated by the fee-for-service system.

Low value items are a clear target of the MBS Review Taskforce, established in April 2015 to deliver a 'Healthier Medicare'. The Taskforce is considering how the >5,700 MBS items could be aligned with contemporary clinical evidence and practice to improve health outcomes for patients.[43] The Review is clinician led, has no targets for savings, and is funded to continue to the 2019–2020 financial year. Its findings will set the foundation for eliminating low value care for items currently funded by the MBS.

Low value procedures that could be removed from the MBS (or their provision reduced) include:

■ **Arthroscopic surgery for knee osteoarthritis:** A knee arthroscopy for degenerative knee disease is a very common orthopaedic operation that has no proven efficacy in most instances.[44]

■ **Hernia repair:** Evidence suggests that about 80 percent of hernia repairs should be day surgery procedures, rather than the current <20 percent as was the case for one of the large private health funds.[45]

■ **Same day upper and lower GI endoscopy:** Simultaneous gastroscopies and colonoscopies are rarely indicated (e.g. Crohn's disease), but commonly occur.

Potential actions for government

Potential actions for the government include:

■ Prioritise high value areas from the MBS review for early attention

■ Updating guidelines to place the burden of proof on physicians to justify any procedures, admissions, and stays over and above what may be appropriate for the procedure.

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[42] The Third Australian Atlas of Healthcare Variation, ACSQHC, December 11, 2018.

[43] Information attained from Department of Health (http://www.health.gov.au).

[44] The Productivity Commission (2017), Shifting the Dial: 5 Year Productivity Review.

[45] Attained from health fund reporting on the number of separations in FY17.

Impact assessment

Eliminating these unnecessary forms of care in private hospitals alone could reduce PHI benefit payments by approximately $80 million per year, which translates to approximately 4.5 percent of medical and diagnostics costs.[46]

5.1.2 Substitute inpatient care with lower cost out-of-hospital care

Treating patients outside of a hospital environment can offer greater choice for consumers, improve clinical outcomes, and reduce healthcare system costs by ~$315 million annually.

The potential care and cost benefits of moving from an inpatient setting to an out-of-hospital environment can be significant. PHI funds are therefore testing innovative models and partnerships to strengthen care outside of the hospital, with the expected benefit of lower benefit outlays and improved member health. These pilot programs are showing that out-of-hospital rehabilitation, chemotherapy, haemodialysis, and palliative care can deliver better treatment outcomes, at less cost. GPs can also better coordinate this out-of-hospital community care to focus on prevention, rather than responding with hospital treatments. A recent global survey found that only 18 percent of Australian GPs were always told when a patient is seen in a hospital emergency department, compared with 68 percent in the Netherlands, 56 percent in New Zealand and 49 percent in the UK.[47]

Examples of Australian out-of-hospital care pilot programs include:

■ **Medibank at Home Program** commenced in 2016 aiming to offer consumers better quality of life, easier family and friend support, greater flexibility and convenience, and less time spent in hospital and a decreased likelihood of returning to hospital.[48] These benefits were achieved for home rehabilitation after total hip or knee replacement, home chemotherapy treatment, home haemodialysis, and home palliative care.

■ **BUPA's Palliative Care Choice Program** started in Brisbane in 2016 and was extended to Adelaide in 2018. An evaluation of the first 12 months operation has shown that 88 percent of program patients died in their place of choice, compared to 70 percent of surveyed Australians who expressed a wish to do so, and only about 14 percent who actually do so.[49] The carers of these patients indicated very high levels of satisfaction with the program, both before and after the patient death. And the total benefit payouts for those who chose to die at home were only half those of customers who chose to die in hospital.

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[46] Opportunity calculated by determining the reduction in benefits outlays from removing/reducing treatments including but not limited to arthroscopic knee surgery, hernia repair (shifting a greater proportion to same day surgery), same day upper and lower GI endoscopy. Benefits outlays financial data for FY17 for a sample group of health funds was extrapolated out to determine PHI industry opportunity.

[47] Osborn, R. Moulds, D. Schneider, E.C., Doty, M.M, Squires, D. and Sarnak, D.O. 2005, Primary Care Physicians in Ten Countries Report Challenges Caring for Patients with Complex Health Needs, *Health Affairs.*

[48] Attained from the Medibank Website: https://www.medibank.com.au/health-insurance/why-medibank/medibank-at-home/ (accessed on 22 August 2018).

[49] Swerissen H and Duckett, S (2014), Dying Well. Grattan Institute.

Unfortunately, current legislative restrictions prevent the expansion of these pilots, or greater use of out-of-hospital services by PHI members. The restrictions prevent PHI funds from covering out-of-hospital medical services that are covered by Medicare (e.g. consultations with specialists in their rooms, diagnostic imaging and tests, GP visits). They were intended to avoid having a second payor for services with low entry barriers, which may lead to fee inflation. However, the result is that consumers may pay less to be treated in a high-cost hospital environment than in a lower-cost out-of-hospital setting. So more treatments are provided in hospitals, adding the cost of accommodation to the higher cost of hospital treatments, and overlooking the benefits of GP-coordinated care. The establishment of appropriate contractual relationships and regular review of clinical and financial outcomes can address the issue of fee inflation.

Currently the Private Health insurance Act 2007 provides for a limited range of outpatient services to be funded by the health funds as approved trials or pilots. This requires extensive investment in the process by individual funds as they negotiate with multiple providers, as well as the Department of Health. A better alternative given we have sufficient experience since 2007, is to implement system-wide change to remove key regulatory barriers to funding outpatient services in specific treatment area all together. Private sector stakeholders and the Department should carefully consider this option for obstetrics, cancer care, chronic mental health and chronic disease patients.

To start to address this challenge, the government has established the Private Health Ministerial Advisory Committee's Improved Models of Care Working Group. The Working Group has provided advice to the Minister in 2018 on changes to PHI regulation that would 'best support consumers' access to clinically effective and efficient care that best meets the needs of consumers with private health insurance'.[50] The government has recognised that 'existing regulation may encourage models of care which may be less efficient than alternate mechanisms and provide less desirable care pathways for consumers, which is not in the interest of patients, carers or practitioners'.[51] The first focus of the Working Group is the delivery of PHI-funded rehabilitation and mental health services.

These models have been pursued successfully overseas, as shown by the reductions achieved in total system hospital beds. In the 15 years to 2015, the UK reduced its hospital bed capacity by 36 percent by shifting more care outside hospital environments (and France by 23 percent, the US by 20 percent). In the same period, Australia has reduced its capacity by only 6 percent.[52]

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[50] Department of Health, Improved Models of Care Working Group of the Private Health Ministerial Advisory Committee – Terms of Reference; accessed at http://www.health.gov.au

[51] Department of Health, Improved Models of Care Working Group of the Private Health Ministerial Advisory Committee – Terms of Reference; accessed at http://www.health.gov.

[52] OECD Healthcare Resources, www.oecd.org

Potential actions for government

■ Continuing to support the Improved Models of Care Working Group and expand areas of review to include other treatments outside a hospital setting including but not limited to intravitreal injections; haemodialysis; chemotherapy; and palliative care.

■ Amending the PHI Act 2007 to release the restrictions on health funds insuring out-of-hospital care for forms of care that have been demonstrated to deliver patients improved choice and outcomes.

Impact assessment

Shifting three of the most impactful areas (rehabilitation, same day admissions for psychiatric care, and intravitreal injections) from an inpatient to an out-of-hospital setting may reduce PHI benefits outlays by approximately $315 million, while improving patient choice and clinical outcome.[53] Further opportunity for improved patient outcomes and cost reductions could come from shifting a proportion of other treatments including but not limited to haemodialysis, chemotherapy, and palliative care. PHA understands the MBS Review Taskforce has strongly recommended intravitreal injections should not be performed in a hospital setting unless there is demonstrated clinical need. Implementing this simple measure alone will reduce health funds premiums by $35 million a year.

5.1.3 More holistic patient-centric management of chronic and complex disease.

Reducing preventable hospitalisation through more holistic patient-centric management of chronic disease, may improve clinical outcomes and save up to ~$1 billion annually.

The largest threat to Australian healthcare outcomes and budgets is the rising incidence of chronic and complex conditions. As much as 35 per cent of the population report having at least one chronic condition, with this proportion increasing with age.[54] Though not limited to the elderly, many are over 70 years old, have multiple chronic diseases and can benefit significantly from holistic patient-centric care. A large PHI fund reports that 2.3 percent of its members account for almost a third of all the fund's benefit payouts.

Any answer to these rising costs must be as holistic as possible, with both medical treatment and behavioural elements. By their nature, chronic and complex diseases will require hospital treatments. They also require ancillary care that can be provided out-of-hospital, and preventive action on contributing behaviours such as poor diet, low exercise, lack of mediation compliance, alcohol consumption and smoking.

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[53] Opportunity calculated using sample health fund benefits outlays data from the financial year 2017. Opportunity calculated by determining the reduction in benefits outlays if a portion of rehabilitation, same day psychiatry, and inpatient intravitreal injections were shifted from an inpatient environment to an out-of-hospital environment.

[54] AIHW, Australia's health 2012, Australia's health series no. 13 Cat. No AUS 156 Canberra, 2012, p.354 (Reform on the Federation Green Paper 2015).

There is significant scope for healthcare providers, public and private funders, and the broader community to work more closely on the prevention, early treatment, inpatient and out-of-hospital care of these conditions. Both international and Australian research supports the case for holistic care programs for individuals with chronic or complex diseases, allowing them to live more independently, and reducing the demand for hospital admissions.

■ A review of 53 international individual-controlled clinical trials showed an average 19 percent reduction in hospital admission rates: see Exhibit 16[55] If properly implemented, these programs offer better health outcomes, better patient experience of care, lower costs and better job satisfaction for clinicians.[56]

■ Medibank Private's CareComplete integrated care program has seen a reduction in both hospitalisation and mortality rates for participants with chronic and complex diseases.[57] This pilot program was funded in partnership with state governments to include both public and private patients (including members of other health funds).[58] The program has three elements.

– *CarePoint* is for patients with the highest level of chronic and complex needs: a GP supervises a care plan that includes an initial home visit, follow-up phone calls and home visits as required to assist the patient to manage their health.[59]

– *CareFirst* is a behavioural change program for patients in one of five key disease areas: chronic heart failure; chronic obstructive pulmonary disease; osteoarthritis; Type 2 diabetes; and cardiovascular disease.

– *CareTransition* focuses on the hospital discharge process and on a patient's ability to manage their own recovery post-discharge, for patients most at risk of unplanned readmissions.

■ HCF's My Heath Guardian Program has improved the health status and frequency of hospitals admission in the 53,000 participants, reducing the likelihood of hospital admission or readmission in members with targeted conditions by between 27–45 percent relative to a control group.

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[55] Dorling, G. Fountaine, T., McKenna, S., Suresh, B., The Evidence for Integrated Care, McKinsey & Company Healthcare Practice (2015).

[56] Dorling, G. Fountaine, T., McKenna, S., Suresh, B., The Evidence for Integrated Care, McKinsey & Company Healthcare Practice (2015).

[57] CareComplete Website (http://carecomplete.com.au): accessed on 22 August 2018.

[58] Productivity Commission (2018) 5 Year Productivity Commission Review, Supporting Paper No. 5, Integrated Care.

[59] Productivity Commission (2018) 5 Year Productivity Commission Review, Supporting Paper No. 5, Integrated Care.

EXHIBIT 16

International research suggests 19% average reduction in hospitalisation rates for Chronic Disease Management Programs

Favours usual care ■ Favours integrated care ■

Risk of hospitalisation for integrated care group vs. control group[1]
Relative risk rebased to 0 (rather than 1)

19% average reduction

Each bar represents one of 53 individual trials

-1.0 -0.9 -0.8 -0.7 -0.6 -0.5 -0.4 -0.3 -0.2 -0.1 0 0.1 0.2 0.3 0.4 0.5
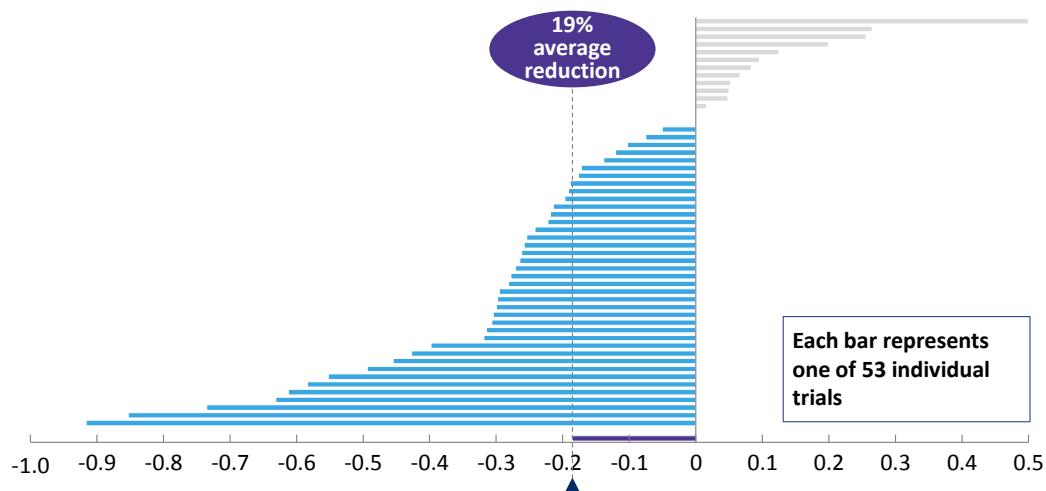
16

1 53 individual trials; 19% reduction in hospital admissions; Relative Risk 0.8141; 95% confidence interval: 0.7528, 0.8754 (-0.12,-0.25 if rebased to 0); p value = <0.0001

SOURCE: DCP dataset, State hospital databases; 50 Random Controlled Trials as identified in System Review of IC literature, The Patient-Centred Medical Home's Impact on Cost & Quality (2013), Western Sydney LHD Inpatient Data 01/07/2010-19/12/2013, AIHW

Potential actions for government

Potential actions for government in the near term include:

- Improve incentives throughout the health sector to encourage hospitals to work with the primary care community, and health funds to manage patients with chronic disease more effectively

- Redirect government funding from care plans that are not shown to deliver improved patient outcomes, toward programs that are outcome based and aligned with improved clinical outcomes, and reduced hospitalisation rates

- Enable health funds to fund MBS GP activities that support client participation and engagement in interventions that have been shown to effectively assist in the management of patients with chronic and complex disease.

Potential actions for government over the longer term include:

- Commencing a state-based trial of holistic patient-centric care for a select group of patients with the most form of complex and chronic disease. The state-based trial could have the following elements:

— **Governance and funding:** A pan-industry operating structure could be established with ownership and financial contributions coming from participating health funds, the state's primary care networks, and the Commonwealth and state governments (under a bilateral agreement similar to that used in the Medibank CareComplete trial). The operating structure would be responsible for employing and funding both the healthcare (GPs, occupational therapists, care coordinators etc.) and overhead costs.

— **Targeted patient selection:** Only patients most likely to benefit significantly from holistic patient-centric care should be initially targeted: i.e. the 2–3 percent of PHI participants that account for a third of health costs should initially be targeted. These patients have consistently high levels of recurrent hospitalisation, are typically over the age of 70, and have multiple chronic diseases.

— **Voluntary patient nominations across both the private and public systems:** Enrolment would require informed patient consent, include both private and public patients, with the relevant payor paying a fixed fee per patient to the operating structure. As a first step, a trial could apply to private patients identified as having serious and complex disease that have been treated in a public hospital.

— **Patient care:** Each patient would have a GP-supervised care plan, and a care coordinator to liaise with the GP and other local providers. The coordinator would also assess the patient's home environment, and follow up with the patient as required to ensure the care plan was being followed.

Impact assessment

Improving incentives throughout the heath sector, and redirecting funding towards outcome-based management of chronic care could deliver savings of $1 billion of current spend to the health sector for private insured patients across both the private and public hospital systems, with improved patient outcomes. This assumes 1) an average 19 percent reduction in hospitalisation (as achieved in international trials), 2) for the 2.3 percent of PHI members with chronic and complex conditions that account for approximately 33 percent of PHI benefit outlays, with 3) 20 percent of the benefit reinvested in program operations in the form of operating costs.

5.2   RIGHT PRICE OF CARE

The Australian health system would be paying the right price for a health service if that price is justifiable by either international benchmarks adjusted for Australian conditions or if price is set through fair and transparent processes to be appropriate for the service or product provided.

Reforms that would help secure the right price of care include:

■   Establish a national independent body to manage the procurement of prostheses

■   Restricting the second-tier default provision to rural and regional hospitals and hospital groups with less than 3 percent market share.

5.2.1 Establish a national independent body to manage the procurement of prostheses

Establishing a national independent body to manage the procurement of prostheses and through moving to a system with international reference pricing may save an additional $500 million over and above the current prostheses reform, and deliver better quality products.

The costs of prostheses make up over 10 percent of total hospital reimbursements by private insurers, and are growing at 7 percent per year.[60] The number of prostheses sold increased from 1.8 million in 2011 to 2.7 million in 2017, while the average price of prostheses remained relatively stable: see Exhibit 17. The benefit increase is largely driven by volume. Prostheses prices in Australia have not fallen over time as you would expect with technologies that have not changed significantly since introduction.

EXHIBIT 17

Prostheses expenditure growth has been driven by increasing volumes whilst average prices have remained stable
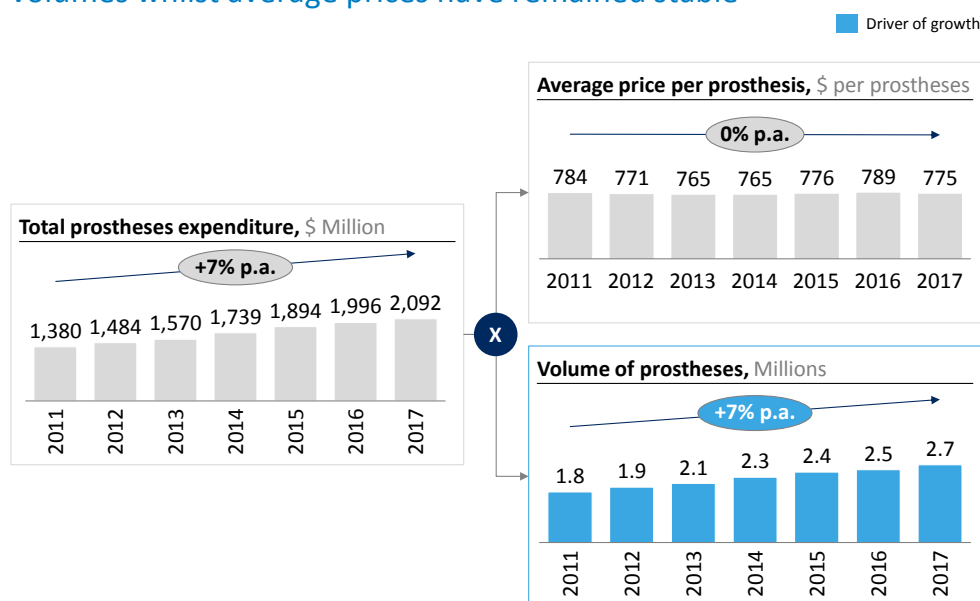
SOURCE: APRA private health insurance statistics

Prostheses prices

The cost of prostheses is high by international standards. High relative prostheses costs were the target of the Prostheses List Benefit Reduction reform announced by the Minister of Health on 13 October 2017. These reforms, negotiated with the Medical Technology Association of Australia (MTAA), projected an average price reduction of 15 percent, for eventual savings of $303 million per annum.

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[60] APRA Health Insurance Statistics, www.apra.gov.au (accessed between May-September 2018)

However, there is further opportunity for cost reductions. Moving to an international reference price system with full price disclosure could save $500 million in annual costs, with no impact on quality.[61] The mechanism would set prices against international benchmarks and could reduce prices by a further 35 percent within three years. Price disclosure as a prerequisite for medical device funding in Australia is critical. This creates transparency in the supply chain so the amount the device is actually sold for vs the benefit paid by the health fund is disclosed. Any benefits paid to providers under prostheses list benefits are formally disclosed whether this has been done locally, or overseas. This same measure applies to generic medicines supplied under the Pharmaceutical Benefits Scheme.

Benchmarking data from comparable economies such as France, Japan, New Zealand, the United States, Italy, and Spain could be used to set reference prices. PHA has benchmarked Prostheses List benefits for 42 commonly used codes against publicly available prices from the UK, France and New Zealand in support of this figure. A summary of this data is available in Appendix 4.[62]

The currently inflated prices for prostheses are constraining the ability of PHI funds to limit premium growth or offer more valuable benefits to members, and are benefiting only international medical device companies. Very few medical devices are manufactured in Australia.

Establishing a national independent body to manage the procurement of prostheses

While a formalised system of international reference pricing is critical to achieving a fair benefits model, to realise the full cost reduction opportunity for health fund members it will require an independent body to manage the procurement and benefits setting for prostheses.

The Prostheses List Advisory Committee is currently too large, and not set up in a way to achieve the results the health sector requires. We need to move away from a representative model to a governance model whereby members are selected for their expertise, and not because of who they represent.

It is proposed that the government considers establishing a national independent body to manage procurement, benefits setting and the output from device registries, which could either be stand-alone, or sit under the Independent Hospital Pricing Authority (IHPA). The national independent body should seek to emulate 1) Health Purchasing Victoria's procurement capabilities, and 2) the Pharmaceutical Benefits Scheme's benefit setting capabilities.

A national independent body for prostheses procurement and benefit setting will address the sector's concerns around price transparency and value for money, which has been an

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[61] Private Healthcare Australia, 'Costing an arm and a leg: making healthcare more affordable and accessible for Australians', October 2015.

[62] See Appendix 4, 42 High volume billing codes inform P/L value for Australians. PHA November 2018.

issue identified amongst public hospitals, veterans and compensable patients, and private patients. The new body would be able to establish an appropriate framework for benefit setting independent of vested interests. One concept used in the PBS which is important here, is recognition that the benefits 'pie' is finite even though it is theoretically uncapped. By reducing benefits for older or 'generic' products to their real market value, the PBS has been able to create 'headroom' to approve benefits for proven, new and innovative products.

The national body will not only address the high level of prostheses prices, but also the growing concerns around increasing prostheses volumes and the types of prostheses that are being purchased:

- *Prostheses volume*: Volumes have risen significantly since 2011, growing at 7 percent p.a., allowing prostheses manufacturers to be compensated for the price reductions that were implemented through volume increases. The level of this volume growth has been unusually high. For instance, in FY17, there was a 17.2 percent uplift in cardiac prostheses when compared to FY16, which could not have only been driven by a clinical need perspective.

- *Prostheses type:* Despite having a National Joint Replacement Registry with unparalleled data on efficacy of orthopaedic prostheses there is still no mechanism for prosthesis selection and pricing based on efficacy. Introducing a procurement body for prostheses could ensure that all prostheses selection and pricing is based on efficacy.

Potential actions for government

Potential actions for government include:

- Establishing a national independent body to manage the procurement of prostheses, including moving to a system of international reference pricing for prostheses.

- A summary of PHA's position on medical device pricing and procurement is summarises in Exhibit 18 below.

EXHIBIT 18

Better Cover. Better Access. Better Care.

What needs to happen now to guarantee quality, safety and cost-effectiveness of medical devices in Australia:

o Australia needs to move to a National Procurement and Pricing System for medical technology, which can be modelled on the successful Pharmaceutical Benefits Scheme, and state-based procurement authorities like HPV;

o Given the data requirements this could sit under the IHPA, as both public and private prices will be impacted;

o This should incorporate a rigorous system of international reference pricing vs comparable markets for established (generic) technologies;

o In addition, new technologies should be evaluated and priced using an appropriate Heath Technology Assessment approach, including comparison of outcomes to existing treatments. New technologies can be funded if prices of established technologies are referenced appropriately and 'headroom' created;

o All Class III medical devices implanted in the body should be reported to a clinical registry so quality and safety outcomes can be recorded. Coding and labelling of implantable devices must be consistent through the system so they can be tracked and patients appropriately followed up;

o All benefits supplied to providers in association with a P/L benefit claim should be fully disclosed – this includes cash rebates and goods and services in kind. All additional services and benefits provided to doctors, including training and travel should be disclosed, both on a local and international basis;

o Under no circumstances should a payor provide benefits to support sales representatives attending a case in the O. R. unless a clinically relevant service is being provided and this is subject to audit. In the event a device company employee needs to be present to supply a clinical service, patient and hospital consent must be provided for each case...

Private Healthcare Australia
Better Cover. Better Access. Better Care.

Impact assessment

Reducing the price of prostheses supplied to Australia to the international benchmarks of comparable countries would provide a further 35 percent savings on like-for-like prostheses, saving the Australian health system an additional $500 million in annual costs. To ensure this gain, a national independent body should be established to manage the procurement and benefit setting for prostheses. Ultimately the national procurement body could also be used as an independent source of information and evidence about medical device performance for clinicians.

5.2.2 Limit the second-tier default provision to smaller hospitals and groups

Restricting the second-tier default provision to rural and regional hospital groups with less than 3 percent market share could lead to costs reductions of $200 million per annum. As a protection for consumers, hospitals falling out of contract with health funds should not be permitted to charge the patient more than 100% of the average charge for the equivalent episode of hospital treatment.

The second-tier default benefit is the minimum level of benefit payable by a health fund for an episode of hospital treatment provided by a private hospital facility with which it does not have a negotiated agreement. The second-tier default benefit is 85 percent of the

average charge for the equivalent episode of hospital treatment under that health fund's negotiated agreements with comparable facilities in the state or territory.[63]

The second-tier default benefit was introduced in 1998 as a market intervention to assist with direct negotiations between health funds and hospital providers. At the time, individual health funds had a larger average market share than operators in a fragmented private hospital market. By placing an effective floor under provider payments, the benefit would even up negotiations for 'second-tier' smaller hospitals.

By 2003, private hospital ownership was concentrating and negotiating power was levelling. After five years' negotiations, the health fund-provider contracting environment had matured. As well, health funds wanted to enter contracts with private hospital networks so that their members could access those services. A government proposal to remove the second-tier default provision was defeated by industry group argument that its removal may reduce consumer choice of hospital providers.

Today, three major concerns of the second-tier default benefit remain:

■ First, it provides too much visibility on pricing data to contracted private hospital providers, which strengthens these providers' negotiating positions. Health funds are obliged to provide private hospital providers with a schedule of second-tier default benefit rates. This applies when a provider has been granted second-tier eligibility by the Second-tier Advisory Committee and is out of contract with the fund. There is no equivalent obligation on private hospital providers to publish or share financial or clinical care data with health funds. This creates information asymmetry between the two negotiating parties.

■ Second, the second-tier default benefit creates a price floor at 85 percent of the episodic charge for comparable facilities in the same state. This encourages some hospitals to use the 85 percent as a 'fall back' for negotiations. As the 85 percent rate is a price floor, rather than a ceiling, in some cases it results in higher out-of-pocket expenses for policyholders. This is because second-tier eligible hospitals can either accept the second-tier default benefit as full payment from the health fund or can charge out-of-pocket expenses to patients.

■ Third, it limits the ability of health funds to reject lower quality provider facilities and limits the ability of funds to contract only where capacity is required to meet member needs. Currently, health funds may contract to pay a higher charge per episode to private hospital facilities that demonstrate high quality patient outcomes. When they do so, that higher charge will flow through to raise the 85 percent price floor. Off-contract facilities may claim that rising benefit, without raising the quality of their service.

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[63] The average charge for the equivalent episode includes the sum payable under the negotiated agreement and any excess or co-payments payable by members in accordance with the health fund's rules; and excludes charges for prostheses and nursing-home type patients. Where a health fund has less than five negotiated agreements with comparable facilities in a state, then the benefit will be based on all of that health fund's negotiated agreements in that state. Where the second-tier default benefit is below the minimum benefit outlined in Schedules 1,2 or 3 of the Private Health Insurance (Benefit Requirements) Rules 2011, the minimum benefit applies.

- Fourth, it spreads the health fund member's dollar far too thinly, as marginal operators are able to establish themselves in areas of provider oversupply and still achieve viability by claiming second tier benefits and never seeking contracts with heath funds. This is creating a dynamic in the day surgery market where facilities are established which do not truly substitute for in-hospital care, but which create a higher cost environment for treatments which should be occurring in an outpatient setting. For example, the converted garage depicted below is a real life example of a rehabilitation facility that has received second tier accreditation as a one-bed day hospital:

These factors limit the ability of health funds to exert competitive pressures to limit hospital benefit payments and raise hospital care standards. As hospital benefits are the largest component of their outlays, this limits their ability to dampen premium inflation.

Restricting the second-tier default provision to its intended beneficiaries – rural and regional hospitals or groups with less than a 3 percent market share – would restore its original intent while maintaining competitive pressures. It is inappropriate to provide a blanket 'second-tier' safeguard to all providers, from billion-dollar hospital groups down to small facilities in rural communities.

Potential actions for government

Potential actions for government include:

- Abolish 85 percent benefit requirement, other than for providers or networks operating in a rural and regional area at under 3 percent market share by removing it from the Private Health Insurance (Benefit Requirements) Rules (2011) except for providers,

including provider networks and negotiating alliances, which have an operating revenue at under 3 percent market share, and which are in a defined regional area.

■ Introduce a cap on total charge to the consumer at no more than 100 percent of the second-tier rate.

■ Prevent hospitals from charging the initial 85 percent cost of hospitalisation upfront to the consumer.

Impact Assessment

Returning competitiveness to negotiation between insurers and hospitals could reduce hospital benefit outlays by an estimated $190 million per annum.[64] In addition, changing the market dynamics could lead to private hospitals group being more likely to evolve towards centres of specialised excellence that would further improve outcomes and value-for-money. Maintaining the exception for smaller hospitals with limited market power would protect the viability of hospital care in regional and rural Australia.

5.3   PAYING FOR CARE IN THE MOST EFFICIENT WAY

The Australian health system would be more efficient if the right amount of payment is paid to the party that bears the cost.

OR

The Australian health system would be more efficient if its payments are made without fraud, non-compliance or error, and it is transparent for consumers and payors.

Reforms that would help secure the right payment for care include:

■ Ensuring transparency of treatment costs and quality

■ Ensuring transparency and fairness of public patients in public hospitals

■ Strengthening payment integrity throughout the health system, and

■ Extending the efficiency of private funders of dental care to bring competition to public programs funding dental care.

■ Maintain the rebate as a percentage of premiums paid at current levels

5.3.1   Publish data on service cost and quality

Providing consumers with information on the full cost and quality of their treatment may lead to improved outcomes, and reduced unanticipated out-of-pocket costs for consumers

If consumers are fully aware of their treatment cost, they will be more likely to avoid unnecessary treatments, or choose a less expensive provider. If they have information on a

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[64] Estimated opportunity of $200 million is based on PHI funds being able to achieve a 6.5 percent reduction in the price per patient per admission across 84 percent of hospitals (excludes small regional and rural hospitals) and assumes a 40 percent capture rate. It is assumed that the opportunity identified could be achieved over a three-year period given that the majority of hospital contracts have a three-year term.

provider's quality, they are more likely to choose the best quality for their payments. These value-conscious decisions would help minimise avoidable costs across the healthcare system.

Unfortunately, consumers do not have this cost and quality information. In particular, they do not have a clear advance picture of the out-of-pocket costs (OOPs) they will bear from a hospital visit. Unaware of what they may have to pay, they may pursue treatments that are more costly than they intended.[65]

Consumer research confirms that 9 out of 10 consumers agree that the government should make medical specialists and hospitals provide upfront costs of procedures and services prior to the day of treatment.[66]

While GPs, clinicians and PHI funds often assist consumers with information about these costs, they very often do not have the relevant information themselves, even if the consumer asks. Funds have little control over medical specialist charges, unless the specialists enter into individual agreements to provide 'no gap' or 'known gap' services. For some procedures, OOP costs are fairly standard, while for others the costs can vary widely: see Exhibit 19.

This suggests that informed financial consent is not working perfectly, and it is typically the insurer to whom the consumer complains. Thirty three percent of surveyed PHI holders who went to hospital in the last 12 months and were charged an OOP cost were surprised by the gap that they had to pay for medical treatment. It is the lack of notice as much as the size of the cost that is the issue: 32 percent of surveyed PHI members hold OOP costs as a primary driver for considering exiting PHI.[67]

To address this challenge, transparency on provider cost and quality is needed at key stages in the consumer journey: when considering a procedure before visiting a GP, when discussing a referral with their GP, or when consulting with a specialist before booking a procedure. A collaborative, online platform for expected out-of-pocket (OOP) medical costs and quality would improve decision-making by clinicians, patients, health funds, hospitals and researchers, and so lower the cost of care.

