10 Public Hospitals

Public hospitals are important providers of government funded health services in Australia. This chapter reports on the performance of State and Territory public hospitals, focusing on acute care services. It also reports separately on a significant component of the services provided by public hospitals — maternity services.

A profile of public hospitals is provided in section 10.1. A framework of performance indicators for public hospitals is outlined in section 10.2. Section 10.3 contains the key performance indicator results for public hospitals. A profile of maternity services provided by public hospitals is outlined in section 10.4. Section 10.5 presents the performance indicator framework for public hospital maternity services and section 10.6 reports the key performance indicator results for these services. Future directions in reporting are discussed in section 10.7. Terms and definitions are summarised in section 10.8. Section 10.9 lists the attachment tables for this chapter. Section 10.10 lists references used in this chapter.

Reporting on public hospitals has been improved this year with the introduction of hospital procedures measures, which provide data on the proportion of hospital separations for which procedures are reported by Indigenous status of the patient. These measures are included in section 10.1 'Profile of public hospitals' and include the following:

- separations with a procedure recorded by principal diagnosis
- separations with a procedure recorded by jurisdiction
- separations with a procedure recorded by remoteness.

The workforce sustainability indicators, which were new in the 2007 Report, have been expanded this year to provide more information about the age profile of the nursing and medical practitioner workforces. Data are reported for registered nurses and medical practitioners aged under 30; 30–39; 40–49; 50–59; and 60 or over both by jurisdiction and by region.

10.1 Profile of public hospitals

Definition

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, palliative care, or long stay maintenance care)
- emergency, outpatient and other services to non-admitted patients
- mental health services, including services provided to admitted patients by designated psychiatric/psychogeriatric units
- public health services
- teaching and research activities.

This chapter focuses on 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 services to admitted patients, have the most reliable data available. Data in the chapter include sub-acute and non-acute care services.

In some instances, stand-alone psychiatric hospitals are included in this chapter, although their role is diminishing in accordance with the National Mental Health Strategy. Under the strategy, the provision of psychiatric treatment is shifting away from specialised psychiatric hospitals to mainstream public hospitals and the community sector. The performance of psychiatric hospitals and psychiatric units of public hospitals is examined more closely in 'Health management issues' (see chapter 12).

Some common health terms relating to hospitals are defined in box 10.1. Other terms and definitions are included in section 10.8.

Box 10.1 Some common terms relating to hospitals

Patients

admitted patient: a patient who has undergone a formal 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 admitted or non-admitted 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.

sub-acute and non-acute care: clinical services provided to patients suffering from chronic illnesses or recovering from such illnesses. Services 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 non-acute.

Hospital outputs

separation: an episode of care for an admitted patient, which can be a total hospital stay (from admission to discharge, transfer or death), or a portion of a hospital stay beginning or ending in a change of type of care (for example, from acute to rehabilitation). Admitted patients who receive same day procedures (for example, renal dialysis) are included 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.

non-admitted occasion of service: occasion of examination, consultation, treatment or other service provided to a non-admitted patient in a functional unit of a health service establishment. 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.

(Continued on next page)

Box 10.1 **(Continued)**

Other common health terms

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 version 5.0 is based on the ICD-10-AM classification.

ICD-10-AM (the Australian modification of the International Standard Classification of Diseases and Related Health Problems): the current classification of diagnoses and procedures, replacing the earlier ICD-9-CM.

Source: AIHW (2006a); NCCH (1998); NHDC (2001, 2003).

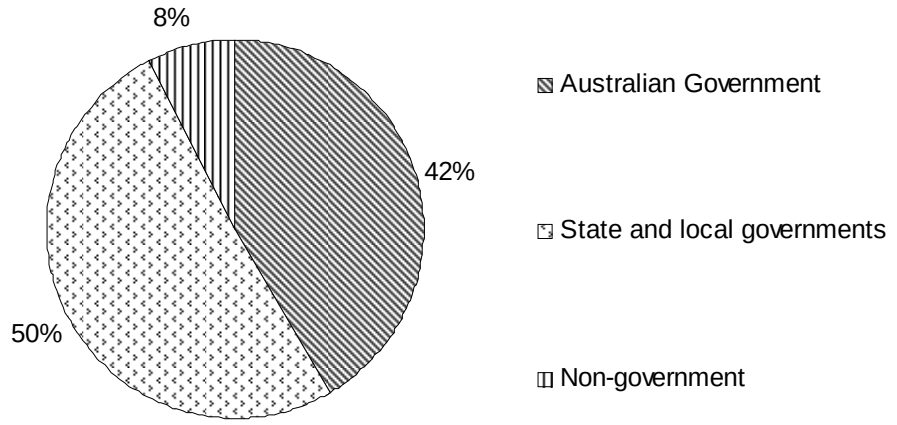
Funding

Total recurrent expenditure on public hospitals (excluding depreciation) was $24 billion in 2005-06 (table 10A.1). In real terms, expenditure increased by 5.6 per cent between 2004-05 and 2005-06 (AIHW 2007a).

The majority of total public hospital recurrent expenditure is spent on admitted patients. Non-admitted patients account for a much smaller share. For selected public hospitals, in 2005-06, the proportion of total public hospital recurrent expenditure that related to the care of admitted patients (based on the admitted patient cost proportion) ranged from 69.0 per cent to 77.0 per cent across jurisdictions (AIHW 2007a).

Funding for public hospitals comes from a number of sources. The Australian, State and Territory governments, health insurance funds, individuals, and workers compensation and compulsory motor vehicle third party insurance contribute to expenditure on public hospitals. Governments contributed about 92.4 per cent of funding for public hospitals in 2005-06 (figure 10.1). Public hospitals accounted for 40.8 per cent of government recurrent expenditure on health services in 2005-06 (AIHW 2007b).

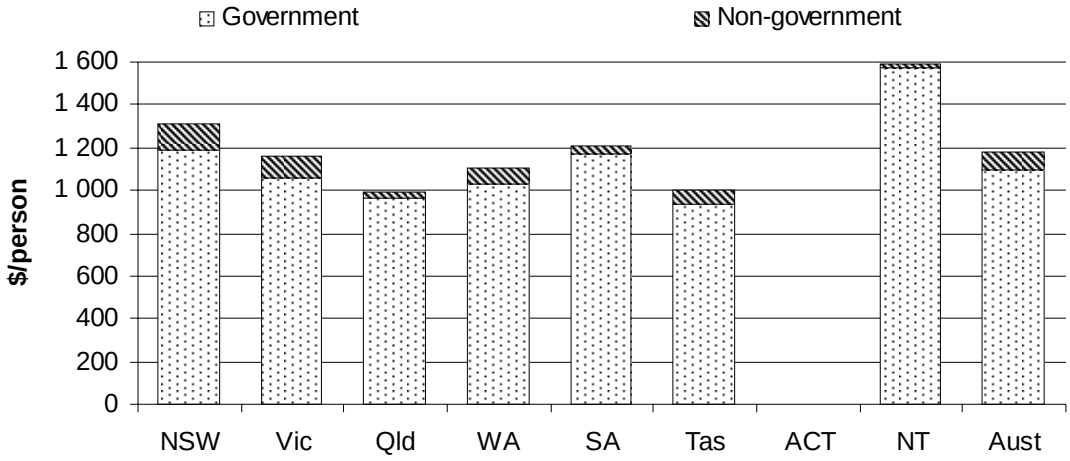
Figure 10.1 **Recurrent expenditure, public hospitals, by source of funds, 2005-06**



Source: AIHW (2007b).

In 2005-06, public hospitals received $1.8 billion from non-government sources — an amount that accounted for 7.6 per cent of all recurrent expenditure (AIHW 2007b). Non-government expenditure in each jurisdiction comprised revenue from health insurance funds, individuals and workers' compensation and compulsory third-party motor vehicle insurers as well as other sources. The proportion of hospital revenue per person funded from non-government sources varied across jurisdictions in 2005-06 (figure 10.2).

Figure 10.2 **Source of public hospital recurrent expenditure, 2005-06**[a, b, c, d]



a Government expenditure excludes depreciation. Non-government expenditure on depreciation is included in recurrent expenditure. **b** Non-government expenditure includes expenditure by health insurance funds, individuals, workers' compensation, compulsory third-party motor vehicle insurers and other sources. **c** WA figures do not include recurrent expenditure associated with public patients at Joondalup and Peel Health Campuses. **d** ACT per person figures are not calculated, as the expenditure numbers for the ACT include substantial expenditures for NSW residents. Thus the ACT population is not the appropriate denominator.

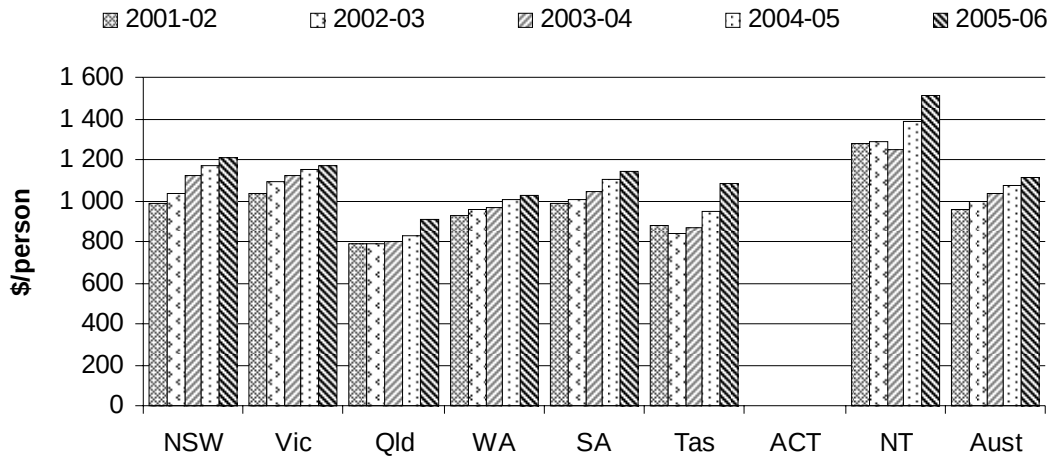
Source: AIHW (2007b); ABS (unpublished) *Australian Demographic Statistics*; table 10A.2.

Expenditure data in figures 10.1 and 10.2 are from *Health Expenditure Australia 2005-06* (AIHW 2007b) and are not directly comparable with other expenditure data used in this chapter, which are drawn from *Australian Hospital Statistics 2005-06* (AIHW 2007a). The data in Health Expenditure Australia have a broader scope than the data in Australian Hospital Statistics and include some additional expenditures (such as those relating to blood transfusion services) (Australian Institute of Health and Welfare (AIHW) unpublished).

In 2005-06, government real recurrent expenditure on public hospitals (in 2004-05 dollars) was $1117 per person for Australia, up from $956 in 2001-02 (figure 10.3). It is difficult to make comparisons between jurisdictions based on these recurrent expenditure data due to differences in the coverage of the data. Some of the differences are:

- the inclusion by some jurisdictions of expenditure on community health services as well as public hospital services
- the exclusion by some jurisdictions of expenditure on privately owned or privately operated hospitals that have been contracted to provide public hospital services.

Figure 10.3 **Real recurrent expenditure per person, public hospitals (including psychiatric) (2004-05 dollars)**[a, b, c, d, e, f, g, h]



[a] Expenditure data exclude depreciation and interest payments. [b] Recurrent expenditure on purchase of public hospital services at the State, or area health service level, from privately owned and/or operated hospitals is excluded. [c] Expenditure data are deflated using the hospital/nursing home care price index from AIHW (2007b). [d] NSW expenditure against primary and community care programs is included from 2001-02. From 2003-04, hospital expenditure recorded against special purposes and trust funds is excluded. [e] Queensland pathology services were purchased from a statewide pathology service rather than being provided by hospital employees. [f] WA recurrent expenditure per person increases to $1094 in 2005-06 if the expenditure on public patients at Joondalup and Peel Health Campuses is included. [g] For 2001-02, data for two small Tasmanian hospitals are not included and data for one small hospital are incomplete. For 2002-03, data for one small hospital are not included and data for five other small hospitals are incomplete. For 2003-04, data for five small hospitals are not included. For 2004-05 and 2005-06, data for one hospital are not included. [h] ACT per person figures are not calculated, as the expenditure numbers for the ACT include substantial expenditures for NSW residents. Thus the ACT population is not the appropriate denominator.

Source: AIHW (2003, 2004, 2005a, 2006a, 2006b, 2007a, 2007b); ABS (unpublished) *Australian Demographic Statistics*; table 10A.3.

Size and scope of sector

There are several ways to measure the size and scope of Australia's public hospital sector. This chapter reports on: the number and size of hospitals; the number and location of public hospital beds; the number and types of public hospital separations; the proportion of separations by age group; the number of separations and incidence of treatment by procedure by Indigenous status of the patient; the number of hospital staff; and the types of public hospital activity.

Hospitals

In 2005-06, Australia had 755 public hospitals (including 19 psychiatric hospitals) (AIHW 2007a). Although 71.9 per cent of hospitals had 50 or fewer beds, these

smaller hospitals represented only 18.6 per cent of total available beds (figure 10.4 and table 10A.4).

Figure 10.4 **Public hospitals, by size, 2005-06**[a, b, c, d, e]

a The number of hospitals reported can be affected by administrative and/or reporting arrangements and is not necessarily a measure of the number of hospital buildings or campuses. **b** Size is based on the average number of available beds. **c** The comparability of bed numbers can be affected by the casemix of hospitals including the extent to which hospitals provide same day admitted services and other specialised services. **d** The count of hospitals in Victoria is a count of the campuses that report data separately to the National Hospital Morbidity Database. **e** WA proportion of hospitals with 100+ available beds would increase if the public bed components at Joondalup and Peel Health Campuses were included.

Source: AIHW (2007a); table 10A.4.

Beds

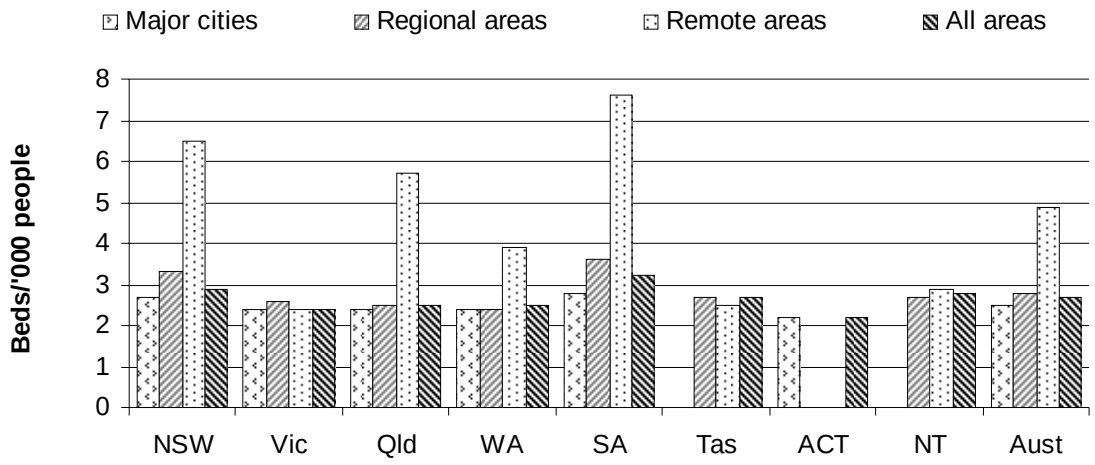
There were 54 601 available beds in public hospitals in 2005-06 (table 10A.4). The concept of an available bed (the definition of which is under review) is becoming less important in the overall context of hospital activity, particularly in light of increasing same day hospitalisations and the provision of hospital-in-the-home care (AIHW 2007a).

The comparability of bed numbers can be affected by the casemix of hospitals, including the extent to which hospitals provide same day admitted services and other specialised services. There are also differences in how available beds are counted, both across jurisdictions and over time.

Nationally, more beds were available per 1000 people in remote areas (figure 10.5). The patterns of bed availability may reflect a number of factors including patterns of availability of other health care services, patterns of disease and injury and the relatively poor health of Indigenous people, who have higher population

concentrations in remote areas (AIHW 2006a). These data also need to be viewed in the context of the age and sex structure (see appendix A) and the morbidity and mortality (see 'Health preface') of the population in each State and Territory.

Figure 10.5 **Available beds, public hospitals, by location, 2005-06**[a, b, c, d, e]



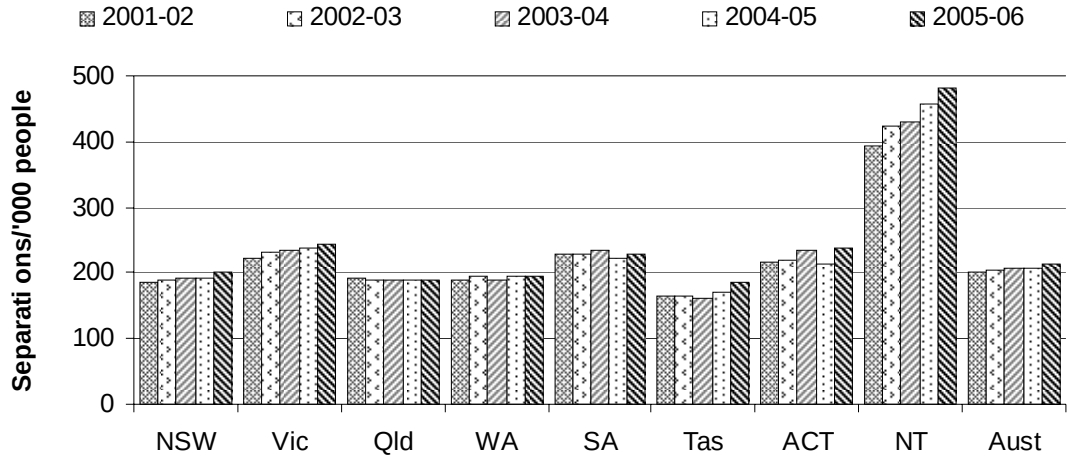
a An 'available bed' is one that is immediately available to be used by an admitted patient. A bed is immediately available for use if it is located in a suitable place for care, with nursing and auxiliary staff available within a reasonable period. Both occupied and unoccupied beds are included. Surgical tables, recovery trolleys, delivery beds, cots for normal neonates, emergency stretchers/beds not normally authorised or funded, and beds designated for same day non-admitted patient care are excluded. Beds in wards that were closed for any reason (except weekend closures for beds/wards staffed and available on weekends only) are also excluded (NHDC 2003). **b** Analysis by remoteness area is of less relevance to geographically smaller jurisdictions and those jurisdictions with small populations residing in remote areas (such as Victoria) (AIHW 2007a). **c** WA total increases from 2.5 to 2.7 if the beds available for public patients at Joondalup and Peel Health Campuses are included. **d** Tasmania and the NT do not have major cities and the ACT does not have remote areas. **e** There were no available beds in regional areas in the ACT.

Source: AIHW (2007a); table 10A.5.

Total separation rates

There were approximately 4.5 million separations from public (non-psychiatric) hospitals in 2005-06 (table 10A.6). Nationally, this translates into 212.8 separations per 1000 people (figure 10.6).

Figure 10.6 **Separation rates in public (non-psychiatric) hospitals**[a, b, c]



[a] Excludes separations for which the care type was reported as 'newborn with no qualified days' and records for hospital boarders and posthumous organ procurement. [b] Rates are directly age standardised to the Australian population at 30 June 2001. [c] WA 2005-06 separation rates per 1,000 people increase from 195.7 to approximately 220 if the public patient separations at Joondalup and Peel Health Campuses are included.

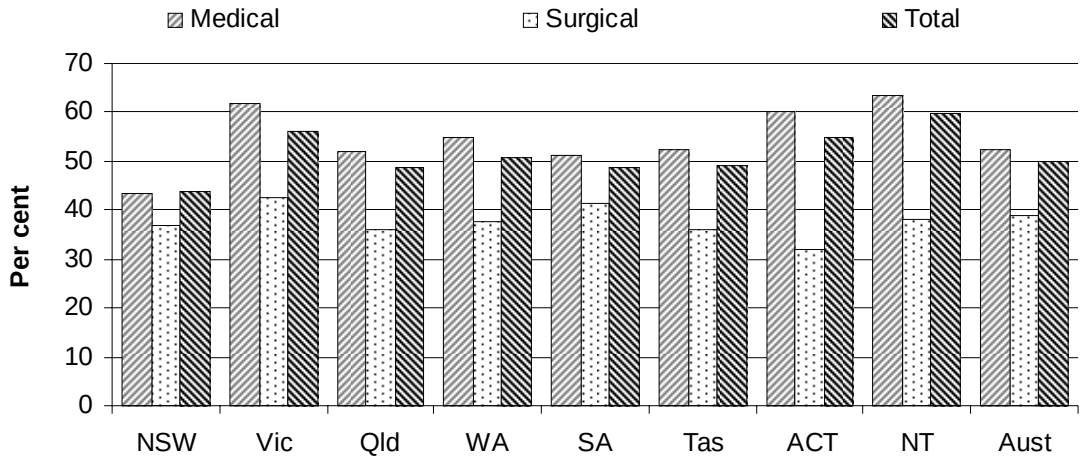
Source: AIHW (2002, 2003, 2004, 2005a, 2006a, 2007a); table 10A.7.

Same day separations in public (non-psychiatric) hospitals increased by 5.6 per cent between 2004-05 and 2005-06, although same day separations as a proportion of total separations remained relatively constant over this period. Overnight separations in public (non-psychiatric) hospitals increased by 3.4 per cent between 2004-05 and 2005-06 (table 10A.7).

Differences across jurisdictions in separation rates reflect variations in the health profiles of the people living in each State and Territory, the decisions made by medical staff about the type of care required and people's access to services other than public hospitals (for example, primary care and private hospitals).

Variations in admission rates can reflect different practices in classifying patients as either admitted same day patients or outpatients. The extent of differences in classification practices can be inferred from the variation in the proportion of same day separations across jurisdictions for certain conditions or treatments. This is particularly true of medical separations. Significant variation across jurisdictions in the proportion of same day medical separations was evident in 2005-06 (figure 10.7). Lower jurisdictional variation is likely in admission practices for surgical procedures, as reflected by the lower variability in the proportion of same day surgical separations.

Figure 10.7 **Proportion of medical, surgical and total separations that were same day, public (non-psychiatric) hospitals, 2005-06[a]**



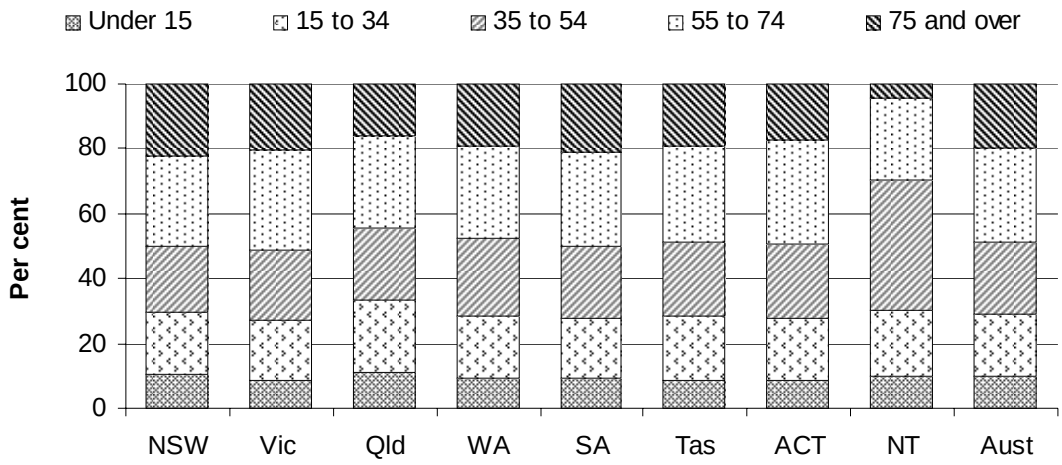
a 'Total' includes medical, surgical, chemotherapy, radiotherapy and 'other' separations based on AR-DRG version 5.0 categories.

Source: AIHW (unpublished); table 10A.8.

Separations by age group

Persons aged 55 years and over accounted for almost half of the separations in public hospitals (48.7 per cent) in 2005-06, even though they accounted for only 23.9 per cent of the estimated resident population at 30 June 2005 (figure 10.8 and AIHW 2007a). The proportion of hospital separations for this and other age groups varies across states and territories (figure 10.8). This variation largely reflects differences in the age profiles of jurisdictions (see table AA.1).

Figure 10.8 **Separations by age group, public hospitals, 2005-06**[a]



a Excludes separations for which the care type was reported as 'newborn with no qualified days' and records for hospital boarders and posthumous organ procurement.

Source: AIHW (2007a); table 10A.9.

Separation rates for Indigenous patients

The completeness of Indigenous identification in hospital admitted patient data varies across states and territories. The AIHW (2005b) report *Improving the Quality of Indigenous Identification in Hospital Separations Data* found that Indigenous patient data was of acceptable quality for analytical purposes only for Queensland, WA, SA, and public hospitals in the NT. Following new assessments of the quality of Indigenous identification in 2007, the National Health Information Management Principal Committee (NHIMPC) recently approved NSW Indigenous patient data as acceptable in quality for analytical purposes, from the 2004-05 reference year. A proposal to approve Victorian data was being considered by the NHIMPC in late 2007. Efforts to improve Indigenous identification across states and territories are ongoing.

The available data are not necessarily representative of other jurisdictions. Indigenous patients are underidentified, to an extent that varies across jurisdictions. Because of improvements in data quality over time, caution also should be used in time series analysis of the data.

In 2005-06, separations for Indigenous people accounted for around 4.6 per cent of total separations and 7.2 per cent of separations in public hospitals in NSW, Queensland, WA, SA and the NT (table 10.1), but the Indigenous population made up only around 2.7 per cent of the population in these jurisdictions (table AA.4). Most separations involving Indigenous patients (93.6 per cent) in these jurisdictions

occurred in public hospitals. 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 in addition to their lower use of private hospitals.

