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March 2014

Controlling costly care: a billion-dollar hospital opportunity

Stephen Duckett and Peter Breadon

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The opinions in this report are those of the authors and do not necessarily represent the views of Grattan Institute's founding members, affiliates, individual board members or reference group members. Any remaining errors or omissions are the responsibility of the authors.

Grattan Institute is an independent think-tank focused on Australian public policy. Our work is independent, practical and rigorous. We aim to improve policy outcomes by engaging with both decision-makers and the community. Dr Duckett is a consultant to the Independent Hospital Pricing Authority and is a member of a number of its committees and working parties.

For further information on the Institute's programs, or to join our mailing list, please go to: <u>http://www.grattan.edu.au/</u>

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Overview

Public hospital spending is the fastest-growing area of government expenditure, but its growth can be slowed. Every year public hospitals spend one billion dollars with little or no benefit. The money is not used to provide better care. It is simply being spent inefficiently and could be better spent.

The problem is the huge variation in costs among hospitals. In NSW hospitals, the average cost of a gall bladder removal ranges from \$3500 to \$8000. In WA it ranges from \$4200 to \$8000. Even after accounting for differences between hospitals and patients, a vast gulf between high and low-cost hospitals remains.

To give the same kind of care to the same kind of patient, some hospitals cost two or three times more than others in the same state. In many states, the gap between the most and least expensive hospital is more than \$1500 for each admission. Avoidable costs can be due to anything from over-priced supplies to keeping people in hospital too long. These costs will remain until states do more to tackle them.

Two big changes make this possible. First, hospital funding is improving. Soon all states will use activity-based funding, which pays hospitals based on an established price for each treatment. It replaces other forms of funding that rewarded inefficiency.

Second, data about costs has improved a lot. The data can now reveal how much cost is legitimate and how much is avoidable. Activity-based funding is a good pricing system, but cost data can help us improve it. Higher quality data makes it clearer than ever where costs are too high. Today, the price paid for care is based on the average cost of treatment. Therefore, it includes costs that can and should be avoided. The price can create a strong incentive to be more efficient, but not while it rewards inefficiency. Using cost data, states should adopt a new efficient price for hospital care: one set at the average cost, but only after avoidable costs are removed.

Setting the right price is crucial, but it won't work on its own. Hospitals need to know a lot more about where they stand. They need detailed information about where their avoidable costs are and how they compare to their peers.

None of this tells individual hospitals exactly what to do. The causes of high costs vary and so will the solutions. States need to put the right incentives in place and let hospital leaders, managers and clinicians find the best ways to improve.

The way that hospitals are funded and managed must work with the new efficient price. Grants and bailouts shouldn't prop up inefficient hospitals. Hospital leaders should be held to account if they do not manage costs well.

The current system rewards average performance even though it includes wasteful spending. Linking funding to efficiency, and giving hospitals the tools and motivation to improve, can free up a billion dollars each year. This money can be spent where it will make a difference: providing more and better hospital care for patients who need it.

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1. Introduction

Health spending is growing fast

Australia spends more than \$140 billion a year on health care, almost one dollar in every 10 that the nation spends. And health spending is growing fast. It grew by nearly 70 per cent in the last decade, increasing its share of gross domestic product by one per cent.¹ Unless something is done, health spending is predicted to rise by another three per cent of GDP over the next 20 years.²

Governments pay for 70 per cent of health spending.³ If spending grows too quickly, we will eventually run out of good ways to fund it. There will have to be big cuts to other public services, high fees for patients, steep tax increases, or growth in government debt will become unsustainable.

Before being forced into such drastic steps, we should eliminate wasteful spending. While most health spending makes a positive difference, this report shows that a significant amount is not linked to health needs. It would be unethical to cut other spending, or raise taxes or fees, before targeting expenditure that does little or nothing to help people. Hospital expenditure is a good place to start. It is the biggest part of health spending, and has grown rapidly.⁴ Over the last decade, hospitals were the biggest source of growth in all government spending, with spending rising by \$8 billion (Figure 1).

Figure 1: Large changes in Commonwealth and state government expenditures, relative to GDP growth, 2002-03 to 2012-13 \$ billion



Notes: Based on government expenditure by the Commonwealth, NSW, Queensland and Victoria, representing 91% of all expenditure by Australian governments. Includes government expenditure on private hospitals. Source: Daley et al. (2013)

¹ Figures are for 2011-12. Health spending makes up 9.5% of spending on all goods and services, Australian Institute of Health and Welfare (2013). ² Goss (2008)

³ Australian Institute of Health and Welfare (2013)

⁴ Australian Institute of Health and Welfare (2012a)

Growth in government spending on hospitals dwarfs growth in other health spending (Figure 2). Because hospital expenditure is so big, and growing so fast, making it more efficient should be a high priority.

Figure 2: Change in Australian governments' health expenditure by sub category, 2002-03 to 2012-13 \$ billion (2013)



Note: includes government expenditure on private hospitals Source: Duckett and McGannon (2013) The good news is that money can be saved without cutting the volume or quality of hospital services. Instead, governments can target public hospital spending that creates little or no benefit.⁵ In this report, we call this spending 'avoidable cost'. How we calculate these costs is discussed in detail in the next chapter.

We estimate there is almost \$1 billion of avoidable cost in public hospitals each year.⁶ This excludes small public hospitals that are funded by grants.⁷ Because adequate data are not available, we are unable to estimate avoidable cost in private hospitals.

What should we do about it?

Broadly, avoidable hospital spending must be tackled on two levels. The first is the way the hospital system works: the incentives that state and Commonwealth funding and management create for hospital networks (defined in Box 1) and individual hospitals.⁸ The second is within individual networks and hospitals: changes to operations and decision-making to increase efficiency.

While responses at both levels are crucial, this report focuses on how the whole system should be managed. We don't outline the

⁵ As the Productivity Commission notes, "Improving the productivity of health services is a fiscally and economically superior way of meeting health needs while containing costs than simply adjusting the quantity or quality of services provided". See Productivity Commission (2013).

⁶ As discussed below, this does not include avoidable costs from giving the wrong treatment, not giving the right treatment or who provides treatments. These topics are addressed in previous and upcoming Grattan reports.

⁷ This report does not discuss small public hospitals that are funded through block funding.

⁸ In this report, 'state' is used to mean state or territory.

exact operational and clinical decisions that will make hospital networks succeed. This is because the evidence on which specific measures work in a given situation is weak, and because different hospital networks have different problems that require different solutions. Hospital networks should have the incentive and the freedom to develop innovative responses to their own challenges.

State governments should do three things to create the right environment for hospital networks to manage their costs better. The first is setting the right price for hospital care. The second is providing the right information. The third is managing the system in a way that doesn't weaken price signals, and encourages underperforming networks to improve.

The next chapter examines the extent of avoidable cost in public hospitals, where it is spent, and what might be driving it. The following chapters discuss pricing, information and governance.

Box 1: Local hospital networks

A local hospital network is a group of one or more hospitals that is governed by a board.⁹ Every public hospital is part of a hospital network. Hospital networks were established to decentralise public hospital management away from government and to increase local accountability and responsiveness.

Hospital networks are responsible for monitoring the quality of care and managing the finances of hospitals in their network, among other things. They set hospital budgets and establish reporting requirements.

Hospital networks were established in every state by mid-2012. Some are small and comprise only a single health service. Others are much larger. The network with the most organisations, in Western Australia, includes 93 hospitals and service providers.

Most hospital networks are funded with a mix of activity-based and block funding.¹⁰ However, some hospital networks are solely block funded. For example, one hospital network in Queensland contains 12 rural hospitals and service providers that are entirely block funded.

⁹ There are a total of 136 hospital networks. Of these, 123 are geographicallybased networks and 13 are networks across a state or territory that provide specialised services. This report focuses on geographic networks that receive activity-based funding. For further information refer to the Glossary. ¹⁰ See the Glossary for definitions. As discussed below in Chapter 5, activitybased funding is linked to the type and amount of hospital services provided, while block payments are more like grants.

2. Avoidable costs

Excessively high costs can be due to a number of things that go well beyond the common example of too much paperwork. Hospitals might pay too much for supplies or staff. They might use unnecessary resources on patients, keeping them in hospital longer than is needed.

To illustrate the wide variety of avoidable costs, we conducted a waste audit of two hospitals.¹¹ The audit looked at a surgical and a medical ward in each hospital, surveying 65 beds in 'Hospital A' and 64 in 'Hospital B'. The audit only provides a snapshot, but it did find several types of waste in each hospital, with more in one than the other (see Figure 3).

Many of the problems we saw, particularly unnecessary delays, would have increased cost for no good reason. In one hospital, for example, a patient had been waiting three days for a cystoscopy (a procedure that examines the inside of the bladder). The patient's usual specialist was away. The specialist on call wanted the patient to wait until the patient's regular specialist returned. In the other hospital, a patient was admitted for surgery but given the wrong preparation. Their surgery had to be rescheduled. Figure 3: Proportion of beds with identified waste, two wards in two hospitals, 2013



Note: only one kind of waste was identified for each bed audited. Source: Grattan Institute

¹¹ Using the Inpatient Hospital Waste Identification Tool developed by The Institute for Healthcare Improvement (based in the US). Resar, *et al.* (2011). A medically-trained Grattan researcher accompanied nurses in using the tool.

