# CHAPTER 12

# ADMITTED PATIENT SERVICES

## WHAT IS INCLUDED IN THE ADMITTED PATIENT SERVICES CATEGORY?

1 The Admitted patient services category comprises State expenses on acute and non-acute medical care and treatment for State residents[1] admitted to a public hospital. Admitted patients are people who undergo a hospital's formal admissions process and after completing one or more episodes of admitted patient care 'separate'[2] from the hospital.

2 Acute medical care expenses are incurred by public hospitals providing at least minimal medical, surgical or obstetric services for inpatient care, and which provide continuous comprehensive qualified nursing services as well as other necessary professional services[3].

3 Non-acute care costs are associated with the provision of rehabilitation care, palliative care and other non-acute care (which comprises psychogeriatric care, geriatric evaluation and management and maintenance care)[4].

4 The category also includes non-hospital patient transport expenses, along with costs of mental health institutions, nursing homes for the aged and superannuation for State government employees engaged in the provision of admitted patient services.

5 Revenues generated from user charges are offset against expenses. Revenue from private admitted patients is about 80 per cent of user charges[5]. The rest is patient transport recoveries and payments from patients in nursing homes and mental health institutions.

---

1 The National Healthcare Agreement requires reimbursement by States for services to their residents provided by other States. The payments are included in the expenses for the State where patients usually reside.

2 'Separation' is the term used to refer to the completion of an episode of admitted patient care. Such episodes can be a total hospital stay (from admission to discharge, transfer or death), or a portion of a hospital stay, resulting in the change of type of care for example, from acute to rehabilitation care. Statistics are compiled at the end of each episode of care.

3 Australian Institute of Health and Welfare (AIHW) 2008, *National Health Data Dictionary, Version 14,* page 492.

4 AIHW 2009, *Australian Hospital Statistics 2007-08,* page 157.

5 Commission calculation using GFS data on admitted patient expenses and user charges.

6 Admitted patient services expenses (net of user charges), including superannuation for State government employees engaged in the provision of these services, were $25.6 billion in 2008-09. Table 12-1 shows expenses on admitted patient services varied between 8.4 per cent in the ACT and 19.3 per cent in Tasmania. The average was 15.0 per cent.

**Table 12-1 Admitted patient services category expenses, 2008-09**

| | NSW | Vic | Qld | WA | SA | Tas | ACT | NT | Total |
|---|---|---|---|---|---|---|---|---|---|
| Category expense ($m) | 7 626.9 | 6 230.5 | 5 420.9 | 2 466.6 | 2 295.3 | 840.6 | 293.7 | 410.7 | 25 585.2 |
| Total ($pc) | 1 083.16 | 1 161.37 | 1 246.31 | 1 119.11 | 1 423.86 | 1 680.36 | 844.44 | 1 852.55 | 1 182.22 |
| Proportion of State operating expense (%) | 15.1 | 16.0 | 14.7 | 12.9 | 16.9 | 19.3 | 8.4 | 10.3 | 15.0 |

Note: Expenses are net of user charges.
Tasmania and the ACT expenses reflect a different classification of health expenditure between admitted and non-admitted patients.
Source: Commission calculation using State data.

7 Table 12-2 shows the share of State expenses directed to admitted patient services rose from 13.4 per cent in 2005-06 to 15.0 per cent in 2008-09.

**Table 12-2 Admitted patient services expenses as a proportion of State operating expenses**

| | 2005-06 | 2006-07 | 2007-08 | 2008-09 |
|---|---|---|---|---|
| Total for category ($m) | 18 020.9 | 20 487.8 | 22 948.4 | 25 585.2 |
| Total operating expenses ($m) | 134 969.0 | 146 359.0 | 157 538.0 | 171 074.5 |
| Proportion of total operating expenses (%) | 13.4 | 14.0 | 14.6 | 15.0 |

Source: Commission calculation using ABS GFS data and State data.

### The average service delivery policy

8 Admitted patient services are available to the whole population, with access to services largely dependent upon clinical need. Admissions to public hospitals may be planned, such as for elective surgery, or unplanned, such as through the emergency department.

9 States own and manage the operations of public hospitals. Under the National Healthcare Agreement between States and the Commonwealth, public hospitals treat public patients at no charge. Private patients may also use public hospital admitted patient services. The costs of treating private patients are either fully compensable (such as those covered under workers compensation insurance schemes, third party motor vehicle insurance schemes and veterans funded by the Department of Veterans' Affairs) or partially compensable, such as for private health fund insured patients.

10 In addition, public admitted patient services also include those where States utilise private hospitals to treat public patients; for example, to reduce waiting lists for particular health conditions.

### What is the role of the Commonwealth and non-government providers?

11 The Commonwealth provides funding to States to assist them in meeting the costs of public hospital services. In 2007-08, the Commonwealth funded around 39 per cent of public hospital costs while the States funded 53 per cent. The remainder came from non-government sources[6]. Expenses on admitted patients are the largest proportion of public hospital costs, at about 78 per cent[7].

12 Commonwealth payments to States are made through a Specific purpose payment (SPP) and National partnership payments (NPPs). The SPP paid under the National Healthcare Agreement directly impacts on State fiscal capacities as it assists the funding of public hospital services. The expenses funded by these payments are assessed in the same way as State funded expenses and the revenue is treated as an offset to the assessed expenses.

13 Depending on their purpose, some of the NPPs related to this category have an effect on State fiscal capacities and some do not. The NPPs that assist States fulfil their responsibility in delivering hospital services are treated in the same manner as the SPP. However, payments for purposes outside State responsibilities, such as to the Royal Darwin Hospital for the operation of a national critical care and trauma response centre, have been treated as having no impact on State fiscal capacities.

14 Similarly, the treatment of Commonwealth own purpose expense payments to States depends on whether they have an effect on State fiscal capacities or not, or whether they are specifically required by the Commission's terms of reference not to have an impact on State fiscal capacities. For example, the terms of reference require that the Commonwealth's ongoing operation of the Mersey Hospital through the Tasmanian Government should not influence Tasmania's fiscal capacity.

15 Table 12-3 summarises the treatment of Commonwealth payments to States. The chapter on the Adjusted budget provides more detail on the treatment of these payments.

16 The Commonwealth also finances services for admitted patients through the arrangements made by the Department of Veterans' Affairs and the Department of Defence. As discussed below under the treatment of user charges, these payments are netted off category expenses.

17 Non-government funding is sourced from insurers (for example, workers' compensation insurers and private health funds) and from individuals as out-of-pocket costs. This funding has been netted off category expenses with other user charges.

---

[6] AIHW 2008, *Health Expenditure Australia, 2007-08*, Table 4.6.

[7] AIHW 2008, *Health Expenditure Australia, 2007-08*, Table C1. Expenses on other services provided by public hospitals, such as emergency department and outpatient clinics, are assessed in the Community and other health services category.

**Table 12-3 Commonwealth payments to State governments relevant to the Admitted patient services category and their treatment**

| Payments affecting the relativities | Payments not affecting the relativities |
|---|---|
| National SPP | National partnership payments |
| National healthcare agreement | Organ transplantation services |
| National partnership payments | Repatriation general hospitals |
| Health and hospital workforce reform | Royal Darwin Hospital |
| Elective surgery waiting list reduction plan | Victorian cytology service |
| Health services (except for health care grants for the Torres Strait) | Health care grants for the Torres Strait |
| Reducing rheumatic heart fever for Indigenous children | |
| Satellite renal dialysis facilities in remote Northern Territory communities | |

Note: Programs that have been replaced by programs included in this table are treated in the same way.
Source: Commonwealth of Australia *Budget Paper No. 3, 2009-10*.

## ASSESSMENT APPROACH

### Overview

*Factors affecting the cost of services in each State*

18 The majority of the services assessed in this category are public hospital based admitted patient services. State and private providers meet the need for admitted patient services of State populations. However, States have responsibility for providing services either not offered by the private sector or in locations where it is uneconomic for private providers to operate. The extent of admitted patient services provided by each State government is driven by the size of its population, the economic environment and the presence of those groups of people who use public services more intensively, such as:

- elderly people;
- babies and younger children;
- Indigenous people;
- people in rural and remote areas; and
- socio-economically disadvantaged persons.

*The data*

19 Under the National healthcare agreement, all States collect and report data for each episode of separation in public hospitals. In accordance with a national data dictionary, the data include each patient's personal details, treatment conditions and the hospital of treatment. States also report on the costs of operating public hospitals and the revenue raised by hospitals.