Table 10.1 **Separations, by Indigenous status of patient and hospital sector, 2005-06**[a, b]

	NSW	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*ACT*	*NT*	*Aust*	*Total*[c]
Public hospital separations ('000)										
Indigenous	47.3	np	58.4	40.5	15.8	np	np	55.6	np	217.6
Non-Indigenous	1 354.5	np	677.7	354.5	351.5	np	np	27.8	np	2 766.0
Not reported	18.7	np	14.2	–	10.4	np	np	–	np	43.2
Total	1 420.5	np	750.3	395.0	377.7	np	np	83.4	np	3 026.8
Private hospital separations ('000)										
Indigenous	1.0	np	4.0	9.4	0.5	np	np	np	np	14.9
Non-Indigenous	756.3	np	638.5	310.0	216.8	np	np	np	np	1 921.6
Not reported	8.6	np	69.1	–	2.8	np	np	np	np	80.5
Total	765.9	np	711.5	319.4	220.2	np	np	np	np	2 017.0
Indigenous separations as proportion of total separations (%)										
Public hospitals	3.3	np	7.8	10.3	4.2	np	np	66.6	np	7.2
Private hospitals	0.1	np	0.6	2.9	0.2	np	np	np	np	0.7
All hospitals	2.2	np	4.3	7.0	2.7	np	np	np	np	4.6
Separations in public hospitals as a proportion of separations in all hospitals (%)										
Indigenous	98.0	np	93.6	81.2	96.7	np	np	np	np	93.6
Non-Indigenous	64.2	np	51.5	53.3	61.8	np	np	np	np	59.0

a Excludes separations for which the care type was reported as 'newborn with no qualified days' and records for hospital boarders and posthumous organ procurement. **b** Identification of Indigenous patients is not considered complete and completeness varies across jurisdictions. The AIHW advised that only data for NSW, Queensland, WA, SA and the NT are considered to be acceptable for the purpose of analysis. Nevertheless, data for these jurisdictions should be interpreted with caution as there are jurisdictional differences in data quality. In addition, these jurisdictions are not necessarily representative of the excluded jurisdictions. **c** The total rates include data only for NSW, Queensland, WA, SA, and the NT. – Nil or rounded to zero. **np** Not published.

Source: AIHW (2007a); table 10A.10.

In 2005-06, on an age standardised basis, 792.1 public hospitals separations (including same day separations) for Indigenous patients were reported per 1000 Indigenous people in NSW, Queensland, WA, SA and the NT (table 10.2). This rate was markedly higher than the corresponding rate for these jurisdictions' combined total population of 205.7 per 1000 (table 10.2). Incomplete identification of Indigenous people limits the validity of comparisons over time, as well as across jurisdictions.

Table 10.2 **Estimates of public hospital separations per 1000 people, by Indigenous status of patient[a, b]**

	NSW[c]	*Vic*	*Qld*[c]	*WA*[c]	*SA*[c]	*Tas*	*ACT*	*NT*[c]	*Aust*	*Total*[d]
2001-02										
Indigenous	np	np	676.5	752.7	743.6	np	np	1129.6	np	np
Total population	np	np	192.5	190.7	229.7	np	np	394.3	np	np
2002-03										
Indigenous	np	np	685.2	809.4	788.1	np	np	1223.3	np	np
Total population	np	np	189.4	195.4	231.0	np	np	422.5	np	np
2003-04										
Indigenous	np	np	710.9	789.3	853.9	np	np	1286.2	np	np
Total population	np	np	189.3	191.0	235.9	np	np	428.9	np	np
2004-05										
Indigenous	np	np	733.6	821.5	822.2	np	np	1441.0	np	907.0
Total population	np	np	188.1	195.2	225.3	np	np	456.2	np	205.2
2005-06										
Indigenous	495.6	np	745.4	845.2	875.0	np	np	1548.0	np	792.1
Total population	204.7	np	188.5	198.8	229.7	np	np	491.4	np	205.7

a The rates are directly age standardised to the Australian population at 30 June 2001. **b** Identification of Indigenous patients is not considered complete and completeness varies across jurisdictions and time. **c** The AIHW advised that only data for NSW, Queensland, WA, SA and the NT are of acceptable quality in 2005-06. Nevertheless, data for these jurisdictions should be interpreted with caution as there are jurisdictional differences in data quality and changes in hospitalisation rates for Indigenous people over time that may include a component due to improved identification. In addition, these jurisdictions are not necessarily representative of the excluded jurisdictions. **d** Total rates include data for Queensland, WA, SA, and the NT for all years, and for 2005-06 incorporate NSW. Total rates before 2005-06 are not comparable with the 2005-06 total. **np** Not published.

Source: AIHW (unpublished); table 10A.11.

Separations with a procedure recorded for Indigenous patients

While Indigenous Australians are more likely to be hospitalised than non-Indigenous Australians, they are less likely to be treated by medical or surgical procedure while in hospital. The underlying reasons for this are not well understood and are likely to reflect a range of factors, including, for example, clinical judgements about the appropriateness of treatment by procedure, patient preferences and concerns, and distance from appropriate facilities (AHMAC 2006). Other factors are also likely to affect the data, including those relating to variations in casemix, comorbidities and stage at presentation.

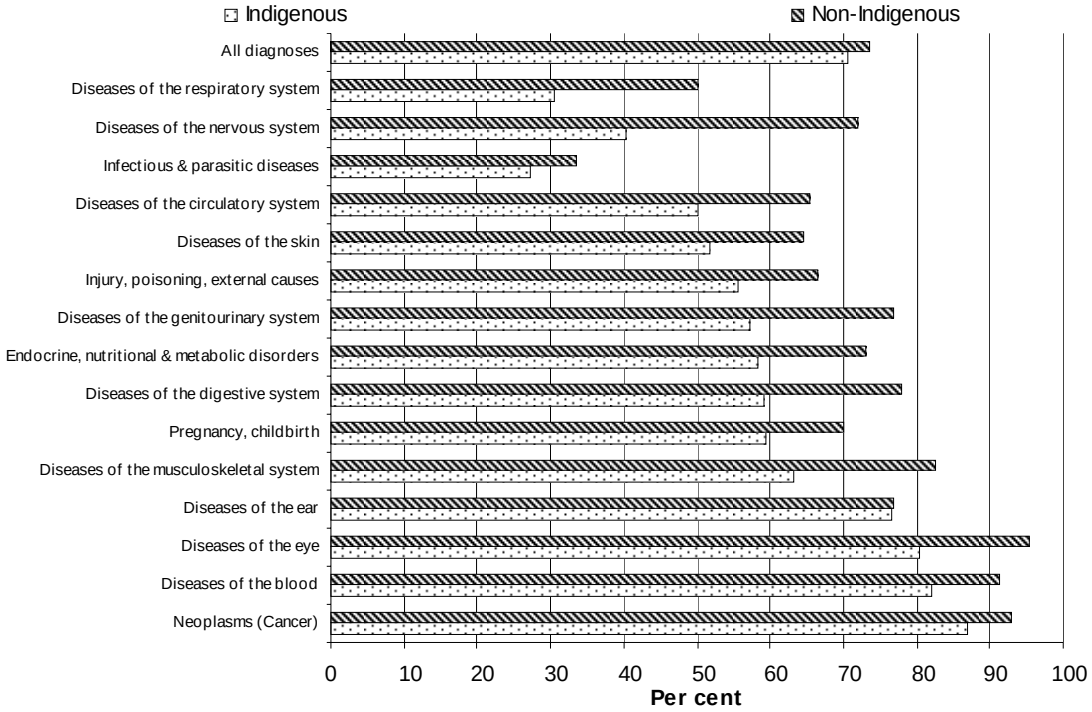
Data for NSW, Queensland, WA, SA and NT public hospitals for separations with a procedure recorded by principal diagnosis are presented in figure 10.9. Separations with a procedure recorded both by jurisdiction and by remoteness are presented in figures 10.10 and 10.11, and include data for all patients treated in public hospitals and public patients treated in private hospitals. Private hospital data are not

published for the NT, but the extent to which public patients are treated in private hospitals in that jurisdiction is limited.

In the period July 2004–June 2006, excluding care involving dialysis, consistently lower proportions of separations with a procedure were recorded for Indigenous patients compared with non-Indigenous patients in almost all categories of principal diagnosis (figure 10.9). The differences can be observed across all jurisdictions for which data are available (figure 10.10). While remoteness is associated with progressively reduced rates of separation with a procedure recorded for all patients, differences were more pronounced for Indigenous patients (figure 10.11).

Care involving dialysis accounts for the greatest number of separations, with end-stage renal disease requiring frequent dialysis treatments, often several times per week. The alternative to dialysis is a kidney transplant. Indigenous people have very high levels of end-stage renal disease as a consequence of high rates of diabetes, hypertension and related illnesses. In addition, few Indigenous people receive kidney transplants (AHMAC 2006). Without the exclusion of dialysis the result would overestimate the numbers of Indigenous people being treated by procedure for other conditions.

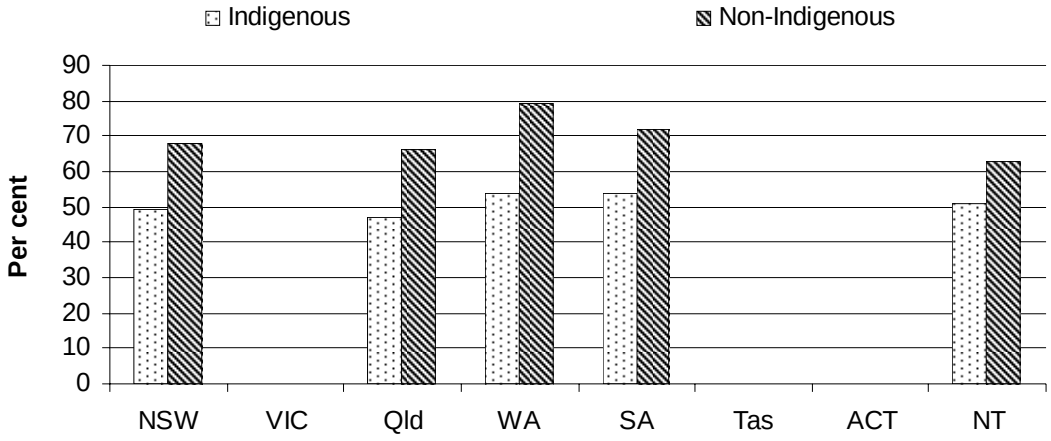
Figure 10.9 **Separations with a procedure recorded by principal diagnosis, public hospitals, by Indigenous status of patient, July 2004–June 2006**[a]



a Includes patients treated in public hospitals in NSW, Queensland, WA, SA and NT.

Source: AIHW (unpublished), table 10A.12.

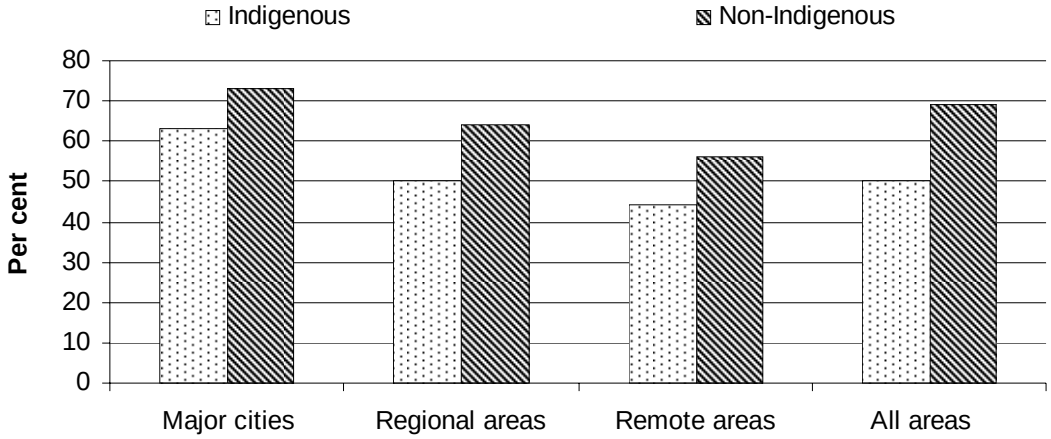
Figure 10.10 **Separations with a procedure recorded, by Indigenous status of patient, July 2004–June 2006**[a, b]



a Includes all patients treated in public hospitals and public patients treated in private hospitals. Excludes private hospital data for NT due to the poor quality of Indigenous data. **b** The AIHW advised that only data for NSW, Queensland, WA, SA and the NT are considered to be acceptable for the purpose of analysis. Nevertheless, data for these jurisdictions should be interpreted with caution as there are jurisdictional differences in data quality. In addition, these jurisdictions are not necessarily representative of the excluded jurisdictions.

Source: AIHW (unpublished), table 10A.13.

Figure 10.11 **Separations with a procedure recorded, by Indigenous status of patient and remoteness, July 2004–June 2006**[a]



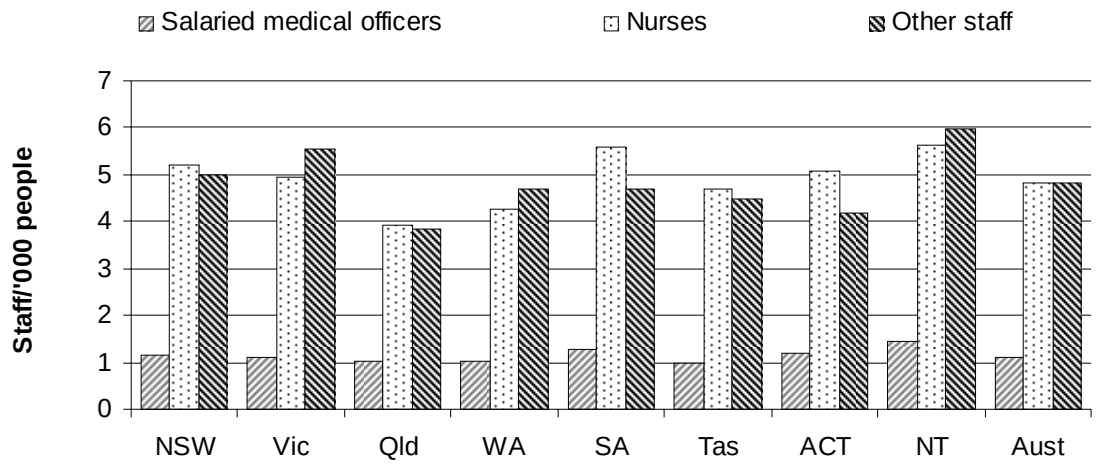
a Includes all patients treated in public hospitals and public patients treated in private hospitals in NSW, Queensland, WA, SA and NT. Excludes private hospital data for NT due to the poor quality of Indigenous data.

Source: AIHW (unpublished), table 10A.14.

Staff

In 2005-06, nurses comprised the single largest group of full time equivalent (FTE) staff employed in public hospitals (4.8 per 1000 people in Australia) (figure 10.12). Comparing data on FTE staff across jurisdictions needs to be undertaken with care because these data are affected by differences across jurisdictions in the recording and classifying of staff. The outsourcing of services with a large labour related component (for example, food services and domestic services) can have a large impact on hospital staffing figures. Differences in outsourcing may explain some of the differences in FTE staff in some staffing categories and across jurisdictions (AIHW 2007a).

Figure 10.12 **Average FTE staff per 1000 people, public hospitals, 2005-06**[a, b, c, d, e, f, g]



a 'Other staff' include diagnostic and allied health professionals, other personal care staff, administrative and clerical staff, and domestic and other staff. **b** Where average FTE staff numbers were not available, staff numbers at 30 June 2006 were used. Staff contracted to provide products (rather than labour) are not included. **c** Staff per 1000 people are calculated from ABS population data at 31 December 2005 (table AA.2). **d** For Victoria, FTEs may be slightly understated. **e** Queensland pathology services staff employed by the State pathology service are not included. **f** WA figures do not include FTEs working with public patients at Joondalup and Peel Health Campuses. **g** Data for two small Tasmanian hospitals are not included.

Source: AIHW (2007a); ABS (unpublished) *Australian Demographic Statistics*; tables 10A.15 and AA.2.

Activity — admitted patient care

There were around 4.6 million acute, sub-acute and non-acute separations in public hospitals in 2005-06. Of these, acute separations accounted for 96.1 per cent, newborns with some qualified days accounted for 1.0 per cent, and rehabilitation care accounted for 1.5 per cent (table 10A.16). Palliative care, non-acute care and other care made up the residual. Public psychiatric hospitals accounted for around

0.3 per cent of total separations in public hospitals in 2005-06. Of the total number of separations in public (non-psychiatric) hospitals, 49.7 per cent were for same day patients (table 10A.6).

Table 10.3 shows the 10 AR-DRGs with the highest number of overnight acute separations in public hospitals for 2005-06. These 10 AR-DRGs accounted for 17.3 per cent of all overnight acute separations.

Table 10.3 **Ten AR-DRGs (version 5.0) with the most overnight acute separations, public hospitals, 2005-06[a, b]**

	NSW	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*ACT*	*NT*	*Aust*
Separations for AR-DRGs as a proportion of all overnight acute separations (%)									
Vaginal Delivery W/O Cat/Severe CC	4.4	4.8	4.6	4.3	3.2	4.2	5.0	3.6	4.4
Chest Pain	2.3	1.8	2.5	1.6	2.4	1.5	1.4	2.1	2.1
Oesophagitis, Gastroent & Misc Digestive Systm Disorders Age>9 W/O Cat/Severe CC	2.0	1.7	1.8	1.8	2.0	1.6	1.3	1.0	1.8
Caesarean Delivery W/O Cat/Severe CC	1.7	1.8	2.0	1.7	1.4	1.8	1.9	1.6	1.8
Antenatal and other Obstetric Admission	1.6	1.4	1.8	1.9	1.4	1.8	1.4	2.6	1.6
Cellulitis (Age >59 W/O Cat/Severe CC) or Age <60	1.3	1.3	1.7	1.7	1.2	1.0	1.4	5.2	1.5
Vaginal Delivery Single Uncomplicated W/O Other Condition	1.2	0.6	1.9	1.0	0.8	1.1	1.4	1.3	1.1
Respiratory Infections/Inflammations W/O CC	1.1	0.9	1.0	1.1	0.9	1.1	1.1	1.9	1.0
Abdominal Pain or Mesenteric Adenitis W/O CC	1.1	1.0	1.0	1.0	1.0	0.8	0.8	0.7	1.0
Bronchitis and Asthma Age <50 W/O CC	1.1	0.9	0.8	1.1	1.4	0.9	0.7	0.7	1.0
Ten AR-DRGs with the most overnight acute separations (%)	**17.7**	**16.1**	**19.1**	**17.0**	**15.7**	**15.8**	**16.2**	**20.7**	**17.3**
Total overnight acute separations ('000)	**766**	**528**	**367**	**185**	**187**	**46**	**30**	**33**	**2143**

cat = catastrophic. cc = complications and comorbidities. sev = severe. w/o = without. w = with. **a** Includes separations for which the care type was reported as 'acute' or 'newborn with qualified days', or was not reported. **b** Excludes same day separations and separations where patients stayed over 366 days.

Source: AIHW (unpublished); table 10A.17.

Table 10.4 lists the 10 AR-DRGs that accounted for the most patient days (18.0 per cent of all patient days recorded) in 2005-06. Schizophrenic disorders associated with mental health legal status accounted for the largest number of patient days, followed by vaginal delivery without complicating diagnosis.

Table 10.4 **Ten AR-DRGs (version 5.0) with the most patient days, public hospitals, 2005-06**[a, b]

	NSW	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*ACT*	*NT*	*Aust*
Patient days for AR-DRGs as a proportion of patient days (%)									
Schizophrenia Disorders W Mental Health Legal Status	3.0	3.6	4.9	4.4	3.6	2.1	2.4	1.0	3.5
Vaginal Delivery W/O Cat/Sev CC	2.4	2.6	2.4	2.6	1.8	2.1	2.5	2.1	2.4
Tracheostomy or Ventilation >95 hours	2.4	2.4	2.5	2.4	2.4	2.4	2.8	2.2	2.4
Major Affective Disorders Age <70 W/O Cat/Sev CC	2.0	1.8	2.0	2.6	2.6	1.9	2.8	1.3	2.1
Schizophrenia Disorders W/O Mental Health Legal Status	1.8	1.4	1.0	1.8	1.5	3.3	1.1	1.8	1.6
Chronic Obstructive Airways Disease W Cat/Sev CC	1.5	1.4	1.4	1.1	1.7	1.6	0.9	1.5	1.4
Caesarean Delivery W/O Cat/Sev CC	1.4	1.5	1.5	1.5	1.2	1.3	1.4	1.5	1.4
Cellulitis (Age >59 W/O Cat/Sev CC) or Age <60	1.0	1.3	1.3	1.2	1.0	0.8	1.1	3.5	1.2
Respiratory Infections/Inflammations W Cat CC	1.1	1.3	0.8	0.9	1.1	0.9	1.0	1.0	1.1
Respiratory Infections/Inflammations W Sev or Moderate CC	1.1	1.0	0.9	1.0	0.9	1.1	1.0	2.4	1.0
Ten AR-DRGs with the most patient days (%)	**17.6**	**18.1**	**18.6**	**19.5**	**17.8**	**17.4**	**17.0**	**18.3**	**18.0**
Total patient days ('000)	**4 304**	**2 762**	**1 860**	**974**	**1 052**	**288**	**169**	**184**	**11 593**

cat = catastrophic. cc = complications and comorbidities. sev = severe. w/o = without. w = with. [a] Includes separations for which the care type was reported as 'acute' or 'newborn with qualified days', or was not reported. [b] Excludes same day separations and separations where patients stayed over 366 days.

Source: AIHW (unpublished); table 10A.18.

Activity — non-admitted patient services

There is no agreed classification system for services to non-admitted patients, so activity is difficult to measure and cannot be compared across jurisdictions. As well as differences in the way data are collected, differing admission practices lead to variation in the services reported across jurisdictions. In addition, states and territories may differ in the extent to which these types of service are provided in non-hospital settings (such as community health centres) (AIHW 2006a). Services to non-admitted patients are measured in terms of occasions of service. Differences in the complexity of the occasion of service are not taken into account — for

example, a simple urine glucose test is treated equally with a complete biochemical analysis of all body fluids (AIHW 2001a).

A total of 44.7 million individual occasions of service were provided to non-admitted patients in public hospitals in 2005-06 (table 10.5). In addition, public hospitals also delivered 384 934 group sessions during this time (a group session is defined as a service provided to two or more patients, excluding services provided to two or more family members) (table 10A.19). In public hospitals in 2005-06, accident and emergency services comprised 14.1 per cent of all occasions of service to non-admitted patients. 'Other medical, surgical and obstetric services' (22.5 per cent), 'pathology services' (15.3 per cent) and 'pharmacy' (10.4 per cent) were the most common types of non-admitted patient care (table 10.5).

Table 10.5 **Ten most common types of individual non-admitted patient care, public hospitals, 2005-06**[a]

	NSW	*Vic*	*Qld*	*WA*[b]	*SA*	*Tas*	*ACT*	*NT*[c]	*Aust*
Occasions of service for the most common types of non-admitted patient care as a proportion of all occasions of service for non-admitted patients (%)									
Accident and emergency	10.6	19.8	14.2	14.4	22.4	14.5	19.9	29.1	14.1
Outpatient services									
Other medical/surgical/ obstetric	20.9	21.5	23.7	14.1	40.6	34.1	44.6	27.0	22.5
Allied health	4.1	14.9	5.6	20.7	10.2	9.7	8.2	2.7	8.2
Pathology	12.3	9.9	31.3	10.7	..	22.2	7.2	19.7	15.3
Radiology and organ imaging	3.8	8.1	8.8	9.0	11.2	9.0	13.6	14.2	6.7
Pharmacy[d]	16.8	6.0	5.9	4.4	–	8.0	0.2	7.2	10.4
Mental health	4.1	9.9	1.1	0.9	1.2	..	0.6	–	3.8
Dental	3.0	2.5	3.6	0.3	0.5	0.1	–	–	2.5
Other non-admitted services									
Community health	8.6	4.1	1.7	17.4	0.6	..	1.6	–	6.6
District nursing[e]	7.3	2.7	0.9	4.1	0.9	–	–	–	4.3
Ten most common types of non-admitted patient care (%)	**91.6**	**99.6**	**96.9**	**96.0**	**87.7**	**97.6**	**96.0**	**100.0**	**94.4**
Total occasions of service for non-admitted patients ('000)	**20 077**	**7 102**	**9 154**	**4 364**	**2 213**	**927**	**501**	**411**	**44 749**

[a] Individual non-admitted patient care services. Excludes group sessions. Reporting arrangements vary significantly across jurisdictions. [b] The WA total occasions of service figure for individuals increases to 4 480 679 if the public patient activity at Joondalup and Peel Health Campuses is included. [c] Radiology figures for the NT are underestimated and pathology figures relate to only three of the five hospitals. [d] Justice Health (formerly known as Corrections Health) in NSW reported a large number of occasions of service that may not be typical of pharmacy. [e] Justice Health (formerly known as Corrections Health) in NSW reported a large number of occasions of service that may not be typical of district nursing. .. Not applicable. – Nil or rounded to zero.

Source: AIHW (2007a); table 10A.19.

