9 Public hospitals

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

Public hospital systems, including provision by public hospitals of maternity services, are described in section 9.1. A framework of performance indicators and the key performance indicator results for public hospitals are outlined in section 9.2. The performance indicator framework and key results for maternity services provided by public hospitals are discussed in section 9.3. Future directions in reporting are discussed in section 9.4. Terms and definitions are summarised in section 9.5.

This year, changes have been made to the reporting of waiting times for elective surgery. An additional method of reporting is based on times waited for admission for elective surgery for all patients, regardless of the clinical urgency category assigned to them. Reporting on hospital accreditation has improved with data being presented for the first time for all hospitals accredited by recognised accreditation programs. Reporting of the relative stay index has also been improved.

Reporting on maternity services has been expanded for this year's Report, with data reported in the health preface on the birthweights of babies born to Indigenous mothers and to all mothers. The inclusion of these data is also in line with the Review's focus on improved reporting for Indigenous people. An indicator of quality is being reported for maternity services for the first time, with the inclusion of the 'perineal status after delivery' indicator.

Supporting tables

Supporting tables for chapter 9 are provided on the CD-ROM enclosed with the Report. The files are provided in Microsoft Excel 97 format as \Publications\Reports\2003\Attach9A.xls and in Adobe PDF format as \Publications\Reports\2003\Attach9A.pdf.

Supporting tables are identified in references throughout this chapter by an 'A' suffix (for example, table 9A.3 is table 3 in the electronic files). These files can be found on the Review web page (www.pc.gov.au/gsp). Users without Internet access can contact the Secretariat to obtain these tables (see details on the inside front cover of the Report).

9.1 Profile of public hospital systems

Definition

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

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

This chapter focuses on acute care services provided to admitted patients and emergency services provided to non-admitted patients, and subsequently, admitted patients in public hospitals. These services comprise the bulk of public hospital activity, and in the case of acute care services to admitted patients, have the most reliable data available. Some data in the chapter include sub-acute and non-acute care services where they cannot yet be separately identified from acute care. In some instances, stand-alone psychiatric hospitals are also included, although their role is diminishing in accordance with the National Mental Health Strategy. 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

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

examined more closely in the health management chapter (chapter 11). Some common health terms relating to hospitals are defined in box 9.1.

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

Patients

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

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

Types of care

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

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

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

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

Hospital outputs

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

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

(Continued on next page)

Box 9.1 **(Continued)**

Non-admitted occasions of service: clinical services provided by hospitals to non-admitted patients. Services may include emergency department visits, outpatient services (such as pathology, radiology and imaging, 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

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

AR-DRG v4.1 (Australian Revised Diagnosis Related Group, version 4.1): a patient classification system that hospitals use to match their patient services (hospital procedures and diagnoses) with their resource needs. AR-DRG v4.1 is based on the ICD-10-AM classification and replaces the earlier AN-DRG v3.0/3.1.

ICD-10-AM (the Australian Modification (AM) of the International Standard Classification of Diseases and Related Health Problems): a classification of diseases and injuries; replaces the earlier ICD-9-CM (Australian Version of the International Classification of Diseases, Revision 9, Clinical Modification).

Source: AIHW (2001a); Department of Health and Aged Care (1998) and National Centre for Classification in Health (1998).

Funding

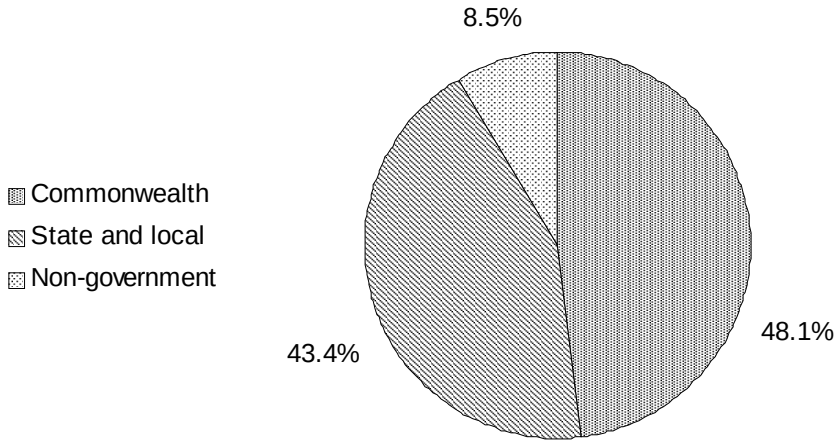
Total recurrent expenditure on public hospitals (excluding depreciation) was $15.5 billion in 2000-01 (table 9A.1).[2] Data provided by NSW for 2000-01 contain for the first time since 1995-96 expenditure through community health programs administered by hospitals, and therefore are not comparable with data for previous years. Based on preliminary revised data provided by NSW for 1999-2000, expenditure increased nationally in constant price terms by 2.7 per cent in 2000-01 (in 1999-2000 dollars) (AIHW 2002a).

Financing for public hospitals comes from a number of sources. Commonwealth, State and Territory governments, health insurance funds, individuals, workers compensation and compulsory motor vehicle third party insurance cover, finance the expenditure on public hospitals. Based on preliminary data, governments contributed about 91.5 per cent of funding for public (non-psychiatric) hospitals in

[2] This figure includes spending on patient transport.

2000-01 (figure 9.1).[3] Public (non-psychiatric) hospitals accounted for 35.7 per cent of government recurrent expenditure on health services in 2000-01 (AIHW 2002b).

Figure 9.1 **Recurrent expenditure on public (non-psychiatric) hospitals, by source of funds, 2000-01 (per cent)[a]**



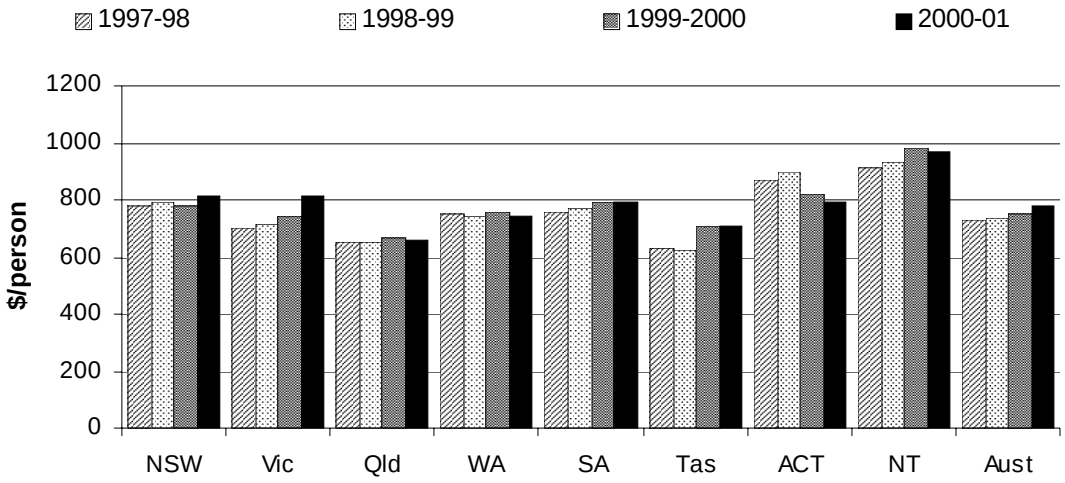
a Based on preliminary AIHW and Australian Bureau of Statistics (ABS) estimates.

Source: AIHW (2002b).

For selected public hospitals, expenditure on admitted patients (based on the inpatient fraction) ranged from 68 to 81 per cent of total recurrent expenditure across jurisdictions in 2000-01 (table 9A.25). In 2000-01, per person government recurrent expenditure on public hospitals was $776 for Australia, ranging from $969 in the NT to $660 in Queensland (1999-2000 dollars). Real expenditure per head across Australia increased over time, from $733 to $776 between 1997-98 and 2000-01 (1999-2000 dollars) (figure 9.2). Not all jurisdictions followed this trend.

[3] These expenditure data (figure 9.1) are from the AIHW's *Health Expenditure Australia* and are not directly comparable with the expenditure data drawn from the AIHW's *Australian Hospital Statistics*. The *Health Expenditure Australia* data have a broader scope. The *Australian Hospital Statistics* data exclude expenditure for population health, primary and community based services administered by NSW hospitals and trust fund expenditure (AIHW 2001a).

Figure 9.2 **Recurrent expenditure per person, public hospitals (including psychiatric) (1999-2000 dollars)[a, b, c, d e, f]**

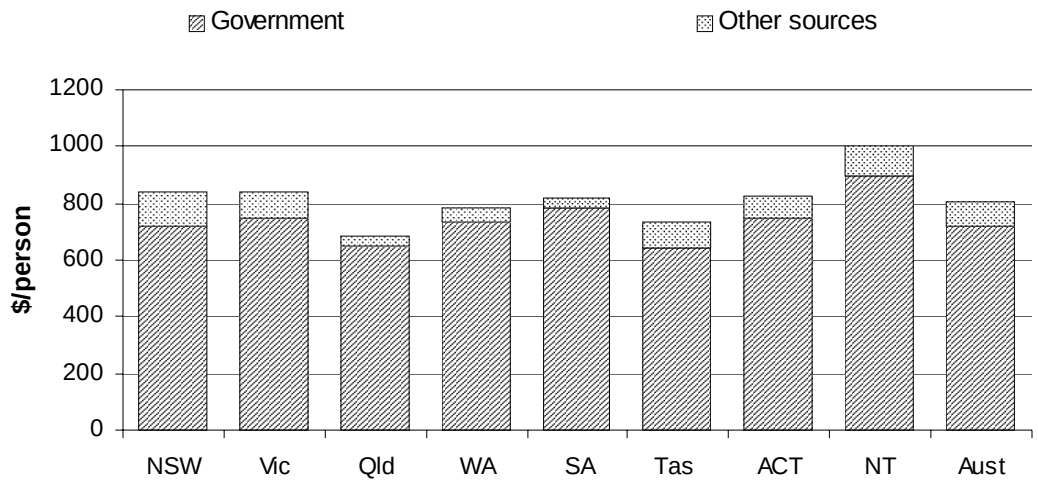


a Expenditure data exclude depreciation and interest payments. Data include patient transport which was excluded in previous reports. **b** Hospital expenditure recorded against special purposes and trust funds and population and primary care programs is excluded. Other personal care staff are not reported separately. **c** Queensland Pathology services are purchased from a Statewide pathology service rather than being provided by each hospital's employees. **d** SA interest payments are included in administrative expenses. Most trainee/pupil nurses are enrolled in tertiary institutions. **e** Tasmanian hospitals pay payroll tax, with most being included in administrative expenses and the remainder in other recurrent expenditure. Except for medical officers, salaries for staff categories are not reported separately. For 2000-01, data for six small Tasmanian hospitals are incomplete. **f** Prior to 2000-01, superannuation for four of the five NT hospitals is included. For 2000-01, superannuation for all NT hospitals is included. Interest payments are not reported.

