

HEALTH SUBSTITUTABILITY

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BACKGROUND

- 1 State governments are not the sole providers of health services. Health services are also provided by the private (non-State) sector. Some of these non-State services have no equivalent service provided by the State government (for example, States tend not to provide cosmetic surgery or optometry services). However, some of these health services can be provided either by State, or non-State providers.
- 2 The Commission proposed that if a State has more residents that use non-State health services than another, it should be able to provide the average standard of service to its population at a lower cost to itself. The impact that the non-State sector has on the demand for State government services is referred to as the substitutability of services.
- 3 While moving to a direct assessment approach (from the subtraction model approach in the 2010 Review), the Commission proposed that the impact of the non-State sector would be captured directly through economic environment factors. These factors would then be applied only to the proportion of expenses that are assessed as substitutable. A separate factor would be calculated for each component.
- 4 In the draft report, the Commission stated that it was unsure of the level of substitutability for each component and sought State views. It used placeholders for each component, while identifying the services it would use to generate the economic environment factor.
 - Emergency departments (EDs) – 40%, with the economic environment factor based on the level of bulk billed general practitioner¹ (GP) benefits paid from Medicare
 - Outpatients – 40%, with the economic environment factor based on the level of bulk billed specialists, pathology and imaging benefits paid from Medicare
 - Community health – 75%, with the economic environment factor based on the level of bulk billed GP benefits paid from Medicare
 - Admitted patients – 0% because these services are already largely accounted for by using remoteness in the SDC calculations.
- 5 In response to the placeholders in the draft report, States had different views on the degrees of substitutability. New South Wales, Victoria and South Australia said that the placeholder levels were too high and needed to be reduced while the ACT and the Northern Territory thought the levels were either about right or could be increased.
- 6 As such, staff engaged two consultants to report on the substitutability between State and non-State sector services. Their advice is considered in this paper.

¹ Also includes other Medicare unreferral attendances such as enhanced primary care and practice nurse items.

- Elizabeth Savage – contracted for one day’s work, provided general comments on the proposed levels of substitutability as outlined in the draft report.
 - James Downie – contracted for seven days work and provided more detailed comments on our proposed levels of substitutability.
- 7 States have provided comments on the content of these reports but their views have not fundamentally changed from previous submissions, which are reflected in this paper.
- 8 This paper examines the levels of substitutability for each component individually.

EMERGENCY DEPARTMENTS

- 9 In the draft report, the Commission noted several studies that indicated a varied level of substitutability. Studies based on clinical assessments of ED presentations estimate the proportion that could have been managed by a GP.
- An Australian Institute of Health and Welfare (AIHW) clinical assessment indicated that approximately 38% of ED visits are potentially substitutable², based on patients allocated to triage 4 or 5, did not arrive by ambulance, police or correctional vehicle, were not admitted to the hospital or referred to another hospital and did not die.
 - A study of 3 major metropolitan hospitals in Perth published in the Medical Journal of Australia by Nagree et al estimated that 10-12% of presentations could have been managed by a GP.³ These attendances comprised 3-5% of total ED length of stay. This study concluded that the AIHW methodology overestimated the actual proportion of GP-type patient attendances.
 - The ABS *Patient Experiences in Australia* study found that 23% of people that presented at the ED thought care could have been provided by a GP. Another 15% thought that the care could not be provided by a GP and cited the time or day as the main reason for not seeing a GP.
- 10 The Commission concluded that the ABS patient experience survey gave a measure of what patients (rather than clinicians) consider being substitutable, which was closer to the concept that we wanted to measure. As such, the placeholder adopted by the Commission in the draft report was 40% substitutability of ED and GP services.

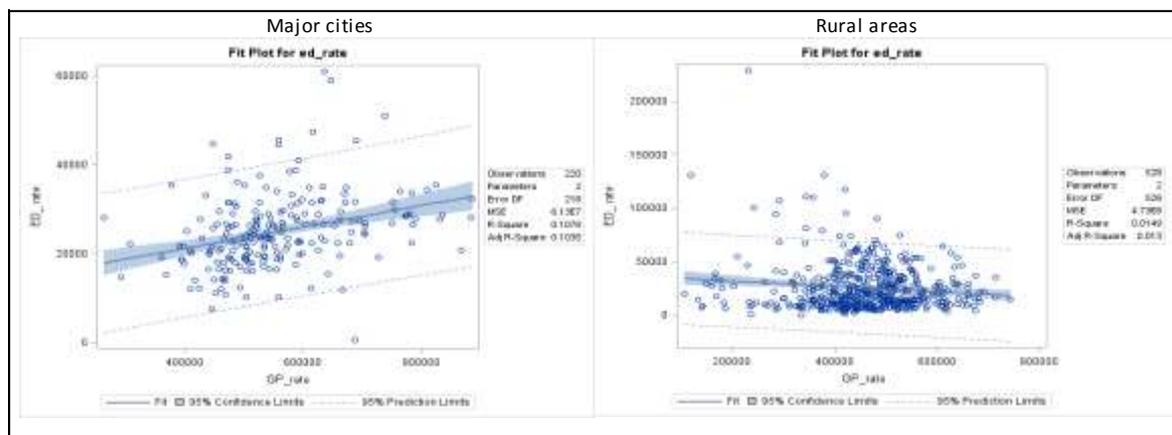
² *Australian hospital statistics 2011-12 — Emergency department care (AIHW)*. Note, the figure is based on larger hospitals only and does not include GP-type presentations to smaller hospital EDs.

³ Nagree et al, *Quantifying the proportion of general practice and low-acuity patients in the emergency department*, Medical Journal of Australia 198(11), June 2013.

State views

- 11 New South Wales provided data that showed a positive correlation between ED presentations and GP attendances in major cities (Figure 1). It considered that an inverse relationship would exist if the concept of substitutability held. However, they conceded that there was an inverse relationship in rural areas across Australia. As a result, they said that economic environment factors for EDs and GPs should be limited to rural areas given that substitutability does not hold for major metropolitan areas.

