
10 Public hospitals

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Attachment tables

Attachment tables are identified in references throughout this chapter by a '10A' suffix (for example, table 10A.3). A full list of attachment tables is provided at the end of this chapter, and the attachment tables are available from the Review website at www.pc.gov.au/gsp.

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.

Major improvements in reporting on public hospitals this year include:

- inclusion of the following measures to align this Report with National Healthcare Agreement (NHA) and National Indigenous Reform Agreement (NIRA) indicators:
 - ‘unplanned/unexpected readmissions within 28 days of selected surgical admissions’ has replaced the ‘unplanned readmission rates’ indicator
 - ‘healthcare associated *Staphylococcus aureus* bacteraemia in acute care hospitals’ has replaced the ‘surgical site infection rates’ indicator
 - an indicator for ‘falls resulting in patient harm in hospitals’ has been included
 - an indicator for ‘intentional self harm in hospitals’ has been included.
- the ‘patient satisfaction’ indicator now includes information previously reported on responsiveness under the output indicator ‘patient satisfaction surveys’
- revisions to the definitions of two sentinel event categories to align with national definitions endorsed by Health Ministers in 2009, improving data comparability across states and territories
- better quality data for reporting on the indicator ‘vaginal birth following a previous caesarean’, with full coverage of births according to national definitions
- inclusion of some ‘data quality information’ (DQI) documentation.

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
- subacute and non-acute services to admitted patients (for example, rehabilitation, palliative care, and 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 subacute 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 the mental health section of the 'Health management' chapter (reported in 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 can receive acute, subacute 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 childbirth, 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.

subacute care: interdisciplinary clinical care in which the need for care depends primarily on the patient's functional status and quality of life rather than the underlying medical diagnosis or the patient's prospects of recovery from illness. Subacute care includes rehabilitation, palliative care and some mental health care, as well as geriatric evaluation and management and psychogeriatric care. Common to all is the patient no longer meets criteria for classification as 'acute', but still requires therapeutic, clinically-intense and goal-directed care.

non-acute care: includes maintenance care and newborn care.

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.

(Continued on next page)

Box 10.1 (Continued)

non-admitted occasion of service: an occasion of examination, consultation, treatment or other service provided to a non-admitted patient in a functional unit of a health service establishment. Services can include emergency department visits, outpatient services (such as pathology, radiology and imaging, and allied health services, including speech therapy and family planning) and other services to non-admitted patients. Hospital non-admitted occasions of service are not yet recorded consistently across states and territories, and relative differences in the complexity of services provided are not yet documented.

Other common health terms

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 5.1 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.

Source: AIHW (2006, 2008); NCCH (2008).

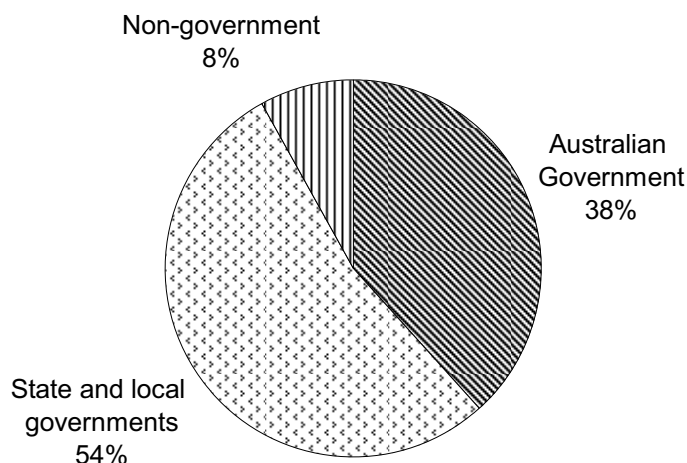
Funding

Total recurrent expenditure on public hospitals (excluding depreciation) was \$31.3 billion in 2008-09 (table 10A.1).

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 2008-09, 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 68.0 per cent to 80.0 per cent across jurisdictions (AIHW 2010a).

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 92.1 per cent of funding for public hospitals in 2008-09 (figure 10.1). Public hospitals accounted for 40.9 per cent of government recurrent expenditure on health services in 2008-09 (AIHW 2010b).

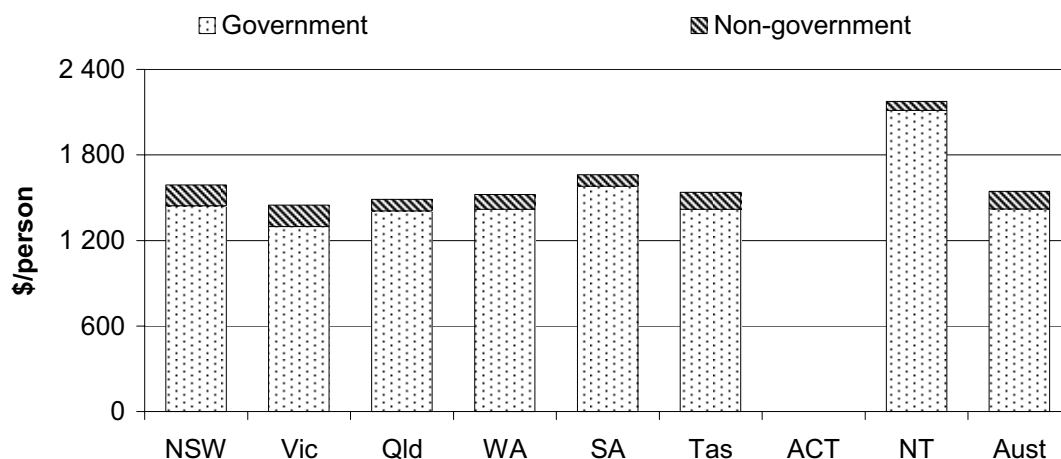
Figure 10.1 Recurrent expenditure, public hospitals, by source of funds, 2008-09



Source: AIHW (unpublished), Health expenditure database.

In 2008-09, public hospitals received \$2.6 billion from non-government sources (which equates to \$122.30 dollars per person) — an amount that accounted for 7.9 per cent of all recurrent expenditure (figure 10.2 and table 10A.2). 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 2008-09 (figure 10.2).

Figure 10.2 **Source of public hospital recurrent expenditure, 2008-09^{a, b, c}**



^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 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.

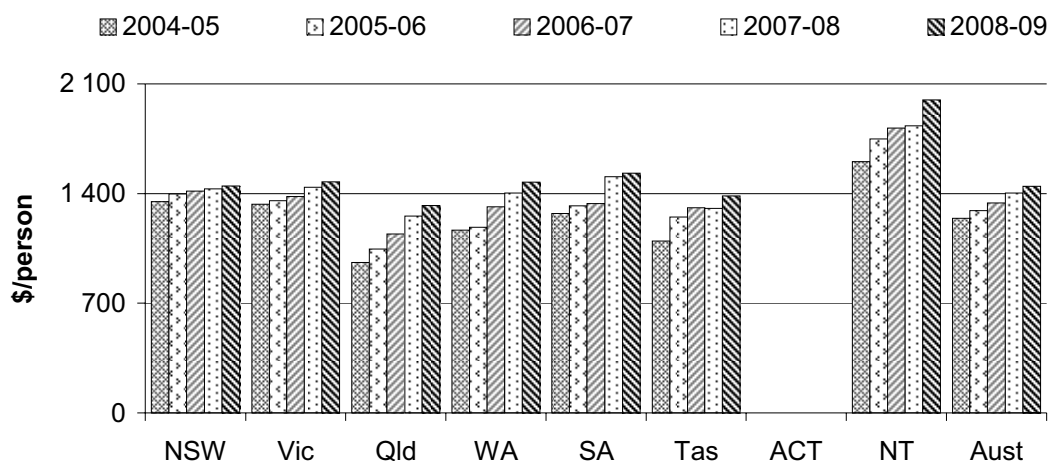
Source: AIHW (unpublished), Health expenditure database; ABS (unpublished), Australian Demographic Statistics, December Quarter 2009, Cat. no. 3101.0; table 10A.2.

Expenditure data in figures 10.1 and 10.2 are from *Health Expenditure Australia 2008-09* (AIHW 2010b) and are not directly comparable with other expenditure data used in this chapter, which are drawn from *Australian Hospital Statistics 2008-09* (AIHW 2010a). 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) (AIHW unpublished).

In 2008-09, government real recurrent expenditure on public hospitals was \$1446 per person for Australia, up from \$1242 in 2004-05 (in 2008-09 dollars) (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) (2008-09 dollars)^{a, b, c, d, e, f, g}



^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 (2010b). ^d Queensland pathology services were purchased from a Statewide pathology service rather than being provided by hospital employees. ^e Data for WA from 2006-07 include expenditure for public patients at Joondalup and Peel Health Campuses. Expenditures for these patients are not included in previous years. ^f For Tasmanian hospitals for 2004-05 and 2005-06, data for one hospital are not included. ^g 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 (various years), *Australian hospital statistics*, Health Services Series, Cat. nos HSE 41, 50, 55, 71 and 84; AIHW (2010), *Health expenditure Australia 2008-09*, Health and Welfare Expenditure Series No. 42, Cat. no. HWE 51. Canberra, AIHW; ABS (unpublished), *Australian Demographic Statistics*, December Quarter 2007, Cat. no. 3101.0; table 10A.3.

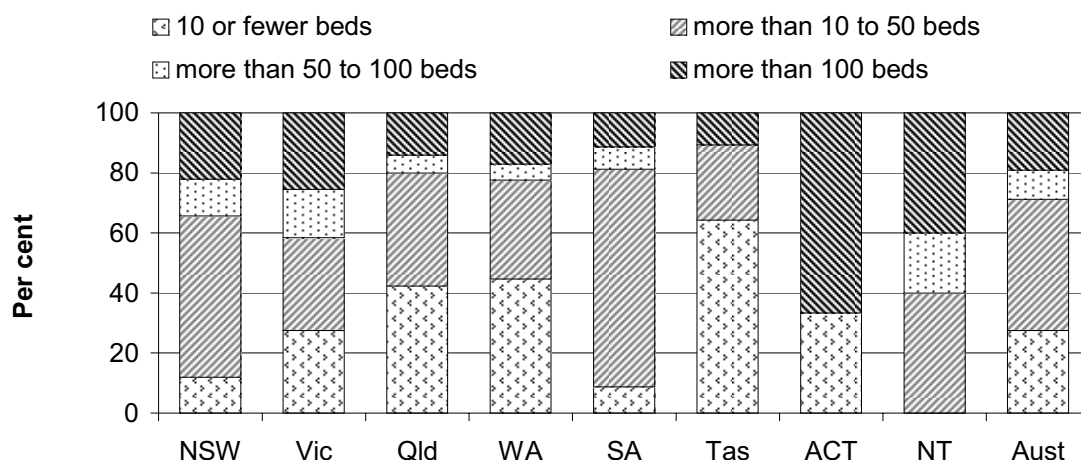
Size and scope of sector

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 type of public hospital separations; the proportion of separations by age group of the patient; the number of separations and incidence of treatment, by procedure and Indigenous status of the patient; the number of hospital staff; and types of public hospital activity.

Hospitals

In 2008-09, Australia had 756 public hospitals (table 10A.4) (including 19 psychiatric hospitals) (AIHW 2010a). Although 71.2 per cent of hospitals had 50 or fewer beds, these smaller hospitals represented only 16.1 per cent of total available beds (figure 10.4 and table 10A.4).

Figure 10.4 **Public hospitals, by size, 2008-09**^{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 Tasmania and the ACT did not have hospitals with more than 50 to 100 beds. The NT did not have hospitals with 10 or fewer beds.

Source: AIHW (2010), *Australian Hospital Statistics 2008-09*, Health Services Series No. 34, Cat no. HSE 84; table 10A.4.

Beds

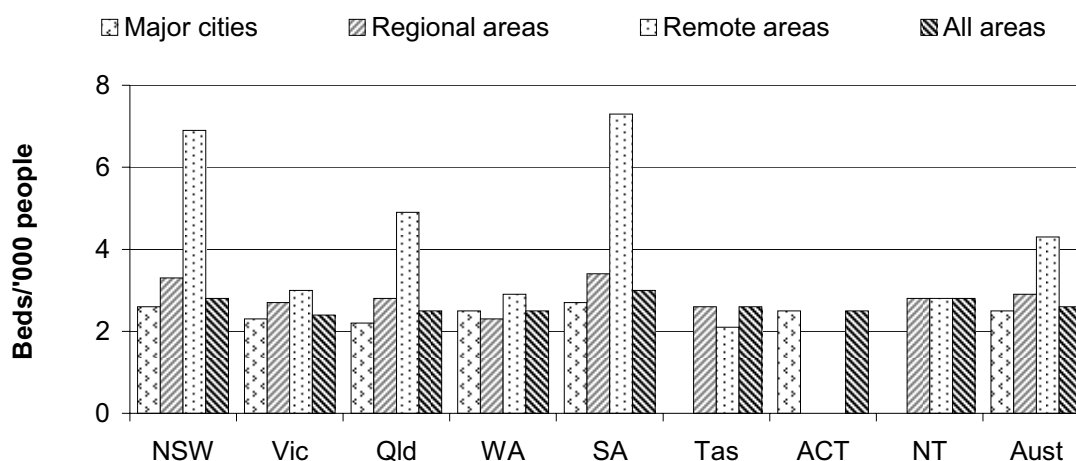
There were 56 478 available beds for admitted patients in public hospitals in 2008-09 (table 10A.4). The concept of an available bed is becoming less important in the overall context of hospital activity, particularly in respect of increasing same day hospitalisations and the provision of hospital-in-the-home care (AIHW 2010a). Admission practices vary across states and territories and change over time which can cause differences in whether patients are treated as admitted or non-admitted.

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 can reflect a number of factors including patterns of availability of other healthcare services, patterns of disease and injury and the relatively poor health of Indigenous people, who have higher population concentrations in remote areas (AIHW 2006). These data also need to be viewed in

the context of the age and sex structure (reported in appendix A) and the morbidity and mortality (reported in 'Health preface') of the population in each State and Territory.

Figure 10.5 Available beds, public hospitals, by location, 2008-09^{a, b, c, d}



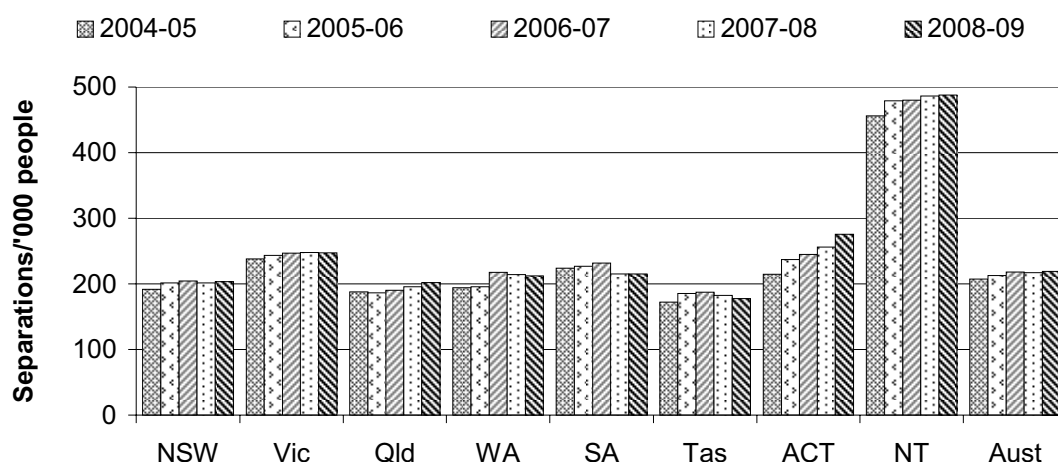
^a An 'available bed' is one that is immediately available to be used by an admitted patient. A bed is immediately available for use if it is located in a suitable place for care, with nursing and auxiliary staff available within a reasonable period. Both occupied and unoccupied beds are included. Surgical 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 (HDSC 2008). ^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 2010a). ^c Tasmania and the NT do not have major cities and the ACT does not have remote areas. ^d There were no available beds in regional areas in the ACT.

Source: AIHW (2010), *Australian Hospital Statistics 2008-09*, Health Services Series No. 34, Cat no. HSE 84; table 10A.5.

Total separation rates

There were approximately 4.9 million separations from public (non-psychiatric) hospitals in 2008-09 (table 10A.6). Nationally, this translates into 218.8 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 Data for WA from 2006-07 include separations for public patients at Joondalup and Peel Health Campuses. Separations for these patients are not included in previous years.

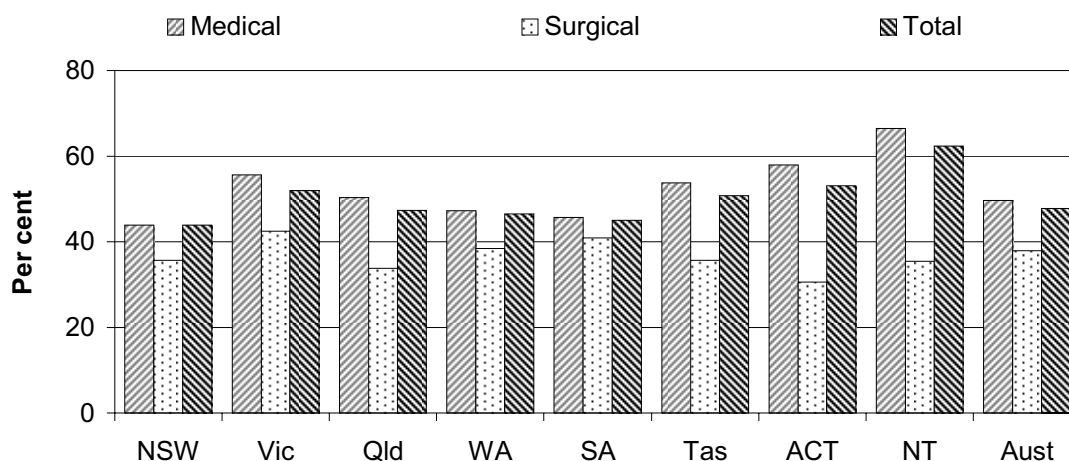
Source: AIHW (various years), *Australian Hospital Statistics*, Health Services Series, Cat. nos HSE 41, 50, 55, 71 and 84; table 10A.7.

Same day separations in public (non-psychiatric) hospitals increased by 4.2 per cent between 2007-08 and 2008-09, 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 2.2 per cent between 2007-08 and 2008-09 (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 2008-09 (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, 2008-09^a



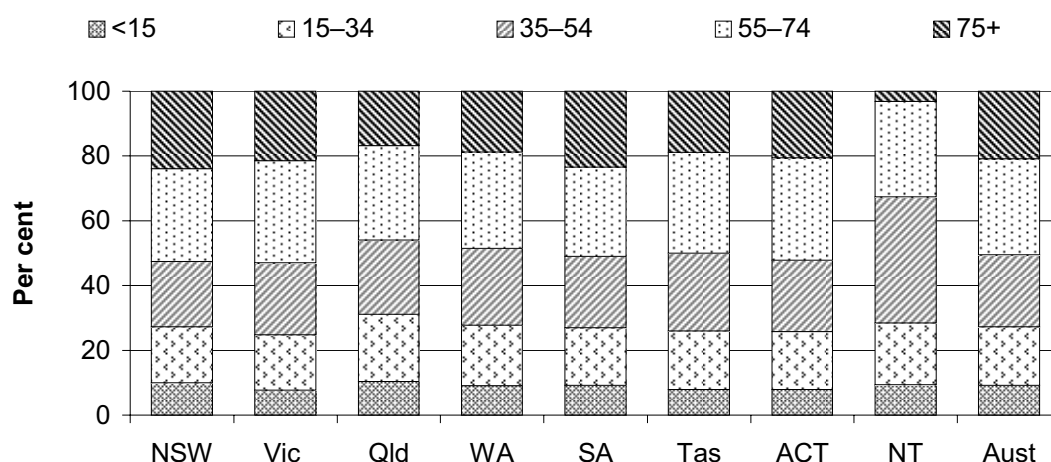
^a 'Total' includes medical, surgical, chemotherapy, radiotherapy and 'other' separations based on AR-DRG version 5.1 categories.

Source: AIHW (unpublished), National Hospital Morbidity Database; table 10A.8.

Separations by age group

Persons aged 55 years and over accounted for half of the separations in public hospitals (50.5 per cent) in 2008-09, even though they accounted for only 24.6 per cent of the estimated resident population at 31 December 2008 (figure 10.8 and AIHW 2010a). 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 (table AA.1).

Figure 10.8 Separations by age group, public hospitals, 2008-09^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 (2010), *Australian Hospital Statistics 2008-09*, Health Services Series No. 34, Cat no. HSE 84; 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 (2005) 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 hospitals in Queensland, WA, SA, and public hospitals in the NT. Following new assessments of the quality of Indigenous identification in 2007, the National E Health Information Principal Committee (NEHIPC) has approved NSW and Victorian Indigenous patient data as acceptable in quality for analytical purposes, from the 2004-05 reference year. More recently, the National Health Information Standards and Statistics Committee (a standing committee of NEHIPC) approved reporting of data for Tasmania and the ACT by Indigenous status at the state and territory level for COAG reporting purposes. However, pending further examination of the quality of Indigenous identification for these jurisdictions, these data will not be included in national totals. This decision was taken too late to include most data for Tasmania and the ACT in this chapter for the 2011 Report. Efforts to improve Indigenous identification across states and territories are ongoing.