This report measures the combined impact of many different factors such as these. Using a detailed dataset that has never been available outside government, we look at how much care costs in different public hospitals, with adjustments to make the comparison as fair as possible.¹²

How we measure avoidable costs

The diagram opposite introduces the terms this report uses to talk about hospital costs. Each is explained in turn below.

Our starting point is to ask how much a hospital spends, on average, compared to other hospitals. Some variation in cost is inevitable: some hospitals spend more than others for reasons that are beyond their control. In other words, these cost variations are legitimate.¹³

The biggest source of cost variation comes from hospitals treating patients with different health care needs. Public hospitals usually can't choose who they treat, so this report only compare the cost of treating patients with the same health problems. Then we adjust those costs for factors that make some patients more

¹² A detailed Technical Supplement explaining our analysis is available as a separate document at the Grattan Institute website. We use the National Hospital Cost Data Collection (NHCDC) provided by the Independent Hospital Pricing Authority. More detail on data sources and our methodology is available in the Technical Supplement.

expensive to treat such as age, disadvantage, health risks and living in a rural area (a full list is shown in Figure 5).¹⁴

Figure 4: Legitimate, unexplained and avoidable costs



¹⁴ See the Technical Supplement for discussion of what is counted as legitimate.

¹³ In terminology from the National Health Reform Agreement, Council of Australian Governments (2011), and used by the Independent Hospital Pricing Authority, they are 'legitimate and unavoidable'.

After that, we remove costs caused by highly specialised and expensive treatments, such as treating malignant cancers of the bone. Next, we exclude a small number of admissions¹⁵ that are much more costly than the average (outliers) because there is no reliable way of knowing what the care for these patients should have cost.¹⁶

Finally, we only compare hospitals in the same state. As discussed below, hospitals in different states have different costs per visit. But much of the difference is caused by factors that individual hospitals, or hospital networks, can't fully control.

The dataset we use is for acute care¹⁷ in public hospitals, most of which is covered by activity-based funding (other types of funding include special grants or block funding, which are discussed later in this report). Our analysis deals with care that uses 73 per cent of public hospital funding.¹⁸

We consider more costs as legitimate than does the Independent Hospital Pricing Authority, the body that sets the price for Commonwealth activity-based funding.¹⁹ The analysis is therefore more generous to hospitals. We acknowledge, for example, that hospitals can't control costs linked to high rates of disadvantage or alcohol use.

However, the Authority considers two costs that we do not include as legitimate. The first is length of stay (which is partly captured by our exclusion of high-cost outliers). We believe hospitals can influence the length of a patient's stay (as the waste audit discussed above illustrates). The second is intensive care unit hours. Because data is not complete in all states, we use hours of mechanical ventilation as a substitute.

Once all of these patient and hospital characteristics are taken into account, the cost of hospital care still varies widely. We call this 'unexplained variation'. These cost differences between hospitals aren't caused by the type of patient or hospital, or the policies of the state.²⁰ The differences can't be explained by any of the clearly legitimate causes we can measure. Therefore they should be able to be reduced.

¹⁵ The technical term for a single episode of patient care in a hospital (from admission to exit) is "separation" but we use "admission".

¹⁶ We check that our analysis is robust to two very different definitions of 'outlier'. The first follows the Independent Hospital Pricing Authority's guidelines. The second is more generous, counting more admissions as outliers (i.e. admissions more than three standard deviations away from the mean). See Gaughan, *et al.* (2012). See the Technical Supplement for more information.

¹⁷ See the Glossary for definitions.

¹⁸ We scale up our findings (by the remaining 27%) to produce findings for all acute care funded through activity-based funding. This is based on the proportion of funding that is activity-based in 2012-13. We make the generous assumption that there are no avoidable costs in other kinds of funding (e.g. block funding, which is discussed later in this report). See Table 3b in Administrator National Health Funding Pool (2013).

¹⁹ We take this conservative approach, recognising more legitimate and unavoidable costs, to ensure that our estimates of savings are not over-inflated. In practice, a more parsimonious list of adjustments is supported in the interest of simplicity and transparency.

²⁰ There are also significant differences between patients *within* hospitals, partly due to differences in the illnesses of individual patients and how they react to treatment.

Figure 5: Adjustments for legitimate costs

| | IHPA | Grattan |
|--|--------------|--------------|
| Patient factors | | |
| Diagnosis related group (health problem) | \checkmark | \checkmark |
| Indigenous status | \checkmark | \checkmark |
| Sex | \checkmark | \checkmark |
| Remoteness of residence | \checkmark | \checkmark |
| Paediatric adjustment (for specialised care) | \checkmark | \checkmark |
| Intensive care unit use | \checkmark | |
| Length of stay | \checkmark | |
| Hours of mechanical ventilation | | \checkmark |
| Age | | \checkmark |
| Admission mode* | | \checkmark |
| Separation mode* | | \checkmark |
| Charlson score (# of body systems affected) | | \checkmark |
| Whether care is specialised | | \checkmark |
| Access to GPs | | \checkmark |
| Likelihood of smoking | | \checkmark |
| Likelihood of alcohol use | | \checkmark |
| Likelihood of physical inactivity | | \checkmark |
| Index of social disadvantage | | \checkmark |
| Provider factors | | |
| Hospital scale | | \checkmark |
| Hospital scope | | \checkmark |

Notes: *Admission mode is where patients came from (e.g. transfer from another hospital), separation mode is where patients left to (e.g. discharged home or died). Public health measures (access to GPs, likelihood of health risks, disadvantage) are based on patient postcode. The paediatric adjustment is linked to both patient and provider characteristics (care is provided in a specialist women's or children's hospital) See the Technical Supplement for more detail. Source: Grattan Institute

Examples of clearly legitimate costs

Hospitals treating people who ...

- have conditions that cost more to treat
- live in remote areas
- are very young

Examples of **avoidable costs** (defined as costs after all clearly legitimate costs have been taken into account and a buffer added for data limitations)

Hospitals having unusually high ...

- length of patient hospital stays
- prices for supplies
- number of tests per patient
- amount of medication per patient
- number of staff per patient
- overhead costs

However, information on hospital cost and performance isn't perfect. Most importantly, while we correct for many features of patients and hospitals, no currently available data fully capture the quality of care. We do explore the relationship between quality and cost, but we cannot adjust costs for the quality of care.

Some factors, such as the age of hospital buildings (which could cause costs)²¹ and the quality of primary care patients have received, are not captured at all.²² We do not capture costs from teaching or research that may be embedded in the cost of providing care.²³ No data are perfect – they will have some limitations and errors (see Box 3 for a discussion of data quality). As a result, some 'unexplained' cost might not be avoidable.

However, these factors are unlikely to account for the bulk of unexplained variation. There is little evidence, for example, that quality increases with cost (see Box 4 in the next chapter). The impact of these factors is probably small, but there is no clear way to measure it. Furthermore, there is no agreed way to determine what level of unexplained variation is too high.²⁴

Because of this uncertainty, we use a generous buffer for things we cannot measure. This makes our estimate of avoidable costs conservative. All hospitals have some unexplained cost. To be realistic, we use the lowest-cost hospital in each state as a benchmark. We assume that their unexplained costs are not avoidable.²⁵

Then, we find the average level of unexplained cost above this benchmark. Only costs above this average are considered avoidable.²⁶ Our approach is summarised in Box 2 and Figure 6.

Our findings

Based on this approach, we estimate that there are \$928 million of avoidable costs in publicly funded hospitals every year.²⁷ As discussed in Box 2, our estimate is conservative. For example, it only captures how much care costs, not whether it was the right care in the first place.

Our data are from 2010-11, and some avoidable costs may have been reduced since then. Yet even if avoidable costs have fallen by a lot, a substantial amount will remain. If the amount had halved, it would still be nearly \$500 million a year, enough to shift the trajectory of health expenditure in coming decades.

²¹ An older hospital may require additional resourcing for maintenance, and is more likely to have multi-bed rooms (which are associated with higher rates of hospital-acquired infection), Ulrich, *et al.* (2004).

²² We do measure access to primary care, see the Technical Supplement.

²³ We also don't account for 'organisational slack': spare assets or capability, (e.g. education, experience, management time or training) that can be used for quality improvement and fostering innovation, Adkins (2005). We also don't take block funding for teaching training and research into account.

²⁴ The proportion of spending that is avoidable is debated. Some researchers claim that 30% of healthcare spending could be unnecessary or wasteful. Others refute this, but there is strong agreement that a significant level of variation is within the control of hospitals and should be reduced, Jacobs and Dawson

^{(2003);} American Hospital Association (2011); American Medical Association (2011).

²⁵ The comparison is with the hospital with the lowest cost after all the adjustments discussed earlier. By definition, it will have the lowest level of unexplained cost. Comparisons are only within states.

²⁶ Over time, with better measurement of quality and outcomes of care, it may be possible to move to a tighter definition of avoidable costs.
²⁷ 3.6% of activity-based funding.