Figure 1 Substitutability of GP and ED services in major cities and rural areas



Source: NSW Health calculation, Public Health Information Development Unit (PHIDU) data 2009-10 and 2011-12.

- 12 New South Wales Health also conducted analysis of ED presentations in a number of hospitals from 2004-05 to 2008-09. The results showed that the level of avoidable presentations was 18% for metropolitan hospitals and 27% for regional hospitals, which is considerably lower than the 40% outlined in the draft report.
- 13 Both New South Wales and Victoria believe the Commission made errors in its interpretation of the ABS *Patient Experiences* survey data. They believe that the additional 15% that cited the time or day as the main reason for not seeing a GP should be excluded because it was most likely due to the lack of GP availability after hours either because it was the weekend, or after business hours when their GP is closed.
- 14 Victoria asserted that the level of substitutability is only 2.5%, where patients stated that they attended the ED because the waiting time for a GP was too long. However, they concede that, for an upper limit, the evidence does not support a rate of substitutability any higher than 23%.
- 15 South Australia provided data on price weights for emergency services used by IHPA that showed that triage 4 and 5 presentations are significantly less costly than triage 1 to 3 presentations. South Australia said that the data to be used in the

calculations need to be cost-weighted, which would reduce the level of substitutability.

- 16 On the other hand, the ACT suggested a substitutability proportion of 45% while the Northern Territory said the rate should be substantially higher than 40%.

Consultants' views

- 17 The consultants believe that the 40% level of substitution of ED services used as a placeholder in the draft report is too high and is more in the range of 10-20%.
- 18 Savage said all GPs provide services that are technically substitutable with the triage 4 and 5 services provided in EDs. However, the extent to which people are willing to change an intended ED visit to a GP visit varies. GP clinics co-located with EDs have been the most successful strategy for reducing ED visits. Bulk billed services are also thought to be more effective. She concluded that 20% substitutability might be a more suitable approximation level.
- 19 She said the Commission will struggle to obtain data on, and a comprehensive model quantifying the impact of, the location of GPs, their opening hours and other factors. In the absence of this, the level of bulk billed GP throughput is a better measure of the level of substitutable private services than total GP throughput.
- 20 Both consultants did not support using the proportions from the ABS *Patient experiences* survey. Downie said it is difficult to draw robust conclusions from the survey and it isn't suited to making the estimates that the Commission need for this methodology. Savage said that surveys of patient intent or reasons are notoriously poor at explaining what people actually do. However, if the Commission does use the survey, it should be more explicit about the concepts it adds to derive the 40% estimate, and should not include groups that may not be substitutable.
- 21 They expressed more support for the Perth hospital study by Nagree et al, although Savage noted that the study was confined to a small sample of metropolitan hospitals and may not be representative of other regions.
- 22 Downie provided a new reference — the Canadian Institute for Health Information (CIHI) released a report in 2014 estimating that 20% of patients who are not admitted at the end of their ED presentation could have been treated by a GP. This equates to 17% of all ED presentations in the Canadian system. In 2011-12, 70% of Australian ED presentations ended with the patient not being admitted or transferred to another hospital. Applying the Canadian estimate of 20% of non-admitted ED patients being potentially avoidable to the Australian data yields an estimate of 14% of total ED presentations being potentially avoidable.
- 23 On balance, the AIHW figure appears to be significantly overstated when compared with the Perth study and the more comprehensive approach adopted by CIHI.

- 24 Downie said that given that the ABS survey data relies on patient perception, the clinically derived methodologies by Nagree et al and the more comprehensive approach adopted by CIHI should be given priority, especially given that they both yield similar results.
- 25 For this reason, he said that a more appropriate estimate for the Commission to use for the proportion of ED presentations that are potentially able to be provided by GPs is 15%. Although, considering triage 4 and 5 presentations are around half the cost of other triage presentations, the substitutable expenses may be lower than 15%.

Analysis

- 26 Based on the analysis provided by the consultants, staff agree that the level of substitution of ED services should be reduced more in the range of 10-20%. However, if we consider each of the studies presented by States and the consultants, there are a number of issues the Commission needs to take into account.
- Compared with the other studies, the AIHW figure of 38% of substitutability appears high. Downie said that the methodology used is likely to be revised in future years, partly in response to a reasonable degree of disagreement about whether or not the AIHW methodology produces a reasonable result.
 - The Perth study by Nagree et al concludes that 10-12% of ED presentations could have been managed by a GP. However, Savage notes that this study was confined to three metropolitan hospitals in Perth and may not be representative of other regions. Staff agree with Savage. Data from IHPA show that outside major cities, there are a greater proportion of triage 4 and 5 presentations to an ED (Table 1). In addition, staff consider the concept trying to be measured is not just technical clinical substitutability, there is a social element of where patients choose to be serviced. This indicates that the 10-12% level probably understates the true level of presentation substitutability across all regions.

Table 1 ED presentation rates per 1 000 population, by remoteness, 2012-13

Remoteness	All EDs	Triage 4 and 5	% Triage 4 and 5
Major cities	275	140	51%
Inner regional	456	264	58%
Outer regional	546	319	58%
Remote	833	543	65%
Very remote	1 039	775	75%
Total	347	190	55%

Source: IHPA special data request.

- While both consultants did not support using the proportions from the ABS *Patient experiences* survey, staff believe that the headline measure of 23% of

people that presented at the ED thought care could have been provided by a GP, could be used as a general guide to the level of substitutability.

- The Canadian report, which translates into 14% of total ED presentations in Australia being potentially avoidable, could also be used as a general guide to the level of substitutability.

27 The Commission could also consider⁷ the State policies and other comments made by hospital officials on this issue.

New South Wales Health ED policy document⁴

1.3. Patients/Carers may be informed of suitable alternatives to the Emergency Department such as collocated General Practitioner services, Urgent Care Centres, Aboriginal Medical Services or nearby Medical Centres.