10.2 Framework of performance indicators for public hospitals

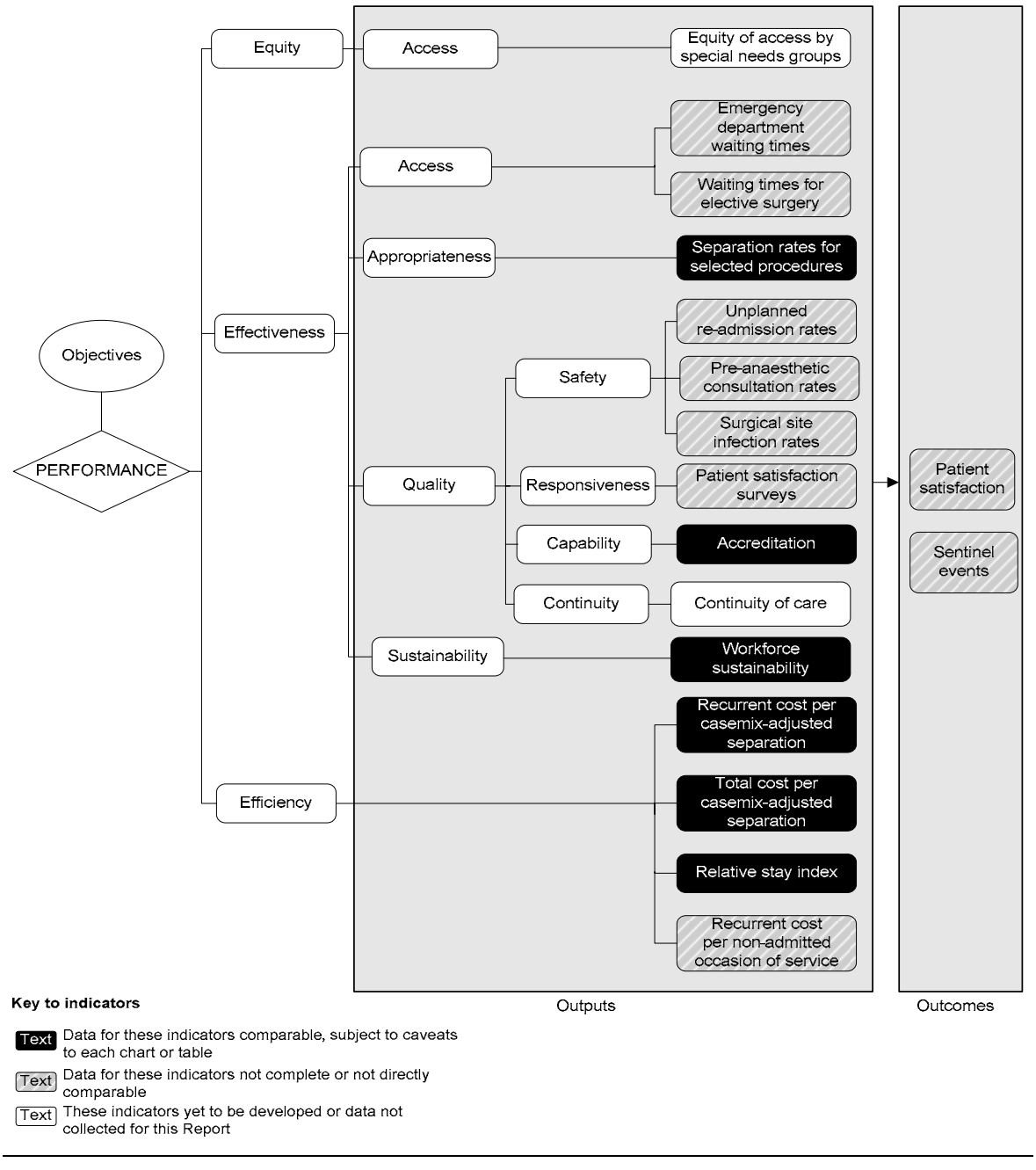
The performance indicator framework is based on the shared government objectives for public hospitals (box 10.2). The performance indicator framework shows which data are comparable in the 2008 Report (figure 10.13). For data that are not considered directly comparable, the text includes relevant caveats and supporting commentary. Chapter 1 discusses data comparability from a Report-wide perspective. The 'Health preface' explains the performance indicator framework for health services as a whole, including the subdimensions of quality and sustainability that have been added to the standard Review framework for health services.

Box 10.2 **Objectives for public hospitals**

The common government objectives for public hospitals are to provide cost-effective acute and specialist services that are:

- safe and of high quality
- responsive to individual needs
- accessible
- equitably and efficiently delivered.

Figure 10.13 **Performance indicators for public hospitals**



10.3 Key performance indicator results for public hospitals

Different delivery contexts, locations and types of client may affect the equity, effectiveness and efficiency of health services. Appendix A of the Report contains statistical profiles on each State and Territory, which may assist in interpreting the performance indicators presented in this chapter.

As discussed in section 10.1, public hospitals provide a range of services to admitted patients, including some non-acute services such as rehabilitation and palliative care. The extent to which these non-acute treatments can be identified and excluded from some data differs across jurisdictions. Similarly, psychiatric treatments are provided in public (non-psychiatric) hospitals at different rates across jurisdictions.

Outputs

Outputs are the actual services delivered (while outcomes are the impact of these services on the status of an individual or group) (see chapter 1, section 1.5).

Equity — access

Equity indicators measure how well a service is meeting the needs of certain groups in society (see chapter 1). Public hospitals have a significant influence on the equity of the overall healthcare system. While access to public hospital services is important to the community in general, it is particularly so for people of low socioeconomic status (and others) who may have difficulty in accessing alternative services, such as those provided by private hospitals.

Equity of access by special needs groups

The Steering Committee has identified 'equity of access by special needs groups' as an indicator of equity of access to public hospitals. This indicator is for development in future reports (box 10.3).

Box 10.3 **Equity of access by special needs groups**

'Equity of access by special needs groups' is an indicator of governments' objective to provide accessible services. Specifically, the Review seeks to report on the performance of agencies providing services for three identified special needs groups: Indigenous people; people living in communities outside the capital cities (that is, people living in other metropolitan areas, or rural and remote communities); and people from a non-English speaking background. This indicator has been identified for development and reporting in future.

Effectiveness — access

Emergency department waiting times

'Emergency department waiting times' is an indicator of effectiveness of access to public hospitals (box 10.4).

Box 10.4 **Emergency department waiting times**

'Emergency department waiting times' is an indicator of governments' objective to provide accessible services. It measures the proportion of patients seen within the benchmarks set according to the urgency of treatment required.

The nationally agreed method of calculation for waiting times is to subtract the time at which the patient presents at the emergency department (that is, the time at which the patient is clerically registered or triaged[a], whichever occurs earlier) from the time of commencement of service by a treating medical officer or nurse. Patients who do not wait for care after being triaged or clerically registered are excluded from the data.

The benchmarks set according to triage category, are as follows:

- triage category 1: need for resuscitation — patients seen immediately
- triage category 2: emergency — patients seen within 10 minutes
- triage category 3: urgent — patients seen within 30 minutes
- triage category 4: semi-urgent — patients seen within 60 minutes
- triage category 5: non-urgent — patients seen within 120 minutes (NHDC 2003).

It is desirable that a high proportion of patients are seen within the benchmarks set for each triage category. Non-urgent patients who wait longer are likely to suffer discomfort and inconvenience, and more urgent patients may experience poor health outcomes as a result of extended waits.

a The triage category indicates the urgency of the patient's need for medical and nursing care.

The comparability of emergency department waiting times data across jurisdictions may be influenced by differences in data coverage (table 10.6) and clinical practices — in particular, the allocation of cases to urgency categories. The proportion of patients in each triage category who were subsequently admitted may indicate the comparability of triage categorisations across jurisdictions and thus the comparability of the waiting times data (table 10A.20).

Nationally, in 2005-06, 99 per cent of patients were seen within the triage category 1 timeframe and 77 per cent of patients were seen within the triage category 2 timeframe. For all triage categories, 69 per cent of patients were seen within triage category timeframes (table 10.6).

Table 10.6 **Emergency department patients seen within triage category timeframes, public hospitals, 2005-06 (per cent)**

Triage category	*NSW*	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*ACT*	*NT*	*Aust*
1 — Resuscitation[a]	100	100	100	98	99	95	100	100	99
2 — Emergency	81	83	66	77	69	68	71	59	77
3 — Urgent	61	79	55	69	56	57	44	59	64
4 — Semi-urgent	66	71	58	67	62	59	47	53	65
5 — Non-urgent	87	89	86	90	85	89	84	87	87
Total	**69**	**77**	**60**	**71**	**62**	**62**	**52**	**60**	**69**
Data coverage[b]	81	89	65	68	68	86	100	100	78

a Resuscitation patients whose waiting time for treatment was less than or equal to two minutes are considered to have been seen on time. **b** Data coverage is estimated as the number of occasions of service with waiting times data divided by the number of emergency department occasions of service. This may underestimate coverage because some occasions of service are for other than emergency presentations, for which waiting times data are applicable. For some jurisdictions, the number of emergency department occasions of service reported to the Non-admitted Patient Emergency Department Care Database exceeded the number of accident and emergency occasions of service reported to the National Public Hospital Establishments Database. For these jurisdictions the coverage has been estimated as 100 per cent.

Source: AIHW (2007a); table 10A.20.

Waiting times for elective surgery

'Waiting times for elective surgery' is an indicator of effectiveness of access to public hospitals (box 10.5).

Box 10.5 **Waiting times for elective surgery**

'Waiting times for elective surgery' is an indicator of governments' objective to provide accessible services. Two measures are reported:

- 'overall elective surgery waiting times'
- 'elective surgery waiting times by clinical urgency category'.

'Overall elective surgery waiting times' are calculated by comparing the date on which patients are added to a waiting list with the date on which they are admitted. Days on which the patient was not ready for care are excluded. 'Overall waiting times' are presented as the number of days within which 50 per cent of patients are admitted and the number of days within which 90 per cent of patients are admitted. The proportion of patients who waited more than one year is also shown.

Fewer days waited at the 50th and 90th percentile and a smaller proportion of people waiting more than 365 days are desirable.

(Continued next page)

Box 10.5 **(Continued)**

'Elective surgery waiting times by clinical urgency category' reports the proportion of patients who were admitted from waiting lists after an extended wait.

The three generally accepted urgency categories for elective surgery are:

- category 1 — admission is desirable within 30 days
- category 2 — admission is desirable within 90 days
- category 3 — admission at some time in the future is acceptable.

There is no specified or agreed desirable wait for category 3 patients, but the term 'extended wait' is used for patients waiting longer than 12 months for elective surgery, as well as for category 1 and 2 patients waiting more than the agreed desirable waiting times of 30 days and 90 days respectively.

A smaller proportion of patients who have experienced extended waits at admission is desirable. However, variation in the way patients are classified to urgency categories should be taken into account. Rather than comparing jurisdictions, the results for individual jurisdictions should be viewed in the context of the proportions of patients assigned to each of the three urgency categories (table 10.8).

Not all elective surgery is covered by these measures. The measures do not cover all the in-scope procedures (87 per cent in 2005-06) (table 10.7), and the in-scope procedures are defined as excluding a range of procedures that may be regarded as surgery, such as elective procedures involving the insertion of a stent.

Patients on waiting lists who were not subsequently admitted to hospital are excluded from both measures (box 10.5). Patients may be removed from waiting lists because they are admitted as emergency patients for the relevant procedure, no longer need the surgery, die, are treated at another location, decline to have the surgery, or cannot be contacted by the hospital (AIHW 2007a). In 2005-06, 15.3 per cent of patients were removed from waiting lists for reasons other than elective admission (AIHW 2007a).

The two measures are affected by variations across jurisdictions in the method used to calculate waiting times for patients who transferred from a waiting list managed by one hospital to a waiting list managed by a different hospital. For patients who were transferred from a waiting list managed by one hospital to that managed by another, the time waited on the first list is included in the waiting time reported for some but not all states and territories (AIHW 2007a). NSW, Victoria, Queensland, WA and the ACT reported the total time waited on all waiting lists. This approach may have the effect of increasing the apparent waiting times for admissions in these jurisdictions compared with other jurisdictions. Queensland and SA have indicated

that patients rarely switch between waiting lists managed by different hospitals in their jurisdictions (AIHW 2007a).

Nationally, in 2005-06, 90 per cent of patients were admitted within 237 days and 50 per cent were admitted within 32 days (table 10.7). The proportion of patients who waited more than a year was 4.6 per cent. Nationally, waiting times at the 50th percentile increased by five days between 2001-02 and 2005-06. In 2001-02, 27 days were waited at the 50th percentile and this increased to 32 days by 2005-06. However, there were different trends in different jurisdictions and for different sized hospitals over that period (figure 10.14 and table 10A.21).

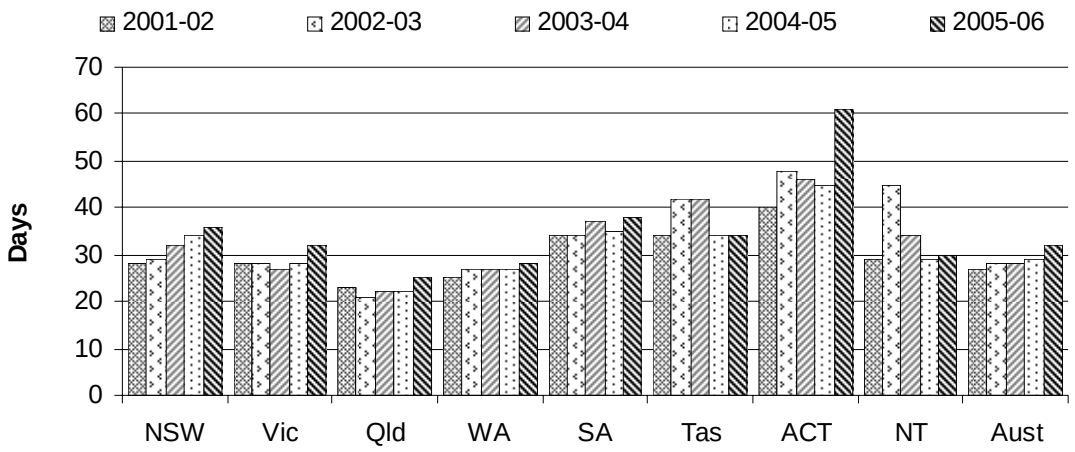
Table 10.7 **Elective surgery waiting times, public hospitals, 2005-06**

	Unit	*NSW*	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*ACT*	*NT*	*Aust*
Number of days waited at:										
50th percentile	no.	36	32	25	28	38	34	61	30	32
90th percentile	no.	291	224	127	205	212	332	372	313	237
Proportion who waited more than 365 days	%	5.4	4.5	2.1	4.3	4.2	8.7	10.3	7.7	4.6
Estimated coverage of elective surgery separations[a]	%	100	79	96	76	63	100	100	100	87

[a] The number of separations with urgency of admission reported as 'elective' and a surgical procedure for public hospitals reporting to the National Elective Surgery Waiting Times Data Collection as a proportion of the number of separations with urgency of admission of 'elective' and a surgical procedure for all public hospitals.

Source: AIHW (2007a); table 10A.21.

Figure 10.14 **Days waited for elective surgery by the 50th percentile, public hospitals**



Source: AIHW (2003, 2004, 2005a, 2006a, 2007a); table 10A.21.

'Elective surgery waiting times by urgency category' data not only provide an indication of the extent to which patients are seen within a clinically desirable time, but also draw attention to the variation in the way in which patients are classified across jurisdictions. Jurisdictional differences in the classification of patients by urgency category in 2005-06 are shown in table 10.8. The states and territories with lower proportions of patients in category 1 also had relatively smaller proportions of patients in this category who were 'not seen on time'. Victoria and the ACT, for example, had the lowest proportions of patients in category 1 and also had the lowest proportions of patients in category 1 who had extended waits (tables 10.8, 10A.26 and 10A.35).

The system of urgency categorisation for elective surgery in public hospitals is important to ensure that priority is given to patients according to their needs. While elective surgery waiting times by urgency category are not comparable across jurisdictions, this measure has the advantage over other measures in that it provides an indication of the extent to which patients are seen within a clinically desirable time period according to the urgency category to which they have been assigned.

Table 10.8 **Classification of elective surgery patients, by clinical urgency category, 2005-06 (per cent)**

	NSW	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*ACT*	*NT*
Patients on waiting lists								
Category 1	6.8	2.4	8.0	5.9	8.4	8.0	2.4	9.7
Category 2	32.4	44.0	36.7	35.0	22.8	47.0	47.5	37.2
Category 3	60.8	53.6	55.3	59.1	68.9	45.0	50.0	53.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Patients admitted from waiting lists								
Category 1	41.5	22.4	36.2	35.3	34.6	45.0	29.9	48.9
Category 2	30.6	46.9	44.8	26.7	27.4	34.0	46.1	33.0
Category 3	28.0	30.7	19.0	38.0	37.9	21.0	24.0	18.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: State and Territory governments (unpublished).

Reporting of 'elective surgery waiting times by clinical urgency category' includes the proportions of patients with extended waits at admission across jurisdictions. The proportions of patients on waiting lists who had already had an extended wait at the date of the census are reported in tables 10A.24, 10A.25, 10A.28, 10A.30, 10A.32, 10A.34, 10A.35 and 10A.37. Census data do not represent the completed waiting time of patients (unlike patients with extended waits at admission).

Of patients admitted from waiting lists in NSW in 2005-06, the percentage of patients classified to each category and the percentage with an extended wait were:

- 41.5 per cent were classified to category 1, of whom 22.8 per cent had an extended wait
- 30.6 per cent were classified to category 2, of whom 29.5 per cent had an extended wait
- 28.0 per cent were classified to category 3, of whom 15.8 per cent had an extended wait.

Overall in NSW, 22.9 per cent of all patients experienced extended waits (table 10A.24).

Of patients admitted from waiting lists in Victoria in 2005-06, the percentage of patients classified to each category and the percentage with an extended wait were:

- 22.4 per cent were classified to category 1, of whom zero per cent had an extended wait
- 46.9 per cent were classified to category 2, of whom 27.7 per cent had an extended wait
- 30.7 per cent were classified to category 3, of whom 10.3 per cent had an extended wait.

Overall in Victoria, 16.2 per cent of all patients experienced extended waits (table 10A.26).

Of patients admitted from waiting lists in Queensland in 2005-06, the percentage of patients classified to each category and the percentage with an extended wait were:

- 36.2 per cent were classified to category 1, of whom 14.3 per cent had an extended wait
- 44.8 per cent were classified to category 2, of whom 15.6 per cent had an extended wait
- 19.0 per cent were classified to category 3, of whom 10.2 per cent had an extended wait.

Overall in Queensland, 14.1 per cent of all patients experienced extended waits (table 10A.28).

Of patients admitted from waiting lists in WA in 2005-06, the percentage of patients classified to each category and the percentage with an extended wait were:

- 35.3 per cent were classified to category 1, of whom 18.9 per cent had an extended wait

- 26.7 per cent were classified to category 2, of whom 32.1 per cent had an extended wait
- 38.0 per cent were classified to category 3, of whom 8.3 per cent had an extended wait.

Overall in WA, 18.4 per cent of all patients experienced extended waits (table 10A.30).

Of patients admitted from waiting lists in SA in 2005-06, the percentage of patients classified to each category and the percentage with an extended wait were:

- 34.6 per cent were classified to category 1, of whom 22.4 per cent had an extended wait
- 27.4 per cent were classified to category 2, of whom 22.9 per cent had an extended wait
- 37.9 per cent were classified to category 3, of whom 10.5 per cent had an extended wait.

Overall in SA, 18.0 per cent of all patients experienced extended waits (table 10A.32).

Of patients admitted from waiting lists in Tasmania in 2005-06, the percentage of patients classified to each category and the percentage with an extended wait were:

- 45.0 per cent were classified to category 1, of whom 28.0 per cent had an extended wait
- 34.0 per cent were classified to category 2, of whom 43.0 per cent had an extended wait
- 24.0 per cent were classified to category 3, of whom 23.0 per cent had an extended wait.

Overall in Tasmania, 32.0 per cent of all patients experienced extended waits (table 10A.34).

Of patients admitted from waiting lists in the ACT in 2005-06, the percentage of patients classified to each category and the percentage with an extended wait were:

- 29.9 per cent were classified to category 1, of whom 3.7 per cent had an extended wait
- 46.1 per cent were classified to category 2, of whom 48.3 per cent had an extended wait

- 21.0 per cent were classified to category 3, of whom 27.0 per cent had an extended wait.

Overall in the ACT, 29.9 per cent of all patients experienced extended waits (table 10A.35).

Of patients admitted from waiting lists in NT in 2005-06, the percentage of patients classified to each category and the percentage with an extended wait were:

- 48.9 per cent were classified to category 1, of whom 16.7 per cent had an extended wait
- 33.0 per cent were classified to category 2, of whom 31.0 per cent had an extended wait
- 18.1 per cent were classified to category 3, of whom 22.7 per cent had an extended wait.

Overall in the NT, 22.5 per cent of all patients experienced extended waits (table 10A.37).

Attachment 10A includes data on 'elective surgery waiting times' by hospital peer group, specialty of surgeon and indicator procedure (tables 10A.21, 10A.22 and 10A.23). All jurisdictions (except Tasmania) also provided data on urgency category waiting times by clinical specialty for 2005-06 (tables 10A.25, 10A.27, 10A.29, 10A.31, 10A.33, 10A.36 and 10A.38).

Effectiveness — appropriateness

Separation rates for selected procedures

'Separation rates for selected procedures' is an indicator of the appropriateness of public hospital services (box 10.6).

Box 10.6 **Separation rates for selected procedures**

The purpose of this indicator is to help determine whether 'hospital separation rates for selected procedures' are appropriate. The procedures are selected for their frequency, for being elective and discretionary, and because alternative treatments are sometimes available.

'Separation rates for selected procedures' is defined as separations per 1000 people for certain procedures, and for caesarean section separations per 100 in-hospital births.

Higher/lower rates are not necessarily associated with inappropriate care. However, large jurisdictional variations in rates for particular procedures, may require investigation to determine whether service levels are appropriate.

Care needs to be taken when interpreting the differences in the separation rates of the selected procedures. Variations in rates may be attributable to variations in the prevalence of the conditions being treated, or to differences in clinical practice across states and territories. Higher rates may be acceptable for certain conditions and not for others. Higher rates of angioplasties and lens insertions, for example, may represent appropriate levels of care, whereas higher rates of hysterectomies or tonsillectomies may represent an over-reliance on procedures. No clear inference can be drawn from higher rates of arthroscopies or endoscopies. Some of the selected procedures, such as angioplasty and coronary artery bypass graft, are alternative treatment options for people diagnosed with similar conditions.

The 'separation rates for selected procedures' reported here include all hospitals and reflect the activities of both public and private health systems. The most common procedures of those reported in 2005-06 were lens insertions, caesarean sections and cholecystectomies (table 10.9). For all procedures, separation rates varied across jurisdictions. Statistically significant and material differences in the separation rates for these procedures may highlight variations in treatment methods across jurisdictions. Table 10A.39 presents standardised separation rate ratios — comparing the separation rate in each jurisdiction with the national rate — along with confidence intervals for each ratio.

Table 10.9 **Separations for selected procedures or diagnoses per 1000 people, all hospitals, by patient's usual residence, 2005-06**[a, b, c]

	NSW	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*ACT*	*NT*	*Total*[d]
Procedure/diagnosis									
Appendectomy	np	np	np	np	np	np	np	np	np
Coronary artery bypass	0.7	0.7	0.8	0.4	0.6	0.6	0.5	0.9	0.7
Coronary angioplasty	1.7	1.7	1.3	1.6	1.5	1.5	1.8	1.2	1.6
Caesarean section:									
separation rate	4.0	4.0	4.6	4.7	4.2	4.2	3.7	4.7	4.2
separations per 100 in-hospital births[e]	28.8	30.4	32.4	34.0	32.8	28.0	28.5	30.9	30.7
Cholecystectomy	2.2	2.3	2.3	2.1	2.3	2.2	2.0	1.7	2.2
Diagnostic gastrointestinal endoscopy	np	np	np	np	np	np	np	np	np
Hip replacement	1.3	1.4	1.1	1.5	1.4	1.7	1.5	0.8	1.3
Revision of hip replacement	0.2	0.2	0.1	0.2	0.1	0.2	0.2	0.1	0.2
Hysterectomy[f]	1.3	1.2	1.4	1.5	1.6	1.6	1.4	1.3	1.3
Lens insertion	8.3	7.5	9.2	8.1	7.0	6.1	6.4	7.0	8.1
Tonsillectomy	1.8	1.8	1.8	1.8	2.4	1.1	1.4	1.0	1.8
Myringotomy	1.2	1.7	1.4	1.9	2.9	1.2	1.3	0.7	1.6
Knee replacement	1.7	1.3	1.4	1.5	1.5	1.5	1.9	0.9	1.5
Prostatectomy	1.3	1.5	1.1	1.2	1.3	1.4	1.2	1.2	1.3
Arthroscopic procedures	np	np	np	np	np	np	np	np	np

a Excludes separations for which the care type was reported as 'newborn with no qualified days' and records for hospital boarders and posthumous organ procurement. Excludes multiple procedures/diagnoses for the same separation within the same group. **b** The procedures and diagnoses are defined using ICD-10-AM codes. **c** Rates per 1000 people were directly age standardised to the Australian population at 30 June 2001. **d** Includes other territories. Excludes non-residents and unknown state or territory of residence. **e** Caesarean sections divided by separations for which in-hospital birth was reported. This is an approximate measure of the proportion of all births that are by caesarean section because births out of hospital are not included. **f** Includes hysterectomies for females aged 15–69 years only. Rate is determined using total population for state or territory. **np** Not published.

Source: AIHW (2007a); table 10A.39.

Effectiveness — quality

There is no single definition of quality in healthcare, but the Australian Commission on Safety and Quality in Healthcare (ACSQHC) has defined quality as 'the extent to which the properties of a service or product produces a desired outcome' (Runciman 2006). No single indicator can measure quality across all providers. An alternative strategy is to identify and report on aspects of quality of care. The aspects of quality recognised in the performance indicator framework are safety, responsiveness, capability and continuity. Data are reported against all of these aspects except continuity.

There has been considerable debate and research to develop suitable indicators of the quality of healthcare both in Australia and overseas. This chapter reports data for clinical indicators of safety ('unplanned re-admission rates', 'pre-anaesthetic consultation rates' and 'surgical site infection rates'), patient satisfaction and the accreditation of public hospital beds.

All Australian health ministers agreed to the establishment of the Australian Council for Safety and Quality in Health Care in January 2000, with a view to taking a systematic approach to assessing and improving the quality of healthcare. The Australian Council for Safety and Quality in Health Care was replaced in January 2006 by the ACSQHC. A key objective of the ACSQHC is to achieve safe, effective and responsive care for consumers. The ACSQHC will continue to maintain the Council's focus on improving the safety of hospitals and will also seek to improve the quality of primary health care and the private health sector.

Various states and territories publicly report performance indicators for public hospital quality. Some have adopted the same indicators as reported in this chapter. In NSW, for example, reporting of Australian Council on Health Care Standards (ACHS) 'surgical site infection rates' is mandatory for public hospitals. Both the WA and Tasmanian health department annual reports include information on 'unplanned re-admission rates'. All Victorian hospitals are required to publish annual quality care reports that include safety and quality indicators for infection control, medication errors, falls monitoring and prevention, and pressure wound monitoring and prevention. Queensland Health releases an annual public hospitals performance report which shows a wide range of hospital performance information including clinical performance, efficiency and patient satisfaction. There are currently 31 clinical indicators that monitor clinical performance in Queensland Health hospitals spanning Medical, Surgical and Obstetrics and Gynaecology.

Safety

Improving patient safety is an important issue for all hospitals. Studies on medical errors have indicated that adverse healthcare related events occur in public hospitals in Australia and internationally, and that their incidence is potentially high (for example, Wilson et al. 1995; Thomas et al. 2000; Runciman and Moller 2001, Runciman et al. 2000 and Davis et al. 2001). These adverse events can result in serious consequences for individual patients, and the associated costs can be considerable (Kohn et al. 1999).