The available data are not necessarily representative of other jurisdictions. Also because of improvements in data quality over time, caution should be used in time series analysis of the data.

In 2008-09, separations for Indigenous people accounted for around 3.6 per cent of total separations and 5.6 per cent of separations in public hospitals in NSW, Victoria, Queensland, WA, SA and the NT combined (table 10.1). Indigenous people made up only around 2.4 per cent of the population in these jurisdictions (tables AA.2 and AA.7). Most separations involving Indigenous patients (92.3 per cent) in these jurisdictions occurred in public hospitals (table 10.1).

Table 10.1 Separations, by Indigenous status of patient and hospital sector, 2008-09^{a, b}

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total ^c
Public hospital separations ('000)									
Indigenous	56.8	12.7	68.7	41.0	18.5	2.5	2.0	66.2	263.8
Non-Indigenous	1 434.8	1 357.1	797.7	426.5	339.6	90.0	86.2	29.2	4 384.8
Not reported	14.4	9.9	16.9	–	16.5	2.4	1.6	–	57.7
Total	1 506.0	1 379.6	883.3	467.4	374.5	94.9	89.9	95.4	4 706.3
Private hospital separations ('000)									
Indigenous	1.5	0.7	4.4	14.4	1.0	np	np	np	22.1
Non-Indigenous	886.0	800.2	733.2	347.7	240.3	np	np	np	3 007.3
Not reported	19.8	10.1	76.3	–	14.2	np	np	np	120.5
Total	907.2	811.0	813.9	362.2	255.5	np	np	np	3 149.8
Indigenous separations as proportion of total separations (%)									
Public hospitals	3.8	0.9	7.8	8.8	4.9	2.6	2.2	69.4	5.6
Private hospitals	0.2	0.1	0.5	4.0	0.4	np	np	np	0.7
All hospitals	2.4	0.6	4.3	6.7	3.1	np	np	np	3.6
Separations in public hospitals as a proportion of separations in all hospitals (%)									
Indigenous	97.5	94.7	93.9	73.9	94.8	np	np	np	92.3
Non-Indigenous	61.8	62.9	52.1	55.1	58.6	np	np	np	59.3

^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, Victoria, 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 includes data only for NSW, Victoria, Queensland, WA and SA for private hospitals and all hospitals. – Nil or rounded to zero. **np** Not published.

Source: AIHW (2010), *Australian Hospital Statistics 2008-09*, Health Services Series No. 34, Cat no. HSE 84; table 10A.10.

In 2008-09, on an age standardised basis, 763.3 public hospital separations (including same day separations) for Indigenous patients were reported per 1000 Indigenous people in NSW, Victoria, Queensland, WA, SA and the NT combined (table 10.2). This rate was markedly higher than the corresponding rate of 221.3 per 1000 for these jurisdictions' combined total population (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 ^c	Qld ^c	WA ^{c, d}	SA ^c	Tas	ACT	NT ^c	Total ^e
2004-05									
Indigenous people	np	np	733.6	821.5	822.2	np	np	1 441.0	907.0
Total population	193.3	238.3	188.1	195.2	225.3	np	np	456.2	208.1
2005-06									
Indigenous people	495.6	np	745.4	845.2	875.0	np	np	1 548.0	792.1
Total population	203.2	243.4	186.2	196.4	228.4	np	np	479.1	213.6
2006-07									
Indigenous people	528.0	624.3	756.7	876.5	929.3	np	np	1 584.8	787.5
Total population	206.0	246.7	190.2	218.4	232.6	np	np	480.1	218.8
2007-08									
Indigenous people	550.5	629.8	785.7	869.4	908.9	np	np	1 670.7	807.7
Total population	202.8	247.8	195.7	215.1	216.4	np	np	486.4	217.6
2008-09									
Indigenous people	511.5	535.8	732.5	817.3	950.5	np	np	1 656.0	763.3
Total population	205.6	249.5	204.4	215.8	217.7	np	np	495.5	221.3

^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 AIHW advice on data of acceptable quality limits reporting across jurisdictions for various years. 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 can be partly due to improved identification. In addition, these jurisdictions are not necessarily representative of the excluded jurisdictions. ^d Data for WA from 2006-07 include separations for public patients at Joondalup and Peel Health Campuses. Separations for these patients are not included in previous years. ^e Total rates include data for Queensland, WA, SA, and the NT for all years, and from 2005-06 include NSW and from 2006-07 include Victoria. Total rates before 2005-06 are not comparable with the 2005-06 total and total rates before 2006-07 are not comparable with the 2006-07 total. **np** Not published.

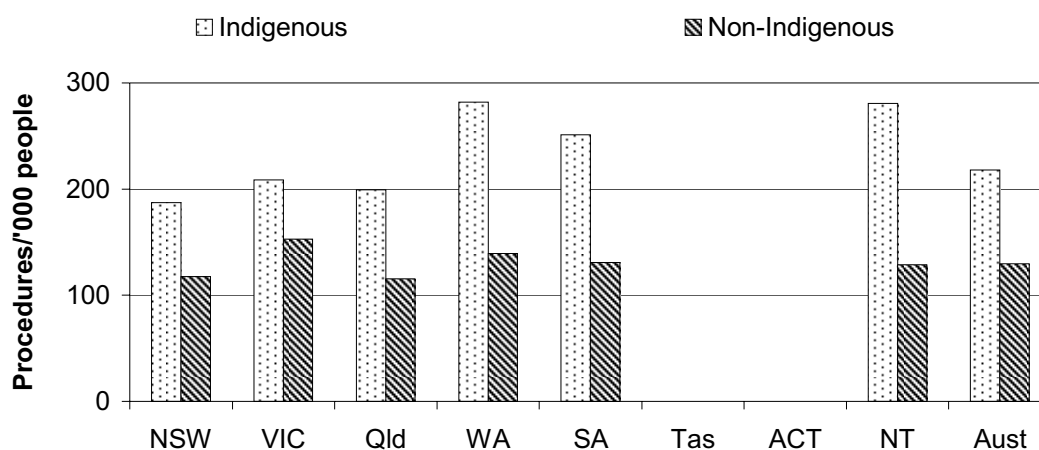
Source: AIHW (unpublished), National Hospital Morbidity Database; table 10A.11.

Separations with a procedure recorded for Indigenous patients

Hospitalisations with a procedure reported both by jurisdiction and by remoteness are presented in figures 10.9 and 10.10, 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 2008–June 2009, excluding hospitalisations for care involving dialysis, Indigenous people had higher rates of hospitalisations with a procedure reported for all states and territories and for each remoteness category (figures 10.9 and 10.10).

Care involving dialysis accounts for the greatest number of Indigenous 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.

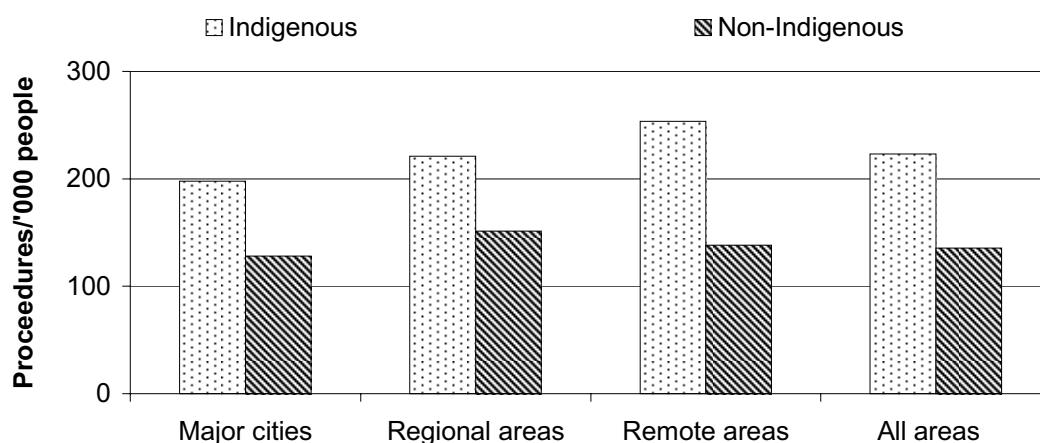
Figure 10.9 Hospitalisations with a procedure reported, public hospitals, July 2008–June 2009^{a, b, c}



^a Includes all patients treated in public hospitals and public patients treated in private hospitals. Private hospital data for NT were not available therefore results for NT include public hospital data only. ^b The AIHW advised that only data for NSW, Victoria, 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 'All diagnoses' excludes care involving dialysis.

Source: AIHW (unpublished), National Hospital Morbidity Database, table 10A.13.

Figure 10.10 Hospitalisations with a procedure reported, public hospitals, July 2008–June 2009^{a, b}

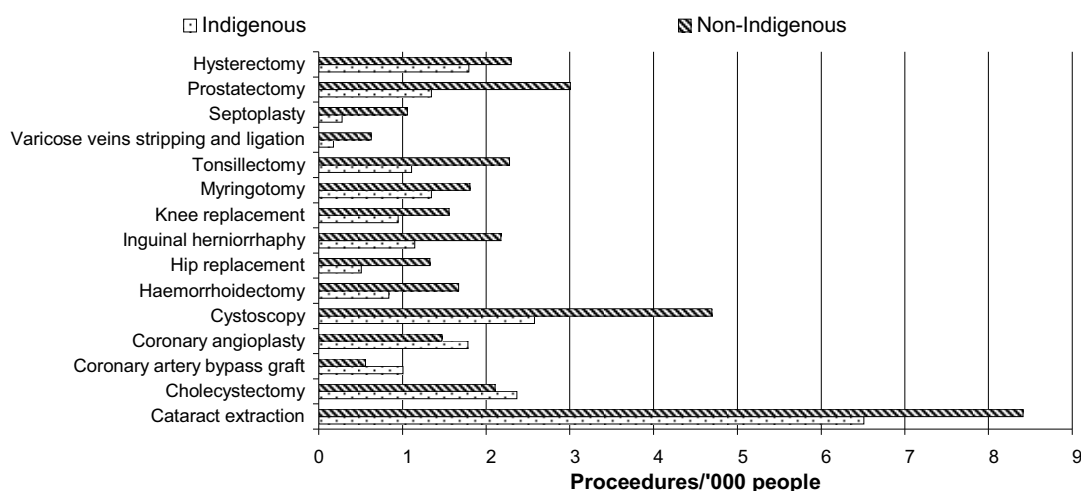


^a Includes all patients treated in public hospitals and public patients treated in private hospitals in NSW, Victoria, Queensland, WA, SA and NT. Private hospital data for NT were not available therefore results for NT include public hospital data only. ^b 'All diagnoses' excludes care involving dialysis.

Source: AIHW (unpublished), National Hospital Morbidity Database, table 10A.14.

Data for NSW, Victoria, Queensland, WA, SA and NT public hospitals for selected procedures are presented in figure 10.11. In the period July 2008–June 2009, Indigenous people had lower rates of hospital procedures for a number of selected procedures (figure 10.11).

Figure 10.11 Selected hospital procedures, public hospitals, July 2008–June 2009^a



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

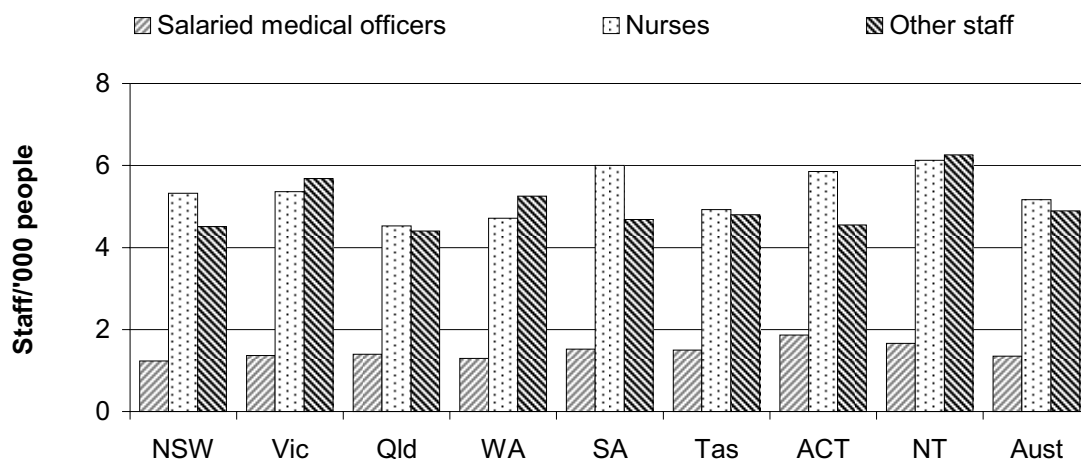
Source: AIHW (unpublished), National Hospital Morbidity Database, table 10A.12.

While Indigenous people have higher rates of separations and hospitalisations with a procedure recorded per 1000 of the population than non-Indigenous people, Indigenous people are actually less likely to undergo procedures while in hospital than non-Indigenous people. 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, 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.

Staff

In 2008-09, nurses comprised the single largest group of full time equivalent (FTE) staff employed in public hospitals (5.2 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 and can explain some of the differences in FTE staff in some staffing categories and across jurisdictions (AIHW 2010a).

Figure 10.12 **Average FTE staff per 1000 people, public hospitals, 2008-09**^{a, b, c, d, e}



^a 'Other staff' include diagnostic and allied health professionals, other personal care staff, administrative and clerical staff, and domestic and other staff. ^b Staff per 1000 people are calculated from ABS population data at 31 December 2008 (table AA.2). ^c For Victoria, FTEs can be slightly understated. ^d Queensland pathology services staff employed by the State pathology service are not included. ^e Data for two small Tasmanian hospitals are not included.

Source: AIHW (2010), *Australian Hospital Statistics 2008-09*, Health Services Series No. 34, Cat no. HSE 84; ABS (unpublished), *Australian Demographic Statistics*, December Quarter 2007, Cat. no. 3101.0; tables 10A.15 and AA.2.

Activity — admitted patient care

There were around 5.0 million acute, subacute and non-acute separations in public hospitals in 2008-09. Of these, acute separations accounted for 95.9 per cent, newborns with some qualified days accounted for 1.2 per cent and rehabilitation care accounted for 1.6 per cent (table 10A.16). Palliative care, non-acute care and other care made up the remainder. Public psychiatric hospitals accounted for around 0.2 per cent of total separations in public hospitals in 2008-09. Of the total number of separations in public (non-psychiatric) hospitals, 50.4 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 2008-09. These 10 AR-DRGs accounted for 17.5 per cent of all overnight acute separations.

Table 10.3 Ten AR-DRGs (version 5.2) with the most overnight acute separations, public hospitals, 2008-09^{a, b}

	<i>NSW</i>	<i>Vic</i>	<i>Qld</i>	<i>WA</i>	<i>SA</i>	<i>Tas</i>	<i>ACT</i>	<i>NT</i>	<i>Aust</i>
Separations for AR-DRGs as a proportion of all overnight acute separations (%)									
Vaginal Delivery W/O Catastrophic or Severe CC	4.4	4.8	4.6	4.4	3.3	3.9	5.0	3.6	4.4
Chest Pain	2.2	2.0	2.7	1.7	2.5	1.7	1.4	1.8	2.2
Caesarean Delivery W/O Catastrophic or Severe CC	1.8	1.9	2.2	1.9	1.6	1.8	1.8	1.6	1.9
Oesophagitis, Gastroent & Misc Digestive Systm Disorders Age>9 W/	2.0	1.7	1.9	1.8	2.0	1.7	1.5	1.2	1.9
Cellulitis (Age >59 W/O Catastrophic or Severe CC) or Age <60	1.4	1.3	1.9	1.9	1.3	1.2	1.3	4.6	1.6
Antenatal and Other Obstetric Admission	1.3	1.1	1.6	1.6	1.1	1.4	1.5	2.6	1.4
Abdominal Pain or Mesenteric Adenitis W/O CC	1.1	1.2	1.0	1.1	1.0	1.0	0.8	0.7	1.1
Vaginal Delivery Single Uncomplicated W/O Other Condition	1.1	0.6	1.6	1.0	0.8	1.1	1.1	1.4	1.1
Respiratory Infections/Inflammations W/O CC	1.1	0.9	1.1	1.1	0.9	1.1	0.9	1.7	1.0
Chronic Obstructive Airways Disease W/O Catastrophic or Severe CC	1.1	0.8	1.1	1.0	1.1	1.4	0.7	1.3	1.0
Total overnight separations accounted for by top 10 AR-DRGs (%)	17.6	16.2	19.7	17.5	15.6	16.3	16.1	20.6	17.5
Total overnight acute separations ('000)^c	806	558	419	214	198	43	36	35	2 309

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 365 days. ^c Total is for all overnight separations (not just the 10 listed in the table).

Source: AIHW (unpublished), National Hospital Morbidity Database; table 10A.17.

Table 10.4 lists the 10 AR-DRGs that accounted for the most patient days (17.8 per cent of all patient days recorded) in 2008-09. Schizophrenic disorders associated with mental health legal status accounted for the largest number of patient days, followed Tracheostomy or Ventilation greater than 95 hours (table 10.4 and table 10A.18).

Table 10.4 Ten AR-DRGs (version 5.2) with the most patient days, public hospitals, 2008-09^{a, b}

	<i>NSW</i>	<i>Vic</i>	<i>Qld</i>	<i>WA</i>	<i>SA</i>	<i>Tas</i>	<i>ACT</i>	<i>NT</i>	<i>Aust</i>
Patient days for AR-DRGs as a proportion of patient days (%)									
Schizophrenia Disorders W Mental Health Legal Status	3.0	3.2	4.2	3.6	3.1	2.1	2.5	2.5	3.3
Tracheostomy or Ventilation >95 hours	2.3	2.5	2.4	2.0	2.6	2.7	2.0	2.0	2.4
Vaginal Delivery W/O Catastrophic or Severe CC	2.2	2.4	2.3	2.4	1.7	1.8	2.5	2.2	2.2
Major Affective Disorders Age <70 W/O Catastrophic or Severe CC	2.0	1.9	1.9	2.6	2.6	2.1	2.9	1.0	2.1
Schizophrenia Disorders W/O Mental Health Legal Status	2.1	1.6	1.0	1.7	1.5	4.0	1.1	0.5	1.7
Caesarean Delivery W/O Catastrophic or Severe CC	1.4	1.5	1.6	1.5	1.3	1.2	1.4	1.5	1.4
Chronic Obstructive Airways Disease W Catastrophic or Severe CC	1.3	1.3	1.4	0.8	1.4	1.0	0.7	1.3	1.3
Cellulitis (Age >59 W/O Catastrophic or Severe CC) or Age <60	1.1	1.1	1.4	1.6	1.1	0.9	1.1	3.1	1.2
Dementia and Other Chronic Disturbances of Cerebral Function	1.0	1.2	0.7	1.0	1.4	3.6	0.4	0.6	1.1
Respiratory Infections/Inflammations W Catastrophic CC	1.1	1.4	0.8	0.7	1.1	0.8	0.8	1.1	1.1
Ten AR-DRGs with the most patient days (%)	17.6	18.1	17.8	17.9	17.8	20.2	15.4	15.9	17.8
Total patient days ('000)^c	4 468	2 920	2 045	1 111	1 068	264	176	193	12 246

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 365 days. ^c Total is for all overnight separations (not just the 10 listed in table).

Source: AIHW (unpublished), National Hospital Morbidity Database; 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 consistently 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 can differ in the extent to which these types of service are provided in non-hospital settings (such as community health centres) (AIHW 2006). 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 2001).

A total of 49.2 million individual occasions of service were provided to non-admitted patients in public acute hospitals in 2008-09 (table 10.5). In addition, public hospitals also delivered 340 889 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 acute hospitals in 2008-09, accident and emergency services comprised 14.6 per cent of all individual occasions of service to non-admitted patients. ‘Other medical, surgical and obstetric services’ (24.2 per cent), ‘pathology services’ (17.6 per cent) and ‘pharmacy’ (10.2 per cent) were the most common types of non-admitted patient care (table 10.5).

