Chapter 9: Public hospitals

Public hospitals are important providers of government funded health care services in Australia. A key objective of government is to provide public hospital services to ensure the population has access to cost-effective health services, based on clinical need and within clinically appropriate times, regardless of geographic location. Public hospitals provide a range of services, including:

- acute care services to admitted patients
- sub-acute and non-acute services to admitted patients (for example, rehabilitation or palliative care, or long stay maintenance care)
- emergency, outpatient and other services to non-admitted patients[1]
- mental health services, including services provided to admitted patients by designated psychiatric/psychogeriatric units
- public health services
- teaching and research activities.

The public hospitals chapter reports on the performance of State and Territory public hospitals, and focuses on acute care services provided to admitted patients and emergency services provided to non-admitted patients in public hospitals. These services comprise the bulk of public hospital activity and, in the case of acute care services to admitted patients, have the most reliable data available. It also reports separately on a significant component of the services provided by public hospitals — maternity services. Some data in the chapter include sub-acute and non-acute care services where they cannot yet be separately identified from acute care. In some instances, stand-alone psychiatric hospitals are also included, although their role is diminishing in accordance with the National Mental Health Strategy. The performance of psychiatric hospitals and psychiatric units of public hospitals is examined more closely in the Health management chapter (chapter 11). Some common health terms relating to hospitals are defined in box 9.1.

[1] Other services to non-admitted patients include community health services such as baby clinics and immunisation units, district nursing services and other outreach services. Definitions are provided in (AIHW 2001a).

Box 9.1 **Some common terms relating to hospitals**

Patients

Admitted patient: a patient who has formally undergone an admission process in a public hospital to begin an episode of care. Admitted patients may receive acute, sub-acute or non-acute care services.

Non-admitted patient: a patient who has not undergone a formal admission process, but who may receive care through an emergency department, outpatient or other non-admitted service.

Types of care

Classification of care depends on the principal clinical intent of the care received.

Acute care: clinical services provided to patients, including managing labour, curing illness or treating injury, performing surgery, relieving symptoms and/or reducing the severity of illness or injury, and performing diagnostic and therapeutic procedures. Most episodes involve a relatively short hospital stay.

Ambulatory services: services provided by hospitals to non-admitted patients.

Sub-acute and non-acute care: clinical services provided to patients suffering from chronic illnesses or recovering from such illnesses. They include rehabilitation, planned geriatric care, palliative care, geriatric care evaluation and management, and services for nursing home type patients. Clinical services delivered by designated psychogeriatric units, designated rehabilitation units and mothercraft services are considered to be non-acute.

Hospital outputs

Separation: the discharge, transfer, death or change of episode of care of an admitted patient. For measuring a hospital's activity, separations are used in preference to admissions because diagnoses and procedures can be more accurately recorded at the end of a patient's stay and patients may undergo more than one separation from the time of admission. Admitted patients who receive same day procedures (for example, renal dialysis) are recorded in separation statistics.

Casemix-adjusted separations: the number of separations adjusted to account for differences across hospitals in the complexity of their episodes of care. Casemix-adjustment is an important step to achieving comparable measures of efficiency across hospitals and jurisdictions.

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Box 9.1 **(Continued)**

Non-admitted occasions of service: clinical services provided by hospitals to non-admitted patients. Services may include emergency department visits, outpatient services (such as pathology, radiology and imaging, and allied health services, including speech therapy and family planning) and other services to non-admitted patients. Hospital non-admitted occasions of service are not yet recorded consistently across States and Territories, and relative differences in the complexity of services provided are not yet documented.

Other common health terms

Co-morbidity: the simultaneous occurrence of two or more diseases or health problems that affect the care of the patient.

AR-DRG (Australian Refined Diagnosis Related Group): a patient classification system that hospitals use to match their patient services (hospital procedures and diagnoses) with their resource needs. AR-DRG versions 4.1 and 4.2 are based on the ICD-10-AM classification.

ICD-10-AM (the Australian modification of the International Standard Classification of Diseases and Related Health Problems): a classification of diseases and injuries replacing the earlier ICD-9-CM (Australian version of the International Classification of Diseases, revision 9, clinical modification).

Source: AIHW (2001a); DHAC (1998); NCCH (1998).

Indigenous data in the public hospitals chapter

The public hospitals chapter in the *Report on Government Services 2004* contains the following data items on Indigenous people:

- Indigenous separations in public and private hospitals, 2001-02
- Indigenous and non-Indigenous separation rates, public hospitals, 2001-02
- Indigenous Standardised Hospital Separation Ratios for selected conditions, by gender, 2001-02
- discussion of differences in admitted patient expenditures between Indigenous and non-Indigenous people.