Data for the 'safety' indicators come from the ACHS Comparative Report Service (Clinical Indicators). The ACHS data are collected for internal clinical review by individual hospitals. They are predominantly used to demonstrate the potential for

improvement across Australian hospitals, if all hospitals could achieve the same outcomes as the hospitals that achieve the best outcomes for patients. When interpreting results of these indicators, emphasis needs to be given to the potential for improvement. Statewide conclusions cannot be drawn because participation by public hospitals in the Comparative Report Service (Clinical Indicators) is generally voluntary, so the data are not necessarily drawn from representative samples of hospitals (box 10.7).

Box 10.7 **Reporting of ACHS clinical indicators**

The data for the clinical indicators of 'unplanned re-admissions to hospital', 'pre-anaesthetic consultation rates' and 'surgical site infection rates' come from the ACHS. The ACHS's method for reporting clinical indicators is explained in Determining the Potential to Improve Quality of Care (ACHS 2007). The ACHS reports the average (that is, mean) rate of occurrence of an event and the performance of hospitals at the 20th and 80th centiles. Where a lower rate implies better quality, national performance at the 20th centile represents the rate at, or below which, the best performing 20 per cent of ACHS reporting hospitals performed. Where a higher rate implies better quality, national performance at the 80th centile represents the rate at, or above which, the best performing 20 per cent of ACHS reporting hospitals performed. This method is designed to allow hospitals to determine whether their performance is above or below average, and what scope exists for improvement.

Particular attention is paid to systematic variation between hospitals and between different categories of hospital (including different jurisdictions), and to individual hospitals that vary significantly from the average for all hospitals (that is, outliers).

The ACHS calculates the average occurrence of an event for all hospitals and uses the shrinkage estimation method to estimate shrunken rates for individual hospitals. From these shrunken rates, the performance of hospitals at the 20th and 80th centiles is calculated. The potential gains from shifting 'mean' hospitals to the 20th/80th centile are obtained by calculating the change in the occurrence of the event measured if the mean were equal to performance at the 20th/80th centile.

Shrunken rates are used rather than actual rates because actual rates of zero per cent and 100 per cent may be obtained for individual hospitals based on random variation where there are low denominators. Shrinkage estimators adjust each hospital's observed rate using the hospital's numerator and denominator, together with the mean and standard deviations of other hospitals to obtain corrected rates. The smaller the denominator for an individual hospital, the larger is the shift to the overall mean.

Using the shrunken rates, mean rates are calculated for individual categories of hospital (including jurisdictions) to determine stratum rates. If the stratum explains more than 10 per cent of the variation in rates, this is reported as a possible explanatory variable. The potential gains of each category shifting performance to the stratum with the lowest mean are also calculated.

(Continued on next page)

Box 10.7 **(Continued)**

Finally, using the shrunken rates for individual hospitals, the observed occurrence of the event measured is compared to the expected occurrence of the event to measure difference from the mean. To avoid responding to random variation, three standard deviations are plotted, and values outside the three standard deviations are assumed to be systematically different from the average rate. The potential gains from shifting the performance of these outliers to the performance of mean hospitals are calculated (outlier gains).

Source: ACHS (unpublished, 2003).

Safety — unplanned re-admission rates

'Unplanned re-admission rates' is an indicator of hospital safety (box 10.8). These estimates should be viewed in the context of the statistical (standard) errors. High standard errors signal that data are potentially unreliable. The statistical terms used to describe this indicator are explained in box 10.9.

Box 10.8 **Unplanned re-admission rates**

'Unplanned re-admission rates' show the rate at which patients unexpectedly return to hospital within 28 days for further treatment of the same condition or a condition related to the initial admission. The aim of this indicator is to measure unintentional additional hospital care. Patients might be re-admitted unexpectedly if the initial care or treatment was ineffective or unsatisfactory, if post discharge planning was inadequate, or for other reasons outside the control of the hospital, for example poor post-discharge care.

The 'unplanned re-admission rate' is the total number of unplanned and unexpected re-admissions within 28 days of separation as a percentage of the total number of separations (excluding patient deaths). High rates for this indicator suggest the quality of care provided by hospitals, or post-discharge care or planning, should be examined because there may be scope for improvement.

There are some difficulties in identifying re-admissions that were unplanned. A re-admission is considered unplanned if there is no documentation to verify that the re-admission was planned and/or if the re-admission occurred through the accident and emergency department of a hospital.

This indicator identifies only those patients re-admitted to the same hospital, so there is some under-reporting (for example, where patients go to another hospital). Unplanned re-admission rates are not adjusted for casemix or patient risk factors, which may vary across hospitals and across jurisdictions.

Box 10.9 **Definition of terms for ACHS clinical indicators**

centile: any of the 99 numbered points that divide an ordered set of scores into 100 parts, each of which contains one 100th of the total. Where a lower rate implies better quality, national performance at the 20th centile represents the rate at, or below which, the best performing 20 per cent of ACHS reporting hospitals performed. Where a higher rate implies better quality, national performance at the 80th centile represents the rate at, or above which, the best performing 20 per cent of ACHS reporting hospitals performed.

centile gains: the potential gains from shifting mean (average) hospitals to the performance at the 20th/80th centile (depending on whether a high or low rate is desirable), is obtained by calculating the change in the occurrence of an event if the mean were equal to performance at the 20th/80th centile.

denominator: the term of a fraction or equation showing the number of parts into which the numerator is being divided (usually written below the line). For the unplanned re-admissions indicator, for example, the denominator is the total number of admissions in the participating hospital.

mean: the sum of a set of numbers divided by the amount of numbers in the set, often referred to as an average.

numerator: the term of a fraction or equation showing how many parts of the fraction are taken (usually written above the line). For the unplanned re-admissions indicator, the numerator is the total number of unplanned re-admissions in the participating hospital; for the infections indicators, the numerator is the number of infections for the selected procedure in the participating hospital.

outlier gains: the potential gains from moving the performance of outlier hospitals to the performance of mean (average) hospitals, obtained by calculating the change in the occurrence of an event if the outlier performance were equal to performance at the mean.

rate: the sum of the numerators divided by the sum of the denominators, which is also the weighted mean of the individual rates of the ACHS reporting hospitals. This mean may not be the same as the unweighted mean of the rates, especially if a few ACHS reporting hospitals with large denominators have different rates (extremely high or low) from the other ACHS reporting hospitals.

stratum gains: the potential gains from a particular category of hospitals moving to the performance of the stratum with the lowest mean.

stratum rate: mean rates for a particular jurisdiction.

Source: ACHS (2001).

Nationally, among all public hospitals participating in the ACHS Comparative Report Service in 2006, the mean rate of 'unplanned re-admissions' was 2.8 per 100 admissions (table 10.10). The ACHS estimated that if the performance of all ACHS reporting public hospitals in Australia matched national performance at the 20th centile, there would be 1.6 per cent (or 18 136) fewer re-admissions to these public hospitals (ACHS unpublished). National performance at the 20th centile shows the rate at, or below which, the best performing 20 per cent of ACHS reporting hospitals performed.

These national results are based on approximately one quarter of total public hospital separations. The number of ACHS reporting hospital separations used to derive this indicator was 1.1 million in 2006 (ACHS unpublished), whereas the total number of separations in 2005-06 was around 4.5 million (AIHW 2007a). For jurisdictions with more than five hospitals reporting 'unplanned readmissions' to the ACHS Comparative Report Service, the mean rates of unplanned re-admissions in 2006 are shown in table 10.10. The coverage of the ACHS data may differ across these states. Data for Tasmania, the ACT and the NT are not reported separately because fewer than five hospitals reported 'unplanned re-admissions' in each of those jurisdictions.

Table 10.10 **Unplanned re-admissions, ACHS reporting public hospitals, 2006**[a]

	Unit	*Results*
National rate	%	2.8
National performance at 80th centile (rate)	(%)	5.1
National performance at 20th centile (rate)	(%)	1.2
NSW		
Numerator (re-admissions)	no.	13 410
Denominator (separations)	no.	395 782
Rate	%	3.4
Standard error (±)		0.3
ACHS reporting hospitals	no.	58
Victoria		
Numerator (re-admissions)	no.	5 857
Denominator (separations)	no.	233 809
Rate	%	2.5
Standard error (±)		0.3
ACHS reporting hospitals	no.	30
Queensland		
Numerator (re-admissions)	no.	7 373
Denominator (separations)	no.	224 206
Rate	%	3.3
Standard error (±)		0.3
ACHS reporting hospitals	no.	14
WA		
Numerator (re-admissions)	no.	1 295
Denominator (separations)	no.	86 270
Rate	%	1.5
Standard error (±)		0.5
ACHS reporting hospitals	no.	23
SA		
Numerator (re-admissions)	no.	2 641
Denominator (separations)	no.	58 097
Rate	%	4.5
Standard error (±)		0.7
ACHS reporting hospitals	no.	9

a The ACHS data are not designed to measure the performance of states and territories, but are for internal clinical review by individual hospitals. In addition, health organisations contribute data voluntarily to the ACHS, so the samples are not necessarily representative of all hospitals in each jurisdiction. As a result, statewide comparisons and conclusions regarding the performance of individual states cannot be drawn.

Source: ACHS (unpublished); tables 10A.40; 10A.41, 10A.42; 10A.43 and 10A.44.

Safety — pre-anaesthetic consultation rates

'Pre-anaesthetic consultation rates' is an indicator of hospital safety (box 10.10). Due to a redevelopment of the ACHS's anaesthetic indicators between their 2004 and 2005 data collections, there was a reduction in the number of hospitals providing data for this indicator for this and last year's Reports. Pre-anaesthetic consultation rate estimates should be viewed in the context of the statistical (standard) errors. High standard errors signal that data are potentially unreliable. The statistical terms used to describe this indicator are explained in box 10.9.

Box 10.10 **Pre-anaesthetic consultation rates**

'Pre-anaesthetic consultation rates' is an indicator of safety because consultation by an anaesthetist is essential for the medical assessment of a patient before anaesthesia for surgery (or another procedure), to ensure that the patient is in an optimal state for anaesthesia and surgery.

The 'pre-anaesthetic consultation rate' is the number of procedures where there is documented evidence that the patient has seen an anaesthetist before entering the operating theatre suite, anaesthetic room, or procedure room as a percentage of the total number of procedures with an anaesthetist in attendance. Low rates for this indicator suggest the quality of pre-anaesthetic care provided by hospitals should be examined because there may be scope for improvement.

This indicator identifies only pre-anaesthetic consultations for which there is documented evidence, so there may be some under-reporting due to some consultations not being documented. In addition, the data include some pre-anaesthetic consultations not conducted by the attending anaesthetist but by one of the medical members of the same anaesthetic department or group. Consultations by the attending anaesthetist are preferable.

Source: ACHS (2004).

Nationally, among all public hospitals participating in the ACHS Comparative Report Service in 2006, the mean rate of 'pre-anaesthetic consultations' was 94.7 per 100 procedures (table 10.11). The ACHS estimated that if the performance of all ACHS reporting public hospitals in Australia matched national performance at the 80th centile, there would be 5.3 per cent (or 1006) more pre-anaesthetic consultations in these public hospitals (ACHS unpublished). National performance at the 80th centile shows the rate at, or above which, the best performing 20 per cent of ACHS reporting hospitals performed.

These national results are based on approximately 1.4 per cent of total public acute hospital anaesthetic procedures. The number of ACHS reporting hospital procedures used to derive this indicator was 18 912 in 2006 (ACHS unpublished).

The estimated total number of anaesthetic procedures in 2005-06 was 1.3 million (AIHW unpublished).

NSW was the only jurisdiction with five or more hospitals reporting 'pre-anaesthetic consultations' to the ACHS Comparative Report Service in 2006 (table 10.11). Data for 2006 for other jurisdictions are not reported separately because fewer than five hospitals reported 'pre-anaesthetic consultations' in each of those jurisdictions. Data for previous years are reported for Victoria and SA in tables 10A.46 and 10A.48 respectively.

Table 10.11 **Pre-anaesthetic consultation rates, ACHS reporting public hospitals, 2006**[a]

	Unit	*Results*
National rate	%	94.7
National performance at 80th centile (rate)	(%)	100.0
National performance at 20th centile (rate)	(%)	91.6
New South Wales		
Numerator (pre anaesthetic consultations)	no.	6 400
Denominator (procedures)	no.	6 428
Rate	%	99.6
Standard error (±)		1.0
ACHS reporting hospitals	no.	6.0

a The ACHS data are not designed to measure the performance of states and territories, but are for internal clinical review by individual hospitals. In addition, health organisations contribute data voluntarily to the ACHS, so the samples are not necessarily representative of all hospitals in each jurisdiction. As a result, statewide comparisons and conclusions regarding the performance of individual states cannot be drawn.

Source: ACHS (unpublished); table 10A.45.

Safety — surgical site infection rates

'Surgical site infection rates' are reported for four frequently performed procedures — hip prosthesis, knee prosthesis, lower segment caesarean section and abdominal hysterectomy (box 10.11). These estimates should be viewed in the context of the statistical (standard) errors. High standard errors signal that the data may be potentially unreliable. The statistical terms used to describe this indicator are explained in box 10.9.

Box 10.11 **Surgical site infection rates**

'Surgical site infection rates' is an indicator of safety because surgical site infections can result in serious consequences for individual patients, place a significant burden on the health system and are influenced by the safety of hospital practices and procedures.

This indicator is calculated as the average (that is, mean) rate of post-operative in-hospital occurrence of surgical site infection rates for selected surgical procedures (see section 10.8 for definitions). Rates are reported for hip and knee prosthesis, lower segment caesarean section and abdominal hysterectomy. Low 'surgical site infection rates' are consistent with the quality standards required in the public hospital sector.

Reporting by procedure reduces the potential for casemix to influence the rates of infection, but some cases are more susceptible to infection than others. Reporting is also affected by the time period during which infections are recorded — for example, some surgical infections do not present until after discharge from hospital. Surgical infection rates are not reported for each procedure where fewer than five hospitals are included in the data.

Nationally, among all public hospitals participating in the ACHS Comparative Report Service in 2006, the mean 'surgical site infection rate' for hip prosthesis surgery was 1.4 per 100 separations. The ACHS estimated that if the performance of all ACHS reporting public hospitals in Australia matched national performance at the 20th centile, there would be 0.29 per cent (or 22) fewer infections after hip prosthesis surgery in these public hospitals (ACHS unpublished). National performance at the 20th centile shows the rate at, or below which, the best performing 20 per cent of ACHS reporting hospitals performed.

The mean 'surgical site infection rate' following knee prosthesis surgery was 0.9 per 100 separations. The ACHS estimated that if the performance of all ACHS reporting public hospitals in Australia matched national performance at the 20th centile, there would be 0.3 per cent (or 23) fewer infections following knee prosthesis surgery in these public hospitals (ACHS unpublished).

The mean 'surgical site infection rate' following lower segment caesarean section surgery was 1.1 per 100 separations. The ACHS estimated that if the performance of all ACHS reporting public hospitals in Australia matched national performance at the 20th centile, there would be 0.89 per cent (or 220) fewer infections following lower segment caesarean section surgery in these public hospitals (ACHS unpublished).

The mean 'surgical site infection rate' following abdominal hysterectomy surgery was 1.5 per 100 separations. The ACHS estimated that if the performance of all

Australian public hospitals matched national performance at the 20th centile, there would be 0.46 per cent (or 8) fewer infections following abdominal hysterectomy surgery (ACHS unpublished).

These national results are based on approximately 55.0 per cent of hip prosthesis, 68.9 per cent of knee prosthesis, 49.2 per cent of lower segment caesarean section and 21.4 per cent of abdominal hysterectomy surgical procedures. The number of ACHS reporting hospital surgical procedures in 2006 used to derive this indicator was 7415 for hip prosthesis, 7631 for knee prosthesis, 24 701 for lower segment caesarean section and 1736 for abdominal hysterectomy. The total number of these surgical procedures in 2005-06 was 13 477 for hip prosthesis (AIHW 2007a), 11 080 for knee prosthesis, 50 243 for lower segment caesarean section and 8117 for abdominal hysterectomy surgical procedures (AIHW unpublished).

For jurisdictions with more than five hospitals reporting 'surgical site infections' to the ACHS Comparative Report Service, the mean rates in 2006 are shown in table 10.12. The coverage of the ACHS data may differ across these states. 'Surgical site infection rates' for Tasmania, the ACT and the NT are not reported separately because fewer than five hospitals participated in the ACHS Comparative Report Service.

Table 10.12 **Surgical site infections, ACHS reporting public hospitals, by selected procedure, 2006**[a, b]

	Unit	*Hip prosthesis*	*Knee prosthesis*	*Lower segment caesarean section*	*Abdominal hysterectomy*
National rate	%	1.4	0.9	1.1	1.5
National performance at 80th centile (rate)	(%)	1.7	1.3	1.8	2.0
National performance at 20th centile (rate)	(%)	1.1	0.6	0.2	1.0
NSW					
Numerator (infections)	no.	11	16	26	np
Denominator (procedures)	no.	1 749	2 396	5 767	np
Infection rate	%	0.6	0.7	0.5	np
Standard error (±)		0.1	0.1	0.3	np
ACHS reporting hospitals	no.	13	12	13	np
Victoria					
Numerator (infections)	no.	27	17	np	np
Denominator (procedures)	no.	1 348	964	np	np
Infection rate	%	2.0	1.8	np	np
Standard error (±)		0.1	0.1	np	np
ACHS reporting hospitals	no.	6	6	np	np
Queensland					
Numerator (infections)	no.	15	6	73	10
Denominator (procedures)	no.	1 516	1 662	8 668	1 006
Infection rate	%	1.0	0.4	0.8	1.0
Standard error (±)		0.1	0.1	0.2	0.2
ACHS reporting hospitals	no.	8	9	10	7
WA					
Numerator (infections)	no.	21	14	18	np
Denominator (procedures)	no.	1 308	1 325	2 400	np
Infection rate	%	1.6	1.1	0.8	np
Standard error (±)		0.1	0.1	0.4	np
ACHS reporting hospitals	no.	7	7	8	np

(Continued on next page)

Table 10.12 **(Continued)**

	Unit	*Hip prosthesis*	*Knee prosthesis*	*Lower segment caesarean section*	*Abdominal hysterectomy*
SA					
Numerator (infections)	no.	16	6	58	np
Denominator (procedures)	no.	632	704	4 454	np
Infection rate	%	2.5	0.9	1.3	np
Standard error (±)		0.1	0.2	0.3	np
ACHS reporting hospitals	no.	5	5	6	np

a The ACHS data are not designed to measure the performance of states and territories, but are for internal clinical review by individual hospitals. In addition, health organisations contribute data voluntarily to the ACHS, so the samples are not necessarily representative of all hospitals in each jurisdiction. As a result, statewide comparisons and conclusions regarding the performance of individual states cannot be drawn. **b** Since 2003, the ACHS surgical site infection indicators have been collected in pairs, one for each of superficial and deep/organ space surgical site infections. An indirectly standardised rate was derived for each pair. The rate for each combined pair was estimated as the sum of the two rates (deep and superficial). The final rate for each State was calculated as the sum of observed infections divided by the sum of expected infections, multiplied by the rate for the combined pair. **np** Not published.

Source: ACHS (unpublished); tables 10A.49, 10A.50, 10A.51, 10A.52, 10A.53.

Responsiveness — patient satisfaction surveys

The use of 'patient satisfaction surveys' is an indicator of responsiveness in public hospitals (box 10.12). Prior to the 2006 Report, this indicator provided information on whether, and when, jurisdictions have conducted patient satisfaction surveys in recent years. This section now reports how jurisdictions use patient satisfaction surveys to improve the quality of public hospital services.

Box 10.12 **Patient satisfaction surveys**

'Patient satisfaction surveys' is an indicator that provides a proxy measure of governments' objective to deliver services that are high quality and responsive to individual patient needs. Surveys can be useful for obtaining information on patient views of both clinical and non-clinical hospital care (such as whether patients feel they were treated with respect and provided with appropriate information regarding their treatment). If public hospitals respond to patient views and modify services, service quality can be improved to better meet patients' needs.

This indicator provides information on how jurisdictions used patient satisfaction surveys to improve public hospital quality in recent years. The more public hospitals use patient satisfaction surveys the greater the potential for increasing the quality of public hospital services to better meet patients' needs.

This is the third edition of this Report to present information on how patient satisfaction surveys are used to improve the quality of public hospital services. Some jurisdictions have provided general information. Over time this information will be refined to identify more specific examples of how public hospital quality has improved. Jurisdictions provided the following information in relation to their most recent survey (results from the NSW and the NT surveys conducted in 2004 and 2004-05 respectively were included in the 2006 Report).

- In Victoria, the survey provides government and hospital management with important information as to where quality improvement activities should be directed (table 10A.74).
- In Queensland, a series of recommendations generated from the survey were being considered by the Minister for Health (table 10A.75).
- In WA, each participating hospital receives detailed information from the survey, which is used to inform service improvement. Some examples of how hospitals have used the survey results to improve public hospital quality include: the development of bedside patient information packages; improved discharge coordination procedures; improved call bell systems and lighting; information noticeboards; and improved pre-admission services (table 10A.76).
- In SA, the survey results inform the public hospital system of the key areas of care and service that are important to maternity patients, as well as the areas of care and service that require improvement from the patient's perspective (table 10A.77).
- In Tasmania, the survey results are used to identify areas requiring review or modification. It is intended that focus surveys will direct strategies to remediate problems (table 10A.78).
- In the ACT, information from Survey 1 was discussed at various Quality and Safety committees. Elements of the results have been taken up in safety programs – for example, medication received in a timely manner has been incorporated into the medication safety program and discharge issues are being addressed in various aspects of the discharge process. Additionally, the advising of patients' rights and responsibilities and the way to make a complaint are ongoing. In Survey 2, opportunities for improvement were prioritised and action plans formed. Areas that were identified as needing improvement in a previous survey had higher levels of satisfaction in this survey (table 10A.79).

Capability — hospital accreditation

'Hospital accreditation' is an indicator of capability in public hospitals (box 10.13). Data for this indicator are shown in figure 10.15.

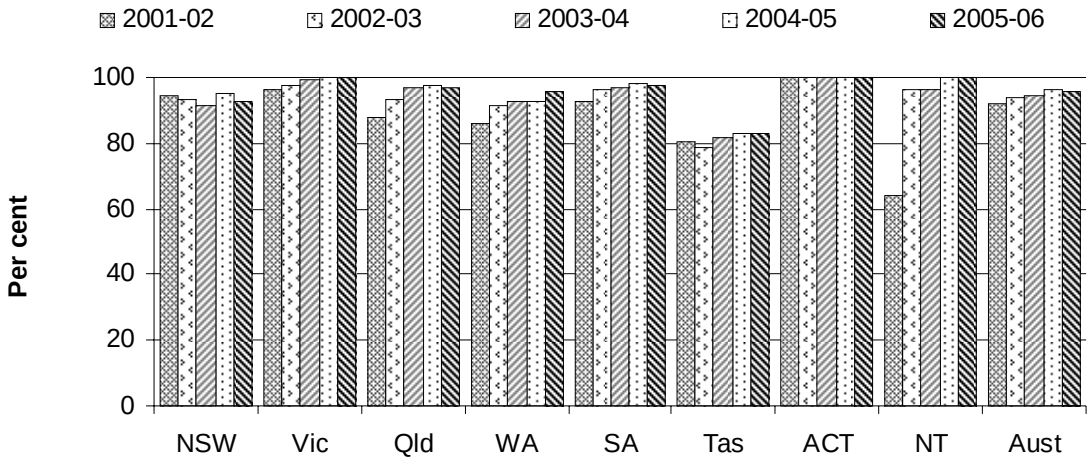
Box 10.13 **Accreditation**

'Accreditation' signifies professional and national recognition awarded to hospitals and other healthcare facilities that meet defined industry standards. Accreditation of healthcare facilities has contributed significantly to quality practices and system wide awareness of quality issues, although accreditation processes could be improved (ACSQHC 2002). Public hospitals may seek accreditation through the ACHS Evaluation and Quality Improvement Program, Business Excellence Australia (previously known as the Australian Quality Council), the Quality Improvement Council, and through certification as compliant with the International Organization for Standardization's (ISO) 9000 quality family or other equivalent programs. Jurisdictions apply specific criteria to determine which accreditation programs are suitable. Quality programs require hospitals to demonstrate continual adherence to quality improvement standards to gain and retain accreditation.

'Accreditation' is reported as the ratio of accredited beds to all beds in public hospitals, because the number of beds indicates the level of hospital capacity or activity.

It is not possible to draw conclusions about the quality of care in those hospitals that do not have 'accreditation'. Public hospital accreditation is voluntary in all jurisdictions except Victoria, where it is now mandatory for all public hospitals (excluding those that provide only dental or mothercraft services). The costs of preparing a hospital for accreditation are significant, so a low level of accreditation may reflect cost constraints rather than poor quality. Also, the cost of accreditation may not rise proportionally with hospital size. This would be consistent with larger hospitals being more active in seeking accreditation (because it is relatively less costly for them).

Figure 10.15 **Proportion of accredited beds, public hospitals**[a, b]



a Where average available beds for the year were not available, bed numbers at 30 June were used. **b** Includes psychiatric hospitals.

Source: AIHW (2007a and various issues); table 10A.54.

Continuity — continuity of care

The Steering Committee has identified 'continuity of care' as an indicator of the continuity aspect of public hospital quality. This indicator is for development in future reports (box 10.14).

Box 10.14 **Continuity of care**

The Steering Committee has agreed to develop an indicator of the continuity of care — that is, the provision of uninterrupted, timely, coordinated healthcare, interventions and actions across programs, practitioners and organisations.

Effectiveness — sustainability

Workforce sustainability

'Workforce sustainability' is an indicator of public hospital sustainability (box 10.15).

Box 10.15 **Workforce sustainability**

The 'workforce sustainability' indicator helps determine whether sustainability problems might arise in the delivery of current/future public hospitals services. Labour is the most significant and costly resource used in providing public hospital services (figure 10.22). Nurses and medical practitioners are the most significant groups of skilled professionals employed in public hospitals (figure 10.12). The sustainability of the 'public hospital' workforce is affected by a number of factors, in particular, whether the number of new entrants are sufficient to maintain the existing workforce, and the proportion of the workforce who are close to retirement.