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[65] Department of Health: Hospital Casemix Protocol. OOP costs will occur if medical or accommodation prices are higher than the Medicare Benefit Schedule (MBS) rate, and there is no scheme in place in cover that 'gap'. For hospital services, the largest area of cost for consumers is the medical gap, comprising over 50 percent of total 'out-of-pocket' hospital costs.

[66] IPSOS, Consumer Research, July-August 2018

[67] IPSOS, Consumer Research, July-August 2018

EXHIBIT 19

While for some procedures out-of-pocket costs are fairly standardised, for other procedures costs are more varied

ILLUSTRATIVE

Distribution of out-of-pocket medical costs for common procedures; Percent frequency

Colonoscopy (MBS item 32090)
%

~90% of colonoscopies have out-of-pocket costs less than $250

0	1-100	101-250	251-500	501-1000	>1000 $
79	4	7	7	3	0
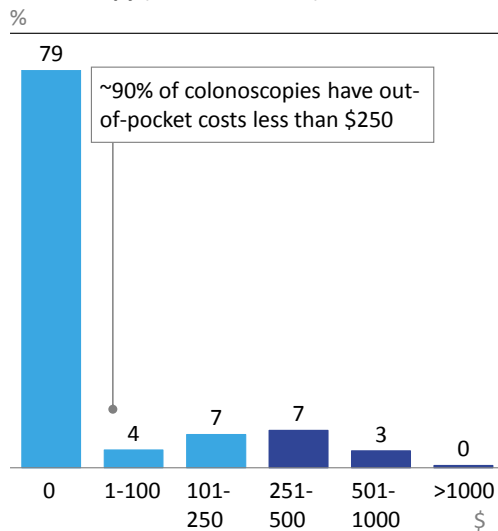
Knee replacement surgery (MBS 49518)
%

Out-of-pocket costs for knee replacements are more varied

0	1-500	501-1000	1001-2000	2001-3000	3001-4000	>4000 $
27	18	13	11	11	11	9
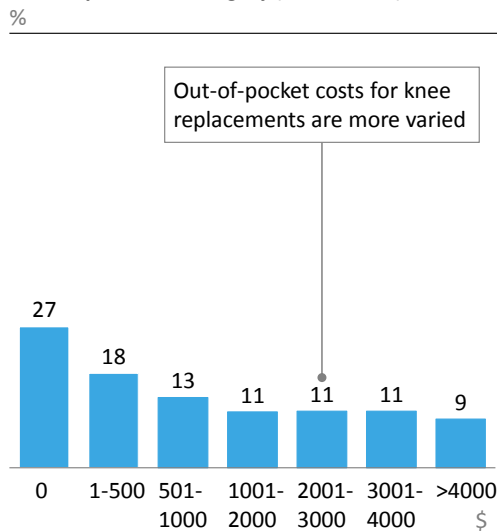
18

SOURCE: Illustrative health fund data

Potential actions for government

We would recommend a collaborative, mandated, online platform for both out-of-pocket costs, and hospital, procedure and physician quality. The two potential models are:

■ Design and develop a transparency platform to aggregate all private health insurer data on cost and quality, for use by consumers and medical professionals through a government operated portal

■ Prevent specialists charging booking and administration fees outside health fund gap cover schemes by clarifying the legality of this, and if necessary, introducing a regulatory remedy.

■ Work with health funds to investigate the feasibility of remunerating GPs to better assist patients in navigating the specialist referral process, using the transparency platform described above.

■ Ensure doctors are made aware of the inherent conflict of interest in providing financial advice to patients they are treating. This includes advising patients to access superannuation, take out loans or use services like AfterPay to finance co-payments.

Impact Assessment

Published cost and quality data will empower patients to make value-conscious decisions and minimise unanticipated out-of-pocket costs.

5.3.2 Clarify funding rules for private patients in public hospitals

Limiting PHI responsibility for private patients in public hospitals to elective surgery only may save $550 million in annual benefit outlays and materially improve PHI affordability.

EXHIBIT 20

The largest driver of increasing public provider benefit outlays is growth in utilisation

⌐ Utilisation

Public hospital outlays for PHI consumers

$ per thousand consumers

+5.6% p.a.

64,017   84,147

2012   2017

Average price per public stay

A$ /stay

-0.5% p.a.

1,431   1,394

2012   2017

Average length of stay for PHI consumers in public hospitals

Average length of stay

-2.2% p.a.

4.0   3.6

2012   2017

Public stays per thousand PHI consumers

Stays per thousand consumers

+6.2% p.a.

45   60

2012   2017

Average price per day in public stay

A$ /day

+1.7% p.a.

354   385

2012   2017

19

SOURCE: APRA private health insurance statistics

Our private health system is designed in such a way that privately insured patients can use public hospitals for acute and emergency care, when only a public hospital can provide the appropriate care in that region, or when an insured patient chooses a specialist who chooses to operate at a public hospital.

The cost to PHI funds of these hospital stays is rising rapidly. They rose by 5.6 percent annually in the five years to 2017, driven mainly by the number of stays rising from 45 stays per thousand members to 60 stays: see Exhibit 20. In 2016, the PHI industry provided 2.2 percent of all public hospital funding;[68] in 2017 that amounted to ~$1.1 billion.[69] Most of this is being driven not by an increase in elective surgery occurring in this setting, but medical patients coming through emergency departments who are being persuaded, sometimes aggressively, to use their private health insurance to fund and admission they are already entitled to.

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[68] Australian Institute of Health and Welfare (2017). Health Expenditure Australia 2015–16.

[69] APRA Health Insurance Statistics, www.apra.gov.au (accessed between May-September 2018)

The rising use of public hospitals may benefit patients and both the public and private systems, so long as there is a transparent and fair delineation of costs between the two systems. Yet that transparency and fairness is not yet being achieved. Four issues are becoming increasingly problematic:

■ The first issue is double payment by the insured. PHI policyholders pay taxes and a Medicare levy for their public care, as well as an insurance premium for their private care. If they receive public-standard care in a public hospital and they claim that care against their insurance, they are effectively paying twice for that care. In 2017, the ~$1.1 billion paid by PHI funds for public hospital stays put direct upwards pressure on premiums.

■ Second, there is a lack of informed financial consent when patients 'elect' to be private patients in the public system. Despite the efforts of many public hospital administrators, they may not be fully aware of or understand the financial implications of their decision, which can include undisclosed co-payments for things like diagnostic services and medicines.

■ Third, the rising incidence of private stays in public hospitals may be due in part to public hospital quotas for 'own-source' revenues. To meet these quotas, incoming patients are often met with the statement that being admitted as a private patient 'helps improve hospital facilities', which seems like the right thing to do.[70]

■ Finally, this growth in the number of private patients in public hospitals is creating a two-tiered system in our public hospitals. In 2017, the median national waiting time for public hospital elective surgery was 42 days for public patients and only 21 days for private patients:[71] see Exhibit 21.

For the benefit of all PHI members, we need a clearer delineation of costs between PHI and Medicare when a private patient is treated in a public hospital.

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[70] The Independent Hospital Pricing Authority's 'Private Patient Public Hospital Service Utilisation' Report, 2 March 2017.
[71] AIHW: Admitted patient care 2016–17: Australian hospital statistics.

EXHIBIT 21

Public hospital cost shifting is creating a two tiered system in our public hospitals

■ Public patients   ■ Private patients

Median waiting time for patients admitted from public hospital elective surgery waiting lists by funding source, 2016-17[1]
Number of days
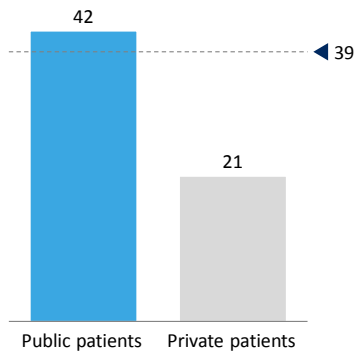
Median waiting time for patients admitted from public hospital elective surgery waiting lists by funding source by state, 2016-17[1]
Number of days
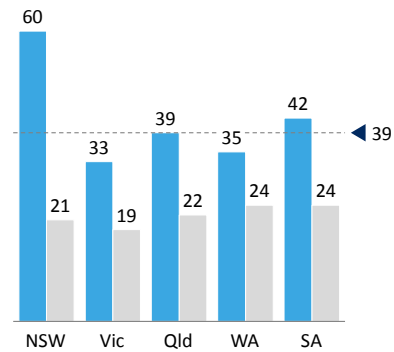
- ■ **Median waiting time for public hospital elective surgery was 39 overall (42 days for public patients and 21 days for patients who used private health insurance** to fund all or part of their admission)
- ■ **Greatest variation** between public and private patients is in **NSW** where **public patients can wait nearly 3X longer** for elective surgery than privately insured patients

20

1 A private patient is defined as a patient that used private health insurance to fund all or part of their admission. Public patients accounted for 90% of admissions from public hospital waiting lists for elective surgery and private health insurance funded separations accounted for 7%, with other patients (e.g. workers compensation, self-funded patients) accounting for 3%

SOURCE: AIHW: Admitted patient care 2016-17: Australian hospital statistics

Potential actions for government

The issue of private patients in public hospitals will be considered as part of the next National Health Agreement to be negotiated in 2018. Potential actions could include:

- ■ Limiting PHI responsibility for private patient costs in public hospitals to elective procedures where patients elect to be treated in a public hospital. PHI would not fund private patients admitted through an emergency department – currently representing 49 percent of private patients in public hospitals.[72]

- ■ Health funds and the government agreeing under the National Health Reform Rules to:

    – Mandate that public hospitals immediately notify health funds when a private patient nominates to be treated as a private patient in a public hospital

    – Ensure informed financial consent with greater and timely transparency on the implications and actual costs of their decisions.

    – Ensure public hospital invoices provide the same itemised detail as private hospital invoices, details already given to the states under activity-based funding models.

72
  Admitted patient care 2016–17: Australian hospital statistics.

- Ensure public hospitals do not have quotas for private patients, with health funds recording and publishing the incidence of member treatments in public hospitals, and the financial impacts.

- Publish details on elective procedure waiting lists in public hospitals by type of patient (i.e. private or public patients)

Impact assessment

Limiting the costs of private patients in public hospitals for private health insurers to elective procedures only, would reduce PHI costs by approximately $550 million per annum, a saving to be passed onto consumers in the form of reduced premiums.

5.3.3 Collaborate with Medicare on payment integrity

System-wide payment integrity may eliminate $40 million p.a. in non-compliant payments.

Like Medicare, PHI funds are already investing in their payment integrity capabilities to reduce error, non-compliance and fraud. Doing so in collaboration with Medicare would improve the integrity of the whole system, saving $40 million each year.

The 2018–19 Budget announced steps to improve Medicare compliance, including by sharing data between private health funds and the Department of Health. Legislation is anticipated to be introduced in 2019. This should not be delayed.

Potential actions for government

Potential actions for the government include:

■ Establish a third party 'clean room' where public and PHI payments data can be analysed as a combined set by an independent contractor, with instances of incorrect MBS payments provided to both the government and insurers to allow appropriate follow up action by each party.

Impact assessment

Global experience suggests that savings of 2 to 3 percent are attainable by improving payment compliance of both hospital and, in particular, ancillary cover. The estimated $40 million is 2 percent of the current $2.2 billion spend on medical and diagnostic costs.

5.3.4 Extending the efficiency of private funders of dental and other ancillary care to bring competition to public programs funding dental care

The main benefit of 'Extras' cover is access to affordable dental care. Fifty three percent of extras claims are for dental care, for which health funds are a major funder in Australia.[73]

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[73] PHA Submission: Senate Community Affairs References Committee Inquiry into the Value and Affordability of Private Health Insurance and Out-of-Pocket Medical Costs.

Health funds are playing an increasingly important role in ensuring Australians have access to high quality dental care. One-in-two Australians claim for dental services through a health fund. Health funds pay out over $2.6 billion per annum in dental benefits, which is more than Federal Government dental programs. In addition, 90 percent of dental health services provided to low and middle-income earners are subsidised by health fund and 60 percent of dental treatments/services in hospitals which typically involve dental extractions and restorations are also funded by health funds.

The proportion of total expenditure on dental services by health funds increased from 14 percent in 2009–2010 to 18.1 percent in 2015–2016.[74] In contrast, the proportion of total expenditure on dental services by the Australian Government has decreased from 16.3 percent in 2009–2010 to 15.9 percent in 2015–2016, and expenditure by State and Local Governments has decreased from 8.2 percent in 2009–2010 to 7.7 percent in 2015–2016.

Traditionally, dental care has been a cottage industry, with large variability in costs for the same service. Approximately 85 percent of dentists' work in the private sector in their main practice. Unlike medical treatments that are covered by Medicare, which have prescribed fees, dental care has no standard fees associated with the services provided by dental professionals. This can lead to a patient receiving different treatment plans from different dental professionals.[75] The driver of this is regulation, as dentistry is regulated by the Australian Health Practitioner Regulation Agency (AHPRA) through the Dental Board of Australia (DBA), which while providing registration standards, codes of conduct and guidelines for professional practice, does not extend to pricing or prescribe a treatment method for a specific dental service.[76]

Increasingly, health funds are contracting with dentists and vertically integrating with dental practices, thereby consolidating and creating economies of scale. This is driven largely by a need to standardise quality, increase transparency on services provided, and reduce out-of-pocket costs for consumers. Health funds have also been able to negotiate harder for dental related equipment and products.

By contracting dentists, health funds have been able to reduce uncertainty about out-of-pocket costs, and have been able to provide preventive dental services with no gaps in many cases.

In addition, a report by Health Workforce Australia in 2014, identified there is an oversupply of dentists in Australia until at least 2025, which is particularly acute in urban areas.[77] Younger dentists in particular are attracted to work with health funds so they can access a guaranteed patient flow and build up a practice. The funds have used this dynamic to promote fee transparency and lower out-of-pockets for contracted dentists.

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[74] Australian Institute of Health and Welfare: Health Expenditure Report, 2015-16.

[75] Castle, J., and Mihm, U. (2017). Down in the mouth over dental costs (as published on choice.com.au).

[76] Castle, J., and Mihm, U. (2017). Down in the mouth over dental costs (as published on choice.com.au).

[77] Health Workforce Australia: Australia's Future Health Workforce – Oral Health Detailed August 2014.

While health funds have been able to deliver benefits to consumers in the private sector, there remains opportunity to bring further efficiencies to dental care in Australia. Through moving towards a private sector dental model, with both private and public funding, health funds could deliver further efficiencies in the dental care segment.

Potential actions for government

Potential actions for the government include:

■ **Extend the efficiency of private funders of dental and other ancillary care to bring competition to public programs:** Enable private funders of dental care to compete to provide public programs of dental care.

5.3.5 Restoration of the PHI rebate for low and middle income earners

To ensure the long-term sustainability of the Australian healthcare system the three financial incentives that were introduced to encourage PHI participation must be sustained:

■ The **Premium Rebate,** which reduces the amount payable by those with PHI by a percentage of their premium, with the rebate determined by the insured's age and, from 2012, their income.

■ The **Medicare Levy Surcharge,** which is a 1–1.5 percent surcharge payable by consumers who earn taxable income above $90,000 and who do not take out PHI with hospital cover.

■ The **Lifetime Health Cover Loading,** which adds 2 percent to lifetime PHI premiums for every year after the age of 30 that a person chooses *not* to take out PHI membership.

These incentives address consumer affordability, which consumer research indicates is the largest driver of concern for consumers of private health insurance[78]

These incentives are efficient, equitable and cost-effective policies that have maintained PHI participation at sustainable levels. They continue to underpin demand for PHI participation among high-income and younger consumers, helping to maintain the community-rating structure of PHI, and as a result allow more public resources to be directed to more vulnerable uninsured groups in the population.

The premium rebate was introduced in 1999 and in conjunction with the Medicare Levy Surcharge, and the Lifetime Health Cover Loading, succeeded in increasing the enrolment in private health insurance to more than 50 percent.

Consumers participating in private health insurance provide benefits to the broader Australian health system, bringing in between $1.60 to 2.40 for every $1 spent on the rebate. At ~$6 billion, the rebate is a key contributing factor that helps deliver consumers affordable private insurance. With increasing cost of living pressure, and rising healthcare costs, maintaining the rebate at current levels is paramount to ensuring private health

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[78] IPSOS, Consumer Research, July-August 2018

participation remains stable, and younger and healthier members are enticed into taking up private health insurance.

A key challenge for consumers, and the industry, is that the rebate entitlement is being reduced each year by the Rebate Adjustment Factor (RAF), and has been reduced from ~30 percent in 2012 to ~25 percent now for most members. Current projections indicate it will fall to around 20 percent by 2023, which equates to an effective rise of around 11 percent in premiums.

If the rebate continues to fall, then the affordability of private health insurance for consumers will decrease, which would thereby lead to reduced participation, and place an increased burden on the public health system and government funding.

Restoration of the PHI Rebate

Independent economic research commissioned by PHA has determined the rebate is an efficient way to fund planned surgery (See Attachment 1). To address the declining effective rebate, it is proposed that the government restores the rebate to 30% of the premium for low and middle-income earners, or at very least freezes the PHI rebate at current levels.

Proposed actions for government:

■ Remove the Rebate Adjustment Factor from the rebate setting scheme and restore the rebate to 30%. Retain means testing.

The Rebate on Extras

The PHI rebate is payable on any complying health insurance product (CHIP) that provide hospital treatment, general treatment (also known as 'ancillary' or 'extras') cover or both. From time to time, government and other stakeholders have proposed removing all or part of the rebate on the general treatment component as a savings measure, however, doing so would impact affordability and participation in PHI, which would have implications across the health system.

Extras cover delivers value to younger people who are less likely to make hospital claims, but who derive considerable value from cheaper access to dental and allied health services in the community. In the absence of extras cover, it is less likely that younger people would enrol in private health insurance as:

■ They have lower expected returns (i.e. lower probability of hospitalisation), and

■ Insurance is comparatively expensive for young people. While the combination of community rating and lifetime loading address equity goals, the core pricing of PHI is typically over what a risk-rated price would look like for people in their 20s.

It should also be noted that these younger consumers, who may initially take up an entry-level policy, will typically upgrade their policy over their lifetime and whilst they hold any PHI policy, they are contributors to the risk equalisation pool and community rating.

The public health impact on regular preventive dental and eye checks could also be significant, with the main benefit of extras cover being access to affordable dental care which accounts for 53 percent of extras claims.

It should be noted that when asked about choosing a health fund for hospital cover, many consumers mention attributes related to extras cover, which reinforces the relevance of this product to consumers. Furthermore, maintaining coverage in this age cohort is critical to be able to spread their risk under the community rating system. Due to the bundling of hospital and extras products, reduction or removal of the rebate on extras would simply appear to be yet another premium increase for a large number of consumers.

As such, it is essential that the rebate on extras is maintained.

6 Appendices

6.1 NOTES ON KEY ASSUMPTIONS

6.1.1 Introduction to methodology

■ In this section, we outline the approach taken to key assumptions behind the analyses in this report, in particular:

- Premiums and premium-growth

- Cost growth

- Participation

■ There are a few assumptions that cut across multiple inputs, ie.:

- Premiums, benefits and OOPs are considered on a 'per average member' basis (rather than 'per policy' or 'per member >25years')

  i. This allows adjustment for membership changes, and more accurately allows consideration of costs on an average individual level, however will not always reflect the exact costs that a consumer sees in terms of premiums

  ii. Where it is more important to illustrate the impact felt by individual consumers, additional analysis using average figures per policy is used

- We have also chosen not to emphasise the distinction between members with general-only coverage and combined coverage, as for any combined policy, it is complex to assign the component of premiums that relate to the general part of a policy versus the hospital component; and less than 4,000 members with some form of private health insurance in Australia, have hospital-only coverage.

- All funds have been treated equally, with the same industry-wide premium growth rate applied to calculate projected premium revenue per member. We have adopted differential treatment for individual fund variation when modelling out impacts on net margins

- Finally, we have projected the detailed effects on participation, industry-wide fund margins, shift of funding and OOPs over a 5-year period to 2023, and then for several measures extrapolated this over the long-term to 2033 (~15 year view) in order to better understand long-term implications of our assumptions

6.1.2 Premium Growth

Context

■ Premium growth projections are important as they drive both consumer and fund behaviour; and are the major point of leverage by the Health Minister in controlling major private health insurance costs to consumers.

- Recently, we have seen:

  – **Greater regulatory downward pressure** placed on premium growth, with the weighted industry average managed at a growth rate of 3.95 percent from April 2018, down from 4.84 percent in the 12 months previously.

  – **Premium revenue per member growing at a lower rate to the industry-weighted average** figure as a result of consumers **downgrading** their level of cover, with more consumers choosing products that have lower premiums in exchange for higher excess or co-payments and lower levels of coverage.

  – Finally, there has typically been a **large spread of premium growth rates** across and within funds, i.e. at least ~6 percent difference between highest and lowest growth rate.

Key assumptions

- Going forward, we expect regulatory and consumer pressures on premiums to continue. Our long-term industry-wide premium growth scenario is hence set at 3.95 percent p.a. based on current year headline industry-averages that will come into full effect at 2019 fiscal year end.

- We have looked at a separate scenario (Exhibit 22), which has premium growth projected at 3.95 percent p.a., except for 2 percent premium cap for 2 years commencing April 2020, annualised to June year-end (and therefore reaching peak 2 percent for a full financial year in FY2021).

EXHIBIT 22

Timelines for industry-average headline premiums
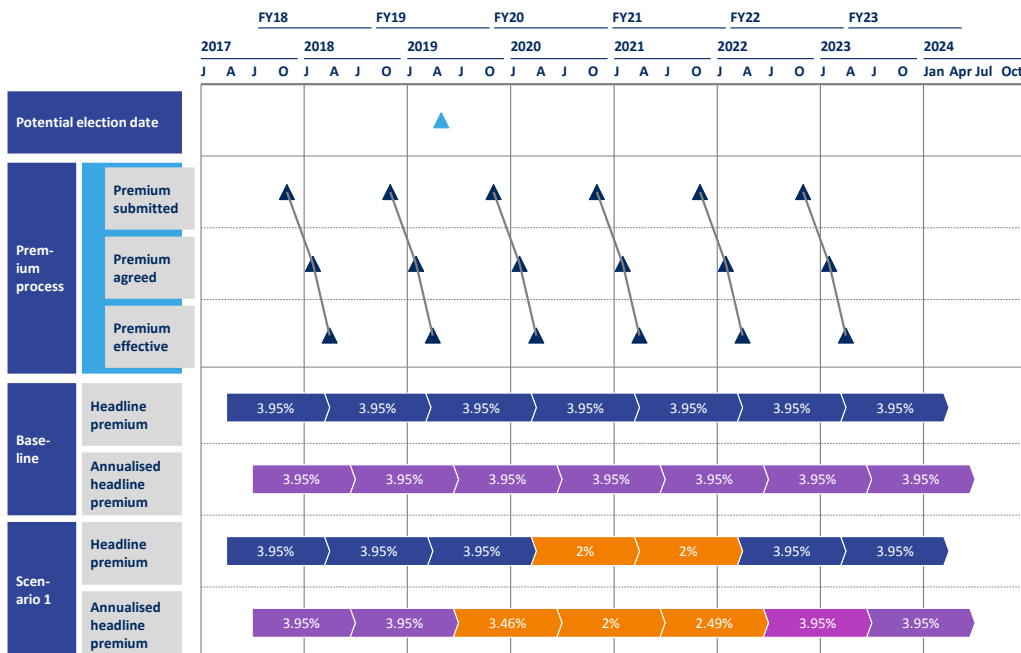
- Premium revenue per member is grown at **headline industry growth rates** (e.g. 3.95 percent in 2018 across all members and funds) to understand consumer behaviour, and

has not been adjusted downwards for the effect of downgrading on premium revenue due to:

— This having limited impact on most of the model outputs, such as participation and OOP costs

— This figure being more in line with what consumers see and experience the effects of

■ We **have not projected a 'rebound'** in premium growth rates for the industry following two years of a 2 percent premium growth cap, and instead have continued premium growth at the same rate as the current year (3.95 percent). This is because, whilst we saw this happen before in the early 2000s, we cannot anticipate that the current regulatory and political context will allow significantly higher growth rates in premiums.

■ The annual premium growth rate has been **adjusted to June year end**, to ensure that the premium growth announcement in April each year is reflected at the right time.

6.1.3 Cost Growth

Context

■ There are many ways of measuring health cost inflation; the most frequently used in this document is **growth in PHI benefits (both hospital and general) to represent health inflation.**

■ In Chapter 3 on Current Challenges, we have considered the major trends of drivers behind the historical average compound annual growth rate in both benefits and OOPs, as well as the considerations around future cost inflation.

Key assumptions

■ Our projection uses a lower short-term benefit inflation figure at 3.9 percent, then increasing this to a steady 4.8 percent p.a. growth rate in the mid- to long-term.

— Over the historical short-term (the last 2 years), we have seen benefits per member grow at a reducing rate (i.e. 3.9 percent) due to members downgrading their cover (and therefore being covered for less) and prosthesis reform having a one-off impact on the price of prosthesis (utilisation unaffected).

— Because downgrading effects as well as further prostheses price cuts are likely to continue in the short-term, we have projected the short-term benefit inflation at a slightly lower rate of 3.9 percent p.a.

— However, over the mid- to long-term, we have modelled a rate consistent with mid- to long-term historical inflation, at 4.8 percent p.a., as this is more in line with the fundamental driver of increased utilisation due to an aging membership base, increasing impact of chronic disease, and continued pressure from more expensive treatment approaches.

— Long-term growth rate of 4.8 percent p.a. has been supported by expert interviews and analyst reports

6.1.4 Participation

Context

- Historically, government policies have been implemented with the purpose of incentivising large parts of the population to privately insure their healthcare needs (see chapter Background).

- Whilst this had the effect of keeping participation stable for many years, over the last years, we have started to witness a plateauing and even decline in hospital health insurance coverage (see chapter Challenges).

- Our forecast is that participation of hospital coverage could decline to ~30% of the Australian population by 2030-2035

Key assumptions

- In projecting the likely status of participation to 2023 and beyond in different scenarios, we considered multiple sources to estimate what might be the reactions of consumers to different premium and out-of-pocket cost growth figures, including:

  - Consumer survey results on sensitivity to price changes on insurance purchasing behaviour

  - Individual fund experience, of recent and more historical times

  - Correlation of historical price changes and participation change

  - Other research on price elasticity

- The resulting elasticity factor has been applied to the effective premium paid by consumers, which is the projected headline average premium growth minus the PHI rebate, and then compared to expected income growth to reflect impact on disposable income.

  - The Rebate has been adjusted yearly by the Rebate Adjustment Factor, which is reliant on CPI inflation (long-term projection of ~2 percent used to reflect recent historical rates)[79]

  - Indexation of the Rebate yearly from April 2014[80] to a weighted average ratio of CPI and premium increase, means that Rebates will at best, stay flat as a proportion of premiums, and most likely continue to decline. In turn, this has and will continue to lead to consumers having to pay larger 'effective' premiums

  - We have projected wage growth at 2 percent consistent with industry projections

- **We have not included OOPs in the consideration of total cost to consumers**, despite recent attention on OOPs in the media.

  - Recent findings from an IPSOS survey however suggest that it is not so much the cost of OOPs to consumers that have an impact on satisfaction with PHI, but the predictability of an OOP 'gap'

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[79] ABS Household Expenditure Survey, 2015–2016

[80] Accessed from Australian Taxation Office website August 2018, https://www.ato.gov.au/Individuals/Data-matching-letters/Types-of-letters/Private-health-insurance-rebate/.

□ People with high OOP costs ($2 thousand plus), with advance notification of this cost, were half as likely to feel negative towards their gap, compared to those who were not notified of their OOP costs in advance

□ Those with modest OOP costs (up to $300) were more negative (48 percent), compared to those who had high OOP costs of $2 thousand plus, but knew of their costs in advance (40 percent)

– In addition, all consumers do not experience OOPs and the impact on their decision-making process in terms of entering or exiting PHI are not clear. We therefore decided not to include OOPs in elasticity calculations.

7 Attachments

1. The Relative Efficiency of the Private Health Insurance Rebate v Direct Public Health Expenditure, 2017

2. Measuring low-value services in Medibank, Bupa, GMHBA and HCF data: 2015/16 to 2016/17

3. 42 high-volume billing codes inform prostheses list value for Australians.

EVALUATE

Economics. Policy. Strategy.

The Relative Efficiency of The Private Health Insurance Rebate v. Direct Public Health Expenditure

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1 August 2017

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Evaluate

Evaluate was formed in September 2016, to bring fresh thinking to policy and economic questions, particularly those in the social sphere.

Our particular goal is to identify long-term solutions to ensuring the sustainability of Australia's admirable social compact, including universal access to healthcare and education, and the supply of aged care, housing and other social infrastructure.

Our approach is based on a traditional microeconomic toolkit, moderated by the knowledge that social services are accessed by people with a vast variety of experiences, needs and resources. Consequently, we have no bias towards either public or private supply of services, noting that the access and welfare needs of different Australians typically require a mix of both.

The Principals of Evaluate are experienced professionals, and we complement this with external expertise where possible.

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www.privatehealthcareaustralia.org.au

Table of contents

Executive Summary

This paper seeks an answer to the question: is a dollar spent by government via private health insurance (PHI) more or less efficient than a dollar spent directly in the public system?

There are multiple dimensions to this problem, and a survey of literature shows competing views. However, there are reasonable grounds for believing that the gains to consumer welfare from subsidising PHI are no less than, and may be greater than, those from putting more money into the public system.

This is not a comparison of quality or outcomes in the public and private systems. Rather it is a review of expenditure efficiency.

For context we look at the history of PHI in Australia, which is substantially longer than the history of universal public care. From that, we note that – far from being a novel activity – the use of PHI subsidy by Australian Governments has a history that extends back to the first part of the 20th Century.

Prior to the introduction of Medicare, this led to insurance coverage amongst Australians of up to 80% of the population, which provided for high standards of healthcare, albeit with a minority relying to some extent on charitable or uncompensated care.

From there, we look at the economic effects of PHI on two fronts.

First, we consider allocative efficiency, which looks at the overall effect of health expenditure through direct purchase: dollar for dollar expenditure by the Commonwealth.

Here we find that there are some respects in which health expenditure via the PHI Rebate is more efficient than direct expenditure through the public system. At the heart of this finding is the fact that because of user-funded premiums, PHI makes a lower call on the public purse, and hence avoids some of the deadweight costs of taxation.

Secondly, we look at the welfare effects of spending a marginal dollar variously: in the public system; via the PHI Rebate; or as a user-payment from private consumers.

We measure welfare gains as a reduction in the opportunity cost of waiting for care: bypassing queues is the principal role of payments made by PHI; and the shift in demand to insured care reduces the waiting time of public patients.

The results of this analysis show that there is a greater welfare gain from the PHI rebate than from marginal investment in public care. In other words, holding everything else constant, redirecting a dollar of public expenditure from the PHI rebate to public hospitals would reduce efficiency. This result seems reasonably robust to changes in the modeling parameters used in the analysis.

We note that where extras are a stapled component of PHI including hospital insurance, there can be sound policy reasons for applying the rebate to them. Primary among those reasons is the role of extras in attracting relatively young and healthy consumers. In the absence of those consumers, charges would likely have to rise, though we do not quantify the costs and benefits of alternative scenarios in that respect.

Finally, we make some observations on the broader value of PHI, beyond the marginal effects.

Introduction

The question we consider in this paper is whether a dollar spent on healthcare via private health insurance (PHI) is more or less efficient an investment in the Australian healthcare system than a dollar transferred into the public health system. This is in turn an evaluation of the economy-wide efficiency of the PHI Rebate.

In 2014, the Commonwealth Government's National Commission of Audit (NCOA) opined:

> *A rise in the share of the nation's income devoted to health care is not necessarily a matter of policy concern as long as the expenditure is cost effective, used efficiently, and the benefits outweigh its opportunity cost (including the excess burden of the taxes raised to pay for the expenditure).[1]*

This question of cost-effectiveness is what we are testing here. In doing so – as suggested by the Commission – this paper is indifferent to the actual scale and mix of healthcare expenditure as long as it is productive.

The preliminary hypothesis was that marginal returns on health expenditure should be roughly equal, with greater gains available from inframarginal effects. By the marginal effects, we refer to gains which occur from the direct application of insurances, to relieve pressure on the public system. And by inframarginal, we refer to the broader benefits of having competing systems, such as the impact competition can have on innovation and experimentation.

The expectation that there would be little marginal gains from preferring either social or private insurances assumed that supply constraints would limit short-term competitive gains whereas, in the longer term, competition should raise the productivity and quality of all providers.