Box 2: How we measure avoidable costs

- 1. Adjust for clearly legitimate costs that hospitals can't control
 - Correct for patient type (only compare costs for the same health problems)
 - Correct for patient characteristics (gender, age, Indigenous status, remoteness of postcode, public health profile of postcode, etc.)
 - Correct for hospital characteristics (size, scope of services)
 - Remove outliers that could skew the average
- 2. Compare with the best performer in each state: unexplained variation
 - Count costs above those of the lowest-cost hospital in the state (the benchmark)
- 3. Use a buffer for data limitations: avoidable cost
 - Only count unexplained costs above the average in the state

This approach is illustrated in the diagram on the right.

Our estimate is conservative for three reasons. First, we correct for many factors that are beyond hospital control (more than the Independent Hospital Pricing Authority does, for example). Second, we only consider unexplained costs above the average level as avoidable.

Finally, we count how much treatments cost (technical efficiency), not whether they are the right treatments for the right patients (allocative efficiency). This excludes a major source of waste.





Note: This is an example with random data – actual results are presented on the following page



Figure 7: Avoidable costs by state, \$ per admission, 2010-11

Note: Only the range is shown for Tasmania Source: Grattan Institute

Box 3: Are the data good enough?

We analysed the National Hospital Cost Data Collection (NHCDC). It is the most reliable and comprehensive patient-level dataset on public hospital costs in Australia.²⁸ Most states and the Independent Hospital Pricing Authority use it to set prices.

There are concerns about its accuracy, particularly for comparisons between states or costs components (such as medical staff costs or operating room costs).²⁹ Despite this, we believe the data are reliable enough for our analysis, especially as our recommendations don't rely on interstate or cost component analysis.

As the Technical Supplement discusses, our findings are robust. The difference between a hospital's performance across two years is generally small: the median is three per cent of the average admission cost. Estimates of avoidable cost are also relatively stable (see Technical Supplement).

Furthermore, NHCDC data will be even better by the time our proposed changes could be implemented. Hospitals report that since our data were collected there have been improvements in processes, software and resources.³⁰ More improvements, such as improved timelines, communications, training, and governance, are being planned or considered.



Figure 8: Avoidable costs by state, 2010-11 Millions

Source: Grattan Institute

Figure 9: Avoidable and other costs (only includes acute admitted activity-based funded care), Australia, 2010-11



Note: Scaled up based on 2012-13 activity (see footnote 18). Total public hospital funding was \$38.9 billion in 2010-11, Australian Institute of Health and Welfare (2012b). Source: Grattan Institute

 ²⁸ PwC (2013b); PwC ibid. See the Technical Supplement for more on the data.
 ²⁹ PwC ibid., This report doesn't suggest any new uses of the NHCDC for interstate comparisons.

³⁰ This is partly due to the national roll-out of activity-based funding (see below) and the NHCDC being adopted as a management tool. PwC ibid.

The example of laparoscopic cholecystectomies

To put cost variation in perspective, Figure 10 illustrates how the cost of laparoscopic cholecystectomies – a type of gall bladder removal – differs depending on where it happens.

Figure 10: Average cost of laparoscopic cholecystectomy by hospital, 2010-11



Notes: Hospitals only included if they were above the bottom tercile in terms of total laparoscopic cholecystectomy volumes. This chart represents the DRG for simpler lap. chole procedures, i.e. H08B

Source: Grattan Institute

Any type of procedure will be slightly different from case to case. But unlike treatment for many medical (as opposed to surgical) conditions, laparoscopic cholecystectomies are often quite similar.

Even so, costs vary dramatically. In Queensland, the median hospital removes gall bladders for around \$6700, while in Victoria the median hospital does it for around \$5000. Within NSW, the

hospital with the highest cost is more than twice as expensive as the hospital with the lowest cost. These differences don't seem to be caused by how many of these procedures a hospital does. Among the five hospitals that do the most, median costs range from less than \$4200 to almost \$8000 (Figure 11).

This example highlights how hospital costs vary. It also shows that much of the variation is caused by factors that hospitals can indeed control. On average, the patients in high-cost hospitals weren't older people and very few had other significant health problems. The situation is similar for hip replacements, as in Figures 12 and 13 show.

Figure 11: Cost of laparoscopic cholecystectomies, high volume hospitals, 2010-11



Source: Grattan Institute

The example of hip replacements





 Figure 13: Hip replacement cost, high-volume hospitals, 2010-11

 Admissions

 High volume hospitals

 Average



What hospital characteristics influence avoidable costs?

We checked for similarities in hospitals with high and low levels of unexplained costs. If there were strong patterns, it would suggest there are important factors that we didn't take into account. If many hospitals with high unexplained costs were bigger hospitals, for example, it would suggest that hospital size was driving costs.

However, once all of the corrections discussed above are made, there are no strong patterns that consistently make different kinds of hospital more or less costly. This includes the size of hospitals, the range of problems they treat and the number of complications that occur (see Box 4 for a discussion on the relationship between cost and quality). These findings are discussed in the Technical Supplement.³¹

One characteristic does make individual hospitals more expensive and for a good reason. Hospitals that provide specialised, expensive types of care may have higher costs. For this reason, we adjust for highly complex care for adults and children (in women's and children's hospitals).

The lack of clear differences between hospitals with high and low costs suggests that a lot of these costs are truly avoidable – the costs are linked to characteristics that hospitals can control.

³¹ The Technical Supplement also presents the methods and findings for variation between hospital departments (within hospitals). This had no significant association with avoidable costs.

Box 4: Cost and quality

Adverse events are recorded when people develop new health problems in hospital, from a fall or infection, for example. They are a good measure of the safety of care. They are also the only measure of quality recorded in all hospitals for all patients.³²

We found no meaningful relationship between adverse events and avoidable cost (see right).³³

This reinforces the lack of clear findings in the literature, although research is hampered by limitations in data about quality.³⁴ Developing better data on the quality of care is discussed in the final chapter of this report.



Figure 14: Adverse events and

Hospital effects (\$'000s) + Hospital

avoidable cost, 2010-11

³² They don't capture quality perfectly because they occur in a minority (9%) of visits. Also, they primarily relate to safety, which is only one aspect of quality.
 ³³ Our measure was the number of adverse events grouped according to the Classification of Hospital Acquired Diagnoses – CHADx, Jackson, *et al.* (2009)
 ³⁴ Some research links increased spending with better patient outcomes, Schreyögg and Stargardt (2010); Hvenegaard, *et al.* (2011) while other research links cost reductions to better outcomes, McKay and Deily (2008). US and UK researchers found variation in hospital spending with no evidence of a clear connection to quality of care, Hossain (2009); Gutacker, *et al.* (2013). Our analysis also revealed potential differences in reporting quality.

What are the characteristics of high-cost states?

One factor does have a strong influence on levels of unexplained cost: the state or territory in which a hospital is located.

Unlike high-cost hospitals, high-cost states share one clear characteristic: they have smaller populations. Some higher-cost states also pay higher wages (Figure 15). In the Northern Territory and Queensland, for example, wages account for more than half the gap between the state level of unexplained costs and the national average.³⁵

These characteristics don't point to clear solutions. Governments in some states may be able to negotiate reduced growth in wages, but this is likely to be difficult. Wages are also influenced by factors beyond the health system, such as the different costs of living in different parts of the country. Small states may be able to adopt practices from larger states, or work with other small states to achieve economies of scale, by jointly purchasing hospital supplies, for example.³⁶

³⁵ 49% and 58% respectively

³⁶ This is proposed for Tasmania in Goddard (2013)

Figure 15: Average state unexplained costs (relative to Australia) with and without adjustment to average wages, 2010-11 Cost per admission relative to national average, (\$)



Note: Wages adjusted so that all state have same average wage rates for doctors, nurses, non-clinical staff and general staff on-costs Source: Grattan Institute

Cutting avoidable costs

We encourage states with higher costs to address them. Yet this report focuses on differences *within* states for four reasons.

First, as discussed above, cost differences among states are harder to change in the short term. Interstate differences also tend to be beyond the control of individual hospitals. Hospitals cannot control the wages or industrial relations requirements in their state, for example.

Second, the cost differences within states are bigger than the differences among states. If higher-cost states closed the gap between them and the average, it would save around \$800 million, compared to nearly \$1 billion from doing the same within each state. In other words, closing gaps within states is at least as important as closing gaps among states. Figures 16 and 17 show the range of variation among states and within states.

Third, reducing cost variation within states will ultimately reduce variation among states and reduce the national average. The recent introduction of a national efficient price may also help reduce variation among states because it has created a benchmark for states to measure themselves against.

Finally, some difference in the apparent performance among states may be due to data issues, such as how admissions are recorded (or 'coded') in different states.³⁷ Measurement of variation within states is likely to be much more reliable.

States have good reason to act. They pay for more than half of all public hospital services, their budgets are under pressure, and rising hospital costs are one of the most important causes.³⁸ They are also responsible for managing the hospital system.³⁹

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³⁷ See discussion in the Technical Supplement

³⁸ Daley, *et al.* (2013)

³⁹ Council of Australian Governments (2011)

Controlling costly care



Figure 16: Average cost per admission by state, variation from lowest-cost state, fully-risk adjusted, 2010-11

Figure 17: Gap between highest and lowest-cost hospital in each state, average cost per admission, fully-risk adjusted, 2010-11



Source: Grattan Institute

Variation in cost is both a problem and an opportunity. In all states, some hospitals are much better than others at reducing avoidable costs. These lower-cost hospitals show can be done. But core aspects of how the hospital system is managed stand in the way of improving performance in high-cost hospitals.