Source: AIHW (2002a, 2002b); table 9A.2.

In 2000-01, public hospitals (including psychiatric hospitals) received almost $1.6 billion revenue from non-government sources, which accounted for 10.2 per cent of all recurrent expenditure (excluding depreciation). Total revenue in each State and Territory comprised patient revenues (including income from private and compensable patients), recoveries (including fees from private practitioners treating private patients in public hospitals, staff meals and accommodation) and other revenue (investment income, charities and bequests). It should be noted that some Commonwealth health insurance subsidy payments are indirectly included in total income via health insurance payments received as part of patient revenue. The proportion of hospital expenditure per person funded from non-government sources varies across jurisdictions (figure 9.3).

Figure 9.3 **Source of funds per person, public hospitals, 2000-01 (current prices)[a]**



a Data include psychiatric hospitals.

Source: AIHW (2002a); tables 9A.1 and 9A.26.

Size and scope of sector

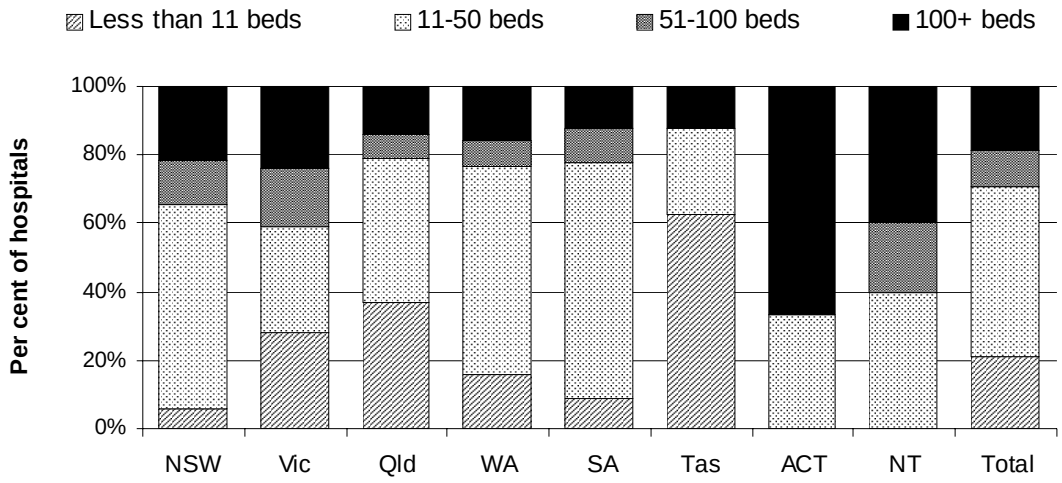
Hospitals

In 2000-01, Australia had 749 public hospitals (including 23 psychiatric hospitals) with 52 591 beds. There were 75 fewer beds in public (non-psychiatric) hospitals in 2000-01 than in 1999-2000, and 281 fewer beds in public psychiatric hospitals (AIHW 2002a). Although 70.6 per cent of hospitals had fewer than 50 beds, these smaller hospitals represented only 19.3 per cent of total available beds (figure 9.4).

Beds

On average, there were 2.7 beds per 1000 people in 2000-01 (figure 9.5). The number of beds per 1000 people was highest in SA (3.4) and lowest in the ACT (2.2). More beds were available per 1000 people in remote areas, although this does not provide an indication of regional access to particular types of service or the distance required to travel to access these services. These data should be viewed in the context of the age and sex structure (information in appendix A) and morbidity and mortality of the population in each jurisdiction.

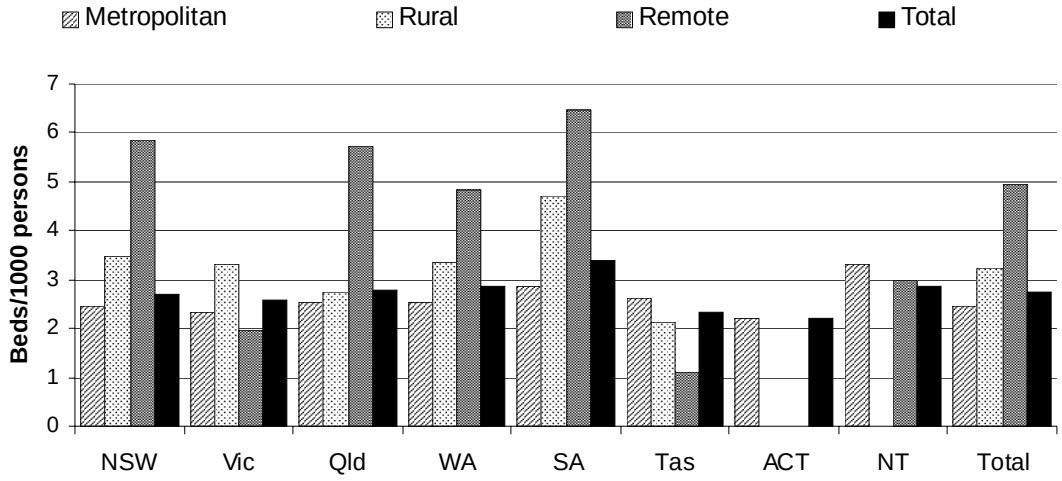
Figure 9.4 **Public hospitals by size, 2000-01[a, b, c]**



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 physical hospital buildings or campuses. **b** Size is based on the number of available beds. **c** The count of hospitals in Victoria is a count of the campuses that report data separately to the National Hospital Morbidity Database.

Source: AIHW (2002a); table 9A.3.

Figure 9.5 **Number of available beds by region, public hospitals, 2000-01[a, b]**



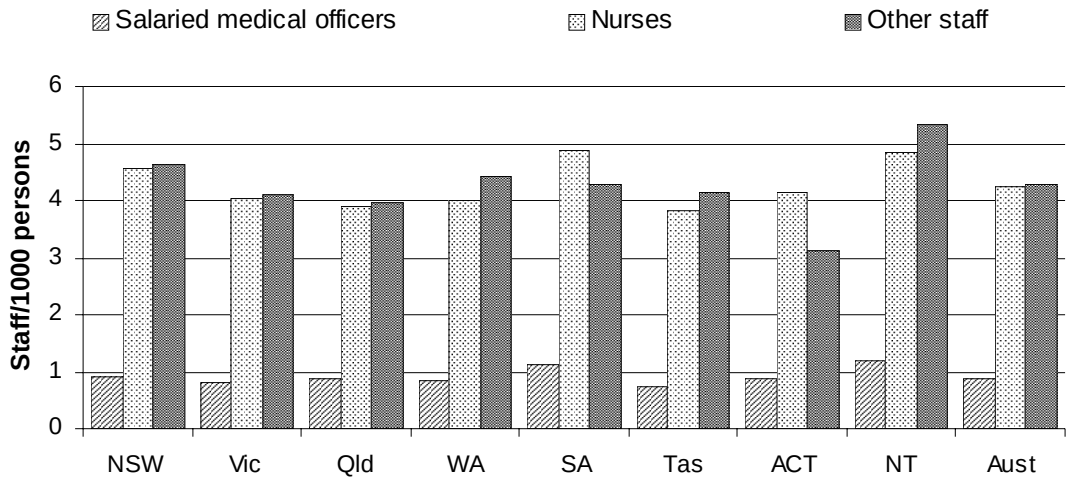
a An 'available bed' is one that is immediately available to be used by an admitted patient. A bed is immediately available if located in a suitable place for care, with nursing and auxiliary staff available within a reasonable period. Surgical tables, recovery trolleys, delivery beds, cots for normal neonates, emergency stretchers/beds not normally authorised or funded, and beds designated for same day non-admitted patient care are excluded. Beds in wards which were closed for any reason (except weekend closures/wards staffed and available on weekends only) are also excluded (AIHW 2001a). **b** Data should be viewed in the context of the age and sex structure and morbidity and mortality of the population in each jurisdiction. This information is included in the statistical appendix to the Report.

Source: AIHW 2002a; table 9A.4.

Staff

There were 182 995 full time equivalent (FTE) staff employed in Australian public hospitals in 2000-01 (based on the average number of staff available for the year). Nurses comprised 45.1 per cent and salaried medical officers represented 9.5 per cent of FTE staff. Other staff (diagnostic and allied health professionals, other personal care staff, administrative and clerical staff, and domestic and other staff) made up the remaining 45.4 per cent (AIHW 2002a). The NT had the most FTE staff per 1000 people (11.4) while the ACT had the least (8.2) (figure 9.6). It is important to note that the collection of data by staffing category is not consistent across jurisdictions — for some jurisdictions, best estimates only are reported. In some jurisdictions there has been an increase in the outsourcing of services with a large labour-related component (for example, food services and domestic services). Increased outsourcing may explain the apparent decline in FTE staff in some staffing categories and also the differences between the jurisdictions (AIHW 2000a).

Figure 9.6 **Average FTE staff, public hospitals, 2000-01[a, b, c, d]**



a Where average FTE staff numbers were not available, staff numbers at 30 June 2000 were used. Staff contracted to provide products (rather than labour) are not included. **b** For Victoria, FTEs may be slightly understated. **c** For Queensland, pathology services are provided by staff employed by the State pathology service and are not reported here. **d** Data for three small Tasmanian hospitals not supplied.

Source: AIHW (2002a); table 9A.5.

Activity

Admitted patient care

There were around 3.9 million acute, sub-acute and non-acute separations in public hospitals in 2000-01 (table 9A.6). Of these, acute separations accounted for 95.7 per cent, newborns with some qualified days 1.1 per cent, and rehabilitation care 1.8 per cent (see table 9A.8). (Palliative care, non-acute care and other care made up the residual.) Public psychiatric hospitals accounted for around 0.5 per cent of total separations in public hospitals. Of the total number of separations in public (non-psychiatric) hospitals, 46.4 per cent were for same day patients (table 9A.6).