20 The Australian Institute of Health and Welfare (AIHW), the national data collector and provider, compiles these data into two major datasets annually — the National Health

Morbidity Database (NHMD) and the National Public Hospital Establishments Database (NPHED). Using its hospital morbidity costing model, the AIHW has consolidated the two datasets, which clearly show how population factors drive the likelihood of people using admitted patient services[8] and the cost of delivering them. This work, which is the accepted benchmark in this area, has allowed us to develop an expenditure methodology for this category.

*The approach*

21 We have used the AIHW data on admitted patient services to calculate national average per capita costs for each population group determined by cross-classifying by age, Indigenous status, socio-economic status and location of patient residence. These national average costs are net of any revenue raised from private patients within each population group. We multiplied the average per capita net costs by the number of people in the corresponding population groups in each State[9], after making an adjustment for the Northern Territory to recognise the shortage of private health services in Darwin as compared with other State capitals. We then added these costs across population groups to derive State shares of total costs.

22 The vast majority of expenses in this category are assessed in this way, using the State shares derived from the AIHW cost data. An exception to this approach is for the expenses relating to non-hospital based patient transport other than land ambulance. These expenses largely reflect aero-medical transport and Patient Assisted Travel Schemes (PATS) and represent around two per cent of category expenses. These costs are allocated to States based on weighted State populations. The weights recognise the higher use and cost of these services by remote and very remote populations.

23 The costs of maintaining a minimum level of administration to provide admitted patient services are classified as Administrative scale expenses, which represent less than half of one per cent of the category total.

24 States are largely supportive of the above assessment approach, except for some technical aspects discussed later in this chapter.

*Broad indicator approach*

25 In the initial stages of the 2010 Review, a broad indicator, for example an outcome based measure such as mortality, was considered and rejected. States did not support such an approach because outcome based measures like mortality do not reflect the rate of service use or its unit cost. As well, there may be a reverse causality between mortality and service use. The broad indicator approach was not considered further.

---

8 The demographic profile of the separations of admitted patients recorded in the AIHW's National Hospital Morbidity Database (NHMD) is classified according to age, sex, Indigenous status, socio-economic status (SES) and location of residence.

9 We match the year when costs were incurred with the population that generated the costs by using the annual Estimated Resident Population (ERP) from the ABS.

26 We also considered whether all health expenses could be assessed in a single category, by adopting the approach used for the assessment of community and other health services. States were not supportive of this approach, saying that it would not recognise the drivers of State health needs adequately. We decided the available data on admitted patient services were reliable and fit for purpose and would provide the most direct measure of the drivers of State costs in this category. We did not consider a single health category further.

## Factors affecting service use and cost

27 The probability of a person using admitted patient services and incurring State costs is strongly influenced by the following population characteristics: their age, Indigenous status, socio-economic status (SES), and where they live. These characteristics also affect the likelihood that people will be treated as private patients in public hospitals where some or all costs would be recovered from them. We consider these characteristics should be recognised in the assessment.

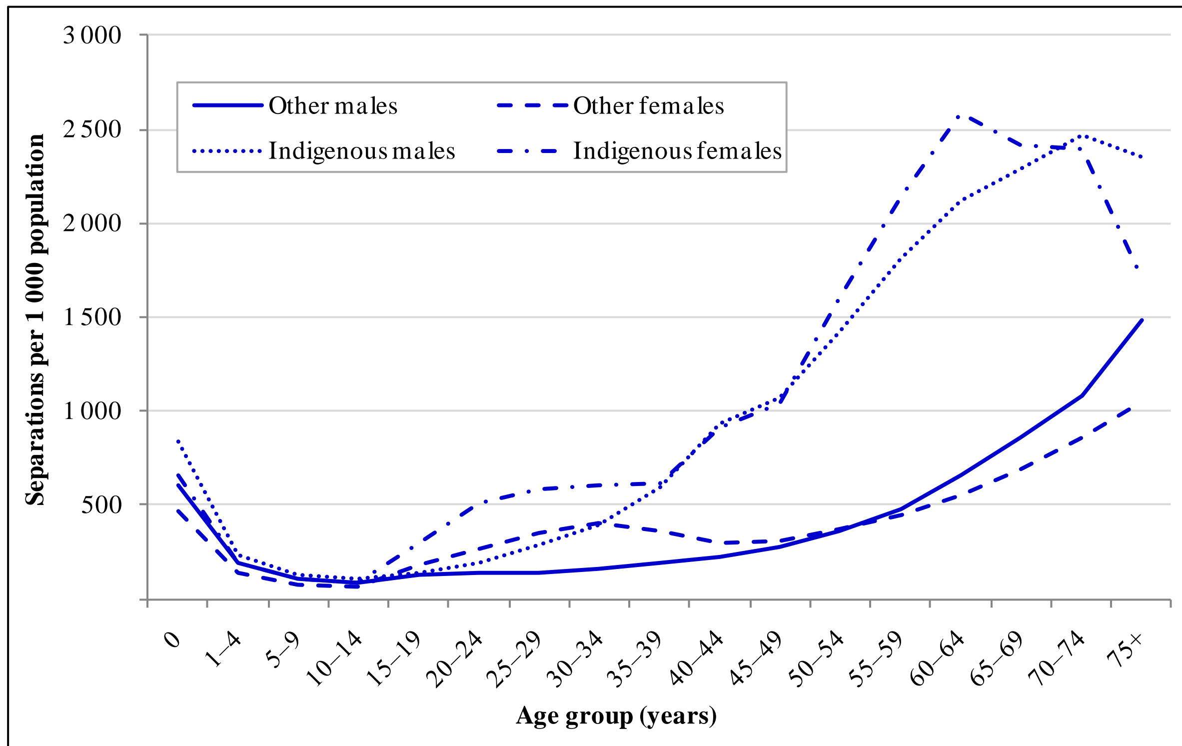
### *Age and Indigenous status*

28 Figure 12-1 shows separation rates vary by age, sex and Indigenous status. The Indigenous separation rates are consistently higher than the non-Indigenous ones across most age groups. The figure also shows that use of admitted patient services is highly age related. However, sex is a subsidiary driver to age and Indigenous status. Therefore, age and Indigenous status are assessed as the main cost drivers in the admitted patient services category.

29 We initially considered that the effects of age on admitted patient costs could be captured in five age bands, with most segregation in the younger and older ages and with a very broad middle age range. Some States said that five age bands were too few. Tasmania said there was a conceptual case, based on age-related health conditions, for increasing the number. After considering State views, we decided the following seven age bands capture the material effects of age on admitted patient service costs:

- 0, capturing neo-natal and paediatric care costs;
- 1-19, capturing costs associated with childhood diseases;
- 20-49, capturing women in their child-bearing years along with higher rates of major trauma for the people in their early twenties;
- 50-64, capturing early chronic conditions and the early-onset effects of cancers;
- 65-74, capturing chronic diseases and age-onset diseases;
- 75-84, capturing diseases of the old; and
- 85+, capturing diseases of the very old.

**Figure 12-1 Public patients' separations per 1000 population, by age, sex and reported Indigenous status in all hospitals, 2007–08**




Source: AIHW, Australian Hospital Statistics 2007-08, Figure 8.1.