Supporting tables

Supporting tables for data within the public hospitals chapter of the compendium are contained in the attachment to the compendium. These tables are identified in references throughout this chapter by an ‘A’ suffix (for example, table 9A.3 is table 3 in the public

hospitals attachment to the compendium). As the data are directly sourced from the Report on Government Services 2004, the compendium also notes where the original table, figure or text in the Report on Government Services 2004 can be found. For example, where the compendium refers to 'ROGS 2004, p. 9.15' this is page 15 of chapter 9 and 'ROGS 2004, 9A.2' is attachment table 2 of attachment 9 of the Report on Government Services 2004.

Equity — Separation rates by target group

Public hospitals have a significant influence on the equity of the overall health care system. While access to public hospital services is important to the community in general, it is particularly so for population groups such as Indigenous people who may have difficulty in accessing alternative services, such as those provided by private hospitals.

Without appropriate access to hospital services, the consequences of any injury or illness are more likely to be either permanent disability or premature death for a patient. Equity of access has been measured using data on Indigenous and non-Indigenous separations. Data on Indigenous people are limited by the accuracy and extent to which Indigenous people are identified in hospital records and this varies across States and Territories. In 1998, a pilot study in 11 hospitals found that the accuracy with which a person's Indigenous status was recorded varied greatly from hospital to hospital, ranging from 55 per cent to 100 per cent (ATSIHWIU 1999). The quality of data improved from 2000-01 because all jurisdictions used consistent categories and definitions for Indigenous status from that year. Despite this, it is considered that for 2001-02 the quality of data was acceptable only in the NT, SA and WA (ABS/AIHW 2003). In addition, difficulties in estimating the size of the Indigenous population limit the comparability of data over time.

Descriptive data on Indigenous and non-Indigenous separations in public hospitals in 2001-02 are provided in table 9.1. Indigenous separations accounted for around 3.0 per cent of total separations in 2001-02 (and 4.7 per cent of separations in public hospitals), although Indigenous people represented around 2.4 per cent of the total population in 2001-02. Most Indigenous separations occurred in public hospitals (97.2 per cent). The low proportion of private hospital separations for Indigenous people may be due partly to a lower proportion of Indigenous patients being correctly identified in private hospitals and partly to a lower use of private hospitals (ABS 2000). Data in table 9.1 need to be interpreted with care. The AIHW advised that only data from WA, SA and the NT are considered to be of acceptable quality (AIHW 2003).

Table 9.1 **Separations by Indigenous status, 2001-02[a]**

	NSW	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*ACT*[b]	*NT*[c]	*Aust*
Number of public hospital separations ('000)									
Indigenous	34.7	8.0	53.2	34.6	12.7	1.5	1.4	39.6	185.7
Non-Indigenous	1224.3	1081.9	630.0	318.1	340.4	73.0	58.4	23.6	3749.7
Not reported	4.7	0.0	11.6	0.0	9.3	4.9	2.2	0.3	32.9
Total	**1263.7**	**1089.9**	**694.7**	**352.8**	**362.3**	**79.5**	**61.9**	**63.5**	**3968.3**
Number of private hospital separations ('000)									
Indigenous	0.5	0.4	1.4	2.7	0.2	0.1	0.0	na	5.4
Non-Indigenous	691.2	579.5	462.0	262.4	192.4	23.2	25.6	na	2236.2
Not reported	0.8	0.0	129.7	0.0	5.2	47.4	1.6	na	184.6
Total	**692.5**	**579.8**	**593.1**	**265.1**	**197.8**	**70.6**	**27.2**	**na**	**2426.2**
Separations in public hospitals as a proportion of separations in all hospitals (%)									
Indigenous	99	95	97	93	98	91	97	na	97
Non-Indigenous	64	65	58	55	64	76	70	na	63

a Identification of Indigenous patients is not considered complete and completeness varies across jurisdictions. The AIHW advised that only data from WA, SA and the NT are of acceptable quality. **b** Separations reported for Indigenous people in the ACT are subject to variability due to the small Indigenous population in the jurisdiction. A high proportion of separations are for maintenance renal dialysis episodes attributable to a small number of people. **c** Data for the private hospital in the NT are not available. **na** Not available.

Source: AIHW (2003); ROGS 2004, p. 9.41; Table 9A.1.

A performance indicator of Indigenous access to hospitals is given by the rate of separations per 1000 people. Data on separation rates for Indigenous people and all people for all public hospitals are presented in table 9.2. Data regarding private hospital separation rates are contained in table 9A.2.