Table 10.5 Non-admitted patient occasions of service, by type of non-admitted patient care, public acute hospitals, 2008-09^a

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT ^b	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	10.9	20.3	14.2	17.3	25.2	13.9	16.9	27.8	14.6
Pathology	14.6	9.5	35.7	10.3	..	23.4	6.1	21.1	17.6
Radiology and organ imaging	4.1	8.3	9.1	9.9	10.9	8.4	13.3	14.6	7.0
Pharmacy ^c	16.2	6.1	5.7	4.4	..	11.0	0.2	8.2	10.2
Other medical/surgical/obstetric	23.7	21.7	23.7	16.7	43.6	34.6	52.1	26.2	24.2
Mental health	3.4	9.0	0.9	1.4	0.9	0.2	0.3	..	3.3
Dental	2.2	3.4	..	0.3	0.4	0.2	..	..	1.6
Allied health	3.4	13.8	5.9	22.3	8.6	8.2	4.4	2.1	7.6
Other non-admitted services									
Community health	7.0	4.5	1.6	11.3	0.3	0.1	2.9	..	5.3
District nursing ^d	6.7	3.0	1.1	3.6	0.3	–	..	..	4.1
Most common types of non-admitted patient care (%)	92.4	99.6	97.9	97.5	90.3	99.8	96.2	100.0	95.4
Total occasions of service for non-admitted patients ('000)	22 103	7 559	10 739	4 528	2 107	1 055	604	465	49 161

^a Individual non-admitted patient care services. Excludes group sessions. Reporting arrangements vary significantly across jurisdictions. ^b Radiology figures for the NT are underestimated and pathology figures relate to only three of the five hospitals. ^c Justice Health (formerly known as Corrections Health) in NSW reported a large number of occasions of service that may not be typical of pharmacy. ^d 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. – Nil or rounded to zero. .. Not applicable.

Source: AIHW (2010), *Australian Hospital Statistics 2008-09*, Health Services Series No. 34, Cat no. HSE 84; 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 2011 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.

COAG has agreed six National Agreements (NAs) to enhance accountability to the public for the outcomes achieved or outputs delivered by a range of government services (see chapter 1 for more detail on reforms to federal financial relations). The NHA covers the area of health, and health indicators in the NIRA establish specific outcomes for reducing the level of disadvantage experienced by Indigenous Australians. The agreements include performance indicators, for which the Steering Committee collates annual performance information for analysis by the COAG Reform Council (CRC). Revisions have been made to the performance indicators reported in this chapter to align with the performance indicators in the NAs.

Box 10.2 Objectives for public hospitals

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

- safe and of high quality
- appropriate and responsive to individual needs
- affordable, timely and accessible
- equitably and efficiently delivered.

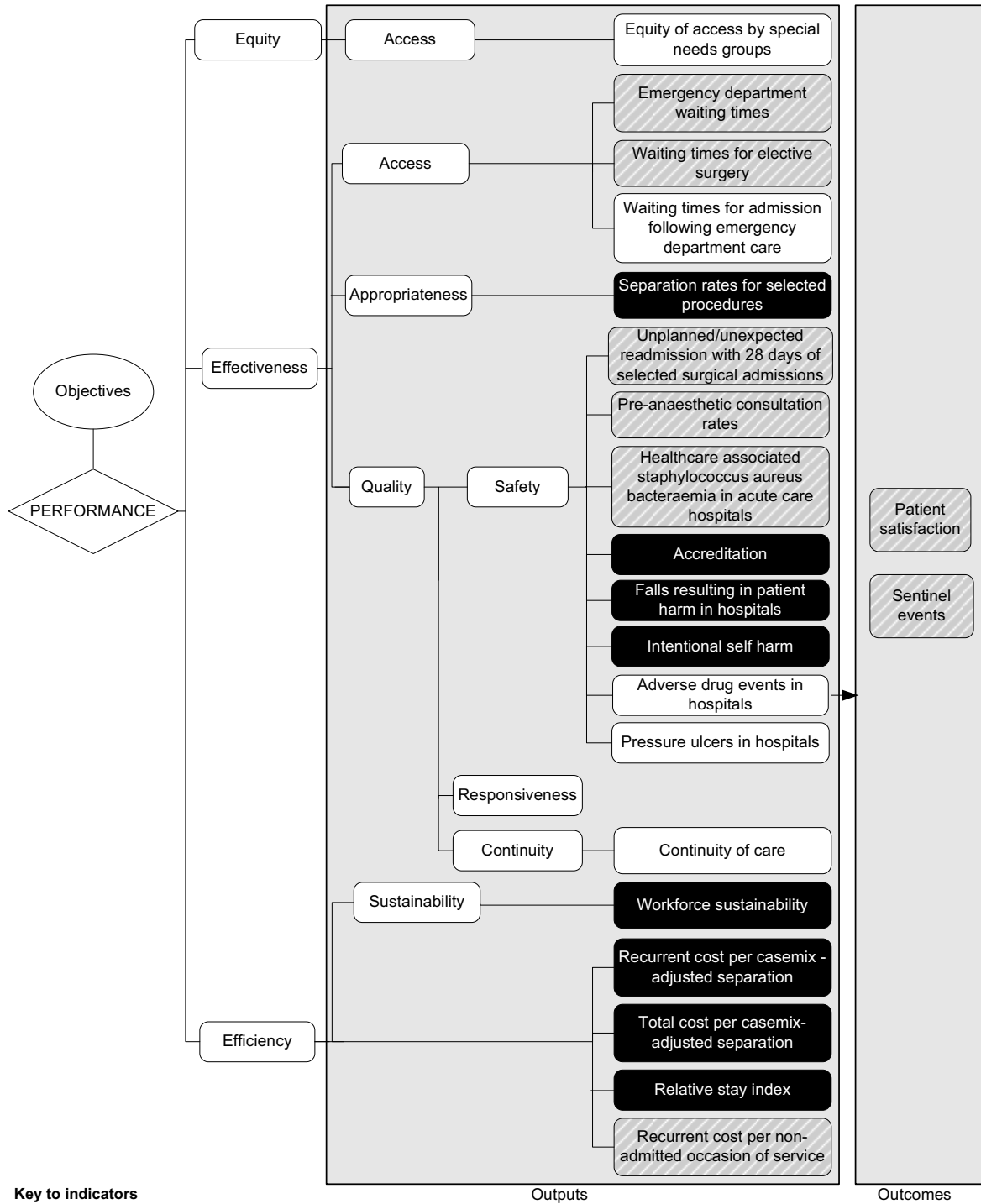
The framework has been revised to either add or replace some indicators:

- unplanned/unexpected readmissions within 28 days of selected surgical admissions has replaced the unplanned readmission rates indicator
- healthcare associated *Staphylococcus aureus* bacteraemia in acute care hospitals has replaced the surgical site infection rates indicator
- falls resulting in patient harm in hospitals and intentional self harm in hospitals have been added

-
- waiting times for admission following emergency department care, adverse drug events in hospitals, and pressure ulcers in hospitals have been added but data are not included in this Report
 - the ‘Patient satisfaction’ indicator now includes responsiveness information previously reported on under the indicator ‘Patient satisfaction surveys’, which has been removed from the framework.

The Report’s statistical appendix contains data that may assist in interpreting the performance indicators presented in this chapter. These data cover a range of demographic and geographic characteristics, including age profile, geographic distribution of the population, income levels, education levels, tenure of dwellings and cultural heritage (including Indigenous and ethnic status) (appendix A).

Figure 10.13 Performance indicators for public hospitals



Key to indicators

- Text** Data for these indicators comparable, subject to caveats to each chart or table
- Text** Data for these indicators not complete or not directly comparable
- Text** These indicators yet to be developed or data not collected for this Report

10.3 Key performance indicator results for public hospitals

Different delivery contexts, locations and types of client can affect the equity, effectiveness and efficiency of health services.

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 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 important for people of low socioeconomic status (and others) who can have difficulty in accessing alternative services, such as those provided by private hospitals.

Equity of access by special needs groups

‘Equity of access by special needs groups’ is an indicator of governments’ objective to provide accessible services (box 10.3).

Box 10.3 Equity of access by special needs groups

‘Equity of access by special needs groups’ measures 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.

‘Equity of access by special needs groups’ has been identified as a key area for development in future Reports.

Effectiveness — access

Emergency department waiting times

‘Emergency department waiting times’ is an indicator of governments’ objective to provide accessible services (box 10.4).

Box 10.4 Emergency department waiting times

‘Emergency department waiting times’ measures the proportion of patients seen within the benchmarks set by the Australasian Triage Scale. The Australasian Triage Scale is a scale for rating clinical urgency, designed for use in hospital-based emergency services throughout Australia and New Zealand.

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, 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 (HDSC 2008).

(Continued next page)

Box 10.4 (Continued)

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 can experience poor health outcomes as a result of extended waits.

Data reported for this indicator are not directly comparable.

Data quality information for this indicator is under development.

The comparability of emergency department waiting times data across jurisdictions can 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 can indicate the comparability of triage categorisations across jurisdictions and thus the comparability of the waiting times data (table 10A.20).

Nationally, in 2008-09, 100 per cent of patients in triage category 1 were seen within the clinically appropriate timeframe, and 77 per cent of patients in triage category 2 were seen within the clinically appropriate timeframe. For all triage categories combined, 70 per cent of patients were seen within triage category timeframes (table 10.6).

Emergency department waiting times are reported for peer group A and B hospitals in the attachment for 2008-09 (table 10A.21). Waiting times are also reported by Indigenous status and remoteness for peer group A and B hospitals for 2008-09. Nationally, there was little difference between Indigenous and non-Indigenous people in the percentages of patients treated within national benchmarks across the triage categories, although there were variations across states and territories for some triage categories (table 10A.22). At the national level, there was variation in waiting times across triage categories by remoteness, although there was less variation for the most serious category of resuscitation (table 10A.23).

Table 10.6 Emergency department patients seen within triage category timeframes, public hospitals, 2008-09 (per cent)^a

<i>Triage category</i>	<i>NSW</i>	<i>Vic</i>	<i>Qld</i>	<i>WA</i>	<i>SA</i>	<i>Tas</i>	<i>ACT</i>	<i>NT</i>	<i>Aust</i>
1 — Resuscitation ^b	100	100	99	99	100	99	100	100	100
2 — Emergency	80	82	72	69	75	76	85	62	77
3 — Urgent	68	74	59	53	59	54	53	48	64
4 — Semi-urgent	73	68	65	62	62	61	53	49	67
5 — Non-urgent	90	86	88	89	83	87	78	89	88
Total	75	73	66	62	64	62	60	54	70
Data coverage ^c	83	88	72	72	67	89	100	100	80

^a Values are derived from all hospitals that reported to the non-admitted patient emergency department care database, including all principal referral and specialist women's and children's hospitals, large hospitals and public hospitals that were classified to other peer groups. ^b Resuscitation patients whose waiting time for treatment was less than or equal to two minutes are considered to have been seen on time. ^c 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 can underestimate coverage because some occasions of service are for other than emergency presentations. 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 (2010), *Australian Hospital Statistics 2008-09*, Health Services Series No. 34, Cat no. HSE 84; table 10A.20.

Waiting times for admission following emergency department care

'Waiting times for admission following emergency department care' is an indicator of governments' objective to provide accessible services (box 10.5).

Box 10.5 Waiting times for admission following emergency department care

Waiting times for admission following emergency department is currently expected to measure the percentage of patients who present to a public hospital emergency department and are admitted to the same hospital, whose time in the emergency department is less than 8 hours.

Waiting times for admission following emergency department care has been identified as a key area for development in future Reports. This indicator is being developed as part of the NHA reporting process.

Waiting times for elective surgery

'Waiting times for elective surgery' is an indicator of governments' objective to provide accessible services (box 10.6).

Box 10.6 **Waiting times for elective surgery**

Two measures are reported for 'Waiting times for elective surgery':

- '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.
- '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 clinical 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.

For 'Overall elective surgery waiting times' fewer days waited at the 50th and 90th percentile and a smaller proportion of people waiting more than 365 days are desirable. For 'Elective surgery waiting times by clinical urgency category' 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).

Data reported for this indicator are not directly comparable.

Data quality information for this indicator is under development.

The elective surgery waiting times data are provided for waiting lists managed by public acute hospitals. The data collection covers most public hospitals that undertake elective surgery. In 2008-09, the elective surgery waiting times data covered 91 per cent of separations for elective surgery in public acute hospitals (table 10.7).

Patients on waiting lists who were not subsequently admitted to hospital are excluded from both measures. Patients can 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 2010a). In 2008-09, 14.0 per cent of

patients who were removed from waiting lists were removed for reasons other than elective admission (AIHW 2010a).

Comparisons between jurisdictions should be made with caution due to differences in clinical practices and classification of patients across Australia. 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 2009a). NSW, Victoria, Queensland, WA, SA and the ACT reported the total time waited on all waiting lists. This approach can have the effect of increasing the apparent waiting times for admissions in these jurisdictions compared with other jurisdictions. Queensland has indicated that patients rarely switch between waiting lists managed by different hospitals in their jurisdiction (AIHW 2009a).

Nationally, in 2008-09, 90 per cent of patients were admitted within 220 days and 50 per cent were admitted within 34 days (table 10.7). The proportion of patients who waited more than a year was 2.9 per cent. Nationally, waiting times at the 50th percentile increased by six days between 2004-05 and 2008-09, from 29 to 34 days. However, there were different trends in different jurisdictions and for different sized hospitals over that period (figure 10.14 and table 10A.24).

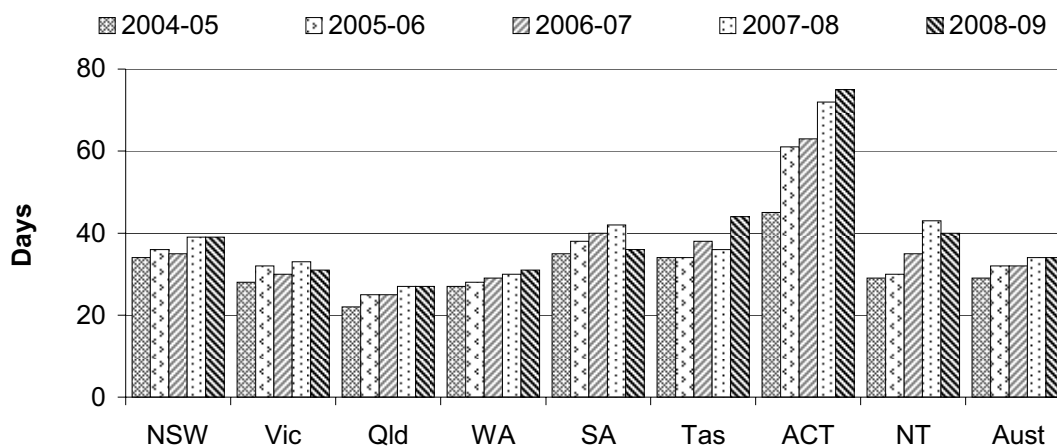
Table 10.7 Elective surgery waiting times, public hospitals, 2008-09

	<i>Unit</i>	<i>NSW</i>	<i>Vic</i>	<i>Qld</i>	<i>WA</i>	<i>SA</i>	<i>Tas</i>	<i>ACT</i>	<i>NT</i>	<i>Aust</i>
Number of days waited at:										
50th percentile	no.	39	31	27	31	36	44	75	40	34
90th percentile	no.	283	194	133	174	207	448	378	256	220
Proportion who waited more than 365 days	%	2.5	2.9	1.8	2.0	2.7	13.1	10.6	5.6	2.9
Estimated coverage of elective surgery separations ^a	%	100.0	78.0	98.0	85.0	70.0	100.0	100.0	100.0	91.0

^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 (2010), *Australian Hospital Statistics 2008-09*, Health Services Series No. 34, Cat no. HSE 84; table 10A.24.

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



Source: AIHW (various years), *Australian Hospital Statistics*, Health Services Series, Cat nos. HSE 41, 50, 55, 71 and 84; table 10A.24.

Attachment 10A includes data on ‘elective surgery waiting times’ by hospital peer group, specialty of surgeon and indicator procedure. It also includes waiting times by Indigenous status and by remoteness for 2008-09 (tables 10A.24–10A.28). Nationally, Indigenous people had longer waiting times for elective surgery than non-Indigenous people at the 50th and 90th percentiles for many of the procedures reported (table 10A.26). Those living in very remote areas also had longer waiting times than those in major cities at the 50th and 90th percentiles at the national level (table 10A.27).

‘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 2008-09 are shown in table 10.8. The states and territories with lower proportions of patients in category 1 tended to have smaller proportions of patients in this category who were ‘not seen on time’. NSW, Victoria and the ACT, for example, had the lowest proportions of patients in category 1 and also had low proportions of patients in category 1 who had extended waits (tables 10.8, 10A.29, 10A.31 and 10A.41).

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.

Under the National Health and Hospitals Network — National Partnership Agreement on Improving Public Hospital Services, a review will be conducted of the elective surgery categories, focusing on safety issues and practical impediments to achieving the targets that have been set under this agreement from 2014 onwards. The review will be auspiced by Health Ministers and involve senior clinical input.

Table 10.8 Classification of elective surgery patients, by clinical urgency category, 2008-09 (per cent)

	<i>NSW</i>	<i>Vic</i>	<i>Qld</i>	<i>WA</i>	<i>SA</i>	<i>Tas</i>	<i>ACT</i>	<i>NT</i>
Patients on waiting lists								
Category 1	3.4	3.3	8.6	8.5	5.1	7.5	2.3	12.6
Category 2	17.7	47.3	46.1	35.5	23.3	54.5	54.0	47.2
Category 3	78.9	49.4	45.3	56.0	71.6	38.0	43.7	40.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Patients admitted from waiting lists								
Category 1	28.3	27.6	39.6	30.6	33.2	36.6	28.3	45.6
Category 2	32.4	46.3	44.0	34.0	31.6	35.9	50.1	36.6
Category 3	39.3	26.1	16.4	35.4	35.1	27.5	21.6	17.8
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.29, 10A.31, 10A.33, 10A.35, 10A.37, 10A.39, 10A.41 and 10A.43. 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 2008-09, the percentage of patients classified to each category and the percentage with an extended wait were:

- 28.3 per cent were classified to category 1, of whom 7.2 per cent had an extended wait
- 32.4 per cent were classified to category 2, of whom 14.5 per cent had an extended wait
- 39.3 per cent were classified to category 3, of whom 6.4 per cent had an extended wait.

Overall in NSW, 9.2 per cent of all patients experienced extended waits (table 10.8 and table 10A.29).

Of patients admitted from waiting lists in Victoria in 2008-09, the percentage of patients classified to each category and the percentage with an extended wait were:

- 27.6 per cent were classified to category 1, of whom zero per cent had an extended wait
- 46.3 per cent were classified to category 2, of whom 27.0 per cent had an extended wait
- 26.1 per cent were classified to category 3, of whom 7.9 per cent had an extended wait.

Overall in Victoria, 14.6 per cent of all patients experienced extended waits (table 10.8 and table 10A.31).

Of patients admitted from waiting lists in Queensland in 2008-09, the percentage of patients classified to each category and the percentage with an extended wait were:

- 39.6 per cent were classified to category 1, of whom 13.0 per cent had an extended wait
- 44.0 per cent were classified to category 2, of whom 18.4 per cent had an extended wait
- 16.4 per cent were classified to category 3, of whom 8.7 per cent had an extended wait.

Overall in Queensland, 14.7 per cent of all patients experienced extended waits (table 10.8 and table 10A.33).

Of patients admitted from waiting lists in WA in 2008-09, the percentage of patients classified to each category and the percentage with an extended wait were:

- 30.6 per cent were classified to category 1, of whom 14.1 per cent had an extended wait
- 34.0 per cent were classified to category 2, of whom 24.7 per cent had an extended wait
- 35.4 per cent were classified to category 3, of whom 4.5 per cent had an extended wait.

Overall in WA, 14.3 per cent of all patients experienced extended waits (table 10.8 and table 10A.35).

Of patients admitted from waiting lists in SA in 2008-09, the percentage of patients classified to each category and the percentage with an extended wait were:

-
- 33.2 per cent were classified to category 1, of whom 17.4 per cent had an extended wait
 - 31.6 per cent were classified to category 2, of whom 15.6 per cent had an extended wait
 - 35.1 per cent were classified to category 3, of whom 7.2 per cent had an extended wait.

Overall in SA, 13.2 per cent of all patients experienced extended waits (table 10.8 and table 10A.37).

Of patients admitted from waiting lists in Tasmania in 2008-09, the percentage of patients classified to each category and the percentage with an extended wait were:

- 36.6 per cent were classified to category 1, of whom 27.1 per cent had an extended wait
- 35.9 per cent were classified to category 2, of whom 48.2 per cent had an extended wait
- 27.5 per cent were classified to category 3, of whom 28.5 per cent had an extended wait.

Overall in Tasmania, 35.1 per cent of all patients experienced extended waits (table 10.8 and table 10A.39).

Of patients admitted from waiting lists in the ACT in 2008-09, the percentage of patients classified to each category and the percentage with an extended wait were:

- 28.3 per cent were classified to category 1, of whom 5.9 per cent had an extended wait
- 50.1 per cent were classified to category 2, of whom 54.9 per cent had an extended wait
- 21.6 per cent were classified to category 3, of whom 24.8 per cent had an extended wait.

Overall in the ACT, 34.5 per cent of all patients experienced extended waits (table 10.8 and table 10A.41).

Of patients admitted from waiting lists in NT in 2008-09, the percentage of patients classified to each category and the percentage with an extended wait were:

- 45.6 per cent were classified to category 1, of whom 24.3 per cent had an extended wait

-
- 36.6 per cent were classified to category 2, of whom 41.6 per cent had an extended wait
 - 17.8 per cent were classified to category 3, of whom 19.7 per cent had an extended wait.