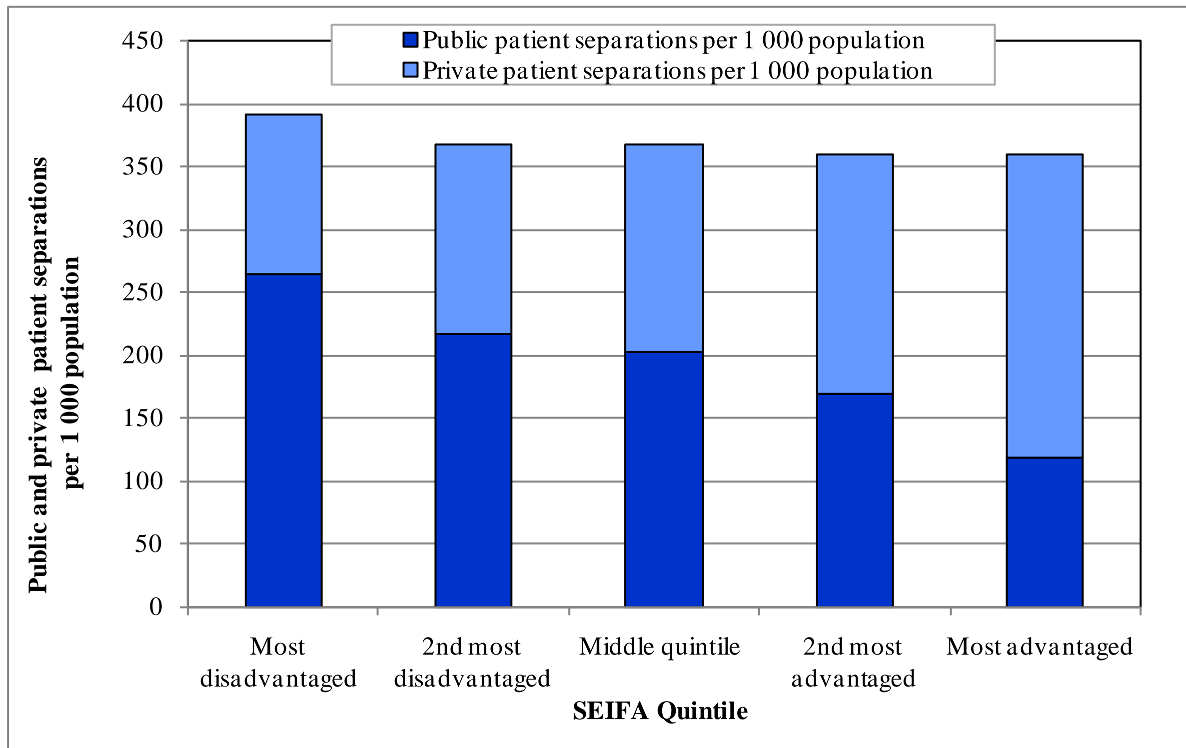
### *Socio-economic status (SES)*

30 Socio-economic status of patients can be measured using the ABS Socio-Economic Index for Areas (SEIFA). The range of characteristics reflected in a SEIFA index captures the influences on a person's financial circumstances as well as lifestyle, which in turn reflects the individual's likely health status.

31 Figure 12-2 indicates there are differences in public patient separation rates by SEIFA quintile[10]. The more disadvantaged patients use public hospitals more than people who are in the more advantaged quintiles. Thus, the socio-economic status of patients is a cost driver for public hospitals that is included in the assessment of admitted patients category expenses.

[10] Each SEIFA quintile has a fifth of the total Australian population. The specific SEIFA index used in the category assessment is the Index of Relative Socio-economic Disadvantage (IRSD). IRSD is a summary of disadvantage variables such as low income, low educational attainment and unemployment.

**Figure 12-2 Public patient separations per 1000 population vs. private patient separations per 1000 population, by SEIFA quintiles, 2007–08**




Source: AIHW, Australian Hospital Statistics 2007-08, Table 8.13.

32 While acknowledging the relationship between income and hospital use (ABS National Health Survey), we initially considered not including income as a driver in the assessment because income is not captured in the AIHW dataset. In addition, the effect of income on hospital use appeared to be covered, at least in part, by the variables of age, location and Indigenous status. For example, older persons, people living in remote regions and Indigenous people all tend to have lower than average incomes.

33 Queensland, South Australia, Tasmania and the Northern Territory all said socio-economic status was a key driver of differential demand for admitted patient services and should be included in the assessment.

34 However, based on research into the drivers of Indigenous hospitalisation, Western Australia said the ABS SEIFA measure did not provide an appropriate indication of differential use and cost of services for Indigenous people. It said Indigenous service use and cost were highly affected by factors such as community dysfunction, morbidity of diabetes, low education and low income. Western Australia said that while these factors would be difficult to include in the assessment, a suggested approach could be to apply the socio-economic status measure globally, rather than to data that are cross-classified by other social and demographic factors.

35 The alternative and additional drivers identified by Western Australia are not captured in the national dataset and therefore cannot be reliably included in the assessment method. On the other hand, we observed that the drivers identified by Western Australia are correlated with

location. For example, the prevalence of diabetes is high in remote areas[11]. In addition, we have no data that suggest the prevalence of diabetes differs between States in comparable areas.

36 Since one of the drivers is location, we consider we have captured the main drivers of the costs for Indigenous people. We also consider that cross-classifying admitted patient costs by their major drivers is an important and necessary procedure to avoid potential double counting.

37 After considering State views and the available data, we decided the effects of SES on admitted patient service costs should be included in the cross-classified data. While it was material to use five SEIFA bands, one for each quintile, we decided, on balance, that it was more reliable to use three bands. This was because, as observed by Western Australia, the relationship between admitted patient costs and SEIFA is not as clear for Indigenous people as for non-Indigenous people. Therefore, the additional disaggregation when applied to the small Indigenous population may produce unreliable results. On the other hand, SEIFA is certainly an important driver for the non-Indigenous people in relation to the use of public hospital admitted patient services.

38 Initially, the three bands were set as the bottom two quintiles in the Index of Relative Social Disadvantage (IRSD), the middle IRSD quintile and the top two IRSD quintiles. However, noting the ABS's view that SEIFA has more power to distinguish SES at either end of the distribution, rather than those in the middle, we decided to classify the bottom quintile as the Low SES group, the three middle IRSD quintiles as the Middle SES group, and the top quintile as the High SES group.

*Where people live*

39 *Location.* Public hospital separations per capita increase as the remoteness of the residential address of a patient increases. This corresponds to the decrease in private hospital services with increasing remoteness. Figure 12-3 shows persons living in remote and very remote areas had separation rates in public hospitals in 2007-08 of around 400 per 1000 population. Public patient separations represented around 80 per cent of all separations in these regions. In contrast, in major cities the public patient separation rate in 2007-08 was under 200 per 1000 population, accounting for about 50 per cent of the total separations. This suggests a clear relationship between location and use of public hospitals.

40 There is also a significant correlation between costs and hospital type and location. For example, tertiary public hospitals in major cities are more expensive than general hospitals in inner regional locations of States. It costs more to operate public hospitals in remote and very remote locations compared with other regional locations.

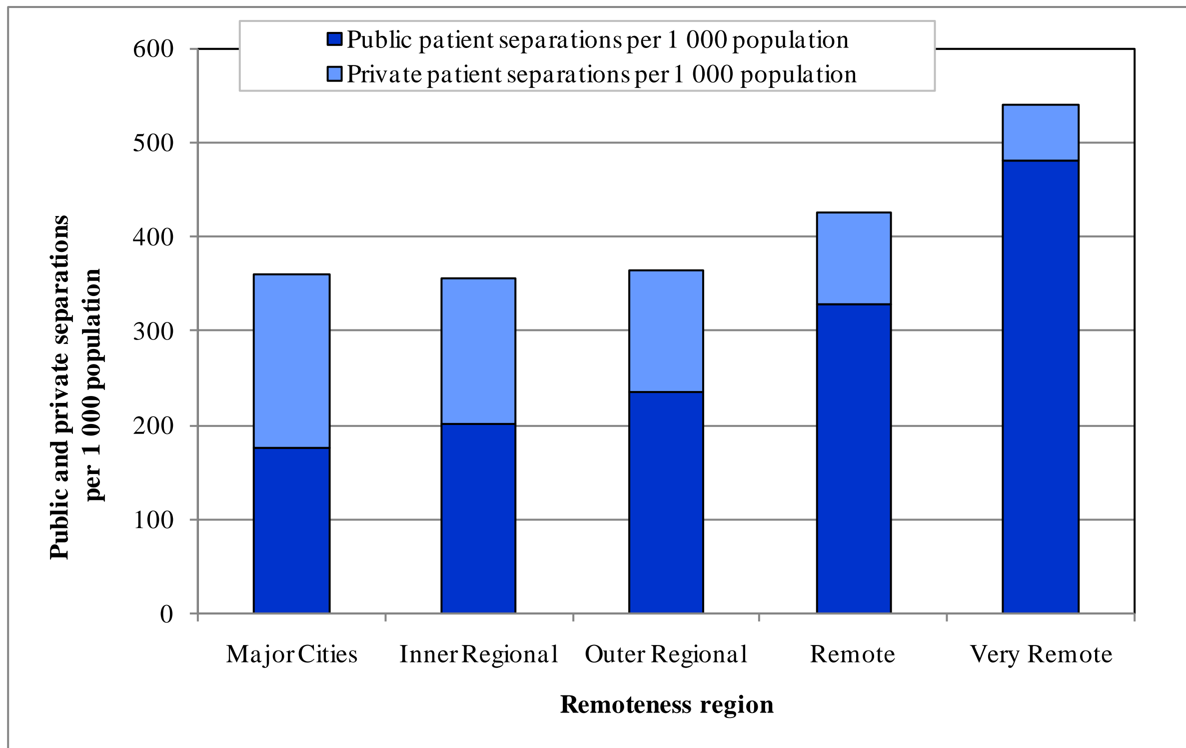
41 We initially considered using three location bands to differentiate costs. Based on SARIA

---

11 ABS, *Diabetes in the Aboriginal and Torres Strait Islander population 2004-05*.

regions[12], these were highly accessible, accessible (combining accessible and moderately accessible regions) and remote (combining remote and very remote regions). New South Wales, Victoria and Queensland, supported the use of three location bands. Western Australia and the Northern Territory said costs relating to five regions should be separately identified.