Some states, either by setting high prices, or through other kinds of funding, are simply paying too much for hospital care. This does little to spur less efficient hospitals to improve.

In the next chapter we propose a better alternative. As states adopt activity-based funding, we recommend that all states set their prices at the average cost of care within their state, but without including avoidable costs.⁴⁰ This will create a stronger incentive to improve efficiency, but in a way that is clearly achievable.

⁴⁰ We discuss the strengths and weaknesses of other price setting approaches in the Appendix.

3. The power of pricing

The benefits of activity-based funding

Until the 1990s, payments to Australian public hospitals were not based on actual work performed but on their previous funding, or on what they could negotiate with governments. The system offered little flexibility to meet changing local demand and did nothing to encourage efficiency. On the contrary, inefficient hospitals were rewarded for their inefficiency. They were paid more to provide the same care as other, more efficient hospitals.

Over the last 20 years, *prices* for care have gradually replaced this approach, with activity-based funding first introduced in Victoria in 1993.⁴¹

Under this method, the State Government paid public hospitals based on the number and type of patients they treated in a year. The Government set a price for each admission. Hospital revenue was then adjusted up or down based on the resources used for similar patients. If a hospital did more resource-intensive procedures than the average hospital, or had patients that were more costly to treat, their payments were increased.

Implemented in the context of significant budget savings, the price per patient was essentially set at about 10 per cent below the prevailing state average.⁴²

Linking funding to activity has three benefits. It improves:

- Transparency: it directly links funds to services provided
- *Equity*: it assists benchmarking and ensures that funding paid for 'like' services is the same
- *Efficiency*: it helps managers and clinicians identify inefficient practices and target unnecessary costs. It also gives hospitals a clear incentive to do this, as they can keep any financial surplus for reinvestment, research, or other purposes.⁴³

Activity-based funding is particularly useful for public hospitals because they don't face strong market pressures to drive down costs.⁴⁴ In a competitive market, firms that cannot provide services at or below the prevailing price soon go out of business.⁴⁵ But in public hospitals, consumers don't face the full costs of care, which are met by governments.

There are good reasons for this. Public hospitals are obliged to provide universal access, regardless of people's ability to pay. Along with other factors, this makes competition difficult.⁴⁶ There

⁴³ Hurley, *et al.* (2009) Street, *et al.* (2011). In some states, this surplus is not funded during the transition to activity-based funding. ⁴⁴ Hurley, *et al.* (2000)

⁴⁴ Hurley, *et al.* (2009).

 ⁴⁵ Assuming firms provide goods of similar quality and that markets are efficient.
 ⁴⁶ Other barriers to effective competition include patients not always being able

to make the best judgement about their health care, and not always responding to price and value (Mwachofi and Al-Assaf (2011)), information asymmetries,

 ⁴¹Duckett (1995). Also known as 'casemix funding'.
 ⁴² Ibid.

are promising ways to use competition for some kinds of hospital services.⁴⁷ But in many cases it is difficult to shift patients between hospitals, especially if the patients need urgent or specialised care, or when there is only one hospital they can realistically get to.⁴⁸

Like competition, pricing can create incentives that operate throughout the system, shaping what gets done, when and where. But it doesn't dictate specific operational or clinical changes that might be unnecessary or inappropriate in many hospitals.

Successful activity-based funding combines clear price signals with autonomy to respond to them. Hospitals are paid for legitimate costs, such as the number and type of patients seen.⁴⁹ All other costs are within the control of hospital management and they should be expected to manage them.

Victoria took this approach and accompanied activity-based funding with more autonomy. Public hospitals were freed to identify strategies to keep costs in line with revenue. In this way activity-based funding can tap into local ingenuity and unlock innumerable improvements that a centralised, top-down system could never design.

There is positive, albeit inconclusive, evidence about the impact of activity-based funding.⁵⁰ Since it was introduced in Australia, hospital efficiency has progressively improved.⁵¹

Based on the available international evidence and its record in Australia, we believe activity-based funding it is a good way to promote tighter control of costs in public hospitals. States are all implementing this funding approach. The next challenge for activity-based funding is removing as much avoidable cost as possible.

Activity-based funding now

The Commonwealth and the states share responsibility for funding public hospitals. In 2011, they agreed to a new funding deal.⁵² From the middle of this year, Commonwealth payments to states will vary with the amount and type of services that hospitals provide. While the Commonwealth will use activity-based funding for the first time, it will only use it to pay for growth in services above 2013-14 levels – a small slice of spending.⁵³

This growth funding will be based on the *national efficient price*, set by the newly-established Independent Hospital Pricing Authority. Acknowledging the big changes to health funding, the Authority has set the national efficient price at the average cost of

doctors both influencing demand and supplying services, regional monopolies and oligopolies for some services, and the need to provide regular and predictable services in some cases irrespective of cost and service volume.

⁴⁷ An example is Victoria's Competitive Elective Surgery Funding Initiative. For details, see Victorian Government Department of Health (2013).

⁴⁸ Hurley, *et al.* (2009).

⁴⁹ The term is from the National Health Reform Agreement. As discussed in the previous chapter, excluding legitimate and avoidable costs is also our approach to estimating avoidable costs.

⁵⁰ Street, *et al.* (2011)

⁵¹ Auditor General of Victoria (1998); Duckett (2008).

⁵² Council of Australian Governments (2011)

⁵³ This growth funding is subject to a minimum guarantee to 2019-20, ibid.

care across the country. This price is clearly achievable rather than truly efficient.⁵⁴ For growth funding, the Commonwealth will pay 45 per cent of the national efficient price.⁵⁵

All states have agreed to follow the lead of Victoria and South Australia and introduce activity-based funding. States, being the system managers, are not required to use the national efficient price.

Activity-based funding is expanding, but a lot of funding will still use old approaches (Figure 18). For all services up to the amount provided in 2013-14 (base funding), the Commonwealth will continue to pay based on the population in each state.⁵⁶ In addition, both the Commonwealth and states will keep using block funding, or grants to hospital networks. This type of funding is discussed in chapter 5.

States provide the majority of hospital funding. Their activitybased funding tops up Commonwealth funding and sets the final level of funding that hospitals get. From a hospital's point of view, the national efficient price is largely theoretical. State funding creates a target price for hospitals and the efficiency incentives that go with it. If states are too generous, there will be little reason for hospitals to become more efficient. If state funding is too low, access to care, and the quality of care, could be put at risk. Figure 18: Expected public hospital funding, share of different funding types, 2012-13 to 2016-17 (indicative)



Notes: 'Commonwealth ABF Growth' is based on projected expenditure over the four years from 2012-13. Does not take into account Commonwealth minimum funding guarantee. Current state activity-based funding price settings are not totally clear, but are likely close to the average cost of care. Source: Commonwealth of Australia (2012)

⁵⁴ As discussed elsewhere, this price is adjusted for costs that hospitals cannot control, see Figure 5 above for a list.

⁵⁵ From mid-2014. The Commonwealth share will rise to 50% from 2017.

⁵⁶ Since 2012-13, Commonwealth base funding base funding has been *described* in terms of a contribution to activity, but the level of funding to each state was not affected by this change (it is the same as was determined by the former population basis).

Getting the price right

Activity-based funding from states is the biggest piece of public hospital funding and has the greatest potential to promote efficiency. It is relatively easy to change – states can act alone without negotiating with the Commonwealth. Other worthwhile changes could be made to Commonwealth funding, but we should focus on state funding first.⁵⁷

Most states are moving their prices towards the average cost of care within their state. Some states, such as Victoria, even set prices one to two per cent below the average to provide an "efficiency dividend" for redistribution to other services or meet increased demand. But even these prices do not do enough to cut avoidable costs.

Prices around the average reward average performance, even if they include avoidable costs. Reducing prices by a fixed proportion promotes efficiency, but it is arbitrary – it is difficult to know whether the cut is too big.

Instead, states should pay for average performance *after avoidable costs are excluded*. We call this the efficient average.⁵⁸

Currently, pricing policy implicitly accepts that avoidable costs are legitimate and pays hospitals for them.

Unlike current prices, an 'efficient average' price will create a direct and ongoing link between funding and efficiency. As long as avoidable costs are high, the new price will bring costs down. Other things being equal, the effect will diminish as hospital costs converge towards an achievable efficient benchmark.

To define avoidable costs, states could use the adjustments we outlined in the previous chapter, or those used by the Independent Hospital Pricing Authority (or a combination). To ensure continuity within this report, we assume that states use our set of adjustments, which are more generous to hospitals.⁵⁹

The impact of an efficient average price

The new efficient average price would produce real but achievable reductions in funding. The change would not affect any of the clearly legitimate costs that we can measure.

Some networks would have their funding reduced beyond the costs we define (very conservatively, see Box 2) as avoidable. This is inevitable if a single price is used across the state. Nationally, one eighth (12.4 per cent) of unexplained costs would be affected.