In 2001-02, on an age standardised basis, 614.3 separations (including same day separations) for Indigenous patients were reported per 1000 Indigenous people in public hospitals. This rate was markedly higher than the corresponding rate for the total population of 202.8 per 1000. Indigenous separation rates for public hospitals were highest in the NT (1129.6 separations per 1000 Indigenous people) (table 9.2). The AIHW advised that only data from WA, SA and the NT are considered to be of acceptable quality. Incomplete identification of Indigenous people limits the validity of comparisons over time, as well as across jurisdictions.

Table 9.2 **Estimates of separations per 1000 people by reported Indigenous status, public hospitals[a, b]**

	NSW	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*ACT*[c]	*NT*	*Aust*
1997-98									
Indigenous people	324.2	369.3	512.6	753.8	633.7	128.1	347.6	871.6	522.6
Total population	202.2	201.7	205.8	201.4	228.5	170.7	211.3	351.0	205.3
1998-99									
Indigenous people	337.3	344.0	594.6	809.8	673.1	22.9	27.3	920.5	557.1
Total population	199.5	207.7	209.1	204.0	232.3	170.5	212.8	359.6	207.1
1999-2000									
Indigenous people	363.4	413.1	708.3	868.9	875.5	132.2	1461.7	1105.0	652.4
Total population	192.1	211.7	205.0	202.0	232.6	160.1	219.2	372.9	204.6
2000-01									
Indigenous people	403.8	461.4	671.6	852.2	772.6	110.6	858.0	1031.6	637.5
Total population	187.9	213.6	195.5	199.7	228.8	150.5	217.0	370.9	201.1
2001-02									
Indigenous people	361.1	416.0	676.5	752.7	743.6	139.4	982.8	1129.6	614.3
Total population	188.6	222.5	192.5	190.7	229.7	165.0	216.3	394.3	202.8

[a] The rates are directly age standardised to the Australian population at 30 June 2001. [b] Identification of Aboriginal and Torres Strait Islander patients is not considered complete and completeness varies across jurisdictions. The AIHW advised that only data from WA, SA and the NT are of acceptable quality. [c] Rates reported for Indigenous people in the ACT are subject to variability due to the small Indigenous population in the jurisdiction. A high proportion of separations are for maintenance renal dialysis episodes attributable to a small number of people.

Source: AIHW (unpublished); ROGS 2004, p. 9.42; Table 9A.2.

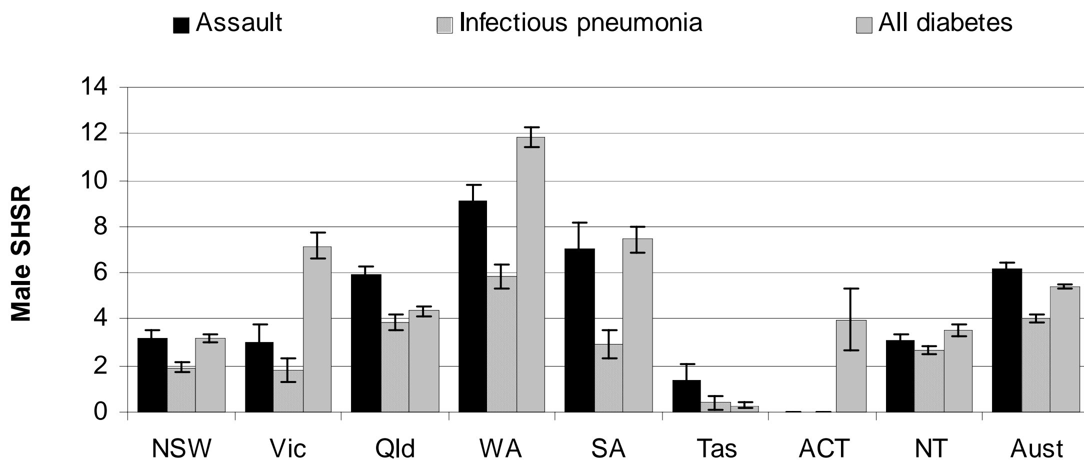
Data on Indigenous separations for selected conditions are included in this chapter for descriptive purposes only. The data do not signal the performance of hospitals, but reflect a range of factors, such as: the spectrum of public, primary care and post-hospital care available; Indigenous access to these as well as hospital services; social and physical infrastructure services for Indigenous people; and differences in the complexity, incidence and prevalence of disease between the Indigenous and non-Indigenous populations.