**Figure 12-3 Public patient separations per 1000 population vs. private patient separations per 1000 population, region of usual residence, 2007-08**




Source: AIHW, Australian Hospital Statistics 2007-08, Table 8.12.

42 After considering State views and the available data, we found the material effects of location on admitted patient service costs should be captured using five bands; highly accessible, accessible, moderately accessible, remote and very remote regions.

43 *Interstate comparison of private provision.* New South Wales, Western Australia, the ACT and the Northern Territory said areas with the same degree of accessibility/remoteness do not have the same level of private provision in each State and the Commission should recognise this. They said the lower level of private health services in their jurisdictions compared with other States affects the services the public sector provides. For example, Western Australia said its costs per capita in non-metropolitan regions are higher than those of other States because, unlike other States, it has only two private hospitals in these regions.

12 Our assessment uses the State based Accessibility/Remoteness Index of Australia (SARIA) developed for the Commission by the National Centre for Social Applications of Geographical Information systems, The University of Adelaide. SARIA is similar to, but not the same as, the ABS Australian Standard Geographical Classification, which classifies regions according to: major cities, inner regional, outer regional, remote and very remote.

44 Table 12-4 shows the level of private hospital provision in each State. It suggests this is well below average only in the Northern Territory — 0.4 licensed hospital beds per 1000 population in private hospitals compared with the national average of 1.3 per 1000 population. The other States cluster around the average, apart from Tasmania that is well above average.

45 Similarly, the private health insurance statistics reported by the Private Health Insurance Administration Council (PHIAC) also show the Northern Territory has a lower use of private services among their insured population compared to other States (Table 12-5). These data suggest that, despite being a capital city, Darwin does not have the same level of private hospital provision or use as other capital cities.

**Table 12-4 Total private hospital beds per 1000 population by State 2007-08**

| | NSW | Vic | Qld | WA | SA | Tas | ACT | NT | Average |
|---|---|---|---|---|---|---|---|---|---|
| Private beds per 1 000 population | 1.0 | 1.4 | 1.5 | 1.7 | 1.3 | 2.1 | 1.1 | 0.4 | 1.3 |

Source: AIHW, Australian Hospital Statistics 2007-08, Table 2.2.

**Table 12-5 Age standardised claim rate — private patient bed days per insured person**

| | NSW/ACT | Vic | Qld | WA | SA | Tas | NT | Average |
|---|---|---|---|---|---|---|---|---|
| Claim rate | 0.59 | 0.61 | 0.54 | 0.51 | 0.58 | 0.53 | 0.40 | 0.58 |

Source: PHIAC, Statistical Trends in Membership and Benefits Data Tables June 2009.

46 Table 12-4 and Table 12-5 show that apart from the Northern Territory, we cannot conclusively say for the other States whether private health services differ to an extent beyond the influences from their population characteristics and State policies. Also, there may only be a limited effect of the private health sector on the level of services provided by the State. Our consultant's view[13] is that services substitutable between the public and private health sectors may affect public hospital waiting lists, rather than public hospital throughput.

47 The Northern Territory is clearly well below average and well below the next nearest State for both the provision of private hospital beds and their use. It is likely that Darwin's isolation and relatively small population base makes it unattractive to private providers. Darwin can be considered to mirror the characteristics of a moderately accessible town in terms of the size of its private health sector. This provides a way of adjusting for the unique economic environment in the Northern Territory, namely classifying its highly accessible and accessible populations as moderately accessible for the purpose of allocating admitted patient costs.

48 *Patient transport*. Patient transport costs captured in the AIHW hospital data are mainly hospital-to-hospital patient transfers. Patient transport costs external to hospitals (such as ambulance and aero-medical costs) are also included in the category. The total amount of net

[13] Butler, JRG (2008), *A review of the proposed approach to the assessment of Community and other health services, a report prepared for the Commonwealth Grants Commission*, Australian National University.

non-hospital patient transport costs is more than $60 per capita and growing[14]. Queensland, Western Australia and the Northern Territory argued for a separate assessment of these costs.

49 Data provided by States showed the provision of aero-medical services in remote areas was 20 times more expensive per capita than in non-remote regions in 2007-08. Similarly, there is a strong conceptual case that, like aero-medical services, Patient Assisted Travel Scheme (PATS) costs are mostly attributable to people in remote and very remote regions. Therefore, we consider it appropriate to assess PATS costs in the same way as aero-medical expenses and differently from the rest of the category.

50 In contrast, there is insufficient evidence in the States' data to conclude that location has a greater influence on costs of providing land ambulance services than for providing hospital based admitted patient services. Therefore, costs related to land ambulance services have been assessed with admitted patient hospital expenses.

51 *Interstate patient travel.* For the smaller States, which may have more limited clinical procedures provided within their jurisdictions, additional costs are incurred when sending an above average number of patients to other States for more complex treatments. To recognise these costs, we applied the general interstate location factor to non-hospital patient transport expenses because we could not reliably calculate a specific patient transport interstate location factor from the available data.

### *Private patients in public hospitals*

52 User charges raised by States in providing admitted patient services predominantly relate to recoveries from, or due to, the treatment of private patients. User charges paid for fully compensable patients (such as from the Department of Veterans' Affairs, compulsory motor vehicle third party and workers' compensation insurers) have been netted off admitted patient expenses because they fully cover the cost of services provided. For simplification, all admitted patient user charges, including patient transport fees and other user charges are offset against category expenses.

53 States do not fully cost recover from private health funded or self-funded patients. On average, they bear around 30 to 40 per cent of the cost of providing services to private patients. The AIHW data allow the identification of private patients, their socio-demographic characteristics, the associated separation costs and the revenue raised (based on the average recovery rate). As the same set of socio-demographic factors can be used to determine the probability of a person using admitted patient services and the likelihood of them being a private patient, the net costs to States of private patients can be derived by offsetting costs recovered against State costs incurred in treating them.

54 States with above average proportions of their populations likely to be private patients are assessed as having lower needs, due to the lower costs of treating these patients (since some of

---

[14] Commission calculation based on GFS data and ABS annual ERP. The net non-hospital patient transport costs do not include user charges.

the costs are recovered). Conversely, States with below average proportions of their populations likely to be private patients are assessed as having higher needs. Fewer assessed private patients mean lower cost recoveries.

## Other factors affecting the cost of services

### *Administrative scale*

55 Administrative scale expenses are costs incurred to maintain a minimum level of administration required to provide admitted patient services. The assessment of these costs is described in detail in the Administrative scale chapter.

### *Location differences between States*

56 Differences between States in the cost of wage and non-wage related inputs to health services are recognised in the assessment using the general location factors. This is discussed in more detail in the Location chapter.

57 We do not need to recognise differences in regional costs or service delivery scale using the general factors. These disabilities are captured in the AIHW data we use to construct cost profiles by age, Indigenous status, SES and location. Regional costs for non-hospital and non-land ambulance patient transport services are captured in the weight applied to people living in remote areas.

## Influences not assessed in this category

### *Cultural and Linguistic Diversity (CALD)*

58 Victoria made a conceptual case that providing services to CALD patients cost more than other admitted patients. It presented the results of an empirical study[15] to the Commission during the Victorian State visit in June 2008. Victoria submitted that CALD patients cost an additional 17.5 per cent to treat compared to the equivalent non-CALD patients, primarily due to longer length of stay.

59 No national data are available to identify patients using the definition of CALD Victoria used in its study. However, a proxy indicator for CALD status (a patient's country of birth) is included in the national data provided by the AIHW. This indicator showed the cost of providing services to people born in non-English speaking countries[16] was higher for those aged 65 years or more than for those born in English speaking countries, including Australia.

---

15 The Victorian study investigated the cost of treating CALD patient groups in three metropolitan hospitals, Royal Melbourne Hospital, Western Hospital and Northern Hospital. CALD patient groups were defined as patients who, either for the current or previous episode, used an interpreter. The study examined the differential costs of treating CALD and non-CALD patients on average, and for given health conditions. The study used data for 2005-06 and included some 131 752 separations, representing around 10 per cent of total admissions to Victorian public hospitals in 2005-06.