Age profiles for nurse and medical practitioner workforces show the proportions of registered nurses and medical practitioners in ten year age brackets. The data are presented both by jurisdiction and by region.

The smaller the proportion of the workforce who are new entrants and/or the larger the proportion of the workforce who are close to retirement, the more likely sustainability problems are to arise in the coming decade as the older age group starts to retire.

(Continued on next page)

Box 10.15 **(Continued)**

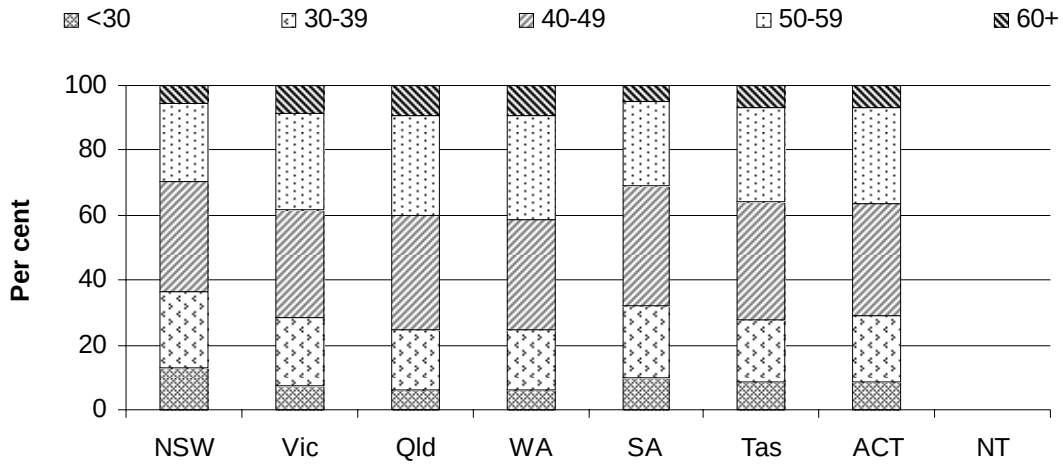
All registered nurses and medical practitioners are included in these measures as crude indicators of the potential respective workforces for public hospitals.

These measures are not a substitute for a full workforce analysis that allows for migration, trends in full-time work and expected demand increases. They can, however, indicate that further attention should be given to workforce sustainability for public hospitals.

Source: National Health Performance Committee (2004).

The age profile of the nursing workforce (which includes midwives) for each jurisdiction, except the NT, is shown in figure 10.16. Nursing workforce data by region are shown in figure 10.17.

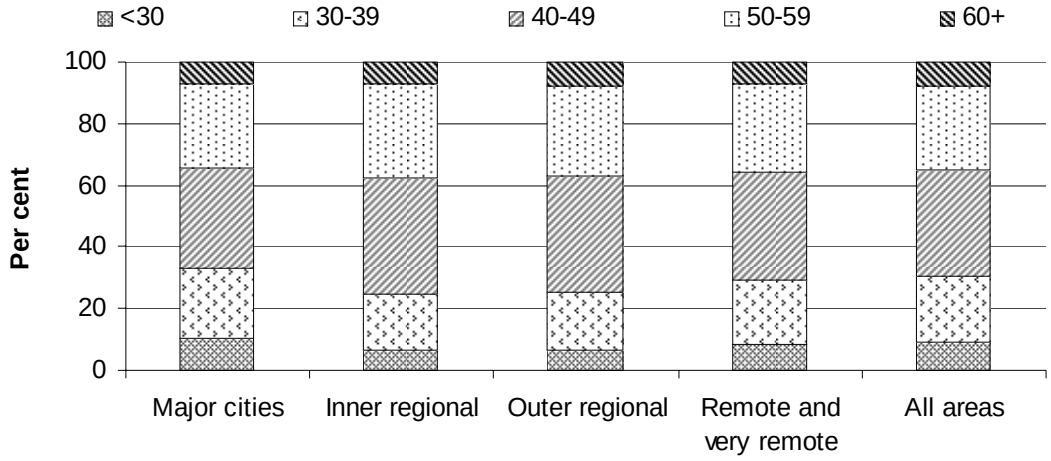
Figure 10.16 **Nursing workforce, by age group, 2005**[a, b]



a Includes registered and enrolled nurses (including midwives) who are employed in nursing, on extended leave and looking for work in nursing. **b** Estimates for the NT are not separately published due to the very low response rate (13.7 per cent) in that jurisdiction to the AIHW Nursing and Midwifery Labour Force Survey.

Source: AIHW (unpublished) *Nursing and Midwifery Labour Force Survey*; table 10A.56.

Figure 10.17 **Nursing workforce, by age group and region, 2005**[a]

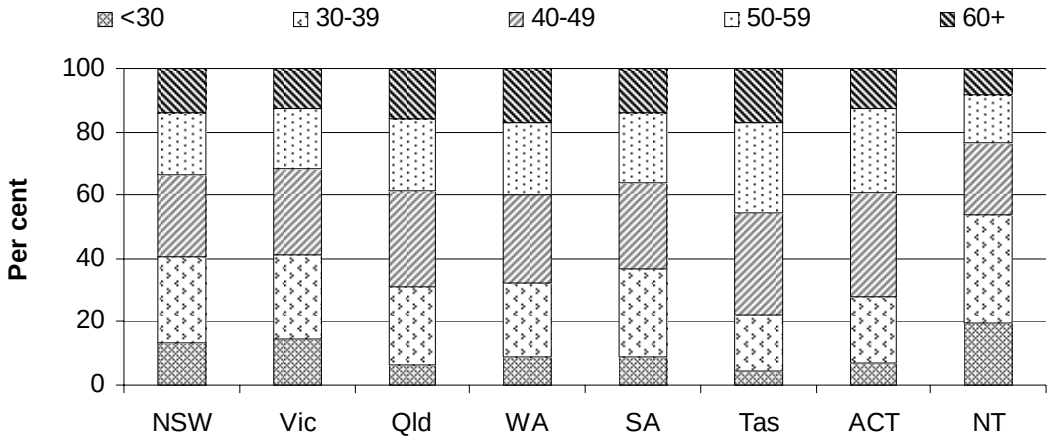


[a] Includes registered and enrolled nurses (including midwives) who are employed in nursing, on extended leave and looking for work in nursing.

Source: AIHW (unpublished) *Nursing and Midwifery Labour Force Survey*; table 10A.55.

The age profile of the medical practitioner workforce for each jurisdiction is shown in figure 10.18. Medical practitioner workforce data by region are shown in figure 10.19.

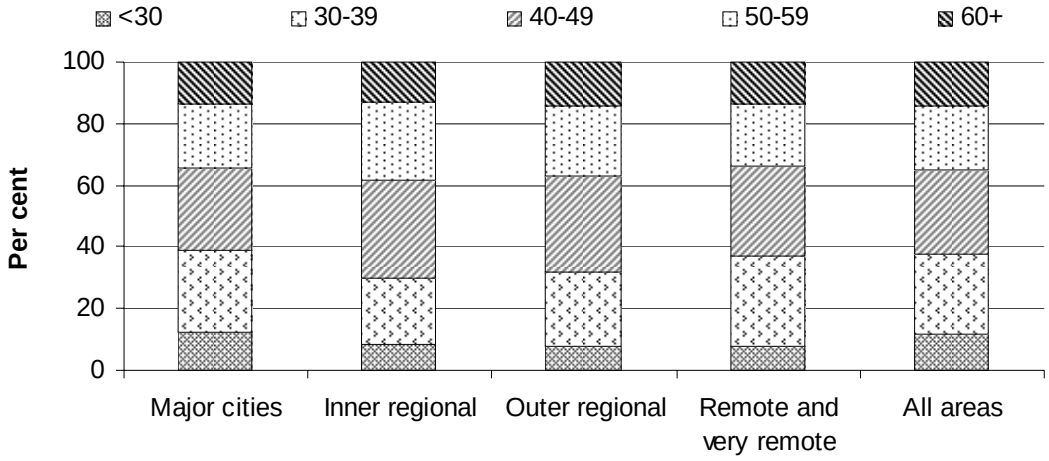
Figure 10.18 **Medical practitioner workforce, by age group, 2005**[a, b]



[a] Includes employed medical practitioners, registered medical practitioners on extended leave and registered medical practitioners looking for work in medicine. [b] Estimates for the NT should be treated with caution due to the low response rate (31.8 per cent) in that jurisdiction to the AIHW Medical Labour Force Survey.

Source: AIHW (unpublished) *Medical Labour Force Survey*; table 10A.58.

Figure 10.19 **Medical practitioner workforce, by age group and region, 2005**[a]



[a] Includes employed medical practitioners, registered medical practitioners on extended leave and registered medical practitioners looking for work in medicine.

Source: AIHW (unpublished) *Medical Labour Force Survey*; table 10A.57.

Efficiency

Two approaches to measuring the efficiency of public hospital services are used in this Report: the 'cost per casemix-adjusted unit of output' (the unit cost) and the 'casemix-adjusted relative length of stay index'. The latter is used because costs are correlated with the length of stay at aggregate levels of reporting.

The Steering Committee's approach is to report the full costs of a service where they are available. Where the full costs of a service cannot be accurately measured, the Steering Committee seeks to report estimated costs that are comparable. Where differences in comparability remain, the differences are documented. The Steering Committee has identified financial reporting issues that have affected the accuracy and comparability of unit costs for acute care services. These include the treatment of payroll tax, superannuation, depreciation and the user cost of capital associated with buildings and equipment. A number of issues remain to further improve the quality of these estimates.

Costs associated with non-current physical assets (such as depreciation and the user cost of capital) are potentially important components of the total costs of many services delivered by government agencies. Differences in the techniques for measuring non-current physical assets (such as valuation methods) may reduce the comparability of cost estimates across jurisdictions. In response to concerns regarding data comparability, the Steering Committee initiated a study, reported in

Asset Measurement in the Costing of Government Services (SCRCSSP 2001). The study examined the extent to which differences in asset measurement techniques applied by participating agencies may affect the comparability of reported unit costs.

The results reported in the study for public hospitals indicate that different methods of asset measurement could lead to quite large variations in reported capital costs. However, considered in the context of total unit costs, the differences created by these asset measurement effects were relatively small, because capital costs represent a small proportion of total cost (although the differences may affect cost rankings across jurisdictions). A key message from the study was that the adoption of nationally uniform accounting standards across all service areas would be a desirable outcome. The results are discussed in more detail in chapter 2.

Care needs to be taken, therefore, in comparing the available indicators of efficiency across jurisdictions. Differences in counting rules, the treatment of various expenditure items (for example, superannuation) and the allocation of overhead costs have the potential to affect such comparisons. In addition, differences in the use of salary packaging may allow hospitals to lower their wage bills (and thus State or Territory government expenditure) while maintaining the after-tax income of their staff. No data were available for reporting on the effect of salary packaging and any variation in its use across jurisdictions.

Differences in the scope of services being delivered by public hospitals may also reduce the comparability of efficiency measures. Some jurisdictions admit patients who may be treated as non-admitted patients in other jurisdictions (AIHW 2000).

Recurrent cost per casemix-adjusted separation

'Recurrent cost per casemix-adjusted separation' is an indicator of the efficiency of public hospitals (box 10.16). 'Recurrent cost per casemix-adjusted separation' data are presented in figure 10.20.

Box 10.16 **Recurrent cost per casemix-adjusted separation**

'Recurrent cost per casemix-adjusted separation' is an indicator of governments' objective to deliver services in a cost effective manner. It measures the average cost of providing care for an admitted patient (overnight stay or same day) adjusted with AR-DRG cost weights for the relative complexity of the patient's clinical condition and of the hospital services provided (AIHW 2000).

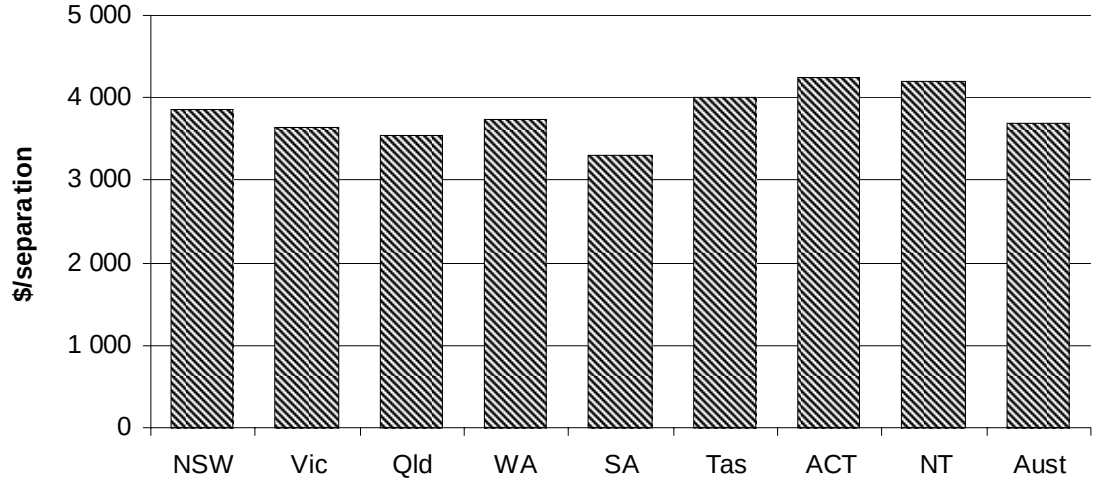
This measure includes overnight stays, same day separations, private patient separations in public hospitals and private patient recurrent costs. It excludes non-acute hospitals, mothercraft hospitals, multipurpose hospitals, multipurpose services, hospices, rehabilitation hospitals, psychiatric hospitals and hospitals in the 'unpeered and other' peer groups. The data exclude expenditure on non-admitted patient care, the user cost of capital and depreciation, and research costs.

All admitted patient separations and their costs are included, and most separations are for acute care. Cost weights are not available for admitted patients who received non-acute care (around 4.0 per cent of total admitted patient episodes in 2005-06), so the same cost weights for acute care are applied to non-acute separations. The admitted patient cost proportion is an estimate only.

Some jurisdictions have developed experimental cost estimates for non-psychiatric acute patients which are also reported here. Separations for non-acute patients and psychiatric acute care patients are excluded from these estimates because AR-DRG cost weights are a poor predictor of these separations.

Lower 'recurrent cost per casemix-adjusted separation' may reflect more efficient service delivery in public hospitals. However, this indicator needs to be viewed in the context of the set of performance indicators as a whole, as cost is not necessarily related to quality and efficiency.

Figure 10.20 **Recurrent cost per casemix-adjusted separation, 2005-06**[a, b, c, d, e, f, g]

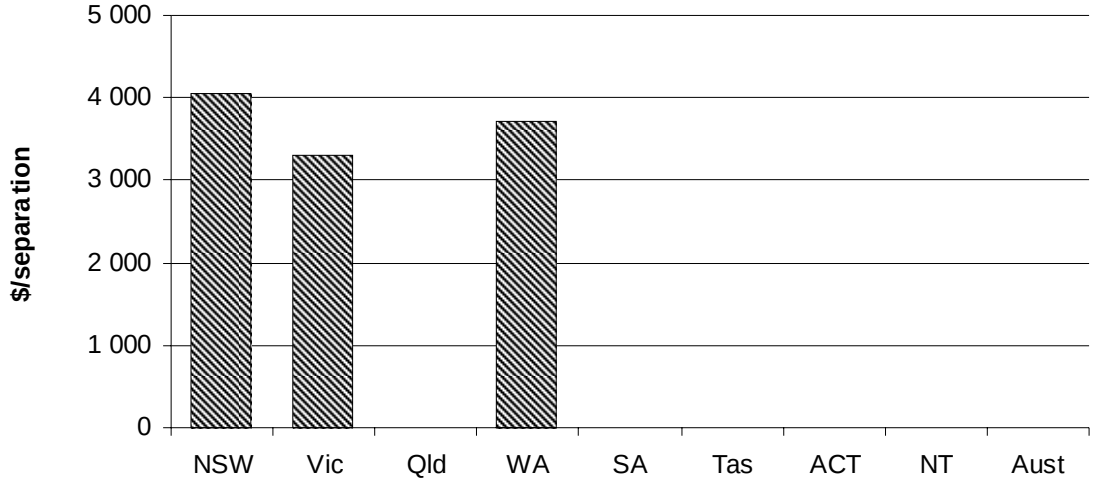


a Excludes depreciation and the user cost of capital, spending on non-admitted patient care and research costs. **b** Casemix-adjusted separations are the product of total separations and average cost weight. Average cost weights are from the National Hospital Morbidity Database, based on acute and unspecified separations and newborn episodes of care with qualified days, using the 2004-05 AR-DRG v 5.0 cost weights (DoHA 2006). **c** Excludes separations for which the care type was reported as 'newborn with no qualified days', and records for hospital boarders and posthumous organ procurement. **d** Psychiatric hospitals, drug and alcohol services, mothercraft hospitals, unpeered and other hospitals, hospices, rehabilitation facilities, small non-acute hospitals and multi-purpose services are excluded from these data. The data are based on hospital establishments for which expenditure data were provided, including networks of hospitals in some jurisdictions. Some small hospitals with incomplete expenditure data were not included. **e** Of the selected hospitals, three small hospitals had their admitted patient cost proportion estimated by the Health and Allied Services Advisory Council ratio. Admitted patient cost proportion was previously called the inpatient fraction. **f** Hospital recurrent expenditures on Indigenous and non-Indigenous people may differ (AIHW 2001b). These differences may influence jurisdictional variation in unit costs. **g** NT data need to be interpreted in conjunction with the cost disabilities associated with hospital service delivery in the NT.

Source: AIHW (2007a); table 10A.59.

Experimental estimates of 'recurrent cost per casemix-adjusted separation' for acute non-psychiatric patients are reported for NSW, Victoria and WA (figure 10.21). (These estimates relate to a subset of the selected public hospitals reported in figure 10.20 and are not available for other jurisdictions.) The experimental estimates aim to overcome the need to apply cost weights for acute care to non-acute care separations (box 10.16). The effect of restricting the analysis to acute non-psychiatric admitted patients was to increase the estimated recurrent cost per casemix-adjusted separation for the subset of hospitals by 3.4 per cent for NSW, and to decrease this cost by 9.7 per cent for Victoria and 1.0 per cent for WA (AIHW 2007a).

Figure 10.21 **Recurrent cost per acute non-psychiatric casemix-adjusted separation, subset of hospitals, 2005-06**[a, b, c, d, e, f]



a Excludes psychiatric hospitals, sub-acute, non-acute and unpeered hospitals. This subset excludes hospitals where the inpatient fraction was equal to the acute inpatient fraction and more than 1000 non-acute patient days were recorded. Also excludes hospitals where the apparent cost of non-acute patients exceeded $1000 per day and more than $1 million of apparent expenditure on non-acute patients days was reported. **b** Separations are those where the care type is acute, newborn with qualified days, or not reported. Psychiatric separations are those with psychiatric care days. **c** Average cost weight from the National Hospital Morbidity Database, based on acute, newborn with at least one qualified day, or not reported, using the 2004-05 AR-DRG version 5.0 cost weights (DoHA 2006). **d** Cost estimates include adjustment for private patient medical costs: $199 for NSW, $90 for Victoria and $100 for WA. **e** These estimates are not available for Queensland, SA, Tasmania, the ACT or the NT. **f** Data are from table A1.12 of AIHW (2007a).

Source: AIHW (2007a); table 10A.59.

'Recurrent cost per casemix-adjusted separation' is affected by differences in the mix of admitted patient services produced by hospitals in each jurisdiction. Hospitals have been categorised by 'peer groups' to enable those with similar activities to be compared. The public hospital peer groups include 'Principal referral and Specialist women's and children's hospitals', 'Large hospitals', 'Medium hospitals' and 'Small acute hospitals'.

The dominant peer classification is the 'Principal referral and Specialist women's and children's' category. The 77 hospitals representing this group had an average of 40 878 separations each at a cost of $3726 (table 10A.60 and table 10.13). The data for each of the hospital peer groups are presented in table 10.13. Detailed data for all peer groups are presented in table 10A.60.

Table 10.13 **Recurrent cost per casemix-adjusted separation, by hospital peer group, 2005-06 ($ million)[a, b, c]**

	NSW	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*ACT*	*NT*	*Aust*
Hospital peer group									
Principal referral and Specialist women's and children's	3 919	3 619	3 665	3 634	3 346	3 951	np	4 102	3 726
Large	3 710	3 702	3 024	3 706	3 420	..	np	..	3 608
Medium	3 637	3 626	2 929	4 047	3 024	..	..	..	3 524
Small acute	3 882	4 566	2 755	4 271	3 047	5 914	..	4 810	3 790
All hospitals[d]	**3 852**	**3 646**	**3 537**	**3 733**	**3 299**	**3 994**	**4 250**	**4 187**	**3 698**

a Data exclude depreciation and the user cost of capital, spending on non-admitted patient care and research costs. **b** The data are based on hospital establishments for which expenditure data were provided, including networks of hospitals in some jurisdictions. Some small hospitals with incomplete expenditure data were not included. **c** Separations for which the care type was reported as newborn with no qualified days, and records for hospital boarders and posthumous organ procurement have been excluded. **d** Includes all hospitals in this cost per casemix-adjusted analysis. .. Not applicable. **np** Not published

Source: AIHW (2007a); table 10A.60.

Total cost per casemix-adjusted separation

'Total cost per casemix-adjusted separation' is an indicator of the efficiency of public hospitals (box 10.17). Total cost includes both the recurrent costs (as discussed above) and the capital costs associated with hospitals services. Results for this indicator in 2005-06 are reported in figure 10.20. Labour costs accounted for the majority of costs per casemix-adjusted separation in all jurisdictions.

Box 10.17 **Total cost per casemix-adjusted separation**

'Total cost per casemix-adjusted separation' is an indicator of governments' objective to deliver services in a cost effective manner. This indicator is defined as the recurrent cost per casemix-adjusted separation plus the capital costs per casemix-adjusted separation. Recurrent costs include labour and material costs, and capital costs include depreciation and the user cost of capital for buildings and equipment. The indicator is included because it allows the full cost of hospital services to be considered in a single measure. The hospitals included in this measure are the same as for recurrent cost per casemix-adjusted separation (box 10.16).

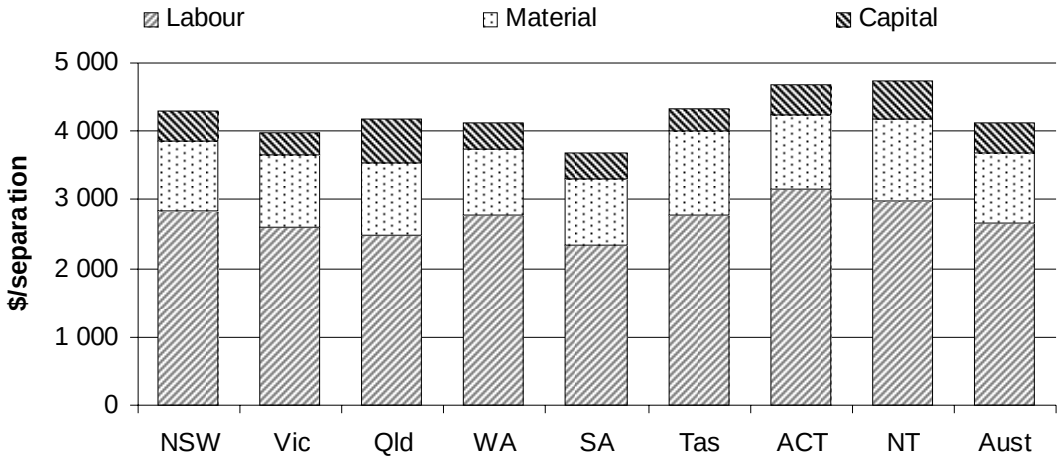
(Continued on next page)

Box 10.17 **(Continued)**

Depreciation is defined as the cost of consuming an asset's services. It is measured by the reduction in value of an asset over the financial year. The user cost of capital is the opportunity cost of the capital invested in an asset, and is equivalent to the return foregone from not using the funds to deliver other government services or to retire debt. Interest payments represent a user cost of capital, so are deducted from capital costs in all jurisdictions to avoid double counting.

A lower 'total cost per casemix-adjusted separation' may reflect more efficient service delivery in public hospitals. However, this indicator needs to be viewed in the context of the set of performance indicators as a whole, as cost is not necessarily related to quality and efficiency.

Figure 10.22 **Total cost per casemix-adjusted separation, public hospitals, 2005-06**[a, b, c]



a 'Labour' includes medical and non-medical labour costs. 'Material' includes other non-labour recurrent costs, such as repairs and maintenance (table 10A.59). **b** 'Capital cost' includes depreciation and the user cost of capital for buildings and equipment that is associated with the delivery of admitted patient services in the public hospitals as described in the data for recurrent cost per casemix-adjusted separation. 'Capital cost' excludes the user cost of capital associated with land (reported in table 10A.61). **c** Variation across jurisdictions in the collection of capital related data suggests the data are only indicative. The capital cost per casemix-adjusted separation is equal to the capital cost adjusted by the inpatient fraction, divided by the number of casemix-adjusted separations.

Source: AIHW (2007a); State and Territory governments (unpublished); tables 10A.59 and 10A.61.

Relative stay index

The 'relative stay index' is an indicator of the efficiency of public hospitals (box 10.18). Data for this indicator are reported in figure 10.23. The 'relative stay

index' is reported by patient election status and by medical, surgical and other AR-DRGs in tables 10A.62 and 10A.63 respectively.