It is important from the outset to emphasise that our interest is in the effects of financing choices rather than hospital selection. These are not identical: the use of PHI in public hospitals is an increasingly widespread practice, though it may be ill-conceived, because it undermines the primary goal of the insurance model, which is to support a separate and competing system; and there continues to be substantial purchase of private hospital services by Commonwealth and State Governments in order to decrease waiting times and lists.[2]

Having looked specifically at the differential effects of 'social health insurance' and PHI, we find that the positive marginal welfare effects of funding via private insurance exceed those of public health finance.

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[1] National Commission of Audit. (2014). *Towards responsible Government*, Appendix 1-9.3, p.194. http://www.ncoa.gov.au/report/appendix-vol-1/9-3-pathway-to-reforming-health-care.html , accessed 27 July 2017.

[2] In 2014-15, 10.1% of expenditure in public hospitals was funded by health insurers, premium rebates, out of pocket costs and other non-government sources (including compensation schemes) — in particular, private health insurers (including premium rebates) accounted for 3.1% of expenditure in public hospitals. Conversely, 12.8% of expenditure in private hospitals was funded by governments, not including premium rebate expenditure – this represents the direct purchase of private hospital services by government. Some 4.0% of all government hospital funding (purchases of services), not including premium rebate expenditure, was in private hospitals. See: Australian Institute of Health and Welfare. (2016). Health Expenditure 2014-15. Table A3.

This is not simply a matter of the discounted Government contribution to care which occurs via PHI: we are primarily interested in comparing dollar for dollar rather than relative share of costs (although this is also considered).

Rather, welfare gains are due to effects on waiting times and the demand characteristics of health consumers. Welfare gain measures are critical to provide a true picture of whether scarce resources, particularly tax revenues, are being allocated efficiently.

Traditional comparisons between different levels of health expenditure look at expenditure as a percentage of gross domestic product (GDP) which can be misleading. For example, World Bank data from 2014 shows that 9.4% of Australian GDP (from all sources) is spent on health compared to 9.1% for the United Kingdom; and 17.1% for the United States.[3] However, expenditure should not be regarded as a good indicator of healthcare access, outcomes, or equitable distribution. In particular, there is widespread confidence that an Australian in need of urgent surgical intervention will be more readily assured of access than a US resident.

For Australians, equity of access is a central expectation of the health system, alongside quality and effectiveness: notwithstanding that it may require competing suppliers as well as some means-testing. To this end, we start from a point of indifference to the broad mix and consumption across the system, rather focusing on what changes in funding patterns would deliver greater marginal gains.

We are naturally aware that there remain ideological biases toward different healthcare models at all corners of politics. However, we share the view that:

> The debate on private vs. public seems anachronistic … It is no longer a question of private vs. public but rather, "what is the best and most efficient mix for the local context?"[4]

Our conclusion is therefore not that all public expenditure should be reallocated to one sector or another, which would be unlikely to be desirable even in a greenfield environment. However, we do believe there is compelling evidence that subsidising PHI is at least at the margin more welfare-maximising than re-diverting such monies to the public sector.

Why PHI?

At this point, we pause to briefly comment on what private health insurance actually does, and what are its goals. This is important, as it informs the succeeding methodologies for examining whether Government contribution via the PHI Rebate is efficient in terms of those goals.

First, it is well-understood that Government funding for hospital services is limited, mostly by a combination of: the population's tolerance for taxation; and, the expectation that tax income will be spent on a mix of services, not just healthcare.

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[3] World Health Organization. (2017). Global Health Expenditure database. http://data.worldbank.org/indicator/SH.XPD.TOTL.ZS, accessed 27 July 2017

[4] Hsu, Justine. (2010). *The relative efficiency of public and private service delivery*. World Health Report (2010) Background Paper, No.39: p.5.

The consequence of this is a requirement for rationing: in hospital care, this is done via waiting lists. The fact that care in public hospitals does not attract a user charge may lengthen the waiting lists, to the extent to which it induces moral hazard by consumers or health care providers.

There are welfare losses from waiting lists, and substantial costs associated with maintaining the quality of life of those in the queue.

Conversely, PHI allows insured persons the choice of opting out of the waiting list, and being treated more expeditiously, in a private hospital. At the same time, they receive some other benefits, including doctor selection.

There is a mix of public and private benefits here. The private benefits are captured in the insured patient's experience: having rapid treatment; peace of mind from having selected a service provider; potentially avoiding comorbidities or longer recovery associated with treatment delays.

This may be paid for by a mixture of PHI and out-of-pocket copayments.

There are also public benefits associated with this activity. Some of these are related to the private experience: patients receiving timely interventions will have less time out from workforce participation[5]; and earlier intervention may save costs in the future.

However, the broad public benefit is a reduction in the length of the public waiting list. This is measured in our paper as a welfare gain, associated with shorter waiting times. Again, some of this is a private benefit (individual patients in the public space being treated more quickly) and some of it is shared (reduction in interruptions to workforce participation, and reduction in non-hospital health costs).

This combination of private and public benefits from PHI is why there is merit in some public participation in PHI funding, to increase the rate of insurance across the population.

History of Private Health Insurance in Australia

In investigating the history of PHI in Australia, we have identified a theme common in both literature and, most likely, with the broader community also. Government involvement in, and support for, the PHI sector is frequently positioned as a recent phenomenon, and one closely associated with the reforms introduced by the Howard Coalition Government in its early years.

In reality, Australian Government support and involvement in PHI significantly pre-dates this period. Current health financing arrangements reflect the blending of social and voluntary insurance which have underpinned Government's subsidisation of health throughout the second half of the twentieth century.[6] This demonstrates the long term view of the value delivered by the sector to the Australian health system and the centrality of the values of choice and access which it underpins.

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[5] Time out of the labour force is not in itself a welfare cost, if it reflects a choice to consume more leisure. However, illness forces involuntary leisure, which is a cost. There is also a tax wedge, so higher involuntary leisure imposes a broader cost on third parties in the form of lower tax receipts.

[6] Cullen, David, *Review of the Pricing Arrangements in Residential Aged Care: Historical Perspectives.* Background Paper 4, Commonwealth of Australia, 2003.

The early years

The forerunners of today's private health insurers can be found in the activities in the 19th century friendly societies: not-for-profit 'self-help' financial organisations and mutual funds that pre-dated most welfare provisions by governments, and aimed to support individuals during times of need through mutual self-funding. Many of these organisations – often called 'mutuals' – operated in Australia in the 1800s and continued into the early 20th century.[7]

During the years between the two World Wars - particularly during the 1930s - this system came under stress, as did the free doctor services provided to poor patients through charitable hospitals. This decade also saw the emergence of hospital or medical based health funds, such as the Hospital Contributions Fund of New South Wales (HCF) in 1932.[8]These years also saw various Governments – the Cook Government in 1913, the Bruce/Page Government in 1928 and the Lyons Government in 1938 – consider the introduction of government-run social insurance schemes although these did not progress into practice.[9]

Post-World War II

The post-World War II period saw the establishment of a more extensive social services system under the Menzies Government. This expansion was informed by the Government's approach establishing a 'partnership between the government and the individual through the union of governmental aid and voluntary effort'[10] and included the introduction of the Voluntary Health Insurance (VHI) scheme established by the *National Health Act 1953.*

Under this system, existing insurers acted as agents for the VHI scheme and received subsidies from the Commonwealth in the form of benefits and underwriting of the claims by the chronically ill.[11]

The VHI subsidies had a crowding-out effect by ensuring non-subsidised products could not be price-competitive, making it nearly impossible to conduct health insurance outside the scheme: only not-for-profit organisations that met the Department of Health's prudential requirements were permitted access to the VHI scheme.[12] In addition, during this period, PHI contributions became tax-deductible. This system of fiscal advantages and financial incentives existed until 1974.[13]

The *National Health Act 1953* also established Australia's system of community rating for PHI together with open enrolment.

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7 Private Health Insurance Administration Council (PHIAC). (2015). *Competition in the Australian Private Health Insurance Market*. Research Paper 1, June 2015.

8 HCF. (2017). *2016 Year in Review*. https://www.hcf.com.au/content/dam/hcf/pdf/about-us/2016%20Year%20in%20Review.pdf, accessed 18 July 2017.

9 Cullen, David, *Review of the Pricing Arrangements in Residential Aged Care: Historical Perspectives.* Background Paper 4, Commonwealth of Australia, 2003.

10 Cullen, David, *Review of the Pricing Arrangements in Residential Aged Care: Historical Perspectives.* Background Paper 4, Commonwealth of Australia, 2003.

11 Private Health Insurance Administration Council (2015). *op. cit.*

12 Scotton, RB and MacDonald, CR. (1993). *The Making of Medibank.* School of Health Services Management, University of New South Wales, Australia.

13 Colombo, F and Tapay, N. (2003). *Private Health Insurance in Australia: A Case Study*. OECD Health Working Papers No. 8, OECD, 30 October 2003.

Under community rating, insurers are not permitted to charge differential premiums to individuals based on any risk factor, such as age, gender or health status. This has the result that all individuals holding the same PHI product living in the same State pay the same premium for that product. In addition, private health insurers are not permitted to refuse cover to any individual regardless of their risk or other status.

By prohibiting risk-rated premiums, and preventing insurers from refusing customers, these regulations can induce insurers to engage in potentially inefficient 'risk selection', whereby they seek to discourage high risk consumers and attract low risk consumers through the design of insurance options. At the same time, they can induce adverse selection by customers, older and more ill Australians will have a higher expected return on their premiums. In those ways, they compound the difficulties PHI faces in competing with an alternative product—coverage through the public system—that is provided on an uncharged basis. Maintaining a viable PHI industry in the presence of these distortions has required a range of public policy interventions, ranging from rebates to Lifetime Health Loading (discussed below).

Towards a mixed public/private model

In 1970, PHI coverage reached a national peak of 80%.[14] By the time of the Whitlam Labor Government's election in 1972, however, there was a significant impetus towards the establishment of a national social health insurance scheme following the implementation of similar programs in Europe during the period of post-war reconstruction.

Medibank was intended as: "a universal, compulsory, publicly-administered and funded health insurance scheme."[15] The dismissal of the Whitlam Labor Government and the subsequent election of the Fraser Coalition Government saw a significant restructure of Medibank with the universal system of cover dismantled and a return to a substantially PHI-funded model supported by public subsidies.

At the same time in 1976, Medibank Private, managed by the Health Insurance Commission, was established as a government owned private health insurer, operating in all states and territories. Private health insurance coverage, which had fallen during the period of Medibank's operation, rose sharply after the discontinuation of Medibank Mark II in 1981,[16] and tax rebates for PHI were introduced.[17] Coverage in the early 1980s was between 55% and 68% of the population.[18]

The election of the Hawke Labor Government in 1984 saw the establishment of Medicare, the second iteration of a universal, publicly funded national insurance scheme. This remains the major funder of Australia's health care system.

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[14] Quinn, C. (2002). *The Pasts and Futures of Private Health Insurance in Australia*. NCEPH Working Paper Number 47, National Centre for Epidemiology and Population Heath, The Australian National University, December 2002.

[15] Private Health Insurance Administration Council (2015*). op. cit.*

[16] Quinn, C. (2002). *op. cit.*

[17] Colombo, F and Tapay, N. (2003). *op. cit.*

[18] Australian Bureau of Statistics. (2001). 'Health expenditure: Private health insurance'. *Australian Social Trends, 2001*. http://www.abs.gov.au/AUSSTATS/abs@.nsf/2f762f95845417aeca25706c00834efa/0aaf3311ebcd3646ca2570ec000c46e4!Open Document, accessed 19 July 2017.

Following the introduction of Medicare, subsidies for PHI ceased, following the earlier removal of tax rebates for PHI in 1983.[19] PHI coverage dropped sharply to 50% and coverage then continued to fall slowly but reasonably consistently over the next ten years.[20]

A number of policy initiatives were introduced to address the fall in PHI coverage, recognising its perceived value and broad population cover.[21] Initiatives included:

- The introduction of requirements in 1988 compelling funds to enable portability by recognising waiting periods already served by policy holders moving between insurers;
- Changes to minimum insolvency requirements in 1988; and,
- Changes to the Medicare Levy in 1995.[22]

At the same time, a number of other events in the broader economy were acting to generate a perfect storm for PHI: a situation that led to additional and significant changes in how Government approached private insurance.

1996 – the 'perfect storm'

Economic downturns in the 1990s, following the 1980s banking crises, drove funding cuts to public hospitals, particularly in Southern Australia. Further, the introduction of 'casemix' funding and its operation as a savings measure meant that public hospitals were under significant pressure, with safety and quality issues being regularly raised both in the media and more generally.

The economic downturns also impacted the private sector, with PHI becoming largely unaffordable for average families as unemployment rose and real wages stagnated or even fell. Community rating acted to compound this issue as older (or sicker) individuals paid the same premium as younger, healthier members. Given that individuals could join PHI funds at any point of their lives, including when they were older and almost certain to lodge claims exceeding the value of their premium, community rating resulted in young people in PHI attracting premiums exceeding their true risk.

Given that this provided little or no incentive for younger people to hold PHI, many of them exited the sector. Adverse selection (the deterioration in the quality of the insured pool as healthier consumers opt out) in turn reduced the effectiveness of risk pooling and increased the premiums required to cover the sicker population retaining their insurance.[23]

The intersection of these conditions created the elements of a 'perfect storm': with premium increases rising rapidly; leading to a further fall in the number of lower claiming members whose premiums were in fact essential to the wellbeing of the sector. Premium rises above ten percent became common, sometimes several times within a twelve-month span, leading to more members dropping their cover. This downward

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[19] Colombo, F and Tapay, N. (2003). *op. cit.*
[20] Quinn, C. (2002). *op. cit.*
[21] Colombo, F and Tapay, N. (2003). *op. cit.*
[22] Private Health Insurance Administration Council. (2005). *op. cit.*
[23] Colombo, F and Tapay, N. (2003). *op. cit.*

spiral threatened the very existence of the PHI sector with only about 30% of the population holding hospital cover by 1997.[24]

Stabilising the private health insurance market – a package of reforms

That the system was in crisis was recognised by the Howard Coalition Government which introduced a number of measures designed to support the PHI sector, while providing room for the public hospital sector to stabilize.

There was significant concern regarding the impact of falling PHI coverage on the sustainability of public hospitals with then Minister for Health and Ageing, the Hon Dr. Michael Wooldridge, stating in a submission to a Senate Inquiry that:

> *...the health of the publicly funded health sector depends upon a vital private sector. Having some six million Australians with PHI directly pays for around one-third of the costs of hospital care in Australia. If there were no private sector, the extra costs borne by the taxpayer would simply be unsustainable.[25]*

The packages of reforms introduced as a result of these concerns fundamentally took two forms: financial incentives based around subsidies and taxation; and incentives which ameliorated premium rating restrictions. At the same time, it was assumed that incentivising a broader population base back into PHI would allow for a better balanced risk pool, and therefore fewer and lower premium rises.

The packages were introduced over time with some of the earlier initiatives further developed and replaced over time.

The Private Health Insurance Incentive Scheme (PHIIS)

- A tax rebate or reduced premium

In July 1997, the PHIIS was introduced as a government-funded reduction in the cost of PHI premiums for those individuals in the lowest income band. This reduction could be accessed in one of two ways, either as a tax rebate for the individual or as a reduced premium. This was an early form of means testing.

- The Medicare Levy Surcharge (MLS)

In addition to the rebate or reduced premium, the PHIIS also introduced an additional contingent incremental Medicare levy for those in the highest income band who did not hold private health hospital insurance.

This meant that, for single people earning over $80,000 and families with incomes over $180,000, their mean rate of taxation would increase by an additional 1% increment if they failed to take out private insurance. As identified by the Department of Health, the MLS is essentially 'a tax on people that earn over

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[24] Quinn, C. (2002). *op. cit.*
[25] The Hon Dr. Michael Wooldridge, quoted in: Quinn, C. (2002). *op. cit.*

a certain amount and don't have PHI hospital cover'.[26] It is separate from the normal Medicare Levy and is positioned as an incentive and savings measure, not a revenue measure.

Hospital Purchaser Provider Agreements

Hospital Purchaser Provider Agreements had been introduced in 1995, following the passage of the *Health Legislation (Private Health Insurance Reform) Amendment Act 1994*.[27] Designed to allowed private health insurers to negotiate with hospitals to pay them above the Medicare Benefits Schedule (MBS) fee where there was an agreement for in-hospital medical services, the intent of these Agreements was to facilitate simplified billing practices and, critically, enable the elimination of out-of-pocket costs for patients.[28] Changes to the Hospital Purchaser Provider Agreements were made in April 1998 to help achieve its objective of reducing medical gaps experienced by consumers.[29]

The Australian Government Private Health Insurance Rebate

The PHI rebate, effective from January 1999, was a universal rebate of 30% on PHI premiums. Funded by the Government, those with PHI could access the rebate either as a reduced premium or as a tax rebate. The 30% rebate replaced the earlier means-tested PHIIS rebate and was designed 'to help people meet the cost of PHI'.[30]

In 2005, the PHI rebate was increased for people 65 to 69 years old from 30% to 35%, and to 40% for people 70 years old and over. The changes applied to both new and existing PHI members.

Lifetime Health Cover

Lifetime Health Cover (LHC) "is a Government initiative that began on 1 July 2000. It was designed to encourage people to take out hospital insurance earlier in life, and to maintain their cover throughout their life."[31] This was done by permitting (making) health insurers to charge differential premiums based on the members' age at the time they first took out private hospital cover.

Lifetime Health Cover regulations mean that anyone who takes out PHI pays a loading of 2% on their premium for each year of age they are over 30. No loading exists for those who hold private health insurance prior to their 30th birthday.

This loading lasts for ten years from the time that the insurance is first purchased and is capped at a maximum of 70%. For example, someone taking out PHI for the first time the day after their 45th birthday would attract a 30% loading on their premium and pay an incremental 30% of the listed premium price each year for the following ten years.

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[26] The Department of Health. (2017). 'Private Health Insurance',
   http://www.health.gov.au/internet/main/publishing.nsf/Content/private-1, accessed 20 July 2017.
[27] Health Legislation Amendment (Private Health Industry Measures) Bill 2002, Bills Digest No. 143 2001-02,
http://www.aph.gov.au/Parliamentary_Business/Bills_Legislation/bd/bd0102/02bd143 (accessed August 2017).
[28] Australian Bureau of Statistics. (2001). *op. cit.*
[29] Health Policy Solutions, 'Impact of the changing role of private health insurers on clinical autonomy', 11 November 2015,
 https://www.surgeons.org/media/22316534/HPS-Report-Health-Insurance-and-Clinical-Autonomy-Nov-2015.pdf, (accessed
   August 2017).
[30] The Department of Health. (2017). *op. cit.*
[31] The Department of Health. (2017). *op. cit.*

As a grandfathering effect, those who held cover before 1 July 2000, later extended to 15 July 2000, were exempt from paying the Lifetime Health Cover regardless of their age at that date. This operated effectively as an amnesty or grace period for those taking out new cover prior to the 15 July date.

No-gap or known gap products

No-gap or known gap products were introduced in July 2000 in order to encourage health funds to offer policies that either enabled members to avoid paying out-of-pocket expenses or allowed them to know in advance what those out-of-pocket costs would be. Unless private health insurers introduced one or more policies involving a no-gap or known gap, they were not permitted to offer members access to the 30% PHI rebate as a premium reduction.[32]

Impact of these reform measures

The impact of the reform measures was significant and immediate. In the March quarter of 2000, private health insurance coverage was 32% for hospital insurance and 33% for ancillary insurance. Over the June quarter of that year, coverage rose significantly with hospital coverage reaching 43% and ancillary coverage 39%. The September quarter saw a continued increase with those with hospital coverage reaching 46% and those with ancillary cover to 41%.

This rise in coverage resulted in an additional 415,200 people aged 30 years and over covered by PHI by September 2000, compared to June of the same year. Notably only 11,300 of those people were paying higher premiums as a result of the Lifetime Health Cover regulations.[33] This indicates the major impact this policy had on people's decision to invest in PHI, with the vast majority taking up insurance during the amnesty period.

In 2006, the Explanatory Memorandum for the *Private Health Insurance Bill 2006* stated that the 30% Rebate; the increased rebate for older Australians; Lifetime Health Cover; and the No-Gap and Known Gap arrangements had 'helped ensure a viable and sustainable private health sector, while also improving the capacity of the public hospital system to deliver services to the Australian community'.[34]

Variations to the regulatory regime over time

Since the initial changes enacted by the Howard Government, a variety of measures have been introduced that have changed the original reform package. The majority of these relate to regulatory changes regarding the rebate, with the aim of restraining government expenditure and most were announced by the Rudd Labor Government in the 2009-10 Budget.

At the time, the Government argued that the measures would also make the operation of the PHI rebate fairer and financially sustainable while supporting consumer choice in health care. Since its introduction,

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[32] Australian Bureau of Statistics. (2001). *op. cit.*
[33] Australian Bureau of Statistics. (2001). *op. cit.*
[34] The Parliament Of Australia, House of Representatives. (2006). *Explanatory Memorandum – Private Health Insurance Act 2006 (and others),* http://parlinfo.aph.gov.au/parlInfo/download/legislation/ems/r2673_ems_45c273f9-92b8-4faa-b9ee-17ca60e182e0/upload_pdf/307054%20a.pdf;fileType=application%2Fpdf, accessed 19 July 2017.

the cost of the PHI rebate had grown steadily and, in 2010–11, cost $4.7 billion.[35] In the same year, the percentage of the population covered by private hospital health insurance was 45.3%.[36]

Means testing the rebate

In the 2009-10 Budget, the Australian Government announced its intention to introduce income thresholds at which different rebate levels would apply: essentially a means test on access to the PHI rebate. This affected not only those Australians in receipt of the 30% rebate but also those older Australians who received the higher 30% or 40% rebate levels if their income was within the new thresholds.

As a result, individuals would no longer universally receive the 30% originally introduced in 1999 but rather would, depending on their income level, receive a 30%, 20% or 10% rebate or, for those over the highest income threshold, no rebate at all.[37]

This change was estimated to save $6.78 billion over four years and commenced on 1 July 2012.

Changing the Medicare Levy Surcharge

In the same Budget, the Government proposed changes to the MLS with a sliding scale related to income. As a result, those on higher incomes without insurance were liable to pay higher penalty contributions, ranging from the original 1% levy to new rates of 1.25% or 1.5% depending on income level.

Removal of the rebate from Lifetime Health Cover loading

Announced at the same time as the above two measures, the Australian Government also advised that that they would remove the part of the PHI rebate then payable on the Lifetime Health Cover loading. This commenced on 1 July 2012 and was estimated to save $386 million over four years, since at that time 1,052,994 people in Australia had a Lifetime Health Cover loading payable on their PHI.[38]

As at March 2017, some 1,058,409 people were subject to a Lifetime Health Cover loading; the number of people subject to the LHC loading decreased by 89,855 over the preceding 12 months. Over the year, 125,050 people had their loading removed after paying a loading for ten years.[39]

Indexation of the rebate to the Consumer Price Index

The Government also announced that the rebate on PHI would be indexed against either the Consumer Price Index (CPI) or the level of the premium increase, whichever is lower. This initiative, which commenced

[35] Biggs, A. (2011). *Legislation to means test the private health insurance rebate re-introduced – debate continues*. Parliamentary Library, http://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/FlagPost/2011/July/Legislation_to_means_test_the_private_health_insurance_rebate_re-introduceddebate_continues, accessed 20 July 2017

[36] Private Health Insurance Administration Council. (2011). *Annual Report 2010-11 – The Operations of Private Health Insurers.* http://www.apra.gov.au/PHI/PHIAC-Archive/Documents/Annual-Report-on-Operations-2010-11-web-version.pdf, accessed 21 July 2017.

[37] Biggs, A. (2011). *op. cit.*

[38] Cabinet document, 'Removal of the Australian Government Rebate on Private Health Insurance from Lifetime Health Cover Loadings', https://www.health.gov.au/internet/main/publishing.nsf/Content/foi-disc-log-2013-14/$File/Document%2010%20-%20removal%20of%20rebate%20on%20PHI%20from%20LHC%20loadings.PDF, accessed 21 July 2017.

[39] APRA. (2017). Private Health Insurance Quarterly Statistics, March 2017. http://www.apra.gov.au/PHI/Publications/Pages/Quarterly-Statistics.aspx, Accessed 27 July 2017.

on 1 July 2014, affects lower and middle income earners and, as a result, the value of the 30% rebate is dropping each year.

For low income earners, what was previously a 30% rebate on their PHI is now effectively a 26% rebate[40] and this will also apply at other tiers of the rebate. The effective value of the rebate will continue to fall as a percentage while health inflation and premium increases remain above CPI.

Freezing income thresholds at 2014-15 levels

Income thresholds for rebate eligibility and the MLS are frozen at 2014-15 levels through 2017-18, saving a projected $370.9 million between 2018-21. The saving arises from bracket creep.

In 2014, the Abbott Coalition Government announced that the income thresholds then applying to the Medicare Levy Surcharge and PHI Rebate would not be indexed for three years, from 1 July 2015 to 30 June 2018. Until this point, the income thresholds had been indexed annually to account for the rise in income needed to meet inflation. In announcing that the indexation would be frozen for three years, the Budget said the savings made would be invested in the Medical Research Future Fund.

In the 2016-2017 Federal Budget, the Turnbull Coalition Government announced a continuation of the indexation freeze for a further three years. This means it will be in operation at current levels until 30 June 2021.

Current Situation

The impact of the above changes has been to slow the growth of the cost to the Commonwealth of the PHI rebate and, given that the number of people eligible for a rebate will fall over time, expenditure on the rebate is forecast to continue its decline.

In July, the Australian Competition and Consumer Commission released its annual report to the Australian Senate regarding the PHI industry. The report confirmed that affordability is a significant concern for consumers with 61% of people who had allowed their PHI to lapse citing the cost of premiums. Real household expenditure on PHI premiums was identified as having increased by 19.7% between 2006 and 2014 and above-CPI premium increases have occurred in every year since that time.

The clear issue here is that savings taken by the Government via bracket creep are contributing to a reduction in the affordability of PHI.

The ACCC report also cited *Online Research Unit* research that 21 per cent of survey respondents plan to relinquish or reduce their PHI cover in the following 12 months with 66% considering that their current policy was too expensive.

In addition, consumers are both shifting to lower-cost policies that have lower benefits, and ceasing to hold PHI altogether: with a 0.42% decline in the number of people holding hospital or combined cover. The report cited Australian Prudential Regulation Authority (APRA) figures that, in June 2015, 47.37% of the Australian population held private hospital or combined health insurance but by June 2016 that percentage

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[40] Private Health Insurance Ombudsman, 'Australian Government Private Health Insurance Rebate', http://www.privatehealth.gov.au/healthinsurance/incentivessurcharges/insurancerebate.htm, accessed 22 July 2017.

had fallen to 46.95%.[41] The decline is continuing, with APRA reporting 46.5% of the Australian population holding private hospital or combined health insurance in March 2017.[42]

The ACCC also found that at the same time as the number of people with coverage was decreasing, the level of hospital benefits paid by health insurers per person increased by 4.2%, along with a 2.9% increase in general benefits per person. At the same time, average out-of-pocket expenses rose by 6.9% for episodes of hospital care.

Statistics from the Australian Prudential Regulation Authority indicate that hospital benefits paid by private health insurers increased from $13.3 billion in the twelve months to 30 June 2015 to $13.4 billion for the twelve months to 30 June 2016.[43] This is a slight drop in real terms, with total outlays falling less quickly than the decrease in the population covered.

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[41] Australian Competition and Consumer Commission. (2016). *Report to the Australian Senate On anti-competitive and other practices by health insurers and providers in relation to private health insurance for the period 1 July 2015 to 30 June 2016.* https://www.accc.gov.au/publications/private-health-insurance-reports/private-health-insurance-report-2015-16, accessed 21 July 2017.

[42] Australian Prudential Regulation Authority. (2017). *Private Health Insurance Quarterly Statistics, March 2017.* http://www.apra.gov.au/PHI/Publications/Pages/Quarterly-Statistics.aspx, accessed 27 July 2017.

[43] Australian Prudential Regulation Authority. (2016). *Private Health Insurance Quarterly Statistics, June 2016.* http://www.apra.gov.au/PHI/Publications/Documents/1608-QSR-20160630.pdf, accessed 21 July 2017.

Methodology and Analysis

Current rates of subsidy

The PHI rebate varies by income, age and family status. It has been means tested since 2012 and rates have been consistently reduced over recent years. Current and recent rates are shown in Table 1 below.[44]

Table 1: PHI Rebate Rates for Past Two Years

Status	Income thresholds			
	Base tier	**Tier 1**	**Tier 2**	**Tier 3**
Single	$90,000 or less	$90,001 – $105,000	$105,001 – $140,000	$140,001 or more
Family	$180,000 or less	$180,001 – $210,000	$210,001 – $280,000	$280,001 or more
Age	Rebate for premiums paid 1 July 2016 – 31 March 2017			
Under 65 yrs	26.791%	17.861%	8.930%	0%
65–69 yrs	31.256%	22.326%	13.395%	0%
70 yrs or over	35.722%	26.791%	17.861%	0%
Age	Rebate for premiums paid 1 April 2017 – 30 June 2017			
Under 65 yrs	25.934%	17.289%	8.644%	0%
65–69 yrs	30.256%	21.612%	12.966%	0%
70 yrs or over	34.579%	25.934%	17.289%	0%

The principle behind the variable rebate is one of simple means testing. We note that means testing private health without means testing public care is a potential source of inefficiency as it makes consumption of public care even cheaper in a relative sense, skewing consumption decisions. However, the political limits to copayments in the public sector are well understood.

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[44] https://www.ato.gov.au/individuals/medicare-levy/private-health-insurance-rebate/income-thresholds-and-rates-for-the-private-health-insurance-rebate/?anchor=Incomethresholdsfor201516201617and201718#PHIincomethresholds Downloaded July 2017

We also note that the rebate can be taken as either a discount to insurance premiums (Government payment to the insurer) or as a tax offset. While there may be some differential transaction costs between these choices, they are presumed to be small and therefore this paper does not account for them.

Finally, it also appears that health inflation is predominantly outside the control of health insurers: given the constraints provided by both Government premium caps and a falling market for PHI, we would expect that if insurers had substantial market power, they would be able to push back against higher medical supply costs. There are few signs of this occurring. As a policy matter, it would therefore make sense to look more closely at addressing the factors driving overall health inflation, rather than simply premium increases.

Allocative efficiency: return on investment

Our primary interest in this paper is the efficiency of Commonwealth Government finance for hospital-based healthcare in Australia. While we consider some issues of technical efficiency of the hospital sector itself, the focus here is on the question of marginal return on expenditure.

Our initial set of equations are prior considerations of what the Commonwealth is buying through its contribution: from these, we move the economic effect of those contributions.

The direct per-separation price for Commonwealth funding of public hospital care under activity based funding (ABF) is:

(1.1) $AP_{Sep}^{N}(1 + M)$

Note that Average Price ($\boldsymbol{AP}$) is used here rather than Marginal Price as there remain obvious supply constraints, so the marginal price would be expected to be higher. This is also consistent with the prevailing activity-based funding (ABF) approach to public hospital transfers. The $\boldsymbol{AP_{Sep}^{N}}$ would ideally be a weighted average taking into account events priced by the National Efficient Price (NEP) and the National Efficient Cost (NEC) which are set by the Independent Hospital Pricing Authority (IHPA). The former is for large hospitals and the latter for small or regional centres. It may also include purchases by the Department of Veterans' Affairs (DVA) and other agencies. This may include some purchases from private hospitals.

Throughout this paper, for notation, $\boldsymbol{N}$ (national) is used to indicate public (uninsured) healthcare, and $\boldsymbol{P}$ for care covered at least in part by private insurance.

M is the marginal excess burden of taxation, which is discussed in greater detail below.

The direct price of a PHI-funded episode of care is simply:

(1.2) AP_{Sep}^{P}

which may include some public hospital expenditure, i.e., insured patients in public hospitals.

For the purposes of this paper, we presume that there is no practical difference between the direct prices AP_{Sep}^{N} and AP_{Sep}^{P}. In 2009, the Productivity Commission found that, despite substantial variance between States, the average cost for a casemix-adjusted separation was \$4,302 in a public hospital and \$4,172 in a public hospital.[45]

This is close to parity. Further, without access to the National Minimum Dataset which is limited to Government,[46] there is little capacity to draw conclusions as to whether the two prices have materially diverged since the Productivity Commission undertook its analysis. Accordingly, we will treat these as being in a 1:1 ratio ($\boldsymbol{AP_{Sep}^{N} = AP_{Sep}^{P}}$). Given that Governments are substantial purchasers of private hospital

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[45] Productivity Commission. (2009). Public and Private Hospitals, Research Report. p.102
[46] Described here, but nil reports: http://www.health.gov.au/internet/main/publishing.nsf/Content/health-casemix-data-collections-about

services as well as public hospital, some convergence of prices might happen in any event, if governments outsourced treatments to the private sector when it has a substantial cost advantage.