⁵⁷ As one example, the Commonwealth could apply the national efficient price to base funding, as well as growth funding, but this would have to be negotiated with the states.

⁵⁸ This change is a relatively small addition to what states have already committed to in agreeing to adopt activity-based funding, Council of Australian Governments (2011). The discussion in this report is about setting the base price for services. Best practice in pricing involves a mix of fixed and variable payments, generally applied in activity-based funding models as a base price related to average efficient cost of target activity and a price for additional, over-target activity set as a fraction of the base price.

⁵⁹ Some of these adjustments may not be needed. For example, we adjust for the impact of hospital scale and scope despite their minimal impact on cost.



Figure 19: Unexplained cost and proposed price, by state and local hospital network, 2010-11

Generally, however, the funding reduction goes only a little beyond avoidable costs. In a small number of cases, the impact is bigger. The highest proportions are in smaller states: 48 per cent of unexplained cost in two Tasmanian networks and 41 per cent in a Northern Territory network. In these unusual cases, states should monitor the relevant hospitals to make sure that new prices don't create unintended consequences.

In more concrete terms, the price for an admission would only fall by between \$50 and \$270 (varying by state), or around one to five per cent of the average cost of care.⁶⁰ In most states, more than 35 per cent of networks already operate below the new price.

Currently, 34 hospital networks have costs higher than the state price.⁶¹ The number would rise to 47 with the new state efficient price – a change of only 13 networks (Figure 19).⁶² All other networks would be able to keep a financial surplus, although it would be reduced.⁶³

The new price would set an achievable target, but it will have a bigger impact in some states than in others. The reduction of state activity-based funding ranges from only two per cent in the ACT to 12 per cent in Tasmania (Figure 20). In all cases, particularly in Tasmania, it will be important to make sure the change to new prices is not too abrupt.

To smooth the adjustment, hospitals that are affected should be eligible for a three-year transition grant while states shift the price to the new level. The result will be a relatively gentle transition for almost all hospitals. Figure 21 shows the percentage reduction in total funding in each state in the first year (assuming funding that is not activity-based stays the same). The annual reduction in all states, except Tasmania, is less than 1.5 per cent.

By the end of the transition, these changes would save governments \$928 million a year (based on 2010-11 cost distributions and 2012-13 activity levels). They would provide a much stronger incentive for hospitals to become more efficient immediately, and in the future. As costs gradually come down over time, so will prices, creating a virtuous circle.⁶⁴ The savings could be reinvested to meet increasing demand, improve access to care, and support hospital networks to meet new price signals.

Some states might choose to go further, either immediately or in the future. Improvement in measurement, especially in measurement of quality and outcomes of care, may make it feasible to reduce the buffer we use to define avoidable cost (only counting above-average unexplained costs). High cost states could also benchmark themselves against low cost states to shift their overall position.

Our proposal takes a small step towards pricing based on 'what care should cost' – a step away from arbitrary price settings. As the final chapter in this report discusses, we should keep moving much further in that direction over time.

 ⁶⁰ Only counting cost covered in our data.
 ⁶¹ Figures in this section assume current state prices are average costs of care.

⁶² The impact on these networks might be reduced by block funding that they already receive.

Except in states where surpluses are recouped.

⁶⁴ Prices are based on a proportion of average costs. As average costs decline, so will prices, driving continuing improvement.



Figure 20: Reduction in activity-based funding from adopting recommended state price, by state, 2010-11

ABF funding reduction from adopting recommended approach

Figure 21: Reduction in hospital funding from adopting recommended state price, first year of transition, based on 2010-11 Overall hospital funding reduction in first year of transition



Source: Grattan Institute

Getting the price right is crucial, but states will also need to take other measures to make sure it works in practice. Hospitals need better information about how they are performing so that they can respond to the new price. Other aspects of how the hospital system is funded and managed must align with the state efficient price instead of undermining it. These issues are discussed in the following chapters.

4. Data for decisions

"If you can not measure it, you can not improve it."

Lord Kelvin aphorism

Why performance data matter

From as early as the mid-1800s, data have been used to measure impact and persuade people of the need for change in health care. 65

Performance data systems are used in two main ways. The first is as 'dials' to show achievement against targets. The second is as 'tin openers' to flag potential problems requiring further investigation.⁶⁶

Research shows that hospitals respond to publicly-released performance data.⁶⁷ This may be because improved awareness of performance leads to improvement. Alternatively, it may stem from a simple desire for reward and recognition, or wanting to avoid negative reports of performance.⁶⁸

Evidence from other industries such as manufacturing also demonstrates how good measurement and data collection can be used to improve processes and to minimise variation.⁶⁹ To reduce costs, hospitals need the right information.

How performance data are used

Over the past decade, public reporting of hospital performance data has increased in other countries.⁷⁰ In some examples, information has focussed on comparisons with the best performers. UK hospitals have access to Dr Foster online tools, which provide hospitals with information on the quality and costs of hospital services to enable comparison against their peers (see Figure 22).⁷¹

In other examples, information has focussed on variation between providers delivering the same services. A growing number of countries including Canada, England, Germany, Spain, the Netherlands, New Zealand and the United States, have developed Atlases of Variation to raise awareness of regional differences in patterns of expenditure, clinical activity and outcomes (see Box 5).⁷²

⁶⁵ As a nurse during the Crimean War, Florence Nightingale learned that improved sanitary conditions in military hospitals could significantly decrease deaths. Her challenge was to convince those in power of the need for change. Nightingale used hospital mortality statistics to present a compelling argument and achieve successful reform. Cohen (1984)

⁶⁶₂₇ Schang, et al. (2013)

⁶⁷ Fung, *et al.* (2008)

⁶⁸ Berwick, *et al.* (2003)

⁶⁹ Womack, *et al.* (2007)

⁷⁰ Fung, *et al.* (2008)

⁷¹ Dr Foster Intelligence (2012b)

⁷² Schang, *et al.* (2013)

Figure 22: Dr Foster Hospital Guide 2012 – Hospital mortality measures



Note: The Dr Foster Hospital Guide includes four measures of mortality and determined trusts with 'higher than expected' (orange) and 'lower than expected' (green) rates of mortality. The measures are to be used as a warning sign that poor quality care may be leading to a higher than expected mortality. Source: Dr Foster Intelligence (2012a)

Box 5: Atlas of Variation

In contrast to many benchmarking tools, which compare performance with the 'best performer', the Atlas of Variation is a tool used to present information on variation in clinical activity and outcomes. Rather than identify whether a hospital's performance is good or bad, it simply identifies how much it differs.

The US Dartmouth Atlas of Healthcare sets out how US hospitals differ in their cost for the 100 most common inpatient procedures (adjusted for patient characteristics such as age and gender).⁷³

The NHS Atlas of Variation in Healthcare identifies variation in health care utilisation (e.g. rates of admission for selected conditions) that cannot be explained by variation in patient illness or patient preferences.⁷⁴

Both the Dartmouth Atlas and NHS Atlas act as 'tin openers' by identifying variation and encouraging services by take action to reduce undesirable differences in care, outcomes or costs.⁷⁵

In Australia, there has also been a move to improve hospital performance reporting through establishment of the National Health Performance Authority⁷⁶ and expansion of the MyHospitals

⁷³ Young and Kirkham (2013)

⁷⁴ NHS Right Care (2013)

⁷⁵ Schang, *et al.* (2013)

⁷⁶ The Authority reports on hospital performance, focussing on equity, effectiveness and efficiency. National Health Performance Authority (2013d). It releases reports on aspects of performance such as length of stay and waiting times for specific, named hospitals, National Health Performance Authority (2013b); National Health Performance Authority (2013a).

website.⁷⁷ Comparative reporting has focussed on comparing hospital performance using a few quality indicators, such as hospital-acquired infections and in-hospital mortality rates. Little attention has been given to reporting costs of hospital services or variation in these costs.

Better data for decisions

Hospitals currently record and report on their own costs, but they need data on their *relative* performance. Unless they have something to compare their costs to, hospital managers and clinicians can't know how well they are performing, or where they can improve most.⁷⁸

We propose that the National Health Performance Authority (with support from the Independent Hospital Pricing Authority) provides additional reporting on the cost of hospital services.⁷⁹

To guide local decisions about where to look for avoidable variation (the 'tin opener' function), these data should report cost variation for treating different kinds of conditions, in addition to information on overall hospital costs.⁸⁰ All hospitals should be able to access this information securely. In time, as data systems mature, this information should be made public.

This comparative information should report on unexplained costs. That way, hospitals will be able to focus on the costs they can control.

The data should allow each hospital to compare their own unexplained costs against hospitals that perform well in their state and nationwide.⁸¹ It should let hospital managers and clinicians drill down into different areas to see where the biggest opportunities for improvement are.

Figure 23 shows how this could highlight unique issues in different hospitals. Hospital A and Hospital B are real hospitals from our dataset. They are around the same size and are in the same state. They have similar levels of avoidable cost overall, but the sources of those costs are different.