Table 9.1 shows the 10 AR-DRGs with the highest number of overnight acute separations in public hospitals for 2000-01. These 10 AR-DRGs accounted for 16.4 per cent of all acute separations nationally. In the NT, which reported the highest jurisdictional percentage, these 10 AR-DRGs accounted for around 19.9 per cent of all acute separations. If same day separations were included, renal dialysis and chemotherapy would form a large proportion (16.0 per cent) of the total national number of separations. In 2000-01, 1.8 million same day separations occurred in Australia. Renal dialysis accounted for 27.7 per cent of these and chemotherapy 6.4 per cent (AIHW 2002a). There may be differences across jurisdictions in the way renal dialysis and chemotherapy patients are treated, with some patients treated as same day admissions and others as outpatients.

Table 9.1 **Ten AR-DRGs with the highest number of overnight acute separations, public hospitals, 2000-01 (per cent)[a, b, c, d]**

	NSW	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*ACT*	*NT*	*Aust*
Vaginal delivery W/O CD	5.1	5.2	5.6	4.3	3.9	4.9	6.2	5.6	5.1
Chest pain	1.6	1.5	1.9	1.2	1.6	0.8	1.2	1.7	1.6
Oesophagitis, gastroenteritis and miscellaneous digestive system disorders Age>9 W/O Cat/Sev CC	1.6	1.4	1.7	1.6	1.5	1.2	0.8	0.9	1.6
Bronchitis and asthma aged<50 W/O CC	1.5	1.3	1.3	1.7	1.9	0.8	1.3	1.2	1.5
Cellulitis aged>59 W/O Cat/Sev CC	1.2	1.1	1.5	1.5	0.9	0.9	1.0	4.2	1.3
Caesarean delivery W/O CD	1.1	1.2	1.4	1.1	1.0	1.2	1.4	1.2	1.2
Unstable angina W/O Cat/Sev CC	1.1	1.1	1.4	0.7	0.8	1.3	0.9	0.9	1.0
Respiratory infections/inflamations W/O CC	1.2	1.0	1.1	1.2	0.9	0.9	1.2	2.6	1.1
Heart failure and shock W/O Cat CC	1.2	1.1	1.0	1.0	1.1	1.1	0.8	0.8	1.1
Abdominal pain or Mesenteric adenitis W/O CC	1.1	1.1	1.1	1.1	0.9	0.9	0.8	0.6	1.1
Per cent of acute separations accounted for by 10 AR-DRGs with most acute separations	16.8	16.0	18.0	15.4	14.5	13.8	15.6	19.9	16.4
Total acute separations ('000)	**700**	**474**	**357**	**185**	**177**	**39**	**28**	**28**	**1 988**

a Cat = Catastrophic, CC = complications and comorbidities, CD = complicating diagnosis, Sev = Severe, W/O = without, W = with. **b** Separations for which the type of episode of care was reported as acute or was not reported and the length of stay was less than 366 days. **c** Totals may not add as a result of rounding. **d** Excludes same day separations.

Source: AIHW (2002a); table 9A.9.

Table 9.2 lists the 10 AR-DRGs that accounted for the largest number of patient days for overnight stays in 2000-01. These account for 17.5 per cent of all patient days recorded. Vaginal delivery without complicating diagnosis accounted for the largest number of patient days, followed by schizophrenic disorders and major affective disorders.

Table 9.2 **Ten AR-DRGs with the most patient days, excluding same day separations, public hospitals, 2000-01(per cent)[a, b]**

	NSW	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*ACT*	*NT*	*Aust*
Vaginal delivery W/O CD	2.8	2.8	3.0	2.6	2.1	2.9	3.0	3.7	2.8
Schizophrenic disorders W/O legal status	2.3	3.2	3.6	3.2	2.5	0.3	1.3	**na**	2.7
Major affective disorder aged<70 W/O Cat/Sev CC	1.9	2.1	2.3	3.0	3.1	1.8	3.1	1.1	2.2
Tracheostomy, any age, any condition	2.1	2.3	1.8	1.6	2.3	2.1	2.5	2.1	2.1
Chronic obstruction airway Disorder W Cat/Sev CC	1.5	1.4	1.5	1.4	1.3	1.5	0.9	1.4	1.5
Schizophrenia disorders W legal status	1.2	1.5	1.2	1.7	1.2	5.1	1.4	1.5	1.4
Stroke with Sev CD/proc	1.3	1.4	1.0	1.6	1.5	1.2	1.1	0.7	1.3
Dementia and chronic disturb Crbrl Fn	1.0	1.5	0.8	1.4	2.4	2.5	0.4	0.3	1.3
Heart failure and shock W/O Cat CC	1.4	1.1	1.2	1.1	1.2	1.3	0.9	0.8	1.2
Chronic obstruction airway disorder W/O Cat/Sev CC	1.2	0.8	1.1	0.9	0.8	1.2	0.7	1.0	1.0
Total patient days accounted for by top 10 AR-DRGs (%)	16.6	18.2	17.6	18.5	18.4	19.9	15.3	12.6	17.5
Total days (excluding same day separations) ('000)	**3 899**	**2 625**	**1 746**	**1 003**	**997**	**252**	**166**	**154**	**10 843**

a Cat = Catastrophic, CC = complications and comorbidities, CD = complicating diagnosis, Sev = Severe, W/O = without, W = with. **b** Separations for which the type of episode of care was reported as acute or was not reported and the length of stay was less than 366 days.

Source: AIHW (unpublished); table 9A.27.

Non-admitted patient services

There is no agreed classification system for services to non-admitted patients, so activity is difficult to measure and cannot be compared across jurisdictions. As well as differences in the way data are collected, differing admission practices will lead to variation among jurisdictions in the services reported. In addition, States and Territories may also differ in the extent to which these types of services are outsourced or provided in non-hospital settings (such as community health centres) (AIHW 2000a). Over the past few years, NSW, Queensland, WA, SA and Tasmania have all made changes to the reporting arrangements used for non-admitted occasions of service (AIHW 2000a). The complexity of the occasion of service is also not taken into account (for example, a simple urine glucose test is treated equally with complete biochemical analysis of all body fluids) (AIHW 2001a). Table 9.3 presents data from the Australian Institute of Health and Welfare (AIHW)

Australian Hospital Statistics publication and can be considered a 'best available estimate' of activity in this area.

A total of 40.1 million occasions of service were provided to individual non-admitted patients in public hospitals in 2000-01. In addition to services provided to individuals, 594 323 group sessions were also delivered by public hospitals during this time (where a group session is defined as a service provided to two or more patients, but excludes services provided to two or more family members) (table 9A.10). In public hospitals in 2000-01, accident and emergency services comprised 13.5 per cent of all occasions of service to non-admitted patients. Pathology services and other medical, surgical and obstetric services were the most common types of outpatient care (table 9.3).

Table 9.3 **Ten most common types of non-admitted patient care, public hospitals, 2000-01 (per cent)[a, b]**

	NSW	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*ACT*	*NT*	*Aust*
Accident and emergency [c]	10.6	16.4	13.7	13.7	20.8	12.3	23.7	28.6	13.5
Outpatient services									
Other medical/ surgical/ obstetric [d]	36.4	19.9	26.0	12.0	38.4	27.1	45.0	24.5	28.7
Pathology	11.7	10.0	25.8	13.1	..	24.7	7.8	19.3	14.1
Allied health [e]	..	14.3	7.2	20.7	11.2	13.4	2.3	3.4	7.1
Radiology and organ imaging	5.0	7.2	8.0	7.7	10.2	8.8	15.8	22.3	6.9
Pharmacy	4.0	4.9	8.8	4.3	..	9.2	0.1	1.8	5.0
Mental health	5.6	11.8	1.0	3.3	0.7	0.2	1.4	..	5.0
Dental	2.6	2.5	4.9	0.2	0.4	0.2	..	..	2.6
Alcohol and drug	5.5	0.6	0.4	..	..	..	..	..	2.5
Other non-admitted									
Community health [f]	11.5	7.4	2.1	19.0	..	..	..	..	8.5
10 most common as a per cent of total (%)	92.8	95.1	97.8	94.1	81.6	95.9	96.0	100.0	93.9
Total occasions of service ('000)	**16 710**	**6 965**	**8 538**	**4 121**	**2 286**	**749**	**392**	**339**	**40 099**

[a] The reliability of non-admitted patient occasions of service data is not good. In addition, signficant differences occur between States and Territories due to different counting methods, rendering the overall comparability of the data poor. [b] For public psychiatric hospitals, national totals include only those States and Territories for which data are available. [c] Includes accident and emergency patients that are subsequently admitted in Victoria, Queensland, SA, Tasmania, the ACT and the NT. [d] Other medical/surgical/obstetric refers to occasions of service to non-admitted patients not covered by other National Health Data Dictionary categories for outpatient services (dialysis, pathology, radiology and organ imaging, endoscopy and related procedures, mental health, drug and alcohol, dental pharmacy and allied health). [e] Allied health includes services to non-admitted patients where services are provided at clinics or units providing treatment or counselling such as physiotherapy, speech therapy and so on. [f] Community health refers to services provided by designated community health units within the establishment, such as baby clinics, immunisation units, aged care assessment teams and so on. .. Not applicable.

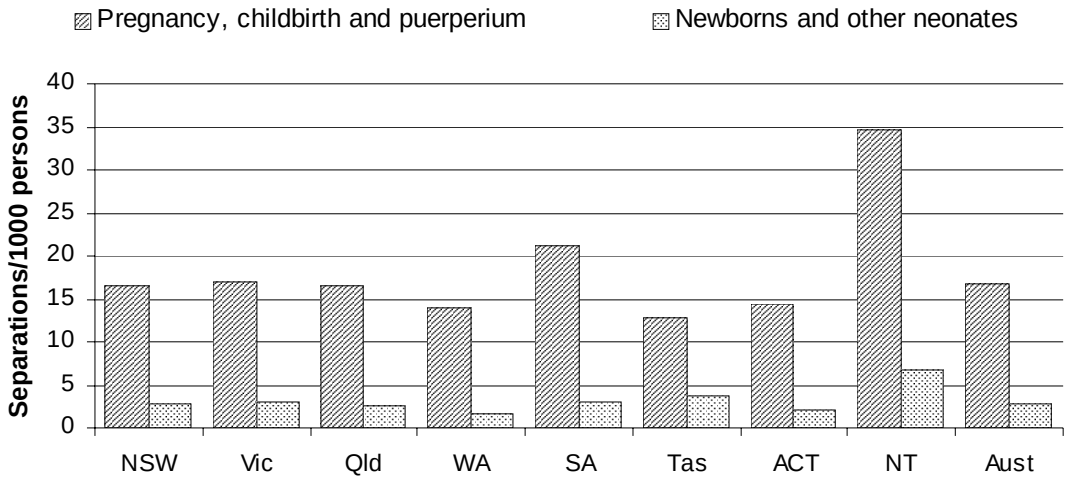
Source: AIHW (2002a); table 9A.10.