The public cost of a single PHI-funded separation is given by:

(1.3) $\qquad A\varepsilon_{Sep}^{P}[1 + M]$

where $\boldsymbol{A\varepsilon_{Sep}^{P}}$ is the average dollar share of the rebate per separation in dollars, given by the total annual expenditure on the PHI Rebate divided by the number of separations covered at least in part by PHI. The public cost would not occur for separations for patients with PHI who receive hospital care without using their insurance (though the government would bear that cost in the form of a higher payment to public hospitals).

So, the first comparison is the direct cost between Commonwealth purchase of hospital services via the States and Territories, and the public cost per separation funded in part by the PHI Rebate.

This ratio will predictably be greater than 1, as Equation 1.1 where the Government pays full cost is always greater than 1.3 where it pays only part.

This reflects the baseline equity and efficiency policy goals of Commonwealth health funding. In particular: the introduction of means testing combined with Lifetime Health Cover and the Medicare Levy Surcharge together act as a proxy for means testing free hospital access against taxable income; and the greater allocation of funding for public v. private health service reinforces the needs-basis for funding policy.

This is essentially an accounting comparison, not a comparison of efficiency per dollars spent. For the latter, we need to consider the administrative costs of public v. private insurances.

This is our first comparison of efficiency rather than simply public expenditure. It is important because, when we look at allocation of money from the Treasury via private providers, we are naturally concerned as to its full economic cost.

So, taking into account both relative expenditure as well as the operating costs of the private sector, our comparison here is given by[47]:

(2.1) $\qquad \dfrac{AP\,_{Sep}^{N}\left(\frac{1}{1-D_{N}}\right)(1+M)}{AP\,_{Sep}^{P}\left(\frac{1}{1-D_{P}}\right)\left\{1-A\psi_{Sep}^{P}+\left[A\psi_{Sep}^{P}(1+M)\right]\right\}}$

where:

> $\boldsymbol{A\psi_{Sep}^{P}}$ is similar to the calculation of $\boldsymbol{A\varepsilon_{Sep}^{P}}$ except that it is the average public share of the PHI component per separation expressed as a *percentage*, rather than a dollar amount. It is equivalent to the average rate of the rebate as a percentage of PHI premiums (for products including hospital cover);

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[47] See Appendix B for further explanation of the effect measured in this equation

The Relative Efficiency of The Private Health Insurance Rebate v. Direct Public Health Expenditure
Prepared by Evaluate, 1 August 2017 $\qquad\qquad$ 21

D_N and D_P are the respective administrative costs of public health expenditure and PHI, with the latter expected to be higher; and,

M is the marginal excess burden of taxation (MEBT) which is the primary deadweight loss associated with public revenue raising, and is expressed as an incremental fraction per dollar of taxation.

The examination here is whether the higher administrative costs of payment via PHI are outweighed by the opportunity cost to the economy from the deadweight loss of Commonwealth revenue raising.

The test is whether the quotient of the model is greater than 1, which would indicate efficient expenditure via PHI. Our calculations are discussed in detail below, but the rebate is efficient on this test.

What is driving this efficiency is that insured's co-contribution to PHI costs (i.e. the share of those costs not covered by the rebate) doesn't incur the marginal excess burden of taxation; obviously, if the rebate increased, that statement would be less true. And if the rebate were reduced to zero, the (1+M) term would drop out of the PHI component entirely (though PHI, which competes with a service provided at no direct charge to consumers, might not be viable were that to occur).

Effectively, the key point here is this:

1. Because it allows consumers to avoid waiting times, PHI provides a higher quality service;

2. Consumers are willing to make some contribution from their own pockets to obtain that service, and associated benefits such as hospital and doctor selection;

3. Their contribution allows the government to spend less, avoiding some of the cost of taxation;

4. As the rebate rises, that saving diminishes;

5. However, there are some consumers who are at the margin between the higher waiting time public system and the higher consumer charge in the private system and who would switch to the public system when the rebate is cut; and

6. As a result, neither a rebate set at zero nor one set at 100% will be efficient with the optimal point depending on the elasticities of demand.

This model does not positively account for the risk-management benefits of an insurance model v. a direct purchase or out-of-pocket system. Rather it is a comparison of the differential efficiency of funding health outlays via social v. private insurances.

A critical element of this analysis will be our assumed rate of M. This rate is highly variable depending on the selected tax base and its associated mobility.

While recent estimates of MEBT on Commonwealth taxes range from 10% for a broader GST to 139% for incremental rates of company tax, we believe the appropriate comparator is the MEBT of income tax.

This is apposite as:

- Whereas the States receive GST, the rebate is a Commonwealth expenditure, and the personal income tax is the largest single source of Commonwealth income;

- As noted, it is a conservative figure, compared to company tax;

- There is little prospect of an increase in GST, and changes in health-related outlays, notably for the NDIS, are being funded through changes in the income tax;

- Both the incentive structure to drive purchase of PHI, and the means-testing of the PHI rebate are couched within the personal income tax system.

Using personal income tax gives us an MEBT generally agreed at around 33c (M = **0.33**) for an extra dollar raised via income tax.[48] Compared to estimates of other taxes – for example company tax – this is a relatively non-contentious estimate, with Treasury estimates previously finding 32% for the average marginal rate.[49]

A potential issue here is that the MEBT rate rises with the marginal rate of taxation. Consequently, the economic effects of increasing income tax to cover healthcare, or using income tax to service recurrent expenditure borrowing, would be higher again than this rate. Nonetheless, for this paper, we assume that money spent at the margin between private and public funding has no effect on the MEBT rate.

A further assumption we make is that the administrative costs of PHI (D_P) should not include profit. This simply reflects the fact that we have not allocated an opportunity cost of capital to public sector healthcare.

In considering this, we note it is occasionally suggested that if efficiency were equal, then it would be of necessity that the private sector expectation of profit would mean a relative reduction in actual healthcare expenditure.[50] This is confused. Capital has an opportunity cost, regardless of whether it is used in the public or the private sector. The fact that opportunity cost is brought to book in the private sector, but not necessarily in the public sector, does not alter the underlying economic reality.

Our proposed figure is D_P = **0.085**. This is based on the last full year of all expenses divided by all revenues across all funds.[51] If reported profit were to be included, then this would rise to D_P = **0.139**. We use this latter as a sensitivity measure. In comparison for the public sector, we will use a figure D_N = **0.024**, based on a reported average administration component from AIHW.[52]

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[48] Murphy, C. (2016). *Efficiency of the tax system: a marginal excess burden analysis*. TTPI – Working Paper 4/2016, ANU, June 2016, p.6

[49] L Cao et al. (2015). *Understanding the Economy-wide Efficiency and Incidence of Major Australian Taxes.* Treasury Working Paper 2015-1, April 2015, p.32

[50] Dahlgren, Göran. (2014)."Why public health services? Experiences from profit-driven health care reforms in Sweden." *International Journal of Health Services* 44.3: p.510

[51] $1.91 Billion total expenses against $22.49 Billion in total fund revenue: APRA. *Private Health Insurance Operations Report 2015-16*. Financial performance tab. Released 9 November 2016.

[52] AIHW. (2014). "How much does Australia spend on health care?", *Australia's health 2014.* Australia's health series no. 14. Ch.2.2, p.3

Consideration has been given to the proposal that there may also be an MEBT associated with the Medicare Levy Surcharge, given this is a tax-based incentive, i.e., the presence of the penalty has a distorting effect.

There is certainly a distortion associated with the MLS; but it is difficult to evaluate. For those consumers who would have bought PHI in any event, the MLS has no behavioural effects, hence no MEBT. So it really depends on how much effect it has. Seen in that light, a reduction in the rebate is likely to increase the MEBT (and total welfare cost) of the MLS (as it means more consumers will only buy PHI because of it), while an increase in the rebate reduces it (because more consumers will buy PHI regardless).

Given the focus on the rebate, and on the economic impacts of reducing the rebate, the higher the welfare cost of the MLS, the weaker any case for reducing the rebate will therefore be.

From our initial considerations of direct efficiency of public v. private expenditure, we progress to the more important question: how this may be reflected in terms of household welfare gains.

Expenditure efficiency: impact on household welfare

The issue of how much of the cost of a hospital separation is met by the Government and what is the economic cost of that expenditure is only a partial examination of efficiency.

Similarly, if we were to only compare the benefits purchased in the public and private sectors, it would not deliver an accurate picture of the effect of the rebate. By "benefits purchased" we refer to the expenditure on hospital services in each sector respectively, which we have assumed may be bought at similar supply costs. To do this, our scope needs to be broadened from the private benefits received by patients to the broader welfare gains produced by reduction in waiting times.

Building on the work of Parry (2001),[53] we consider the relative welfare gains from public sector expenditure between two initial options, viz.:

1. Marginal increases in direct expenditure on public hospital services; and,

2. Marginal increases in indirect expenditure on private hospital services, via contribution to PHI.

In the Australian context, this is a choice between increased funding for hospitals from the Commonwealth via State and Territory Governments and the PHI subsidy.

The question is which of these most efficiently contributes to overall welfare. In terms of Government's capacity to contribute to welfare via the health finance system, the key measure is a reduction in the loss represented by the opportunity cost of public hospital waiting lists (the cost to consumers and the economy from avoidable waiting times).

This is a reduction to household welfare or utility, describing the cost of unmet demand for healthcare and the costs which flow from it.

Drawing on Parry,[54] proposed measurements are:

for the change in welfare from an increase in expenditure on public hospitals, we expect an incremental increase per additional dollar of public health output to be:

(3.1)
$$dW_t^N = \left[-s + \left\{ \frac{1-s}{-\eta^N} k_a' - (1 - s - c) \right\} - s \frac{dH^P}{d\hat{H}^N} - M \left\{ 1 - c + s \frac{dH^P}{d\hat{H}^N} \right\} \right]$$

for corresponding change in welfare from increase in Government payments to private services, we expect an incremental dollar of private health output to produce:

(3.2)
$$dW_t^P = \left[-s + \left(-\frac{dH^N}{dH^P} \right) \frac{1-s}{\eta^N} k_a' - M \left\{ s - \frac{1-s}{\eta^P} \right\} + \frac{(1-s)}{(-\eta^P)} M \zeta^P \right]$$

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[53] Parry, Ian William Holmes. (2001). *On the Efficiency of Public and Private Health Care Systems: An Application to Alternative Health Policies in the United Kingdom*. Resources for the Future.
[54] Ibid., see Parry's Appendices for derivation of equations.

where:

dW_t^N and dW_t^P respectively are the increases in welfare associated with an increased unit of public (National) or private health output at a given rate of taxation;

t is the labour tax rate (effective rate) and is for reference purposes;

s is the effective rate of public subsidy for private health care. Whereas for Parry's original calculations, s was expressed as a small tax subsidy (recognising UK policy settings), in Australia it is equivalent to our earlier measure $A\psi_{Sep}^P$ as it is a transfer from taxes raised, rather than a deduction;

η^N and η^P respectively are the price-elasticities of demand for public and private healthcare. We note here Parry's view that elasticity for PHI in the UK would be much higher than some international averages, given its low base. We would not expect this to be the case in Australia;

k_a' is the average cost of the waiting list;

c is the user fee (if any) for public healthcare;

H^N and H^P are respectively household consumption of public and private healthcare, where $\hat{H}^N$ is a limit to consumption caused by government budgetary constraints;

M is again the marginal excess burden of taxation, which is a source of deadweight loss; and

ζ^P is the expenditure (income) elasticity of demand for private healthcare. We note some common and distinctive features of the equations:

- The subsidy for private healthcare is explicitly treated as a cost to welfare in both equations, which is proper, as it is present at a discretionary rate for any mix of public and private services;

- The common term $\frac{1-s}{\eta^N}k_a'$ illustrates the relation of the subsidy to welfare gains, where an increase in the subsidy rate will reduce the overall loss through a reduction in the waiting list;

- Each equation includes a revenue financing term; and,

- We presume k_a' will be indifferent to changes in waiting list structure (see below).

We also make a range of assumptions which underpin the application of these equations. These include:

- For the purposes of evaluating the efficiency of the PHI rebate, we restrict the value of s to the subsidy itself. In particular, this means:

  o We do not include other tax-funded contributions to healthcare, including the Medicare Safety Net, Net Medical Expenses Tax Offset or the Pharmaceutical Benefits Scheme subsidy; and,

- o We do not regard the Medicare Surcharge 'foregone' for those who take out PHI as a charge to Government revenue. This is because the expected or preferred value of the measure is zero, having been explicitly designed as a penalty via the tax system rather than as a revenue measure.

  On this, we would suggest that if the penalty were expressed as a fine, rather than an *ad valorem* measure, there would be no discussion;

- Complementing this approach, we treat the MBS contribution to specialist interventions - which is an equivalent expenditure in both public and private settings – as immaterial, as it is incorporated in the NEP. In addition, it is unaffected by marginal changes in the PHI subsidy, or by the operation of PHI;

- We presume for simplicity that in the Australian context, $c = 0$. While in the British context, the small cost of pharmaceuticals may be included, the expected cost of public care in Australia is zero (notwithstanding that public hospitals commonly no longer provide take-home pharmaceuticals at discharge). The effect of this assumption is not insignificant as the absence of an expected copayment in the public system to some extent crowds out or reduces the market incentive for PHI and should have some effect on elasticities;

- Out-of-pocket costs for private patients are outside the parameters of this analysis, except that expected gap cost of private care may have an effect on demand for PHI. There is no doubt that there are social welfare effects from out-of-pocket costs, and that these are unevenly distributed.

  While there is a body of literature which assumes perfect capacity to discriminate based on price, this appears to be an impractical assumption. More recent research also suggests a positive relationship between increases in PHI coverage and the size of out-of-pocket costs[55], although the relationship is difficult to interpret, as the causation may run either way.

  For the purposes of our analysis, we assume that the welfare savings addressed by the PHI Rebate are entirely encapsulated within the opportunity cost of waiting k_a'. Copayments and other out of pocket costs may also contribute to this, but it is presumed that they are primarily responsible for the private benefits received by PHI holders, particularly doctor selection.

  The expenditure elasticity at the individual household level may be influenced or obscured by a range of factors, including:

  - o Means testing, which is based on taxable income, not wealth or actual income;
  - o Lifetime loading effects on decision to purchase;
  - o Access to services, i.e., private health insurance is likely to be less attractive outside the catchments of large private hospitals; and/or,
  - o Imperfect behaviour. We have considered consequences of poor individual decisions elsewhere in this paper but, in particular, neither rational calculation of future demand for

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[55] Dormont, Brigitte, and Mathilde Péron. (2016). "Does health insurance encourage the rise in medical prices? A test on balance billing in France." *Health economics,* 25.9 : 1073-1089.

healthcare, nor consistent intertemporal choices, are assumed as these would require high levels of insight into PHI as an investment, rather than as an annually consumed and irregularly utilised service;

- For the purposes of comparing efficiency of expenditure, we presume – perhaps controversially – that money may be spent equally efficiently in the public and private health systems. It is important to distinguish between the efficiency of hospital operations and the efficiency of funding mechanisms.

  The assumption of roughly equal levels of technical efficiency is consistent with previous reviews of the technical efficiency of hospitals by the Productivity Commission. While it has observed that both not-for-profit and for-profit providers might increase outputs from a common level of inputs, there does not appear to be any significant difference in capacity to economise on inputs for a fixed level of outputs.[56] There are also scale effects here, with greater disparities between small hospitals, including by ownership.[57]

  Given capacity constraints in both public and private hospitals, the latter observation is more relevant. For consideration of efficiency, it is typical to **take** key inputs, i.e., total beds, supply of doctors, etc., as fixed at a given level, and then measure output given that level.[58]

  We note in support of this that there is an increasing alignment between PHI and public health's recent ABF approach. For example, contracts between PHI providers and private hospitals may now include reduction in payment for avoidable adverse events, which has long been a feature of ABF financing.[59]

- We have not included in our analysis the different treatment of capex between public and private services. Capex costs will be passed on to insurers in the private sector, but tend to be separated from the ABF in the public sector. From an efficiency perspective, a dollar of capital invested should be treated as having the same opportunity cost, regardless of whether it is invested in the public or private sector.

- For simplicity, we are not discounting outcomes of our expenditure efficiency calculations by administrative costs. This effect is tested in equation 2.1;

- While it is discussed below in greater detail, we assume that effects on waiting lists and on unmet demand for public care are indifferent to the composition of the lists. We recognise the difference in casemix affects relative efficiency of hospital operation, but:

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[56] Forbes, Matthew et al (PC). (2010). "Measuring the technical efficiency of public and private hospitals in Australia". Presentation to Australian Conference of Economists. Sydney, September 27-29, 2010.

[57] For full data see Productivity Commission. Public & Private Hospitals, Multivariate Analysis: Supplement to Research Report. May 2010. Partic. p.114

[58] Cf. Asandului, Laura, Monica Roman, and Puiu Fatulescu. "The efficiency of healthcare systems in Europe: a Data Envelopment Analysis Approach." *Procedia Economics and Finance* 10 (2014): 261-268.

[59] Productivity Commission. Efficiency in Health: Productivity Commission Research Paper. April 2015. p.33

- There are medium-term constraints on public supply, including beds, theatres and specialist staff[60]. A place is a place. This may initially seem to be a limitation to the model, but in practice predicting structural changes in waiting lists will not alter overall demand for hospital accommodation;

- Waiting lists have two rationing effects, viz.:

  - Prioritising urgent care (cardiac arrest, oncology) over less time-sensitive conditions;
  - Total rationing of hospital access, within each category;

- Consequently it may be in practice irrelevant for the average cost of waiting k_a' whether private patients were to migrate to the top, middle or end of the public waiting list, and vice versa. Our reasons for this are discussed in further detail in our valuation of k_a';

- At the same time, we are aware that private hospitals may focus on diagnosis-related groups (DRGs) which are typically more in the category of 'elective surgery': private hospitals do not replicate public waiting lists, and their delays are purely due to supply of surgical services.

  The impact of this is discussed elsewhere in the paper but, given the expectation that public hospitals cater to more high-impact DRGs, it is likely that any shift from the private to the public sector will create inefficiencies, at least in the short term, through poor matching of demand and specialist capacity. These might be addressed through changes in specialist capacity, though this would take time, and it is not clear that specialists are so easily moved; and,

- It is occasionally argued that the application of the rebate should be restricted to hospital services, not general treatment or extras cover. This is not germane to our model but, at least for younger people, it is likely that the rebate on extras is an important component of the incentive to take out PHI. The converse will become true with age.

  This does not mean that our analysis would endorse a subsidy for PHI which is exclusive of hospital cover: non-hospital insurance will have no material effect on waiting lists and therefore does not meet stated welfare goals. As an observation here, it might be argued that there is a useful welfare gain in subsidising healthcare activities which are preventive, and thus reduce future demand, but this tends to add to the argument for including extras in the Rebate calculation, rather than subsidising them as a standalone.

Following from the discussion above, we consider a third case suggested by Parry, which is the efficiency of increased private user fees for private care. We have not considered his work on user fees for public care as this would violate Australian political constraints:

$$(3.3) \qquad dW_c^P \approx \left[-s + \left(-\frac{dH^N}{dH^P} \right) \frac{1-s}{\eta^N} k_a' + k_a' \left\{ s - \frac{1-s}{\eta^P} \right\} + \frac{1-s}{\eta^P} \frac{M}{1+M} \zeta^P \right]$$

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[60] Similar restrictions may prevail in the private sector, but we assume that the presence of copayments assists in addressing these. This would particularly occur with greater willingness of key medical staff to work.

As there is no revenue-financing effect here, we might expect that this third option will increase the stock of social welfare at a greater rate than tax-based investment in private care. We note here that the expected greater efficiency of direct private contributions over public contributions is not an argument against the PHI rebate. To the contrary, it reinforces the view that the rebate is an important measure to encourage the largest possible participation in PHI, although it is equally clear that as the rebate rises, the benefit decreases and the cost (in terms of the deadweight loss associated with financing higher levels of public outlays) falls.

We are also aware that there has been some recent discussion around direct payment of a subsidy benefit for private hospital services,[61] which superficially might appear to obviate demand for PHI. However, this notion excessively discounts the benefits of an insurance-based model (both in terms of risk-sharing and in terms of the role of insurers in managing risk) and confers substantial new risk upon Government.

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[61] Senate Estimates, Community Affairs Committee Transcript. 29 May 2017. Pp.13-14

Parameters

Valuing k'_a: what is the price of the waiting list?

The datum k'_a in our equations is a measure of the valuation that consumers put on the loss associated with waiting for healthcare. Formally, it is a measure of the distribution of those valuations: with a higher value for k'_a indicating a more common valuation across the population; and a lower value indicating more disparity of perceived losses.

The valuation of k'_a is extremely complex, and it will be difficult to gain a consensus figure. Accordingly, we have not attempted a formal valuation within the scope of this paper.

We will therefore consider a broad range of measures for k'_a. This accords with Parry's assumption that the average cost of waiting (k'_a) must be lower than unity with the marginal cost (k_m) as willingness to pay for treatment (the driver of η^P) varies by individual.[62]

We have therefore adopted Parry's range of 0.25 to 0.75, with a mean of 0.5. The higher figure implies a lower variance from any period of waiting. These are positive figures because waiting is always a cost.

The rate of subsidy: s

For the purpose of calculating the mean rate of subsidy s we divide the total rebate paid by the number of insured persons, and calculate this as a percentage of the mean price of insurance (only inclusive of hospital cover). We recognise that insurance policies exhibit substantial heterogeneity, but our question is whether the subsidy is efficient, not the design of individual policies.

Consequently, we are interested in the rate, not the actual dollar amount.

At December of 2016, 46.6% of Australians had some form of hospital cover, down from 47.2% twelve months earlier. In terms of actual people, this was some 11,328,000.

In the prior twelve months, approximately 7.0 million Australians were registered for the PHI Rebate, at a cost of $5.9 billion up from $5.7 billion for the previous year.[63] According to the industry regulator – the Australian Prudential Regulatory Authority (APRA) - total industry premium revenue over the same period was $22.05 billion.[64,65]

Using an average amount of $5.8 billion as our dividend,[66] this gives us a mean of s = **0.263**. This is substantially higher than the UK figure of 0.05, which was only a partial tax deduction. For comparison to

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[62] Parry, Op. Cit., p.16
[63] Department of Human Services. *2015-16 Annual Report*. p.53
[64] APRA, Op. Cit.
[65] Annual data from APRA does split hospital and extras (general treatment and ambulance) cover, but does not allow us to identify how much of the latter is stapled to hospital policies, and thus eligible for a rebate
[66] To match the financial rather than the calendar year

the mean, the maximum Australian rebate over the same period was 37% (aged over 70, lowest income bracket).[67]

Price elasticities of demand

The price elasticity of demand for PHI η^P has multiple prospective measures.[68]

There is of course a relationship between the MLS and η^P, which is that the rate of the MLS will reduce the elasticity figure: a higher surcharge will incentivise more people to select PHI, and the *ad valorem* design of the surcharge (its calculation as a tax on income) will make PHI more attractive as incomes rise.[69] This is its function. This also interacts with means-testing to ensure that PHI remains attractive, as the subsidy falls while the surcharge increases.

There is a variety of factors which influence price elasticity, including:

- education and access to information;
- income;
- personal taste;
- age;
- health status;
- prior healthcare experience;
- ability to utilise PHI (capacity to fund copayments); and
- desire to avoid tax surcharges.

Given the complex interaction of these factors, we are suspicious of interpolating elasticity data from abstract models of healthcare expenditure. So, for the purposes of this study, we use a predicted elasticity based on consumer survey, which accords with industry experience.

From a random sample of Australians with health insurance, the research firm *Ipsos* has identified the expected responses of consumers to a reduction in the rebate.[70] The various rates, depending upon scale of reduction are:[71]

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[67] https://www.ato.gov.au/individuals/medicare-levy/private-health-insurance-rebate/income-thresholds-and-rates-for-the-private-health-insurance-rebate/ Downloaded July 2017

[68] We note above some concern with Cheng's application of this datum. Further, we regard the 'effective premium' on which it is based as contestable. The proposed 'effective premium' in Cheng's case is the retail price net of both the rebate and the MLS as applicable. This makes the effective premium lower than it should actually be. For our purposes, the effective premium is the premium paid by the consumer (the retail premium minus any means-tested subsidy).

[69] For discussion see: Robson, Alex, Henry Ergas, and Francesco Paolucci. "The analytics of the Australian private health insurance rebate and the Medicare levy surcharge." *Agenda: A Journal of Policy Analysis and Reform* (2011): 27-47.

[70] http://ipsos.com.au/

[71] Data supplied by Ipsreos, commissioned by Private Healthcare Australia, 2017

Size of Reduction $= n$	Intend to drop $= \Upsilon_n$	Intend downgrade	Implied elasticity $= \eta^P$
Status quo ($n = 0$)	3% = Υ_0	12%	-
25%	8%	17%	0.95
50%	9%	27%	0.68
75%	12%	26%	0.80
100%	12%	28%	0.68
100% + 15% increase	16%	31%	-

Our calculation of η^P is based on the implicit price increases, so:

4.1
$$\eta^P = \frac{-(\Upsilon_n - \Upsilon_0)}{\left[-s\left(1 - \frac{1}{1+n}\right)\right]}$$

The dividend here is the reduction in the rate of people insured, and the divisor is the change in the price of insurance. We make several observations on this:

- For consistency, we have used the mean rate of $s = 0.263$. While we might reasonably assume that the reduction in coverage will at least initially occur in the lower-income cohort, we have no clear evidence of this from our survey data;

- The figure Υ_0 against which we net other decreases may be interpreted as an effect of the interaction between the most recent annual rise in PHI premiums and any simultaneous or consequent changes in the mean household consumption function: By this we mean that it is a measure of perceived value against affordability, with no formal change in the rebate rate, noting that a component of premium rise is due to bracket creep against the means-tested rebate, which is not captured elsewhere in our model, this makes the measure conservative;

- The intent to downgrade cover is not insignificant, particularly as it implies a slight increase in price-elasticity between the 75% and 100% reduction; and

- There is a clearly a variety of measures here, from η^P = -0.68 to η^P = -0.95. Equally, there is some evidence of behavioural response in the survey, with the rate of η^P increasing and decreasing over different sequential increments.

From our perspective, the relevant price elasticity is one which occurs at the margin. Consequently, we have used the figure η^P = -0.95 as our marginal price elasticity of demand. This represents the effect of an initial shock to the price of PHI. While the lower figures for greater shocks may suggest dilution as the most

sensitive cohort is already removed from the PHI pool, we remain primarily interested in marginal expenditure.

This estimate is substantially lower than Parry's UK range of -2 to -10, however, these reflect both the low rate of subsidy in the UK, alongside the absence of other incentives such as the Australian MLS. Probably more than anything though, high elasticity figures are a consequence of a small insured base. We note that a recent US study found elasticities of take-up with respect to price around one, in line with our assumption.[72]

Parry originally associated his much higher levels of η^P with the low rate of take-up in the UK. However, in 2005, looking at a slightly different dimension of the problem he scaled this back to a narrower range of 0.5-3[73].

A key observation here is that we might reasonably assume higher sensitivity to price amongst younger consumers of PHI. The temptation following this observation is to discount the potential welfare losses from excluding these consumers, as younger people will have lower rates of service consumption.

However, this is short-term thinking. If there were no lifetime loading, then it might be reasonable, but there is evidence that those who leave or fail to enter the market at a younger age may find themselves priced out later in life.

According to the Australian Taxation Office (ATO), in the 2014-15 financial year, 164,535 Australian taxpayers paid the Medical Levy Surcharge at a total cost of $218,948,416. The mean contribution was $1,331.[74]

The MLS rates are per Table 3.[75]

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[72] Kruegera, AB, and Kuziemko, I. (2013). The demand for health insurance among uninsured Americans: Results of a survey experiment and implications for policy. *Journal of Health Economics* 32:780–93

[73] Parry, Ian WH. "Comparing the welfare effects of public and private health care subsidies in the United Kingdom." *Journal of health economics* 24.6 (2005): p.1201.

[74] ATO. Taxation statistics 2014–15 Individuals: Selected items for 1978–79 to 2014–15 income years 1,4. 2017. Excel Table 1B

[75] ATO. Income rates and thresholds for the Medicare Levy Surcharge: https://www.ato.gov.au/individuals/medicare-levy/medicare-levy-surcharge/income-thresholds-and-rates-for-the-medicare-levy-surcharge/ Downloaded July 2017

Table 3: Medicare Levy Surcharge Rates 2014-18:

	Base tier	Tier 1	Tier 2	Tier 3
Single threshold	$90,000 or less	$90,001 – $105,000	$105,001 – $140,000	$140,001 or more
Family threshold	$180,000 or less	$180,001 – $210,000	$210,001 – $280,000	$280,001 or more
Medicare levy surcharge	0%	1%	1.25%	1.5%

Clearly a payment of $1331 must occur either from a Tier 1 Family or Tier 2 Single. Individuals and families in these tiers are have relatively high incomes which suggests that – if this is not simply irrational behavior - later working-age consumers are being locked out of PHI due to LHC loading.

Drawing on the same dataset, we have selected a figure of η^N = **-0.5**. Our rationale for this is that the lower elasticity figure of 0.68 may be regarded as a measure of willingness to pay for private healthcare in the absence of any subsidy. η^N is an own price elasticity, which implies a willingness to pay in this case for public healthcare, if it were not free.

It may be that the price-elasticity of demand for public healthcare is even lower than this, but given various settings such as the MLS, it is not unreasonable to presume a relatively narrow band between the two data.

Given our earlier assumption that c = 0, there is no real basis for calculating η^N other than as a complement to the price-elasticity of demand for private care. This may have been more visible in the rapid fall of private insurance following the introduction of Medicare in 1984, though this data is somewhat aged.

Our argument for discounting this figure from -0.68 to -0.5 is that currently insured Australians are on average wealthier than uninsured consumers. Keeping in mind that this is a complementary figure, we believe the selected value is reasonable. It is also the same value originally used by Parry for the UK market, where c is still small, but non-zero.

The labour tax rate: t_L

For the labour tax burden, we have used an effective average tax rate measure from the OECD. While this is highly variable by marital status and presence of children, we have selected a lower modal rate of t_L = **0.24**.[76] It is purely for reference.

Expenditure elasticity

We believe Parry's range of 1.0–3.0 with a median of 2.0 for expenditure elasticity of demand is also high. Instead, we have selected an observed figure of ζ^P = 1.1 which is an average of expenditure elasticities on

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[76] OECD. *Taxing Wages: 2015-16 – Special Feature: Taxation & Skills*. 2017. p.54

healthcare across OECD countries.[77] This is for all healthcare consumption rather than solely within the private sector, so it may partially underestimate elasticity but, given that we account for separate price effects in our other elasticity measures, using an average seems reasonable.

The rate of substitution

We have two substitution rates required for our equations: $\frac{dH^P}{d\hat{H}^N}$; and $\frac{dH^N}{dH^P}$.

The former is the rate of increase in public care relative to the private sector, where we relax the public spending constraint $\hat{H}^N$. The latter is a more direct substitution where public contribution to the rebate is increased.

For the former, we would argue that if national healthcare output were incrementally increased, the induced increase in demand could be expected (to first order) to be spread across the public and private sectors in proportion to their current shares,[78] so:

$$\frac{dH^P}{d\hat{H}^N} = \frac{9.4}{31.6} = 0.30$$

Looking to the second datum, we note that the use of private healthcare will naturally increase with the subsidy. This will occur for three reasons:[79]:

1. People substitute private care for public care;

2. People change their consumption mix, increasing their overall demand for healthcare relative to other (non-healthy) goods; and,

3. People who are already in the private sector increase the amount of their insurance.

In the absence of the latter two behaviours, we would assume that the substitution effect: $\frac{dH^N}{dH^P}$ = -1

However, increases in insurance coverage and increases in consumption of health goods and services have the effect of discounting this back towards zero. In his original work, Parry estimated the latter two effects as having a relative small impact, and therefore estimated a range of -0.4 to -0.8.

However, in Australia, the broader set of options for PHI coverage should make the discount greater than for the UK. Therefore, we have estimated a range:

$$\frac{dH^N}{dH^P} = -0.4 \, to -0.6$$

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[77] Lago-Peñas, Santiago, David Cantarero-Prieto, and Carla Blázquez-Fernández. "On the relationship between GDP and health care expenditure: a new look." *Economic Modelling* 32 (2013): 124-129.
[78] AIHW. *Health Expenditure Australia 2014-15*. Health and welfare expenditure series no.57. 2016. Table A9
[79] Parry. Op. Cit. p.15

The reason the first of these terms is positive is that it implies a marginal increase in the overall rate of care, as opposed to the latter, which is a straight substitution. This is again because in the former case, we are relaxing the public spending restraint $\hat{H}^N$. There is not a comparable restraint in the PHI sector.