16 Persons born in a non-English speaking country exclude persons born in the following English-speaking countries: United Kingdom, Ireland, New Zealand, Canada, United States of America and South Africa.

However, it was lower for those aged less than 65 years echoing the 'healthy migrant effect' described by the AIHW[17]. Table 12-6 shows the differences in the relative costs.

60 When the costs from Table 12-6 are applied to State populations (in conjunction with age, Indigenous status, location and socio-economic status classifications), the impact on GST shares is not material for any State and so a CALD adjustment has not been included in this category. However, across the categories, the impact of recognising CALD meets the assessment guideline materiality requirements. Consequently, a single broad allowance has been made for CALD in the Other expenses category. See the Other expenses chapter for more detail on this adjustment.

**Table 12-6 National admitted patient costs per capita for persons born in English and non-English speaking countries, 2005-06**

| | | Costs per capita ($) | BNESC/BESC ratio |
|---|---|---|---|
| Born in English speaking country (BESC) | under 65 | 463.22 | |
| | 65+ | 2 099.82 | |
| Born in non-English speaking country (BNESC) | under 65 | 449.16 | 0.97 |
| | 65+ | 2 321.08 | 1.11 |

Source: Commission calculation using AIHW, *Hospital morbidity costing model special data request, 2005-06*; and ABS 2006 Census data adjusted by the Commission.

### *Providing a tertiary hospital in small States*

61 The provision of at least one major tertiary hospital, located in a highly accessible area, is a standard State function. Tasmania has said it faces higher per capita costs because it has only a small highly accessible population to which the higher costs of a tertiary hospital could be allocated and its tertiary hospital is used extensively by its accessible population. It said a small State adjustment is required.

62 While tertiary hospitals are located in highly accessible areas, they do not provide services solely to people in these areas. These hospitals provide services, such as more complex treatments, to a State's wider population. The general standard used by State health planners is that an immediate catchment population of 250 000 people and up to 500 000 people State-wide, would require a level six tertiary hospital (the highest level). Tasmania's population is sufficient to support such a hospital.

63 Moreover, our approach attributes costs to patients, regardless of where they are treated[18]. The costs of State tertiary hospitals are allocated across all regions, depending on where their

[17] The AIHW reported that people born overseas are relatively healthier than their Australian counterparts, based on hospital statistics that show they have lower death and hospitalisation rates, along with other positive health indicators. The AIHW refers to this as the 'healthy migrant effect'. Healthy migrants tend to be willing and economically able to migrate and have undertaken health (and other) screening as part of the conditions of migration. AIHW, *Australia's Health, 2008*, pages 91-92.

[18] Nationally, around 20 per cent of patients treated in hospitals located in highly accessible regions do not live in a highly accessible region. This proportion is higher for Tasmania.

patients live. The national average cost for each region therefore reflects the costs of the hospitals in which patients from that region are treated.

64 In addition, we also observed that the tertiary hospitals in Tasmania and the other small States have comparable patient throughputs to those in the larger States. Hence, we doubt that larger States can achieve economies of scale that smaller States cannot. Economies of scale are likely to have most impact on the highly specialised tertiary hospital services. Unit costs for these episodes may be higher in the smaller States due to lower patient volumes. However, average cost per separation data for the tertiary hospitals in the smaller States (Tasmania, the ACT and the Northern Territory) and in the larger States, indicates there are not enough high cost cases overall to have a clear impact on costs.

65 Therefore, we have not made any adjustment for the provision of a tertiary hospital in the smaller States.

*Providing tertiary hospitals in large cities*

66 New South Wales said public hospitals cost more in a highly urbanised city due to the need to provide complex specialised treatments with expensive equipment, more intensive use and a greater prevalence of high cost problems like drug use. Altogether, the result is higher operating costs, a faster run down of capital assets and higher depreciation costs. Further, it said that as a major international gateway, hospitals in Sydney cost more to operate because large numbers of overseas visitors under international reciprocal healthcare agreements are entitled to free public hospital, and some international patients not covered by such agreements do not always pay even though they are ineligible for Medicare.

67 *Urbanisation*. We acknowledge that services provided by, and the size of, a hospital varies with its location. In large urban centres, particularly capital cities, the tertiary hospitals tend to have a full complement of admitted patient services and some super specialised services. Such cities provide services to their populations and also serve a State and nation-wide function. Compared with regional hospitals or remote hospitals, which are usually smaller and offer more basic services, the costs of operating such hospitals are higher.

68 As discussed earlier, the AIHW hospital morbidity costing model captures the differential costs of tertiary hospitals and allocates them to the regions where patients live. To the extent services in tertiary hospitals are used by the population living in highly accessible areas, the costs are attributed to those regions. To the extent they are used by patients living in other regions, even other regions in other States, the costs are allocated to those regions.

69 Similarly, differential costs relating to tertiary hospital infrastructure and equipment are also recognised in the Investment and Depreciation categories. Thus, an allowance for higher costs in tertiary hospitals has been included in the operating and infrastructure assessments.

70 *Overseas visitors*. Overseas visitors may be temporary (for example, tourists) or long term (such as overseas students staying in Australia more than 12 months). In both cases, they may or may not be covered by a reciprocal health care agreement and eligible for free public hospital services.

71 While the assessment does not allow for differences in the interstate distribution of temporary visitors, their impact is likely to be small. The AIHW hospital data indicate temporary visitors represented less than one per cent of total cost weighted separations.

72 Further, any impact from eligible short term visitors is likely to be partially offset by long term visitors. Long term visitors are included in the estimated resident populations (ERPs) of States provided by the ABS; thus States receive GST to deliver public hospital services to them. However, immigration statistics[19] show the majority of long term visitors are ineligible for free services. Therefore, the costs of treating these people can be recovered, so that the GST received for ineligible long term visitors offsets in part the costs of treating short term visitors. We estimate that the net effect is well below the materiality threshold for all States. Therefore, we have not made an adjustment for overseas visitors.

### *Cross-border*

73 A cross-border disability has not been assessed in the admitted patient services category. This is because cross-border costs have been addressed through provisions in the Australian Healthcare Agreements that allow States to recover recurrent and capital costs for the use of hospital services by residents of other States from those States. However, the ACT is still concerned that its costs are not fully recovered. We do not consider it our role to overturn arrangements that have been reached between States.

## THE ASSESSMENT METHOD

74 The assessment of the Admitted patient services category is in two components: service delivery and other expenses. Table 12-7 shows the assessment structure for the category, the disabilities that will be assessed and the relative size of each component, using 2008-09 data.

---

[19] Department of Immigration and Citizenship, *Population flows - Immigration aspects, 2007-08*, p 65. At 30 June 2008, there were an estimated 175 635 people who had been living in Australia for more than 12 months, excluding New Zealand citizens. The largest of this group were citizens of the People's Republic of China, followed by India, the UK, the Republic of Korea and the USA. Of these countries, only the UK has a reciprocal health care agreement with Australia. From this data, we estimate 75 per cent of long term overseas residents are not eligible for free public hospital services and States are entitled to recoup any treatment expenses.

**Table 12-7 Category structure, Admitted patient services, 2008-09**

| Component | Component weight | Disability | Influence measured by disability |
|---|---|---|---|
| | % | | |
| Service expenses | 99.67 | Socio-demographic composition | Recognises that use and cost of State provided admitted patient services differ among different population groups. |
| | | Location | Recognises the differences in the cost of providing labour and non-labour resources between States. |
| Other expenses | 0.33 | Administrative scale | Recognises the unavoidable costs each State incurs to provide the policy and administrative infrastructure necessary to provide the minimum unavoidable service, regardless of the size of the task. |

Note: The socio-demographic composition disability includes the non-hospital patient transport disability.
Source: Commission calculation.

## Service delivery expenses

75 Service delivery expenses comprise over 99 per cent of the average admitted patient services costs. The assessed service delivery expenses for each State are derived by:

- allocating the national aggregate service delivery costs to States on the basis of their population shares (that is, the total service delivery costs are distributed equal per capita); and then
- adjusting for:
  - the effects of State differences in the socio-demographic composition (SDC) of their populations on admitted patient services (allowances are made for the different costs per person in different population groups defined by age, Indigenous status, intrastate location and socio-economic status);
  - the effects of State differences due to the distribution of where people live when providing non-hospital patient transport services; and
  - the effects of interstate differences in wages, freight and travel costs.