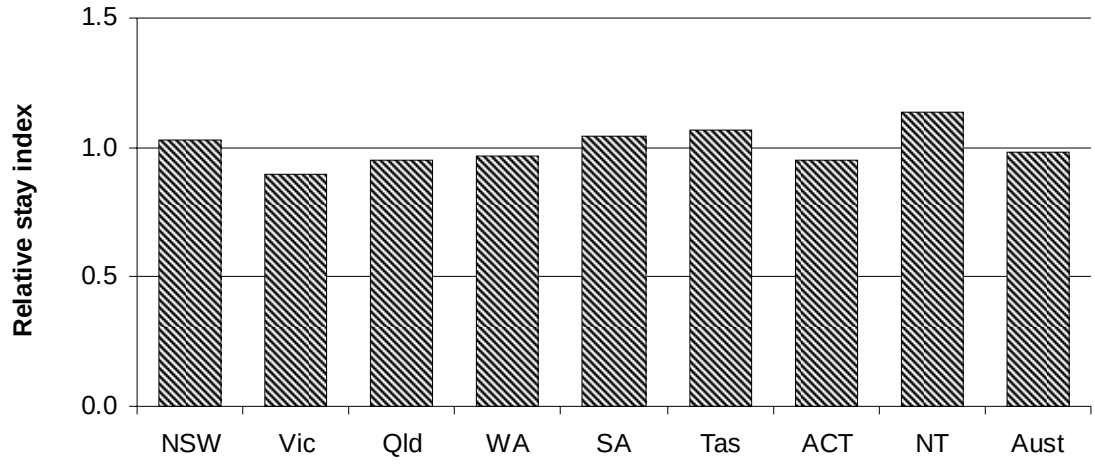
Box 10.18 **Relative stay index**

'Relative stay index' is an indicator of governments' objective to deliver services efficiently. The 'relative stay index' is defined as the actual number of acute care patient days divided by the expected number of acute care patient days adjusted for casemix. Casemix adjustment allows comparisons to take account of variation in types of service provided but not other influences on length of stay, such as the Indigenous status of the patient. Acute care separations only are included. Section 10.8 contains a more detailed definition outlining exclusions from the analysis.

The 'relative stay index' for Australia for all hospitals (public and private) is one. A 'relative stay index' greater than one indicates that average length of patient stay is higher than expected given the jurisdiction's casemix distribution. A 'relative stay index' of less than one indicates that the number of bed days used was less than expected. A low 'relative stay index' is desirable if it is not associated with poorer health outcomes or significant extra costs outside the hospital systems (for example, in-home care).

States and territories vary in their thresholds for classifying patients as either same day admitted patients or outpatients. These variations affect the 'relative stay index'.

Figure 10.23 **Relative stay index, public hospitals, 2005-06**[a, b]



a Includes separations for which the care type was reported as 'acute' or 'newborn with qualified days', or was not reported. **b** The relative stay index is based on all hospitals and is estimated using the indirect standardisation method and AR-DRG version 5.0. The indirectly standardised relative stay index is not strictly comparable between jurisdictions but is a comparison of the jurisdiction with the national average based on the casemix of the jurisdiction.

Source: AIHW (2007a); table 10A.62.

Recurrent cost per non-admitted occasion of service

'Recurrent cost per non-admitted occasion of service' is an indicator of the efficiency of public hospitals (box 10.19).

Box 10.19 **Recurrent cost per non-admitted occasion of service**

'Recurrent cost per non-admitted occasion of service' is an indicator of governments' objective to deliver services in a cost effective manner. Non-admitted occasions of service (including emergency department presentations and outpatient services) account for a significant proportion of hospital expenditure.

The recurrent cost per non-admitted occasion of service is the proportion of recurrent expenditure allocated to patients who were not admitted, divided by the total number of non-admitted patient occasions of service in public hospitals. Occasions of service include examinations, consultations, treatments or other services provided to patients in each functional unit of a hospital.

Lower recurrent cost per non-admitted occasion of service may reflect more efficient service delivery in public hospitals. However, this indicator needs to be viewed in the context of the set of performance indicators as a whole, as cost is not necessarily related to quality and efficiency. This indicator does not adjust for the complexity of service — for example, a simple urine glucose test is treated equally with a complete biochemical analysis of all body fluids (AIHW 2000).

These data are not comparable across jurisdictions. Reporting categories vary across jurisdictions, and further inconsistencies arise as a result of differences in outsourcing practices. In some cases, for example, outsourced occasions of service may be included in expenditure on non-admitted services, but not in the count of occasions of service. Jurisdictions able to supply 2005-06 data for this indicator reported the following results for non-admitted patient services:

- In NSW, the emergency department cost per occasion of service was $191 for 2.0 million occasions, the outpatient cost per occasion of service was $85 for 14.0 million occasions and the overall cost per occasion of service (emergency plus outpatient plus other) was $96 for 19.3 million occasions (table 10A.64).
- In WA, the emergency department cost per occasion of service was $369 for 629 590 occasions, the outpatient cost per occasion of service was $135 for 3.4 million occasions and the overall cost per occasion of service (emergency plus outpatient plus other) was $130 for 5.0 million occasions (table 10A.66).
- In SA, the emergency department cost per occasion of service was $263 for 491 571 occasions, the outpatient cost per occasion of service was $199 for 1.4 million occasions and the overall cost per occasion of service (emergency plus outpatient) was $216 for 1.9 million occasions (table 10A.67).

- In Tasmania, the emergency department cost per occasion of service was $249 for 126 607 occasions and the outpatient cost per occasion of service was $107 for 418 289 occasions. An overall cost per occasion of service was not available (table 10A.68).
- In the ACT, the emergency department cost per occasion of service was $479 for 99 624 occasions, the outpatient cost per occasion of service was $92 for 584 633 occasions and the overall cost per occasion of service (emergency plus outpatient) was $149 for 684 257 occasions (table 10A.69).

Victoria collects data on the basis of cost per non-admitted patient encounter. An encounter includes the clinic visit and all ancillary services provided within a 30 day period either side of the clinic visit. Based on cost data from 14 hospitals, the average cost per encounter was $146 for 1.2 million encounters in 2005-06 (table 10A.65).

Given the lack of a nationally consistent non-admitted patient classification system, this Report includes national data from the Australian Government Department of Health and Ageing's National Hospital Cost Data Collection (NHCDC). The NHCDC collects data across a sample of hospitals that is expanding over time. The sample for each jurisdiction is not necessarily representative because hospitals contribute data on a voluntary basis. The NHCDC data are affected by differences in costing and admission practices across jurisdictions and hospitals. Therefore, an estimation process has been carried out to create representative national activity figures from the sample data. In addition, the purpose of the NHCDC is to calculate between-DRG cost weights, not to compare the efficiency of hospitals.

Outpatient data were contributed by 170 public hospitals for all types of public hospital outpatient clinics (tier 0). These data suggest that 'cost per non-admitted clinic occasions of service' for the public hospitals sector in 2005-06 was $169 for 12.6 million occasions (table 10A.70). 'Cost per non-admitted clinic occasions of service' data are also shown for seven categories of outpatient clinics (tier 1) (table 10.14). These tier 1 outpatient clinics data were provided by 170 public hospitals. Emergency department data, provided by 166 public hospitals, show the 'cost per occasion of service for emergency departments' by triage class (table 10.15).

Table 10.14 Non-admitted clinic occasions of service for tier 1 clinics, sample results, public sector, 2005-06[a, b, c]

	Occasions of service	*Average cost*
	no.	$/occasion of service
Allied health and/or clinical nurse specialist	846 918	91
Dental	15 574	210
Medical	941 983	272
Obstetrics and gynaecology	421 869	148
Paediatric	125 766	195
Psychiatric	82 520	114
Surgical	628 293	164
Total	**3 062 923**	**175**

a Includes depreciation costs. **b** Based on 170 public sector hospitals. **c** Excludes Victorian outpatient data.

Source: DoHA, *NHCDC, Round 10* (2007); table 10A.72.

Table 10.15 Emergency department average cost per occasion of service, public hospitals, by triage class, 2005-06 (dollars)[a, b, c, d, e]

Triage category	*Population estimated — average cost per occasion of service*[f]	*Actual — average cost per occasion of service*
Admitted triage 1	993	1 042
Admitted triage 2	579	603
Admitted triage 3	507	534
Admitted triage 4	441	465
Admitted triage 5	290	341
Non-admitted triage 1	527	556
Non-admitted triage 2	398	409
Non-admitted triage 3	349	361
Non-admitted triage 4	258	269
Non-admitted triage 5	169	187
Did not wait[g]	81	88
Total	**325**	**347**

a Not all hospitals that submit data to the NHCDC submit emergency department data. The emergency department national database contains only acute hospitals with emergency department cost and activity. **b** Based on data from 166 public sector hospitals. **c** Victorian emergency department data are not included. **d** Costing and admission practices vary across jurisdictions and hospitals. **e** Depreciation costs are included. **f** Estimated population costs are obtained by weighting the sample results according to the known characteristics of the population. **g** 'Did not wait' means those presentations to an emergency department who were triaged but did not wait until the completion of their treatment, at which time they would have been either admitted to hospital or discharged home.

Source: DoHA, *NHCDC, Round 10* (2007); table 10A.71.

Outcomes

Outcomes are the impact of services on the status of an individual or group (while outputs are the actual services delivered) (see chapter 1, section 1.5).

Patient satisfaction

'Patient satisfaction' is an indicator of public hospital quality (box 10.20). In 2005, the Steering Committee engaged Health Policy Analysis Pty Ltd to undertake a study reviewing patient satisfaction and responsiveness surveys conducted in relation to public hospital services in Australia. The study identified and examined current patient satisfaction surveys conducted by State and Territory governments that are relevant to measuring 'public hospital quality'. A major objective of the study was to identify points of commonality and difference between patient satisfaction surveys and their potential for concordance and/or for forming the basis of a minimum national data set on public hospital 'patient satisfaction' or 'patient experience'.

The study found that, although there is some potential for harmonising approaches (as most surveys assess similar aspects of patient experience and satisfaction), different survey methodologies posed significant impediments to achieving comparable information. It suggested that a starting point for harmonising approaches would be to identify an aspiring body and create a forum through which jurisdictions can exchange ideas and develop joint approaches (Pearse 2005). A copy of this study can be found on the Review web page (www.pc.gov.au/gsp).

Box 10.20 **Patient satisfaction**

'Patient satisfaction' provides a proxy measure of governments' objective to deliver services that are high quality and responsive to individual patient needs. Patient satisfaction surveys are different from other sources of hospital quality data, because they provide information on hospital quality from the patient's perspective.

Overall patient satisfaction ratings taken from each jurisdiction's patient surveys are reported. Results are expressed in percentage terms or as scale scores. A higher proportion of patients who were satisfied (or a higher score) is desirable because it suggests the hospital care received was of high quality and better met the expectations and needs of patients.

Given that 'patient satisfaction surveys' differ in content, timing and scope across jurisdictions, it is not possible to compare these results nationally. This indicator will be further developed over time as data become more comparable.

Jurisdictions reported the following results from patient satisfaction surveys:

- The Victorian Patient Satisfaction Monitor (VPSM) was conducted between March 2006 and February 2007 using a mailout questionnaire to adult acute and sub-acute patients of Victorian public hospitals. During this period, 15 806 patients answered the questionnaire, which represented a response rate of 39.0 per cent. The statewide Overall Care Index was 78.1, which translates into 'very good' under the VPSM rating system (table 10A.74).
- In Queensland, computer assisted telephone interviews were conducted with admitted mothers who had given birth in Queensland public hospitals and were discharged between June 2006 and September 2006. The sample size was 4767 with a response rate of 82.0 per cent. More than 80.0 per cent of respondents described the care they and their babies received after the birth as good or very good (table 10A.75).
- In WA, a computer assisted telephone interview survey was conducted between February 2007 and June 2007. The sample size was 8605, with an 85.5 per cent response rate. Four patient groups were reported on. The patient-rated overall indicator of satisfaction scores for each of the patient groups were as follows: child admitted, 86.5; adult admitted, 84.8; child outpatient, 79.8; and adult outpatient, 77.7. These scores are weighted by the importance of each issue as ranked by the patient and scored from 0 to 100, where 100 is the highest possible overall satisfaction score, taking into account all of the satisfaction domains measured (table 10A.76).
- In SA, a computer assisted telephone interview survey was conducted between December 2006 and January 2007 with 848 female patients aged 16 or over who had at least one live birth. This represented a response rate of 90.1 per cent. The overall satisfaction score was 86.1 (scored from 0 to 100, being least to most satisfied). The scores achieved for the seven individual areas of care ranged from 80.9 to 92.1 (table 10A.77).
- In Tasmania, up to 96 patients per ward requiring an overnight stay and 496 emergency department patients were surveyed by mailout questionnaire between June 2007 and September 2007. The survey results were not available at the time of printing (table 10A.78).
- In the ACT, two hospital-specific surveys were conducted. Between February 2007 and May 2007, Survey 1, a mailout survey, was conducted with three groups: emergency department patients; day surgery patients; and public acute inpatients. Between September 2006 and February 2007, Survey 2, a questionnaire survey, was conducted with admitted patients. For Survey 1: emergency department patients' overall satisfaction rating was 76.4 points (sample size was 135, with a response rate of 27.2 per cent); day surgery

patients' overall satisfaction rating was 87.8 points (sample size was 204, with a response rate of 57.9 per cent); and inpatients' overall satisfaction rating was 81.6 points (sample size was 160, with a response rate of 41.7 per cent). For Survey 2, results indicated that 94.0 per cent of patients were fairly or very satisfied with all aspects of their hospital stay. Survey 2 was conducted with 444 admitted patients and had a response rate of 39.0 per cent (table 10A.79).

Sentinel events

'Sentinel events' is an indicator of public hospital quality and safety (box 10.21). Data for 2005-06 are available for all jurisdictions except the NT, where numbers were suppressed for confidentiality reasons (table 10.16). For the ACT a total only is included.

Sentinel event programs have been implemented by all State and Territory governments. The purpose of these programs is to facilitate a safe environment for patients by reducing the frequency of these events (DHS 2004). The programs are not punitive, and are designed to facilitate self reporting of errors so that the underlying causes of the events can be examined, and action taken to reduce the risk of these events re-occurring.

In 2007 the AIHW, in conjunction with the ACSQHC, published a report that included national sentinel event data for 2004-05 (AIHW and ACSQHC 2007). The report notes that nationally consistent sentinel event definitions have not been agreed and as a result the data are not considered comparable across jurisdictions.

Box 10.21 **Sentinel events**

'Sentinel events' is an indicator of governments' objective to deliver public hospital services that are safe and of high quality. A sentinel event is an adverse event that occurs because of hospital system and process deficiencies and which results in the death of, or serious harm to, a patient. Sentinel events occur relatively infrequently and are independent of a patient's condition (DHS 2004). Sentinel events have the potential to seriously undermine public confidence in the healthcare system.

Australian health ministers have agreed on a national core set of sentinel events for which all public hospitals are required to provide data. The eight nationally agreed core sentinel events are:

1. Procedures involving the wrong patient or body part.
2. Suicide of an admitted patient.

(Continued on next page)

Box 10.21 **(Continued)**

3. Retained instruments or other material after surgery requiring re-operation or further surgical procedure.
4. Intravascular gas embolism resulting in death or neurological damage.
5. Haemolytic blood transfusion reaction resulting from ABO (blood group) incompatibility.
6. Medication error leading to the death of a patient reasonably believed to be due to incorrect administration of drugs.
7. Maternal death or serious morbidity associated with labour or delivery.
8. Infant discharged to the wrong family.

The indicator is defined as the number of reported sentinel events. A high number of sentinel events may indicate hospital system and process deficiencies that compromise the quality and safety of public hospitals.

Over time an increase in the number of sentinel events reported might reflect improvements in incident reporting mechanisms at a health service level and organisational cultural change, rather than an increase in the frequency of such events. However, trends need to be monitored to establish whether this is the underlying reason (DHS 2004).

Source: DHS (2004); NSW Department of Health (2005a).

Table 10.16 **Nationally agreed core sentinel events, 2005-06 (number)**[a]

Sentinel event	*NSW*	*Vic*	*Qld*	*WA*[b]	*SA*	*Tas*	*ACT*	*NT*	*Aust*	*Total*[c]
1. Procedures involving the wrong patient or body part	18	25	6	5	11	–	np	na	np	65
2. Suicide of an admitted patient	6	7	4	5	3	–	np	na	np	25
3. Retained instruments or other material after surgery requiring re-operation or further surgical procedure	11	6	6	1	1	–	np	na	np	25
4. Intravascular gas embolism resulting in death or neurological damage	–	–	–	–	1	–	np	na	np	1
5. Haemolytic blood transfusion reaction resulting from ABO incompatibility	–	–	1	–	–	–	np	na	np	1
6. Medication error leading to the death of a patient reasonably believed to be due to incorrect administration of drugs	–	2	1	1	1	–	np	na	np	5
7. Maternal death or serious morbidity associated with labour or delivery	3	2	1	1	3	–	np	na	np	10
8. Infant discharged to the wrong family	–	–	–	–	–	–	np	na	np	–
Total	**38**	**42**	**19**	**13**	**20**	**–**	**7**	**na**	**np**	**139**

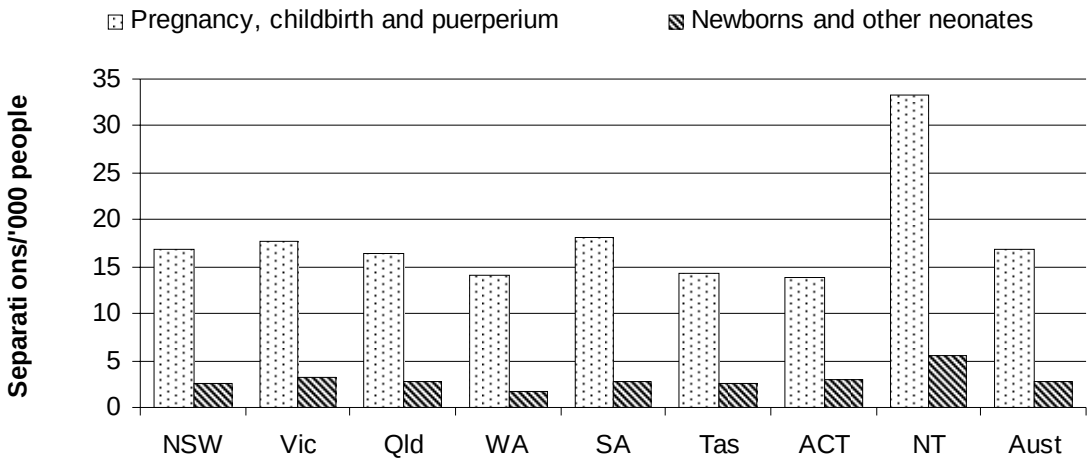
a Sentinel event definitions can vary across jurisdictions. **b** Includes public and private hospitals. **c** Totals relate to those jurisdictions for which data are published. **na** Not available. – Nil or rounded to zero. **np** Not published.

Source: State and Territory governments (unpublished); table 10A.81.

10.4 Profile of maternity services

Maternity services (defined as AR-DRGs relating to pregnancy, childbirth and the puerperium, and newborns and other neonates) accounted for 9.3 per cent of total acute separations in public hospitals (table 10A.83) and around 10.9 per cent of the total cost of all acute separations in public hospitals in 2005-06 (table 10A.82). Figure 10.24 shows the rate of acute separations per 1000 people for maternity services across jurisdictions in 2005-06.

Figure 10.24 **Separation rates for maternity services, public hospitals, 2005-06**[a, b]



a The puerperium refers to the period of confinement immediately after labour (around six weeks). **b** Newborns and other neonates include babies aged less than 28 days or babies aged less than one year with admission weight of less than 2500 grams.

Source: AIHW (2007a); tables AA.2 and 10A.83.

In Australian public hospitals in 2005-06, vaginal deliveries without complicating diagnosis accounted for a substantial proportion of the separations for pregnancy, childbirth and the puerperium (27.8 per cent) (tables 10A.83 and 10A.84). In the context of all AR-DRGs in public hospitals, vaginal deliveries without complicating diagnosis comprised the largest number of overnight acute separations (4.4 per cent of all separations) (table 10.3) and the second highest cost ($377.1 million) (table 10A.84).

The complexity of cases across jurisdictions for maternity services is partly related to the mother's age at the time of giving birth. The mean age of mothers giving birth varied across jurisdictions in 2004, 2005 and 2006 (table 10.17).

Table 10.17 **Mean age of mothers at time of giving birth, public hospitals**

	NSW	*Vic*	*Qld*[a]	*WA*	*SA*[b]	*Tas*	*ACT*[c]	*NT*
2004								
First birth	27.7	28.1	25.3	25.9	26.8	25.2	27.6	23.9
Second birth	29.9	30.3	27.9	28.4	29.2	27.5	30.4	26.3
Third birth	31.3	31.8	29.6	29.7	30.8	28.8	31.2	27.7
All births	29.5	29.9	27.7	28.0	28.8	27.8	29.5	26.4
2005								
First birth	27.8	27.7	25.5	25.9	26.6	25.1	27.6	24.2
Second birth	29.9	29.9	28.0	28.6	29.4	27.3	29.7	26.3
Third birth	31.4	31.4	29.5	29.9	31.1	29.4	31.0	28.0
All births	29.6	29.5	27.8	28.1	28.9	27.2	29.3	26.5
2006								
First birth	27.1	27.7	25.5	26.0	26.8	na	27.7	23.8
Second birth	30.4	29.9	28.1	28.5	29.4	na	30.0	26.3
Third birth	31.6	31.5	29.6	29.8	31.0	na	31.4	28.2
All births	29.3	29.5	27.9	28.1	29.0	na	29.6	26.5

a 2006 data exclude mothers whose age was 'not stated'. **b** Age is based on exact age (years) to 4 decimal places. **c** ACT 2006 data are preliminary. Care must be taken when interpreting percentages as these data include both ACT and non-ACT residents where the birth occurred in the ACT. In 2006, 16.2 per cent of women who gave birth in the ACT were not residents. **na** Not available.

Source: State and Territory governments (unpublished).

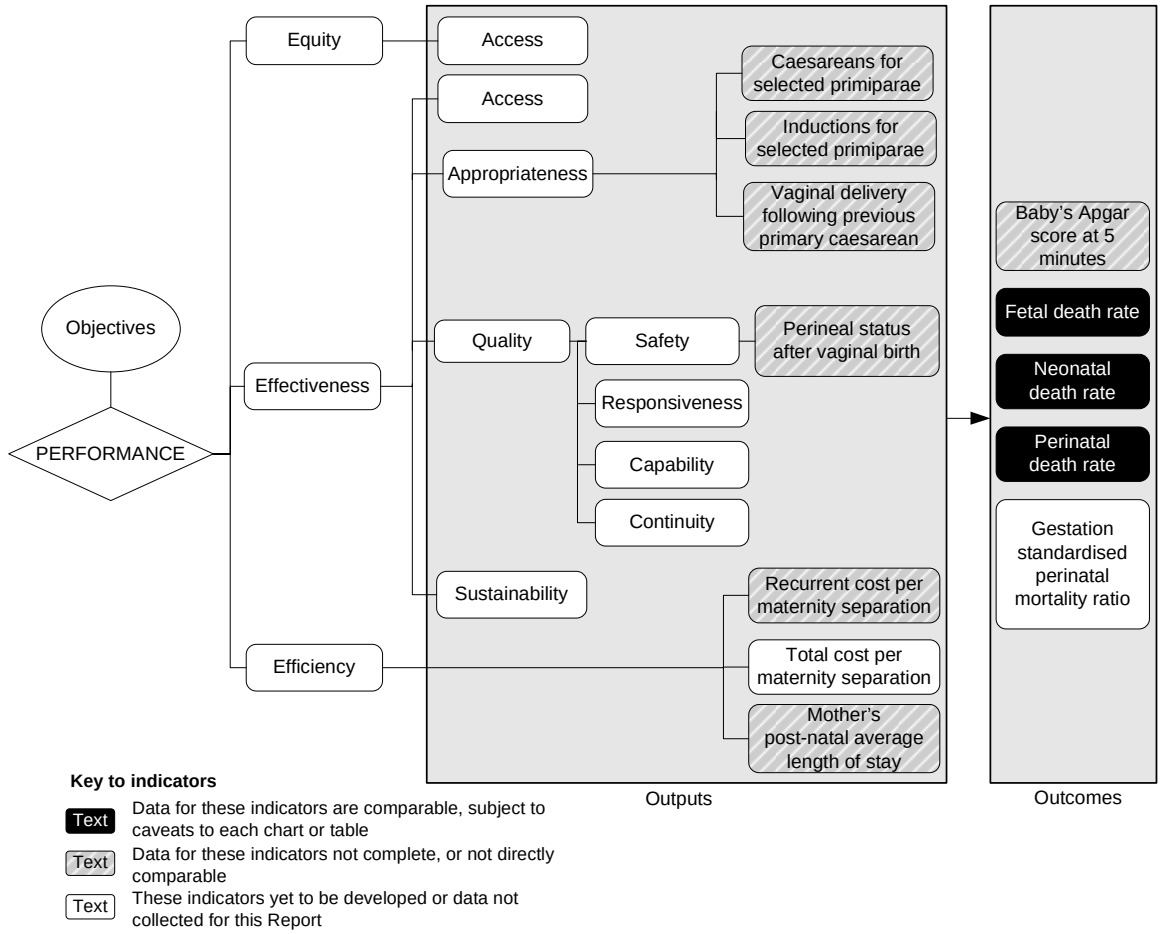
10.5 Framework of performance indicators for maternity services

The performance framework for maternity services is outlined in figure 10.25, and has the same objectives as those for public hospitals in general. The framework is under development by the Steering Committee and, as with all the performance indicator frameworks, will be subject to regular review. The performance indicator framework shows which data are comparable in the 2008 Report. For data that are not considered directly comparable, the text includes relevant caveats and supporting commentary. Chapter 1 discusses data comparability from a Report-wide perspective (see section 1.6). The 'Health preface' explains the performance indicator framework for health services as a whole, including the subdimensions for quality and sustainability that have been added to the standard Review framework for health services.

This year the 'Gestation standardised perinatal mortality ratio' (GSPMR) has replaced the 'Rate of survival to 28 days of very low birthweight babies', but no data were available for this Report. This measure of perinatal mortality is risk-adjusted to enable hospitals with higher proportions of low gestation infants

(and therefore a higher likelihood of perinatal mortality) to be validly compared with hospitals with a different casemix (DHS 2007).

Figure 10.25 **Performance indicators for maternity services**



10.6 Key performance indicator results for maternity services

Outputs

Outputs are the actual services delivered (while outcomes are the impact of these services on the status of an individual or group) (see chapter 1, section 1.5).

Equity — access

The Steering Committee has identified equity of access as an area for development in future reports. Equity of access indicators will measure access to maternity services by special needs groups such as Indigenous people or people in rural and remote areas.

Effectiveness — access

The Steering Committee has identified the effectiveness of access to maternity services as an area for development in future reports. Effectiveness of access indicators will measure access to appropriate services for the population as a whole, particularly in terms of affordability and/or timeliness.

Effectiveness — appropriateness

Caesareans and inductions for selected primiparae

'Caesareans for selected primiparae' and 'Inductions for selected primiparae' are indicators of the appropriateness of maternity services in public hospitals (box 10.22).