Overall in the NT, 29.8 per cent of all patients experienced extended waits (table 10.8 and table 10A.43).

All jurisdictions also provided data on urgency category waiting times by clinical specialty (tables 10A.30, 10A.32, 10A.34, 10A.36, 10A.38, 10A.40, 10A.42 and 10A.44).

Effectiveness — appropriateness

Separation rates for selected procedures

‘Separation rates for selected procedures’ is an indicator of the appropriateness of public hospital services (box 10.7).

Box 10.7 Separation rates for selected procedures

‘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. The procedures are selected for their frequency, for being elective and discretionary, and because alternative treatments are sometimes available.

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

Care needs to be taken when interpreting the differences in the separation rates for the selected procedures. Variations in rates can be attributable to variations in the prevalence of the conditions being treated, or to differences in clinical practice across states and territories. Higher rates can be acceptable for certain conditions and not for others. Higher rates of angioplasties and lens insertions, for example, can represent appropriate levels of care, whereas higher rates of hysterectomies or tonsillectomies can 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.

Data reported for this indicator are comparable.

Data quality information for this indicator is under development.

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 2008-09 were caesarean sections, prostatectomies and hysterectomies (table 10.9).

For all procedures, separation rates varied across jurisdictions. Statistically significant and material differences in the separation rates for these procedures can highlight variations in treatment methods across jurisdictions. Table 10A.45 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, 2008-09^{a, b, c}

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total ^d
<i>Procedure/diagnosis</i>									
Coronary artery bypass	0.58	0.62	0.71	0.35	0.65	0.41	0.67	..	0.59
Coronary angioplasty	1.51	1.62	1.43	1.53	1.48	1.43	2.89	..	1.53
Caesarean section: separation rate	8.40	8.40	9.90	9.80	9.20	9.00	8.90	8.70	8.90
separations per 100 in-hospital births ^e	29.80	31.20	33.50	33.70	33.30	29.90	28.70	28.60	31.50
Cholecystectomy	2.12	2.19	2.31	2.03	2.31	1.85	2.32	1.66	2.17
Hip replacement	1.25	1.43	1.20	1.49	1.54	1.48	2.37	0.77	1.35
Hysterectomy ^f	2.25	2.20	2.67	2.39	2.84	2.62	2.85	1.74	2.39
Tonsillectomy	2.16	2.13	2.37	2.68	2.82	1.38	3.20	0.93	2.28
Myringotomy	1.50	1.84	1.74	2.27	3.16	1.16	2.67	1.10	1.83
Knee replacement	1.66	1.37	1.72	1.75	1.85	1.17	2.60	0.91	1.62
Prostatectomy	3.01	3.44	2.71	2.60	2.91	2.38	4.29	1.71	3.00

^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. .. Not applicable.

Source: AIHW (2010), *Australian Hospital Statistics 2008-09*, Health Services Series No. 34, Cat no. HSE 84; table 10A.45.

Effectiveness — quality

There is no single definition of quality in healthcare, but the Australian Commission on Safety and Quality in Health Care (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 approach is to identify and report on aspects of quality of care. The aspects of quality recognised in the performance indicator framework are safety, responsiveness and continuity. Data are reported against safety but not responsiveness or continuity.

There has been considerable debate and research to develop suitable indicators of the quality of healthcare both in Australia and overseas. 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 has maintained the Council’s focus on improving the safety of hospitals and sought to improve the quality of primary healthcare and the private health sector.

Various states and territories publicly report performance indicators for public hospital quality. Some have adopted the same indicators reported in this chapter. For example:

- In NSW reporting of Australian Council on Health Care Standards (ACHS) ‘surgical site infection rates’ is mandatory for public hospitals.
- 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, pressure wound monitoring and prevention, patient satisfaction and consumer participation in health care decision making.
- Queensland Health publishes the Queensland Health Annual report, which includes clinical indicator results for the largest 58 public hospitals spanning the medical, surgical, obstetrics, gynaecology and mental health areas. Queensland Health also publishes the Quarterly public hospitals performance report which amongst other measures includes patient satisfaction results.
- Both the WA and Tasmanian health departments’ annual reports include information on ‘unplanned re-admission rates’ and WA also includes a section on patient satisfaction.

-
- SA Health publishes an annual report on patient safety which provides a summary of the types of incidents that occurred in public hospitals, actions taken on coronial findings and progress against priority areas in The South Australian Patient Safety Framework and Strategy 2007-2011.
 - ACT Health publishes quarterly reports that include data on unplanned readmissions, unplanned returns to operating theatre and hospital acquired infection rates.

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, 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).

Safety — unplanned/unexpected readmissions within 28 days of selected surgical admissions

‘Unplanned/unexpected readmissions within 28 days of selected surgical admissions’ is an indicator of governments’ objective to provide public hospital services that are safe and of high quality (box 10.8). This indicator has been included in the report for the first time this year and replaces the previously reported ‘unplanned readmission rates indicator’.

Box 10.8 Unplanned/unexpected readmissions within 28 days of selected surgical admissions

Unplanned/unexpected readmissions within 28 days of selected surgical admissions show the rate at which patients unexpectedly return to hospital within 28 days for further treatment of the same condition.

The indicator is calculated as the number of separations that were unplanned or unexpected readmissions to the same hospital following a separation in which a selected surgical procedure was performed and occurred within 28 days of the previous date of separation divided by number of public hospital separations in which one of the selected surgical procedures was performed expressed per 1000 separations.

Selected surgical procedures are knee replacement, hip replacement, tonsillectomy and adenoidectomy, hysterectomy, prostatectomy, cataract surgery and appendectomy.

'Unexpected/unplanned' readmissions are those having a principal diagnosis of a post-operative adverse event for which a specified ICD-10-AM diagnosis code has been assigned.

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). 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. The unplanned and/or unexpected readmissions are limited to those having a principal diagnosis of a post-operative adverse event. This does not include all possible unplanned/unexpected readmissions, so the indicator is likely to be an under-estimate.

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 can vary across hospitals and across jurisdictions.

Data reported for this indicator are not complete or directly comparable.

Data quality information for this indicator is at www.pc.gov.au/gsp/reports/rogs/2011.

Unplanned/unexpected readmissions within 28 days of selected surgical admissions in public hospitals in 2008-09 are reported in table 10.10. Unplanned/unexpected readmissions are reported by Indigenous status and remoteness in table 10A.47. The measure reported for this indicator is significantly different from that reported previously in this Report. Both the method of calculating the indicator and the data source have changed. The new measure uses the same specifications and data as the

corresponding NHA measure. The quality of this measure is improved from that included in previous reports and data are not comparable with previous reports.

Table 10.10 Unplanned/unexpected readmissions within 28 days of selected surgical admissions in public hospitals, per 1000 separations, 2008-09^a

	<i>NSW</i>	<i>Vic</i>	<i>Qld</i>	<i>WA</i>	<i>SA</i>	<i>Tas</i>	<i>ACT</i>	<i>NT</i>	<i>Aust</i>
<i>Surgical procedure prior to separation</i>									
Knee replacement	25.0	27.7	42.5	15.9	15.1	np	np	np	27.7
Hip replacement	18.7	21.7	33.5	14.2	16.8	21.3	np	np	21.8
Tonsillectomy and Adenoidectomy	24.1	29.7	29.8	30.2	40.4	50.1	np	np	29.5
Hysterectomy	34.9	36.7	36.9	32.1	38.1	44.9	np	np	36.9
Prostatectomy	39.1	25.7	43.6	33.8	33.4	23.8	np	np	33.8
Cataract surgery	3.6	4.7	4.1	3.2	5.6	np	np	28.9	4.5
Appendicectomy	28.0	20.6	25.5	28.0	37.2	36.8	28.1	29.5	26.4

^a Total rates for Australia do not include WA. **np** Not published.

Source: AIHW (unpublished) Admitted Patient Care National Minimum Data Set; table 10A.46.

Safety — pre-anaesthetic consultation rates

‘Pre-anaesthetic consultation rates’ is an indicator of governments’ objective to provide public hospital services that are safe and of high quality (box 10.9).

Box 10.9 Pre-anaesthetic consultation rates

'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.

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. Low rates for this indicator suggest the quality of pre-anaesthetic care provided by hospitals should be examined because there can be scope for improvement.

This indicator identifies only pre-anaesthetic consultations for which there is documented evidence, so there can 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.

Data reported for this indicator are not complete or directly comparable.

Data quality information for this indicator is under development.

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 10.10).

Box 10.10 Reporting of ACHS clinical indicators

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 can 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.

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).

Following a redevelopment of the ACHS's anaesthetic indicators between their 2004 and 2005 data collections, there has been a reduction in the number of hospitals providing data for this indicator. 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 10.11.

Box 10.11 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.

(Continued next page)

Box 10.11 (Continued)

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 weighted 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 2008, the mean rate of ‘pre-anaesthetic consultations’ was 72.1 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 27.9 per cent (or 6970) 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 1.7 per cent of total public acute hospital anaesthetic procedures. The number of ACHS reporting hospital procedures used to derive this indicator was 24 998 in 2008 (ACHS unpublished). The estimated total number of anaesthetic procedures in 2007-08 was 1.5 million (AIHW unpublished).

NSW was the only jurisdiction with five or more hospitals reporting ‘pre-anaesthetic consultations’ to the ACHS Comparative Report Service in 2008 (table 10.11). Data for 2008 for other jurisdictions are not reported separately because fewer than five hospitals reported ‘pre-anaesthetic consultations’ in each of those jurisdictions. Data for 2006 are reported for Victoria in table 10A.49.

Table 10.11 Pre-anaesthetic consultation rates, ACHS reporting public hospitals, 2008^a

	<i>Unit</i>	<i>Results</i>
National rate (per 100 separations)	%	72.1
National performance at 80th centile (rate)	(%)	100.0
National performance at 20th centile (rate)	(%)	31.7
<i>New South Wales</i>		
Numerator (pre anaesthetic consultations)	no.	7 800
Denominator (procedures)	no.	10 833
Rate (per 100 separations)	%	72
Standard error (\pm)		17
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.48.

Safety — healthcare associated Staphylococcus aureus bacteraemia in acute care hospitals

‘Healthcare associated *Staphylococcus aureus* (including Methicillin-resistant *Staphylococcus aureus* [MRSA]) bacteraemia (SAB) in acute care hospitals’ is an indicator of governments’ objective to provide public hospital services that are safe and of high quality (box 10.12). This indicator replaces the ‘Surgical site infection rates’ indicator reported previously.

Box 10.12 Healthcare associated *Staphylococcus aureus* bacteraemia in acute care hospitals

'Healthcare associated SAB in acute care hospitals' is the number of SAB patient episodes associated with acute care public hospitals divided by the number of patient days for public acute care hospitals reporting for the SAB indicator expressed as a rate per 10 000 patient days.

A patient episode of SAB is defined as a positive blood culture for SAB. Only the first isolate per patient is counted, unless at least 14 days has passed without a positive blood culture, after which an additional episode is recorded.

SAB is considered to be healthcare-associated if the first positive blood culture is collected more than 48 hours after hospital admission or less than 48 hours after discharge, or if the first positive blood culture is collected 48 hours or less after admission and one or more of the following key clinical criteria was met for the patient-episode of SAB:

- SAB is a complication of the presence of an indwelling medical device
- SAB occurs within 30 days of a surgical procedure where the SAB is related to the surgical site
- an invasive instrumentation or incision related to the SAB was performed within 48 hours
- SAB is associated with neutropenia ($<1 \times 10^9/L$) contributed to by cytotoxic therapy.

Cases where a known previous blood culture has been obtained within the last 14 days are excluded.

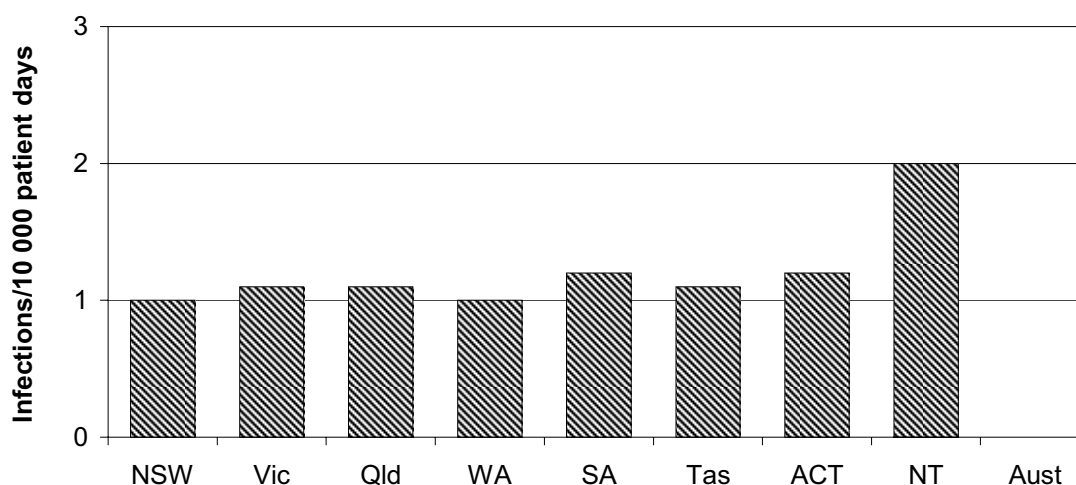
Healthcare associated SAB episodes can result in serious consequences for individual patients, place a significant burden on the health system and are influenced by the safety of hospital practices and procedures. Low 'Healthcare associated SAB in acute care hospitals' rates are consistent with the quality standards required in the public hospital sector.

Data reported for this indicator are not complete or directly comparable.

Data quality information for this indicator is at www.pc.gov.au/gsp/reports/rogs/2011.

Healthcare associated SAB in acute care hospitals per 10 000 patient days is reported in figure 10.15.

Figure 10.15 Healthcare associated SAB in public acute care hospitals, 2009-10^{a, b, c}



^a Comprises both Methicillin resistant *Staphylococcus aureus* and Methicillin sensitive staphylococcus aureus. ^b The calculation of an Australian total is not appropriate as NSW data are not comparable with other jurisdictions. ^c The SAB patient episodes were associated with both admitted patient care and with non-admitted patient care (including emergency departments and outpatient clinics). No denominator is available to describe the total admitted and non-admitted patient activity of public hospitals. However, the number of patient days for admitted patient activity is used as the denominator to take into account the large differences between the sizes of the public hospital sectors among the jurisdictions. The comparability of the SAB rates among jurisdictions and over time is limited because the count of patient days reflects the amount of admitted patient activity, but does not necessarily reflect the amount of non-admitted patient activity. The amount of hospital activity that patient days reflect varies among jurisdictions and over time because of variation in admission practices.

Source: AIHW unpublished; table 10A.50.

Safety — hospital accreditation

‘Accreditation’ is an indicator of governments’ objective to provide public hospital services that are of high quality (box 10.13). Data for this indicator are shown in figure 10.16.

Box 10.13 Accreditation

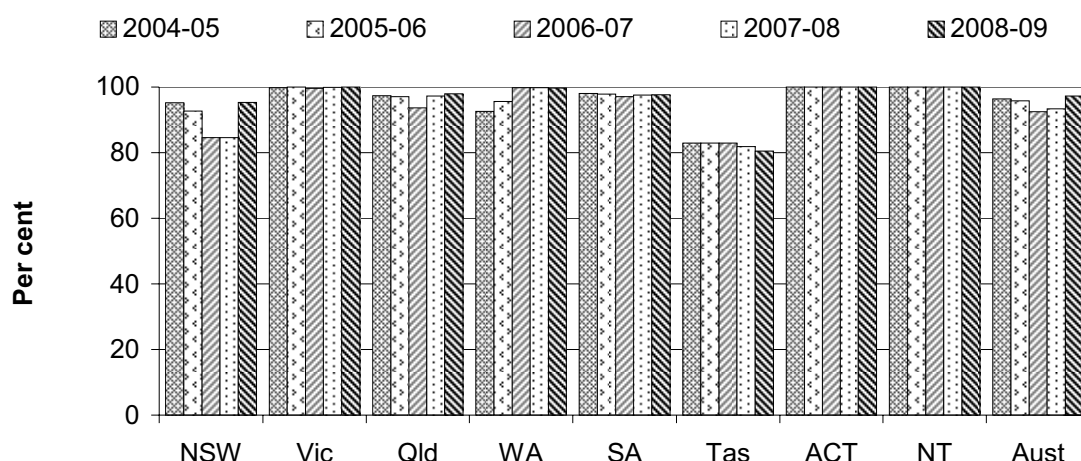
'Accreditation' is defined as the ratio of accredited beds to all beds in public hospitals. The number of beds indicates the level of hospital capacity or activity. 'Accreditation' signifies professional and national recognition awarded to hospitals and other healthcare facilities that meet defined industry standards. Public hospitals can 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 Organisation 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.

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 mandatory for all public hospitals (excluding those that provide only dental or mothercraft services). The costs of preparing a hospital for accreditation are significant, and a low level of accreditation can 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).

Data reported for this indicator are comparable.

Data quality information for this indicator is under development.

Figure 10.16 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 (various years), *Australian Hospital Statistics*, Health Services Series, Cat nos. HSE 41, 50, 55, 71 and 84; table 10A.51.

Safety — falls resulting in patient harm in hospitals

‘Falls resulting in patient harm in hospitals’ is an indicator of governments’ objective to provide public hospital services that are safe and of high quality (box 10.14). This indicator has been included for the first time in this Report.

Box 10.14 Falls resulting in patient harm in hospitals

Falls occurring in health care settings and resulting in patient harm treated in hospital is defined as the number of separations with an external cause code for fall and a place of occurrence of health service area divided by the total number of hospital separations and is expressed as a rate per 1000 separations.

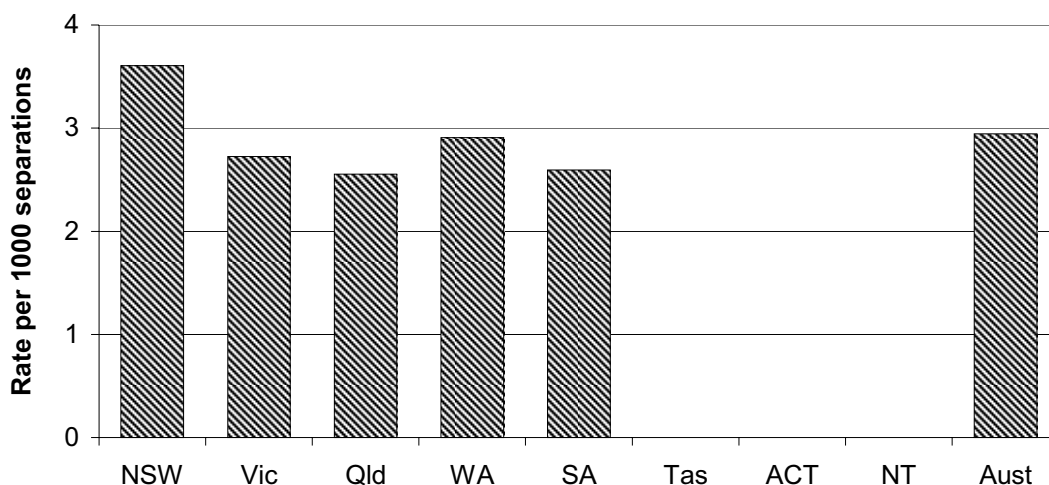
A high number of falls resulting in patient harm in hospitals can indicate hospital system and process deficiencies that compromise the quality and safety of public hospitals. Falls resulting in patient harm in hospitals can result in serious consequences for individual patients and place a significant burden on the health system.

Data reported for this indicator are comparable.

Data quality information for this indicator is at www.pc.gov.au/gsp/reports/rogs/2011.

The indicator defines a fall in hospital as a fall for which the place of occurrence is coded as health service area. The health service area as a place of occurrence is broader in scope than hospitals as it includes other health care settings such as day surgery centres or hospices. Data could therefore be an overestimate as they include falls in health care settings other than hospitals. Falls resulting in patient harm in public health care settings varied across states and territories in 2008-09 with a national rate of 2.9 falls per 1000 separations (figure 10.17).

Figure 10.17 **Falls resulting in patient harm in public health care settings, 2008-09^{a, b, c}**



^a Around 25 per cent of the records of separations involving falls did not have a code assigned for the place of occurrence. Consequently, the recorded number of falls occurring in hospitals may be an under-estimate. ^b If there is more than one external cause reported, there is uncertainty about whether the place of occurrence 'health service area' relates to the fall, or to the other external cause. As a consequence, there may be some over-counting in the calculation of the data reported. ^c Data for Tasmania, the ACT and the NT are not published.

Source: AIHW unpublished; table 10A.52.

Safety — intentional self harm in hospitals

'Intentional self harm in hospitals' is an indicator of governments' objective to provide public hospital services that are safe and of high quality (box 10.15). This indicator has been included for the first time in this Report.

Box 10.15 Intentional self harm in hospitals

Intentional self harm in hospitals is defined as the number of hospital separations with an external cause code for intentional self harm and a place of occurrence of health service divided by the total number of hospital separations and is expressed as a rate per 1000 separations.