76 The results from these calculations are summarised in Table 12-8.

**Table 12-8 Service expenses component, Admitted patient services, 2008-09**

| | NSW | Vic | Qld | WA | SA | Tas | ACT | NT | Total |
|---|---|---|---|---|---|---|---|---|---|
| Service expenses ($m) | 8 297.0 | 6 321.4 | 5 125.1 | 2 597.0 | 1 899.4 | 589.5 | 409.9 | 261.2 | 25 500.5 |
| Socio-demographic composition | 0.99722 | 0.96454 | 0.99778 | 0.98410 | 1.09862 | 1.10247 | 0.77310 | 1.55597 | |
| Location factor | 1.01608 | 0.99156 | 0.98115 | 1.01090 | 0.98731 | 0.97706 | 1.03171 | 1.04922 | |
| Assessed expenses | 8 406.4 | 6 045.3 | 5 017.0 | 2 583.4 | 2 060.1 | 634.9 | 326.9 | 426.4 | 25 500.5 |

Note: The socio-demographic composition disability includes the non-hospital patient transport disability.
Source: Commission calculation.

*Calculating the socio-demographic composition (SDC) factor*

77 Socio-demographic disability factors are calculated in two parts. States supported the Commission view that the level of State spending on hospital based admitted patient services is related to their respective demographic characteristics, such as age, Indigenous status, socio-economic status and location of residence. Also, States were generally supportive of the specific sub-group banding for each characteristic. Factors related to hospital based services are derived as follows:

- National acute and non-acute separation costs of admitted public patients and private patients in public hospitals are sourced from the AIHW. State population data are provided by the ABS.
- Costs for private patients in public hospitals are adjusted to reflect the extent to which they are fully or partially recovered through patient fees and other user charges.
- Each population group is defined by age (divided into seven bands), Indigenous status (two bands), location (five bands) and socio-economic status (three bands).
  - Age has seven bands, focusing on each end of the age spectrum and having broader bands in the middle range. The seven age bands are 0, 1-19, 20-49, 50-64, 65-74, 75-84, 85+.
  - People are classified as Indigenous or non-Indigenous.
  - Intrastate location bands have been based on the following groups of regions — highly accessible, accessible, moderately accessible, remote and very remote regions.
  - Socio-economic status has been measured by the ABS Index of Relative Social Disadvantage (IRSD). There are three bands: low for the most disadvantaged quintile; middle for the second most disadvantaged, middle and second least disadvantaged quintiles; and high for the least disadvantaged quintile.
- The AIHW and ABS data are used to calculate the national average costs per capita for particular population groups by dividing the costs attributable to each population group by the national population in that group. Table 12-9 gives an example of the national costs per capita of providing admitted patient services to people with different characteristics.
- The national average cost per capita for each population group is multiplied by the number of people in the corresponding SDC group in each State. An exception is applied to the people living in the Northern Territory's highly accessible and accessible areas, who are assigned the national per capita costs of the moderately accessible region. Costs for each population group are summed to give the total assessed costs for each State.
- A factor is derived by comparing State shares of aggregated hospital based State costs with State population shares.

**Table 12-9 Sample matrix of national per capita costs for providing admitted patient services, non-Indigenous people, 2007-08**

| SARIA | Age | High SES | Middle SES | Low SES |
|---|---|---|---|---|
| | | $pc | $pc | $pc |
| Highly accessible | 0 | 1 812.13 | 2 578.18 | 3 227.22 |
| | 1 to 19 | 175.25 | 247.96 | 305.48 |
| | 20 to 49 | 342.33 | 523.91 | 761.26 |
| | 50 to 64 | 496.42 | 831.85 | 1 229.07 |
| | 65 to 74 | 1 195.95 | 1 831.99 | 2 534.30 |
| | 75 to 84 | 2 224.59 | 3 072.77 | 3 776.97 |
| | 85+ | 2 828.44 | 3 639.21 | 4 250.50 |

Note: The sample matrix shows the per capita costs for non-Indigenous people for one SARIA region. The other regions are accessible, moderately accessible, remote and very remote. The Indigenous disaggregation is same as that for non-Indigenous people.

Source: Commission calculation using AIHW, Hospital morbidity costing model special data request, 2007-08 and ABS ERP June 2008.

78 As discussed later, the SDC factors for non-hospital patient transport services are derived separately from hospital based services. These SDC factors are applied to the proportion of the category that represents costs for non-hospital patient transport services relating to aero-medical services and Patient Assistance Travel Schemes (PATS). The hospital based service factors are applied to the remaining service expenses.

### *Data issues*

79 *National acute and non-acute separation costs*. Hospital based admitted patient service costs are derived from patient separation costs which are estimated by the AIHW using its hospital morbidity costing model. This model uses two major AIHW datasets — the National Health Morbidity Database (NHMD) and the National Public Hospital Establishments Database (NPHED).

80 The model estimates the cost of providing acute care services to admitted patients in public hospitals by apportioning the total admitted patient costs of each hospital to individual episodes of hospitalisation in that hospital. The model adjusts for the varying patient treatment costs using Diagnosis Related Groups (DRGs)[20] and length of stay. Estimates for non-acute patient costs are based primarily on length of stay. The model adjusts for the higher costs of Indigenous patients and Indigenous patient undercount.

81 Some States have said that data deficiencies, such as underestimates of Indigenous use (especially in remote areas) and outdated data used in the AIHW model, could undermine the assessment method. Some States had specific concerns with how location related costs would be allocated to patients. Queensland and Western Australia said that there are data

[20] DRGs are a patient classification scheme which provides a means of relating the number and types of patients treated in a hospital to the resources required by the hospital — AIHW, *National Health Data Dictionary 2008* (version 14), p 420.

deficiencies in the way that intrastate location costs are captured. As costs are allocated to patients according to their place of residence, the cost differences between regions within a State (or intrastate differences) in providing admitted patient services are captured in the AIHW morbidity costing model and consequently in our assessment. The AIHW data represent the most reliable data available.

82 The AIHW has indicated that its databases include complete coverage of public hospital facilities[21], so that almost all State costs are being captured. Within hospitals, the AIHW allocates costs between admitted and non-admitted patients based on the admitted patient cost proportion. The AIHW notes these data are of reasonable quality, although there is no nationally agreed method for their derivation. The Department of Health and Ageing (DoHA) National Hospital Cost Data Collection (NHCDC) is used to calculate the DRG cost weights, which are then used to allocate costs to patients based on their level of acuity. Since this is a voluntary collection, not all hospitals are included. The 2006-07 samples comprised 89 per cent of the total acute separations within the year.[22] While the average DRG weights may be influenced by the incomplete coverage, this does not inhibit the complete allocation of hospital costs to patients by the AIHW. The AIHW data are reliable, reasonably comprehensive, comparable and consistent across States.[23]

83 *Population*. The assessment uses Estimated Resident Population (ERP) data disaggregated by age, region and socio-economic status (SES). In a census year, the ABS also produces estimated Indigenous population. These data are applied to ERPs in the years following a census.

84 The AIHW provides the Commission with admitted patient costs based on Statistical Local Area (SLA) populations. Consequently, we calculated the national per capita admitted patient services costs using national SLA based populations. The national per capita costs are then applied to the States' Collection District (CD) based populations. Since a CD is smaller than an SLA, CD based populations provide a more accurate measure of socio-demographic characteristics, particularly for SES, as shown in Table 12-10. Using SLA populations would underestimate the variability in SES within an area. CD populations better capture these differences.

---

21 AIHW, *Australian Hospital Statistics, 2007-08*, Appendix 2, Table A2.2. Coverage of public hospitals is complete for all States except for the ACT.

22 National Hospital Cost Data Collection, *Cost Report Round 11 (2006-2007).*

23 The data are subject to a continuous improvement process through the work of bodies like the Australian Hospital Statistics Advisory Committee and the Health Expenditure Advisory Committee.

**Table 12-10 Comparing SLA and CD based SES (SEIFA) populations, June 2008 ERP**

| | | NSW | Vic | Qld | WA | SA | Tas | ACT | NT | Average |
|---|---|---|---|---|---|---|---|---|---|---|
| | | % | % | % | % | % | % | % | % | % |
| SLA | High SES | 19.87 | 22.56 | 16.54 | 22.46 | 14.33 | 0.00 | 66.49 | 10.83 | 19.92 |
| | Middle SES | 58.89 | 61.43 | 62.10 | 71.65 | 54.08 | 44.01 | 32.72 | 53.15 | 60.27 |
| | Low SES | 21.24 | 16.01 | 21.36 | 5.89 | 31.58 | 55.99 | 0.79 | 36.02 | 19.81 |
| CD | High SES | 22.48 | 20.36 | 17.30 | 24.58 | 12.54 | 6.76 | 43.16 | 11.09 | 20.24 |
| | Middle SES | 55.07 | 62.14 | 63.75 | 60.49 | 61.43 | 59.84 | 53.70 | 51.73 | 59.64 |
| | Low SES | 22.45 | 17.50 | 18.95 | 14.93 | 26.03 | 33.40 | 3.13 | 37.18 | 20.12 |

Source: Commission calculation using ABS ERP data.