Standardised hospital separation ratios are calculated by dividing Indigenous separations by ‘expected’ separations. Expected separations are calculated as the product of the all Australian separation rates and the Indigenous population. They illustrate differences between the rates of Indigenous hospital admissions and those of the total Australian population, taking into account differences in age distributions. Ratios are presented for six major conditions: circulatory diseases, injury and poisoning, respiratory diseases and lung cancer, diabetes, tympanoplasty associated with otitis media, and mental health conditions and selected associated ICD-9 and ICD-10 codes (tables 9A.3 and 9A.4).

For males in 2001-02, there was a marked difference between the Indigenous separation rates and those of the total population for assault (with the Indigenous separation rates

being 6.2 times higher than for all Australians), all diabetes[2] (with the Indigenous separation rates being 5.4 times higher than for all Australians), and infectious pneumonia (with the Indigenous separation rates being 4.0 times higher than for all Australians) (figure 9.1). While the 2001-02 standardised rates for rheumatic heart disease and tympanoplasty associated with otitis media for Indigenous males also appeared to be markedly higher than for the Australian male population, the number of separations for these conditions was very small (table 9A.3).

Figure 9.1 **Standardised hospital separation ratios for selected conditions: Indigenous males to all males, 2001-02[a, b, c, d, e, f]**



a The ratios are indirectly age standardised using the Census based estimated resident population of Indigenous males at 30 June 2001, the hospital separation rates for Australian males aged 0–74 years for 2000-01 and the male population at 30 June 2001. **b** Identification of Aboriginal and Torres Strait Islander patients is not considered to be complete and completeness varies among jurisdictions. The variation in the number of Indigenous separations per 1000 Indigenous population among the States and Territories suggests variation in the proportion of Indigenous persons who were identified as such in the hospital morbidity data collections and/or in the total population. **c** The quality of the data provided for Indigenous status in 2001-02 has continued to improve due to the use of the National Health Data Dictionary definitions by all jurisdictions, however it is still in need of improvement, being considered acceptable for only SA, WA and the NT. Data on Indigenous status should, therefore, be interpreted cautiously. **d** The ACT data are not considered reliable due to the small size of the Indigenous population in that jurisdiction. **e** 'All diabetes' refers to separations with either a principal or additional diagnosis of diabetes. **f** These data do not signal the performance of hospitals, but reflect a range of factors such as: the spectrum of public, primary care and post hospital care available; Indigenous access to these as well as hospital services; social and physical infrastructure services for Indigenous people; and differences in the complexity, incidence and prevalence of disease between the Indigenous and non-Indigenous populations. Information on the Indigenous population in each jurisdiction is contained in the appendix A.

Source: AIHW (unpublished); ROGS 2004, p. 9.43; Table 9A.3.

In 2001-02, separation rates were markedly higher for Indigenous females than those for all females for assault (16.6 times higher), all diabetes (6.7 times higher), infectious pneumonia (4.0 times higher) and coronary heart disease (3.6 times higher) (figure 9.2).

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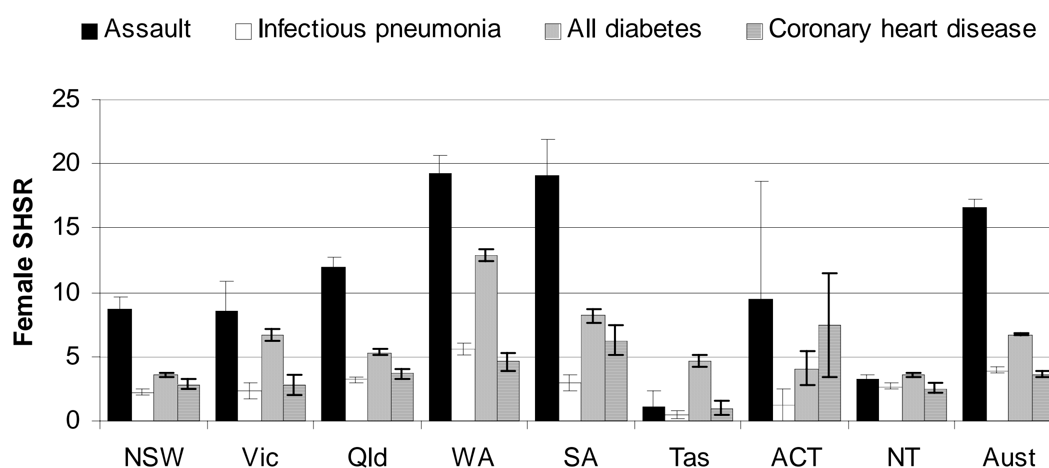
2 'All diabetes' refers to separations with either a principal or additional diagnosis of diabetes.