Maternity services

Maternity services (defined as AR-DRGs relating to pregnancy, childbirth and the puerperium, and newborns and other neonates) accounted for the third highest number of separations in public hospitals in Australia in 2000-01 after diseases and disorders of the kidney and urinary tract, and diseases and disorders of the digestive system (AIHW 2002a). Maternity services separations accounted for 10.1 per cent of total acute separations in public hospitals (table 9A.33) and contributed around

10.8 per cent to the total cost of all acute separations in public hospitals in 2000-01 (table 9A.32). Figure 9.7 shows that the NT had the highest number of acute separations per 1000 people for maternity services (41.5) in 2000-01 and WA had the lowest (15.7).

Figure 9.7 **Separation rates for maternity services in public hospitals, 2000-01[a, b, c]**



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 less than 2500 grams. **c** Separations for which the type of episode of care was reported as acute or newborn with qualified patient days.

Source: AIHW (2002a); table 9A.33.

Vaginal deliveries without complicating diagnosis accounted for a substantial proportion of the separations for pregnancy, childbirth and the puerperium (32.3 per cent) in 2000-01. Excluding same day separations, vaginal deliveries without complicating diagnosis accounted for the largest number of acute separations and patient days in public hospitals (tables 9.1 and 9.2) and the second highest cost in 2000-01 ($246.3 million) (table 9A.34) (AIHW 2002a).

The complexity of cases across jurisdictions for maternity services is in part related to the mother's age at the time of giving birth. Data on the mean age of giving birth across jurisdictions for 2000 and 2001 are shown in table 9.4.

Table 9.4 **Mean age of mothers at time of first, second and third births in public hospitals (years)**

	NSW	*Vic*[a]	*Qld*[b]	*WA*	*SA*[c]	*Tas*	*ACT*[d]	*NT*
Mean age of mothers at the following:								
2000								
First birth	27.3	27.1	25.2	25.8	26.2	27.0	27.1	**na**
Second birth	29.5	29.4	27.7	28.2	28.7	29.0	29.3	**na**
Third birth	30.9	31.0	30.9	29.8	30.2	31.0	30.7	**na**
All confinements	29.2	29.9	27.5	27.9	28.3	29.0	28.9	**na**
2001								
First birth	27.2	27.0	**na**	25.6	26.0	**na**	**na**	**na**
Second birth	29.5	29.4	**na**	28.1	28.6	**na**	**na**	**na**
Third birth	30.9	30.9	**na**	29.5	30.2	**na**	**na**	**na**
All confinements	29.1	30.0	**na**	27.7	28.2	**na**	**na**	**na**

a Total births of 62 562 in 2000 and of 62 143 in 2001. **b** Data for 2000 are preliminary and subject to change. **c** Data for 2001 are provisional. **d** Previously, both public and private hospital data were requested. The average age for women giving birth in ACT private hospitals is higher than for public hospitals. **na** Not available.

Source: State and Territory governments (unpublished).

9.2 Public hospitals

Framework of performance indicators

The performance indicator framework is based on the shared government objectives for public hospitals (box 9.2).

Box 9.2 **Objectives for public hospitals**

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

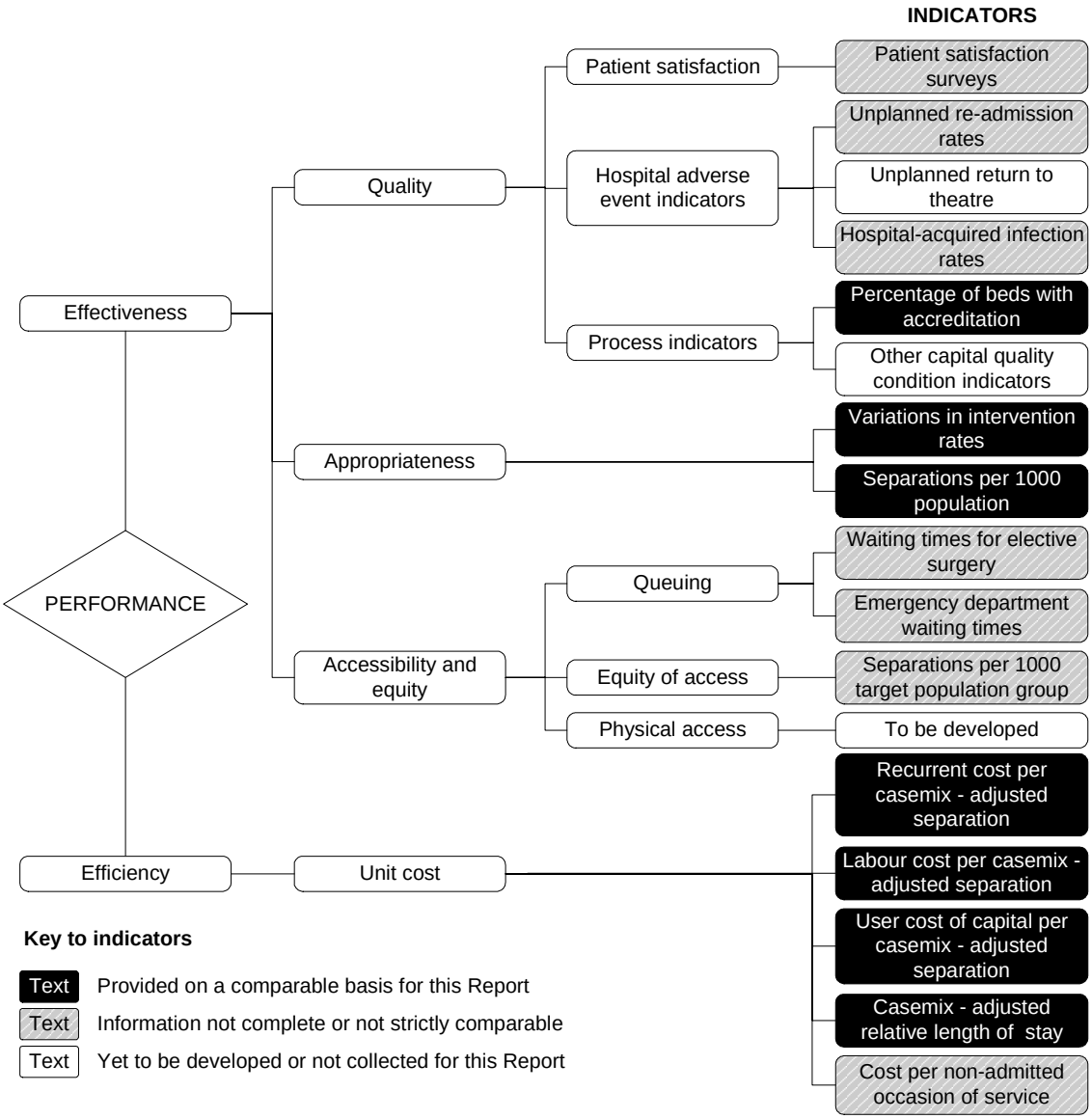
- safe and of high quality;
- responsive to individual needs;
- accessible and equitable; and
- efficiently delivered.

The framework captures general aspects of the performance of public hospitals in providing health care services (figure 9.8). The effectiveness of services provided is reflected in terms of quality (as indicated by patient satisfaction, hospital infections

and re-admissions and accreditation), appropriateness (as indicated by the total separation rate and the rate for certain procedures) and access and equity (as indicated by emergency department and elective surgery waiting times and by information on access by Indigenous people to services provided by public hospitals). Efficiency indicators include the cost per casemix-adjusted separation, the cost per non-admitted occasion of service and the casemix-adjusted relative length of stay. The framework is subject to regular review. Ongoing work to improve reporting on public hospitals is discussed in section 9.4.

The performance indicator framework shows which data are comparable in the 2003 Report (figure 9.8). For data that are not considered strictly comparable, the text includes relevant caveats and supporting commentary. Chapter 1 discusses data comparability from a Report-wide perspective (see section 1.6).

Figure 9.8 **Performance indicators for public hospitals**



Key performance indicator results

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

As discussed in section 9.1, 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 the analysis differs across jurisdictions. Similarly, psychiatric treatments are being transferred to public hospitals at rates that differ across jurisdictions.

Quality

All Australian governments and users of health care services are interested in assessing and improving quality of care. There is no single definition of quality in health care, but the Institute of Medicine in the United States defines quality as 'the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge' (Lohr and Shroeder 1990). No single indicator can measure quality across all providers; an alternative strategy is to identify and report on *aspects* of quality of care.

There has been considerable debate and research to develop suitable indicators of the quality of health care both in Australia and overseas. The Steering Committee reports data on the accreditation of public hospital beds, patient satisfaction, and clinical indicators including unplanned re-admission rates and hospital-acquired infection rates.

The Australian Council for Safety and Quality in Health Care (ACSQHC) recently identified a reduction in health care associated infections as a high priority area, recognising that infections can result in serious consequences for individual patients and place a significant burden on the health system. Other priorities identified were reducing patient harm from medication use and monitoring serious adverse events. Prevention of patient falls in health care facilities was also identified as a key area for action.

The ACSQHC noted accreditation of health care facilities has contributed significantly to quality practices and system wide awareness of quality issues, while noting accreditation processes could be improved. The Council recognised any national effort to improve accreditation processes must lead to sustainable and demonstrable improvements in patient safety (ACSQHC 2002).

Accreditation

Public hospitals may seek accreditation through the Australian Council on Healthcare Standards (ACHS) Evaluation and Quality Improvement Program, the Australian Quality Council, the Quality Improvement Council, the ISO 9000 Quality Management System or other equivalent programs. Jurisdictions apply specific criteria to determine which accreditation programs are suitable. The ACHS requires hospitals to demonstrate continual adherence to quality improvement

standards to gain and retain accreditation. Previously, data presented in the Report reflected accreditation only by the ACHS. This year, for the first time, data are presented for all hospitals accredited by recognised accreditation programs. This is a significant improvement.

Accreditation is an imperfect indicator of quality for several reasons. While it indicates that accredited parties have passed a series of quality tests, it is not possible to draw conclusions about the quality of care in those hospitals that do not have accreditation. Public hospital accreditation is voluntary in all jurisdictions except Victoria, where it is now mandatory for all public hospitals (excluding those which provide only dental or mothercraft services). The costs of preparing a hospital for accreditation are significant, so a low level of accreditation may reflect cost constraints rather than indicate 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) than actually offering superior care. That said, accreditation provides some information about the proportion of hospital beds in institutions that have been subject to some independent evaluation. Comparable data on proportions of hospital beds with accreditation are one of the few nationally available indicators of hospital quality.