We compared departments (areas such as psychiatry or oncology) in Hospitals A and B with average state costs, adjusting for legitimate cost variation. The high-cost departments are rarely the same. Of the 10 departments with the highest costs in Hospital A, only three are in the top ten for Hospital B. To take one example, Haematology is the highest-cost area in Hospital B, but has below-average costs in Hospital A.⁸²

⁷⁷ The MyHospitals provides service and performance information for over 1000 public and private hospitals, National Health Performance Authority (2013c).

⁷⁸ Performance information can provider important feedback for clinicians about their own practices, as well as their peers', Watson (2013).

⁷⁹ The roles of many health portfolio agencies are being reconsidered in the context of the policy commitments of the new government. If changes are made, it may be more appropriate for another agency to carry out this task.

⁸⁰ Data should explain costs by Diagnosis Related Group. See glossary for further detail.

⁸¹ Reporting performance relative to peers and averages only draws attention to top and bottom outliers. This can provide false assurance to the 'average' performers, even when the average performance is not in line with best practice, Schang, *et al.* (2013).

⁸² Note that both hospitals have a similar distribution of patients in different departments, and offer services across almost all areas of care. There are exceptions, Hospital A has more patients in chemo- and radiotherapy, while Hospital B has a much larger obstetrics and gynaecology practice.

Managers might respond to this information in many ways. The tool we propose is a starting point. It highlights problems for investigation, but further analysis of data and practices will be needed. One approach is to review the processes that are used, with the people who do the work helping to identify problems and solutions. As Box 6 explains, process redesign can be successful if it's done in the right way.

Simply providing data won't be enough. An evaluation of the NHS Atlas of Variation in Healthcare found that only half of hospital trusts surveyed used the Atlas to inform local decision-making. The evaluation found that a number of things can influence how well information is used.⁸³ Services are unlikely to use information that is difficult to find or comprehend. They are also unlikely to use information if they doubt its validity or usefulness, or if the intended audience is not clear.⁸⁴

To avoid these problems, the tool must be designed in close consultation with hospital leaders, managers and clinicians. States should also closely monitor its uptake and use. Figure 24 shows an example of how the tool might look. Figure 23: Avoidable cost by department, two hospitals, 2010-11



⁸³ Schang, *et al.* (2013)
 ⁸⁴ Ibid.

Grattan Institute 2014

Box 6: How should hospital managers respond to the data?

There is little clear evidence about what hospital managers should do when avoidable costs are high. The best responses will vary in different contexts. However, a recent systematic review found that a range of process redesign methods can succeed if they are coupled with other good management practices.⁸⁵

Many of these process redesign methods were developed in manufacturing and other industries. They include Business Process Reengineering (rethinking of all systems and processes), Lean Management (removing non-value adding steps in the production process), Six Sigma (reducing process variation) and Lean Six Sigma (a combination of the last two approaches).

The review found that this kind of process redesign can work well if it is implemented with good human resource management practices such as:

- involving health professionals in identifying problems and designing solutions
- setting clear protocols and expectations
- providing relevant training and education
- auditing behaviours and giving performance feedback
- holding staff accountable for process changes.

⁸⁵ Leggat, *et al.* (2014)



Figure 24: Comparative report on unexplained hospital costs, top level (this page) and service group level (next page) reports

Grattan Institute 2014



Total expenditure above benchmark

Source: Grattan Institute

5. Carrots and sticks

A price will encourage efficiency only if it is set in the right context, with the right combination of carrots and sticks. To maximise the impact of pricing, other kinds of funding shouldn't get in the way. Failing to manage costs should trigger support to help hospital networks improve. If that support fails, there have to be consequences, potentially including changes in hospital network leadership.

Competing carrots: block funding

It's not practical or appropriate to base all hospital funding on activity. In Australia, as in most countries with activity-based funding, hospital services are also funded with block payments.⁸⁶ These payments are like grants. They might be subject to a range of conditions, but payment is not directly linked to the amount and type of services provided. Even with the price settings we propose, some block payments will still be required.

There are two kinds of block funding: planned block funding for a specific service or objective, and unplanned 'bailouts' to fund hospital network deficits. Both risk diluting the price incentives that this report proposes. For this reason, states should track where planned block funding goes and hold networks to account for deficits and bailout payments.

Planned block funding

Some block funding will always be needed, but states can follow the example of South Australia by reducing it as much as possible.

Not all services are viable at the national efficient price, or the efficient average price that we propose. For example, a small hospital in a remote area may have to remain open at all times, even when there are few or no patients. Not giving them block funding might threaten their viability and skew the overall price.⁸⁷

Additionally, some services currently cannot yet be quantified in units of activity. Most hospitals provide education for doctors, nurses and other health professionals, with some providing more than others. There is currently no agreed way to quantify the legitimate cost impact of teaching and research in a consistent way. As a result, these costs have to be funded through block funding.⁸⁸

Some states have also chosen to use block funding as 'transition grants' to minimise the shock to individual hospital networks that are most affected by the shift to activity-based funding. While this makes sense, timelines for reducing these transition grants should be clear and public.

⁸⁶ Many European countries have implemented payment systems which link funding to activity. For the majority of models, activity-based funding is supplemented by block funding, such as payments for capital or teaching, training and research. Cots, *et al.* (2011)

 ⁸⁷ The cost of keeping a small hospital open at all times to deliver a small volume of activity is likely to exceed the 'average price' of delivering hospital services.
 ⁸⁸ Health Policy Solutions (in association with Casemix Consulting and Aspex Consulting) (2011)

Figure 25 shows the percentage of block funding (from state and Commonwealth sources) paid to each hospital network.⁸⁹ There is a lot of variation. Some hospital networks get as much as 60 per cent of their funding from block funding, while others receive as little as two per cent. There is also variation among states.

We can expect the proportion of block funding to decrease with time. Activity measures are being developed for more aspects of hospital work which are currently block funded, such as teaching, training and research activity. Hospital networks will also adjust to the new funding model, reducing the need for transitional block funding.

Yet even with these reductions, significant block funding will remain. If this funding isn't tightly targeted and appropriately justified, it risks insulating many hospital networks from the financial consequences of running inefficiently. This stifles efforts to curb avoidable costs and adds to the financial strains on the system outlined in this report's first chapter.

South Australia has made progress in reducing the number of block funded site-specific grants paid to hospitals. SA Health reviewed and removed several grants to align with the national approach to grant funding. The number of grants in 2012-13 was reduced by a third, from 162 to 109. Funding from removed grants was redirected into the activity-based funding pool, with a corresponding increase in the state price.⁹⁰

Figure 25: Planned block funding (per cent of total funding), excluding National Partnership Payments, 2012-13



Note: Payments for patient transport are counted as block funding. This may legitimately increase the level of block funding in jurisdictions with greater transport needs, such as the NT. Excludes exclusively block funded hospital networks (49 of the 136).⁹¹ Average is NWAU weighted (see Glossary for definitions).

Source: National Health Funding Body (2013)

 ⁸⁹ Block funding represents mental health, small rural and metropolitan hospitals, sub-acute, teaching, training and research, and other categories. It does not include payments from other sources, such as National Partnership Payments.
 ⁹⁰ SA Health (2012)

⁹¹ These hospital networks are funded according to the 'National Efficient Cost', which reflects the average cost of all block funded hospitals. A hospital's funding level is weighted relative to this cost based on their size and location. These hospital networks satisfy the 'low volume threshold' for block funding i.e. provide ≤1800 separations per annum in a metropolitan area or ≤3500 separations per annum in a regional or remote area.

Other states can follow a similar approach. States should regularly review and adjust block funding, checking whether significant amounts of block funding are being paid to hospital networks that have very high avoidable costs.

Unplanned 'bailout' funding

Block funding is also used to cover financial shortfalls. This type of bailout funding carries an even greater risk of undermining price incentives to improve efficiency.

In New South Wales, the Auditor General reported that in 2011-12, all but one hospital network spent more than they earned, leading to a deficit of \$79 million (0.5 per cent of total spending for hospital services).⁹² In response, the New South Wales Ministry paid an additional \$73 million to hospital networks to prop up their financial positions and ensure they paid suppliers. One metropolitan hospital network alone received more than \$53 million in assistance.93

In the same year, the Victorian Auditor General reported that 36 per cent of public hospitals were at high risk of having insufficient cash flow to meet obligations. In response, the Department of Health provided hospitals with a letter of comfort stating they would be paid additional funding to meet expenses if required.⁹⁴

Most of these financial bailouts are small. However, many hospitals are clearly letting their costs get too high relative to their revenue. The escape routes of financial bailouts and block

funding weaken the incentive to manage costs well and maintain a financial buffer.

States have a choice about how they handle hospital network budgets and deficits. Some states may apply strict budget constraints and regular performance monitoring, while others may be less stringent.95

Activity-based funding only drives efficiency if a price, set in advance, is applied to all hospitals. In effect, bailouts retrospectively set a higher price for poor performers, rewarding inefficiency. This means bailouts undermine activity-based funding, and the commitments government have made to use it.

All bailouts should therefore come with clear consequences. When a state makes an unplanned block payment to a hospital network, it should trigger a performance audit or, in significant cases, special reporting by the state Auditor General.