Daily Telegraph article⁵

NSW Health minister Jillian Skinner said demand for hospital services was increasing, but urged people to visit their GP if their condition is not serious.

She said: "It is a tribute to the skill and compassion of emergency department staff in NSW public hospitals that so many people turn to them when they are unwell, but to manage growing demand it is important that people with minor health concerns see their GP."

Guidelines for the Victorian ED Care Coordination Program 2009 (St Vincent's Hospital)⁶

...alternative community-based services are arranged to prevent unnecessary admissions and facilitate diversions from the ED.

South Australia Health website⁷

...The emergency department can get incredibly hectic. It's a place where they deal with life and death situations every day. So if you've got a cough or a cold and are thinking of heading to emergency, call your GP or use the National Health Services Directory to find an after-hours or alternative health service.

Canberra Times article⁸

ACT Health director-general Peggy Brown said: ACT Health was encouraging people with non-life threatening or non-limb threatening

4 <http://www.health.nsw.gov.au/policies/manuals/Documents/pmm-6.pdf>

5 <http://www.dailytelegraph.com.au/news/nsw/patients-are-clogging-up-state-hospital-emergency-rooms-with-minor-conditions-costing-taxpayers-close-to-1-billion-a-year/story-fni0cx12-1226854682350?nk=97061c97db26cc42f68e6197e3601ab9>

6 [http://docs.health.vic.gov.au/docs/doc/A6A247F8366D9B05CA257AD2007A291E/\\$FILE/edcc_guidlines.pdf](http://docs.health.vic.gov.au/docs/doc/A6A247F8366D9B05CA257AD2007A291E/$FILE/edcc_guidlines.pdf)

7 <http://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/protecting+public+health/health+promotion+and+protection/emergency+departments+are+for+emergencies>

8 <http://www.canberratimes.com.au/act-news/surge-in-demand-puts-canberra-hospital-emergency-department-under-enormous-pressure-20140917-10i2ch.html>

injuries to use alternative services such as walk-in centres at the Tuggeranong or Belconnen community health centres, their GP, healthdirect or CALMS or the National Home Doctor Service for non-urgent after hours care.

- 28 These extracts show that State governments are actively trying to encourage people with minor medical conditions to not present at the ED and to seek alternative care arrangements. This suggests that the level of substitutability is greater than very low levels as suggested by New South Wales or the 2.5% as suggested by Victoria.

Summary

- 29 There are many factors that need to be considered when estimating a level of substitutability for EDs.
- Clinical studies – the level of substitutability as outlined in these studies ranges from 10% to 38%.
 - Consultants' views – both consultants were of the view that the level of substitutability is approximately 10-20%.
 - State government policies – States have adopted policies to try and reduce ED costs by encouraging people to seek alternative care arrangements.
 - Lower costs – it is acknowledged that triage 4 and 5 presentations are less costly than triage 1-3 patients.
- 30 On balance, taking all of the above into account, staff intend recommending the Commission adopt a substitutability level within the range of 10-20% of emergency departments component expenses.

NON-ADMITTED PATIENTS

- 31 The provision of other non-admitted patient type care is complex. Services include a wide range of pre and post hospital and clinical treatments, including:
- the management of chronic conditions and pain management
 - obstetrics, gynaecology, cardiology, oncology and other specialist services
 - numerous ancillary services, often referred to as allied health, such as physiotherapy, chiropractic, dental, dietetics and optical
 - pharmacy, pathology, and radiology and imaging services
 - mental health and alcohol and drug treatment.
- 32 The majority, if not all, services provided in public hospital outpatient clinics are also provided in the private sector. There are private gynaecologists, cardiologists, physiotherapists and chiropractors that all offer the same type of service as that provided in public hospitals. There are also pathology, radiology and imaging services

that are provided in a private setting. As such, people have a choice to attend an outpatient service provided in a public or private setting and there would be some level of substitutability in these services.

- 33 However, in the draft report, the Commission stated that while it agreed that there is a private alternative for non-admitted patient services, it was unsure as to what degree the quantity of these services provided in the private sector influence the level of services provided in the public sector.
- 34 The ABS *National health survey* (NHS) found that 50% of outpatients had been admitted to hospital in the past 12 months. For most of these people, their visit seems likely to be connected to their earlier admission, and there would be low levels of substitutability for this group, although not negligible. However, for the other 50% of visits without a previous admission, there may be some level of substitutability.
- 35 The placeholder adopted by the Commission in the draft report was one consistent with the ED placeholder, of 40% substitutability of outpatient services.

State views

- 36 Similar to the stated positions in EDs, New South Wales and Victoria maintain that the figure should be lower than the 40% placeholder. New South Wales Health estimated the substitutability of specialist outpatient services was closer to 10% while Victoria said the Commission should take a conservative view in light of the issues around cost and availability of non-State services, and said a rate of substitutability of around 25% would be more appropriate.
- 37 Tasmania said while there is no obvious link between the degree of substitutability applicable to EDs and that applicable to outpatient services, they expect the outpatient percentage to be higher than EDs.
- 38 The ACT supported 40% while the Northern Territory said it should be 50% or higher.

Consultants' views

- 39 Both consultants acknowledged that to calculate the level of substitutability in this area is more problematic than for EDs.
- 40 Savage provided the following advice:
- Specialists – around 30% of services are bulk billed, with these services presumably only available for people on health care cards. Most of these services are likely to be substitutable. For the 70% of services not bulk billed, the price constraint is considerable, and so the level of substitutability is considerably lower.
 - Pathology and imaging – most services are bulk billed (over 80%), so there would be a high degree of substitutability as there is no price constraint.

- 41 Downie presented similar advice to Savage. He said that non-admitted services should be considered to be 100% potentially substitutable in the vast majority of specialities. For example, most medical and surgical specialists who work in the public sector also have rights of private practice and offer similar services to patients in their private consulting rooms.
- 42 Similarly, other non-admitted allied health services available through the public hospital system are also available privately in the community (for example, physiotherapy, occupational therapy, psychology etc). Pathology and diagnostic imaging services are now widely available throughout the private sector, and for almost all services should be considered close to 100% potentially substitutable.
- 43 However, the bulk billing rates for these services vary dramatically, and should be taken into account. He calculated that, based on the bulk billing rates for each area of outpatient services (specialists, obstetrics, anaesthetics, pathology and imaging, and allied health), 55% of these services could be assumed substitutable.