Box 10.22 **Caesareans and inductions for selected primiparae**

Labour inductions and birth by caesarean section are interventions that are appropriate in some circumstances, depending on the health and wellbeing of mothers and babies.

Caesareans and inductions for selected primiparae are reported for women aged between 25 and 29 years who have had no previous deliveries, with a vertex presentation (that is, the crown of the baby's head is at the lower segment of the mother's uterus) and a gestation length of 37 to 41 weeks. This group is considered to be low risk parturients [a], so caesarean or induction rates should be low in their population.

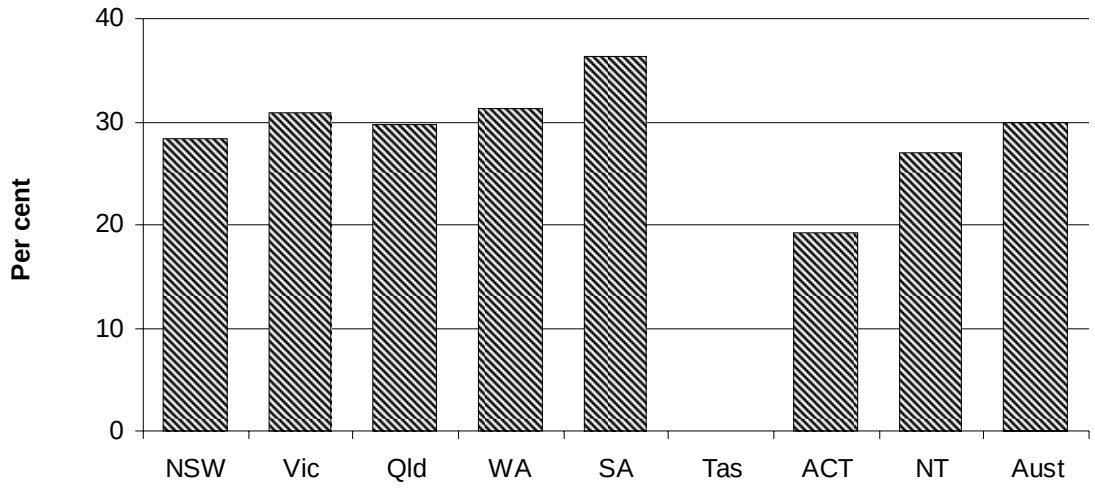
These indicators are defined as the number of inductions or caesareans for the selected primiparae divided respectively by the number of the selected primiparae who give birth. High intervention rates may indicate a need for investigation.

[a] Parturient means 'about to give birth'. Primiparae refers to pregnant women who have had no previous pregnancy resulting in a live birth or stillbirth (Laws and Sullivan 2004).

Induction rates for selected primiparae in public hospitals are reported in figure 10.26. Induction rates for private hospitals are shown in table 10A.85 for comparison. They are higher than the rate for public hospitals in all jurisdictions for

which data are available. Data for all jurisdictions for earlier years are included in tables 10A.86–93.

Figure 10.26 **Inductions for selected primiparae, public hospitals, 2006**[a, b, c]

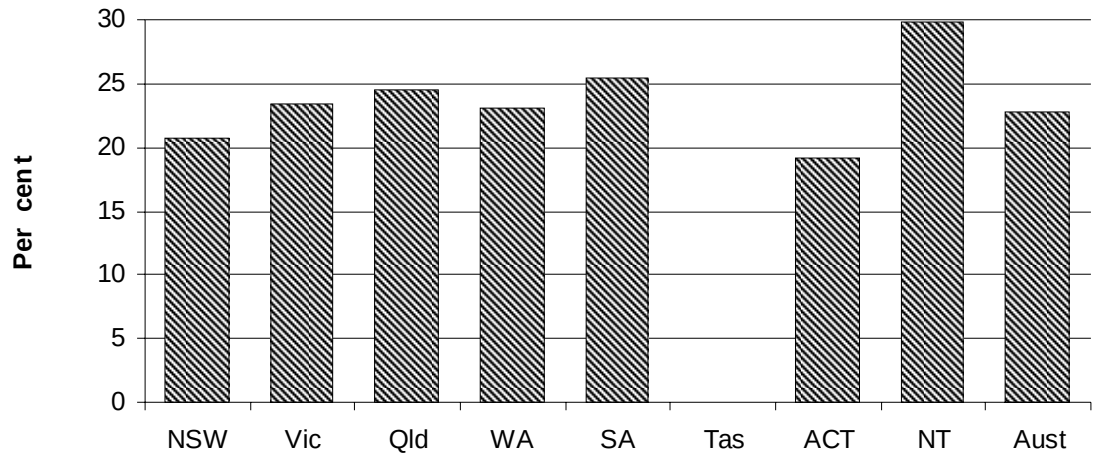


a Data for Tasmania are not available. **b** ACT data are preliminary. Care must be taken when interpreting percentages as these data include both ACT and non-ACT residents where the birth occurred in the ACT. In 2006, 16.2 per cent of women who gave birth in the ACT were not residents. **c** Rate for Australia includes only jurisdictions for which data are available.

Source: State and Territory governments (unpublished); table 10A.85.

Caesarean rates for selected primiparae in public hospitals are reported in figure 10.27. Caesarean rates for private hospitals are shown in table 10A.85 for comparison. They are higher than the rate for public hospitals in all jurisdictions for which data are available. Data for all jurisdictions for earlier years are included in tables 10A.86–93.

Figure 10.27 **Caesareans for selected primiparae, public hospitals, 2006**[a, b, c]



a Data for Tasmania are not available. **b** ACT data are preliminary. Care must be taken when interpreting percentages as these data include both ACT and non-ACT residents where the birth occurred in the ACT. In 2006, 16.2 per cent of women who gave birth in the ACT were not residents. **c** Rate for Australia includes only jurisdictions for which data are available.

Source: State and Territory governments (unpublished); table 10A.85.

Vaginal birth following previous primary caesarean

'Vaginal birth following previous primary caesarean' is an indicator of the appropriateness of maternity services in public hospitals (box 10.23).

Box 10.23 **Vaginal birth following previous primary caesarean**

Birth by caesarean section is appropriate in some circumstances related to the health and wellbeing of mothers and babies. It may also be undertaken inappropriately, resulting in overmedicalisation of labour, poorer health outcomes and/or unnecessary costs.

The rate of 'vaginal delivery following previous primary caesarean section' is defined as the number of women delivering vaginally following a previous primary (first) caesarean section, as a proportion of the total number of women delivering who have had a previous primary caesarean section and no intervening pregnancies of longer than 20 weeks gestation (ACHS 2002).

Interpretation of this indicator is ambiguous. There is ongoing debate about the relative risk to both mother and baby of a repeat caesarean section compared with a vaginal birth following a previous primary caesarean. Low rates of vaginal birth following a previous primary caesarean may warrant investigation, or on the other hand, they may indicate appropriate clinical caution. When interpreting this indicator, emphasis needs to be given to the potential for improvement.

Data for 'vaginal birth following a previous primary caesarean' are sourced from the ACHS Comparative Report Service (Clinical Indicators) and collected for internal clinical review by individual hospitals. The ACHS data are predominantly used to demonstrate the potential for improvement across Australian hospitals if all hospitals could achieve the same outcomes as those of hospitals with the best outcomes for patients. Statewide conclusions cannot be drawn from the data because healthcare organisations contribute to the ACHS on a voluntary basis, so the data are not necessarily drawn from representative samples (box 10.7). Estimated rates should be viewed in the context of the statistical (standard) errors. High standard errors signal that data are potentially unreliable. The statistical terms used to describe this indicator are explained in box 10.9.

The mean rates of 'vaginal birth following a primary caesarean' in 2006 are shown in table 10.18 for jurisdictions with more than five hospitals reporting to the ACHS Comparative Report Service. The coverage of the ACHS data may differ across these states. Data for Tasmania, the ACT and the NT are not reported separately because fewer than five hospitals reported 'vaginal birth following a primary caesarean' in each of those jurisdictions.

Nationally, among all public hospitals participating in the ACHS Comparative Report Service in 2006, the mean rate of 'vaginal birth following a previous primary caesarean' was 16.6 per 100 deliveries (table 10.18). Given the uncertainty regarding whether high/low rates of vaginal birth following a previous primary caesarean are desirable, this Report does not include potential centile gains for this indicator.

Table 10.18 Vaginal births following previous primary caesarean, public hospitals, 2006[a, b]

	Unit	*Results*
National rate	(%)	16.6
National performance at 80th centile (rate)	(%)	19.9
National performance at 20th centile (rate)	(%)	12.4
NSW		
Numerator (no. of VBACs)	no.	542
Denominator (no. of DACs)	no.	3 387
Rate	%	16.0
Standard error (±)		0.7
ACHS reporting hospitals	no.	36
Victoria		
Numerator (no. of VBACs)	no.	389
Denominator (no. of DACs)	no.	2 413
Rate	%	16.1
Standard error (±)		0.8
ACHS reporting hospitals	no.	23
Queensland		
Numerator (no. of VBACs)	no.	230
Denominator (no. of DACs)	no.	1 383
Rate	%	16.6
Standard error (±)		1.0
ACHS reporting hospitals	no.	10
WA		
Numerator (no. of VBACs)	no.	209
Denominator (no. of DACs)	no.	1 176
Rate	%	17.8
Standard error (±)		1.1
ACHS reporting hospitals	no.	11
SA		
Numerator (no. of VBACs)	no.	239
Denominator (no. of DACs)	no.	1 308
Rate	%	18.3
Standard error (±)		1.1
ACHS reporting hospitals	no.	12

VBAC = vaginal birth following primary caesarean. DAC = delivery following primary caesarean. **a** Defined as the number of patients delivering vaginally following a previous primary caesarean section divided by the total number of patients delivering who had a previous primary caesarean section and no intervening pregnancies of longer than 20 weeks gestation. **b** The ACHS data are not designed to measure the performance of states and territories, but are for internal clinical review by individual hospitals. In addition, health organisations contribute data voluntarily to the ACHS, so the samples are not necessarily representative of all hospitals in each jurisdiction. As a result, statewide comparisons and conclusions regarding the performance of individual states cannot be drawn.

Source: ACHS (unpublished); tables 10A.94, 10A.95, 10A.96, 10A.97 and 10A.98.

Effectiveness — quality

The Steering Committee has identified four subdimensions of quality for health services: safety; responsiveness; capability; and continuity. For maternity services in this Report, data are reported against the subdimension of safety only. Other subdimensions of quality have been identified by the Steering Committee for future development.

Safety — perineal status after vaginal birth

'Perineal status after vaginal birth' is an indicator of the safety of maternity services (box 10.24).

Box 10.24 **Perineal status after vaginal birth**

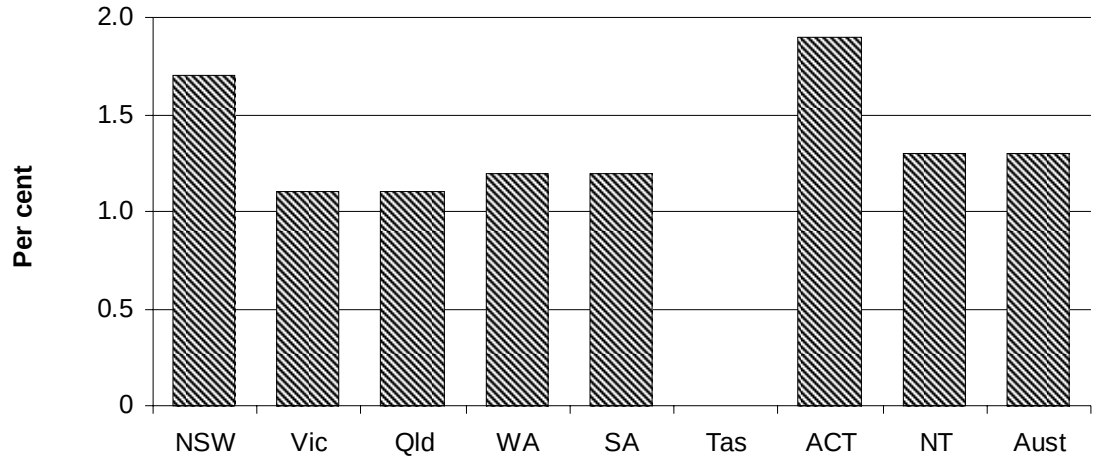
'Perineal status after vaginal birth' is an indicator of governments' objective to provide safe and high quality services. Perineal lacerations caused by childbirth are painful, take time to heal and may result in ongoing discomfort and debilitating conditions such as faecal incontinence. Maternity services staff aim to minimise lacerations, particularly more severe lacerations (third and fourth degree), through labour management practices.

'Perineal status after vaginal birth' is the state of the perineum following a vaginal birth (NHDC 2003). A third or fourth degree laceration is a perineal laceration or rupture (or tear following episiotomy) extending to, or beyond, the anal sphincter (see section 10.8 for definitions) (NCCH 1998).

Severe lacerations (third and fourth degree laceration) of the perineum are not avoidable in all cases and so safe labour management is associated with a low (rather than zero) proportion of third or fourth degree lacerations.

The proportion of mothers with third or fourth degree lacerations to their perineum following vaginal births is shown in figure 10.28. More information on 'perineal status after vaginal birth' (including the proportion of mothers with intact perineum following vaginal births) is contained in attachment table 10A.99.

Figure 10.28 **Perineal status — mothers with third or fourth degree lacerations after vaginal births, 2004**[a, b, c, d]



a For multiple births, the perineal status after birth of the first child was used. **b** Data for Tasmania are not available in a form that are comparable with other jurisdictions. **c** Data include all women who gave birth vaginally, including births in public hospitals, private hospitals and outside of hospital, such as homebirths. **d** ACT data are preliminary. Care must be taken when interpreting percentages as these data include both ACT and non-ACT residents where the birth occurred in the ACT. In 2006, 16.2 per cent of women who gave birth in the ACT were not residents.

Source: Laws, Grayson and Sullivan (2006); table 10A.99.

Responsiveness

The Steering Committee has identified the responsiveness of maternity services as an area for development in future reports. While there is currently no indicator for the responsiveness of maternity services, the patient satisfaction surveys reported earlier in this chapter generally cover maternity patients.

Capability

The Steering Committee has identified the capability of maternity services as an area for development in future reports.

Continuity

The Steering Committee has identified the continuity of care provided by maternity services as an area for development in future reports.

Effectiveness — sustainability

The Steering Committee has identified the sustainability of maternity services as an area for development in future reports.

Efficiency

Recurrent cost per maternity separation

'Recurrent cost per maternity separation' is an indicator of the efficiency of maternity services in public hospitals (box 10.25).

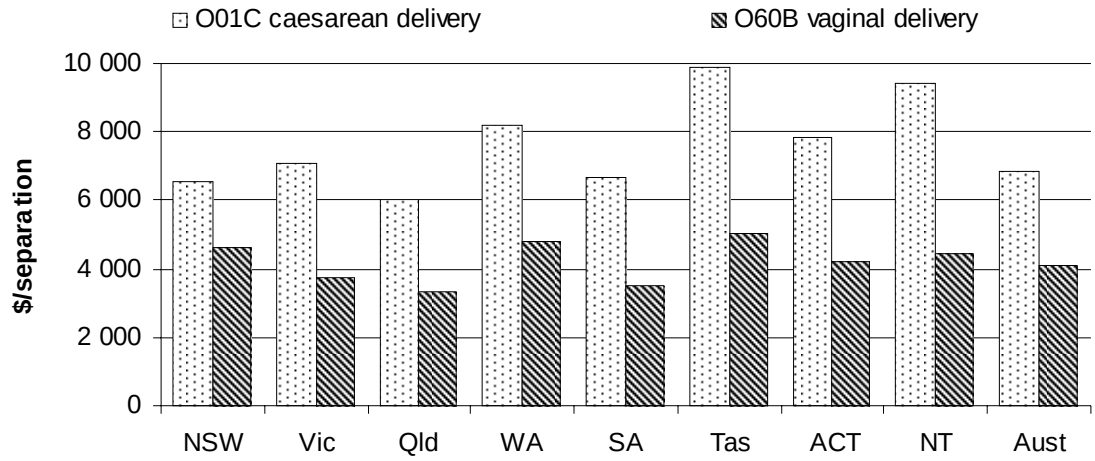
Box 10.25 **Recurrent cost per maternity separation**

'Recurrent cost per maternity separation' is an indicator of governments' objective to deliver cost effective services. It is presented for the two AR-DRGs (version 5.0) that account for the largest number of maternity patient days: caesarean delivery without catastrophic or severe complications and comorbidities; and vaginal delivery without catastrophic or severe complications and comorbidities.

Lower 'recurrent costs per maternity separation' may reflect higher efficiency in providing maternity services to admitted patients. However, this is only likely to be the case where the low cost maternity services are provided at equal or superior effectiveness.

Data are reported for the two most common maternity AR-DRGs: caesarean delivery without catastrophic or severe complications and comorbidities; and vaginal delivery without catastrophic or severe complications and comorbidities (figure 10.29). Data for a number of other maternity related AR-DRGs are shown in table 10A.100. Data are sourced from the NHCDC. The NHCDC is a voluntary annual collection, the purpose of which is to calculate between-DRG cost weights. The samples are not necessarily representative of the set of hospitals in each jurisdiction. An estimation process has been carried out to create representative national activity figures from the sample data.

Figure 10.29 **Estimated average cost per separation for selected maternity related AR-DRGs, public hospitals, 2005-06**[a, b]



a Includes AR-DRG O01C caesarean delivery without catastrophic or severe complications and comorbidities and AR-DRG O60B vaginal delivery without catastrophic or severe complications and comorbidities. **b** Average cost is affected by a number of factors including admission practices, sample size, remoteness and the types of hospital contributing to the collection. Direct comparisons between jurisdictions are difficult because there are differences in hospital costing systems.

Source: DoHA, *NHCDC, Round 10* (2007); table 10A.100.

Total cost per maternity separation

The Steering Committee has identified the 'total cost per maternity separation' (recurrent cost plus capital cost) as an indicator of the efficiency of public hospital maternity services, but no data are available for this Report (box 10.26).

Box 10.26 **Total cost per maternity separation**

The Steering Committee has agreed to develop an indicator of the 'total cost per maternity separation' as a measure of the efficiency of public hospital maternity services. A method for calculating the capital cost component of the 'total cost per maternity separation' indicator has not yet been determined, so no data can be reported.

Mothers average length of stay

'Mothers average length of stay in hospital' is an indicator of the efficiency of maternity services in public hospitals (box 10.27). Data are reported for the two most common maternity AR-DRGs: caesarean delivery without catastrophic or

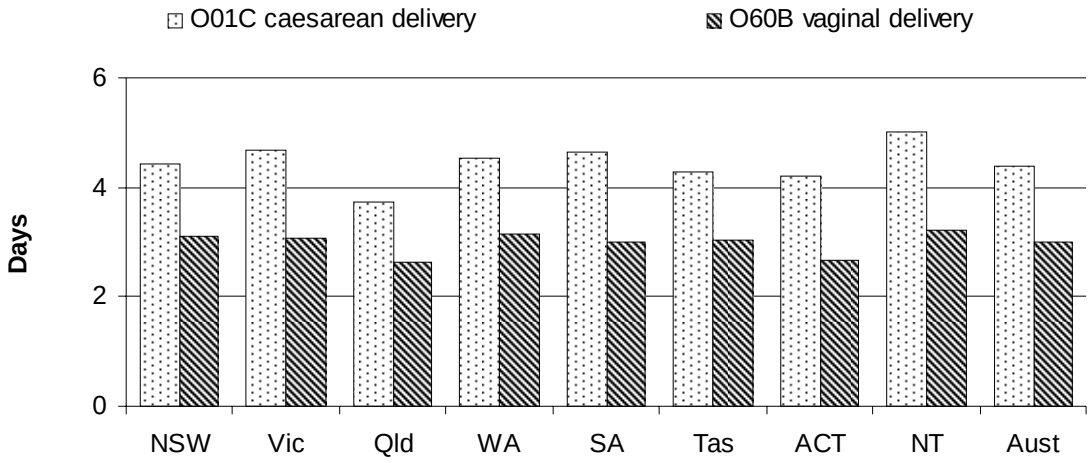
severe complications and comorbidities; and vaginal delivery without catastrophic or severe complications and comorbidities (figure 10.30).

Box 10.27 **Mothers average length of stay**

'Mothers average length of stay' is an indicator of governments' objective to deliver services efficiently. Mother's average length of stay is defined as the total number of patient days for the selected maternity AR-DRG (version 5.0), divided by the number of separations for that AR-DRG.

Shorter stays for mothers reduce hospital costs but whether they represent genuine efficiency improvements depends on a number of factors. Shorter stays may, for example, have an adverse effect on the health of some mothers and result in additional costs for in-home care. The indicator is not adjusted for multiple births born vaginally and without complications but requiring a longer stay to manage breastfeeding.

Figure 10.30 **Average length of stay for selected maternity-related AR-DRGs, public hospitals, 2005-06**[a]



[a] Includes AR-DRG O01C caesarean delivery without catastrophic or severe complications and comorbidities and AR-DRG O60B vaginal delivery without catastrophic or severe complications and comorbidities.

Source: DoHA, *NHCDC, Round 10* (2007); table 10A.100.

Outcomes

Outcomes are the impact of services on the status of an individual or group (while outputs are the actual services delivered) (see chapter 1, section 1.5).

Apgar score

'Apgar score of babies at five minutes after birth' is an indicator of the outcomes of maternity services (box 10.28). 'Low' Apgar scores for babies by birthweight category are contained in table 10.19. The range of Apgar scores for 2002 to 2006 are reported in table 10A.101.

Box 10.28 **Apgar score at five minutes**

'Apgar score at five minutes' is an indicator of governments' objective to deliver maternity services that are safe and of high quality. The Apgar score is a numerical score that indicates a baby's condition shortly after birth. Apgar scores are based on an assessment of the baby's heart rate, breathing, colour, muscle tone and reflex irritability. Between 0 and 2 points are given for each of these five characteristics and the total score is between 0 and 10. The Apgar score is routinely assessed at one and five minutes after birth, and subsequently at five minute intervals if it is still low at five minutes (Day et al. 1999). The future health of babies with lower Apgar scores is often poorer than those with higher scores.

Low Apgar scores (defined as less than 4) are strongly associated with babies' birthweights being low. The management of labour in hospitals does not usually affect birthweights, but can affect the prevalence of low Apgar scores for babies with similar birthweights. Within birthweight categories therefore, Apgar scores may indicate relative performance.

This indicator is defined as the number of live births with an Apgar score of 3 or less, at five minutes post-delivery, as a proportion of the total number of live births by specified birthweight categories.

Factors other than hospital maternity services can influence Apgar scores within birthweight categories — for example antenatal care, multiple births and socioeconomic factors.

Table 10.19 **Live births with an Apgar score of 3 or lower, five minutes post-delivery, public hospitals, 2006**

Birthweight (grams)	*Unit*	*NSW*	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*ACT*[a]	*NT*
Less than 1500	no.	1 014	455	579	252	196	na	64	52
Low Apgar	%	14.3	15.0	16.4	8.0	6.6	..	17.2	17.3
1500-1999	no.	1 012	641	579	265	193	na	64	56
Low Apgar	%	1.3	1.3	1.0	0.4	–	..	–	5.4
2000-2499	no.	2 872	2 042	1 659	715	616	na	163	187
Low Apgar	%	0.5	0.5	0.4	0.7	0.5	..	1.2	–
2500 and over	no.	64 305	44 192	35 766	15 631	12 538	na	2 962	2 637
Low Apgar	%	0.2	0.1	0.1	0.1	0.1	..	0.2	0.2

a ACT data are preliminary. Care must be taken when interpreting percentages as these data include both ACT and non-ACT residents where the birth occurred in the ACT. In 2006, 16.2 per cent of women who gave birth in the ACT were not residents. **na** Not available. .. Not applicable. – Nil or rounded to zero.

Source: State and Territory governments (unpublished); table 10A.101.

Fetal death rate

The 'fetal death rate' is an indicator of the outcomes of maternity services (box 10.29).

Box 10.29 **Fetal death rate**

Fetal death (stillbirth) is the birth of a child who did not at any time after delivery breathe or show any other evidence of life, such as a heartbeat. Fetal deaths by definition include only infants weighing at least 400 grams or of a gestational age of at least 20 weeks.

'Fetal death rate' is reported as an indicator because maternity services for admitted patients have some potential to reduce the likelihood of fetal deaths. However, this potential is limited and other factors (such as the health of mothers and the progress of pregnancy before hospital admission) are also important.

The 'fetal death rate' is calculated as the number of fetal deaths divided by the total number of births (live births and fetal deaths combined), by state or territory of usual residence of the mother. The rate of fetal deaths is expressed per 1000 total births. This indicator is also reported by the Indigenous status of the mother.

(Continued on next page)

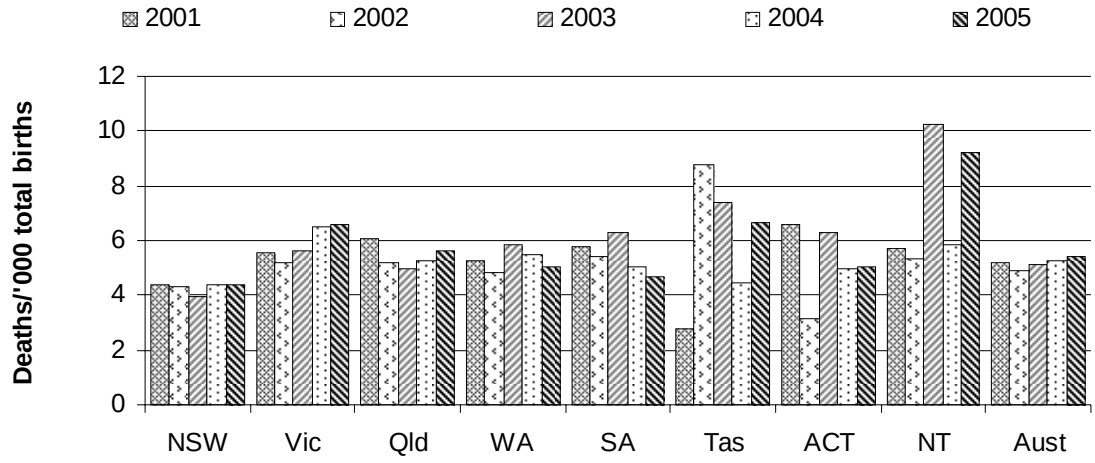
Box 10.29 **(Continued)**

Low fetal death rates may indicate high quality maternity services. In jurisdictions where the number of fetal deaths is low, small annual fluctuations in the number affect the annual rate of fetal deaths.