85 The ABS was unable to provide estimates of the number of Indigenous persons cross classified by location and socio-economic status beyond age 75 years for reasons of confidentiality. We have therefore applied the Indigenous shares of population beyond age 75 years to both the 75-84 and 85+ age cohorts.

### *Patient transport expenses*

86 We used Productivity Commission data[24] that indicate the costs related to non-hospital patient transport services other than land ambulance, largely PATS and aero-medical services, represented around 35 per cent of the total non-hospital patient transport expenses for each of the four years 2004-05 to 2007-08. For these non-hospital patient transport expenses, location is the primary driver of differential costs across the States. Therefore, they have been assessed by applying a weight of 20[25] derived from State data to remote and very remote populations and a weight of one to other populations.

87 This factor applies to a proportion of non-hospital patient transport costs. The separate patient transport assessment involves costs of around $400 million, or about two per cent of the 2008-09 category expenses totalling $25.6 billion. The assessment is material for the Northern Territory at the $10 per capita threshold.

88 While the Northern Territory favoured updating the remote weight over the review period, we do not consider there is a pressing case for an annual update. On the grounds of simplicity, the proportion of non-hospital patient transport costs on non-land ambulance services and the weights applied to remote and very remote populations will be fixed for the duration of the 2010 Review period.

### *Location*

89 As costs are allocated to patients depending on their place of residence, the cost differences between regions in a State (or intrastate differences) in providing admitted patient services are

[24] The Productivity Commission *Report on Government Services 2009* contains data on Ambulance, PATS and aero-medical service expenses

[25] The remoteness weight was derived from the final year (2007-08) of the four years of data provided by the States.

captured in the AIHW morbidity costing model and, therefore, in the assessment. There are five location classifications, each with its own national average expense profile, to capture differences between the States in the distribution of their populations.

90 The national averages derived from the AIHW data do not capture the differences between States in the costs of providing admitted patient services, for example, due to wages. A location factor has been assessed to recognise these disabilities. The Location chapter describes the methods used to derive that factor.

## Other expenses

91 The other expenses component comprise the administrative scale affected expenses, as adjusted for the effects of interstate differences in wage costs (the calculation is shown in the Administrative scale chapter). The result is shown in Table 12-11.

**Table 12-11 Other expenses component, Admitted patient services, 2008-09**

| | NSW | Vic | Qld | WA | SA | Tas | ACT | NT | Total |
|---|---|---|---|---|---|---|---|---|---|
| | $m | $m | $m | $m | $m | $m | $m | $m | $m |
| Administrative scale expenses | 10.7 | 10.4 | 10.2 | 10.6 | 10.3 | 10.1 | 10.8 | 11.7 | 84.7 |
| Assessed expenses | 10.7 | 10.4 | 10.2 | 10.6 | 10.3 | 10.1 | 10.8 | 11.7 | 84.7 |

Source: Commission calculation.

## Bringing the category together

92 Table 12-12 brings the assessed expenses for each component together to derive the total assessed expenses for each State for the category.

**Table 12-12 Category assessment, Admitted patient services, 2008-09**

| | NSW | Vic | Qld | WA | SA | Tas | ACT | NT | Total |
|---|---|---|---|---|---|---|---|---|---|
| | $m | $m | $m | $m | $m | $m | $m | $m | $m |
| Service expenses | 8 406.4 | 6 045.3 | 5 017.0 | 2 583.4 | 2 060.1 | 634.9 | 326.9 | 426.4 | 25 500.5 |
| Other expenses | 10.7 | 10.4 | 10.2 | 10.6 | 10.3 | 10.1 | 10.8 | 11.7 | 84.7 |
| Total | 8 417.0 | 6 055.7 | 5 027.2 | 2 594.0 | 2 070.4 | 645.0 | 337.7 | 438.1 | 25 585.2 |
| Assessed expenses ($pc) | 1 195.37 | 1 128.79 | 1 155.80 | 1 176.93 | 1 284.39 | 1 289.32 | 970.80 | 1 976.23 | 1 182.22 |
| Cost of service provision ratio | 1.0111 | 0.9548 | 0.9777 | 0.9955 | 1.0864 | 1.0906 | 0.8212 | 1.6716 | 1.0000 |

Source: Commission calculation.

93 Table 12-13 summarises the category factors. It shows for each disability how the expenses per capita in each component and in total are affected by differences in State characteristics. Disability factors below one indicate a State is assessed to need to spend less than average. Disability factors above one indicate a State is assessed to need to spend more than average.

94 Table 12-13 shows that differences between States in the socio-demographic composition of their populations, along with interstate wage and non-wage cost differences, are the main drivers of differences in assessed expenses in this category.

**Table 12-13 Category factor, Admitted patient services, 2008-09**

| | NSW | Vic | Qld | WA | SA | Tas | ACT | NT | Average |
|---|---|---|---|---|---|---|---|---|---|
| **Service expenses (component weight = 99.67 %)** | | | | | | | | | |
| Socio-demographic composition | 0.99722 | 0.96454 | 0.99778 | 0.98410 | 1.09862 | 1.10247 | 0.77310 | 1.55597 | 1.00000 |
| Location | 1.01608 | 0.99156 | 0.98115 | 1.01090 | 0.98731 | 0.97706 | 1.03171 | 1.04922 | 1.00000 |
| Component factor | 1.01319 | 0.95633 | 0.97890 | 0.99476 | 1.08461 | 1.07711 | 0.79756 | 1.63244 | 1.00000 |
| **A.** Weighted component factor | 1.00983 | 0.95316 | 0.97566 | 0.99147 | 1.08102 | 1.07354 | 0.79492 | 1.62704 | 0.99669 |
| **Other expenses (component weight = 0.33 %)** | | | | | | | | | |
| Administrative scale | 0.38715 | 0.49373 | 0.60097 | 1.22537 | 1.63150 | 5.15091 | 7.92995 | 13.47304 | 1.00000 |
| Component factor | 0.38715 | 0.49373 | 0.60097 | 1.22537 | 1.63150 | 5.15091 | 7.92995 | 13.47304 | 1.00000 |
| **B.** Weighted component factor | 0.00128 | 0.00163 | 0.00199 | 0.00405 | 0.00540 | 0.01704 | 0.02624 | 0.04458 | 0.00331 |
| **Category factor** [A+B] | 1.01112 | 0.95480 | 0.97765 | 0.99552 | 1.08642 | 1.09059 | 0.82116 | 1.67162 | 1.00000 |

Source: Commission calculation.

## WHAT IS THE IMPACT ON THE GST DISTRIBUTION?

95 Table 12-14 shows the extent to which the assessment for this category moves the distribution of the GST away from an equal per capita distribution. It shows that GST revenue is redistributed to New South Wales, South Australia, Tasmania and the Northern Territory and away from Victoria, Queensland, Western Australia and the ACT.

**Table 12-14 GST impact, Admitted patient services**

| | NSW | Vic | Qld | WA | SA | Tas | ACT | NT | Redist |
|---|---|---|---|---|---|---|---|---|---|
| Dollars million | 94.7 | -256.0 | -107.9 | -26.5 | 150.8 | 49.6 | -66.6 | 161.8 | 456.9 |
| Dollars per capita | 13.27 | -46.88 | -24.22 | -11.70 | 92.51 | 98.30 | -188.51 | 714.67 | 20.75 |

Note: The difference from an equal per capita assessment derived using 2006-07 to 2008-09 assessed expenses and 2009-10 GST.
Source: Commission calculation.

96 The main reasons for these redistributions are the differences between States in the proportions of their populations in the groups that are high or costly users of admitted patient services, along with differences between States in the cost of wage and non-wage related inputs to health services. High or costly users of admitted patient services are the very old, the very young, Indigenous people, people living in remote regions and people living in areas of relative disadvantage (that is, with low SES).