Analysis

- 44 The approach taken by the Commission, as outlined in the draft report, to measure the level of substitutability and the approach taken by the consultants were different. The Commission argued that the level of substitutability for patients that came through the hospital as an inpatient was minimal. The consultants didn't take this into account and assumed that all non-admitted services were potentially substitutable, discounted by the bulk billing rate of each service.
- 45 Staff have attempted to calculate a level of substitutability using the consultants approach. We have disaggregated all non-admitted patient services into broad groups.
- Allied health (physiotherapists, chiropractic, dental, dietetics and optical etc) – staff still consider the majority of these services to not be substitutable because they are generally linked to an inpatient service and would be independent of the level of private provision outside the hospital. We estimate these services would make up approximately 10% of all non-admitted patient costs.⁹
 - Specialists (obstetrics, gynaecology, cardiology, oncology etc) – staff consider that a bulk billing rate of 30% represents the level of comparable services provided in a private setting considering the price constraint as outlined by Savage. We estimate these services would make up approximately 55-60% of all non-admitted patient costs.
 - Pathology and imaging – staff consider that a bulk billing rates of 85% and 75% represent the level of comparable services provided in a private setting

⁹ Estimates based on the individual occasions of service data presented in AIHW *Australian hospital statistics* 2012-13 and the average Medicare patient contribution for each service.

considering the price constraint. We estimate these services would make up approximately 20-25% of all non-admitted patient costs.

- Other (mental health, alcohol and drug treatment etc) – in some States these services are provided in a hospital or in a community health setting, or in most cases, both. Staff consider that a large proportion of these services could be provided in a private setting, similar to our arguments in the community health component (75% substitutability). We estimate these services would make up approximately 10-15% of all non-admitted patient costs.

46 Based on estimated State spending and the level of bulk billing rates in each broad service area, staff have estimated the level of substitutability using this approach is approximately 40-45%.

47 It should also be noted that the substitutability rate that Downie calculated was based on the estimated level of services provided and did not take into account the variable costs of each service. Considering specialist services are more costly (and with a lower bulk billing rate) than other non-admitted patient services such as pathology, it could be implied that his estimated rate of substitutability would be lower than 55%.

48 In summary, the results show that we get similar results to the broad approach as outlined in the draft report. On balance, staff intend recommending the Commission adopt a level within the range of 40-45% substitutability of non-admitted patients component expenses.

COMMUNITY HEALTH

49 There is significant variety both within and between States in how community health services are delivered. While the majority are provided in dedicated community health centres, they can also be provided in schools, local councils and in clients' homes.¹⁰

50 In addition, there is considerable overlap in the services provided in the public and private sector. There are many similarities in the services provided by GPs (and other private or non-State health providers, including local governments) and those provided in community health centres and public health programs. For example, a GP provides immunisation vaccines as do State funded professionals. GPs also assist people with drug rehabilitation programs, family planning, anti-smoking advice and other health promotion activities.

51 In the draft report, the Commission said that it considered there was strong evidence of substitutability between GPs and community health services. However, similar to

¹⁰ AIHW, Australia's Health 2010, pp 356-357.

the difficulties in outpatients, it was unsure as to what degree the quantity of these services provided in the private sector influence the level of services provided in the public sector.

- 52 In the absence of any further information, the Commission considered that a placeholder of 75% would be a reasonable estimate of the substitutability of community health services.

State views

- 53 Based on advice from senior health service managers from one of the largest Local Health Districts in New South Wales, New South Wales Health provided analysis that indicated that the level of substitutability for community health is significantly lower for most services.
- 54 New South Wales said that the private sector (including GPs, psychologists and allied health providers) overwhelmingly focus on less severe disorders such as anxiety and affective disorders, and provide planned, non-emergency treatment for those disorders while State services provide care for more severe disorders (for example, psychoses, severe mood disorders, personality disorders).
- 55 Victoria and South Australia said that a broader view should be taken concerning the substitutability of community health services. Victoria said that while many individual elements of State funded community health services might also be performed by GPs or the private sector, there are many that are not. It is unlikely that increases in GP provision of family planning, well-baby and drug rehabilitation services will lead to a significant reduction in the need for deliberate, co-ordinated delivery of these services through State community health organisations.
- 56 Victoria said that the Commission should err on the side of caution and apply a more conservative rate of 50% substitutability.
- 57 Tasmania, the ACT and Northern Territory supported the Commission estimate of 75%.
- 58 Tasmania contends that substitutability increases as the complexity of care decreases. Community health care is the least complex which means it has the highest substitutability.

Supplementary State views

- 59 In response to the analysis conducted by New South Wales Health, staff asked States to provide advice on the method adopted by New South Wales and whether they had any data that may assist in this calculation.

- 60 Most States were of the view that the data produced by New South Wales was not fit for the Commission's purposes and should not be used as the basis for the determining the level of substitutability in the community health assessment.
- 61 However, no other State was able to provide any new information that would be able to assist the Commission in determining an appropriate level of substitutability in this component.
- 62 Queensland said that for many community health services, if the State did not fund them, it is likely that clients would not access any other service, which may lead to a deterioration of their condition and give rise to additional costs through the public hospital system. In the case of primary health care, the State is a provider of last resort. The State generally only provides services in locations where no private providers are available.