Differences in the 'fetal death rate' between jurisdictions are likely to be due to factors outside the control of maternity services for admitted patients. To the extent that the health system influences fetal death rates, the health services that may have an influence include outpatient services, general practice services and maternity services.

Fetal death rates are reported in figure 10.31. Nationally, fetal death rates remained stable over the period 2001–2005 although there was variation over this period in some jurisdictions (these annual fluctuations are generally a result of the low incidence of fetal deaths and small populations). National time series for fetal death rates for the period 1993 to 2005 are included in table 10A.104. Fetal deaths rates by the Indigenous status of the mother are shown in figure 10.34.

Figure 10.31 **Fetal death rate**[a, b]



a Statistics relate to the number of deaths registered — not those that occurred — in the years shown. The ABS estimates that about 5–6 per cent of deaths occurring in one year are not registered until the following year or later. These data may differ, therefore, from other published sources (such as AIHW or State and Territory government publications). **b** Annual rates fluctuate (in particular, for smaller jurisdictions) as a result of a low incidence of fetal deaths and small populations.

Source: ABS (unpublished*) Causes of Death*, Cat. no. 3303.0; table 10A.102.

Neonatal death rate

The 'neonatal death rate' is an indicator of the outcomes of maternity services (box 10.30).

Box 10.30 **Neonatal death rate**

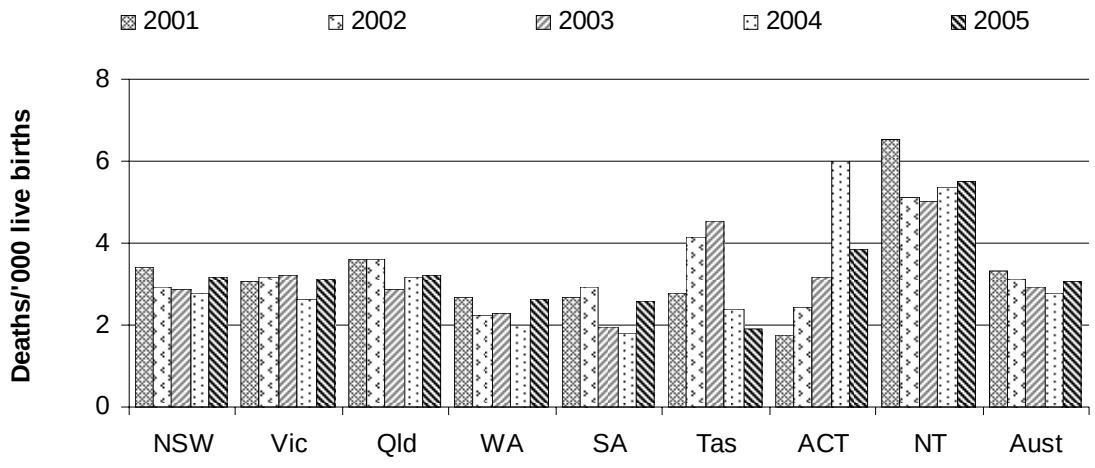
Neonatal death is the death of a live born infant within 28 days of birth (see section 10.8 for a definition of a live birth). As for fetal deaths, a range of factors contribute to neonatal deaths. However, the influence of maternity services for admitted patients is greater for neonatal deaths than for fetal deaths, through the management of labour and the care of sick and premature babies.

The 'neonatal death rate' is calculated as the number of neonatal deaths divided by the number of live births registered. The rate of neonatal deaths is expressed per 1000 live births, by state or territory of usual residence of the mother. This indicator is also reported by the Indigenous status of the mother.

Low 'neonatal death rates' may indicate high quality maternity services. The rate tends to be higher among premature babies, so a lower neonatal death rate may also indicate a lower percentage of pre-term births.

Neonatal death rates are reported in figure 10.32. Nationally, neonatal death rates generally declined over the period 2001–2004 with a small increase in 2005, although there was variation over this period in some jurisdictions (these annual fluctuations are generally a result of the low incidence of neonatal deaths and small populations). National time series for neonatal death rates for the period 1993 to 2005 are included in table 10A.104. Neonatal death rates by the Indigenous status of the mother are shown in figure 10.34.

Figure 10.32 **Neonatal death rate**[a, b]



a Statistics relate to the number of deaths registered — not those that occurred — in the years shown. The ABS estimates that about 5–6 per cent of deaths occurring in one year are not registered until the following year or later. These data may differ, therefore, from other published sources (such as AIHW or State and Territory government publications). **b** Annual rates fluctuate (in particular, for smaller jurisdictions) as a result of a low incidence of neonatal deaths and small populations.

Source: ABS (unpublished) *Causes of Death*, Cat. no. 3303.0; table 10A.103.

Perinatal death rate

The 'perinatal death rate' is an indicator of the outcomes of maternity services (box 10.31). Perinatal death rates are shown in figure 10.33. Perinatal death rates by the Indigenous status of the mother are shown in figure 10.34. National time series for perinatal death rates for the period 1993 to 2005 are included in table 10A.104.

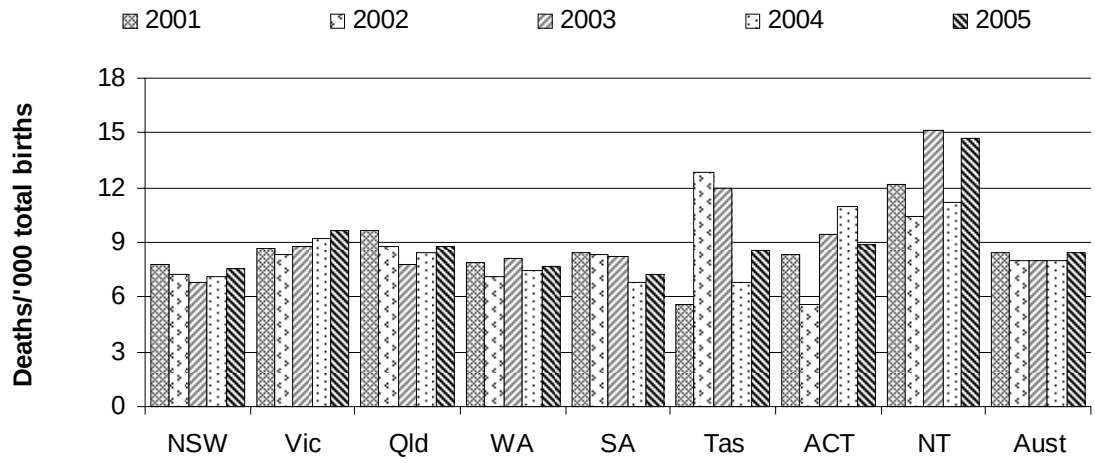
Box 10.31 **Perinatal death rate**

A perinatal death is a fetal or neonatal death (boxes 10.29 and 10.30).

The 'perinatal death rate' is calculated as the number of perinatal deaths divided by the total number of births (live births registered and fetal deaths combined) in each jurisdiction. It is expressed per 1000 total births. This indicator is also reported by the Indigenous status of the mother.

The caveats that apply to fetal and neonatal death rates also apply to perinatal death rates.

Figure 10.33 **Perinatal death rate**[a, b]



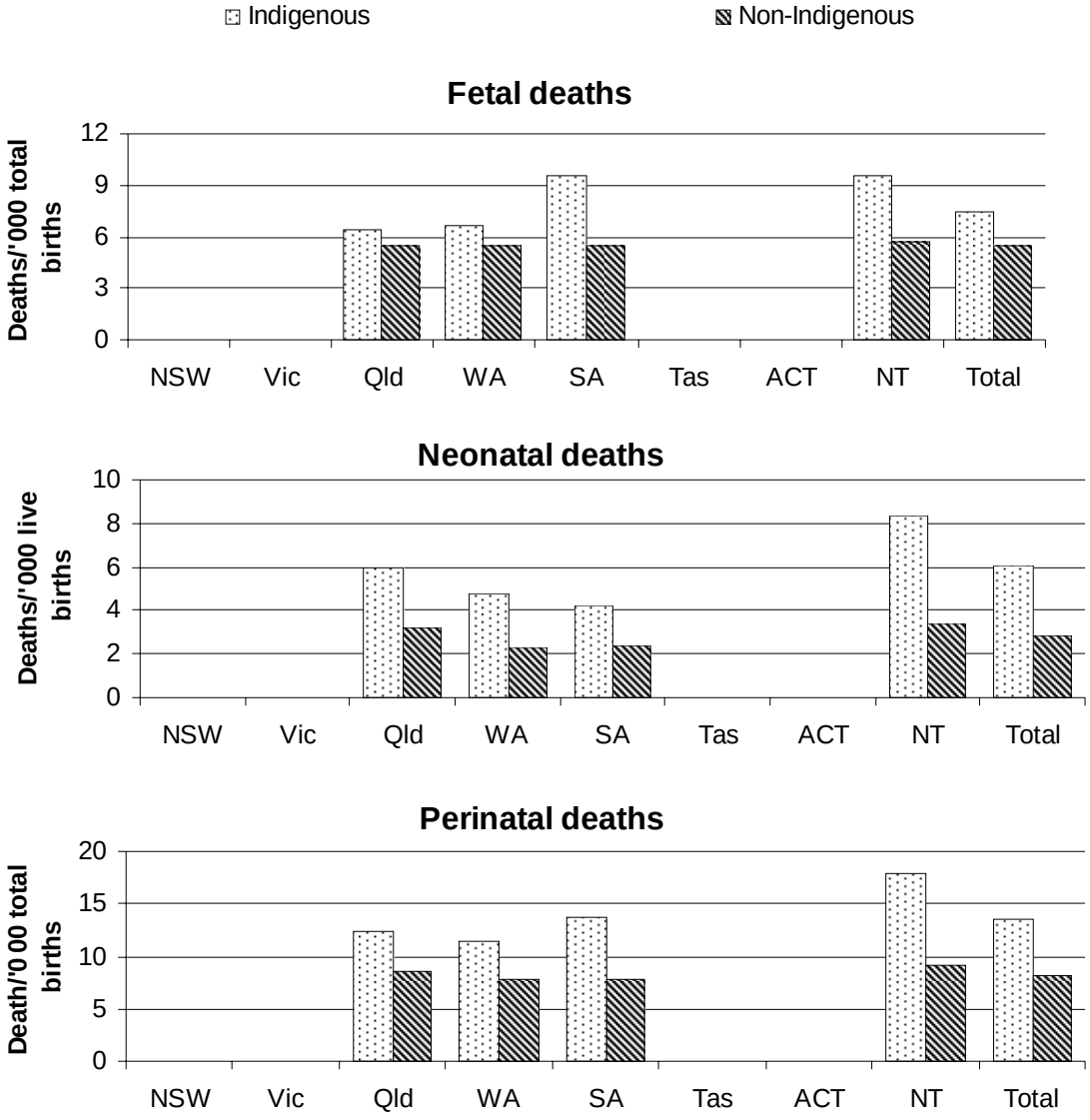
a Statistics relate to the number of deaths registered — not those that occurred — in the years shown. The ABS estimates that about 5–6 per cent of deaths occurring in one year are not registered until the following year or later. These data may differ, therefore, from other published sources (such as AIHW or State and Territory government publications). **b** Annual rates fluctuate (in particular, for smaller jurisdictions) as a result of a low incidence of perinatal deaths.

Source: ABS (unpublished) *Causes of Death*, Cat. no. 3303.0; table 10A.105.

Fetal, neonatal and perinatal deaths for Indigenous people

Fetal, neonatal and perinatal deaths data by the Indigenous status of the mother are available for Queensland, WA, SA and the NT only. Data are for the period 2001–2005 combined. Data for other jurisdictions are not included due to small numbers or poor coverage rates (ABS 2004). In those jurisdictions for which data are available, the fetal, neonatal and perinatal death rates for Indigenous people are higher than those for non-Indigenous people (figure 10.34).

Figure 10.34 **Fetal, neonatal and perinatal deaths, by Indigenous status of mother, 2001–2005**[a]



[a] The total relates to those jurisdictions for which data are published. Data are not available for other jurisdictions.

Source: ABS (unpublished) *Causes of Death*, Cat. no. 3303.0; table 10A.106.

Gestation standardised perinatal mortality ratio

The Steering Committee has identified GSPMR an indicator of the outcomes of maternity services (box 10.32). No data for this indicator are currently available.

Box 10.32 **Gestation standardised perinatal mortality ratio**

This measure of perinatal mortality (box 10.31) is standardised according to gestational age. It excludes infants less than 20 weeks gestation or where gestation is unknown, weighing less than 400 grams, terminations of pregnancy and deaths due to congenital malformations (DHS 2007). This indicator has been identified for development and reporting in the future. Data were not available for the 2008 Report.

10.7 Future directions in performance reporting

Priorities for future reporting on public hospitals and maternity services include the following:

- Improving the comprehensiveness of reporting by filling in gaps in the performance indicator frameworks. Important gaps in reporting for public hospitals include indicators of equity of access to services for special needs groups (particularly Indigenous people), and indicators of continuity of care. Gaps in the maternity services framework include equity of access, effectiveness of access, three aspects of quality — responsiveness, capability and continuity — and the effectiveness subdimension of sustainability.
- Improving currently reported indicators for public hospitals and maternity services where data are not complete or not directly comparable. There is scope to improve reporting of the quality and access dimensions of the public hospitals framework, and the output indicators for maternity services.

The Steering Committee is seeking to improve the reporting of elective surgery waiting times by urgency category in order to achieve greater comparability across jurisdictions in assessing the extent to which patients are seen within a clinically desirable period.

The Steering Committee is seeking to improve the reporting of hospital accreditation in order to provide more meaningful comparative information about the capability of public hospitals across jurisdictions. The ACSQHC is currently undertaking a review of safety and quality accreditation standards in Australia with a view to recommending an alternative model for accreditation including a national set of health standards by which health services would be assessed. The outcomes of the review may inform options for future reporting in this area.

10.8 Definitions of key terms and indicators

Accreditation	Professional recognition awarded to hospitals and other healthcare facilities that meet defined industry standards. Public hospitals may seek accreditation through the ACHS Evaluation and Quality Improvement Program, the Australian Quality Council (now known as Business Excellence Australia), the Quality Improvement Council, the International Organisation for Standardization 9000 Quality Management System or other equivalent programs.
Acute care	Clinical services provided to admitted or non-admitted 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.
Admitted patient	A patient who has undergone a formal admission process in a public hospital to begin an episode of care. Admitted patients may receive acute, sub-acute or non-acute care services.
Admitted patient cost proportion	The ratio of admitted patient costs to total hospital costs, also known as the inpatient fraction.
Allied health (non-admitted)	Occasions of service to non-admitted patients at units/clinics providing treatment/counselling to patients. These include units providing physiotherapy, speech therapy, family planning, dietary advice, optometry and occupational therapy.
Apgar score	Numerical score used to evaluate a baby's condition after birth. The definition of the reported indicator is the number of babies born with an Apgar score of 3 or lower at 5 minutes post delivery, as a proportion of the total number of babies born. Excludes fetal deaths in utero before commencement of labour.
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 version 5.0 is based on the ICD-10-AM classification.
Average length of stay	The mean length of stay for all patient episodes, calculated by dividing total occupied bed days by total episodes of care.
Caesarean section	Operative birth through an abdominal incision.
Casemix adjusted	Adjustment of data on cases treated to account for the number and type of cases. Cases are sorted by AR-DRG into categories of patients with similar clinical conditions and requiring similar hospital services. Casemix adjustment is an important step to achieving comparable measures of efficiency across hospitals and jurisdictions.
Casemix adjusted separations	The number of separations adjusted to account for differences across hospitals in the complexity of episodes of care.
Catastrophic	An acute or prolonged illness usually considered to be life threatening or with the threat of serious residual disability. Treatment may be radical and is frequently costly.
Community health services	Health services for individuals and groups delivered in a community setting, rather than via hospitals or private facilities.
Cost of capital	The return foregone on the next best investment, estimated at a rate of 8 per cent of the depreciated replacement value of buildings,

	equipment and land. Also called the 'opportunity cost' of capital.
Cost per casemix adjusted separation	Recurrent expenditure multiplied by the inpatient fraction and divided by the total number of casemix-adjusted separations plus estimated private patient medical costs.
Cost per non-admitted occasion of service	Recurrent expenditure divided by the inpatient fraction and divided by the total number of non-admitted occasions of service.
Elective surgery waiting times	The time elapsed for a patient on the elective surgery waiting list, from the date on which he or she was added to the waiting list for a procedure to admission or a designated census date.
Emergency department waiting times to service delivery	The time elapsed for each patient from presentation to the emergency department (that is, the time at which the patient is clerically registered or triaged, whichever occurs earlier) to the commencement of service by a treating medical officer or nurse.
Emergency department waiting times to admission	The time elapsed for each patient from presentation to the emergency department to admission to hospital.
Episiotomy	An obstetrics procedure. A surgical incision into the perineum and vagina to prevent traumatic tearing during delivery.
Fetal death	Delivery of a child who did not at any time after delivery breathe or show any other evidence of life, such as a heartbeat. Excludes infants that weigh less than 400 grams or that are of a gestational age of less than 20 weeks.
Fetal death rate	The number of fetal deaths divided by the total number of births (that is, by live births registered and fetal deaths combined).
General practice	The organisational structure with one or more GPs and other staff such as practice nurses. A general practice provides and supervises healthcare for a 'population' of patients and may include services for specific populations, such as women's health or Indigenous health.
ICD-10-AM	The Australian modification of the International Standard Classification of Diseases and Related Health Problems. This is the current classification of diagnoses and procedures in Australia.
Inpatient fraction	The ratio of admitted patient costs to total hospital costs, also known as the admitted patient cost proportion.
Labour cost per casemix-adjusted separation	Salary and wages plus visiting medical officer payments, multiplied by the inpatient fraction, divided by the number of casemix-adjusted separations.
Length of stay	The period from admission to separation less any days spent away from the hospital (leave days).
Live birth	Birth of a child who, after delivery, breathes or shows any other evidence of life, such as a heartbeat. Includes all registered live births regardless of birthweight.
Medicare	Australian Government funding of private medical and optometrical services (under the Medicare Benefits Schedule). Sometimes defined to include other forms of Australian Government funding such as subsidisation of selected pharmaceuticals (under the Pharmaceutical Benefits Scheme) and public hospital funding (under the Australian Health Care Agreements), which provides public hospital services free of charge to public patients.

Mortality rate	The number of deaths per 100 000 people.
Neonatal death	Death of a live born infant within 28 days of birth. Defined in Australia as the death of an infant that weighs at least 400 grams or that is of a gestational age of at least 20 weeks.
Neonatal death rate	Neonatal deaths divided by the number of live births registered.
Nursing workforce	Registered and enrolled nurses who are employed in nursing, on extended leave or looking for work in nursing.
Medical practitioner workforce	Registered medical practitioners who are employed as medical practitioners, on extended leave or looking for work as a medical practitioner.
Non-acute episode of care	Clinical services provided to admitted and non-admitted patients, including planned geriatric respite, palliative care, geriatric evaluation and management and services for nursing home type patients. Clinical services delivery by designated psychiatric or psychogeriatric units, designated rehabilitation units and mothercraft services are also considered non-acute.
Non-admitted occasions of service	Occasion of examination, consultation, treatment or other service provided to a non-admitted patient in a functional unit of a health service establishment. 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.
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.
Perinatal death	Fetal death or neonatal death of an infant that weighs at least 400 grams or that is of a gestational age of at least 20 weeks.
Perinatal death rate	Perinatal deaths divided by the total number of births (that is, live births registered and fetal deaths combined).
Perineal laceration (third or fourth degree)	A 'third degree' laceration or rupture during birth (or a tear following episiotomy) involves the anal sphincter, rectovaginal septum and sphincter NOS. A 'fourth degree' laceration, rupture or tear also involves the anal mucosa and rectal mucosa (NCCH 1998).
Perineal status	The state of the perineum following a birth.
Pre-anaesthetic consultation rate	The number of procedures where there is documented evidence that the patient has seen an anaesthetist before entering the operating theatre suite, anaesthetic room, or procedure room as a percentage of the total number of procedures with an anaesthetist in attendance (ACHS 2004).
Primary care	Essential healthcare based on practical, scientifically sound and socially acceptable methods made universally accessible to individuals and families in the community.
Primipara	Pregnant woman who has had no previous pregnancy resulting in a live birth or a still birth.
Public hospital	A hospital that provides free treatment and accommodation to eligible admitted persons who elect to be treated as public patients.

	It also provides free services to eligible non-admitted patients and may provide (and charge for) treatment and accommodation services to private patients. Charges to non-admitted patients and admitted patients on discharge may be levied in accordance with the Australian Health Care Agreements (for example, aids and appliances).
Puerperium	The period or state of confinement after labour.
Real expenditure	Actual expenditure adjusted for changes in prices.
Relative stay index	The actual number of patient days for acute care separations in selected AR–DRGs divided by the expected number of patient days adjusted for casemix. Includes acute care separations only. Excludes: patients who died or were transferred within 2 days of admission, or separations with length of stay greater than 120 days, AR-DRGs which are for 'rehabilitation', AR-DRGs which are predominantly same day (such as R63Z chemotherapy and L61Z admit for renal dialysis), AR DRGs which have a length of stay component in the definition, and error AR-DRGs.
Same day patients	A patient whose admission date is the same as the separation date.
Sentinel events	Adverse events that cause serious harm to patients and that have the potential to undermine public confidence in the healthcare system.
Separation	A total hospital stay (from admission to discharge, transfer or death) or a portion of a hospital stay beginning or ending in a change in the type of care for an admitted patient (for example, from acute to rehabilitation). Includes admitted patients who receive same day procedures (for example, renal dialysis).
Separation rate	Hospital separations per 1000 people or 100 000 people.
Selected primiparae	Primiparae with no previous deliveries, aged 25–29 years, singleton, vertex presentation and gestation of 37–41 weeks (inclusive).
Sub-acute and non-acute care	Clinical services provided to patients suffering from chronic illnesses or recovering from such illnesses. Services 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 non-acute.
Surgical site infection rate for selected surgical procedures	The number of surgical site infections for a selected procedure (hip and knee prosthesis, lower segment caesarean section or abdominal hysterectomy) performed during the surveillance period divided by the total number of the selected procedures performed during the surveillance period. Since 2003, the ACHS surgical site infection indicators have been collected in pairs, one for each of superficial and deep/organ space surgical site infections. An indirectly standardized rate was derived for each pair. The rate for each combined pair was estimated as the sum of the two rates (deep and superficial). The indirectly standardized rate for each State was calculated as: State rate = (sum of observed infections in State/sum of expected

	infections for State)*rate for indicator pair Where Rate of indicator pair = rate of superficial infection + rate of deep/organ infection.
Triage category	The urgency of the patient's need for medical and nursing care: category 1 — resuscitation (immediate within seconds) category 2 — emergency (within 10 minutes) category 3 — urgent (within 30 minutes) category 4 — semi-urgent (within 60 minutes) category 5 — non-urgent (within 120 minutes).
Unplanned hospital re-admission	An unexpected hospital admission for treatment of: the same condition for which the patient was previously hospitalised; a condition related to one for which the patient was previously hospitalised; or a complication of the condition for which the patient was previously hospitalised.
Unplanned hospital re-admission rate	The number of unplanned re-admissions to the same hospital within 28 days of separation, during the time period under study, divided by the total number of separations (excluding deaths) for the same time period, including day stay patients.
Urgency category for elective surgery	Category 1 patients — admission is desirable within 30 days for a condition that has the potential to deteriorate quickly to the point that it may become an emergency. Category 2 patients — admission is desirable within 90 days for a condition that is causing some pain, dysfunction or disability, but that is not likely to deteriorate quickly or become an emergency. Category 3 patients — admission at some time in the future is acceptable for a condition causing minimal or no pain, dysfunction or disability, that is unlikely to deteriorate quickly and that does not have the potential to become an emergency.

10.9 Attachment tables

Attachment tables are identified in references throughout this appendix by an 'A' suffix (for example, table 10A.3 is table 3 in the attachment). Attachment tables are provided on the CD-ROM enclosed with the Report and on the Review website (www.pc.gov.au/gsp). On the CD-ROM, the files containing the attachment tables are provided in Microsoft Excel format as \Publications\Reports\2008\Attach10A.xls and in Adobe PDF format as \Publications\Reports\2008\Attach10A.pdf. Users without access to the CD-ROM or the website can contact the Secretariat to obtain the attachment tables (see contact details on the inside front cover of the Report).

Table 10A.1	Recurrent expenditure, public hospitals (including psychiatric hospitals), current prices, ($ million)
Table 10A.2	Recurrent expenditure, public hospitals, by source of funding, 2005-06
Table 10A.3	Recurrent expenditure per person, public hospitals (including psychiatric) (2004-05 dollars)
Table 10A.4	Public hospitals (including psychiatric hospitals) by hospital size, 2005-06
Table 10A.5	Available beds per 1000 people, by region, public hospitals (including psychiatric) (number)
Table 10A.6	Summary of separations, public hospitals 2005-06
Table 10A.7	Separations, public (non-psychiatric) hospitals
Table 10A.8	Separations, public (non-psychiatric) hospitals, 2005-06
Table 10A.9	Separations in public hospitals, by age group, 2005-06
Table 10A.10	Separations by hospital sector and by Indigenous status of patient, 2005-06
Table 10A.11	Indicative estimates of separations per 1000 people, by Indigenous status of patient (number)
Table 10A.12	Separations with a procedure recorded, selected principal diagnosis, public hospitals, by Indigenous status of patient, July 2004 – June 2006 (per cent)
Table 10A.13	Separations with a procedure recorded, by Indigenous status of patient, July 2004 – June 2006 (per cent)
Table 10A.14	Separations with a procedure recorded, by Indigenous status of patient and remoteness, July 2004 – June 2006 (per cent)
Table 10A.15	Average full time equivalent (FTE) staff per 1000 persons, public hospitals (including psychiatric hospitals)
Table 10A.16	Separations, by type of episode of care, public hospitals (including psychiatric), 2005-06
Table 10A.17	Australian refined diagnosis related groups (AR-DRGs) version 5.0 with the highest number of overnight acute separations, public hospitals, 2005-06
Table 10A.18	Top 10 AR-DRGs (version 5.0) with the most patient days, excluding same day separations, public hospitals, 2005-06

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