97 Some of the main reasons for the redistributions for each State are:

- New South Wales has a more than average proportion of people with low SES. It also has to pay higher than average wages;

- Victoria has a lower than average proportion of Indigenous people and fewer than average people with low SES, along with fewer than average people living in remote and very remote regions;
- Queensland and Western Australia have about equal or below average numbers of people with low SES, which is partially offset by higher than average Indigenous populations and more people living in remote and very remote regions. Queensland also has relatively low wage costs;
- South Australia and Tasmania have older populations, along with higher than average proportions of their populations with low SES;
- the ACT has a relatively young population with fewer than average people with low SES; and
- the Northern Territory has a larger than average proportion of Indigenous people as well as a higher than average proportion of people residing in remote and very remote regions.

98 Table 12-15 shows State proportions of people aged 65 and over, people from a low SES background, Indigenous people and people living in remote areas.

**Table 12-15 State proportions of selected population groups**

| | NSW | Vic | Qld | WA | SA | Tas | ACT | NT | Average |
|---|---|---|---|---|---|---|---|---|---|
| | % | % | % | % | % | % | % | % | % |
| Age 65+ | 13.77 | 13.51 | 12.25 | 11.89 | 15.31 | 15.00 | 9.97 | 5.03 | 13.21 |
| Low SES population | 22.45 | 17.50 | 18.95 | 14.93 | 26.03 | 33.40 | 3.13 | 37.18 | 20.12 |
| Remote population | 1.16 | 0.11 | 3.30 | 6.21 | 2.45 | 0.55 | 0.00 | 38.71 | 2.29 |
| Indigenous population | 2.27 | 0.66 | 3.55 | 3.39 | 1.82 | 3.86 | 1.30 | 30.16 | 2.52 |

Note: Low SES comprises people in the bottom quintile.
Remote populations include people living in remote and very remote areas.
Source: ABS ERP June 2008.

99 Table 12-16 provides a summary of the major reasons the assessment moves State GST revenue away from an equal per capita distribution.

**Table 12-16 Major reasons for difference from EPC, Admitted patient services**

| | NSW | Vic | Qld | WA | SA | Tas | ACT | NT | Redist |
|---|---|---|---|---|---|---|---|---|---|
| | $m | $m | $m | $m | $m | $m | $m | $m | $m |
| Socio-demographic composition factor | -22.5 | -203.5 | -10.6 | -37.3 | 171.2 | 55.3 | -86.0 | 133.4 | 359.9 |
| Location factor | 134.6 | -43.2 | -90.6 | 9.1 | -22.0 | -12.3 | 13.0 | 11.4 | 168.1 |
| Administrative scale factor | -16.7 | -10.5 | -6.7 | 2.0 | 3.9 | 7.9 | 9.4 | 10.8 | 33.9 |

Source: Commission calculation.

## Changes since the 2009 Update

100 Table 12-17 breaks down the total changes since the 2009 Update into the impact of shortening of the review period from five years to three, category-specific method changes, and change in State circumstances in the 2010 assessment period.

**Table 12-17 Changes since the 2009 Update — Admitted patient services**

| | NSW | Vic | Qld | WA | SA | Tas | ACT | NT | Redist |
|---|---|---|---|---|---|---|---|---|---|
| | $m | $m | $m | $m | $m | $m | $m | $m | $m |
| Shortening the review period | 47.2 | 1.1 | -38.1 | -1.5 | -14.9 | -3.8 | 3.3 | 6.8 | 58.3 |
| Method changes | -37.1 | 4.2 | -23.2 | 7.0 | 31.3 | 33.5 | -2.7 | -13.0 | 76.0 |
| State circumstances | -1.3 | -32.5 | -8.4 | 12.3 | 16.8 | 4.7 | -6.9 | 15.5 | 49.2 |
| Total | 8.7 | -27.2 | -69.7 | 17.7 | 33.1 | 34.4 | -6.3 | 9.2 | 103.2 |

Source: Commission calculation.

101 *Shortening the review period.* The changes due to shortening of the review period largely reflect those observed when moving from the 2001 Census to the 2006 Census. The proportion of people on low income increased over the two Census periods in New South Wales, but in contrast, decreased in Queensland. People with low incomes rely more on public hospital services than higher income earners. Moving to a three-year average from a five-year average removed the impact of the 2001 Census results, thus accentuating the impact of the 2006 Census results which led to the GST redistribution to New South Wales and away from Queensland.

102 *Method changes*. The redistribution shown in Table 12-17 due to method changes can be mainly attributed to the different way in which we recognise the higher costs of providing services to people with low SES. Table 12-18 demonstrates that using three SES bands (based upon the ABS SEIFA) better captures the differences in the distribution of people by SES between States than by using an income threshold. Under the latter approach, the differences in low SES population proportions across States were not as great as they are under the SEIFA approach. As a result of the introduction of SEIFA to measure the effect of people with low SES on the cost of providing admitted patient services, GST has been redistributed to South Australia and Tasmania, and away from New South Wales, Queensland and the ACT.

**Table 12-18 Recognition of socio-economic status using SEIFA and income**

| | | NSW | Vic | Qld | WA | SA | Tas | ACT | NT | Average |
|---|---|---|---|---|---|---|---|---|---|---|
| | | % | % | % | % | % | % | % | % | % |
| June 2008 ERP | High SES | 22.48 | 20.36 | 17.30 | 24.58 | 12.54 | 6.76 | 43.16 | 11.09 | 20.24 |
| | Middle SES | 55.07 | 62.14 | 63.75 | 60.49 | 61.43 | 59.84 | 53.70 | 51.73 | 59.64 |
| | Low SES | 22.45 | 17.50 | 18.95 | 14.93 | 26.03 | 33.40 | 3.13 | 37.18 | 20.12 |
| 2006 Census | High income | 71.56 | 72.25 | 72.81 | 74.41 | 69.11 | 66.26 | 83.56 | 72.72 | 72.16 |
| | Low income | 28.44 | 27.75 | 27.19 | 25.59 | 30.89 | 33.74 | 16.44 | 27.28 | 27.84 |

Note: In the 2009 Update the individual low income threshold was $20 800 while for households it was $33 800.
Source: Commission calculation.

103 There are two method changes affecting the Northern Territory. The low English fluency cost weight is no longer applied in this category, for reasons discussed in the *Cultural and Linguistic Diversity (CALD)* section. For Indigenous people, the AIHW data already reflect all additional costs for treating Indigenous people and no further adjustment is required. Its removal resulted in a smaller GST share for the Territory. We have recognised the lack of private hospital provision in Darwin compared with other State capitals, which resulted in an increase in the Northern Territory's share of GST. Combined, the effect of the two changes has been to reduce the Northern Territory's GST share.

104 *Changes in State circumstances.* The change due to State circumstances was largely driven by the rapid growth in the category size. State expenses on admitted patient services continue to grow at a faster rate than GST revenue. Therefore, GST has been redistributed to the States whose assessed expenses are above average over the assessment period, namely South Australia, Tasmania and the Northern Territory.

105 The observed effect for New South Wales and Western Australia was driven by changes in the costs of wage and non-wage related inputs to admitted patient services. Over the assessment period, there was an increase in these costs for Western Australia, and a decrease in these costs for New South Wales.

## UPDATE PROCESS

106 We recommend that data used in this assessment be updated when new data become available, to ensure the relativities remain as contemporary and consistent with the circumstances of the States as possible. On this basis, we recommend that:

- we obtain from the AIHW the latest national admitted patient separation costs data cross-classified by age, Indigenous status, location and socio-economic status (SEIFA) each year;
- the assessed expenses for the admitted patient services be calculated on the basis of those annual AIHW data, in conjunction with the matching annual ABS estimated resident populations; and
- the assessment of non-hospital patient transport component only be updated by the annual change in the GFS data, while the remote weight and the proportion of non-land ambulance patient transport services be fixed for the Review period.

## SIMPLIFICATION

107 In the Admitted patient services category, simplification was achieved through a reduction in the number of SDC factors and the number of population groups within the SDC factor. Using an expenditure based approach to the assessment allowed the same treatment of acute and non-acute separations (on an expenditure basis), as distinct from the 2004 Review approach of

using cost weighted separations for acute and bed days for non-acute patient assessments. In addition, the costs derived by the AIHW capture treatment expenditure by different hospital types, making the need to calculate a separate hospital costs factor redundant. The 210 population groups represent a 90 per cent decrease on the 2080 population groups used in the 2004 Inpatient services assessment.

## FURTHER INFORMATION

108 Background material in support of this assessment is published on the Commission's website. That material includes the following documents, released for comment in the development of this assessment, together with State submissions responding to those documents:

- Staff discussion paper *2007/13-S Admitted patient services*;
- Staff discussion paper *2007/36-S Health as a single category*;
- Commission position paper *2008/18 Admitted patient services*; and
- *2010 Review Draft Report*.