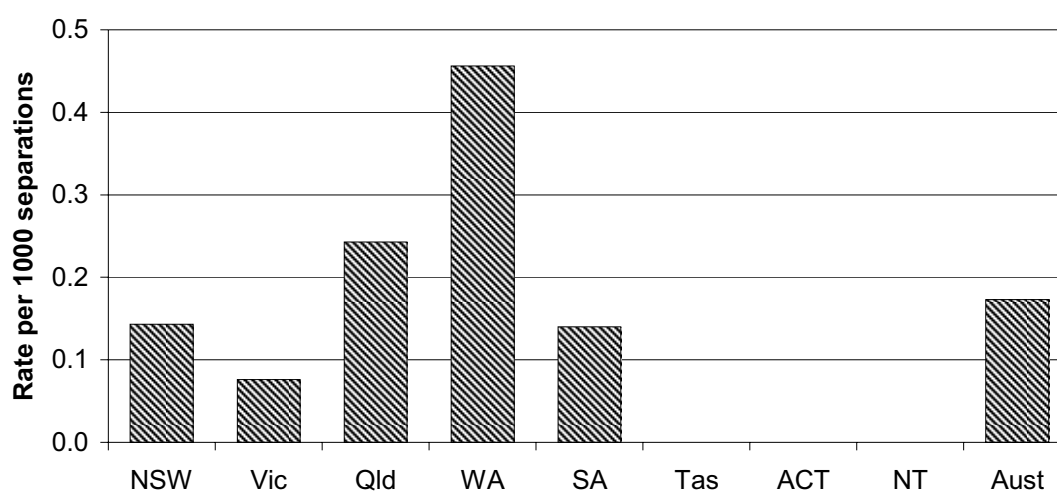
Self harm in hospitals can result in serious consequences for individual patients. A high rate of self harm can indicate hospital system and process deficiencies that compromise the quality and safety of public hospitals.

Data reported for this indicator are complete and directly comparable.

Data quality information for this indicator is at www.pc.gov.au/gsp/reports/rogs/2011.

The indicator defines intentional self harm in hospital as being one for which the place of occurrence is coded as health service area. The health service area as a place of occurrence is broader in scope than hospitals as it includes other health care settings such as day surgery centres or hospices. Data could therefore be an overestimate as they include intentional self harm in health care settings other than hospitals. Nationally in 2008-09 occurrences of intentional self harm in public health care settings was around 0.2 per 1000 separations (figure 10.18).

Figure 10.18 Intentional self harm in public health care settings, 2008-09^{a, b, c, d}



^a Around 30 per cent of all separations involving intentional self harm did not have a code assigned for the place of occurrence. Consequently, the recorded number of intentional self harm incidents occurring in hospitals may be an under-estimate. ^b If there is more than one external cause reported, there is uncertainty about whether the place of occurrence 'health service area' relates to intentional self harm, or to the other external cause. As a consequence there may be some over-counting in the calculation of the data reported. ^c Separations with a principal diagnosis of an injury or poisoning have been excluded on the assumption that the self-harm occurred prior to admission to hospital. However, it is possible that some of these separations would have involved self-harm that occurred in hospital. ^d Data for Tasmania, the ACT and the NT are not published.

Source: AIHW unpublished; table 10A.53.

Safety — adverse drug events in hospitals

'Adverse drug events in hospitals' is an indicator of governments' objective to provide public hospital services that are safe and of high quality (box 10.16).

Box 10.16 Adverse drug events in hospitals

Adverse drug events in hospitals is currently expected to measure the number of separations with an adverse drug event occurring in hospital divided by total separations from hospital expressed as a rate.

Adverse drug events in hospitals has been identified as a key area for development in future Reports. This indicator is being developed as part of the NHA reporting process.

Safety — pressure ulcers in hospitals

‘Pressure ulcers in hospitals’ is an indicator of governments’ objective to provide public hospital services that are safe and of high quality (box 10.17).

Box 10.17 Pressure ulcers in hospitals

Pressure ulcers in hospitals is currently expected to measure separations with a pressure ulcer in acute and subacute care settings recorded as arising during an episode of care.

Pressure ulcers in hospitals has been identified as a key area for development in future Reports. This indicator is being developed as part of the NHA reporting process.

Responsiveness

The Steering Committee has identified the responsiveness of public hospitals as an area for development in future Reports.

Continuity — continuity of care

‘Continuity of care’ is an indicator of governments’ objective to provide public hospital services that are of high quality (box 10.18).

Box 10.18 Continuity of care

‘Continuity of care’ measures the provision of uninterrupted, timely, coordinated healthcare, interventions and actions across programs, practitioners and organisations.

Continuity of care has been identified as a key area for development in future Reports.

Sustainability

Workforce sustainability

‘Workforce sustainability’ is an indicator of governments’ objective to provide sustainable public hospital services (box 10.19).

Box 10.19 Workforce sustainability

‘Workforce sustainability’ reports age profiles for nurse and medical practitioner workforces. It shows the proportions of registered nurses and medical practitioners in ten year age brackets, both by jurisdiction and by region.

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 10.25). 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.

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.

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.

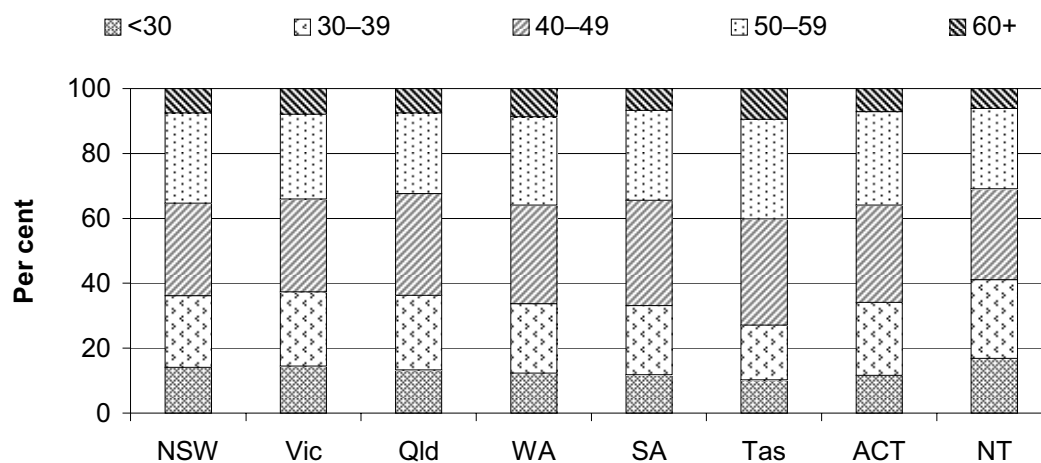
Data reported for this indicator are comparable.

Data quality information for this indicator is at www.pc.gov.au/gsp/reports/rogs/2011.

Source: National Health Performance Committee (2004).

The age profile of the nursing workforce for 2008 (which includes midwives) for each jurisdiction is shown in figure 10.19. Nursing workforce data by remoteness area for 2008 are shown in figure 10.20.

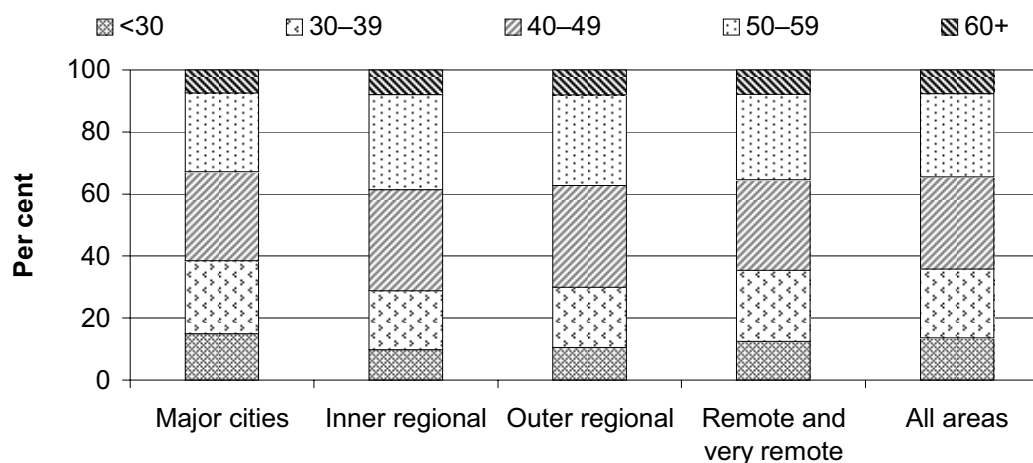
Figure 10.19 Nursing workforce, by age group, 2008^a



^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.

Figure 10.20 Nursing workforce, by age group and remoteness area, 2008^a

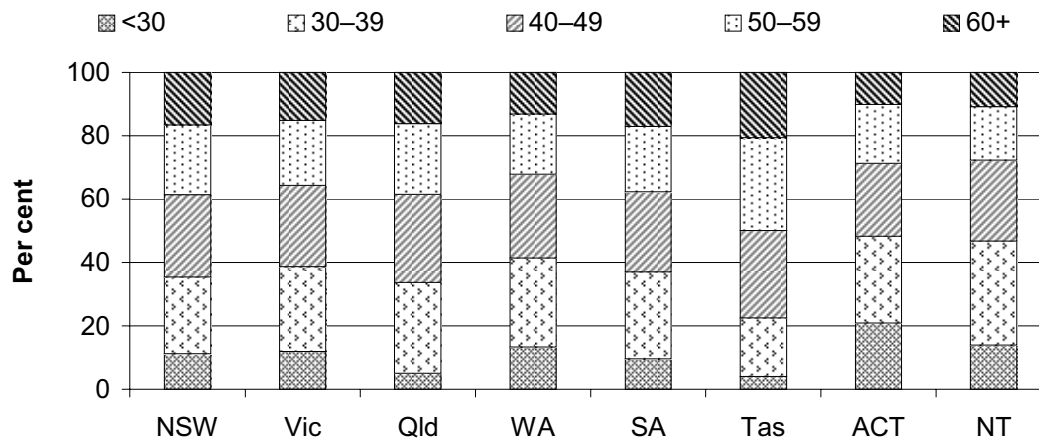


^a Includes registered and enrolled nurses (including midwives) who are employed in nursing, on extended leave and looking for work in nursing.

Source: AIHW (unpublished) *Nursing and Midwifery Labour Force Survey*; table 10A.54.

The age profile of the medical practitioner workforce in 2008 for each jurisdiction is shown in figure 10.21. Medical practitioner workforce data for 2008 by remoteness area are shown in figure 10.22.

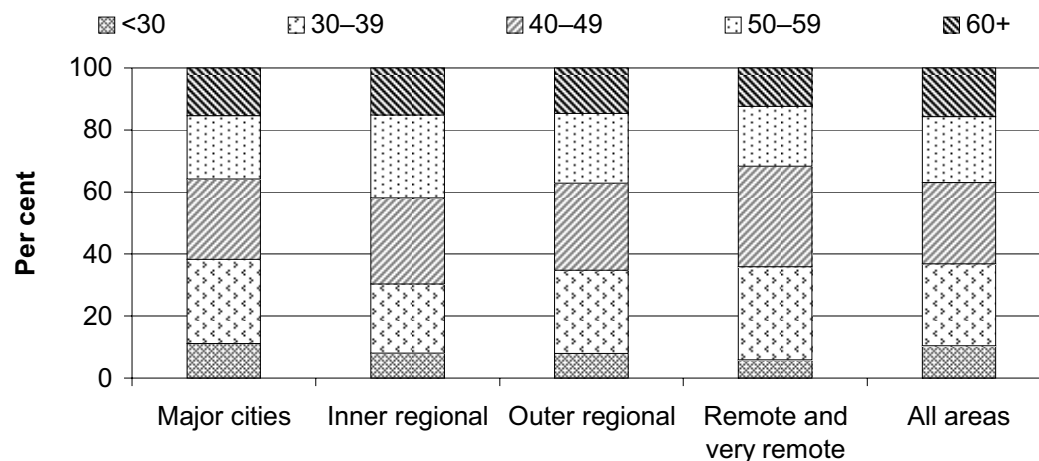
Figure 10.21 Medical practitioner workforce, by age group, 2008^a



^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.

Figure 10.22 Medical practitioner workforce, by age group and remoteness area, 2008^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.56.

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) can 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 can 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 can 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 unit costs 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 can 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 can also reduce the comparability of efficiency measures. Some jurisdictions admit patients who can 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 governments’ objective to deliver services in a cost effective manner (box 10.20). ‘Recurrent cost per casemix-adjusted separation’ data are presented in figure 10.23.

Box 10.20 Recurrent cost per casemix-adjusted separation

‘Recurrent cost per casemix-adjusted separation’ 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 (4.1 per cent of total separations in 2008-09 (table 10A.16)), so the same cost weights for acute care are applied to non-acute separations. The admitted patient cost proportion is an estimate only.

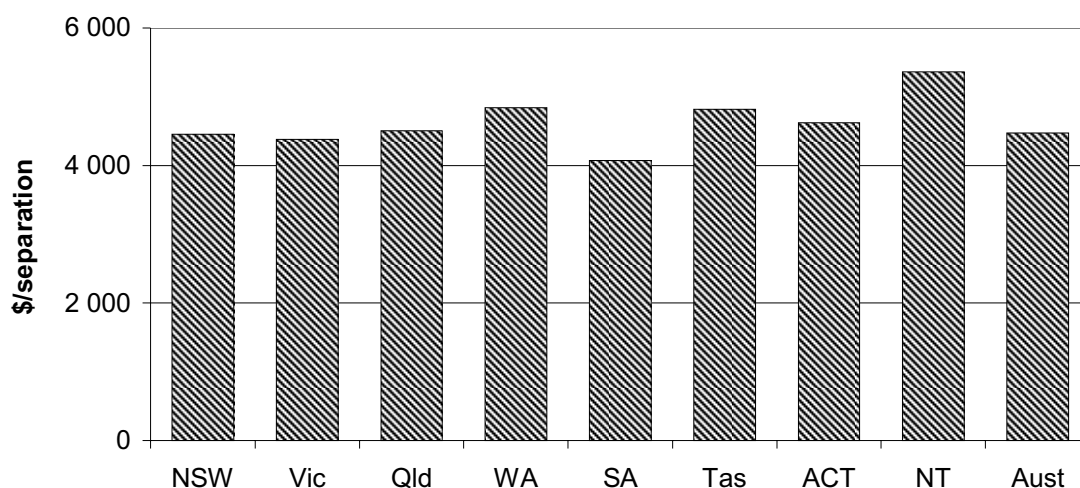
Some jurisdictions have developed experimental cost estimates for non-psychiatric acute patients which are also reported here. Separations for non-acute patients and psychiatric acute care patients are excluded from these estimates because AR-DRG cost weights are a poor predictor of these separations.

Lower ‘recurrent cost per casemix-adjusted separation’ can 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.

Data reported for this indicator are comparable.

Data quality information for this indicator is under development.

Figure 10.23 **Recurrent cost per casemix-adjusted separation, 2008-09^a**
b, c, d, e, f, g

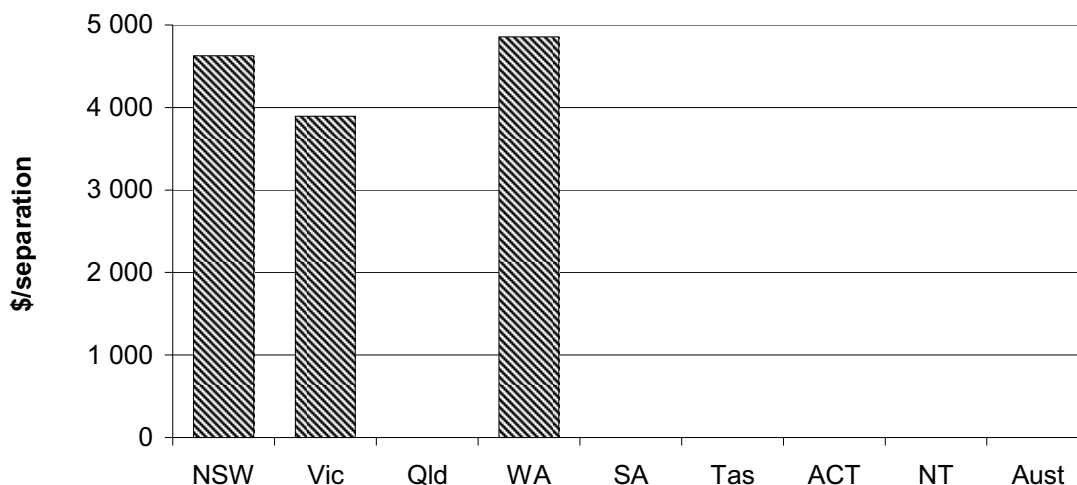


^a Excludes depreciation and the user cost of capital, spending on non-admitted patient care and research costs. ^b Casemix-adjusted separations are the product of total separations and average cost weight. Average cost weights are from the National Hospital Cost Data Collection, based on acute and unspecified separations and newborn episodes of care with qualified days, using the 2006-07 AR-DRG v 5.1 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 can differ. These differences can 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 (2010), *Australian Hospital Statistics 2008-09*, Health Services Series No. 34, Cat no. HSE 84; table 10A.58.

Experimental estimates of 'recurrent cost per casemix-adjusted separation' for acute non-psychiatric patients are reported for NSW, Victoria and WA (figure 10.24). (These estimates relate to a subset of the selected public hospitals reported in figure 10.23 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 10.20). 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 3.9 per cent for NSW and 0.3 per cent for WA, and to decrease this cost by 11.1 per cent for Victoria (AIHW 2010a).

Figure 10.24 Recurrent cost per acute non-psychiatric casemix-adjusted separation, subset of hospitals, 2008-09^{a, b, c, d}



^a Excludes psychiatric hospitals, subacute, 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 Cost Data Collection, based on acute, newborn with at least one qualified day, or not reported, using the 2006-07 AR-DRG version 5.1 cost weights (DoHA 2006). ^d These estimates are not available for Queensland, SA, Tasmania, the ACT or the NT.

Source: AIHW (2010), *Australian Hospital Statistics 2008-09*, Health Services Series No. 34, Cat no. HSE 84; table 10A.58.

‘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 85 hospitals representing this group had an average of 41 493 separations each at a cost of \$4501 (table 10A.59 and table 10.12). Data for each of the hospital peer groups are presented in table 10.12. Detailed data for all peer groups are presented in table 10A.59.

Table 10.12 Recurrent cost per casemix-adjusted separation, by hospital peer group, 2008-09^{a, b, c}

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
Hospital peer group									
Principal referral and Specialist women's and children's	4 465	4 426	4 579	4 852	4 124	4 713	4 624	5 287	4 501
Large	4 283	3 946	3 693	4 248	3 903	np	..	..	4 156
Medium	4 434	4 098	4 003	5 138	3 696	..	..	..	4 315
Small acute	4 991	5 277	4 883	5 784	4 531	4 355	..	5 912	5 162
All hospitals^d	4 454	4 380	4 507	4 842	4 074	4 817	4 624	5 361	4 471

^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 (2010), *Australian Hospital Statistics 2008-09*, Health Services Series No. 34, Cat no. HSE 84; table 10A.59.

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 (box 10.21).

Box 10.21 Total cost per casemix-adjusted separation

'Total cost per casemix-adjusted separation' 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 10.20).

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.

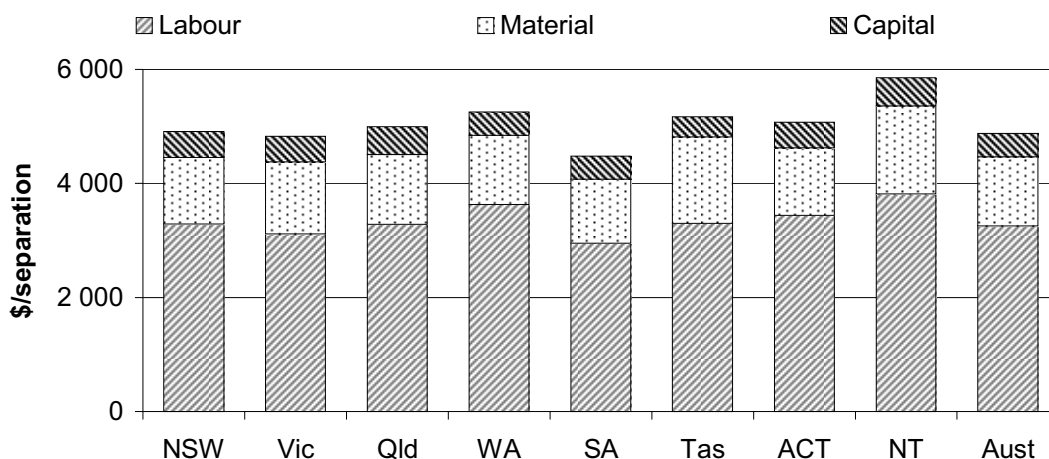
A lower 'total cost per casemix-adjusted separation' can reflect more efficient service delivery in public hospitals. However, this indicator needs to be viewed in the context of the set of performance indicators as a whole, as cost is not necessarily related to quality and efficiency.