Consultants' views

- 63 Savage agreed with the States who maintain that the proposed level is too high and believes the level is likely closer to 50% than 75%. Savage's advice to obtain a more accurate figure would be to do a micro analysis, similar to the partial work undertaken from New South Wales. Staff could investigate each area of community health separately (immunisation, mental health, family planning etc) and expense weight the determined level of substitutability.
- 64 Alternatively, Downie said that the vast majority of community health services are available in the private sector, noting that this substitution is not always with identical services. For example, the services provided by maternal child health nurses could equally be obtained from a GP or general practice nurse if that was a preferred option by the parents. Equally, allied health services are widely available in the private sector. Infant hearing screening services can be obtained from private audiology services if required (for example, follow services for babies deemed at risk are provided by the private sector).
- 65 However, he said that these services were also influenced by the availability of bulk billing and that the 75% substitutability selected by the Commission appears reasonable, noting the limitations of available data to inform this estimate more fully.

Analysis

- 66 In the draft report, the Commission said that for individual community health services, the level of substitutability is likely to vary.
- Community health centre services – health services provided in a community setting including domiciliary nursing services, well baby clinics, dental health, home nursing services, community health centre programs, family planning,

alcohol and drug rehabilitation etc. The majority of these services can be provided by a GP or other private or non-State health provider.

- Public health services – activities for the protection and promotion of health and the prevention of disease, illness or injury. These include organised immunisation, health promotion, screening programs, communicable disease control, and prevention of hazardous and harmful drug use. Some of these services would have a private or non-State health provider alternative such as immunisation and some health promotion activities.
- Mental health services – mental health services provided in a community setting. Many services could be provided by a GP or other private or non-State health provider but some services are provided by community organisations that are part funded by State governments.
- Other health services – these include health research and administration and pharmaceuticals, medical aids and appliances etc. While the Commonwealth and many universities provide health research, staff doubt the provision of any of these services would impact on State government provision.

67 In response, States have been unable to provide any reliable costings that would enable us to calculate a level of substitutability in this area. Their comments are largely at the high level saying that the 75% is ‘too high’ or ‘about right’.

68 The consultants held similar views without being able to offer a definitive answer. On balance, staff intend recommending the Commission adopt a level within the range of 60-75% substitutability of community health services component expenses.

ADMITTED PATIENTS

69 In the draft report, the Commission decided not to make a separate adjustment for the effect of private hospitals on public hospital admitted patient services. It said that, as in the 2010 Review, we assess the substitutability between public and private hospitals by using remoteness within our assessment of SDC. Admission rates to public hospitals increase with remoteness, in part because of the lack of private hospital alternatives. We assumed that there was no material difference in the availability of private hospital services in comparable areas of different States, except for the Northern Territory.¹¹

70 New South Wales said that, apart from Queensland (which has high levels of private hospital use and low level of public hospital use) there is no apparent relationship between levels of private and public hospital use. As such, the Commission

¹¹ With the move from State-based Accessibility and Remoteness Index of Australia (SARIA) to ABS's standard classification of remoteness, Darwin is now considered an outer regional area. This will account for the difference in private provision of admitted patient services in Darwin compared with other capital cities.

considered that substitutability for admitted patients should not be separately assessed. This was also the position of the Commission in the 2010 Review.

- 71 In summary, the Commission position was that the substitutability of services was sufficiently small, and the supply of private services in comparable areas of different States sufficiently similar, that an economic environment adjustment would not be material. However, the Commission did recognise the costs associated with private patients in public hospitals.

State views

- 72 In the last review, several States provided comments on the impact of private hospitals on the provision of public hospital admitted patient services. They believed areas with the same degree of accessibility/remoteness do not have the same level of private provision in each State. They concluded the lower level of private health services in their jurisdictions compared with other States affected the level of services provided by the public sector.
- 73 However, in this review, there have only been minimal comments from States in this area. Western Australia said that the vast majority of services delivered in or through public hospitals are also delivered by private providers and argued that the Commission should consider this for the admitted patients component. It said that, traditionally, private hospitals have provided services at the less complex end of the inpatient spectrum of services, including elective surgery procedures, and especially surgical services provided on a day patient basis. However, in all States, there has been a trend for private hospitals to take on more complex (but not urgent) procedures.
- 74 New South Wales said that if the Commission were to include the impact of the non-State sector in other areas of health, it should also include the impact of private hospitals.

Consultants' views

- 75 Savage had only brief comments in this area. She said that while we maintain that the substitutability of admitted patient services is already accounted for by using remoteness in the SDC calculations, she thinks there are State differences in private and public hospital rates within major cities, and that additional work should be undertaken by the Commission to test for this.
- 76 On the other hand, Downie was able to provide much greater analysis on this issue. He said there is good evidence to support the assertion that most inpatient services are potentially substitutable in most major cities and inner regional areas, as the majority of procedures are performed in both public and private hospitals (albeit not to the same degree).

- 77 He argues that private hospital activity makes up about 40% of total admitted patient activity and the vast majority of admitted patient services are available in both private and public hospitals.
- 78 However, he does concede that not all of those services provided in private hospitals can be regarded as substitutable and that estimating the proportion of potential substitutability requires the consideration of a number of factors:
- differences in the type of admitted patient activity in each sector
 - private health insurance coverage
 - individuals' preferences.
- 79 Whilst the National Hospital Cost Data Collection (NHCDC) data suggests that private hospitals deliver services across the vast majority of Australian refined diagnosis-related groups (AR-DRGs), this does not necessarily imply they have similar case mixes. Data from the AIHW shows that 40% of all public hospital admissions were classified as emergency in 2012-13, compared to just 5% of private hospital admissions.¹² As a result, it can be reasonably argued that this proportion of public hospital activity is not substitutable.
- 80 In addition, given that privately insured patients make up the bulk of private hospital activity, it is also reasonable to say that only the 47.2%¹³ of the population who hold private health insurance could be regarded as potentially substitutable between the private sector and public sector.
- 81 Based on these two factors, Downie calculates that a reasonable estimate of the level of potential substitutability between the public and private sector for admitted patient services is 28% (that is, 47.2% * 60%).
- 82 However, he says that the actual level of substitutability is likely to be lower than 28% due to the fact a number of patients who hold private insurance will choose not to use it due to health insurance policy excesses and gaps charged by some specialists.