Ninety-one per cent of public hospital beds were in accredited hospitals at 30 June 2001. Across jurisdictions, the proportion ranged from 100 per cent in the ACT to 53 per cent in the NT (table 9.5).

Table 9.5 **Proportion of accredited beds in public hospitals (per cent)[a, b, c]**

	NSW	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*ACT*	*NT*	*Aust*
Beds accredited by ACHS									
1999	77	88	66	63	78	76	100	52	76
2000	80	94	71	62	75	76	99	47	79
2001	81	95	83	76	89	82	97	53	85
Total beds accredited by ACHS or other agency[d]									
2001	92	96	92	76	97	82	100	53	91

[a] Accreditation status at 30 June. [b] Does not indicate that hospitals without accreditation are of lesser quality. Accreditation is voluntary (except in Victoria where it is now mandatory for most public hospitals). The costs of accreditation are significant so a low level of accreditation may reflect cost constraints rather than poor quality. Accreditation costs may not rise proportionally with hospital size, so larger hospitals may find it relatively less costly to obtain accreditation. [c] Data includes psychiatric hospitals. [d] Data for 30 June 2001 include all hospitals accredited by recognised accreditation programs. These data are not comparable with previous years as in previous years only hospitals accredited by the ACHS were counted.

Source: AIHW (2002a); table 9A.11.

Patient survey results

Patient satisfaction surveys have been used to assess the performance of hospitals in their delivery of clinical and non-clinical services. In the absence of other comparable indicators of quality, they provide a useful means of assessing the outcomes of hospital care. There is no agreement among jurisdictions on the best method of undertaking patient surveys and reporting the results. The timing and scope of patient satisfaction surveys also differ, so it is not possible to compare results across jurisdictions. Table 9.6 reflects the editions of the *Report on Government Services* for which patient satisfaction data have been provided by jurisdictions.

Table 9.6 **Patient satisfaction data provided by jurisdictions for each edition of the *Report on Government Services***

Report edition	*NSW*	*Vic*	*Qld*	*WA*	*SA*[a]	*Tas*	*ACT*	*NT*
1995	✓	✓	✓	✓	✗	✗	✓	✗
1999	✗	✓	✗	✓	✗	✓	✓	✓
2000	✓	✓	✓	✓	✗	✓	✓	✗
2001	✓	✗	✗	✓	✗	✓	✓	✗
2002	✗	✓	✗	✓	✓	✓	✓	✗
2003	✓	✗	✓	✓	✗	✓	✓	✗

[a] SA has conducted a patient satisfaction survey for 2002 although data were not available in time for inclusion in the 2003 Report.

Source: SCRSCCP (1995, 1999, 2000, 2001a and 2002).

Jurisdictions reported the following developments this year.

- NSW conducted a patient survey between January and August 2002, sampling over 9000 patients from across the 17 area health services. The survey received a 70 per cent response rate. Of those patients surveyed following an overnight hospital stay, 73.1 per cent rated the service received as 'very good' or 'excellent'. The results are outlined in table 9A.59.
- Queensland Health conducted a mailout patient satisfaction survey in 2001 with patients who spent at least one night in one of Queensland's 55 largest hospitals. Based on 27 questions about specific aspects of hospital care, the State achieved an average score of 65 on a scale of 0 to 100. This result indicates that patients on average rated the service as either very good or good. Survey results are detailed in table 9A.70.
- WA conducted a patient survey between February and June 2002 covering sameday, outpatients and emergency patients. Patients were asked to assess the outcome of their hospital stay and results are presented as scale scores out of 100. The results are outlined in table 9A.71.

- Tasmania conducted a mailout survey of 1659 hospital patients during 2002. The response rate for the mailout was 35 per cent. Overall, 94.8 per cent of hospital patients rated their overall care as 'good' or 'very good' (table 9A.83).
- The ACT surveyed its inpatients, emergency and day surgery patients using mailout surveys in 2000-01. The response rate for the survey was 57 per cent for inpatients, 48 per cent for emergency patients, and 64 per cent rate for day surgery patients. Inpatients reported an overall satisfaction rate of 88 per cent, emergency patients an overall satisfaction rate of 76 per cent and day surgery patients an 89 per cent overall satisfaction rate (table 9A.87).
- No Territory-wide patient satisfaction data for the NT have been collected in recent years. Hospitals conduct their own hospital-specific patient satisfaction surveys. Development of a Territory-wide survey is planned for 2003.

Clinical indicators

Selected clinical indicators, including re-admissions and infection rates, were evaluated in a research project undertaken in 1998 (box 9.3). The Steering Committee acknowledges the limitations of the current indicators and agrees with the project's recommendations for improving these indicators. Until improved data are available, the Steering Committee has decided to continue to report data on these indicators at the jurisdiction level, on the understanding that doing so is better than reporting nothing at all. As Boyce *et al.* (1997, p. 3) state:

> Most existing quality and outcome indicators are imperfect. …We see the current generation of indicators as stepping stones to future better indicators. It will only be by their application in the health sector that indicators will improve.

The clinical indicators presented here are also reported elsewhere, including in the annual reports of the WA, Tasmanian and ACT health departments. The WA and ACT health departments report on unplanned re-admissions, while the Tasmanian health department reports on unplanned re-admissions and rates of hospital acquired bacteraemia (Health Department of WA 2001; Tasmanian Department of Health and Human Services 2001; ACT Department of Health and Community Care 2002). The ACT Department of Health and Community Care has included a range of clinical indicators in its purchase agreements with its major public hospitals.

Box 9.3 **The Pilot Hospital-wide Clinical Indicators Project**

The Commonwealth Department of Health and Family Services funded the Pilot Hospital-wide Clinical Indicators Project as part of the National Hospital Outcomes Program in 1998. The project investigated the link between the selected clinical indicators (used in this Report) and an overall assessment of all aspects of the quality of clinical care, as determined by a panel of medical experts. The indicators evaluated were:

- the rate of unplanned hospital re-admissions within 28 days of separation;
- the rate of hospital-acquired bacteraemia;
- the rate of post-operative wound infections following clean and contaminated surgery; and
- the rate of unplanned returns to an operating room.

The last indicator could not be easily extracted from available databases, so was not included in the project's more detailed analysis.

The project set a high standard for each indicator, requiring it to accurately reflect hospital-wide medical care. The final report concluded that a clinically weak and statistically insignificant relationship existed between the indicators and the overall assessment of quality of care, and as such the indicators were unsuited as national performance measures of hospital quality. As a result, the indicators were not validated as measures of hospital-wide care.

Questions remain about whether the indicators reflect the quality of more limited aspects of care — for example, do unplanned re-admissions reflect discharge planning procedures? Do wound infection rates reflect the standards of wound care during and immediately after surgery?

The project report recommended that 'there is a strong rationale for individual institutions to continue to monitor these indicators as part of a quality improvement program' (Ibrahim *et al.* 1998). It urged caution in using these indicators for benchmarking purposes, but suggested that the indicators may be useful for identifying outliers or comparing the performance of hospitals with similar patient mix, rather than making close comparisons. The final report concluded that '(a) low incidence of surgical wound infection is highly desirable … wound infection rates should continue to be monitored …. Institutions whose rates are very high compared with the average should seek an explanation for this' (Ibrahim *et al.* 1998, p. 43).

The project identified the lack of appropriate and widely recognised definitions and the absence of structured data collections as significant shortcomings of the indicators. The final report recommended that ideally, future indicators should be constructed from planned collections of clinical data and that clinical data collection within hospitals should be improved.

Source: Ibrahim *et al.* (1998).

The presentation of data for the clinical indicators reported here has changed significantly for the 2003 Report, to better reflect the purpose for which the data are collected. The data for these indicators are sourced from the ACHS Comparative Report Service (Clinical Indicators). The data are collected for the purposes of internal clinical review by individual hospitals. The ACHS data are predominantly used to demonstrate the potential for improvement across Australian hospitals if all hospitals could achieve the same outcomes as those hospitals achieving the best outcomes for patients. When interpreting results of these indicators therefore emphasis should be given to the potential for improvement. Statewide conclusions cannot be drawn from the data as participation in the Comparative Report Service (Clinical Indicators) is voluntary and the data are therefore not necessarily drawn from representative samples.

An explanation of the reporting of clinical indicators sourced from the ACHS is contained in box 9.4.

Box 9.4 **Reporting of ACHS clinical indicators**

The data for the unplanned re-admissions and infection rate indicators are sourced from the ACHS. This year, the presentation of data for these indicators has changed significantly to better reflect the purpose for which the data are collected.

The methodology used by the ACHS for reporting of clinical indicators is explained in its publication, *Determining the Potential to Improve the Quality of Care in Australian Health Care Organisations* (ACHS 2001). The ACHS reports the average (that is, mean) rate of occurrence of an event and the performance of hospitals at the 20th and 80th centile (that is, the rate at (or below) which the top 20 per cent and 80 per cent of hospitals are performing). This is designed to allow hospitals to determine whether their performance against an indicator is above or below average, and what scope may exist for improvement.

Particular attention is paid to systematic variation between hospitals, variation between different categories of hospital (including different jurisdictions) and individual hospitals varying significantly from average 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 centile is calculated. The potential gains from shifting (shrunken) 'mean' hospitals to the 20th centile are obtained by calculating the change in the occurrence of the event measured were the mean equal to performance at the 20th centile.

(Continued on next page)

Box 9.4 **(Continued)**

(Shrunken rates are used rather than actual rates as actual rates of 0 per cent and 100 per cent may be obtained for individual hospitals based on random variation where there are low denominators. Shrinkage estimators adjust each hospital's observed rate using the hospital's numerator and denominator together with the mean and standard deviations of other hospitals to obtained corrected rates. The smaller the denominator for an individual hospital, the larger 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 and if 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 provide a measure of difference from the mean. To avoid responding to random variation, three-sigma limits are plotted and values outside the three-sigma limits are assumed to be systematically different to the average rate. The potential gains from shifting the performance of these 'outliers' to the performance of 'mean' hospitals are calculated (ACHS 2001).

Source: ACHS (unpublished).

Unplanned re-admission rates

The unplanned re-admission rate is the total number of unplanned and unexpected re-admissions within 28 days of separation as a percentage of the total number of separations (excluding patient deaths). (There is a more detailed definition of this indicator in table 9.32.)