Data reported for this indicator are comparable.

Data quality information for this indicator is under development.

Total cost includes both the recurrent costs (as discussed above) and the capital costs associated with hospital services. Results for this indicator in 2008-09 are reported in figure 10.25. Labour costs accounted for the majority of costs in all jurisdictions.

Figure 10.25 **Total cost per casemix-adjusted separation, public hospitals, 2008-09^{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.58). ^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.60). ^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 (2010), *Australian Hospital Statistics 2008-09*, Health Services Series No. 34, Cat no. HSE 84; State and Territory governments (unpublished); tables 10A.58 and 10A.60.

Relative stay index

‘Relative stay index’ is an indicator of governments’ objective to deliver services efficiently (box 10.22).

Box 10.22 **Relative stay index**

'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.

'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).

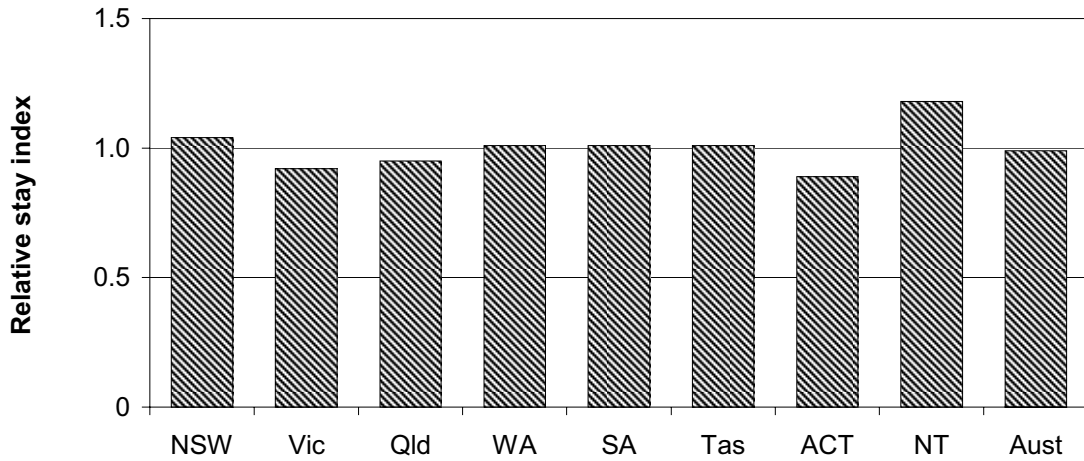
States and territories vary in their thresholds for classifying patients as either same day admitted patients or outpatients. These variations affect the 'relative stay index'.

Data reported for this indicator are comparable.

Data quality information for this indicator is under development.

Data for this indicator are reported in figure 10.26. The 'relative stay index' is reported by patient election status and by medical, surgical and other AR-DRGs in tables 10A.61 and 10A.62 respectively.

Figure 10.26 **Relative stay index, public hospitals, 2008-09^{a, b}**



a Separations exclude newborn with unqualified days, organ procurement posthumous and hospital boarders.

b The relative stay index is based on all hospitals and is estimated using the indirect standardisation method and AR-DRG version 5.1. 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 (2010), *Australian Hospital Statistics 2008-09*, Health Services Series No. 34, Cat no. HSE 84; table 10A.61.

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 (box 10.23).

Box 10.23 Recurrent cost per non-admitted occasion of service

'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.

Non-admitted occasions of service (including emergency department presentations and outpatient services) account for a significant proportion of hospital expenditure.

Lower recurrent cost per non-admitted occasion of service can 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).

Data reported for this indicator are not complete or directly comparable.

Data quality information for this indicator is under development.

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 can be included in expenditure on non-admitted services, but not in the count of occasions of service. Jurisdictions able to supply 2008-09 data for this indicator reported the following results for non-admitted patient services:

- In NSW, the emergency department cost per occasion of service was \$175 for 2.3 million occasions, the outpatient cost per occasion of service was \$99 for 16.0 million occasions and the overall cost per occasion of service (emergency plus outpatient plus other) was \$107 for 21.2 million occasions (table 10A.63).
- In WA, the emergency department cost per occasion of service was not available. The outpatient cost per occasion of service was \$203 for 3.0 million occasions and the overall cost per occasion of service (emergency plus outpatient plus other) was \$213 for 3.7 million occasions (table 10A.65).
- In SA, the emergency department cost per occasion of service was \$365 for 511 000 occasions, the outpatient cost per occasion of service was \$291 for 1.4 million occasions and the overall cost per occasion of service (emergency plus outpatient) was \$310 for 1.9 million occasions (table 10A.66).
- In Tasmania, the emergency department cost per occasion of service was \$451 for 142 000 occasions. The outpatient cost per occasion of service was \$206 for

486 000 occasions. An overall cost per occasion of service was not available (table 10A.67).

- In the ACT, the emergency department cost per occasion of service was \$637 for 102 000 occasions, the outpatient cost per occasion of service was \$268 for 288 000 occasions and the overall cost per occasion of service (emergency plus outpatient) was \$368 for 390 000 occasions (table 10A.68).

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. The average cost per encounter was \$167 for 1.3 million encounters in 2008-09 (table 10A.64).

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 205 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 2008-09 was \$269 for 11.9 million occasions (table 10A.69). 'Cost per non-admitted clinic occasions of service' data are also shown for seven categories of outpatient clinics (tier 1) (table 10.13). These tier 1 outpatient clinics data were provided by 177 public hospitals. Emergency department data, provided by 159 public hospitals, show the 'cost per occasion of service for emergency departments' by triage class (table 10.14).

Table 10.13 Non-admitted clinic occasions of service for tier 1 clinics, sample results, public sector, 2008-09^{a, b, c, d, e}

	<i>Occasions of service</i>	
	no.	Average cost \$/occasion of service
Allied health and/or clinical nurse specialist	1 757 643	162
Dental	34 378	300
Medical	4 064 037	386
Obstetrics and gynaecology	1 925 889	168
Paediatric	368 498	312
Psychiatric	142 267	616
Surgical	2 988 560	220
Total	11 281 272	270

^a Not all hospitals that submit data to the NHDCDC submit emergency department data. The emergency department national database contains only acute hospitals with emergency department cost and activity.

^b Costing and admission practices vary across jurisdictions and hospitals. ^c Includes depreciation costs. ^d Based on 177 public sector hospitals. ^e Excludes Victorian outpatient data.

Source: DoHA (2010), *National Hospital Cost Data Collection Cost Report, Round 13 (2008-09)*; table 10A.71.

Table 10.14 Emergency department average cost per occasion of service, public hospitals, by triage class, 2008-09 (dollars)^{a, b, c, d, e}

<i>Triage category</i>	<i>Population estimated — average cost per occasion of service^f</i>	<i>Actual — average cost per occasion of service</i>
Admitted triage 1	1 535	1 545
Admitted triage 2	851	861
Admitted triage 3	702	713
Admitted triage 4	585	589
Admitted triage 5	422	420
Non-admitted triage 1	815	847
Non-admitted triage 2	561	565
Non-admitted triage 3	462	472
Non-admitted triage 4	343	349
Non-admitted triage 5	221	217
Did not wait ^g	41	42
Total	438	451

^a Not all hospitals that submit data to the NHDCDC submit emergency department data. The emergency department national database contains only acute hospitals with emergency department cost and activity.

^b Based on data from 159 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 (2010), *National Hospital Cost Data Collection Cost Report, Round 13 (2008-09)*; table 10A.70.

Outcomes

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

Patient satisfaction

‘Patient satisfaction’ provides a proxy measure of governments’ objective to deliver services that are high quality and responsive to individual patient needs (box 10.24). The ‘Patient satisfaction’ indicator now includes information previously reported on responsiveness under the output indicator ‘Patient satisfaction surveys’.

Box 10.24 Patient satisfaction

‘Patient satisfaction’ reports satisfaction ratings taken from each jurisdiction’s patient surveys. Results are expressed in percentage terms or as scale scores. Patient satisfaction surveys are different from other sources of hospital quality data, because they provide information on hospital quality from the patient’s perspective. 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).

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.

This indicator also provides information on how jurisdictions used patient satisfaction surveys to improve public hospital quality in recent years. If public hospitals respond to patient views and modify services, service quality can be improved to better meet patients’ needs. 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.

Data reported for this indicator are not directly comparable.

Data quality information for this indicator is under development.

In 2005, the Steering Committee engaged Health Policy Analysis Pty Ltd to undertake a study reviewing patient satisfaction and responsiveness surveys. The study examined 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 auspicing 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).

Jurisdictions reported the following results and improvements to services arising from patient satisfaction surveys:

- In NSW, a mailout survey was conducted in each of February 2007, 2008, and 2009 of overnight admitted patients, day only patients, paediatric admitted patients, outpatients, non-admitted emergency patients, community health patients and adult rehabilitation admitted patients in public health services. The 2009 sample size was 216 000 and the response rate was 38.4 per cent. In 2009, 91 per cent of patients rated their care positively (good, very good or excellent) when asked how they would rate their overall care. In 2009, 66 per cent reported they would definitely recommend the service to others. Both measures have increased from 2007 when 88 per cent rated overall care as good, very good or excellent and 62 per cent reported they would recommend the service to others. In 2010 the survey was conducted on a monthly basis throughout the year for the admitted patient and emergency department categories, and provided for internet, mail and telephone responses to the survey questionnaire.
 - Service quality is improved by NSW Area Health Services producing an annual action plan in response to the survey and using data to inform Statewide service improvement programs. Key performance indicator results from the survey are included in area health service performance agreements (table 10A.72).
- In Victoria, surveying of adult in-patients in public acute hospitals began in 2000 and in sub-acute hospitals in 2005. Surveys are distributed each month and results are reported to health services on a six monthly basis using the Victorian Patient Satisfaction Monitor. The survey conducted between July and December 2009, using a mailout questionnaire and online surveying, had a sample size of 36 038 and a response rate of 38.7 per cent. The overall care index was 78.4 out of a possible range of 20–100, which is a rating of ‘good to very good’. The overall care index is derived from 25 questions across six sub-indices of care. These indices comprise access and admission, general patient information,

treatment information, complaints management, physical environment and discharge and follow-up. The consumer participation indicator score (willingness of staff to listen, opportunity to ask questions and the way staff involved you in decisions about your care) was 79.7.

- Service quality is improved by Victorian hospitals developing quality improvement strategies targeting the three ‘priority to improve’ areas from their survey results. These are based on items that most closely relate to overall satisfaction and if addressed are most likely to improve the overall care index score.
- Each health service is required to report to their community on their overall care index and the consumer participation indicator in their annual quality of care report. In addition, an annual report on the Victorian Patient Satisfaction Monitor is available to the public on the web site www.health.vic.gov.au/patsat (table 10A.73).
- In Queensland, the ‘Having a baby in Queensland pilot survey’ was conducted in November 2009 by inviting participants to complete a survey booklet, online, or by telephone with trained telephone interviewers. The sample size was 2384 and the response rate was 29 per cent. Respondents were asked about a number of aspects of the quality of their care during pregnancy, labour, birth and postnatal care. Between 83 and 96 per cent of respondents were satisfied with each of these aspects of care.
 - Individual facility survey reports will be provided to district CEOs to assist in the planning and identification of service improvement initiatives. The process to take place will be as follows:
 - ... survey results are provided to hospitals
 - ... hospitals review their results in detail and determine areas for improvement
 - ... hospitals develop management action plans to address areas for improvement
 - ... hospitals implement management action plans
 - ... governance units at a district or state level monitor the implementation of action plans (table 10A.74).
- In WA, a computer assisted telephone interview survey was conducted from July 2009 to June 2010 for admitted patients and emergency department patients. The sample size was 6347 admitted patients and 2585 emergency patients, and the response rate was 92 per cent for both admitted and emergency patients. For the 2009-10 Admitted Patient Survey, the overall score of satisfaction was 78.6, an improvement from 77.8 in 2008-09. For emergency patients in 2009-10, the

overall satisfaction score was 77.0, improving from the 2007-08 result of 75.7. Results from 2008-09 cannot be used in comparison with 2009-10 for the emergency patient survey as only tertiary hospital emergency departments were surveyed that year, which is not a comparable group to that surveyed in 2009-10.

- Service quality is improved in WA by each participating hospital receiving detailed information from the survey, which is used to inform service improvement. Hospitals can also request a workshop to assist in the interpretation of the survey results. Many hospitals use patient satisfaction as a performance indicator and as part of their accreditation process. Some examples of how hospitals have used the survey to improve public hospital quality include: a process to record and cross reference for food allergies; improved communication with patients on rights and services available; employment of a customer liaison officer to increase patient involvement; improved access to patient care plans; improved discharge coordination procedures; and the introduction of brochures to inform patients on how the emergency department works (table 10A.75).
- In SA, a computer assisted telephone interview survey was conducted between August 2008 and November 2008 of adult patients aged over 16 years who received between 1 to 34 nights of care in the SA public hospital system in June (metropolitan hospitals) and between May and July (country hospitals). The sample size was 4785 and the response rate was 73.2 per cent. The overall satisfaction score was 88.0 (scored from 0 to 100, being least to most satisfied).
 - Service quality is improved in SA by identifying sub-groups of patients who are either less or more satisfied with hospital care which in turn highlight gaps in services that affect SA hospital patients and assist hospital administrators to set priorities for allocation of resources (table 10A.76).
- Tasmania is reviewing its approach to conducting consumer satisfaction surveys and therefore has not conducted a Statewide survey for this reporting period. While a Statewide system is under development local surveys are being conducted by individual services, however, data and information from these surveys are not available at time of reporting (table 10A.77).
- In the ACT a number of surveys have been conducted in the past year with the two most recent being between October and December 2009 and between January and June 2010 using mailout questionnaires of consenting patients who are discharged from the hospital during the reporting period. The sample size of the 2009 surveys, for example, in one hospital were 186 patients with a 27 per cent response rate and 298 patients with a 30 per cent response rate. In another hospital the sample size was 644 patients with a response rate ranging between 27 and 57 per cent in five different areas. Sample size and response information from the 2010 survey are not yet available. Patients of the 2009 survey, for

example, in one hospital returned a mean satisfaction score of 4.04 (where 1 = very dissatisfied and 5 = very satisfied) when asked to consider their satisfaction with all aspects of their experience with the health service. Results from the 2010 survey are not yet available.

- Data from the 2009 survey has been used to identify and make improvements in service provision to consumers and provide an opportunity for quality improvement by benchmarking against similar services in Australia (table 10A.78).
- In the NT, surveys of admitted patients in public acute hospitals and some clinic patients were conducted at various times of the year in 2010 using various methods. Sample sizes and response rates varied. Some results were as follows:
 - 91 per cent were told why they were in hospital
 - 89 per cent said medical explanations were provided when necessary
 - 68 per cent were told about services that were available to them
 - 51 per cent were told about their rights and responsibilities
 - 0.4 per cent were advised of how to complain.
 - Service quality is improved in the NT from survey results. Aboriginal liaison officers now have a private area for patients to be able to meet with them. Additional DVD players have been purchased to play DVDs created to show patients what to expect in hospital and patient care assistants and Aboriginal liaison officers have been trained in their use. Ward pamphlets have been created and there is increased distribution of brochures outlining patient rights and how patients can make complaints (table 10A.79).

Sentinel events

‘Sentinel events’ is an indicator of governments’ objective to deliver public hospital services that are safe and of high quality (box 10.25).

Box 10.25 **Sentinel events**

'Sentinel events' is defined as the number of reported adverse events that occur because of hospital system and process deficiencies and which result 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 resulting in death or major permanent loss of function.
2. Suicide of a patient in an inpatient unit.
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.

A high number of sentinel events can 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).

Data reported for this indicator are not complete or directly comparable.

Data quality information for this indicator is under development.

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

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 reporting practices differ between jurisdictions and as a result the data are not considered comparable across jurisdictions.

Numbers of sentinel events for 2008-09 are reported below. As larger states and territories will tend to have more sentinel events than smaller ones, the numbers of separations and individual occasions of service are also presented below to provide context to the reported sentinel events in terms of numbers of patients treated.

- In NSW there were 6 procedures involving the wrong patient or body part, 2 suicides of patients in inpatient units, 16 cases of retained instruments or other material after surgery requiring re-operation or further surgical procedure, 2 intravascular gas embolisms resulting in death or neurological damage, 1 haemolytic blood transfusion reaction resulting from ABO incompatibility and 1 medication error leading to the death of a patient reasonably believed to be due to incorrect administration of drugs. Sentinel events in all other categories were reported as zero (table 10A.80). In NSW in 2008-09 there were around 1.5 million separations (table 10A.6) and around 22.1 million individual occasions of service (table 10A.19).
- In Victoria there were 7 suicides of patients in inpatient units, 3 retained instruments or other material after surgery requiring re-operation or further surgical procedure, 1 haemolytic blood transfusion reaction resulting from ABO incompatibility, 1 medication error leading to the death of a patient reasonably believed to be due to incorrect administration of drugs and 3 maternal deaths or cases of serious morbidity associated with labour or delivery. Sentinel events in all other categories were reported as zero (table 10A.81). In Victoria in 2008-09 there were around 1.4 million separations (table 10A.6) and around 7.6 million individual occasions of service (table 10A.19).
- In Queensland there were 2 procedures involving the wrong patient or body part, 2 suicides of patients in inpatient units, 1 retained instrument or other material after surgery requiring re-operation or further surgical procedure, 6 medication errors leading to the death of a patient reasonably believed to be due to incorrect administration of drugs and 2 maternal deaths or cases of serious morbidity associated with labour or delivery. Sentinel events in all other categories were reported as zero (table 10A.82). In Queensland in 2008-09 there were around 883 000 separations (table 10A.6) and around 10.7 million individual occasions of service (table 10A.19).
- In WA there were 3 suicides of patients in inpatient units, 3 retained instruments or other material after surgery requiring re-operation or further surgical procedure, 2 haemolytic blood transfusion reactions resulting from ABO

incompatibility, 2 medication errors leading to the death of a patient reasonably believed to be due to incorrect administration of drugs and 1 maternal death or serious morbidity associated with labour or delivery. Sentinel events in all other categories were reported as zero (table 10A.83). In WA in 2008-09 there were around 467 000 separations (table 10A.6) and around 4.5 million individual occasions of service (table 10A.19).

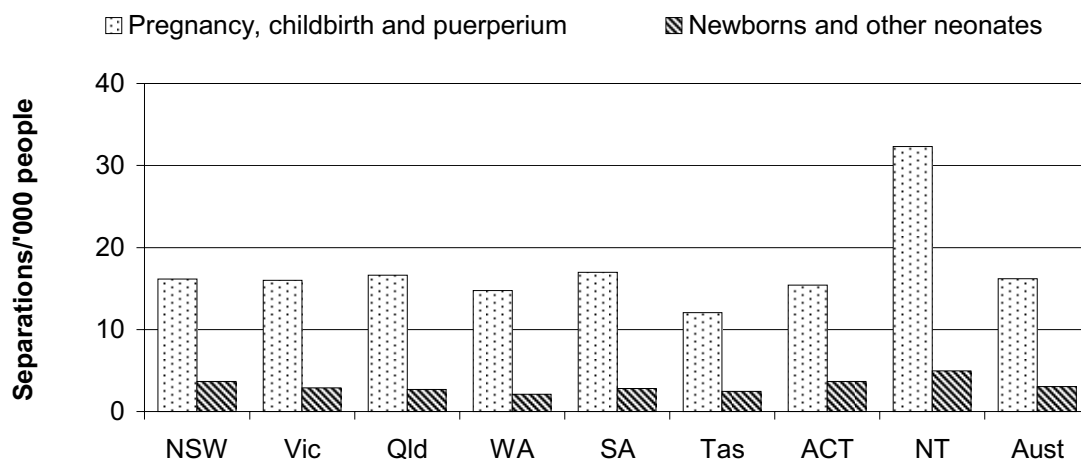
- In SA there were 6 suicides of patients in inpatient units, 7 retained instruments or other material after surgery requiring re-operation or further surgical procedure and 2 maternal deaths or serious morbidity associated with labour or delivery. There were no events reported in the other categories (table 10A.84). In SA in 2008-09 there were around 375 000 separations (table 10A.6) and around 2.1 million individual occasions of service (table 10A.19).
- In Tasmania sentinel events in all categories were reported as zero (table 10A.85). In Tasmania in 2008-09 there were around 95 000 separations (table 10A.6) and around 1.1 million individual occasions of service (table 10A.19).
- In the ACT sentinel events in all categories were reported as zero (table 10A.86). In the ACT in 2008-09 there were around 90 000 separations (table 10A.6) and around 604 000 individual occasions of service (table 10A.19).
- In the NT sentinel events in all categories were reported as zero (table 10A.87). In the NT in 2008-09 there were around 95 000 separations (table 10A.6) and around 465 000 individual occasions of service (table 10A.19).