Each of our parameters is listed at Appendix A.

Outputs

Allocative efficiency test
Our first test, based on equation 2.1, sought to answer simply whether the deadweight loss of taxation outweighed the greater administrative cost of PHI.

As a sensitivity test, we vary the datum D_P between:

- 1.15, where PHI administration is at 8.5%; and,

- 1.08, if we include profit as an administrative cost, to take the figure to 13.9%.

The conclusion here is that funding hospital separations via PHI rebate as opposed to direct full cost is allocatively efficient, even taking into account higher administrative costs in the private sector.

Another way of stating this data is that all else equal, a dollar spent by the Government on the PHI Rebate is up to 15% more efficient than a dollar redirected to the public system.

The key driver of this result is that the share of MEBT which occurs for the separations partially funded by the rebate is low compared to public care, and the administrative costs are thus outweighed by the deadweight loss.

Comparative welfare gains
Equations 3.1, 3.2 and 3.3 allow us to make a dollar-for-dollar comparison respectively between the choices of incremental government investment in either public or private healthcare, and increased user payments into private care.

There are multiple options for selected variables here, so the following tables show outcomes depending upon different assumptions. An important preliminary point to keep in mind with these data is that they are significant for their relativity, rather than their absolute values.

For 3.1, which determines the welfare change from a marginal dollar substituted to public health, we have three potential outcomes depending upon the value of k_a':

Table 4: Welfare change per tax-derived marginal dollar spent on public health

k'_a	dW^N_t
0.25	-1.06
0.5	-0.70
0.75	-0.33

As noted by Parry, the welfare effect is highly sensitive to our valuation of waiting times. Transferring funds from the PHI subsidy to public health becomes less negative where we assume there is a more homogeneous value accorded by the community to waiting times. However, while we are unable to directly measure this parameter, were the variance in the value placed on waiting times relatively homogenous, we would not expect to see as much variation in the take-up of PHI as there seems to be.

The overall conclusion here is that the reduction in deadweight loss from relief of waiting times consequent on marginal redirecting funds to the public sector fails to outweigh the deadweight loss associated with revenue raising. This is consistent with our preliminary test of the MEBT.

For our equation 3.2, which examines the additional welfare gain for a marginal dollar added to PHI, we have multiple outcomes based on settings of k'_a and $\frac{dH^N}{dH^P}$:

Table 5: Welfare changes per tax-derived marginal dollar spent on private health

k'_a / $\frac{dH^N}{dH^P}$	-0.4	-0.5	-0.6
0.25	-0.23	-0.19	-0.15
0.5	-0.08	-0.01	0.07
0.75	0.07	0.18	0.29

Our base-case (0.5,-0.5) suggests that the current settings for the PHI subsidy are not unreasonable: if we were looking at the outputs as absolute numbers, it would argue for neither additional nor lower contributions to the rebate, but again, we caution that these figures should be read as relative, not absolute, given the challenges in establishing the value of some parameters.

And predictably for our equation 3.3, the effects are greater where there is no revenue-raising term:

Table 6: Welfare changes per marginal dollar from increased user fees for private health

$k_a' / \frac{dH^N}{dH^P}$	-0.4	-0.5	-0.6
0.25	-0.03	0	0.04
0.5	-0.01	0.06	0.13
0.75	0	0.12	0.23

In theory, increased copayments may have a lower efficiency cost than raising additional public revenue, though the comparison also depends on what effect those copayments ultimately have on health outcomes. However, in practice, the challenge is to balance copayments against incentives required to increase PHI participation.

Given community rating, the main effect of increased user fees is likely to be a deteriorating in the quality of the insured risk, increasing costs, and creating the risk of a vicious spiral in which PHI demand unravels, as it did in 1996.

Conclusion

Overall, using broad welfare effects as the evaluation criterion, the analysis suggests that for reasonable parameter values, a marginal reallocation of funding away from the PHI rebate to public hospital funding would be likely to reduce efficiency.

Broader Context

The preceding analysis focuses on the effect of purchasing choice on social welfare, by measuring different options' capacity to address the deadweight loss of waiting times, while considering the equivalent losses associated with economically-distorting revenue raising.

However, there are potential welfare effects of PHI which are not captured in this model. The first of these is simply the benefit of choice

As well as expanding the range of options consumers face, we expect that PHI yields benefits through the competitive effects of the private sector which it supports, and which acts as a discipline on the public sector.

These benefits are inherently difficult to quantify. They have nonetheless been stressed in recent official reports. For example, the Harper Review noted the Productivity Commission's advice regarding human services that:

> "Lack of choice can result in poorer quality and more expensive services, and less diversity and innovation. In contrast, user control of budgets creates incentives for suppliers to satisfy the needs of users, given that they would otherwise lose their business. That in turn typically leads to differentiated products for different niches."[80]

This is the mechanism which the 'voucher' of PHI provides to insured consumers, and which we would expect to drive innovation and quality increases in both the private and public sectors.

Similarly, the Productivity Commission in its review of Human Services advised:

> "Greater contestability and user choice could be part of a broader suite of reforms to improve outcomes. Even a small percentage improvement in outcomes from public hospital services could deliver significant benefits in aggregate, given the scale of service provision."[81]

Contestability and user choice are fundamental to the private sector. The size of the gains they can bring needs to be seen in the context of broader pressures on health spending.

Thus, the most recent Intergenerational Report (IGR) projects a rise in government health expenditure as a percentage of GDP of over one third, from 4.2% to 5.5% by 2054[82]. Much of this is driven by population ageing, and we would expect political factors to exacerbate this growth.

Given these pressures, it is obviously important to try to ensure the increase in demand is met as efficiently as possible. The results derived above suggest PHI has an important role to play in meeting that goal.

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[80] Harper, Ian et al, *Competition Policy Review: Final Report*. March 2015. p.230

[81] Productivity Commission. *Introducing Competition and Informed User Choice into Human Services: Identifying Sectors for Reform: PC Study Report*. November 2016. p.85

[82] Treasury. *Intergenerational Report 2015*. p.60: http://www.treasury.gov.au/PublicationsAndMedia/Publications/2015/2015-Intergenerational-Report

Appendix A: Table of Variables

Description	Designation	Value/Range
Marginal Excess Burden of Taxation (MEBT)	M	0.33
Administrative cost of public health funding	D_N	0.024
Administrative cost of PHI (and including profit)	D_P	0.085 (0.139)
Per-separation share of PHI funding (same as s)	$A\psi^P_{Sep}$	0.263
Labour tax rate	t	0.24
Mean rate of PHI rebate	s	0.263
Price elasticity of demand for public healthcare	η^N	-0.5
Price elasticity of demand for PHI	η^P	-0.95
Average cost of waiting (mean)	k'_a	0.25 to 0.75 (0.5)
User cost of public healthcare	c	0
Expenditure elasticity of demand for PHI	ζ^P	1.1
Substitution rate of public for private care	$\dfrac{dH^P}{d\hat{H}^N}$	0.30
Substitution rate of private for public care	$\dfrac{dH^N}{dH^P}$	-0.4 to -0.6

Appendix B: Administration cost v. Deadweight Loss

This appendix explains how equation 2.1 shows allocative efficiency of the PHI rebate:

$$\frac{AP_{Sep}^N \left(\frac{1}{1 - D_N}\right)(1 + M)}{AP_{Sep}^P \left(\frac{1}{1 - D_P}\right)\{1 - A\psi_{Sep}^P + [A\psi_{Sep}^P(1 + M)]\}}$$

$$\frac{AP_{Sep}^N \left(\frac{1}{1 - D_N}\right)(1 + M)}{AP_{Sep}^P \left(\frac{1}{1 - D_P}\right)\{1 + A\psi_{Sep}^P * M\}}$$

$$\frac{AP_{Sep}^N}{AP_{Sep}^P} * \frac{\left(\frac{1}{1 - D_N}\right)}{\left(\frac{1}{1 - D_P}\right)} * \frac{(1 + M)}{\{1 + A\psi_{Sep}^P * M\}}$$

$$\frac{AP_{Sep}^N}{AP_{Sep}^P} * \frac{(1 - D_P)}{(1 - D_N)} * \frac{(1 + M)}{\{1 + A\psi_{Sep}^P * M\}}$$

Assuming $AP_{Sep}^P = AP_{Sep}^N$, then the quotient is greater than 1 if and only if:

$$\frac{(D_P - D_N)}{(1 - D_N)} < \frac{\left(1 - A\psi_{Sep}^P\right) * M}{\{1 + M\}}$$

That is if:

$$\frac{(D_P - D_N)}{(1 - D_N)} * \{1 + M\} * AP_{Sep}^P < \left(1 - A\psi_{Sep}^P\right) * AP_{Sep}^P * M$$

The left hand side of the equation is the economic cost of using the funds currently spent on the administration of PHI (in excess of the costs of social insurance). The right hand side is the tax payable on the out of pockets costs of the health treatment.

{ EVALUATE

Measuring low-value services in private health insurance data: 2015/16 – 2016/17

A Project Delivered on Behalf of Private Healthcare Australia (PHA) by Sustainable Health System Solutions Pty Ltd

Sole Director and Principal, Prof Adam Elshaug

with Kelsey Chalmers and Tim Badgery-Parker

CONTENTS

1   EXECUTIVE SUMMARY

Low-value health care provides little expected benefit relative to its cost or potential harms. Campaigns and discussions on how to reduce low-value care have gained momentum in the past few years, both in Australia and internationally. Low-value care was a prominent focal point in the 2017 Productivity Commission report[1] (they estimated that 10% of health care spending was low-value). The *Choosing Wisely* campaign also launched in Australia in 2015, supported by 37 medical professional groups who have provided 'Top 5' lists of low-value services. The Royal Australasian College of Physicians have also launched a similar campaign, *Evolve* ('evaluating evidence, enhancing efficiencies').

We investigated the prevalence of 21 low-value procedures in claims data for four private health funds. The data was supplied by funds that together represent 66.5% of the market[2]. Our measurement approach is based on work from the Value in Health Care division led by Professor Adam Elshaug at the Menzies Centre of Health Policy, The University of Sydney. Professor Elshaug first devised, applied and published these methods with colleagues while he was a member of the Department of Health Care Policy, Harvard Medical School. We have defined low-value procedures based on previous literature and Choosing Wisely recommendations[3], and classified admissions as low-value or not based on the member and admissions information within the claims. We employed a broad (i.e., a more sensitive) and narrow (i.e., a more specific) definition of low-value for each service in order to report the range of likely low-value admissions. This is based on the seminal method co-developed by Professor Elshaug in the US.[4]

There were 72 314 admissions with a low-value procedure (broad definition) across the four funds (35.6% of all admissions with at least one of the investigated services) in FY 2016/2017. There were 57 346 admissions (28.3%) with a low-value procedure using the narrow definitions.

Hospital benefits for these admissions with a low-value procedure were between $83.2 (narrow) and $156.7 million (broad), and the medical benefits were between $28.6 (narrow) and $44.6 (broad) million. Some admissions would still occur in scenarios where the low-value procedure was not provided. Excluding admissions with these types of low-value procedures (so as to arrive at a true 'waste' figure) meant the total hospital benefits was between $75.1 (narrow) and $141.3 (broad) million, and the total medical benefits was between $26.9 (narrow) and $41.5 (broad) million.

This analysis included 67% of privately insured Australians in FY 2016/2017, according to the Australian Prudential Regulation Authority's annual report data. The extrapolated, total hospital benefits for all insured Australians is $112 (narrow) to $211 (broad) million (for admissions that would

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[1] Productivity Commission (2017), Impacts of Health Recommendations, Shifting the Dial: 5 year Productivity Review, Supporting Paper No. 6, Canberra

[2] Private health insurance ombudsman (2017), State of the Health Funds Report, www.ombudsman.gov.au/__data/assets/pdf_file/0017/81404/2017-State-of-the-Health-Funds-Report.pdf

[3] See www.choosingwisely.org.au

[4] Schwartz, A. L. et al. (2014) 'Measuring Low-Value Care in Medicare', JAMA Internal Medicine, 174(7), pp. 1067–1076

still occur if the low-value service was not provided). The extrapolated, total medical benefits was $40 (narrow) to $62 (broad) million.

For most of the investigated procedures, a small number of medical providers were responsible for a large proportion of low-value services. For example, the top 5% of providers performing low-value abdominal hysterectomies provided 43% of these low-value services, but only 12% of all hysterectomies claimed to one insurer. There were also variations in low-value services between metro and non-metropolitan hospitals. Higher rates of low-value colonoscopies and endoscopies occurred in metropolitan hospitals compared to hospitals located in non-metropolitan areas within the same state.

The low-value service definitions are attached in an Appendix.

2 INTRODUCTION

Scott and Duckett (2015) define low-value care as:

> *…use of an intervention where evidence suggests it confers no or very little benefit on patients, or risk of harm exceeds likely benefit, or, more broadly, the added costs of the intervention do not provide proportional added benefits.* [5]

An international groundswell of activity is now seeking to identify and reduce the use of health care services that provide little or no benefit — whether through overuse or misuse. There are strong imperatives for identifying such waste: (1) an ethical imperative to ensure patient safety and thus avoid tests and treatments that cause harm directly or indirectly without providing commensurate benefit; (2) a quality imperative to measure and reward best practices; and (3) an economic imperative to reduce spending and enhance the diffusion of cost-effective innovations.

Historically, geographic variation analysis has been used in flagging potential areas of overuse (as well as potential underuse). However, this is an indirect measure and has been plagued by a general inability to interpret where warranted variation ends and unwarranted variation begins, largely because it does not take account of individual clinical circumstances of patients (e.g. demographics and/or diagnoses). In contrast to indirect measures of low-value care, such as geographic variation analysis, our approach involves direct measurement — specifically identifying episodes where the care is contrary to published recommendations that are now proliferating (e.g. Choosing Wisely). The intent of these evidence-informed lists is to provide sets of specific services used in defined clinical scenarios that payers and health care professionals can target directly in rewarding value and limiting inappropriate care. As suggested by the lists, services that are ineffective, unsafe, or both for all patients and indications are rare. Typically, a service demonstrates safety and effectiveness profiles that depend on the characteristics of the population to whom it is provided. In essence, a service that is low-value in some clinical circumstances might be high value in others. The method applied herein provides indicators for targeting this low versus high value differentiation.

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[5] Scott, Ian A., and Stephen J. Duckett. (2015) 'In search of professional consensus in defining and reducing low-value care', Medical Journal of Australia, 203(4), pp. 179-181.

3 METHODS – INDICATOR DEVELOPMENT

The basic method for developing indicators for low-value care was pioneered in the United States by Schwartz et al. (2014) (a project co-led by Prof Elshaug), and from that was first applied in the Australian setting for a small sample of services (n=5) in an analysis by the Grattan Institute.

In our analysis, recommendations from Choosing Wisely (US), Choosing Wisely Canada, Choosing Wisely Australia, the Royal Australian College of Physicians (RACP) EVOLVE initiative, and the National Institute of Health and Care Excellence (NICE) (UK) 'do not do' database were scanned to exclude recommendations that did not relate to hospital inpatient care or clearly could not be measured using the hospital admissions data. We then examined remaining recommendations in more detail to determine whether it was possible to measure the low-value service.

For a service to be measurable, it is necessary to identify the specific service, the indication for which it is low-value, the population for which it is low-value, and any indications that could otherwise justify use of the service. These characteristics were identified and mapped from the explanatory notes to the recommendations and, when necessary, the original evidence on which the recommendation was based. The variables available in the data and the coding systems (ICD-10-AM, ACHI) were consulted to determine if each characteristic could be identified.

Low-value care results when patients with a particular indication (or in some cases particular patient characteristics) receive the service. If the patient also has an indication recorded for which the service is not low-value, we assume the service was for the appropriate indication.

We developed operational definitions for each of the 21 services, specifying the variables and relevant ICD-10-AM and ACHI codes for identifying low-value use of the services. Clinicians and a clinical coder were consulted when developing the definitions.

It can be difficult to identify low-value use of services for several reasons. In some cases, recommendations from different sources may have slightly different criteria for inappropriate use. In other cases, we had to develop proxy measures for components of the recommendations. For example, a recommendation may refer to "asymptomatic" patients. Symptoms are not recorded, so our approach is to identify diagnoses that imply the patient had symptoms. There can be disagreement about which diagnoses to include in this proxy measure. Because of the uncertainty due to these issues, where possible we developed both narrower and broader operational definitions. First, we developed the narrower definition aimed to identify only episodes generally accepted as low-value; at risk of undercounting the true level of low-value care (i.e. it is conservative). The criteria were then relaxed where appropriate to develop the broader definition, which might include more episodes that are not actually inappropriate. It is expected the true value will be bracketed by these two definitions.

4 RESULTS

This section provides the results for the low-value analysis for the four funds. Results for one fund were included from an analysis and report written earlier in 2018, which had a narrower scope than this analysis. The results for this fund are therefore not included in some sections.

We carried out the analysis separately for each fund, and present the results for each alongside one other.

ADMISSION AND MEMBER COUNTS 2016/2017

In total, there were 72 314 admissions with a low-value procedure (broad definition) across the four funds combined (35.6% of all admissions with one of the investigated services). There were 57 346 admissions with a low-value procedure using the narrow definitions (28.3% of investigated admissions). Table 1 gives the counts of admissions and members for each service that was claimed in FY 2016/17.

Table 1. Counts of admissions and members with the procedure, and the percentage of each of these that were low-value (both broad and narrow definitions).

Services	Fund	Admissions	Members	Low-value (broad)				Low-value (narrow)			
				Admissions		Members		Admissions		Members	
				N	%	N	%	N	%	N	%
Inpatient intravitreal injection	1	15955	2893	15647	98.07	2823	97.58	15647	98.07	2823	97.58
	2	365	72	348	95.34	69	95.83	348	95.34	69	95.83
	3	5699	996	5691	99.86	994	99.80	5691	99.86	994	99.80
	4	13313	2555	12990	97.57	2483	97.18	12990	97.57	2483	97.18
Knee arthroscopy	1	11516	11248	9804	85.13	9617	85.50	4138	35.93	4064	36.13
	2	970	952	802	82.68	788	82.77	303	31.24	233	24.47
	3	4135	4056	3135	75.82	3091	76.21	1595	38.57	1568	38.66
	4	8831	8673	7582	85.86	7471	86.14	3369	38.15	3333	38.43

Services	Fund	Admissions	Members	Low-value (broad)				Low-value (narrow)			
				Admissions		Members		Admissions		Members	
				N	%	N	%	N	%	N	%
Endoscopy (members < 55 years)	1	28909	27995	3384	11.71	3367	12.03	3338	11.55	3321	11.86
	2	1671	1622	259	15.50	257	15.84	257	15.38	255	15.72
	3	9564	9266	1078	11.27	1073	11.58	1038	10.85	1033	11.15
	4	22484	21928	2838	12.62	2826	12.89	2803	12.47	2791	12.73
Abdominal hysterectomy	1	3728	3723	872	23.39	872	23.42	382	10.25	382	10.26
	2	392	391	87	22.19	87	22.25	43	10.97	43	11.00
	3	1901	1901	389	20.46	389	20.46	241	12.68	241	12.68
	4	3210	3210	697	21.71	697	21.71	262	8.16	262	8.16
Colonoscopy (members < 50 years)	1	21655	21184	853	3.94	848	4.00	847	3.91	842	3.97
	2	1175	1156	45	3.83	45	3.89	45	3.83	45	3.89
	3	8380	8185	194	2.32	194	2.37	184	2.20	184	2.25
	4	15653	15375	604	3.86	602	3.92	603	3.85	601	3.91
Retinal laser or cryotherapy	1	2484	2152	485	19.52	470	21.84	469	18.88	455	21.14
	2	38	37	3	7.89	3	8.11	3	7.89	3	8.11
	3	826	737	259	31.36	252	34.19	252	30.51	246	33.38
	4	2008	1799	426	21.22	414	23.01	414	20.62	403	22.40
Spinal fusion	1	1969	1930	517	26.26	513	26.58	34	1.73	33	1.71
	2	108	107	27	25.00	27	25.23	0	0.00	0	0.00
	3	738	723	162	21.95	160	22.13	13	1.76	13	1.80
	4	1649	1620	447	27.11	446	27.53	20	1.21	20	1.23

Services	Fund	Admissions	Members	Low-value (broad)				Low-value (narrow)			
				Admissions		Members		Admissions		Members	
				N	%	N	%	N	%	N	%
Percutaneous coronary interventions	1	5164	4657	361	6.99	361	7.75	287	5.56	287	6.16
	2	358	322	17	4.75	15	4.66	17	4.75	15	4.66
	3	1291	1203	72	5.58	71	5.90	59	4.57	58	4.82
	4	3981	3678	356	8.94	355	9.65	279	7.01	278	7.56
Adenoidectomy (members < 12 years)	1	428	426	153	35.75	153	35.92	153	35.75	153	35.92
	2	27	27	6	22.22	6	22.22	6	22.22	6	22.22
	3	222	222	73	32.88	73	32.88	73	32.88	73	32.88
	4	1055	1054	398	37.73	398	37.76	398	37.73	398	37.76
EVAAR	1	219	218	141	64.38	140	64.22	103	47.03	103	47.25
	2	12	12	7	58.33	7	58.33	5	41.67	5	41.67
	3	76	75	42	55.26	41	54.67	11	14.47	11	14.67
	4	182	182	113	62.09	113	62.09	82	45.05	82	45.05
IVC Filter	1	120	120	97	80.83	97	80.83	16	13.33	16	13.33
	2	7	6	7	100.00	6	100.00	3	42.86	2	33.33
	3	17	17	17	100.00	17	100.00	11	64.71	11	64.71
	4	106	106	97	91.51	97	91.51	26	24.53	26	24.53
Carotid endarterectomy	1	271	259	81	29.89	78	30.12	59	21.77	57	22.01
	2	25	24	9	36.00	9	37.50	7	28.00	7	29.17
	3	96	92	32	33.33	31	33.70	2	2.08	2	2.17
	4	217	214	89	41.01	89	41.59	64	29.49	64	29.91

Services	Fund	Admissions	Members	Low-value (broad)				Low-value (narrow)			
				Admissions		Members		Admissions		Members	
				N	%	N	%	N	%	N	%
Epidural steroid injections	1	512	444	87	16.99	81	18.24	87	16.99	81	18.24
	2	25	23	8	32.00	8	34.78	8	32.00	8	34.78
	3	90	73	22	24.44	17	23.29	22	24.44	17	23.29
	4	424	377	88	20.75	84	22.28	88	20.75	84	22.28
Laparoscopic uterine nerve ablation	1	71	71	71	100.00	71	100.00	9	12.68	9	12.68
	2	5	5	5	100.00	5	100.00	1	20.00	1	20.00
	3	7	7	7	100.00	7	100.00	1	14.29	1	14.29
	4	49	49	49	100.00	49	100.00	5	10.20	5	10.20
Open bariatric surgery (opposed to laparoscopic)	1	3862	3862	65	1.68	65	1.68	65	1.68	65	1.68
	2	185	185	3	1.62	3	1.62	3	1.62	3	1.62
	3	1096	1096	21	1.92	21	1.92	21	1.92	21	1.92
	4	3376	3376	43	1.27	43	1.27	43	1.27	43	1.27
Renal angioplasty	1	33	33	33	100.00	33	100.00	30	90.91	30	90.91
	2	1	1	0	0.00	0	0.00	0	0.00	0	0.00
	3	17	15	17	100.00	15	100.00	17	100.00	15	100.00
	4	39	37	38	97.44	36	97.30	32	82.05	30	81.08
Hyperbaric oxygen therapy	1	1600	80	43	2.69	5	6.25	0	0.00	0	0.00
	2	107	6	0	0.00	0	0.00	0	0.00	0	0.00
	3	805	23	0	0.00	0	0.00	0	0.00	0	0.00
	4	1957	74	0	0.00	0	0.00	0	0.00	0	0.00

Services	Fund	Admissions	Members	Low-value (broad)				Low-value (narrow)			
				Admissions		Members		Admissions		Members	
				N	%	N	%	N	%	N	%
Vertebroplasty	1	11	11	11	100.00	11	100.00	11	100.00	11	100.00
	2	0	0	0	0.00	0	0.00	0	0.00	0	0.00
	3	8	8	8	100.00	8	100.00	8	100.00	8	100.00
	4	17	15	17	100.00	15	100.00	17	100.00	15	100.00
Nasolacrimal duct (members < 1 year)	1	7	7	7	100.00	7	100.00	6	85.71	6	85.71
	2	0	0	0	0.00	0	0.00	0	0.00	0	0.00
	3	19	19	19	100.00	19	100.00	15	78.95	15	78.95
	4	0	0	0	0.00	0	0.00	0	0.00	0	0.00
Gallbladder removal during bariatric surgery	1	71	71	2	2.82	2	2.82	2	2.82	2	2.82
	2	0	0	0	0.00	0	0.00	0	0.00	0	0.00
	3	5	5	3	60.00	3	60.00	3	60.00	3	60.00
	4	66	66	3	4.55	3	4.55	3	4.55	3	4.55
All services	1	88431	69683	32634	36.90	19468	27.94	25599	28.95	12620	18.11
	2	5376	4780	1629	30.30	1328	27.78	1045	19.44	756	15.82
	3	38250	26062	11238	29.38	6452	24.76	9254	24.19	4500	17.27
	4	70843	55599	26813	37.85	16107	28.97	21448	30.28	10845	19.51

ADMISSION BENEFITS 2016/2017

See Table 2. In FY 2016/2017, approximately $83.2 million (narrow) to $156.7 million (broad) in hospital benefits were paid by the four funds on admissions with a low-value procedure. Some of the investigated admissions would still occur if the low-value procedure had never been provided (that is, the admission principally occurs for another reason). The total hospital benefits after excluding these types of services – representing a truer 'waste' figure - was $75.1 million (narrow) to $141.3 million (broad). The total medical benefits was $26.9 million (narrow) to $41.5 million (broad).

The funds investigated in this analysis represented 67% of privately insured Australians in 2016/2017.[6] The extrapolated total PHI hospital benefits was $112 million (narrow) to $211 million (broad), and the extrapolated total medical benefits was $40 million (narrow) to $62 million (broad). This extrapolation is based on the assumption that the use of these services are consistent across the remaining 33% of privately insured Australians covered by PHI funds not included in this analysis.

Table 3 shows the benefits paid for admissions with individual procedures. The procedures with the highest benefits were knee arthroscopy (out of the broadly defined low-value procedures) and inpatient intravitreal injections.

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[6] Australian Prudential Regulation Authority, *Operations of Private Health Insurers Annual Report data 2016-17.*

Table 2. *Total hospital and medical benefits paid towards admissions involving low-value procedures (both broad and narrow definitions). "Remaining [Private Health Insurers] PHI" is the extrapolated estimate (approximately 33% of the PHI market in 2016/2017.*

Services	Fund	Hospital benefits ($)		Medical benefits ($)	
		Broad	**Narrow**	**Broad**	**Narrow**
Total: all services	1	74,850,647	40,259,542	23,048,196	14,651,922
	2	705,526	366,745		
	3	23,474,674	13,110,985	6,049,463	4,180,456
	4	57,661,263	29,508,570	15,481,583	9,717,761
Total: services not requiring an admission (Truer waste figure)	1	67,935,248	36,753,663	21,607,148	13,927,242
	2	664,780	348,635		
	3	20,655,435	11,157,657	5,535,189	3,837,684
	4	52,009,389	26,822,400	14,348,951	9,144,617
Total: all services	All 4 funds	156,692,110	83,245,842	44,579,242	28,550,139
	Remaining PHI (extrapolation)	77,000,000	41,000,000	22,000,000	14,000,000
	All PHI	234,000,000	124,000,000	66,000,000	43,000,000
Total: services not requiring an admission (Truer waste figure)	All 4 funds	141,264,852	75,082,355	41,491,288	26,909,543
	Remaining PHI (extrapolation)	69,000,000	37,000,000	20,000,000	13,000,000
	All PHI	211,000,000	112,000,000	62,000,000	40,000,000

'Services not requiring an admission' exclude those admissions with low-value procedures which would still have occurred regardless of whether the procedure was provided or not.

Table 3. Hospital and medical benefits paid towards admissions involving each low-value procedure (both broad and narrow definitions).

Services	Fund	Hospital benefits ($)		Medical benefits ($)	
		Broad	**Narrow**	**Broad**	**Narrow**
Knee arthroscopy	1	21,451,294	9,242,681	8,614,174	3,715,966
	2	458,315	166,584		
	3	6,816,055	3,583,206	2,116,423	1,122,009
	4	14,801,535	6,755,136	5,681,280	2,544,158
Spinal fusion	1	15,184,067	987,097	1,995,952	142,832
	2	17,851	-		
	3	5,318,615	603,277	515,438	53,575
	4	13,633,924	706,931	1,492,225	76,039
Inpatient intravitreal injections	1	11,593,163	11,593,163	4,212,248	4,212,248
	2	95,615	95,615		
	3	3,470,502	3,470,502	1,524,227	1,524,227
	4	7,590,686	7,590,686	3,298,846	3,298,846
Abdominal hysterectomy*	1	5,995,214	2,567,150	1,230,176	500,184
	2	39,343	16,707		
	3	2,472,197	1,606,286	443,245	271,743
	4	4,729,607	1,754,933	857,759	297,573
Percutaneous coronary interventions	1	5,875,406	4,432,824	645,297	464,357
	2	6,512	6,512		
	3	1,380,590	1,155,226	119,088	102,263
	4	4,425,548	3,289,848	558,220	403,058
Endovascular abdominal aneurysm repair	1	5,190,065	3,854,370	912,204	752,436
	2	6,839	4,656		
	3	1,350,033	396,847	153,315	47,868
	4	4,112,402	3,278,304	375,227	302,928
Endoscopy (members < 55 years)	1	2,768,399	2,730,897	2,252,341	2,229,896
	2	50,555	50,315		
	3	600,498	577,685	515,039	493,517
	4	1,494,443	1,467,336	1,292,073	1,276,895
IVC Filter	1	1,786,964	243,329	474,868	55,273
	2	1,387	713		
	3	223,518	174,885	35,189	25,061
	4	2,040,502	475,433	323,211	69,083

Services	Fund	Hospital benefits ($)		Medical benefits ($)	
		Broad	Narrow	Broad	Narrow
Retinal laser or cryotherapy	1	1,296,376	1,259,779	1,334,126	1,288,646
	2	2,069	2,069		
	3	771,492	749,799	328,859	318,255
	4	1,054,544	1,035,714	557,671	542,814
Carotid endarterectomy	1	898,897	678,442	260,768	205,661
	2	6,729	5,209		
	3	270,793	14,913	71,977	4,587
	4	1,035,723	734,454	220,272	158,541
Colonoscopy (members < 50 years)	1	906,472	900,397	741,889	738,302
	2	15,554	15,554		
	3	143,819	138,254	95,268	90,163
	4	550,410	549,676	329,217	328,565
Open bariatric procedures*	1	707,121	707,121	132,323	132,323
	2	719	719		
	3	228,156	228,156	32,120	32,120
	4	409,488	409,488	57,940	57,940
Renal angioplasty	1	504,650	386,445	82,394	70,192
	2	-	-		
	3	159,688	159,688	25,519	25,519
	4	641,311	385,055	91,471	50,496
Adenoidectomy during tube insertion (members < 12 years)*	1	180,687	180,687	82,255	82,255
	2	684	684		
	3	90,354	90,354	36,620	36,620
	4	497,302	497,302	212,479	212,479
Vertebroplasty	1	253,146	253,146	44,415	44,415
	2	-	-		
	3	85,004	85,004	14,007	14,007
	4	412,058	412,058	47,078	47,078
Laparoscopic uterine nerve ablation	1	207,663	23,432	73,279	9,519
	2	2,146	201		
	3	16,356	2,812	3,676	352
	4	110,182	12,791	43,321	4,473

Services	Fund	Hospital benefits ($)		Medical benefits ($)	
		Broad	Narrow	Broad	Narrow
Epidural steroid injections	1	125,137	125,137	72,574	72,574
	2	1,506	1,506		
	3	35,466	35,466	12,585	12,585
	4	148,610	148,610	67,680	67,680
Gallbladder removal (during bariatric surgery)*	1	51,304	51,304	11,408	11,408
	2	-	-		
	3	28,532	28,532	2,289	2,289
	4	24,448	24,448	5,152	5,152
Hyperbaric oxygen therapy	1	27,117	-	6,221	-
	2	-	-		
	3	-	-		
	4	-	-		
Nasolacrimal duct procedures (members < 1 year)	1	5,603	4,668	3,146	2,808
	2	-	-		
	3	13,008	10,095	4,579	3,695
	4	-	-	-	-
Total – all services	1	74,850,647	40,259,542	23,048,196	14,651,922
	2	705,526	366,745		
	3	23,474,674	13,110,985	6,049,463	4,180,456
	4	57,661,263	29,508,570	15,481,583	9,717,761
Total – services not requiring an admission	1	67,935,248	36,753,663	21,607,148	13,927,242
	2	664,780	348,635		
	3	20,655,435	11,157,657	5,535,189	3,837,684
	4	52,009,389	26,822,400	14,348,951	9,144,617

* Services where an admission would still have occurred if the low-value service was not provided. Totals are for unique admissions only; admissions with multiple low-value services are only counted once.