Conceptual case

- 83 In the 2010 Review, we said that disaggregating by remoteness achieved two things. It covered the higher costs associated with more remote hospitals, but it also covered non-State provision effects. There are less non-State alternatives in more remote regions. However, we said that partly because public and private hospitals have slightly different treatment focuses (public – medical, private – surgical) we didn't make any further distinction. That is, we assumed private hospital provision was sufficiently similar in Sydney as in Melbourne, Perth etc.

¹² Table 6.20 AIHW 2014. Australian hospital statistics 2012-13. Health services series no. 54. Cat. no. HSE 145

¹³ PHIAC Quarterly Statistics September 30 2014.

84 Table 2 shows that all hospitals in remote and very remote regions and the majority in outer regional regions are provided by the public sector.

Table 2 Public and private hospitals (a) by remoteness

	Major cities	Inner regional	Outer regional	Remote	Very remote	Total
Public	176	188	227	71	83	746
Private	220	57	14			291
Total	396	245	241	71	83	1 037

(a) Includes acute and psychiatric hospitals but excludes private free-standing day hospital facilities.

Source: AIHW, Australian hospital statistics 2012-13.

85 New South Wales argued that, apart from Queensland there is no apparent relationship between levels of private and public hospital use. While there may be some merit in this argument based on separations per 1 000 population, as shown in Table 3, if we look at patient days per 1 000 population, a different story emerges.

86 New South Wales, South Australia and the collective of the small States have above average use of public hospitals and below average use of private hospitals, while Victoria and Queensland have below average public and above average private use. Only Western Australia has below average use in both sectors. This suggests that there may be some level of substitutability (higher than average private, lower than average public and vice versa).

87 Based on this data and the views of the consultants, it is worth revisiting the level of substitutability and the differences in private provision between comparable areas in States.

Table 3 Public and private hospital separations and patient days per 1 000 population, 2012-13

	NSW	Vic	Qld	WA	SA	Small States	Total
Separations per 1 000 population							
Public	233	252	227	245	249	283	241
Private	147	166	203	182	179	118	168
Patient days per 1 000 population							
Public	868	815	715	774	963	877	821
Private	335	407	482	367	385	290	387

Source: AIHW Australian hospital statistics 2012-13.

Differences and similarities between public and private hospitals

- 88 Analysis conducted by the Productivity Commission¹⁴ on the differences and similarities between public and private hospitals, in part, supports the consultants' view.
- 89 When we focus on overnight stays in hospital, there are differences between the type of services provided in public and private hospitals.
- ...In a comparison of the 30 most frequent overnight AR-DRGs treated in each sector (which represent 33% of overnight separations in the public sector and 42% of overnight separations in the private sector), only eight AR-DRGs were common to both sectors. These common AR-DRGs mainly relate to obstetrics. Of the 22 overnight AR-DRGs that were distinct to the public sector in this sample, many were the type of separation commonly admitted through emergency departments, such as respiratory and cardiac-related cases, injuries, seizures, and treatment for poisoning and the toxic effects of drugs. All but one of these treatments were medical cases...
- ...Of the 22 overnight AR-DRGs that were distinct to the private sector in this sample, many were elective procedures such as knee or hip replacements. All but two of these AR-DRGs were surgical cases.
- 90 A subset of the 30 most frequent overnight AR-DRGs is provided in Attachment A. The analysis in this sample indicates that the private sector, for overnight patients at least, provide treatment for very different injuries/illnesses to those provided in public hospitals. Public hospitals tend to focus more on emergency medical treatments while private hospitals treat more non-emergency surgical patients. This can also be seen in the AIHW data provided in Table 4.

¹⁴ *Public and private hospitals*, Productivity Commission Research Report, December 2009, using data from 2007-08.

Table 4 National overnight separations by broad category of service, public and private hospitals, 2012–13

	Public hospitals	Private hospitals	Private proportion
	No.	No.	%
Emergency			
Surgical	239 139	34 462	13
Medical	1 357 568	136 733	9
Subtotal (a)	1 655 079	183 232	10
Non-emergency			
Surgical	335 692	558 950	62
Medical	420 157	298 318	42
Subtotal (a)	778 465	897 854	54
Total	2 433 544	1 081 086	31

(a) Subtotals include 'Other' broad category of service.

Source: AIHW, Australian hospital statistics 2012-13 Table S6.3 and S6.4.

91 On the other hand, when we focus on same-day separations in public and private hospitals, there are some similarities in the services provided.

.....There appears to be considerably more overlap between the sectors in their same-day separations. In a comparison of the 30 most frequent same-day AR-DRGs treated in each sector (which represented 70% of same-day separations in the public sector and 81% of same-day separations in the private sector in 2007-08), 22 AR-DRGs were common to both sectors, including the four most frequent same-day separations overall. Although differing in order of frequency, the top four activities in both sectors were: renal dialysis, chemotherapy, non-complex colonoscopy and lens procedures. The greater degree of overlap in same-day separations between the two sectors may be partly explained by the fact that same-day separations in both hospital sectors appear to be concentrated among a smaller number of AR-DRGs. Although the public and private hospital sectors displayed more similarity in their same-day separations than in their overnight separations, the concentration of medical cases in the public sector and surgical cases in the private sector was again apparent.

92 A subset of the 30 most frequent same-day AR-DRGs is provided in Attachment A. Similar to overnight stays, public hospitals tend to treat the majority of emergency-type patients (96%) as seen in Table 5. However, while the data in the table suggest that the disaggregation of non-emergency treatment into medical and surgical is similar to that of overnight stays, the analysis in the Productivity Commission report suggests that the AR-DRGs are very similar.

Table 5 National same-day separations by broad category of service, public and private hospitals, 2012–13

	Public hospitals	Private hospitals	Private proportion
	No.	No.	%
Emergency			
Surgical	21 741	4 970	19
Medical	512 218	10 930	2
Subtotal (a)	539 018	19 698	4
Non-emergency			
Surgical	362 808	813 045	69
Medical	1 604 711	990 712	38
Subtotal (a)	2 220 114	2 516 930	53
Total	2 759 132	2 536 628	48

(a) Subtotals include 'Other' broad category of service.