Data for 2007-08 are reported in tables 10A.80–10A.88. Australian totals are in table 10A.88.

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 8.8 per cent of total acute separations in public hospitals (table 10A.90) and around 10.6 per cent of the total cost of all acute separations in public hospitals in 2008-09 (table 10A.89). Figure 10.27 shows the rate of acute separations per 1000 people for maternity services across jurisdictions in 2008-09.

Figure 10.27 **Separation rates for maternity services, public hospitals, 2008-09^{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 (2010), *Australian Hospital Statistics 2008-09*, Health Services Series No. 34, Cat no. HSE 84; ABS (unpublished), *Australian Demographic Statistics*, December Quarter 2009, Cat. no. 3101.0; tables AA.2 and 10A.90.

In Australian public hospitals in 2008-09, vaginal deliveries without complicating diagnosis accounted for a substantial proportion of the separations for pregnancy, childbirth and the puerperium (30.0 per cent) (tables 10A.90 and 10A.91). 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 third highest cost of all separation categories (\$452.8 million) (table 10A.91).

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 2007, 2008 and 2009 (table 10.15).

Table 10.15 Mean age of mothers at time of giving birth, public hospitals

	<i>NSW</i>	<i>Vic</i> ^a	<i>Qld</i> ^b	<i>WA</i>	<i>SAC</i> ^c	<i>Tas</i>	<i>ACT</i> ^d	<i>NT</i>
2007								
First birth	28.1	27.8	25.6	26.0	26.9	26.0	27.7	24.1
Second birth	30.2	30.0	28.0	28.5	29.4	28.5	30.2	26.4
Third birth	31.4	31.5	29.7	30.0	31.1	29.9	31.4	27.8
All births	29.1	29.6	27.9	28.1	29.0	28.1	29.6	26.6
2008								
First birth	27.9	27.7	25.5	26.0	26.9	27.0	28.0	24.5
Second birth	30.2	30.0	28.1	28.6	29.5	29.6	30.2	26.4
Third birth	31.5	31.5	29.7	32.0	31.0	31.7	31.9	28.5
All births	29.8	29.6	27.9	28.2	29.1	29.2	29.8	26.8
2009								
First birth	27.9	27.7	25.6	26.2	27.0	na	27.8	24.1
Second birth	30.4	30.0	28.3	28.6	29.6	na	30.2	26.8
Third birth	31.6	31.5	29.9	32.0	31.1	na	31.1	28.6
All births	29.9	29.6	28.0	28.3	29.1	na	29.5	26.9

^a Data for Victoria for 2009 are preliminary. ^b The 2006 data exclude mothers whose age was 'not stated'. ^c Age is based on exact age (years) to 4 decimal places. ^d ACT 2009 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. **na** Not available.

Source: State and Territory governments (unpublished).

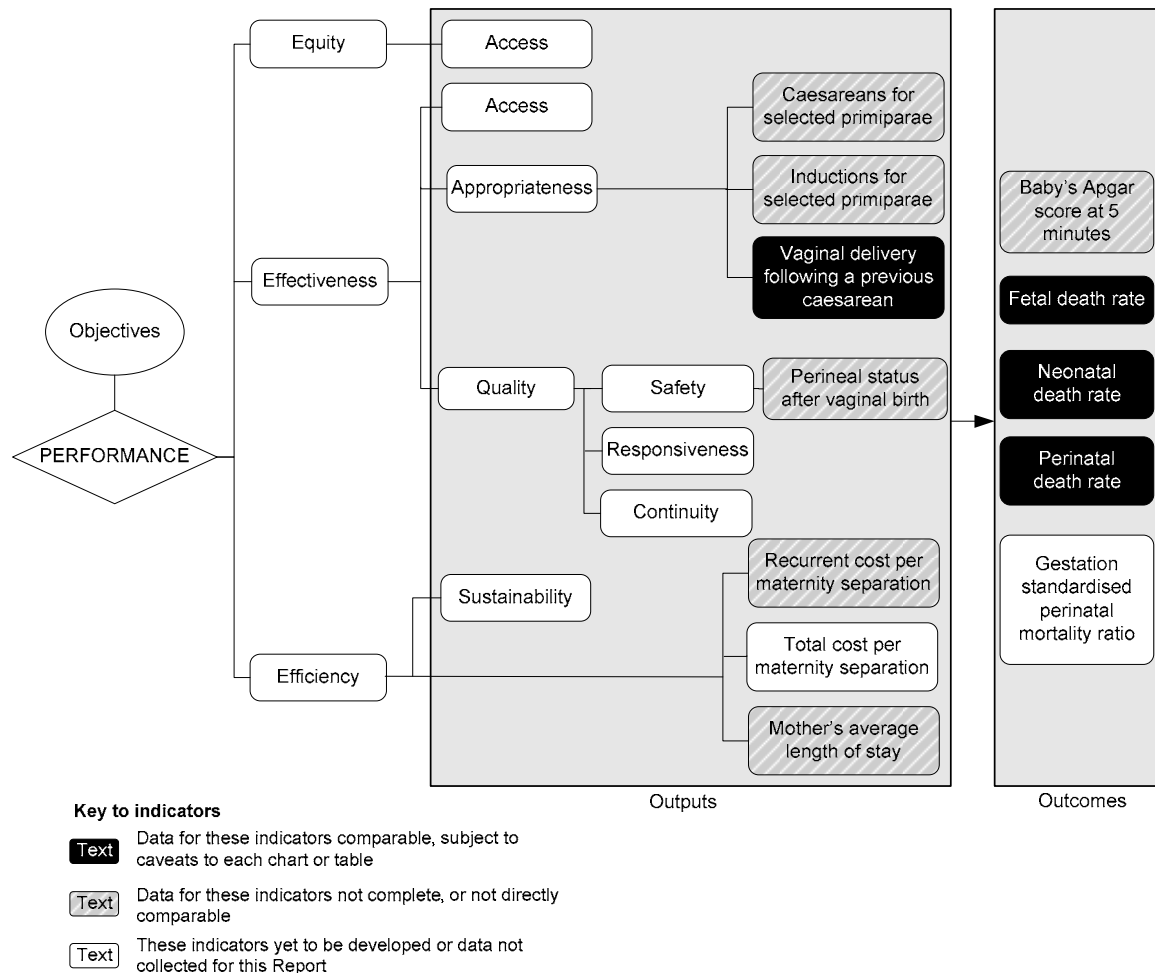
10.5 Framework of performance indicators for maternity services

The performance framework for maternity services is outlined in figure 10.28, and is based on 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 2011 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.

The Report's statistical appendix contains data that may assist in interpreting the performance indicators presented in this chapter. These data cover a range of demographic and geographic characteristics, including age profile, geographic

distribution of the population, income levels, education levels, tenure of dwellings and cultural heritage (including Indigenous and ethnic status) (appendix A).

Figure 10.28 Performance indicators for maternity services



10.6 Key performance indicator results for maternity services

Outputs

Outputs are the 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 10.26).

Box 10.26 Caesareans and inductions for selected primiparae

‘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 can indicate a need for investigation, although 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.

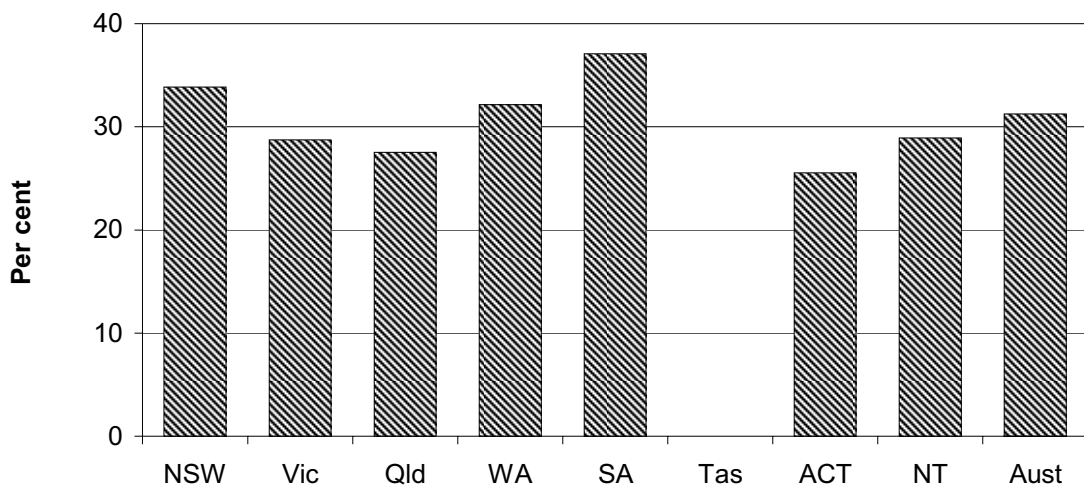
Data reported for this indicator are not complete or directly comparable.

Data quality information for this indicator is under development.

^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 Hilder 2008).

Induction rates for selected primiparae in public hospitals are reported in figure 10.29. Induction rates for private hospitals are shown in table 10A.92 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.93–10A.100.

Figure 10.29 Inductions for selected primiparae, public hospitals, 2009^{a, b, c, d}

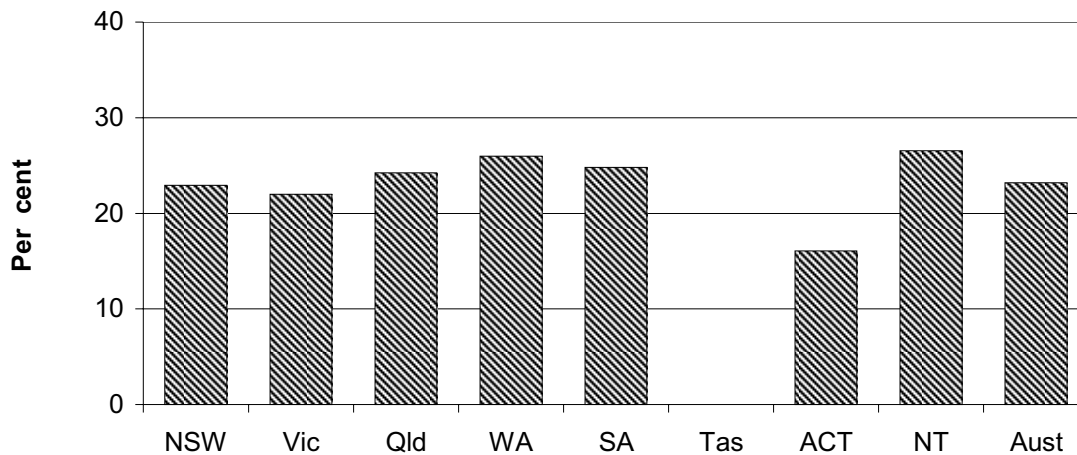


^a Data for Victoria are preliminary. ^b Data for Tasmania are not available. ^c ACT data are preliminary. Care must be taken when interpreting percentages as these data include both ACT and non-ACT residents where the birth occurred in the ACT. ^d Rate for Australia includes only jurisdictions for which data are available.

Source: State and Territory governments (unpublished); table 10A.92.

Caesarean rates for selected primiparae in public hospitals are reported in figure 10.30. Caesarean rates for private hospitals are shown in table 10A.92 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.93–10A.100.

Figure 10.30 **Caesareans for selected primiparae, public hospitals, 2009^{a, b, c, d}**



^a Data for Victoria are preliminary. ^b Data for Tasmania are not available. ^c 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. ^d Rate for Australia includes only jurisdictions for which data are available.

Source: State and Territory governments (unpublished); table 10A.92.

Vaginal birth following previous caesarean

‘Vaginal birth following a previous caesarean’ is an indicator of the appropriateness of maternity services in public hospitals (box 10.27).

Box 10.27 Vaginal birth following a previous caesarean

‘Vaginal delivery following a previous caesarean’ is defined as the percentage of multiparous^a mothers who have had a previous caesarean, whose current method of birth was either an instrumental or non-instrumental vaginal delivery.

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 caesarean. Low rates of vaginal birth following a previous caesarean may warrant investigation, or on the other hand, they can indicate appropriate clinical caution. When interpreting this indicator, emphasis needs to be given to the potential for improvement.

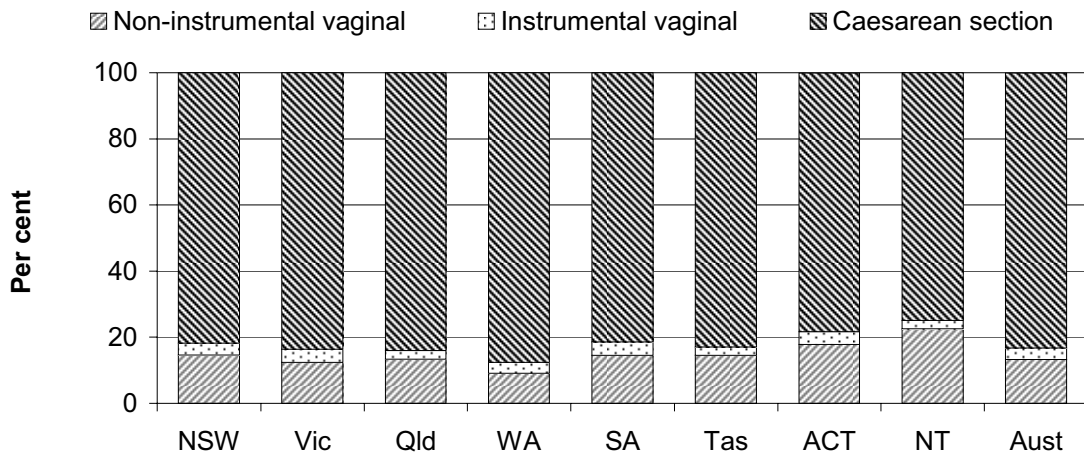
Data reported for this indicator are comparable subject to caveats.

Data quality information for this indicator is under development.

^a Multiparous means a pregnant woman who had at least one previous pregnancy resulting in a live birth or stillbirth.

The measure reported for this indicator is significantly different from that reported previously in this Report. Both the method of calculating the indicator and the data source have changed. The quality of this measure is greatly improved with full coverage of births according to national definitions. Data are not comparable with previous Reports. Nationally, of women that had a previous caesarean section, 16.7 per cent had either an instrument or non-instrument vaginal delivery as their current method of birth, while 83.2 per cent had another caesarean section (figure 10.31).

Figure 10.31 Multiparous mothers who have had a previous caesarean section by current method of birth, 2008^{a, b, c, d}



^a For multiple births, the method of birth of the first born baby was used. ^b Data present method of birth for multiparous women who have had a previous caesarean, not only women who had a previous caesarean section. ^c For NSW, Victoria, WA and the NT non-instrumental vaginal includes all women who had a vaginal breech birth, whether or not instruments were used. For the remaining jurisdictions, vaginal breech births are only included where instruments were not used. ^d Instrumental vaginal birth includes forceps and vacuum extraction.

Source: Laws P.J., Li Z., Sullivan E.A., (2010), *Australia's Mothers and Babies 2008*, AIHW Cat. No. PER 50, AIHW National Perinatal Statistics Unit (Perinatal Statistics Series No. 24), Sydney; table 10A.101.

Effectiveness — quality

The performance indicator framework for maternity services identifies three subdimensions of quality for health services: safety; responsiveness 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 governments’ objective to provide safe and high quality services (box 10.28).

Box 10.28 Perineal status after vaginal birth

‘Perineal status after vaginal birth’ is the state of the perineum following a vaginal birth (HDSC 2008). 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 2008).

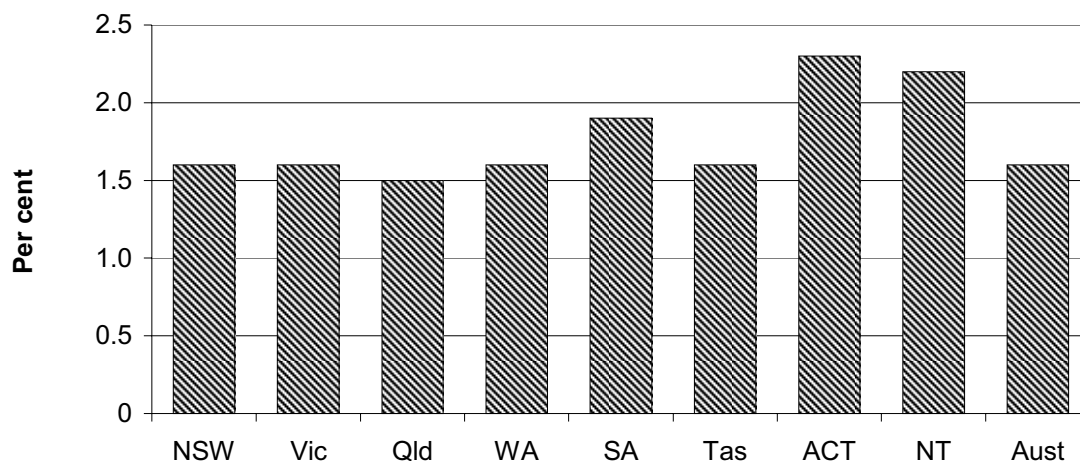
Perineal lacerations caused by childbirth are painful, take time to heal and can result in ongoing discomfort and debilitating conditions such as faecal incontinence. Maternity services staff aim to minimise lacerations, particularly more severe lacerations (third and fourth degree), through labour management practices. 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.

Data reported for this indicator are not directly comparable.

Data quality information for this indicator is under development.

The proportion of mothers with third or fourth degree lacerations to their perineum following vaginal births is shown in figure 10.32. 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.102.

Figure 10.32 **Perineal status — mothers with third or fourth degree lacerations after vaginal births, 2008^{a, b}**



^a For multiple births, the perineal status after birth of the first child was used. ^b Data include all women who gave birth vaginally, including births in public hospitals, private hospitals and outside of hospital, such as homebirths.

Source: Laws P.J., Li Z., Sullivan E.A., (2010), *Australia's Mothers and Babies 2008*, AIHW Cat. No. PER 50, AIHW National Perinatal Statistics Unit (Perinatal Statistics Series No. 24), Sydney; table 10A.102.

Responsiveness, continuity

The Steering Committee has identified the responsiveness and continuity of care of maternity services as an area for development in future Reports.

Efficiency — 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 governments’ objective to deliver cost effective services (box 10.29).

Box 10.29 Recurrent cost per maternity separation

'Recurrent cost per maternity separation' is presented for the two AR-DRGs 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.

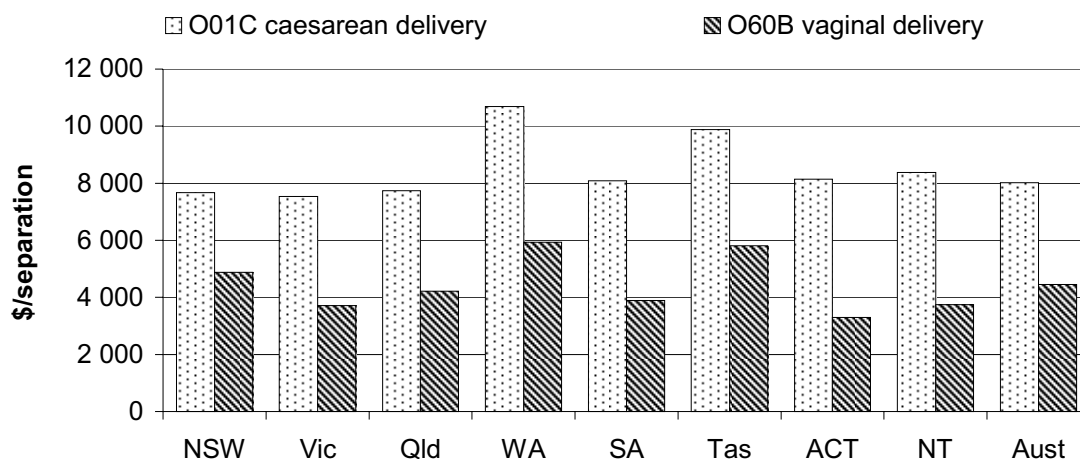
Lower 'recurrent costs per maternity separation' can reflect higher efficiency in providing maternity services to admitted patients. However, this is only likely to be the case where the low cost maternity services are provided at equal or superior effectiveness.

Data reported for this indicator are not directly comparable.

Data quality information for this indicator is under development.

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 10.33). Data for a number of other maternity related AR-DRGs are shown in table 10A.103. Data are sourced from the NHCDC. The NHCDC is a voluntary annual collection, the purpose of which is to calculate 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 10.33 **Estimated average cost per separation for selected maternity related AR-DRGs, public hospitals, 2008-09^{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 (2010), *National Hospital Cost Data Collection Cost Report, Round 13 (2008-09)*; table 10A.103.

Total cost per maternity separation

‘Total cost per maternity separation’ (recurrent cost plus capital cost) is an indicator of governments’ objective to deliver cost effective services (box 10.30).

Box 10.30 Total cost per maternity separation

‘Total cost per maternity separation’ as a measure of the efficiency of public hospital maternity services.

Total cost per maternity separation has been identified as a key area for development in future Reports.

Mother’s average length of stay

‘Mother’s average length of stay’ is an indicator of governments’ objective to deliver services efficiently (box 10.31).