There are a number of caveats for the interpretation of this indicator. First, it is not clear to what extent differences between jurisdictions are due to casemix of hospitals or patient risk factors (ACHS 2000). Second, there are some difficulties in identifying re-admissions that were unplanned (Ibrahim *et al.* 1998). A re-admission is considered 'unplanned' or 'unexpected' if there was no documentation to verify that the re-admission was 'planned' and if the re-admission occurred through the accident and emergency department of a hospital (Ibrahim *et al.* 1998). Third, this indicator identifies only those patients re-admitted to the same hospital, which may not always be the case. Box 9.3 outlines some limitations to this indicator. These estimates should also be viewed in context of the statistical (standard) errors. High standard errors signal that data are particularly unreliable.

New South Wales

Among those NSW public hospitals participating in the ACHS Service in 2001 the mean rate of unplanned re-admissions was 2.3 per 100 admissions (subject to a standard error of 0.7). The ACHS estimates that if the performance of all NSW public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 1.1 per cent fewer re-admissions to NSW public hospitals (table 9.7). The terms in table 9.7 are defined in box 9.5.

Box 9.5 **Definitions of terms for clinical indicators**

Centile: value separating one hundredth parts of a distribution in order of size. The 20th centile of hospitals for the unplanned re-admissions indicator would represent the best performing 20 per cent of hospitals (with the lowest number of re-admissions); the 20th centile of hospitals for the infections indicators would represent the best performing 20 per cent of hospitals (with the lowest number of infections).

Centile gains: the potential gains from shifting 'mean' hospitals to the performance at the 20th centile, obtained by calculating the change in the occurrence of an event were the mean equal to performance at the 20th centile.

Denominator: 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, the denominator is the total number of admissions in the participating hospital; for the infections indicators, the denominator is the total number of separations in the participating hospital.

Rate (mean): the sum of a set of numbers divided by the amount of numbers in the set; often referred to as an average.

Numerator: 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 denominator is the total number of unplanned re-admissions in the participating hospital; for the infections indicators, the denominator is the number of relevant infections in the participating hospital.

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

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).

Table 9.7 **Unplanned re-admissions per 100 admissions, public hospitals, NSW, 2001[a]**

No. hospitals	*No. reports*	*Numerator (readmissions)*	*Denominator (separations)*	*Rate*	*Standard error* (±)
61	92	7 124	308 698	2.31	0.65
National performance at 80th centile (rate)	*National performance at 20th centile (rate)*	*Potential centile gains (no. readmissions)*	*% change represented by potential gains*	*Potential outlier gains (no. readmissions)*	*Potential stratum gains (no. readmissions)*
4.61	1.17	3 512	1.14	1 179	2 213

a Health organisations contribute data voluntarily to the ACHS and therefore the samples are not necessarily representative of all hospitals in each jurisdiction.

Source: ACHS (unpublished); table 9A.56.

Victoria

Among those Victorian public hospitals participating in the ACHS Service in 2001, the mean rate of unplanned re-admissions was 2.7 per 100 admissions (subject to a standard error of 0.3). The ACHS estimates that if the performance of all Victorian public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 1.5 per cent fewer re-admissions to Victorian public hospitals (table 9.8). See box 9.5 for definitions of terms used.

Table 9.8 **Unplanned re-admissions per 100 admissions, public hospitals, Victoria, 2001[a]**

No. hospitals	*No. reports*	*Numerator (readmissions)*	*Denominator (separations)*	*Rate*	*Standard error* (±)
44	77	8 847	334 312	2.65	0.31
National performance at 80th centile (rate)	*National performance at 20th centile (rate)*	*Potential centile gains (no. readmissions)*	*% change represented by potential gains*	*Potential outlier gains (no. readmissions)*	*Potential stratum gains (no. readmissions)*
4.61	1.17	4 936	1.48	2 894	3 529

a Health organisations contribute data voluntarily to the ACHS and therefore the samples are not necessarily representative of all hospitals in each jurisdiction.

Source: ACHS (unpublished); table 9A.62.

Queensland

Among those Queensland public hospitals participating in the ACHS Service in 2001, the mean rate of unplanned re-admissions was 2.7 per 100 admissions (subject to a standard error of 0.7). The ACHS estimates that if the performance of

all Queensland public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 1.5 per cent fewer re-admissions to Queensland public hospitals (table 9.9). See box 9.5 for definitions of terms used.

Table 9.9 **Unplanned re-admissions per 100 admissions, public hospitals, Queensland, 2001[a]**

No. hospitals	*No. reports*	*Numerator (readmissions)*	*Denominator (separations)*	*Rate*	*Standard error* (±)
12	17	2 182	81 047	2.69	0.66
National performance at 80th centile (rate)	*National performance at 20th centile (rate)*	*Potential centile gains (no. readmissions)*	*% change represented by potential gains*	*Potential outlier gains (no. readmissions)*	*Potential stratum gains (no. readmissions)*
4.61	1.17	1 234	1.52	528	893

a Health organisations contribute data voluntarily to the ACHS and therefore the samples are not necessarily representative of all hospitals in each jurisdiction.

Source: ACHS (unpublished); table 9A.68.

Western Australia

Among those WA public hospitals participating in the ACHS Service in 2001, the mean rate of unplanned re-admissions was 1.9 per 100 admissions (subject to a standard error of 0.4). The ACHS estimates that if the performance of all WA public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 0.7 per cent fewer re-admissions to WA public hospitals (table 9.10). See box 9.5 for definitions of terms used.

Table 9.10 **Unplanned re-admissions per 100 admissions, public hospitals, WA, 2001[a]**

No. hospitals	*No. reports*	*Numerator (readmissions)*	*Denominator (separations)*	*Rate*	*Standard error* (±)
10	14	847	45 692	1.85	0.37
National performance at 80th centile (rate)	*National performance at 20th centile (rate)*	*Potential centile gains (no. readmissions)*	*% change represented by potential gains*	*Potential outlier gains (no. readmissions)*	*Potential stratum gains (no. readmissions)*
4.61	1.17	312	0.68	102	120

a Health organisations contribute data voluntarily to the ACHS and therefore the samples are not necessarily representative of all hospitals in each jurisdiction.

Source: ACHS (unpublished); table 9A.74.

South Australia

Among those SA public hospitals participating in the ACHS Service in 2001, the mean rate of unplanned re-admissions was 3.3 per 100 admissions (subject to a standard error of 0.8). The ACHS estimates that if the performance of all SA public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 2.1 per cent fewer re-admissions to SA public hospitals (table 9.11). See box 9.5 for definitions of terms used.

Table 9.11 **Unplanned re-admissions per 100 admissions, public hospitals, SA, 2001[a]**

No. hospitals	*No. reports*	*Numerator (readmissions)*	*Denominator (separations)*	*Rate*	*Standard error* (±)
13	23	2 630	80 370	3.27	0.83
National performance at 80th centile (rate)	*National performance at 20th centile (rate)*	*Potential centile gains (no. readmissions)*	*% change represented by potential gains*	*Potential outlier gains (no. readmissions)*	*Potential stratum gains (no. readmissions)*
4.61	1.17	1 690	2.10	813	1 352

a Health organisations contribute data voluntarily to the ACHS and therefore the samples are not necessarily representative of all hospitals in each jurisdiction.

Source: ACHS (unpublished); table 9A.79.

Data for Tasmania, the ACT and the NT were not provided by the ACHS because of the small number of hospitals in those jurisdictions. Nationally, among those public hospitals participating in the ACHS Service in 2001, the mean rate of unplanned re-admissions was 2.5 per 100 admissions. The ACHS estimates that if the performance of all Australian public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 1.3 per cent (or 12 619) fewer re-admissions to Australian public hospitals.

Hospital-acquired infection rates

The ACSQHC views reducing health care associated infections as a high priority area, recognising that infections can result in serious consequences for individual patients and place a significant burden on the health system (ACSQHC 2002). Three measures of hospital-acquired infection rates are reported here. Rates of post-operative wound infection are defined for both clean and contaminated surgery. They are derived by dividing the number of inpatients with evidence of wound infection on or after the fifth post-operative day following clean (or contaminated) surgery, by the number of inpatients undergoing clean (or contaminated) surgery with a post-operative stay of at least five days.

The ‘rate of hospital-acquired bacteraemia’ is the number of inpatients who acquired bacteraemia during the period under study, as a percentage of the total number of separations with a hospital length of stay of 48 hours or more during the time period under study. (There is a more detailed definition of this indicator in table 9.32.) This indicator does not reflect infections that do not become apparent until post-discharge.

The infections data, like the unplanned re-admissions data, are sourced from the ACHS and are collected for the purposes of internal clinical review by individual hospitals. Statewide conclusions cannot be drawn from the data as health care organisations contribute to the ACHS on a voluntary basis and so the data are not necessarily drawn from representative samples. As with the unplanned re-admissions data, reporting of this indicator has been changed this year to better reflect the purpose for which the data are collected.

It should be noted that the data are not adjusted for differences in the risk of infection across cases or differences in casemix across hospitals. Higher rates for bacteraemia are to be expected in those hospitals treating conditions where bacteraemia infections were more likely. Box 9.3 outlines limitations associated with this indicator. Estimates shown should be viewed in the context of the statistical (standard) errors. High standard errors signal that the data may be particularly unreliable.

This is the final year for which these indicators are to be reported. Changes made by the ACHS to reporting on hospital-acquired infections taking place from calendar year 2002 should significantly assist in addressing concerns over the absence of casemix or risk adjustment. Recording by the ACHS of surgical site infection rates will become surgical procedure-specific, while indicators of central line-associated blood stream infections will relate to particular clinical units of hospitals. More detail on these changes is contained in section 9.4.

New South Wales

Among those NSW public hospitals participating in the ACHS Service in 2001, the mean rate of post-operative infections following clean surgery was 1.9 per 100 separations (subject to a standard error of 0.7). The ACHS estimates that if the performance of all NSW public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 0.7 per cent fewer post-operative infections following clean surgery in NSW public hospitals (table 9.12).

The mean rate of post-operative infections following contaminated surgery was 1.8 per 100 separations (subject to a standard error of 1.0). The ACHS estimates that if the performance of all NSW public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 0.2 per cent fewer post-operative infections following contaminated surgery in NSW public hospitals (table 9.12).

The mean rate of hospital-acquired bacteraemia was 0.4 per 100 separations (subject to a standard error of 0.04). The ACHS estimates that if the performance of all NSW public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 0.3 per cent fewer cases of hospital-acquired bacteraemia in NSW public hospitals (table 9.12). See box 9.5 for definitions of terms used.