Source: AIHW, Australian hospital statistics 2012-13 Table S6.3 and S6.4.

Summary

- 93 The analysis from the Productivity Commission shows that while there are differences in the provision of some admitted patient services (namely emergency-type procedures), there are similarities in other services. This suggests that there is a level of potentially substitutable admitted patient services, although more so for lower cost (same day) services. The question then is does the provision of these services in the private sector influence the level of similar services provided in the public sector?
- 94 If we consider childbirth as an example, because the total number of births in any given period is fixed, the more births¹⁵ in the private sector will have a direct impact on the number of births that are required in the public sector. These services would be regarded as perfectly substitutable. Similarly, same-day admitted patient services that could be considered non-emergency but endanger the patient's life if not performed, such as renal dialysis and chemotherapy, could also be considered as perfectly substitutable (if they are not performed in the private sector then they must be performed in the public sector). These two AR-DRGs make up nearly 40% of all same-day separations in public hospitals (but not necessarily 40% of the costs considering these procedures are less costly than other AR-DRGs).
- 95 Based on this information, staff believe there is a strong conceptual case that the level of some admitted patient services provided in private hospitals influences the number of similar services that need to be provided in public hospitals, that is, there is a level of substitutability between the two.
- 96 As the influence of the economic environment in health is a material disability, this indicates that the disability should be recognised in the admitted patient services

¹⁵ Non-emergency.

component, regardless of the materiality of economic environment influences in this component alone.

Assessment method

97 Given improvements in the availability of data on private hospital service provision, staff consider that an assessment, based on a similar approach to the assessments made for the other health components, is the best approach. We are proposing to slightly change the calculation method used in the draft report. This method is described in more detail at the end of this paper.

Level of substitutability

98 Staff generally agree with the calculations of substitutability conducted by Downie and consider it a good starting point. He argues that because private hospitals tend not to provide emergency-type services (40%), then the majority of those services should not be regarded as substitutable.

99 In addition, the national levels of private health insurance (47.2%) would also need to be taken into account. A person without private health insurance will rarely attend a private hospital (unless they are self-funded), regardless of the availability of private health services in their State.

100 This gives us a potential level of substitutability of 28%. However, as Downie points out, there are examples of why this should be regarded as an upper estimate considering the following.

- Gap payments are unaffordable for some – for some AR-DRGs, people with private health insurance still choose to be admitted to a public hospital because the additional cost, over and above the rebate from private health funds (the gap), is too great. Some people only have private health insurance to claim the Medicare rebate for tax purposes. This may be evident in the ACT where residents have the highest private health insurance rates of all States, yet have below average use of private hospital services.
- Cosmetic-type surgery is regarded as non-emergency but should not be considered as substitutable because these procedures are predominantly provided in the private sector.
- Some patients that will access a private facility interstate because there are lengthy waiting lists for private hospitals in their State or they cannot access a private specialist in their State. In this case, these procedures can't be regarded as substitutable because they don't impact on the public sector. Approximately 2% of all private hospital separations are from interstate patients.
- Some people consider that the quality of services provided in public hospitals in their State are at the same standard or not appreciably different, to that provided in private hospitals. If people get the same standard of service in the

public sector (with high quality doctors available) as they would in the private sector, then why go to a private hospital and potentially face out-of-pocket expenses? This could be a policy choice of the State government to provide a standard of service that is above average.

- Downie says that ‘whilst State governments have the responsibility for licensing private hospitals in some jurisdictions, there appears to be no evidence to suggest that State government policies limit the expansion of the private sector in jurisdictions where there are lower numbers of private hospitals’. Staff are not entirely convinced of this argument. While not necessarily targeted at private hospitals, there may be planning restrictions (at the State government and/or local government level) that could limit the expansion or availability of private facilities in some States. However, we are not sure whether the impact is materially different for each State.
- There is also a disparity at the State level of private patients treated in public hospitals. In some States, instead of setting up private hospitals in certain locations, States offer visiting medical officers (VMOs) incentives to see private patients in public hospitals.
- Non-emergency type procedures would be less costly than the emergency procedures. Further, same-day procedures are less costly than overnight procedures.

101 As such, we agree that the 28% of potentially substitutable services represents an upper limit and estimate that the true figure would probably be between 10-20%.

102 As an aside, as mentioned in the community health discussion, Tasmania contends that substitutability increases as the complexity of care decreases. Admitted patient care is the highest complexity (lowest substitutability), ED and outpatient care is moderately complex and community health care is the least complex (highest substitutability).

103 On balance, considering that we are not able to fully capture the impact of policy influences that some States may have on the location and/or degree of provision of private facilities in their State, staff intend recommending the Commission adopt a level within the range of 10-20% substitutability of admitted patients component expenses.

Data availability

104 Much of the data required for the assessment is collected by the AIHW or the Private Health Insurance Administration Council (PHIAC), with various degrees of comprehensiveness across the States.

105 **National data by SDC profile.** To determine the assessed private patient levels across the States, we requested data on the national average use of private hospital services from the AIHW, disaggregated by their SDC profile. However, we’ve been

advised by the AIHW that the full matrix will not be ready until the end of January 2015. As such, we have developed an interim SDC profile based on separately identified data (not in matrix form) from the *Australian Hospital statistics* publication. While this is not ideal because it doesn't capture the data in the traditional matrix¹⁶, we believe it is sufficiently robust to make a reliable assessment.