While the standardised rates for rheumatic heart disease and tympanoplasty associated with otitis media for Indigenous females also appeared markedly higher than for the Australian female population, the number of separations for these conditions was very small (table 9A.4).

Figure 9.2 **Standardised hospital separation ratios for selected conditions: Indigenous females to all females, 2001-02[a, b, c, d, e, f]**



[a] The ratios are indirectly age standardised using the Census based estimated resident population of Indigenous females at 30 June 2001, the hospital separation rates for Australian females aged 0–74 years for 2000-01 and the female population at 30 June 2001. [b] Identification of Aboriginal and Torres Strait Islander patients is not considered to be complete and completeness varies among jurisdictions. The variation in the number of Indigenous separations per 1000 Indigenous population among the States and Territories suggests variation in the proportion of Indigenous persons who were identified as such in the hospital morbidity data collections and/or in the total population. [c] The quality of the data provided for Indigenous status in 2001-02 has continued to improve due to the use of the National Health Data Dictionary definitions by all jurisdictions, however it is still in need of improvement, being considered acceptable for only SA, WA and the NT. Data on Indigenous status should, therefore, be interpreted cautiously. [d] The ACT data are not considered reliable due to the small size of the Indigenous population in that jurisdiction. [e] 'All diabetes' refers to separations with either a principal or additional diagnosis of diabetes. [f] These data do not signal the performance of hospitals, but reflect a range of factors such as: the spectrum of public, primary care and post hospital care available; Indigenous access to these as well as hospital services; social and physical infrastructure services for Indigenous people; and differences in the complexity, incidence and prevalence of disease between the Indigenous and non-Indigenous populations. Information on the Indigenous population in each jurisdiction is contained in the appendix A.

Source: AIHW (unpublished); ROGS 2004, p. 9.44; Table 9A.4.

Efficiency — Recurrent cost per casemix-adjusted separation

The recurrent cost per casemix-adjusted hospital separation is an efficiency indicator that measures the average cost of providing care for an admitted patient (whether overnight stay or same day), adjusted for the relative complexity of the patient's clinical condition and of the hospital services provided (AIHW 2000). The AIHW (2001b) showed that

hospital recurrent expenditures on Indigenous and non-Indigenous people may differ (box 9.2). This difference may also influence unit cost outcomes.

Box 9.2 **Admitted patient costs for Indigenous people, 1998-99**

The AIHW (2001b) noted that a number of factors drive differences in the admitted patient expenditures for Indigenous people and non-Indigenous people.

- The average AR-DRG cost weight is lower for Indigenous patients than for non-Indigenous patients due to the Indigenous population's higher numbers of low cost AR-DRGs (such as dialysis) and lower numbers of high cost surgical AR-DRGs.
- The average length of hospital stay tends to be longer for Indigenous people than for non-Indigenous people within the same AR-DRG. This leads to higher costs per episode and can be attributed to case complexity, hospital and regional cost variations, differences in clinical practice and post-discharge support.
- A high proportion of Indigenous people live in areas where the hospitals are relatively high cost, such as those in remote parts of Australia. On the other hand, in some cases, a high proportion of Indigenous people live in the vicinity of lower cost hospitals, such as small non-remote rural hospitals and remote Queensland hospitals.[3]
- In addition, there is evidence that cost per separation for Indigenous people is higher due to the higher costs of caring for patients with greater co-morbidities. These costs are in addition to those associated with longer lengths of stay. The AIHW (2001b) added a 5 per cent cost loading for Indigenous admitted patients to account for this effect.

Overall, after adjusting for length of stay and differences in hospital costs due to locational factors, costs per separation within AR-DRGs for Indigenous patients were 6 per cent higher than for non-Indigenous patients in 1998-99. This gap varied across jurisdictions. Costs per separation for Indigenous patients were 4 per cent lower in NSW and 6 per cent lower in Queensland, whereas WA, SA and NT costs per separation for Indigenous patients were 5 per cent, 13 per cent and 6 per cent higher respectively. Higher costs in SA in 1998-99 were the result of treatment of Indigenous patients many hundreds of kilometres from home. Many of the high cost NT patients are treated in SA hospitals.

Source: AIHW (2001b); ROGS 2004, p. 9.48.

[3] In 1998-99, over one quarter of the Indigenous population (27.5 per cent) lived in remote areas, compared with only 2.6 per cent of the total Australian population (AIHW 2001b).

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