VARIATION BETWEEN MEDICAL PROVIDERS

Table 4 examines the medical providers who claimed the most low-value procedures (narrow definition) from each fund, and how this compared to the total share of all procedures claimed to the fund.

For example, the top 5% of doctors with claims to Fund 1 performed 43% of low-value abdominal hysterectomies, but only 12% of all hysterectomies (the top 5% of doctors claiming to Fund 2 performed over half – 53% - of the low-value procedures, but only 10% of all hysterectomies). Many of the investigated low-value procedures had a similar trend, where the majority of low-value procedures were performed by a small volume of clinicians.

There were a few exceptions to this trend, which suggests the low-value use of these procedures is more consistent across providers. This included endovascular repair for abdominal aortic aneurysms, inpatient intravitreal injections (low-value if not done as an outpatient procedure in most cases), knee arthroscopy and renal angioplasty.

Table 4. The total share of admissions with a low-value (LV) procedure or all procedures performed by the top medical providers (top 5%, top 20% or top 50%) of admissions with (narrow) low-value procedures. N = number of medical providers for all admissions.

Service	Fund	N	Top 5%		Top 20%		Top 50%	
			LV%	All%	LV%	All%	LV%	All%
Abdominal hysterectomy	1	1049	43.1	12.3	79.2	31.1	100.0	57.6
	2	431	52.6	9.7	100.0	26.6	100.0	51.3
	4	886	41.4	9.0	79.8	24.4	100.0	53.5
Adenoidectomy	1	207	52.0	24.2	79.6	48.6	100.0	69.2
	2	58	28.6	6.6	92.9	19.7	100.0	47.4
	4	327	51.0	24.1	79.7	45.0	98.0	70.2
Carotid endarterectomy	1	180	29.1	14.7	65.4	40.4	100.0	66.0
	2	26	42.9	23.4	85.7	46.8	100.0	68.1
	4	139	26.0	20.9	61.4	44.4	94.5	69.4
Colonoscopy	1	1696	41.3	20.7	82.1	50.3	100.0	75.8
	2	1153	89.2	13.5	100.0	23.8	100.0	53.5
	4	1504	42.2	19.8	82.5	49.6	100.0	75.1
Endoscopy	1	1939	42.5	24.0	81.2	61.5	99.3	87.5
	2	1408	43.0	23.8	88.8	40.1	100.0	63.1
	4	1634	42.4	23.1	79.8	59.3	98.1	86.1
EVAAR	1	154	22.2	15.9	56.1	43.0	85.4	70.9
	2	21	15.4	7.1	53.8	28.6	100.0	53.6
	4	123	20.6	15.2	57.1	41.8	87.6	63.7

Service	Fund	N	Top 5%		Top 20%		Top 50%	
			LV%	All%	LV%	All%	LV%	All%
Epidural steroid injection	1	200	72.0	41.7	95.1	57.9	100.0	76.1
	2	15	53.8	52.4	76.9	59.5	100.0	83.3
	4	176	65.6	35.1	92.2	52.3	100.0	71.8
Gallbladder removal during bariatric surgery	1	66	60.0	12.9	100.0	25.8	100.0	56.5
	4	62	62.5	27.6	100.0	39.6	100.0	61.9
Hyperbaric oxygen therapy	1	61	75.0	14.4	100.0	33.0	100.0	58.0
Intravitreal injections	1	212	52.0	51.2	82.9	81.6	98.4	97.0
	2	65	26.8	25.6	69.5	66.2	92.7	88.9
	4	207	40.2	39.3	80.7	79.1	97.8	96.0
IVC Filter	1	181	34.4	6.5	100.0	22.8	100.0	51.2
	2	14	40.0	13.3	80.0	26.7	100.0	53.3
	4	144	16.3	5.5	61.2	22.4	100.0	53.6
Knee arthroscopy	1	929	34.6	27.4	69.0	61.0	93.7	88.9
	2	765	42.3	31.9	72.3	50.8	100.0	71.2
	4	823	22.8	19.3	57.8	53.0	89.4	85.2
Laparoscopic uterine nerve ablation	1	49	39.1	9.0	82.6	31.4	100.0	45.5
	2	7	66.7	40.0	66.7	40.0	100.0	70.0
	4	29	18.2	4.8	63.6	13.5	100.0	50.0
Nasolacrimal duct procedure	1	9	20.0	18.2	40.0	36.4	60.0	54.5
Open bariatric procedure	1	350	77.9	11.7	100.0	40.0	100.0	64.3
	2	173	100.0	7.0	100.0	17.2	100.0	44.7
	4	217	61.5	11.4	96.7	29.1	100.0	69.8
Percutaneous coronary interventions	1	561	40.3	21.6	79.5	51.9	100.0	79.0
	2	241	85.0	22.6	100.0	33.1	100.0	58.0
	4	492	37.7	25.0	77.8	51.7	100.0	79.3
Renal angioplasty	1	53	15.3	13.2	39.0	35.3	64.4	57.4
	4	47	15.4	13.5	41.5	40.5	72.3	68.9
Retinal laser	1	163	39.5	24.2	82.5	65.3	99.9	90.2
	2	37	33.3	3.5	100.0	21.1	100.0	57.9
	4	151	34.6	21.1	77.7	59.2	99.3	89.0
Spinal fusion	1	335	72.9	10.5	100.0	30.4	100.0	56.2
	4	261	63.5	12.3	100.0	29.7	100.0	56.4

VARIATION BETWEEN MEDICAL PROVIDERS BETWEEN & ACROSS HOSPITALS

Medical providers (the identified treating doctor associated with the admission) may practice across different hospitals. This section explores the variation in the proportion of low-value procedures performed by individual doctors both *within* the same hospital and *across* different hospitals. To follow are some exemplar results.
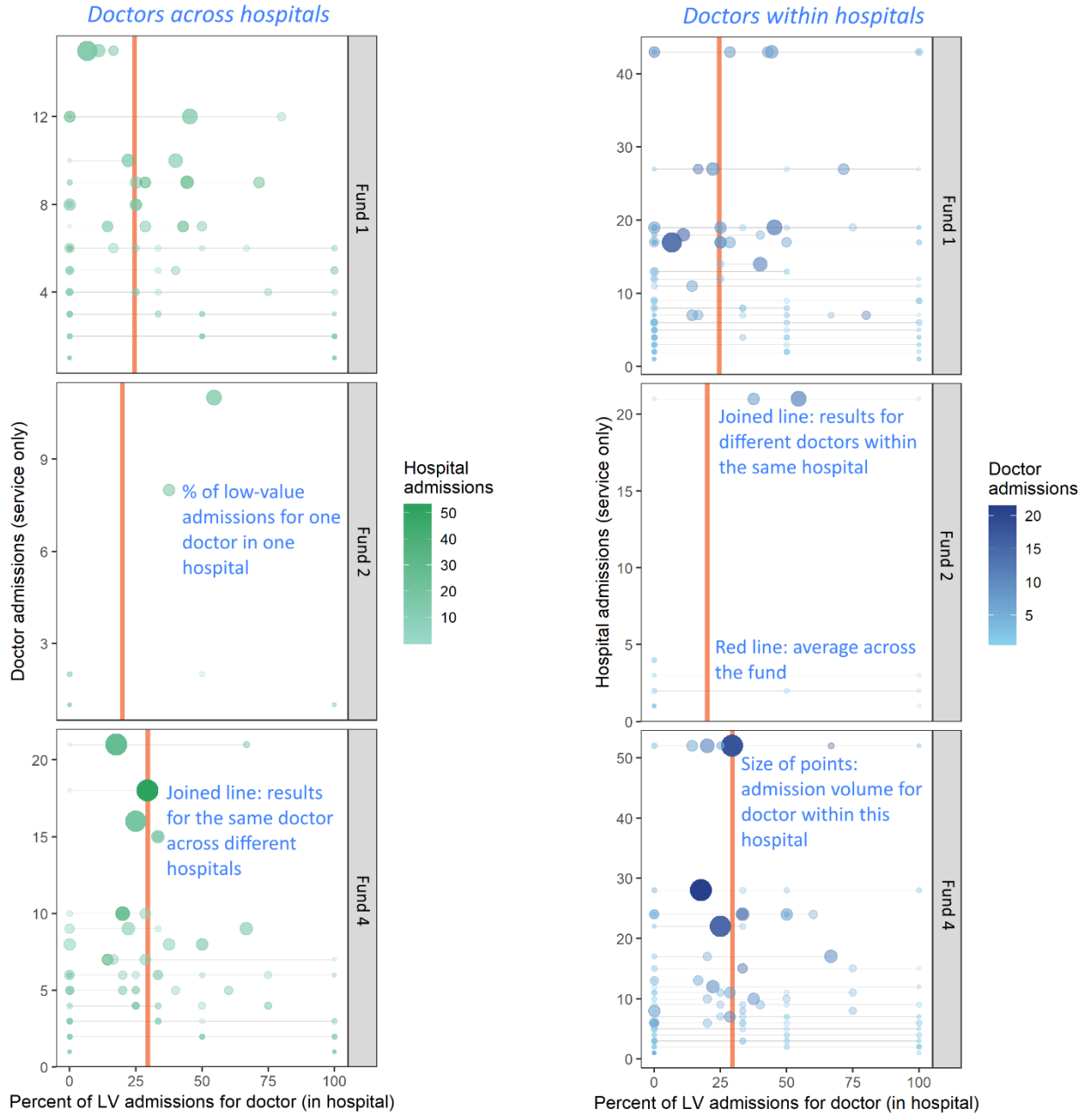
Figure 1. Guide for interpreting variation of drs' admissions across and within hospitals. Left: individual drs' results across hospitals: each horizontal line is a dr and each dot is the different hospitals that dr performs the procedure in. Left/right position of dot reflects proportion of LV procedures. Right: multiple drs within the same hospital: each horizontal line is a hospital and each dot represents an individual dr performing procedures within that hospital. Left/right position of dot reflects proportion of LV procedures for individual drs within hospital. Vertical red line is group mean.

Low-value abdominal hysterectomy

Within hospitals, doctors varied in their practice of low-value abdominal hysterectomies. Most of the doctors with the highest volumes had small or zero rates of low-value care.
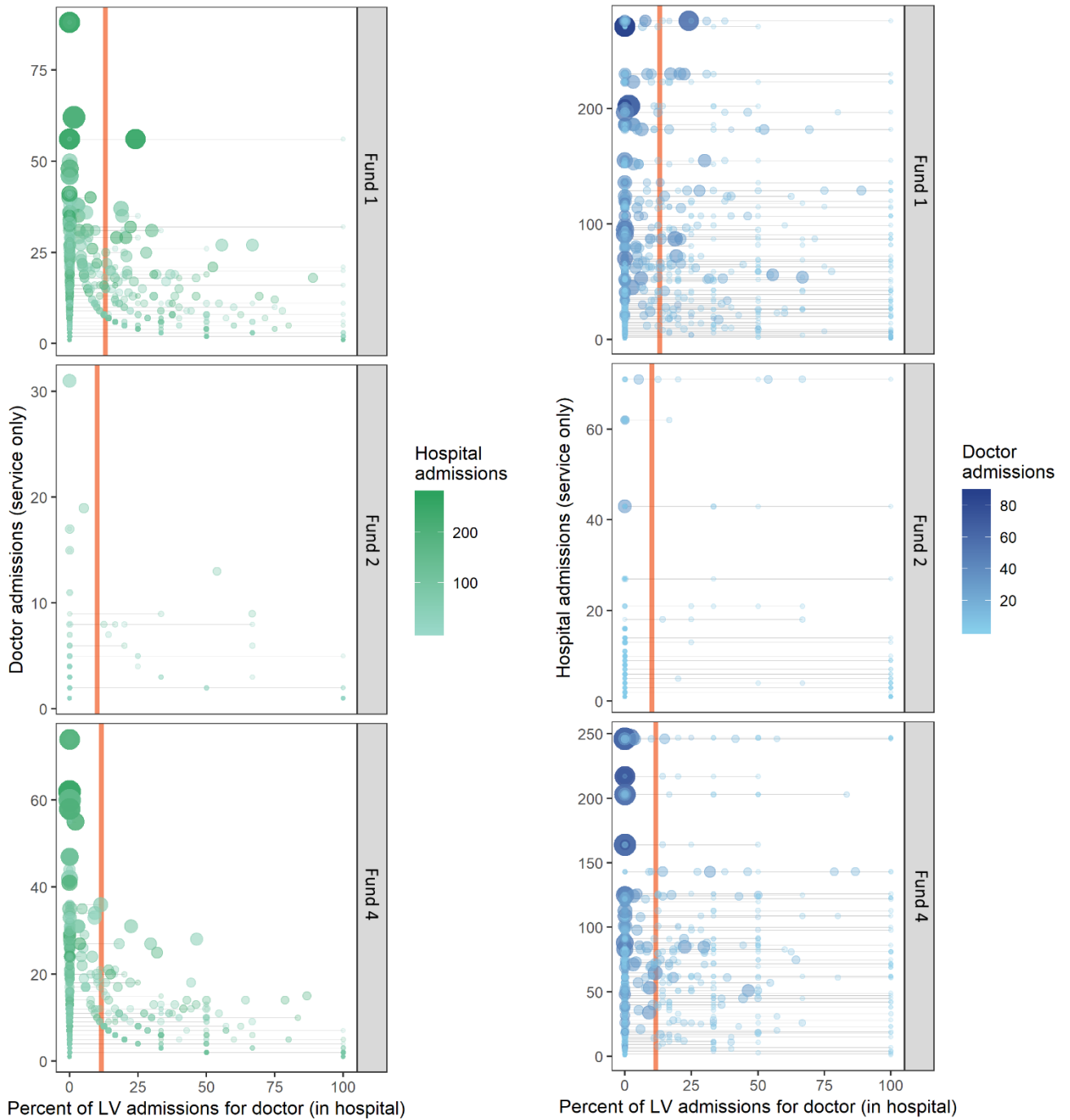
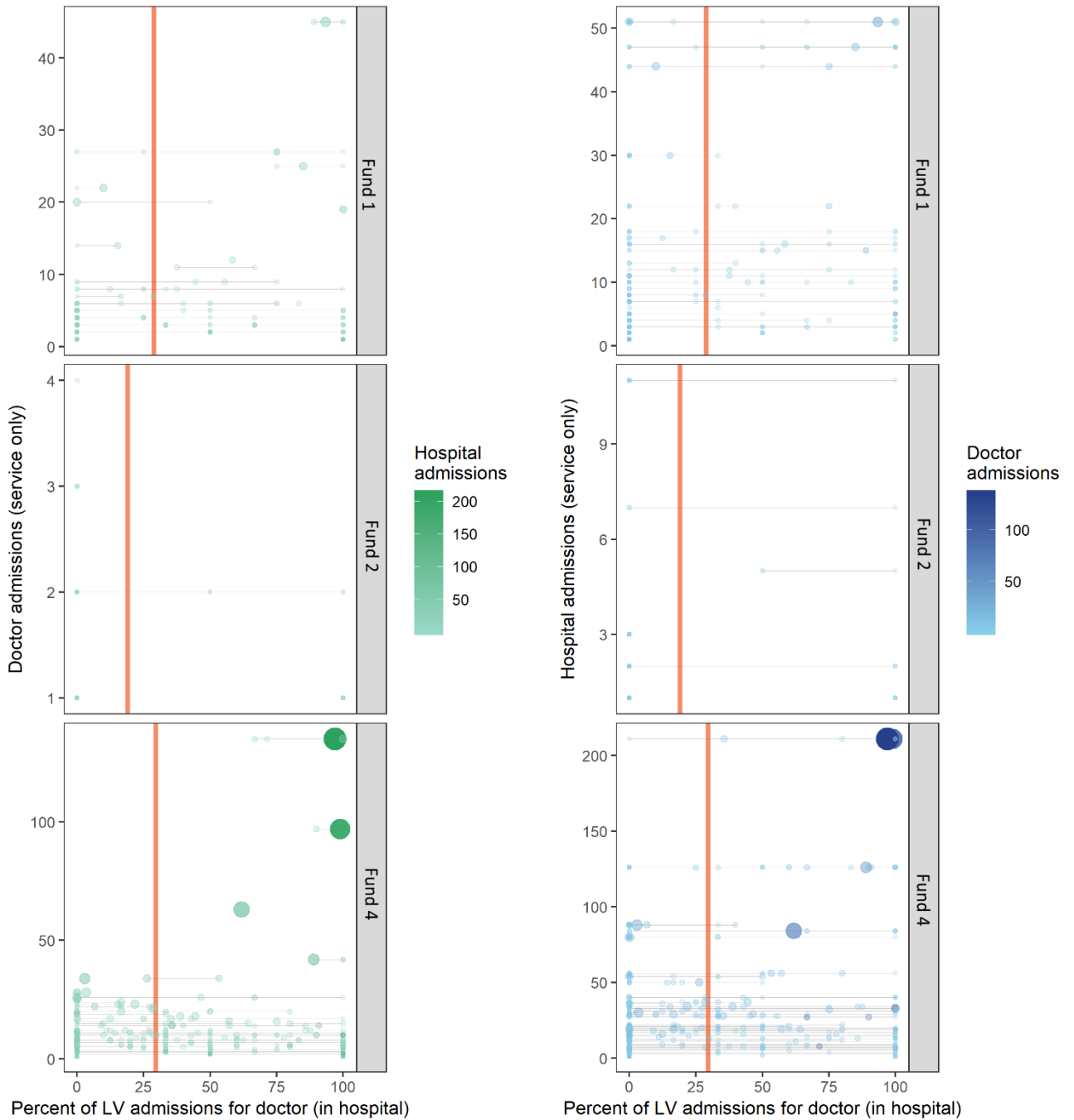*Figure 2. Rates of low-value admissions for doctors working across hospitals (left) and within hospitals (right) for low-value abdominal hysterectomies (narrow definition). Vertical red line is group mean.*

Low-value adenoidectomy during tube insertion procedure

There were several doctors (evident from the Fund 4 results) with consistently high rates (and volumes) of low-value admissions.

Figure 3. Rates of low-value admissions for doctors working across hospitals (left) and within hospitals (right) for low-value adenoidectomy during a tube insertion procedure.

Low-value carotid endarterectomy

Low-value procedure rates varied for many of the individual doctors across the hospitals they practiced in.
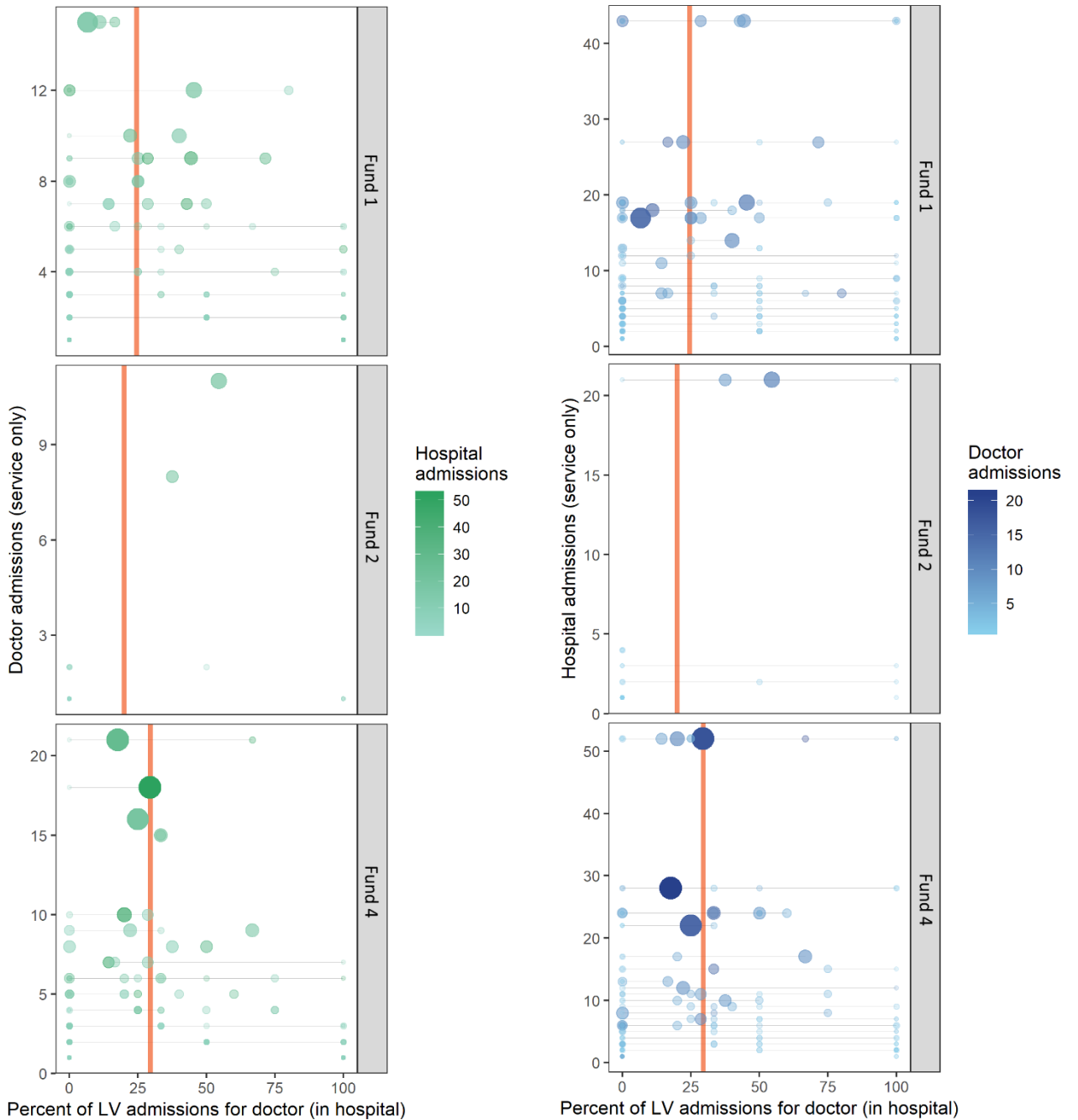

Figure 4. Rates of low-value admissions for doctors working across hospitals (left) and within hospitals (right) for low-value carotid endarterectomy (narrow definition).

Low-value colonoscopy (for members < 50 years old)

Both Fund 1 and 4 appeared to have a few clinicians with high proportions and volumes of low-value colonoscopies.
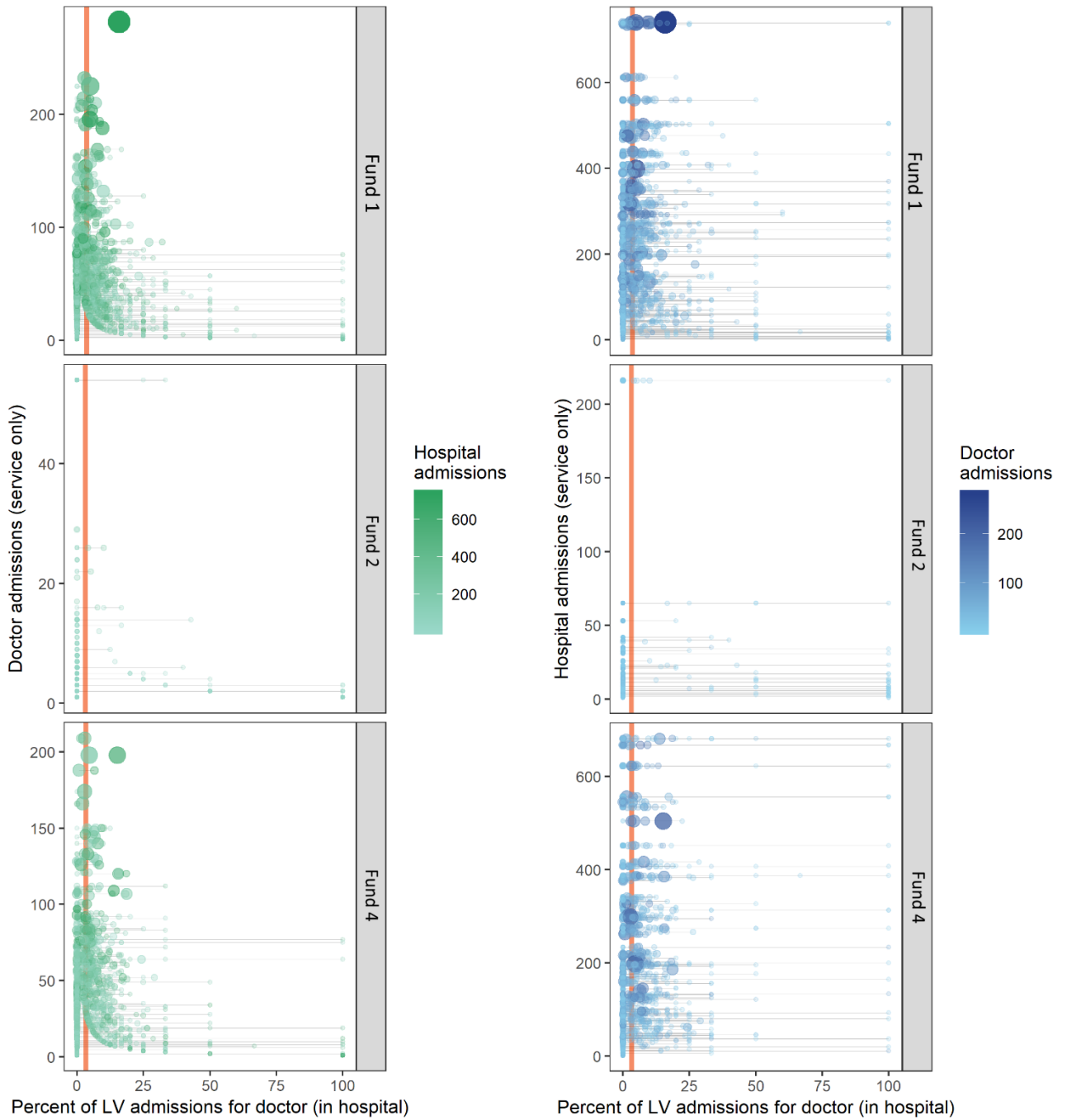

Figure 5. Rates of low-value admissions for doctors working across hospitals (left) and within hospitals (right) for low-value colonoscopy (narrow definition).

Low-value endoscopy (for members < 55 years old)

There are several medical providers with relatively high rates of low-value admissions across all hospitals where the procedure was performed.
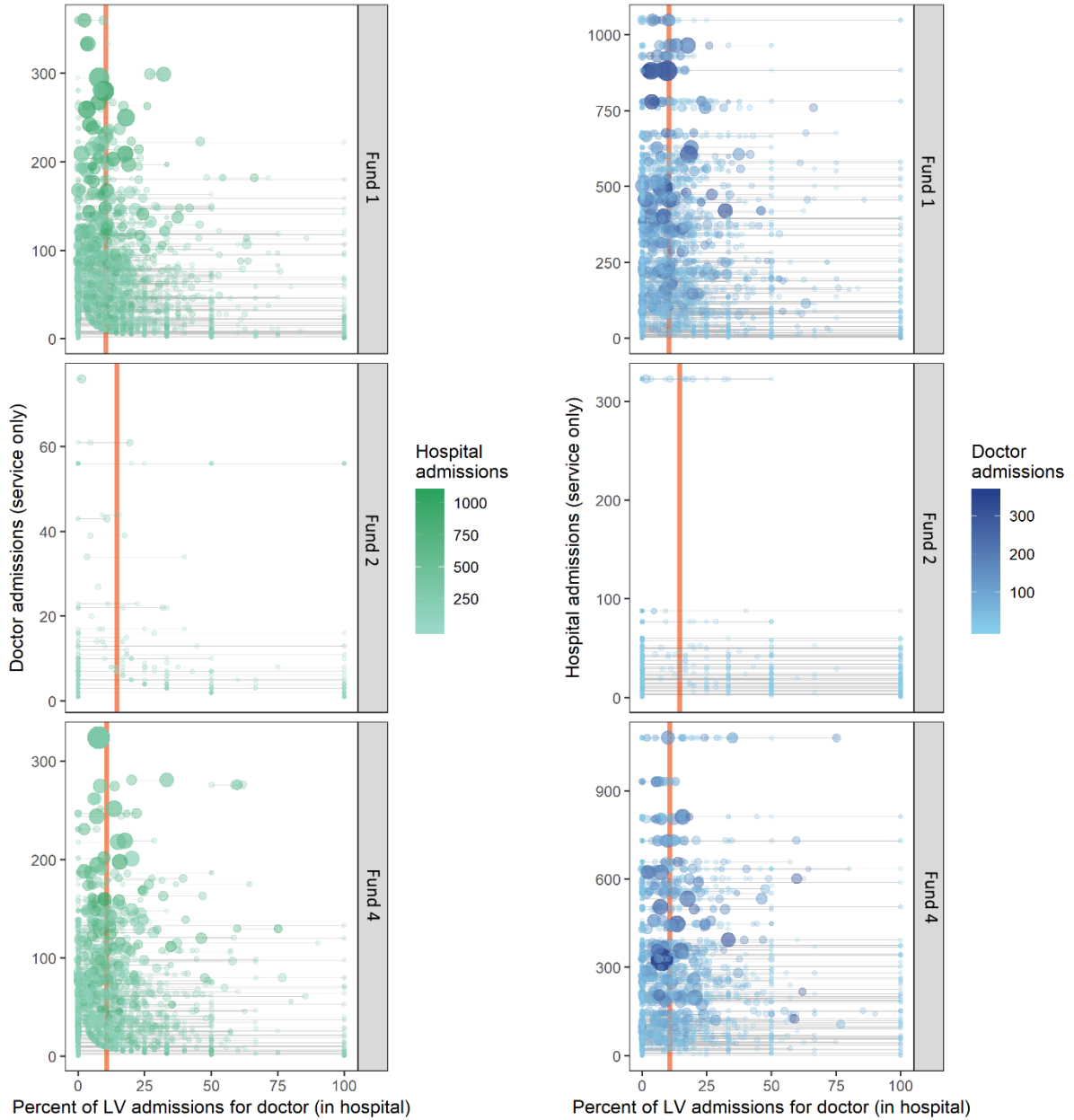

Figure 6. Rates of low-value admissions for doctors working across hospitals (left) and within hospitals (right) for low-value endoscopy (narrow definition).