If the audit finds only minor problems with the board's financial management, states would follow standard processes, which include placing the board on close financial watch. But states should set out explicit conditions for sacking boards when there is major financial mismanagement, and act on them if necessary. This is an extreme response, so there should be efforts to intervene before things deteriorate to this extent.

 ⁹² There are 18 hospital networks in NSW.
 ⁹³ Audit Office of New South Wales (2012)

Auditor General of Victoria (2012)

⁹⁵ Scott. *et al.* (2012)

The right carrots and sticks, at the right time

Even with clear price incentives and rich information on their performance, some hospital networks may still struggle to keep costs under control. Or costs might be controlled, but at the expense of quality or access to care.⁹⁶ A hospital network might contain costs by 'gaming' the system, by not treating some types of patient or by discharging them too soon, for example.

For these reasons, local autonomy needs to sit within clear accountability to the state as system manager. States should have a system for early detection of deteriorating performance and be ready to respond.

A network's performance should determine how much autonomy a network has. When a network is performing well, it should be rewarded with greater autonomy. Lower levels of performance should trigger increased government scrutiny and intervention.⁹⁷ Where a network sits in this hierarchy should be driven in large part by the performance information discussed in the previous chapter.

Figure 26 illustrates how responsive regulation can work. Most hospital networks are in the pyramid's base, where boards are effectively self-regulating to ensure efficiency, high quality and safe care. The tip of the pyramid represents a minority of networks that require more intensive intervention due to a drop in performance.



Source: Adapted from Braithwaite et al. (2007)

In these cases, states can use a number of strategies according to the severity of the problem.⁹⁸ Often these interventions follow a hierarchy: the first approach such as seeking information, reports

⁹⁶ Financial and non-financial incentives can create perverse outcomes, see Custers, *et al.* (2008)

⁹⁷ Health Quality and Complaints Commission (2006)

⁹⁸ Healy and Braithwaite (2006). In Victoria, the most intensive levels of intervention are "Performance Watch" and "Intensive Monitoring". In addition to detailed and frequent monitoring, networks in these categories may also be subject to department-sanctioned cash or financial audits, service improvement planning and independent review, Victorian Government Department of Health (2012b) Victorian Government Department of Health (2012a).

and recovery plans, is the least severe. More severe sanctions (such as financial audit) are employed when softer approaches are ineffective. As performance improves, the severity of intervention is reduced.

Victoria has a long-established system of devolved governance and autonomy linked to performance. More recently, New South Wales⁹⁹, Queensland¹⁰⁰ and Western Australia¹⁰¹ have adopted responsive regulation models. States should put the avoidable cost measure used in this report at the centre of these systems. Along with measures of safety and quality, it should be the most important way to determine how hospital networks are managed.

⁹⁹ NSW Health (2013) ¹⁰⁰ Queensland Health (2013b)

¹⁰¹ Department of Health (Western Australia) (2013)

6. Future directions for pricing

This report makes three recommendations that will reduce avoidable costs in public hospitals. First, states should set the right price. Second, hospital networks should get detailed information on their unexplained costs to help them improve. Finally, states should use the same information to make sure they aren't propping up inefficient hospital networks, and to decide when they need to get a hospital network back on track.

But our suggestions are only one step towards paying hospitals for what care *should* cost, as opposed to what care *does* cost.¹⁰²

There are two basic choices about how prices are set. The first is the benchmark that hospitals have to meet. Is it the average cost of an admission, or a more ambitious target, such as 10 per cent below the average? The second is what hospitals should get paid for. Are they paid according to the type of patients they treat? Are they paid only for providing high quality care? Are avoidable costs included or excluded?

Figure 27 shows these choices. Before the introduction of activitybased funding, prices were essentially arbitrary – the top left cell. Wasteful hospitals were paid more than efficient hospitals simply because they had been paid more in the past. Our recommended efficient average price keeps the existing standard of average performance, but strips avoidable costs out, adding a new adjustment.¹⁰³

Figure 27: A path from arbitrary to normative pricing

What costs are funded?

| | | Pay for costs caused by patient factors | Don't pay avoidable costs | Pay for care that works | |
|-----------------------------------|-------------------------------|---|---------------------------------|------------------------------------|-----------------------------|
| What standard | Arbitrary | | | Adjust for: 'never events' | Pay for pathways |
| snould hospitals reach? | | | | adverse events re-admissions | Adjust for outcomes |
| Their own previous standard | What care <i>does</i> cost | | | | More research & |
| Average cost | | Current system | Grattan proposal | | better data needed |
| Below- average cost | | | | | What care should cost |

Notes: Price adjustments are cumulative from left to right. Source: Grattan Institute

¹⁰³ A further discussion on pricing options is included at Appendix A.

¹⁰² Pricing for what care should cost is often referred to as "normative pricing' in the literature. Independent Hospitals Pricing Authority (2012)

After this, the next step could be to aim for something slightly better than average (for example, five or 10 percent below the average – a standard that some hospitals already meet).

Beyond that, states should work to base prices on the best way of doing things, and on the results of care. This would take the system even closer to paying for what care should cost.

Paying for care that works

The recommendations in this report would reduce avoidable costs, with no sign they would reduce the quality of care. Activitybased funding could make care more efficient in other ways as well. Funding could reward care that works and penalise care that leads to high levels of health problems, readmissions or deaths.

More research and testing is needed, but this should be a priority. Ultimately, what care achieves should be the focus of funding, not just what it costs.

The Independent Hospital Pricing Authority advises governments on how hospitals are funded.¹⁰⁴ The Authority should investigate the best way to incorporate quality into pricing, in consultation with states and the Australian Commission on Safety and Quality in Healthcare. States should then implement and evaluate new approaches that reward hospitals for the quality and results of care.

Because this report focuses on reducing cost without compromising quality, it doesn't provide a detailed assessment of

the best way to measure how well care works for patients. But the Authority and the states should look into five options, many of which have been tried overseas:

- Never events not paying for things that should never happen, such as objects being left in patients after surgery. This has recently been announced by Bupa (a private health insurer) and Healthscope (a private hospital provider), and Queensland Health.¹⁰⁵ In the USA, Medicare won't pay for some potentially preventable, hospital-acquired conditions.¹⁰⁶
- Adverse events the same approach can be applied to a broader range of events that cause harm to patients, but are not always avoidable. Pricing can be adjusted for high and low rates of health problems acquired in hospital, long hospital stays, or death.¹⁰⁷
- Readmissions adjusting payments for the proportion of patients who are readmitted. A hospital group in the USA is

¹⁰⁴ To "advise the Commonwealth, the States and the Territories in relation to funding models for hospitals", Commonwealth of Australia (2011)

 ¹⁰⁵ Parnell (2013); Duckett, *et al.* (2008); Queensland Health (2013a)
 ¹⁰⁶ Examples are objects being left in patients after surgery, patient falls, hospital-acquired urinary tract infections and administration of incompatible blood, Department of Health and Human Services (USA) (2012)

¹⁰⁷ A study on adverse events in Victoria notes that rates should be adjusted for patient complexity, Hauck, *et al.* (2012). Different types of hospitals (e.g. teaching and rural) have different rates, which may warrant payment adjustments for performance within peer groups. McNair, *et al.* (2010) proposes a funding strategy to incorporate adverse event rates.

trialling a flat price that covers any follow-up treatment for up to 90 days after leaving hospital.¹⁰⁸

- Pathways only paying the cost of the best package of care for a condition.¹⁰⁹ Examples in the UK include a pathway for treating hip fractures and pricing to promote same-day hospital stays for some surgical treatments.¹¹⁰
- Patient-reported outcomes adjusting payments based on the benefits that patients report. Since 2009, patients getting four types of surgery in the UK have been invited to fill out questionnaires before the surgery and several months afterwards.¹¹¹ They report on their symptoms, functional status and health-related quality of life. In 2015, accountable care organisations in the USA will have to demonstrate patient-reported benefits from treatment.¹¹²

Many studies suggest that pricing based on best practices can be effective, but conclusive evidence is still lacking.¹¹³ Some of these

new approaches also raise risks, but most can be managed through good design, careful evaluation and adjustment.¹¹⁴

All five methods might be used, but some can be tried sooner. Adjusting payments for never events and adverse events can be trialled now. Readmissions are more complex. They cover things that happen outside hospitals, many of which are not due to the quality of hospital care. This means that extra caution will be needed when designing any pricing adjustments.

The other two options don't use existing data and will take longer to research, design and test. In particular, routine collection of patient-reported outcomes for pricing is a much longer-term project, but could be valuable.¹¹⁵

The changes this report proposes are only possible because an architecture for hospital cost data was built over decades.¹¹⁶ In a similar way, we should start developing high-quality data on patient reports about the impact of care. In time, this can help link hospital funding ever more closely to the ultimate objectives of health care: health and wellbeing.

¹⁰⁸ Not every complication can be eliminated, so the flat price is a little higher than the cost with no complications, giving hospitals a financial reward for low rates of readmissions or complications, Abelson (2007).

¹⁰⁹ Care pathways are used for selected conditions when clearly supported by robust evidence and clinical consensus. National Hip Fracture Database (2012) ¹¹⁰ Department of Health (England) (2013)

¹¹¹ Hip or knee replacements and surgery for varicose veins or groin hernias. Response rates for these treatments range from 65 to 85%. See Black (2013).