Table 9.12 **Hospital-acquired infections per 100 separations, public hospitals, NSW, 2001[a]**

	Post-operative infection following clean surgery	*Post-operative infection following contaminated surgery*	*Hospital-acquired bacteraemia*
No. hospitals	24	23	47
Rate	1.88	1.76	0.40
Standard error (±)	0.71	0.98	0.04
National performance at 80th centile (rate)	2.27	3.40	0.44
National performance at 20th centile (rate)	1.20	1.56	0.11
Potential centile gains (no. infections)	43	10	603
% change represented by potential gains	0.68	0.20	0.29
Potential outlier gains (no. infections)	8	5	228
Potential stratum gains (no. infections)	51	28	571

a Health organisations contribute data voluntarily to the ACHS and therefore the samples are not necessarily representative of all hospitals in each jurisdiction.

Source: ACHS (unpublished); table 9A.57.

Victoria

Among those Victorian public hospitals participating in the ACHS Service in 2001, the mean rate of post-operative infections following clean surgery was 1.9 per 100 separations (subject to a standard error of 1.6). The ACHS estimates that if the performance of all Victorian public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 0.7 per cent fewer

post-operative infections following clean surgery in Victorian public hospitals (table 9.13).

The mean rate of post-operative infections following contaminated surgery was 2.8 per 100 separations (although subject to a very high standard error of 4.5). The ACHS estimates that if the performance of all Victorian public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 1.2 per cent fewer post-operative infections following contaminated surgery in Victorian public hospitals (table 9.13).

The mean rate of hospital-acquired bacteraemia was 0.6 per 100 separations (subject to a standard error of 0.1). The ACHS estimates that if the performance of all Victorian public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 0.4 per cent fewer cases of hospital-acquired bacteraemia in Victorian public hospitals (table 9.13). See box 9.5 for definitions of terms used.

Table 9.13 **Hospital-acquired infections per 100 separations, public hospitals, Victoria, 2001[a]**

	Post-operative infection following clean surgery	*Post-operative infection following contaminated surgery*	*Hospital-acquired bacteraemia*
No. hospitals	15	14	28
Rate	1.93	2.80	0.55
Standard error (±)	1.59	4.47	0.13
National performance at 80th centile (rate)	2.27	3.40	0.44
National performance at 20th centile (rate)	1.20	1.56	0.11
Potential centile gains (no. infections)	19	24	427
% change represented by potential gains	0.73	1.24	0.44
Potential outlier gains (no. infections)	0	3	253
Potential stratum gains (no. infections)	22	31	412

a Health organisations contribute data voluntarily to the ACHS and therefore the samples are not necessarily representative of all hospitals in each jurisdiction.

Source: ACHS (unpublished); table 9A.63.

Queensland

Among those Queensland public hospitals participating in the ACHS Service in 2001, the mean rate of post-operative infections following clean surgery was

1.1 per 100 separations (subject to a standard error of 0.6). The mean rate of post-operative infections following clean surgery was lower in Queensland than the rate of the best performing 20 per cent of participating hospitals nationally (table 9.14).

The mean rate of post-operative infections following contaminated surgery was 1.2 per 100 separations (subject to a standard error of 1.1). The mean rate of post-operative infections following contaminated surgery was lower in Queensland than the rate of the best performing 20 per cent of participating hospitals nationally (table 9.14).

The mean rate of hospital-acquired bacteraemia was 0.2 per 100 separations (subject to a standard error of 0.03). The ACHS estimates that if the performance of all Queensland public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 0.1 per cent fewer cases of hospital-acquired bacteraemia in Queensland public hospitals (table 9.14). See box 9.5 for definitions of terms used.

Table 9.14 **Hospital-acquired infections per 100 separations, public hospitals, Queensland, 2001[a]**

	Post-operative infection following clean surgery	*Post-operative infection following contaminated surgery*	*Hospital-acquired bacteraemia*
No. hospitals	7	5	15
Rate	1.08	1.22	0.20
Standard error (±)	0.56	1.05	0.03
National performance at 80th centile (rate)	2.27	3.40	0.44
National performance at 20th centile (rate)	1.20	1.56	0.11
Potential centile gains (no. infections)	-6	-7	129
% change represented by potential gains	-0.12	-0.34	0.09
Potential outlier gains (no. infections)	0	0	0
Potential stratum gains (no. infections)	0	0	108

a Health organisations contribute data voluntarily to the ACHS and therefore the samples are not necessarily representative of all hospitals in each jurisdiction.

Source: ACHS (unpublished); table 9A.69.

Western Australia

Among those WA public hospitals participating in the ACHS Service in 2001, the mean rate of post-operative infections following clean surgery was 1.3 per 100 separations (subject to a standard error of 1.3). The ACHS estimates that if the performance of all WA public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 0.1 per cent fewer post-operative infections following contaminated surgery in WA public hospitals (table 9.15).

The mean rate of post-operative infections following contaminated surgery was 6.2 per 100 separations (subject to a relatively high standard error of 2.8). The ACHS estimates that if the performance of all WA public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 4.7 per cent fewer post-operative infections following contaminated surgery in WA public hospitals (table 9.15).

The mean rate of hospital-acquired bacteraemia was 0.1 per 100 separations (subject to a standard error of 0.05). The ACHS estimates that if the performance of all WA public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 0.02 per cent fewer cases of hospital-acquired bacteraemia in WA public hospitals (table 9.15). See box 9.5 for definitions of terms used.

Table 9.15 **Hospital-acquired infections per 100 separations, public hospitals, WA, 2001[a]**

	Post-operative infection following clean surgery	*Post-operative infection following contaminated surgery*	*Hospital-acquired bacteraemia*
No. hospitals	5	5	6
Rate	1.29	6.22	0.13
Standard error (±)	1.25	2.80	0.05
National performance at 80th centile (rate)	2.27	3.40	0.44
National performance at 20th centile (rate)	1.20	1.56	0.11
Potential centile gains (no. infections)	0	11	1
% change represented by potential gains	0.09	4.66	0.02
Potential outlier gains (no. infections)	0	4	0
Potential stratum gains (no. infections)	1	12	0

a Health organisations contribute data voluntarily to the ACHS and therefore the samples are not necessarily representative of all hospitals in each jurisdiction.

Source: ACHS (unpublished); table 9A.75.

South Australia

Among those SA public hospitals participating in the ACHS Service in 2001, the mean rate of post-operative infections following clean surgery was 2.0 per 100 separations (subject to a standard error of 0.5). The ACHS estimates that if the performance of all SA public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 0.8 per cent fewer post-operative infections following clean surgery in SA public hospitals (table 9.16).

The mean rate of post-operative infections following contaminated surgery was 3.3 per 100 separations (subject to a relatively high standard error of 2.8). The ACHS estimates that if the performance of all SA public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 1.7 per cent fewer post-operative infections following contaminated surgery in SA public hospitals (table 9.16).

The mean rate of hospital-acquired bacteraemia was 0.4 per 100 separations (subject to a standard error of 0.08). The ACHS estimates that if the performance of all SA public hospitals matched the performance of the top 20 per cent of public hospitals nationally, there would be 0.3 per cent fewer cases of hospital-acquired

bacteraemia in SA public hospitals (table 9.16). See box 9.5 for definitions of terms used.

Table 9.16 **Hospital-acquired infections per 100 separations, public hospitals, SA, 2001[a]**

	Post-operative infection following clean surgery	*Post-operative infection following contaminated surgery*	*Hospital-acquired bacteraemia*
No. hospitals	7	5	9
Rate	2.01	3.29	0.43
Standard error (±)	0.45	2.76	0.08
National performance at 80th centile (rate)	2.27	3.40	0.44
National performance at 20th centile (rate)	1.20	1.56	0.11
Potential centile gains (no. infections)	6	8	131
% change represented by potential gains	0.81	1.73	0.32
Potential outlier gains (no. infections)	0	5	82
Potential stratum gains (no. infections)	7	10	125

a Health organisations contribute data voluntarily to the ACHS and therefore the samples are not necessarily representative of all hospitals in each jurisdiction.

Source: ACHS (unpublished); table 9A.80.

Data for Tasmania, the ACT and the NT were not provided by the ACHS because of the small number of hospitals in those jurisdictions. Nationally, among those public hospitals participating in the ACHS Service in 2001 the mean rate of post-operative infections following clean surgery was 1.7 per 100 separations. The ACHS estimates that if the performance of all Australian public hospitals matched the performance of the top 20 per cent of public hospitals, there would be 0.5 per cent (or 70) fewer post-operative infections following clean surgery in Australian public hospitals.

The mean rate of post-operative infections following contaminated surgery was 2.2 per 100 separations nationally. The ACHS estimates that if the performance of all Australian public hospitals matched the performance of the top 20 per cent of public hospitals, there would be 0.6 per cent (or 64) fewer post-operative infections following contaminated surgery in Australian public hospitals.

The mean rate of hospital-acquired bacteraemia was 0.4 per 100 separations nationally. The ACHS estimates that if the performance of all Australian public hospitals matched the performance of the top 20 per cent of public hospitals, there

would be 0.3 per cent (or 1398) fewer cases of hospital-acquired bacteraemia in Australian public hospitals.

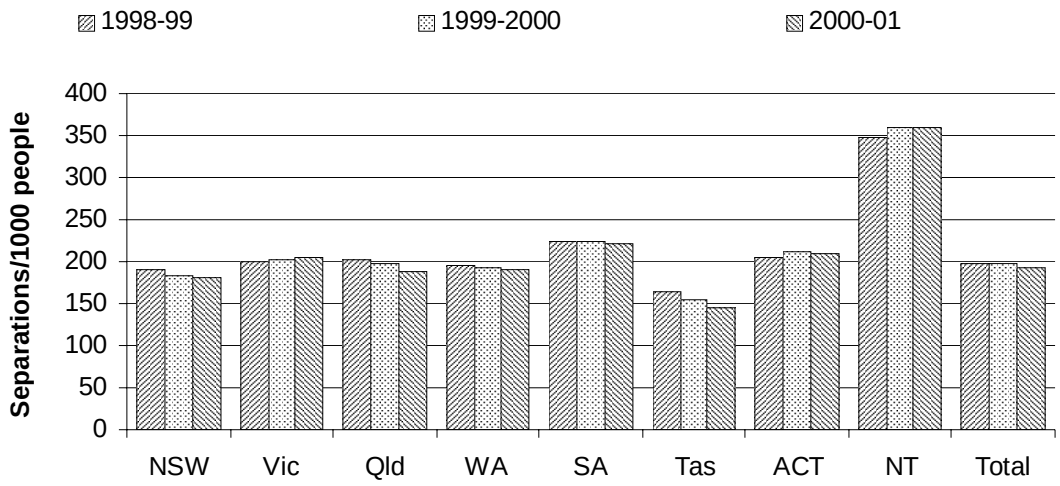
Appropriateness

Two indicators are presented for the appropriateness of care provided by public hospitals: the number of separations per 1000 people (also known as the separation rate) and separation rates for certain procedures. Both indicators, however, are problematic. First, the measures do not reflect differences in casemix across jurisdictions. Second, there is no benchmark as to the appropriate share of same day separations. Third, the appropriate mix/level is unclear (for example, a relatively high level of separations may reflect better access *or* over-servicing). Fourth, variations in admission rates also reflect different practices in classifying patients as either admitted same day patients or outpatients. This is a particular issue for non-surgical same day admissions. States that apply lower thresholds for treating a patient as an admitted patient will tend to have higher separation rates. Comparisons are also complicated by different access to substitutable services (for example, private hospitals). Jurisdictional comparisons therefore are most useful for highlighting differences, noting that more detailed analysis may be required.