Low-value spinal fusion

Within hospitals, individual medical providers' low-value procedure rates varied. There were several high-volume clinicians with relatively high proportions of low-value procedures (evident in two funds' results).
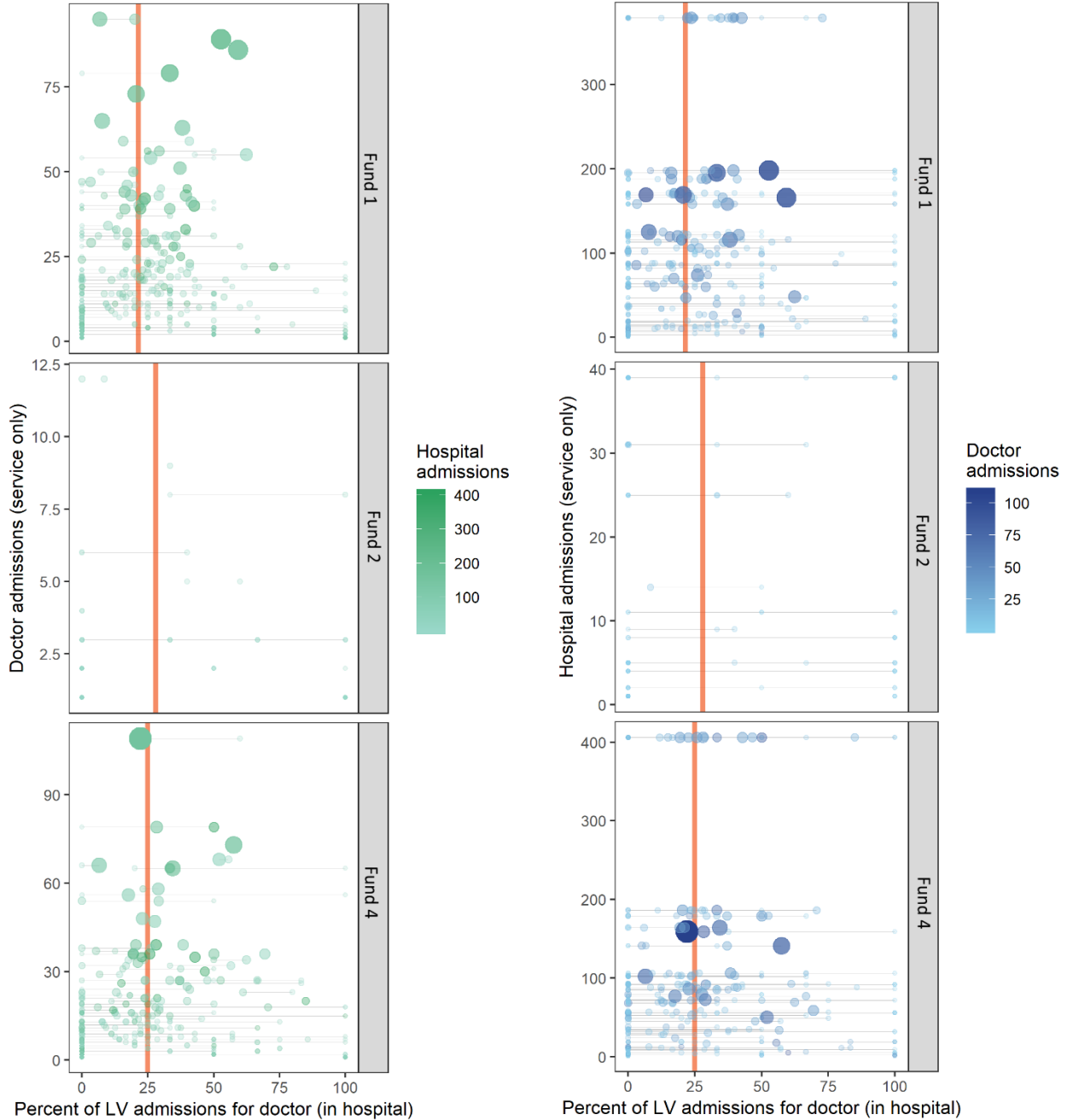

Figure 7. Rates of low-value admissions for doctors working across hospitals (left) and within hospitals (right) for low-value spinal fusion (broad definition).

GEOGRAPHIC VARIATION IN LOW-VALUE PROCEDURES

Table 5 provides the variation results across the different procedures and funds. The regions with the minimum and maximum rates of low-value procedures are provided. Results were divided across ten regions (different states, and metropolitan and non-metropolitan areas).

Metropolitan is defined as the 'Major Cities of Australia' category of the Australian Bureau of Statistics (ABS) Remoteness Area geographic structure. Fund 4 assigned the admissions to remoteness area before sending the admissions. We assigned the other funds' episodes to remoteness area based on provided Statistical-Area 3 (SA3) levels, according to ABS mapping.

Figure 8 to Figure 13 show the variation across regions and SA3 levels for selected procedures. In these figures, SA3 results are only displayed if the procedure was claimed 5 or more times to the fund within the SA3 level.

Table 5. Proportions of low-value services across funds for different regions (N is the number of regions where the service occurred). Regions are defined as metro (M) or non-metro (non-M) areas in different states (NSW: New South Wales and Australian Capital Territory; SA: South Australia and Northern Territory; VIC: Victoria and Tasmania; WA: Western Australia; QLD: Queensland). Q3/Q1 gives the ratio of the third quartile rates to first quartile rates (1 = no variation).

Service	Fund	N	Narrow					Broad				
			Min region	Min rate	Max region	Max rate	Q3/Q1	Min region	Min rate	Max region	Max rate	Q3/Q1
Abdominal hysterectomy	1	10	WA non-M	0.03	SA M	0.15	1.8	WA non-M	0.07	SA M	0.31	1.9
	2	10	SA non-M	0.00	SA M	0.20	2.5	WA non-M	0.00	SA M	0.26	1.8
	4	10	WA M	0.06	SA non-M	0.28	1.5	WA M	0.12	SA non-M	0.61	1.8
Adenoidectomy	1	10	WA non-M	0.00	WA M	0.55	1.9	WA non-M	0.00	WA M	0.55	1.9
	2	8	QLD non-M	0.00	WA M	0.49	5.7	QLD non-M	0.00	WA M	0.49	5.7
	4	10	WA non-M	0.00	WA M	0.76	2.4	WA non-M	0.00	WA M	0.76	2.4
Carotid endarterectomy	1	9	SA non-M	0.00	NSW M	0.31	1.8	SA non-M	0.00	NSW M	0.43	1.4
	2	7	NSW M	0.00	VIC M	0.28	—	QLD non-M	0.00	VIC M	0.42	—
	4	9	WA M	0.13	QLD non-M	0.60	1.3	WA M	0.23	QLD non-M	0.80	1.4
Colonoscopy	1	10	NSW non-M	0.01	QLD M	0.06	2.5	NSW non-M	0.01	QLD M	0.06	2.5
	2	10	SA non-M	0.00	WA M	0.04	3.0	SA non-M	0.00	WA M	0.04	3.0
	4	10	SA M	0.02	QLD M	0.05	1.9	SA M	0.02	QLD M	0.05	1.9

Service	Fund	N	Narrow					Broad				
			Min region	Min rate	Max region	Max rate	Q3/Q1	Min region	Min rate	Max region	Max rate	Q3/Q1
Endoscopy	1	10	NSW non-M	0.02	WA M	0.18	2.0	NSW non-M	0.02	WA M	0.18	2.0
	2	10	SA non-M	0.00	WA M	0.20	3.2	SA non-M	0.00	WA M	0.20	3.2
	4	10	WA non-M	0.08	WA M	0.18	1.3	WA non-M	0.08	WA M	0.18	1.3
EVAAR	1	8	NSW non-M	0.12	VIC M	0.60	1.3	NSW non-M	0.13	VIC M	0.73	1.3
	2	8	NSW M	0.00	QLD non-M	1.00	—	NSW M	0.00	QLD non-M	1.00	4.3
	4	8	QLD non-M	0.25	SA M	0.57	1.6	QLD non-M	0.25	QLD M	0.69	1.2
Epidural steroid injection	1	9	VIC non-M	0.04	NSW M	0.43	2.8	VIC non-M	0.04	NSW M	0.43	2.8
	2	7	QLD M	0.00	NSW M	0.50	2.2	QLD M	0.00	NSW M	0.50	2.2
	4	9	SA non-M	0.00	VIC non-M	0.67	5.2	SA non-M	0.00	VIC non-M	0.67	5.2
Gallbladder removal	1	9	NSW non-M	0.00	VIC non-M	0.13	—	NSW non-M	0.00	VIC non-M	0.13	—
	2	1	VIC non-M	1.00	VIC non-M	1.00	1.0	VIC non-M	1.00	VIC non-M	1.00	1.0
	4	9	NSW non-M	0.00	QLD M	0.10	—	NSW non-M	0.00	QLD M	0.10	—
Hyperbaric oxygen therapy	1	7	NSW M	0.00	VIC non-M	0.00	—	VIC M	0.00	QLD M	0.31	17.4
	2	4	VIC non-M	0.00	VIC non-M	0.00	—	VIC non-M	0.00	VIC non-M	0.00	—
	4	4	NSW M	0.00	NSW M	0.00	—	NSW M	0.00	NSW M	0.00	—
Intravitreal injection	1	9	SA non-M	0.02	SA M	1.00	1.9	SA non-M	0.02	SA M	1.00	1.9
	2	8	WA non-M	0.10	WA M	1.00	2.0	WA non-M	0.10	WA M	1.00	2.0
	4	9	QLD non-M	0.55	WA non-M	1.00	1.0	QLD non-M	0.55	WA non-M	1.00	1.0
IVC filter	1	8	NSW M	0.07	SA M	0.23	1.4	NSW non-M	0.33	QLD non-M	1.00	1.1
	2	6	NSW non-M	0.00	QLD M	0.50	309.1	QLD non-M	0.00	QLD M	1.00	11.0
	4	9	SA non-M	0.00	QLD M	0.44	1.8	SA non-M	0.00	NSW non-M	1.00	1.2
Knee arthroscopy	1	10	WA non-M	0.15	SA M	0.41	1.6	NSW non-M	0.31	QLD M	0.88	1.8
	2	10	SA non-M	0.05	WA M	0.37	2.7	WA non-M	0.20	SA M	0.87	2.7
	4	10	WA M	0.33	WA non-M	0.44	1.1	NSW M	0.82	SA non-M	0.93	1.1

Service	Fund	N	Narrow					Broad				
			Min region	Min rate	Max region	Max rate	Q3/Q1	Min region	Min rate	Max region	Max rate	Q3/Q1
LUNA	1	8	QLD non-M	0.00	WA M	0.56	68.8	VIC non-M	0.19	QLD M	1.00	1.5
	2	3	VIC non-M	0.01	QLD M	0.50	2.7	VIC non-M	0.19	QLD M	1.00	1.7
	4	8	NSW non-M	0.00	QLD non-M	0.20	—	NSW non-M	1.00	NSW non-M	1.00	1.0
Nasolacrimal probe	1	7	VIC non-M	0.02	QLD non-M	1.00	1.2	VIC non-M	0.02	NSW M	1.00	1.0
Open bariatric surgery	1	10	NSW non-M	0.00	SA M	0.10	14.9	NSW non-M	0.00	SA M	0.10	14.9
	2	10	NSW non-M	0.00	QLD M	0.03	—	NSW non-M	0.00	QLD M	0.03	—
	4	10	QLD non-M	0.00	SA M	0.11	6.9	QLD non-M	0.00	SA M	0.11	6.9
PCI	1	10	SA non-M	0.01	WA non-M	0.07	1.3	SA non-M	0.01	QLD M	0.07	1.2
	2	10	QLD non-M	0.00	WA M	0.04	217.1	QLD non-M	0.00	WA M	0.04	217.1
	4	10	SA non-M	0.03	WA non-M	0.11	1.5	SA non-M	0.03	WA M	0.11	1.3
Renal artery angioplasty	1	7	NSW non-M	0.02	WA M	1.00	1.4	NSW non-M	0.02	VIC M	1.00	1.2
	2	1	VIC non-M	0.25	VIC non-M	0.25	1.0	VIC non-M	0.25	VIC non-M	0.25	1.0
	4	8	QLD non-M	0.67	NSW non-M	1.00	1.2	VIC M	0.94	NSW non-M	1.00	1.0
Retinal laser therapy	1	9	VIC non-M	0.12	SA non-M	0.57	1.6	VIC non-M	0.12	SA non-M	0.57	1.6
	2	8	NSW M	0.00	WA M	0.50	18.8	NSW M	0.00	WA M	0.50	18.8
	4	10	WA non-M	0.00	NSW non-M	0.36	1.6	WA non-M	0.00	NSW non-M	0.38	1.6
Spinal fusion	1	8	VIC non-M	0.00	WA M	0.08	4.7	NSW non-M	0.06	WA M	0.35	1.3
	2	9	NSW non-M	0.00	NSW non-M	0.00	—	SA non-M	0.00	WA M	0.33	2.3
	4	8	NSW non-M	0.00	QLD non-M	0.08	7.6	NSW non-M	0.11	QLD non-M	0.49	1.4

Low-value abdominal hysterectomy

The variation in the rates of low-value abdominal hysterectomies across SA3 levels (represented as dots in charts below) was high for two funds' results. Fund 4 had a substantially higher proportion of low-value abdominal hysterectomies in South Australia/Tasmania non-metropolitan areas.
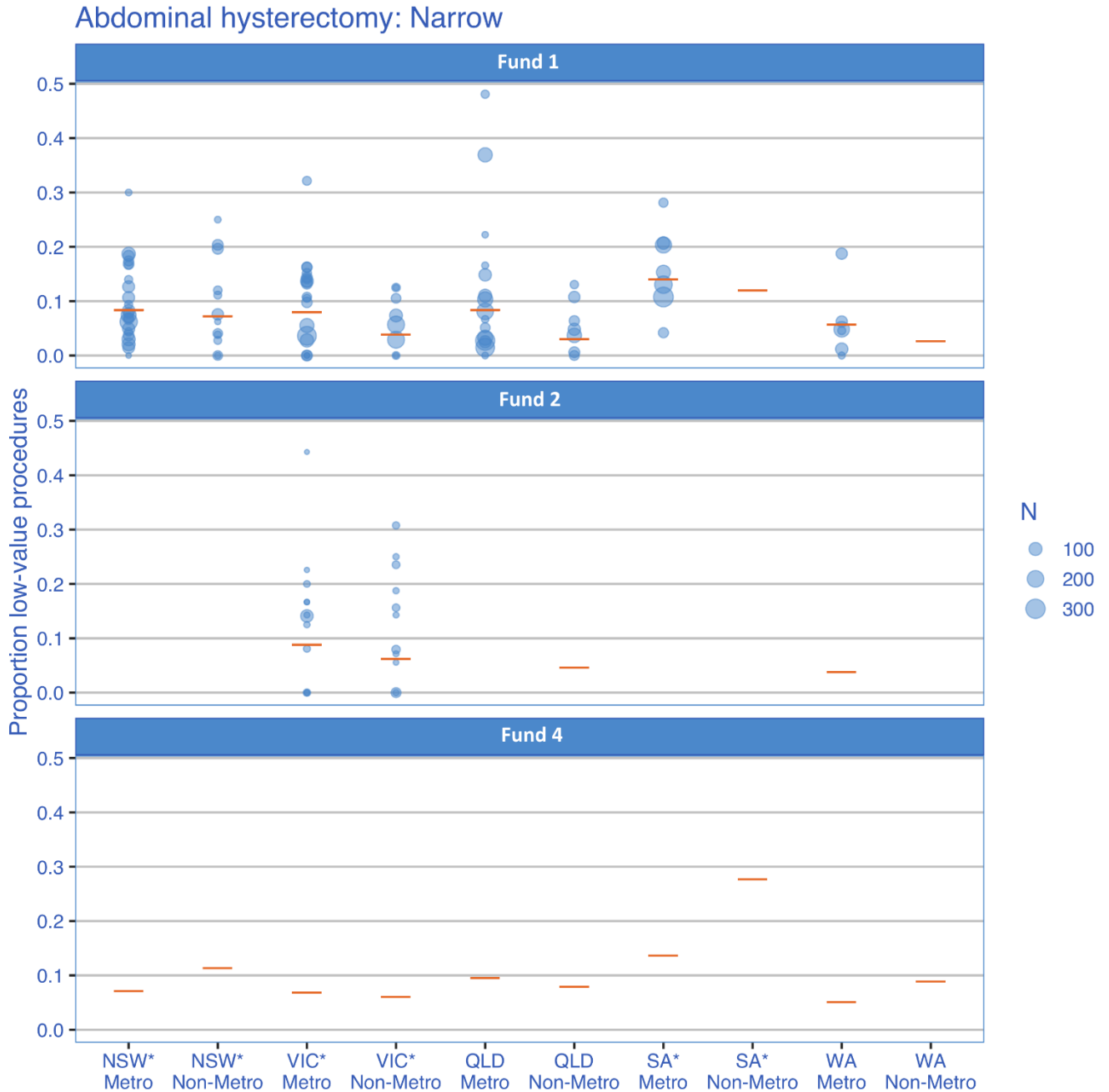

Figure 8. Variation in low-value abdominal hysterectomies (narrow definition) between SA3 regions (dots in charts) divided between states and metropolitan areas. N = the total number of procedures in the SA3 region. The red lines indicate the overall rate for the fund in the region. Only regional rates (not SA3 region) are available for one fund.

Low-value adenoidectomy during tube insertion procedure

Both Funds 1 and 4 showed substantially higher rates of low-value admissions with adenoidectomies within Western Australia, metropolitan areas.
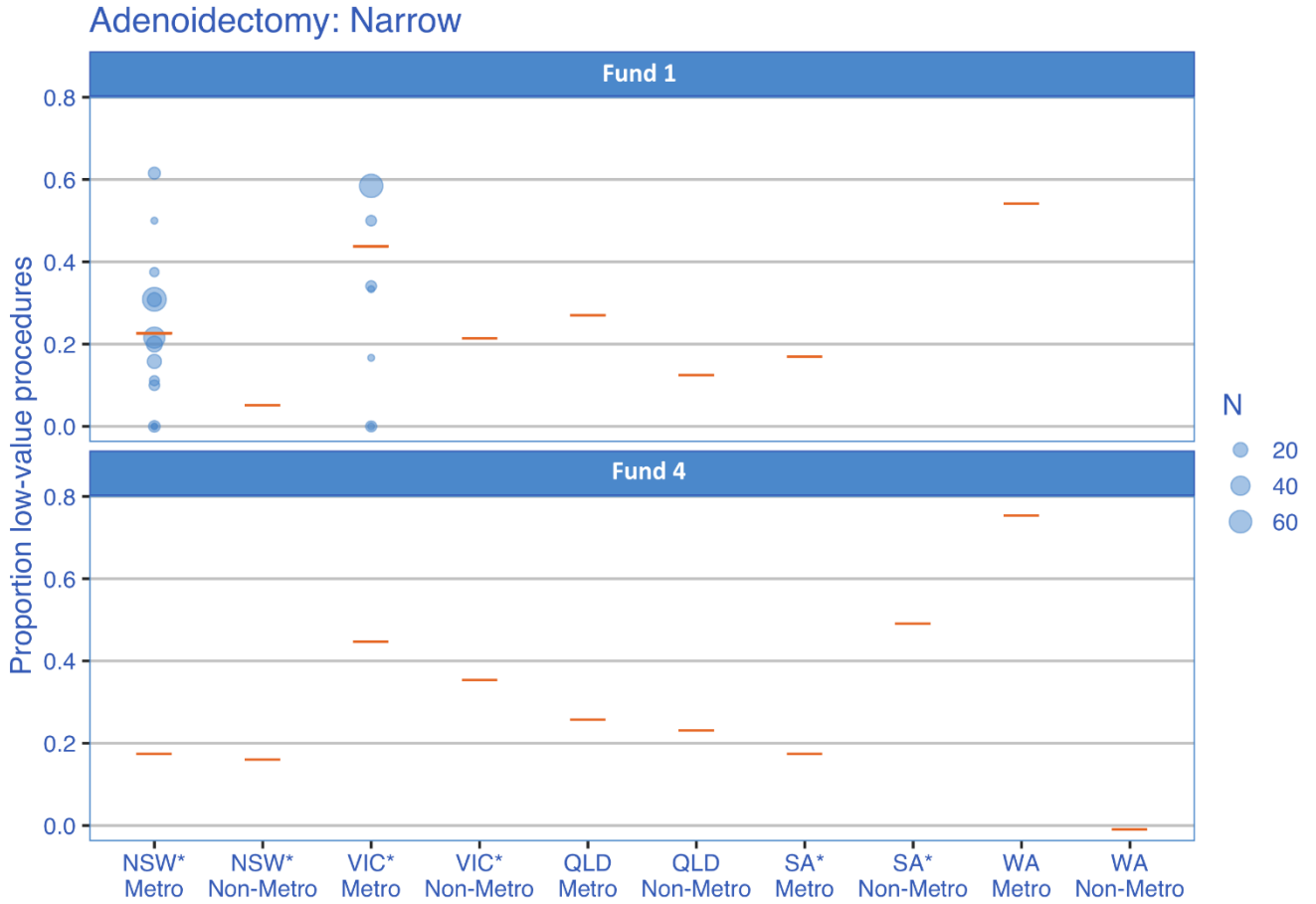
Figure 9. Variation in low-value adenoidectomies (during a tube insertion procedure) between SA3 regions divided between states and metropolitan areas. N = the total number of procedures in the SA3 region. The red lines indicate the overall rate for the fund in the region. Only regional rates (not SA3 region) are available for one fund.

Low-value colonoscopy (for members < 50 years old)

Within two funds' results, non-metropolitan areas had lower overall rates of low-value colonoscopies compared to metropolitan areas within the same states.
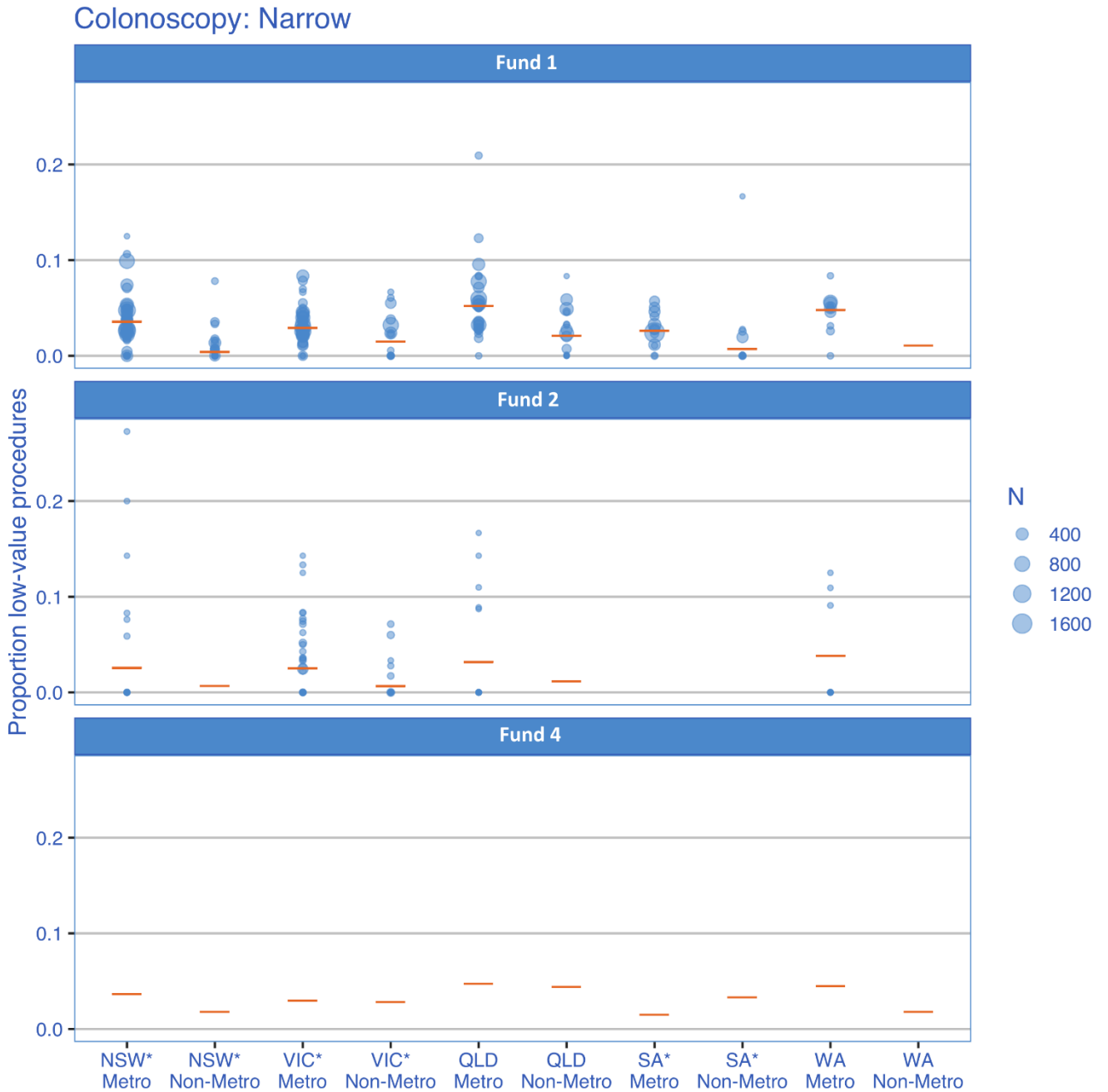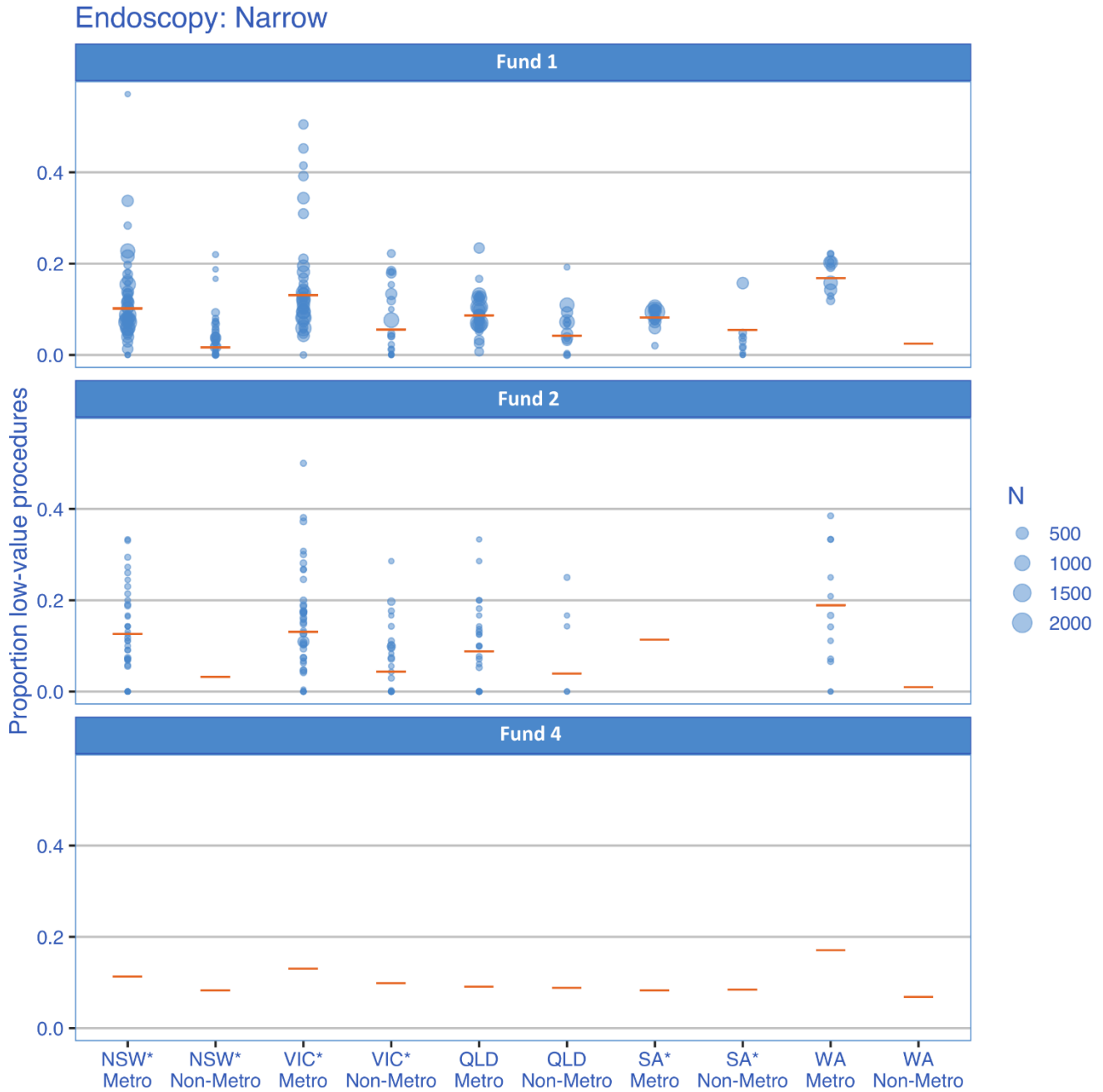

Figure 10. Variation in low-value colonoscopies (narrow definition) between SA3 regions divided between states and metropolitan areas. N = the total number of procedures in the SA3 region. The red lines indicate the overall rate for the fund in the region. Only regional rates (not SA3 region) are available for one fund.

Low-value endoscopy (for members < 55 years old)

Like low-value colonoscopies, the results for two funds show lower rates of low-value procedures in non-metropolitan areas compared to metropolitan areas within the same states. Across all funds, the overall rate of low-value endoscopies in metropolitan Western Australian areas was relatively high.

Figure 11. Variation in low-value endoscopies (narrow definition) between SA3 regions divided between states and metropolitan areas. N = the total number of procedures in the SA3 region. The red lines indicate the overall rate for the fund in the region. Only regional rates (not SA3 region) are available for one fund.

Low-value knee arthroscopy

The rates of low-value knee arthroscopies was lower in non-metropolitan areas compared to metropolitan areas within the same states (particularly for two funds' results).
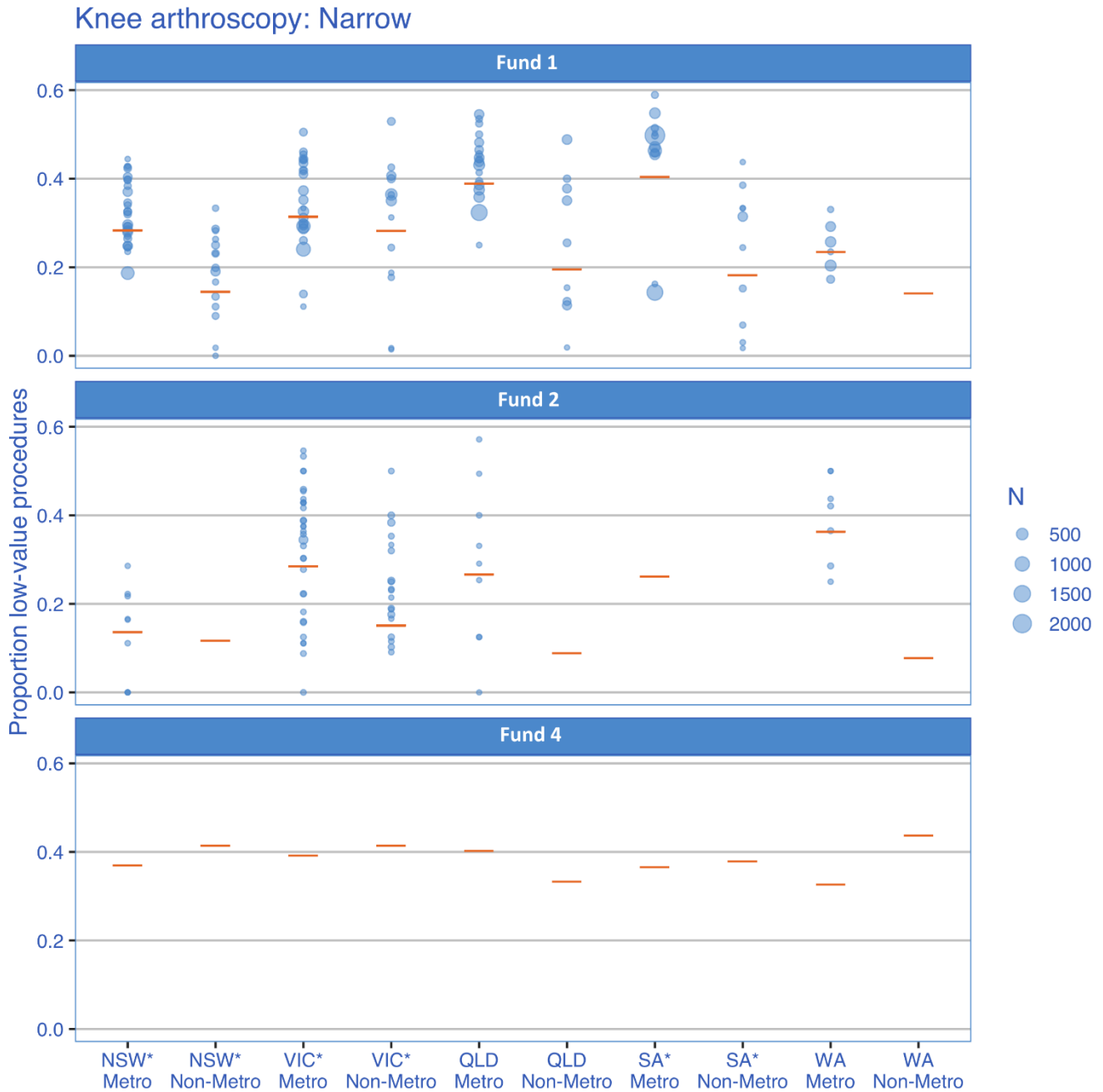

Figure 12. Variation in low-value knee arthroscopies (narrow definition) between SA3 regions divided between states and metropolitan areas. N = the total number of procedures in the SA3 region. The red lines indicate the overall rate for the fund in the region. Only regional rates (not SA3 region) are available for one fund.