¹¹² In the future, this might be linked to payment, Hostetter and Klein (2012).

¹¹³ Eijkenaar, *et al.* (2013) Eagar, *et al.* (2013) Australian Commission on Safety and Quality in Health Care (2013).

¹¹⁴ An example of a risk is that adjustments for readmission don't do enough to take into account whether readmissions are due to the quality of hospital care or to the quality of care by other providers.

¹¹⁵ See, e.g., Devlin, *et al.* (2010); McGrail, *et al.* (2011); Black (2013). Varagunam, *et al.* (2013) found UK outcomes data changed little from 2009-12 and more effort may be needed to communicate results and advise on actions to take. Snyder, *et al.* (2012) discuss some design and implementation issues.

¹¹⁶ The data we use, the National Hospital Cost Data Collection, were first collected in the early 1990s and have been gradually improved ever since. This dataset is now highly valued and unique in the world, PwC (2013b).

Conclusion

Avoidable costs in Australia's public hospitals total almost \$1 billion a year, at a conservative estimate. This spending isn't caused by the characteristics of hospitals or the needs of patients. The money could be much better spent.

Setting the right price for services is a good way to promote efficiency. But for most hospital services the price ignores an important fact: the costs in many hospitals are too high. All hospital costs are simply added up and the price is set near the average.

Instead, state activity-based funding should not pay for avoidable costs. States should set an efficient average price, excluding hospital spending that is clearly too high. Unlike a simple cut, this price will respond to how well costs are controlled, falling more when avoidable costs are high. Over time, state efficient average prices will drive hospital costs down towards achievable benchmarks.

But the reform won't work on its own. Tackling avoidable cost has to be at the heart of how the whole system works. Hospitals need data showing how much of their spending is avoidable and where that spending is concentrated. This is the only way hospitals can know where they need to improve. To make hospitals and all governments accountable, the National Health Performance Authority or another national agency should publicly report on avoidable hospital costs. The way the public hospital system is managed also needs to focus on avoidable cost. Other kinds of spending that can counteract the efficient price – such as block funding and financial bailouts – should be used sparingly. Along with measures of quality, avoidable cost should dictate whether hospitals have more autonomy or whether they are managed closely to improve their performance.

Taking avoidable cost out of the system is an important step. The next step will be to make prices reflect the quality of care and the health outcomes it achieves – rewarding hospitals for achieving health gains. The Independent Hospital Pricing Authority should advise states on the best ways to do this. Figure 28 on the following page sets out a timeline for these changes.

Tackling avoidable costs is an opportunity. In the face of tight budgets and growing demand for health care, spending money where it makes the biggest difference is more crucial than ever. Avoidable costs don't help patients. If this money was spent where it was most needed, it would go a long way towards making hospital care easier to access and more effective. Figure 28: A proposed timeline for cutting avoidable costs and trialling pricing for quality

| | 2014-15 | 2015-16 | 2016-17 |
|--|--|---|---|
| States | Efficient average price for activity-based funding Use avoidable cost to help determine autonomy/control of hospital networks | Set up a system providing hospitals with detailed information on their (unexplained and avoidable) costs Trial pricing that uses adjustments for quality | Begin routine collection of patient-reported outcomes for some procedures |
| Independent Hospital Pricing Authority | Advise governments on incorporating quality and outcomes into pricing | | |
| National Health Performance Authority* | | Start publishing hospital-level data on avoidable cost | |

Source: Grattan Institute

Glossary

Activity-based funding

Activity-based funding is a system for funding public hospital services based on the actual number of services provided to patients and the efficient cost of delivering those services.¹¹⁷

Acute care

Acute care involves surgery, diagnostic or therapeutic procedures to treat an illness or injury that lasts for a limited period.

Administrator, National Health Funding Pool

The Administrator of the National Health Funding Pool oversees national health funding flows into and out of the Funding Pool and State Managed Funds.

Admitted acute services (or activity)

Hospital services for patients who have been admitted to a public hospital for timely management of one or more problems.

Avoidable cost

Unexplained cost (see below) above the average level in the state (per admission).

Block funding

Block funding is a system of funding hospital services based on a fixed amount, not related to activity. For example, block funding is

provided to states and public hospitals to support teaching and research undertaken in public hospitals, and for selected smaller rural and regional hospitals.

Hospital Network

Formally 'local hospital network', a group of one or more hospitals that is governed by a board. The official terminology differs between states. Every public hospital is part of a local hospital network. Boards of hospital networks are responsible for the overall performance of hospital services in their network. In this report, local hospital networks are referred to as 'hospital networks'.

Independent Hospital Pricing Authority

The Independent Hospital Pricing Authority is responsible for determining the national efficient price for public hospital services.

National Efficient Price

The national efficient price is a national benchmark, currently set at the national average, for the level of funding required to meet the cost of providing care.

National Health Funding Pool

The National Health Funding Pool receives all Commonwealth funding (activity-based and block funding) and state activity-based funding for public hospitals, and makes payments to states and

¹¹⁷ National Health Funding Body (2013)

hospital networks. Each state has its own State Pool Account within the Funding Pool.

National Health Performance Authority

The National Health Performance Authority reports on the performance of hospitals and health and health care in communities across Australia. The Performance Authority's work is governed by the Performance and Accountability Framework.

National Health Reform Agreement

The National Health Reform Agreement entered into by all states and the Commonwealth in August 2011 amongst other things sets out a new national framework for public hospital governance and funding.

National Weighted Activity Unit

The National Weighted Activity Unit (NWAU) is a measure of health service activity expressed as a common unit, against which the national efficient price is paid. It provides a way of comparing different hospital services.

The average hospital service is worth one NWAU – the most intensive and expensive activities are worth multiple NWAUs, the simplest and least expensive are worth fractions of an NWAU. NWAUs currently are used to describe in-patient, outpatient and emergency department care.

Performance and Accountability Framework

Endorsed by the Council of Australian Governments, the Performance and Accountability Framework identifies indicator areas against which national hospital performance is measured for equity, effectiveness and efficiency.

States

States and territories.

State Managed Fund

A separate bank account established by each state for the purposes of health funding.

Unexplained cost

Hospital costs above the lowest-cost hospital in a state after adjustments have been made for a range of clearly legitimate causes of cost. Legitimate causes include patient characteristics (for example the health problem treated, and if the patient lives in a remote area) and hospital characteristics (for example being a specialised women's or children's hospital).

Appendix A: Pricing options

We considered a range of options for both the standard that hospitals could be expected to reach and the adjustments made to take other factors into account. This appendix presents the major benefits and risks that informed our recommendations.

This Appendix does not include options that need further research (on effectiveness or risk) or involve unavailable data, such as adjustments for quality. It excludes options that we do not think are feasible, such as the median admission cost (which is very low due to the high number of low-cost admissions).

What standard should hospitals reach?

| | Average cost of all admissions Recommended | Below-average cost of all admissions* | Average cost in average hospital | Average cost in median hospital |
|-----|---|---|--|---|
| Pro | Minimal change More stable than provider- based benchmark | More stable than provider- based benchmark Drives efficiency | Provider-level benchmark may aid clarity & acceptance (as the proportion of hospitals meeting pricing benchmark is clear) | |
| Con | Targets average, not best practice (lowest savings) | Funding cuts may exceed avoidable costs | Less stable benchmark | Funding cuts may exceed avoidable Less stable benchmark |

* e.g. 10% below the average

What costs are funded?

| | Adjust for legitimate patient factors | + remove avoidable costs Recommended | + adjust for safety (adverse events) |
|-----|---|---|--|
| Pro | Minimal change | Explicitly targets avoidable costs (and impact will moderate if they fall) | Expected to improve safety |
| Con | <i>Status quo</i> – doesn't do enough to reduce excess cost variation | More technically complex and difficult to explain than other options | No clear link to cost control – out of scope for this report |

When Victoria introduced activity-based funding in 1993, it did so in the context of significant budget reductions.¹¹⁸ It achieved those reductions by introducing 'target pricing' or 'residual pricing'. The state price was effectively calculated as a residual by dividing total funds available by expected activity. Although 'target pricing' is still used in practice, because it has no link to the actual costs of care, it may be seen as less legitimate than other pricing strategies.

States may choose to consider adjustments for safety (using frequency, number or type of adverse events) but as we found no

¹¹⁸ Duckett (1995)

meaningful relationship between adverse events and unexplained cost, we have not discussed this option in detail.¹¹⁹

States may also choose to set an arbitrary benchmark below the average. However, there is a risk that either initially, or over time, prices significantly below the average may remove funding that exceeds the level of avoidable cost by too much.

We did not recommend hospital-level benchmarks as they are likely to be much more volatile, particularly in smaller jurisdictions. Currently, activity-based funding at both a Commonwealth and State level uses an admission-level approach, so provider-level settings would require additional change.

We also considered hospital-level payments based on the level of avoidable cost in different hospitals. While this avoids price reductions that exceed avoidable costs, it was rejected because it would introduce strong gaming incentives and would be much more complex to administer than uniform prices and adjustments.

¹¹⁹ This report is principally about controlling costs, assuming quality is unchanged.

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