- 106 **Actual use by State.** The availability of the actual use of private hospital services in each State is more problematic. AIHW data from *Australian Hospital statistics* are not reported for the three small States because of scope and privacy issues. Not all private free-standing facilities in the ACT or the Northern Territory are collected. In addition, because the Northern Territory has only one free-standing day facility and one private hospital, the AIHW does not want to publish the data for its private hospital due to privacy reasons.
- 107 While these could be estimated for the three small States, we would also need to make a number of other adjustments to the data.
- Include the level of private services provided in public hospitals for each State. If we only assess the State differences in private hospital usage, we will be neglecting the above average service provision of those private services in public hospitals in some States.
 - Remove those public patients that are seen in a private hospital. This practice is implemented by some States to remove backlogs and totals approximately 120 000 separations each year.
 - Take into account the cross-border use of services. We should only be including the State of residence of the patient and not the State location of the hospital.
- 108 In comparison with the data from the AIHW, data collected from PHIAC on the use of admitted patient services by private patients is less problematic and includes the following:
- Actual use of privately-provided admitted patient services are separately identified for all States – no need to estimate the use in the small States.
 - The data are provided on the residence of the patient – no need for a cross-border adjustment.
 - All private patients in public and private hospitals and does not include public patients in private hospitals – no need for more adjustments.
- 109 The only downside to the data is that it does not include the use of private hospitals by self-funded patients. However, we would consider that these services would generally not be covered by private health insurance premiums (mainly cosmetic surgery) and would, therefore, not be considered substitutable.

¹⁶ The data in the tables in the report also use SEIFA as their remoteness indicator instead of IRSEO/NISEIFA remoteness that we use in the rest of the assessment. In our request to AIHW, we have asked for data based on IRSEO/NISEIFA.

- 110 PHIAC data are not available by SDC group, so the AIHW data remains the most reliable data for determining national average use of private admitted patient services. The data from AIHW will reflect privately insured patients in both public and private hospitals, as will the PHIAC data.
- 111 Staff intend recommending the use of AIHW data to determine the national average use of private admitted patient services, disaggregated by their SDC profile and the use of PHIAC data to determine the actual level of private admitted patient services in each State.

CHANGE IN ASSESSMENT METHOD

- 112 In the draft report, we said that the impact of the non-State sector would be captured using economic environment factors applied to the percentage of services that are considered substitutable.
- 113 The steps involved in calculating the economic environment factor were outlined in the draft report. However, staff now consider there are two issues with this approach. The factor approach:
- can overstate the economic environment effect, particularly where there are large differences in assessed and actual private provision
 - adjusts the profile of State-provided services overall, not the profile of users of substitutable services.
- 114 Staff consider an alternative approach that avoids these issues is as follows (using EDs as an example at a 15% substitutability rate):
- Determine the total State spending on substitutable ED services — eg total ED expenses of \$3.7 billion x 15% substitutability rate.
 - Assessed GPs — calculate the level of bulk billed services each State would need based on the national profile of people using GP services (by Indigeneity, remoteness, SES and age). The substitutable ED expenses are then apportioned across States.
 - Actual GPs — obtain the actual level of bulk billed GP services in each State. Again, apportion the substitutable ED expenses based on these State proportions.
 - Subtract the actual levels from the assessed levels. This determines the assessed impact of the private sector on admitted patient services for each State.
- 115 The calculation is more easily explained in a step process as detailed in Table 6 (at a 15% substitutability rate, not 40%). It shows, as a result of the private sector, New South Wales needs to spend \$19 million less on its ED services and Western Australia needs to spend \$16 million more.

Table 6 Economic environment adjustment, 2013-14

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
	\$m								
Substitutable ED expenses									555
Assessed expenses	183	139	108	57	43	12	8	4	555
Actual expenses	202	140	111	41	41	11	5	4	555
Economic environment	-19	0	-3	16	2	1	3	0	0

Source: Commission calculation.

ATTACHMENT A

1 Table A1 provides a subset of the 30 most frequent overnight AR-DRGs.

Table A1 Subset of the most frequent overnight separations in public and private hospitals by AR-DRG, 2007-08

Description	Public hospitals			Private hospitals		
	Rank	Number of separations	Per cent	Rank	Number of separations	Per cent
	No.	No.	%	No.	No.	%
Vaginal delivery (w/o csc)	1	101 245	4.5	1	34 421	3.4
Chest pain	2	52 326	2.3	26	8 427	0.8
Oesophagitis, gastroent and misc. digestive	3	42 082	1.9	23	9 212	0.9
Caesarean delivery (w/o csc)	4	41 510	1.8	3	28 324	2.8
Cellulitis (age>59 (w/o csc)) or age<60)	5	35 070	1.6		na	
Antenatal and other obstetric admission	6	33 277	1.5	25	8 504	0.8
Sleep apnoea		na		2	34 109	3.4
Other shoulder procedures		na		4	26 536	2.6
Knee replacement and reattachment		na		5	22 184	2.2
Inguinal and femoral hernia procedures		na		6	18 605	1.8
Tonsillectomy and/or adenoidectomy		na		7	17 619	1.7

Source: Productivity Commission *Public and private hospitals, 2009.*

2 Table A2 provides a subset of the 30 most frequent same-day AR-DRGs.

Table A2 Subset of the most frequent same-day separations in public and private hospitals by AR-DRG, 2007-08

Description	Public hospitals			Private hospitals		
	Rank	Number of separations	Per cent	Rank	Number of separations	Per cent
	No.	No.	%	No.	No.	%
Admit for renal dialysis	1	815 622	34.8	3	164 469	8.3
Chemotherapy	2	121 703	5.2	1	176 290	8.9
Other (non-complex) colonoscopy	3	53 385	2.3	2	169 234	8.5
Lens procedures	4	51 907	2.2	4	121 181	6.1
Antenatal and other obstetric admission	5	45 835	2.0		na	
Other factors influencing health status	6	45 378	1.9	8	77 046	3.9
Chest pain	7	36 115	1.5		na	
Other gastroscopy for non-major digestive	8	34 160	1.5	5	97 758	4.9
Complex gastroscopy	13	23 513	1.0	7	89 533	4.5
Dental extractions and restorations	15	22 983	1.0	6	91 399	4.6

Source: Productivity Commission *Public and private hospitals, 2009.*