Box 10.31 Mother's average length of stay

'Mother's average length of stay' is defined as the total number of patient days for the selected maternity AR-DRG, divided by the number of separations for that AR-DRG.

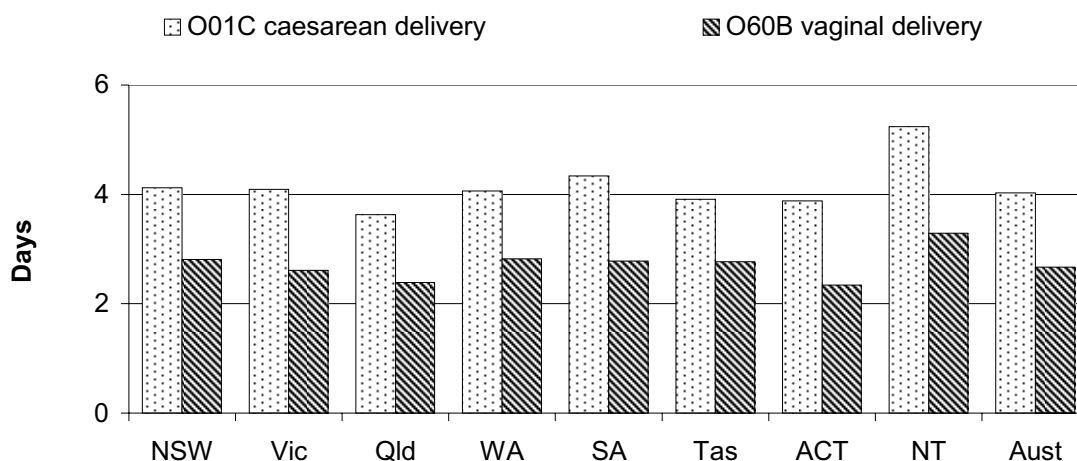
Shorter stays for mothers reduce hospital costs but whether they represent genuine efficiency improvements depends on a number of factors. Shorter stays can, for example, have an adverse effect on the health of some mothers and result in additional costs for in-home care. The indicator is not adjusted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

Data reported for this indicator are not directly comparable.

Data quality information for this indicator is under development.

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 10.34).

Figure 10.34 **Average length of stay for selected maternity-related AR-DRGs, public hospitals, 2008-09^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 (2010), *National Hospital Cost Data Collection Cost Report, Round 13 (2008-09)*; table 10A.103.

Outcomes

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

Apgar score

‘Apgar score at five minutes’ is an indicator of governments’ objective to deliver maternity services that are safe and of high quality (box 10.32).

Box 10.32 Apgar score at five minutes

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.

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.

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 can indicate relative performance.

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

Data reported for this indicator are not complete or directly comparable.

‘Low’ Apgar scores for babies by birthweight category are contained in table 10.16. The range of Apgar scores for 2005 to 2009 are reported in table 10A.104.

Table 10.16 Live births with an Apgar score of 3 or lower, 5 minutes post-delivery, public hospitals, 2009

<i>Birthweight (grams)</i>	<i>Unit</i>	<i>NSW</i>	<i>Vic^a</i>	<i>Qld</i>	<i>WA</i>	<i>SA</i>	<i>Tas</i>	<i>ACT^b</i>	<i>NT</i>
Less than 1500	no.	829	628	530	319	222	na	55	52
Low Apgar	%	19.1	16.5	16.2	9.1	9.5	na	9.1	23.1
1500-1999	no.	933	628	616	321	260	na	57	61
Low Apgar	%	1.2	16.5	0.8	1.9	1.5	na	5.3	1.6
2000-2499	no.	2 847	1 985	1 837	825	669	na	161	204
Low Apgar	%	0.6	0.5	0.8	0.4	0.1	na	1.2	–
2500 and over	no.	67 545	46 453	39 738	16 311	13 345	na	3 261	2 749
Low Apgar	%	0.2	0.2	0.2	0.1	0.1	na	0.2	0.1

^a Data for Victoria are preliminary. ^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. **na** Not available. – Nil or rounded to zero.

Source: State and Territory governments (unpublished); table 10A.104.

Fetal death rate

‘Fetal death rate’ is an indicator of governments’ objective to deliver maternity services that are safe and of high quality (box 10.33).

Box 10.33 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.

Low fetal death rates can 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.

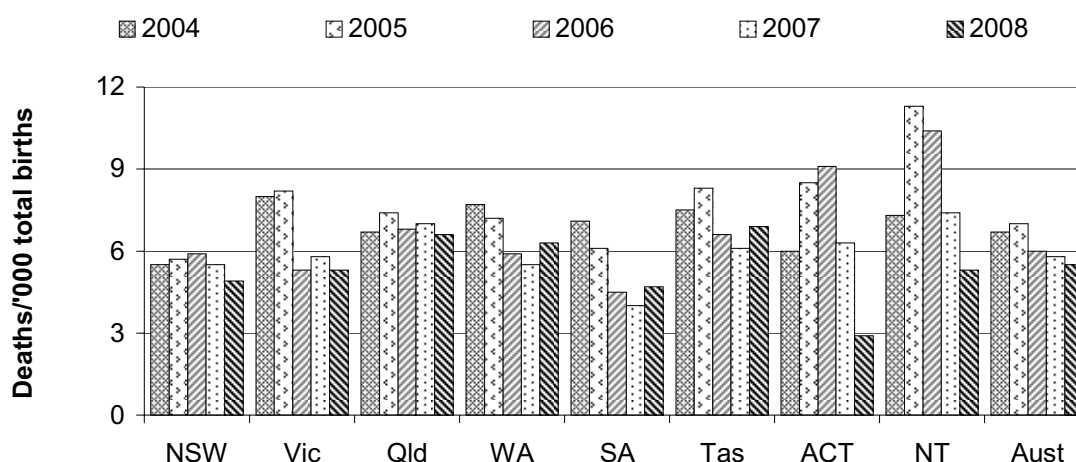
Differences in the 'fetal death rate' between jurisdictions are likely to be due to factors outside the control of maternity services for admitted patients. To the extent that the health system influences fetal death rates, the health services that can have an influence include outpatient services, general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

Data reported for this indicator are comparable.

Data quality information for this indicator is under development.

Fetal death rates are reported in figure 10.35. Nationally, fetal death rates have declined slightly over the period 2004–2008. National time series for fetal death rates for the period 1996 to 2008 are included in table 10A.107. Fetal deaths rates by the Indigenous status of the mother are shown in figure 10.38.

Figure 10.35 **Fetal death rate**^{a, b}



^a Annual rates fluctuate (in particular, for smaller jurisdictions) as a result of a low incidence of fetal deaths and small populations. ^b The ACT and Australian total may exclude stillbirth data which were not received or processed by the ABS in time for the finalisation of the 2008 reference year. According to scope rules, these 2008 data will be included in the 2010 reference year.

Source: ABS (unpublished) *Perinatal deaths, Australia*, Cat. no. 3304.0; table 10A.105.

Neonatal death rate

‘Neonatal death rate’ is an indicator of governments’ objective to deliver maternity services that are safe and of high quality (box 10.34).

Box 10.34 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.

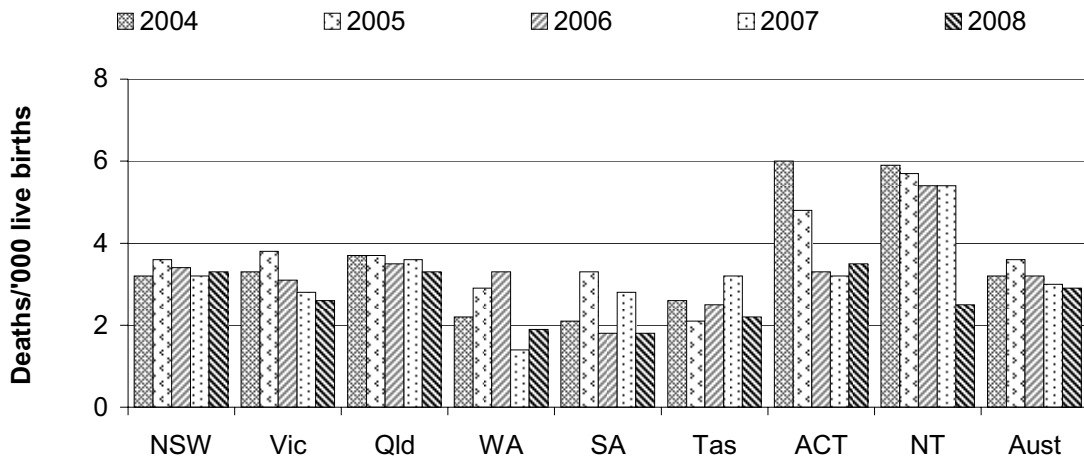
Low ‘neonatal death rates’ can indicate high quality maternity services. The rate tends to be higher among premature babies, so a lower neonatal death rate can also indicate a lower percentage of pre-term births.

Data reported for this indicator are comparable.

Data quality information for this indicator is under development.

Neonatal death rates are reported in figure 10.36. Nationally, neonatal death rates have declined slightly over the period 2004–2008. National time series for neonatal death rates for the period 1996 to 2008 are included in table 10A.107. Neonatal death rates by the Indigenous status of the mother are shown in figure 10.38.

Figure 10.36 **Neonatal death rate^a**



^a Annual rates fluctuate (in particular, for smaller jurisdictions) as a result of a low incidence of neonatal deaths and small populations.

Source: ABS (unpublished) *Perinatal deaths, Australia*, Cat. no. 3304.0; table 10A.106.

Perinatal death rate

‘Perinatal death rate’ is an indicator of governments’ objective to deliver maternity services that are safe and of high quality (box 10.35).

Box 10.35 Perinatal death rate

A perinatal death is a fetal or neonatal death (boxes 10.33 and 10.34).

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.

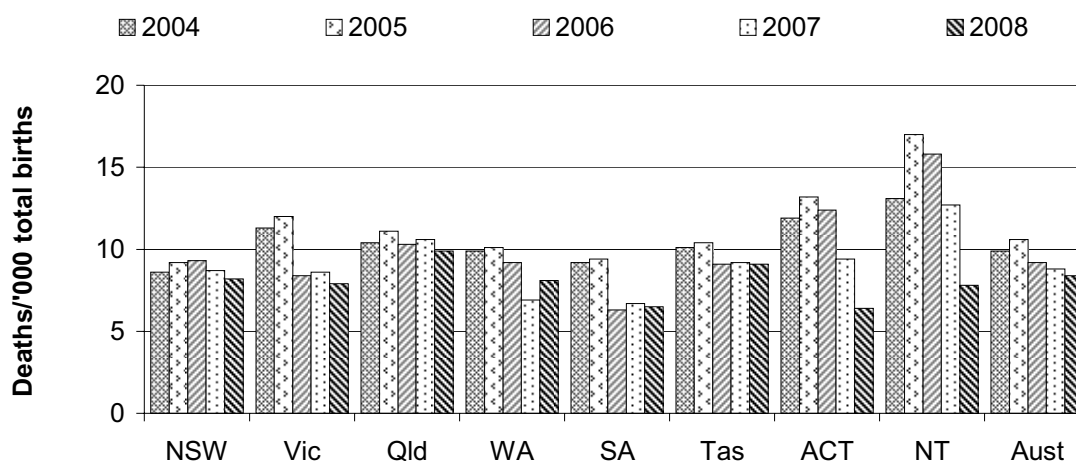
The caveats that apply to fetal and neonatal death rates also apply to perinatal death rates.

Data reported for this indicator are comparable.

Data quality information for this indicator is under development.

Perinatal death rates are shown in figure 10.37. Perinatal death rates by the Indigenous status of the mother are shown in figure 10.38. National time series for perinatal death rates for the period 1996 to 2008 are included in table 10A.107.

Figure 10.37 **Perinatal death rate**^{a, b}



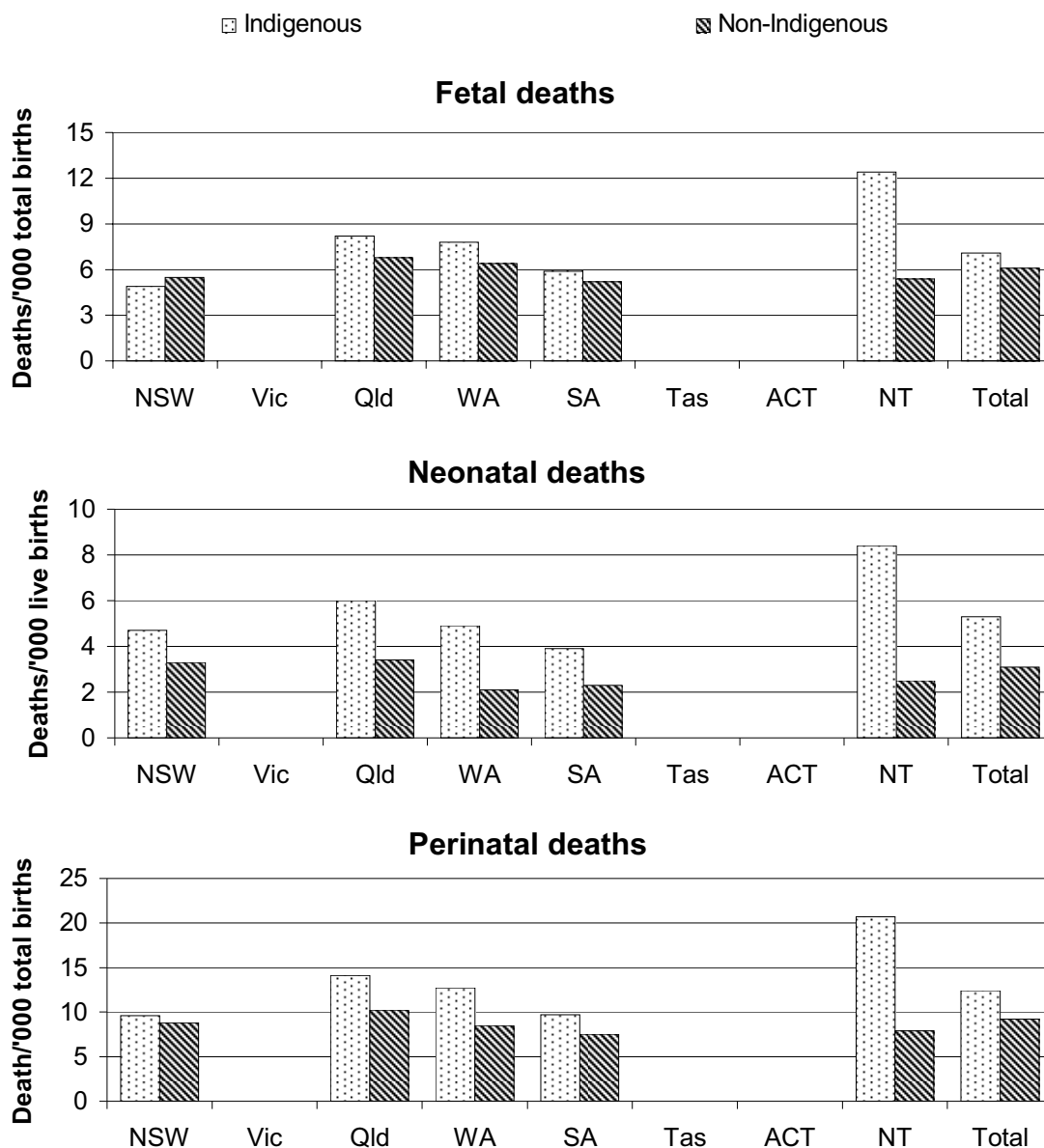
^a Annual rates fluctuate (in particular, for smaller jurisdictions) as a result of a low incidence of perinatal deaths. ^b The ACT and Australian total may exclude stillbirth data which were not received or processed by the ABS in time for the finalisation of the 2008 reference year. According to scope rules, these 2008 data will be included in the 2010 reference year.

Source: ABS (unpublished) *Perinatal deaths, Australia*, Cat. no. 3304.0; table 10A.108.

Fetal, neonatal and perinatal deaths for Indigenous people

Fetal, neonatal and perinatal deaths data by the Indigenous status of the mother are available for NSW, Queensland, WA, SA and the NT only. 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 10.38).

Figure 10.38 **Fetal, neonatal and perinatal deaths, by Indigenous status of mother 2004–2008^a**



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

Source: ABS (unpublished) *Perinatal deaths, Australia*, Cat. no. 3304.0; table 10A.109.

Gestation standardised perinatal mortality ratio

The Steering Committee has identified Gestation standardised perinatal mortality ratio as an indicator of the outcomes of maternity services (box 10.36).

Box 10.36 Gestation standardised perinatal mortality ratio

This measure of perinatal mortality (box 10.35) 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 2011 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, two aspects of quality — responsiveness and continuity — and the efficiency 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.
- Improving 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 and improving timeliness of the data.
- Improving the reporting of quality and safety indicators in both the public hospitals and maternity services frameworks.
- Improving the quality of Indigenous data, particularly completeness and Indigenous identification. Indigenous hospitalisation data for the ACT and Tasmania will be included in future reports. Work on improving Indigenous identification in hospital admitted patient data across states and territories is ongoing, with the inclusion of data for Tasmania and the ACT in national totals a priority.

Report on Government Services alignment with National Agreement reporting

Further alignment between the Report and NA indicators might occur in future reports as a result of developments in NA reporting.

Outcomes from review of Report on Government Services

COAG endorsed recommendations of a review of the Report on Government Services in December 2009. Those recommendations implemented during 2010 are reflected in this Report.

Further recommendations will be reflected in future Reports, including implementation of Independent Reference Group and Steering Committee recommendations arising from the 'Review of the general performance indicator framework' and the 'Review of the performance indicators and their associated measures'. The 2012 Report and later editions will continue:

- lengthening time series data in attachment tables
- developing data quality information documents for performance indicators
- developing mini-case studies.

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 can 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 can receive acute, subacute 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 5.1 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 can 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 can 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.
Multiparous	A pregnant women who had at least one previous pregnancy resulting in a live birth or stillbirth
Non-acute care	Includes maintenance care and newborn care.
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 can 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 2008).
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 can provide (and charge for) treatment and accommodation services to private patients. Charges to non-admitted patients and

	admitted patients on discharge can 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).
Subacute care	Interdisciplinary therapeutic clinically-intense and goal-directed care in which the need for care depends primarily on the patient's functional status and quality of life rather than the underlying medical diagnosis or the patient's prospects of recovery from illness. Subacute care includes rehabilitation, palliative care and some mental health care, as well as geriatric evaluation and management and psychogeriatric care. Common to all is the patient no longer meets criteria for classification as 'acute', but still requires therapeutic, clinically-intense and goal-directed care.
Surgical site infection rate for selected surgical procedures	<p>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.</p> <p>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 indirectly standardised rate for each Jurisdiction was calculated as:</p> <p>Jurisdiction rate = (sum of observed infections in Jurisdiction /sum of expected infections for Jurisdiction)*rate for indicator pair</p> <p>Where</p>

	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 can 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 List of attachment tables

Attachment tables are identified in references throughout this chapter by an ‘10A’ suffix (for example, table 10A.3). Attachment tables are provided on the Review website (www.pc.gov.au/gsp). Users without access to the website can contact the Secretariat to obtain the attachment tables (see contact details on the inside front cover of the Report).

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Table 10A.2	Recurrent expenditure, public hospitals, by source of funding, 2008-09
Table 10A.3	Recurrent expenditure per person, public hospitals (including psychiatric) (2008-09 dollars)
Table 10A.4	Public hospitals (including psychiatric hospitals) by hospital size, 2008-09
Table 10A.5	Available beds per 1000 people, by region, public hospitals (including psychiatric) (number)
Table 10A.6	Summary of separations, public hospitals 2008-09
Table 10A.7	Separations, public (non-psychiatric) hospitals
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Table 10A.9	Separations in public hospitals, by age group, 2008-09
Table 10A.10	Separations by hospital sector and Indigenous status of patient, 2008-09
Table 10A.11	Separations per 1000 people, by Indigenous status of patient (number)
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Table 10A.16	Separations, by type of episode of care, public hospitals (including psychiatric), 2008-09
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Table 10A.18	Top 10 AR-DRGs (version 5.1) with the most patient days, excluding same day separations, public hospitals, 2008-09
Table 10A.19	Non-admitted patient occasions of service, by type of non-admitted patient care, public hospitals, 2008-09
Table 10A.20	Emergency department waiting times, by triage category, public hospitals 2008-09

Table 10A.21	Patients treated within national benchmarks for emergency department waiting time, 2008-09
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Table 10A.24	Elective surgery waiting times for patients admitted from waiting lists, by hospital peer group, public hospitals
Table 10A.25	Elective surgery waiting times, by specialty of surgeon
Table 10A.26	Waiting times for elective surgery in public hospitals, by Indigenous status and procedure, 2008-09 (days)
Table 10A.27	Waiting times for elective surgery in public hospitals, by remoteness area, 2008-09 (days)
Table 10A.28	Elective surgery waiting times, by indicator procedure
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