Low-value spinal fusion

For admissions with a spinal fusion funded by Fund 1, the majority took place in either NSW/ACT, VIC/TAS or QLD metropolitan areas. Within these regions, the results across SA3 levels varied significantly for both broad and narrow rates of low-value spinal fusion procedures.
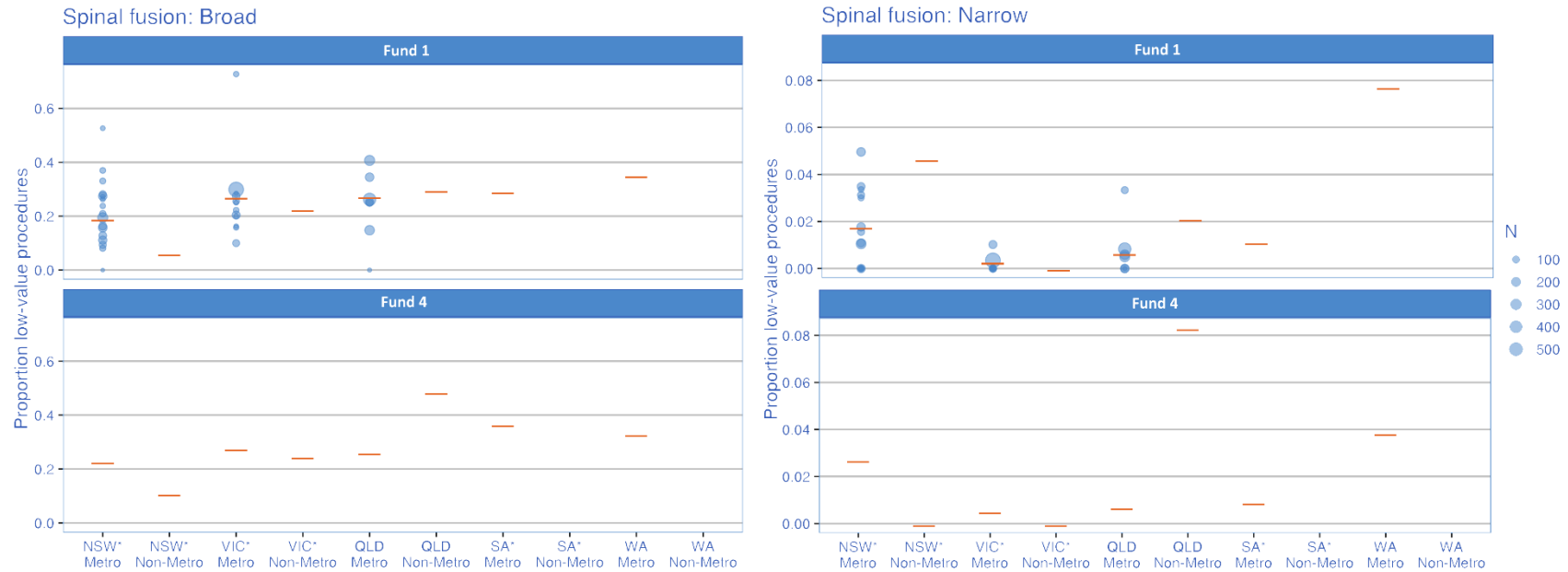

Figure 13. Variation in low-value spinal fusions (left: broad definition, right: narrow definition) between SA3 regions divided between states and metropolitan areas. N = the total number of procedures in the SA3 region. The red lines indicate the overall rate for the fund in the region. Only regional rates (not SA3 region) are available for one fund.

5 DISCUSSION AND LIMITATIONS

In developing these indicators, we consulted extensively with clinicians. One of the first questions we asked was whether the specific recommendations were relevant and appropriate in the Australian context. In all cases, the headline recommendation was accepted; discussion focused on specific inclusion and exclusion criteria. Similarly, where we are aware of Australian guidelines, the main recommendation has agreed with the recommendation from NICE or Choosing Wisely, but there may have been differences in the specific inclusions or exclusions, and we have always incorporated these in defining the indicator. Hence, while the source of some of the recommendations may be international, the implementation in our indicators is tailored to the Australian context (within the limitations of the data).

In most cases, we have created narrower and broader definitions of low-value care. This is intended to account for the unavoidable uncertainty in whether a specific episode is low-value, which may arise from insufficient clinical detail in the data, clinical disagreement about which patients will not benefit, or differences in guidelines from different sources. We fully expect that our broader definitions flag some episodes where the care was actually appropriate. Similarly, our narrow measures likely underestimate the true occurrence of low-value care. It is important to understand that the true estimate should be somewhere between the narrower and broader estimates, and that the indicators are intended to highlight services and hospitals that may require further investigation (for example, through chart review). The word "indicator" is critical here.

Most, if not all, of the services we have examined may benefit some patients. The most robust method of determining if care is low-value is to define Appropriate Use Criteria (AUC) by the RAND (Brook, 1995) or similar method, and conduct a chart review to compare the care with the AUC. Our approach explicitly sets out to (a) establish a method to measure this in routine data thus at a population level and for more than a few services, for ongoing monitoring, and (b) to employ a method developed in the US context (of which Prof Elshaug was a co-lead) to the Australian data setting. To date, much attention is given to the examination of 'appropriate care' via geographic variation analysis. This, however, highlights regions with high or low rates of a service, but provides only an indirect indicator of low-value care. We are attempting advance the science of this.

Our approach seeks to provide direct measures, as in the AUC chart review approach, but on a larger scale and at lower cost in time and resources. This is achieved by using published recommendations from groups such as RACP EVOLVE and Choosing Wisely, and using information in routine hospital data, instead of full chart review. The trade-off is that our indicators cannot be as accurate as AUC chart review, but we hope reporting on a larger number of services at a larger number of facilities, with the potential for regular updating as data become available, will offset the potential lower accuracy. This depends on the limitations of the indicators being understood, and the indicators being used as intended — to highlight services and hospitals that may require further investigation. For interest, one study has compared a similar method's accuracy to full chart

review,[7] wherein they evaluated two measures (indicators) of lumbar spine (LS) MRI overuse (administrative data versus chart review) and they found our method to be highly conservative. Specifically:

> *"…Of the 146 scans reviewed, 23% were considered inappropriate by the administrative measure, whereas 59% were considered inappropriate by chart review…. analysis of administrative data identified scans that were appropriate but underestimated inappropriate ordering. Contrary to expectations, chart review resulted in more scans being classified as inappropriate. The administrative method is economically feasible for identifying the overuse of LS MRI, but it underestimates the true extent of inappropriate ordering."*

We see this finding as a positive. If this finding applies to our work, then we would prefer our method to be conservative than overstate the real extent of low-value care (i.e. report false positives).

We also expect to revise and refine the indicators over time, and expect the broader clinical community to become engaged in this via socialisation and publication of our work. Recommendations may change as new evidence is published or surgical techniques are improved. Data availability is increasing, which may allow more clinical information to be incorporated.

Our work does not measure actual health outcomes from care that is deemed low-value. For us, "low-value" is defined by our translation of recommendations to the data, and so relates to expected benefit according to published evidence. Individual patients may benefit (gain value), either by random chance or the placebo effect (so service is still low-value overall) or because of clinical details that we cannot observe in the data (so service is not actually low-value for that specific subgroup but we cannot distinguish them). The aim of narrower and broader definitions is to try to account for this clinical uncertainty.

Furthermore, a surgical team at a hospital that specialises in a particular procedure may have better outcomes than most teams can achieve, or may have better patient selection on features not visible in the data, so the recommendation/evidence may not apply to that team. This is not relevant for most services, but is worth exploring for some services as part of the socialisation effort, for example by comparing results for carotid endarterectomy conducted at a highly specialised neurovascular centre versus the usual vascular surgery department. Caution must be taken in this approach, however, as low-value care hotspots can masquerade under the auspices of 'clinical champions' (of inappropriate care), which might be difficult to distinguish from centres of excellence.

Finally, payment totals are associated with admissions with a low-value procedure, not an incremental difference between low-value and appropriate care. For some services, (e.g. carotid endarterectomy in asymptomatic high-risk patients) recommended care is medical management, so costs might be interpreted as the costs of providing low-value care. In other cases (e.g. hysterectomy, bariatric surgery), the patient would be in hospital anyway, so the costs due to 'low-value care' component is overestimated.

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[7] Avoundjian, T., Gidwani, R., Yao, D., Lo, J., Sinnott, P., Thakur, N., & Barnett, P. G. (2016). 'Evaluating two measures of lumbar spine MRI overuse: administrative data versus chart review', Journal of the American College of Radiology, 13(9), pp. 1057-1066.

6   PHA: NEXT STEPS

The following quotes and themes are from a 2016 survey of US primary care physicians, on their perspectives of the barriers to reduce low-value care.[8] The main points raised were patients needed to be more aware of low-value care (perhaps through promoting *Choosing Wisely*), and there are more patients who are aware of the harms of unnecessary services.

More and better patient-facing information is needed

"Need specific handouts readily available to give to patients explaining why a certain test is or is not indicated and its risk/benefit. These conversations are too lengthy in the time constraint we have.

A public awareness campaign should be implemented to raise the profile of the importance of reducing low-value care

"Increasing public awareness of the Choosing Wisely program through outreach to media outlets that is consistent and ongoing."

Medical decisions are nuanced and challenging to measure

"We need to make sure we are generating good and accurate data with the hope [that] this info[rmation] [will] lead to healthy and important discussions."

Providers also want cost information

"I think the next step in doing this is to provide providers with actual costs of tests. I realize that the cost to the patient may vary depending on a number of things, but in order to better inform patients and ourselves about low-value care, this is the missing piece."

Patients want low-value care reduced

"I am noting a sea change in patients – they are coming forward more frequently asking if a test is really necessary. Some of this is from a cost perspective… and some from informed consumerism about risks of unnecessary testing."

Choosing Wisely Australia's 2017 survey on health care providers found that 59% of general practitioners were aware of the campaign, and 49% of specialists. Half of the colleges, societies and associations who partnered with *Choosing Wisely* are currently or have developed consumer resources to raise awareness of their 'Top 5' low-value services.[9]

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[8] Buist, Diana SM, et al. (2016) 'Primary care clinicians' perspectives on reducing low-value care in an integrated delivery system', The Permanente Journal, 20(1), p. 41.
[9] NPS MedicineWise, '2017 report: Join the conversation', available online: http://www.choosingwisely.org.au/resources/choosing-wisely-journal-articles-(1)

The approach to reducing low-value care will depend on the particular service. For example, intravitreal injections can be safely done in most outpatient settings, and The Royal Australian and New Zealand College of Ophthalmologists have stated so in their *Choosing Wisely* recommendation. Private health insurers, however, currently have to cover this as an inpatient procedure, so the best approach may be to lobby to have this changed.

Another approach is to provide feedback to medical providers or hospitals on their use of low-value care, especially compared to other providers. This could be done with a letter writing campaign. This might be especially effective for knee arthroscopy. Prior to 2015 the use of this service decreased substantially, so there is evidence that many doctors changed their practice. Providing this data to the doctors who haven't changed their practice over this time might have an effect.

APPENDIX: LOW-VALUE SERVICE DEFINITIONS

In the following table, the service (**S**) and the patient-indication (**P-I**) is given for each low-value service. The broad (*B*) and narrow (*N*) definitions are given.

Low-value knee arthroscopy	
Schwartz et al (2014): "Arthroscopic debridement/chondroplasty of the knee with diagnosis of osteoarthritis or chondromalacia in the procedure claim; No meniscal tear noted in procedure claim" (NICE) NICE: "Avoid recommending knee arthroscopy as initial/management for patients with degenerative meniscal tears and no mechanical symptoms" Choosing Wisely Australia, Australian Rheumatology Association: "Do not perform arthroscopy with lavage and/or debridement for patients with symptomatic osteoarthritis of the knee and/or degenerate meniscal tear." Choosing Wisely US, American Medical Society for Sports Medicine (April 2014): "Avoid recommending knee arthroscopy as initial/management for patients with degenerative meniscal tears and no mechanical symptoms"	
S	Knee arthroscopy (debridement, lavage and chondroplasty)
P-I	*B:* Osteoarthritis or meniscal derangements; no ligament repair procedure or pyogenic arthritis. *N:* Also exclude mechanical symptoms; age ≥ 55 years
Low-value endoscopy	
Choosing Wisely CA, Canadian Association of Gastroenterology: "Avoid performing an endoscopy for dyspepsia without alarm symptoms for patients under the age of 55 years"	
S	Endoscopy (age < 55 years)
P-I	*B:* Dyspepsia; no dysphagia, anaemia, abnormal weight loss, personal or family history of cancer of digestive system, or personal history of peptic ulcer disease recorded. *N:* Also, exclude dysphagia, anaemia, abnormal weight loss, personal or family history of cancer of digestive system, or personal history of peptic ulcer disease recorded in the previous 12 months.
Low-value intravitreal injection	
Choosing Wisely Australia, The Royal Australian and New Zealand College of Ophthalmologists: "Intravitreal injections may be safely performed on an outpatient basis. Don't perform routine intravitreal injections in a hospital or day surgery setting unless there is a valid clinical indication"	
S	Inpatient intravitreal injections
P-I	No intraocular or eye surgery in admission or anaesthetic services
Low-value abdominal hysterectomy	
From Elshaug (2014) list: conclusion from Cochrane review on the surgical approach to hysterectomy for benign gynaecological disease: "Because of equal or significantly better outcomes on all parameters, [vaginal hysterectomy] should be performed in preference to [abdominal hysterectomy (AH)] where possible. Where [vaginal hysterectomy] is not possible, [laparoscopic hysterectomy] may avoid the need for AH however the length of the surgery increases as the extent of the surgery performed laparoscopically increases. The surgical approach to hysterectomy should be decided by the woman in discussion with her surgeon in light of the relative benefits and hazards."	
S	Abdominal, vaginal or laparoscopic hysterectomy

P-I	Abdominal hysterectomy, plus:
	   B: No Caesarean; no cancer diagnosis in previous 12 months
	   N: As above; no pelvic peritoneal adhesion or endometriosis

Low-value colonoscopy	
Choosing Wisely CA, Canadian Association of Gastroenterology: "Avoid performing a colonoscopy for constipation in those under the age of 50 years without family history of colon cancer or alarm features"	
S	Colonoscopy (age < 50 years)
P-I	*B:* Constipation; no anaemia, weight loss, family or personal history of cancer of digestive system, or personal history of other diseases of the digestive system. *N:* Also, exclude anaemia, weight loss, family or personal history of cancer of digestive system, or personal history of other diseases of the digestive system in previous 12 months.
Low-value spinal fusion	
Choosing Wisely CA, Canadian Spine Society: "Don't perform fusion surgery to treat patients with mechanical axial low back pain from multilevel spine degeneration in the absence of: leg pain with or without neurologic symptoms and/or signs of concordant neurologic compression; structural pathology such as spondylolisthesis or deformity." Choosing Wisely Australia, Faculty of Pain Medicine, ANZCA: "Do not refer axial lower lumbar back pain for spinal fusion."	
S	Spinal fusion surgery
P-I	*B:* Low back pain or spinal stenosis; no leg pain sciatica, spondylolisthesis, or spinal deformities in previous 12 months. *N:* Same, but low back pain only; no leg pain in previous 12 months
Low-value percutaneous coronary interventions (PCI)	
From Schwartz et al (2014): "Coronary stent placement or balloon angioplasty for patients with an established diagnosis of ischemic heart disease or angina (at least 6 months prior to the procedure) Procedure not associated with an ER visit, which might be indicative of acute coronary syndrome" "Only patients with a past diagnosis of myocardial infarction in order to exclude patients with a history of non-cardiac chest pain inaccurately coded as angina"	
S	Coronary stent or balloon angioplasty
P-I	*B:* Stable coronary disease: coronary disease code (excluding unstable angina) 6 to 18 months prior PCI, and none 6 months prior. *N:* Not emergency; exclude all angina codes from indicator
Low-value adenoidectomy during tube insertion	
From NICE: "Once a decision has been taken to offer surgical intervention for otitis media with effusion (OME) in children, insertion of ventilation tubes is recommended. Adjuvant adenoidectomy is not recommended in the absence of persistent and/or frequent upper respiratory tract symptoms.'' Published February, 2008 (reviewed February 2014)	
S	Adenoidectomy with tube insertion procedure; no tonsillectomy
P-I	Tube insertion procedure; otitis media with effusion; age < 12 years; no tonsillectomy; no upper respiratory tract symptoms in previous 12 months
Low-value epidural steroid injections	
Choosing Wisely Australia, Australian and New Zealand Association of Neurologists: "Don't perform epidural steroid injections to treat patients with low back pain who do not have radicular symptoms in the legs originating from the nerve roots"	
S	Epidural steroid injections
P-I	Low back pain; no sciatica, leg pain or radiculopathy in previous 12 months
Low-value inferior vena cava (IVC) filter	
Choosing Wisely US, American Society of Hematology: "Don't use inferior vena cava (IVC) filters routinely in patients with acute VTE." Choosing Wisely US, Society for Vascular Surgery: "Don't use IVC filters as primary prevention of pulmonary emboli in the absence of an extremity clot or prior pulmonary embolus."	
S	IVC filter insertion
P-I	*B:* Any insertion of inferior vena cava filter, with no diagnosis of adverse effects of anticoagulant or

	antithrombotic drugs in the separation. *N:* no history of or current pulmonary embolism diagnosis or deep vein thrombosis in previous 12 months, no current acute venous thromboembolism, and no diagnosis of adverse effects of anticoagulant or antithrombotic drugs in the separation.

Low-value carotid endarterectomy

Choosing Wisely CA, Canadian Society of Vascular Surgery: "Don't perform carotid endarterectomies or stenting in most asymptomatic high risk patients with limited life expectancy"

S	Carotid endarterectomy
P-I	*B:* no stroke or focal neurological symptoms recorded in the separation, and ASA code 4–5 or age ≥75 or record of palliative care code in the previous 12 months. *N:* no stroke or focal neurological symptoms recorded in the separation, and ASA code 4–5 or (age ≥75 and ASA 3) or palliative care code. Exclude emergency admissions.

Low-value laparoscopic uterine nerve ablation (LUNA)

From NICE: "The evidence on laparoscopic uterine nerve ablation (LUNA) for chronic pelvic pain suggests that it is not efficacious and therefore should not be used."

S	LUNA
P-I	*B:* All patients. *N:* pelvic pain or other chronic or intractable pain.

Low-value endovascular repair of abdominal aortic aneurysm

Choosing Wisely CA, Canadian Society of Vascular Surgery: "Don't perform endovascular repair of abdominal aortic aneurysms in most asymptomatic high-risk patients with limited life expectancy"

S	Abdominal aortic aneurysm repair
P-I	*B:* ASA score 4–5 or age ≥75 or palliative care code; no ruptured aneurysm. *N:* Same, but if age ≥ 75 then ASA ≥ 3 and exclude emergency admissions.

Low-value renal artery angioplasty or stent placement

From Schwartz et al (2014): "Renal/visceral angioplasty or stent placement; Diagnosis of renal atherosclerosis or renovascular hypertension noted in procedure claim"

From QLD Health (2016): "Recent meta-analyses including around 1,000 patients in each arm showed no benefit of angioplasty with stenting over medical therapy alone. Despite a lack of trial evidence, there is still considerable support for the use of renal artery stenting in selected patient groups; namely those with flash pulmonary oedema, severe refractory hypertension or progressive decline in renal function."

S	Renal (diagnosis of renovascular hypertension, atherosclerosis of renal artery, hypertensive heart (and kidney) disease) stenting or angioplasty
P-I	*B:* No fibromuscular dysplasia or pulmonary oedema in previous 12 months. *N:* Only renovascular hypertension or atherosclerosis of renal artery

Low-value retinal laser or cryotherapy

Choosing Wisely Australia, Royal Australian and New Zealand College of Ophthalmologists: "In general there is no indication to perform prophylactic retinal laser or cryotherapy to asymptomatic conditions such as lattice degeneration (with or without atrophic holes), for which there is no proven benefit"

S	Retinal laser or cryotherapy
P-I	*B:* lattice degeneration diagnosis, with no procedure code indicating repair of retinal detachment, or history of diagnosis of retinal detachment in the separation. *N:* Also exclude history of diagnosis of retinal detachment in previous 12 months.

Low-value nasolacrimal duct procedure

Choosing Wisely UK:

"If a child is under 12 months old and has a blocked nasolacrimal duct, do not try to unblock"

S	Nasolacrimal duct procedure (age < 1 year)
P-I	Blocked nasolacrimal passage or duct

Low-value hyperbaric oxygen therapy

From Duckett et al (2015), NICE:

"Hyperbaric oxygen therapy for a range of conditions including osteomyelitis, cancer, non-diabetic wounds and ulcers, skin graft survival, Crohn's disease, tinnitus, Bell's palsy, soft tissue radionecrosis, cerebrovascular disease, peripheral obstructive arterial disease, sudden deafness and acoustic trauma, and carbon monoxide poisoning"

S	Hyperbaric oxygen therapy
P-I	*B:* foot ulcers, decubitus ulcers, carbon monoxide or carbon dioxide poisoning, Crohn's disease, cancer, open wounds, soft tissue injuries, or sudden deafness, and no excluding diagnoses in the admission. *N:* foot ulcers or decubitus ulcers, and no excluding diagnoses in the separation.

Low-value gallbladder removal during bariatric surgery [2]

Choosing Wisely (US), American Society for Metabolic and Bariatric Surgery: "Don't routinely remove the gallbladder unless clinically indicated."

S	Cholecystectomy with bariatric procedure (exc. biliopancreatic diversion)
P-I	Bariatric procedure; no gallbladder disease in previous 12 months

Low-value primary bariatric procedures (open instead of laparoscopic)

Choosing Wisely (US), American Society for Metabolic and Bariatric Surgery: "Avoid an open approach for primary bariatric surgical procedures."

S	Open bariatric procedure (if service could be done laparoscopically)
P-I	Primary bariatric procedure (no bariatric procedure in previous 12 months; not reversal or revision procedure)

Low-value vertebroplasty

From Schwartz et al (2014)

"Vertebroplasty/kyphoplasty for vertebral fracture; No myeloma in procedure claim"

S	Vertebroplasty
P-I	*B:* All patients. *N:* osteoporotic vertebral fracture in the separation, and no evidence record of bone cancer, myeloma or hemangioma in the previous 12 months.

Low-value electroconvulsive therapy

From NICE:

Electroconvulsive Therapy (ECT) is not recommended in the treatment of depression in children (5-11 years).

S	Electroconvulsive therapy (age < 12 years)
P-I	Depression

Private Healthcare Australia
Better Cover. Better Access. Better Care.

**42 high volume billing codes
inform P/L value for Australians**

In February 2017 the Department of Health <u>reduced prices</u> on cardiac devices by <u>10%, hips 7.5% and knees 7.5%</u>.

The <u>MTAA agreement signed in October 2017</u> with government claimed to promote the sustainability of privately insured healthcare. This saw <u>cardiac devices dropped a further 20%, Hips 5% and Knees 3.3%</u>. This *agreement was underpinned by improved value of private health insurance for consumers through benefits that enable access to safe, <u>effective and **cost-effective**</u> medical devices supplied within a **<u>competitive market</u>**.*

So with a <u>30% reduction in cardiac over the last 2 years and 12.5% in hips and 10.8% in knees</u> we should expect these claims to hold true......

The attached is a review of just <u>42</u> of the highest utilization billing codes (>14% of P/L $ value) in these three categories on the August 2018 Prostheses List (post <u>both</u> price reforms) against <u>their direct equivalent codes/prices in the UK (NHS), France (list of products and services refundable) and NZ (Pharmac)</u>, comparable first world health markets, the later routinely <u>run by the same management team as Australia</u>. There are 10,784 billing codes are on the current P/L.

Utilisation Review: Hips (cementless)

J&J: Corail ceramic liner/head		P/L utilisation 2016/17: 3,070		Largest volume non cemented hip stem	
🇺🇸	UK	NZ		Fr	P/L
Construct Oct 18	$7,782.09	$7,010.71		$3,261.84	$10,699.00
P/L Cost @ utilisation	$23,891,019.98	$21,522,888.30		$10,013,848.80	$32,845,930.00

Medacta:Quadra ceramic liner/head		P/L utilisation 2016/17: 1,722		2nd largest non cemented hip stem	
🇨🇭	UK	NZ*		Fr	P/L
Construct Oct 18	$4,965.29	N/A		$3,261.84	$10,477.00
P/L Cost @ utilisation	$8,550,226.97	N/A		$5,616,888.48	$18,041,394.00

S&N: Polarstem Ox head/liner		P/L utilisation 2016/17: 1,345		3rd largest non cemented hip stem	
🇬🇧	UK	NZ		Fr	P/L
Construct Oct 18	$5,449.71	$5,800.60		$2920.07	$10,335.00
P/L Cost @ utilisation	$7,329,856.18	$7,801,807.00		$3,927,494.15	$13,927,475.00

3

Exchange Rate used @ 13/10/18 £1: A$1.86   NZ$1:A$92c   €1:A$1.58

* Medacta not recorded on Pharmac.

Utilisation Review: Hips (Hips cemented)

Stryker: Exeter XLPE liner/head		P/L utilisation 2016/17: 4,107		Largest volume cemented hip stem	
🇺🇸	UK	NZ	Fr	P/L	
Construct Oct 18	$4,596.99	$4,529.62	$2,728.71	$6,467.00	
P/L Cost @ utilisation	$18,879,837.93	$18,603,149.34	$11,206.812.00	$26,559,969.00	

Zimmer: CPT XLPE liner/head		P/L utilisation 2016/17: 657		2nd largest cemented hip stem	
🇺🇸	UK	NZ	Fr	P/L	
Construct Oct 18	$6,945.48	$3,827,20	$2,684.56	$6,640.00	
P/L Cost @ utilisation utilisation	$4,563,181.54	$2,514,470.40	$1,763,755.92	$4,362,480.00	

S&N: CPCS XLPE liner/head		P/L utilisation 2016/17: 525		3rd largest cemented hip stem	
🇬🇧	UK	NZ	Fr	P/L	
Construct Oct 18	$3,729.30	$3,405.84	$2,728.71	$6,662.00	
P/L Cost @ utilisation	$1,957,882.61	$1,788,066.00	$1,432,572.75	$3,497,500.00	

Exchange Rate used @ 13/10/18 £1: A$1.86   NZ$1:A$92c   €1:A$1.58

Utilisation Review: Hips Summary

UK comparator largest 6 hip systems on P/L Utilisation

UK Sales in AUD $65,172,005.21	P/L Sales in AUD $99,234,798.00
Dollar Difference	$34,062,792.79
% Difference over UK	52.27%

French comparator largest 6 hip systems on P/L Utilisation

French Sales in AUD $33,961,372.10	P/L Sales in AUD $99,234,798.00
Dollar Difference	$65,273,425.90
% Difference over France	192.20%

NZ comparator largest 5* hip systems on P/L Utilisation

NZ Sales in AUD $52,230,381.04	P/L Sales in AUD $81,193,404.00
Dollar Difference	$28,963,022.96
% Difference over NZ	55.45%

* Medacta either do not operate in NZ or do not submit prices to Pharmac

Utilisation Review: Knees (Cemented/Hybrid)

Stryker: Triathlon CR		P/L utilisation 2016/17: 2,873		Largest volume hybrid knee system	
🇺🇸	UK	NZ	Fr		P/L
Construct Price 10/18	$5,632.69	$5,472.93	$4,271.97		$7,324.00
P/L Cost @ utilisation	$16,182,729.29	$15,723,735.93	$12,273,376.70		$21,041,852.00

Zimmer: Nexgen CR flex		P/L utilisation 2016/17: 1,683		2nd largest volume cemented knee system	
🇺🇸	UK	NZ	Fr		P/L
Construct Price 10/18	$7,864.92	$4,830.00	$3,957.32		$8,264.00
P/L Cost @ utilisation	$13,236,655.31	$8,128,890.00	$6,660,161.82		$13,908,312.00

J&J: Attune CR		P/L utilisation 2016/17: 1,543		3rd largest volume cemented knee system	
🇺🇸	UK	NZ	Fr		P/L
Construct Price 10/18	$7,429.12	$5,248.37	$3,957.32		$6,429.00
P/L Cost @ utilisation	$11,560,336.84	$8,098,234.91	$6,106,144.76		$9,919,947.00

S&N: Genesis II PS Oxinium		P/L utilisation 2016/17: 1,167		4th largest cemented, 2nd largest family	
🇬🇧	UK	NZ	Fr		P/L
Construct Price 10/18	$5,047,58	$5,755.15	$3,957.32		$7,741.00
P/L Cost @ utilisation	$5,890,520.03	$6,716,262.38	$4,618,192.44		$9,033,747.00

Exchange Rate used @ 13/10/18 £1: A$1.86   NZ$1:A$92c   €1:A$1.58

Utilisation Review: Knees Summary

UK comparator largest 4 knee systems (CR or PS) on P/L Utilisation

UK Sales in AUD $46,870,241.46	P/L Sales in AUD $53,903,858.00
Dollar Difference	$7,033,616.54
% Difference over UK	15.01%

French comparator largest 4 knee systems (CR or PS) on P/L Utilisation

French Sales in AUD $29,657,875.70	P/L Sales in AUD $53,903,858.00
Dollar Difference	$24,245,982.30
% Difference over Fr	81.7%

NZ comparator largest 4 knee systems (CR or PS) on P/L Utilisation

NZ Sales in AUD $38,667,123.23	P/L Sales in AUD $53,903,858.00
Dollar Difference	$15,236,734.77
% Difference over NZ	39.40%

Utilisation Review: Drug Eluting Stents (Cardiac)

Medtronic Resolute	P/L utilisation 2016/17: 7,709		Largest volume stents- approx. 4 per procedure	
🇺🇸	UK	NZ	Fr	P/L
Each Price Oct 18	$809.96	$874.00	$1,327.20	$2,484.00
P/L Cost @ utilisation	$6,243,947.72	$6,737,666.00	$10,231,384.80	$19,149,156.00

Abbott Xcience	P/L utilisation 2016/17: 7,653		2nd largest volume stent – app 4 per procedure	
🇺🇸	UK	NZ	Fr	P/L
Each Price Oct 18	$793.85	$938.40	$1,358.80	$2,484.00
P/L Cost @ utilisation	$6,075,318.74	$7,181,575.20	$10,398,896.40	$19,010,052.00

Boston Synergy	P/L utilisation 2016/17: 6,380		3rd largest volume stent – app 4 per procedure	
🇺🇸	UK	NZ	Fr	P/L
Each Price Oct 18	$1,311.60	$1,472.00	$1,327.20	$2,484.00
P/L Cost @ utilisation	$8,367,992.69	$9,391,360.00	$8,467,536.00	$15,847,920.00

Biotronik Orsiro	P/L utilisation 2016/17: 2,079		4th largest volume stent – app 4 per procedure	
🇩🇪	UK	NZ	Fr	P/L
Each Price Oct 18	$632.77	$966.00	$1,327.20	$2,484.00
P/L Cost @ utilisation	$1,315,532.99	$2,008,314.00	$2,759,248.80	$5,164,236.00

Exchange Rate used @ 13/10/18 £1: A$1.86   NZ$1:A$92c   €1:A$1.58

Utilisation Review: Stent Summary

UK comparator largest 4 stent systems (Cardiac) on P/L Utilisation

UK Sales in AUD $22,002,792.14	P/L Sales in AUD $59,171,364.00
Dollar Difference	$37,168,571.86
% Difference over UK	168.93%

French comparator largest 4 stent systems (Cardiac) on P/L Utilisation

French Sales in AUD $31,857,066.00	P/L Sales in AUD $59,171,364.00
Dollar Difference	$27,314,298.00
% Difference over Fr	85.74%

NZ comparator largest 4 stent systems (Cardiac) on P/L Utilisation

NZ Sales in AUD $25,318,915.20	P/L Sales in AUD $59,171,364.00
Dollar Difference	$33,852,448.80
% Difference over NZ	133.70%

So what are the <u>indisputable facts</u> from just <u>42</u> P/L billing codes comparing list prices in markets

UK sales in AUD$ at 2016/7 utilisation	P/L sales in AUD$ at 2016/7 utilisation
$134,045,038.81	$212,310,020.00
% of 2016/17 total P/L value	14.08%**

Dollar Difference = $78,264,981.19, % Inc the P/L is inflated over the UK prices = 58.39%

French sales in AUD$ at 2016/7 utilisation	P/L sales in AUD$ at 2016/7 utilisation
$95,476,313.80	$212,310,020.00
% of 2016/17 total P/L value	14.08%**

Dollar Difference = $116,833,706.00, % Inc the P/L is inflated over the Fr prices = 122.37%

NZ sales* in AUD$ at 2016/7 utilisation	P/L* sales in AUD$ at 2016/7 utilisation
$116,216,419.47	$194,268,626.00
% of 2016/17 total P/L value	12.89%**

Dollar Difference = $78,052,206.53, % Inc the P/L is inflated over the NZ prices = 67.16%

*Medacta either do not operate in NZ <u>or</u> do not submit prices to Pharmac. Comparison on 38 billing codes
**Contribution as % of the total sales value for the 2016/17 P/L @ $1,507,579,753.00 on 10,784 billing codes