Total separation rates

There were approximately 3.9 million separations from public (non-psychiatric) hospitals in 2000-01 (table 9A.7). Nationally, this translates into 193.0 separations per 1000 people, ranging from 360.3 per 1000 in the NT to 144.9 per 1000 in Tasmania (figure 9.9).

Figure 9.9 **Separation rates in public (non-psychiatric) hospitals[a]**



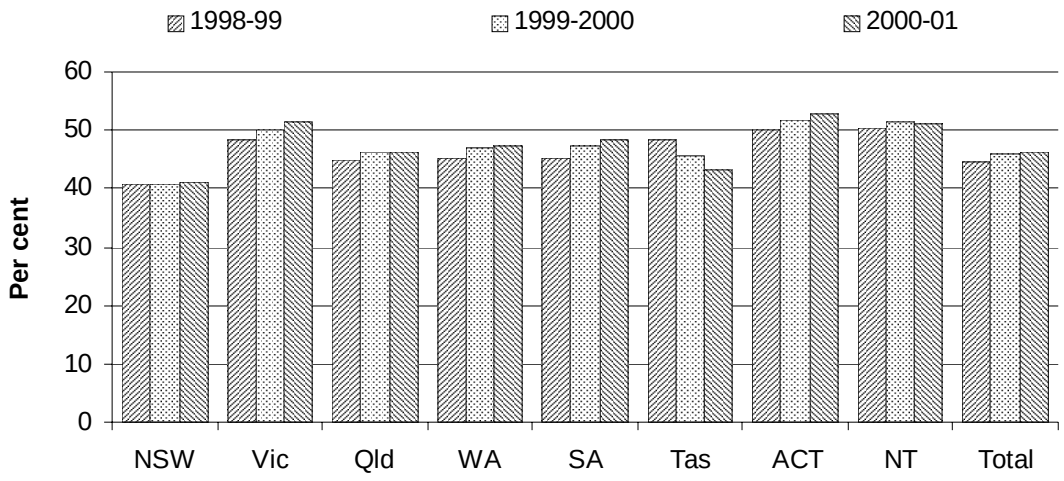
a Figures are directly age-standardised to the Australian population at 30 June 1991.

Source: AIHW (2002a); table 9A.7.

Nationally, in public (non-psychiatric) hospitals, 46.4 per cent of separations were same day separations in 2000-01. The ACT reported the highest percentage rate of same day separations (52.7) and NSW reported the lowest (41.0) (figure 9.10). As indicated previously, variations between States in the thresholds applied for classifying patients as either same day admitted patients or outpatients will affect this indicator. NSW reports that over recent years there have been changes in this threshold. These issues apply mainly to non-surgical same day admissions, and a better indicator of appropriateness may be the percentage of surgical separations performed on a same day basis.

Same day separations in public (non-psychiatric) hospitals increased 1.2 per cent between 1999-2000 and 2000-01 and the proportion of separations that were same day increased from 45.8 per cent to 46.4 per cent. In contrast, overnight separations in public (non-psychiatric) hospitals decreased 2.0 per cent between 1999-2000 and 2000-01 (calculated from table 9A.7).

Figure 9.10 **Proportion of separations that were same day, public (non-psychiatric) hospitals[a]**



a Figures are directly age-standardised to the Australian population at 30 June 1991.

Source: AIHW (2002a); table 9A.7.

Separation rates for certain procedures

Separation rates for certain procedures are used to indicate the appropriateness of hospital care, with procedures selected for their frequency and for being elective and discretionary (given the availability of alternative treatments) (table 9.17). The list of procedures has changed this year. Revision of hip replacement has been included for the first time as rates for this procedure may provide information on the performance of the original hip replacements. Separation rates for asthma and Type 2 diabetes (as principal diagnoses) have been included as indicators of care for the primary care sector. Separation rates for Type 2 diabetes as any diagnosis (principal or additional) have also been included, as 89.3 per cent of separations with diagnosis of diabetes have the diagnosis recorded as an additional diagnosis, rather than as the principal diagnosis.

Care needs to be taken when interpreting the differences in the separation rates of the selected procedures. Variations in rates may be attributable to variations in the prevalence of the conditions being treated or to differences in clinical practice among States and Territories. Higher/lower rates are not necessarily associated with inappropriate care. Higher rates may be acceptable for certain conditions and not for others. For example, higher rates of angioplasties and lens insertions may represent appropriate levels of care, whereas higher rates of hysterectomies or tonsillectomies may represent an over reliance on procedures, and no clear inference can be drawn on the basis of higher rates of arthroscopies or endoscopies. Some are indicators of

the performance of primary care rather than hospitals. Some of the selected procedures, such as angioplasty and coronary artery bypass graft, are alternative treatment options for people diagnosed with similar conditions.

The data reported include all hospitals, so are reflective of the activities of both public and private health systems.[4] The most common procedures in 2000-01 were endoscopies, Type 2 diabetes (principal or additional diagnosis), lens insertions and arthroscopic procedures (table 9.17). Separation rates for all procedures varied across jurisdictions. The NT had significantly higher separation rates for Type 2 diabetes (principal diagnosis) and Type 2 diabetes (principal or additional diagnosis). Table 9A.12 outlines which State or Territory separation rates are statistically significantly different to the collective separation rate for all other jurisdictions. Statistically significant and material differences in the separation rates for these procedures may highlight variations in treatment methods across jurisdictions.

[4] Data include public acute, public psychiatric, private acute, private psychiatric and private free-standing day hospital facilities. Some private hospitals are excluded resulting in underreporting of some procedures, particularly those more likely to be performed in private hospitals. Thus, these types of procedure will be undercounted for some jurisdictions (AIHW 2002a).

Table 9.17 **Separations per 1000 people, public and private hospitals by selected procedure or diagnosis, 2000-01[a, b, c]**

	NSW	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*ACT*	*NT*	*Total*[d]
Appendicectomy	1.32	1.45	1.52	1.73	1.37	1.62	1.40	1.08	1.44
Coronary artery bypass	0.87	0.80	0.83	0.56	0.69	0.71	0.48	0.65	0.79
Angioplasty	1.03	1.19	0.84	1.05	1.01	1.12	1.22	0.73	1.04
Caesarean section separation rate	3.15	3.13	3.86	3.63	3.41	3.40	2.71	2.72	3.34
Caesarean section separations per 100 in-hospital births	22.8	24.3	26.4	26.8	26.1	22.7	20.1	21.3	24.4
Cholecystectomy	2.19	2.24	2.43	2.21	2.38	2.26	2.00	1.23	2.25
Diagnostic gastrointestinal endoscopy	24.88	27.71	30.28	27.02	23.63	20.40	12.05	12.09	26.29
Hip replacement	1.03	1.15	0.90	1.23	1.21	1.35	1.35	0.67	1.08
Revision of hip replacement	0.13	0.15	0.12	0.15	0.14	0.20	0.23	0.09	0.14
Hysterectomy	1.50	1.54	1.66	1.94	1.87	2.06	1.88	0.62	1.62
Lens insertion	6.07	5.62	6.59	6.49	5.32	5.91	4.07	5.59	5.99
Tonsillectomy	1.54	1.77	1.73	1.88	2.18	1.19	1.15	0.43	1.69
Myringotomy	1.48	2.28	1.67	2.32	3.36	1.20	1.49	0.63	1.92
Knee replacement	1.13	0.79	0.93	1.09	1.13	0.86	1.09	0.63	1.00
Prostatectomy	1.06	1.32	0.98	0.97	1.16	1.31	1.09	0.68	1.12
Arthroscopic procedures (includes arthroscopies)	4.74	5.96	4.42	7.20	8.18	4.95	4.78	3.71	5.49
Asthma (principal diagnosis)	2.73	2.38	2.49	2.71	3.98	1.39	1.80	2.33	2.64
Type 2 diabetes (principal diagnosis)	1.06	1.79	1.21	1.98	1.92	1.47	1.22	5.14	1.46
Type 2 diabetes (principal or additional diagnosis)	11.96	14.58	14.19	15.76	14.56	12.62	9.46	27.03	13.70

a The procedures and diagnoses are defined using ICD-10-AM codes. Procedures include National Health Ministers' Benchmarking Working Group sentinel procedures and additional procedures requested by States and Territories. **b** Some private hospitals are not included. **c** Rate per 1000 population was directly age- and sex-standardised to the Australian population at 30 June 1991 using December 2000 population estimates as divisors. **d** Excludes non-residents and unknown State of residence.

Source: AIHW (2002a); table 9A.12.

Emergency department waiting times

This indicator measures the proportion of patients seen within the time limits set according to the urgency of treatment required. Waiting times measure the time elapsed from presentation to the emergency department to commencement of service by a treating medical officer or nurse. A 1997 study recommended two emergency department waiting time indicators for national reporting (Whitby *et al*. 1997). One of these indicators relates waiting times to the urgency of treatment required (the triage category):

- triage category 1: patients needing resuscitation — 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; and
- triage category 5: non-urgent — patients seen within 120 minutes.

Data for all jurisdictions for patients presenting to public hospital emergency departments in 2000-01 are presented in table 9.18. All patients of public hospital emergency departments are public patients. Data may vary across jurisdictions as a result of differences in clinical practices (for example, the allocation of cases to urgency categories). The proportion of patients in each triage category that were subsequently admitted, which is included for the first time in this year's Report, may provide an indication of the comparability of triage categorisations across jurisdictions, and thus comparability of the waiting times data.

The nationally agreed definition for measurement of 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 at which they are triaged, whichever occurs earlier) from the time of commencement of service by a treating medical officer or nurse. Patients who subsequently do not wait for care after being triaged or clerically registered are excluded from the data. Victoria, Queensland, WA and the ACT use the national definition, while NSW, SA, Tasmania and the NT use the time of triage. In SA, patients are always triaged before being clerically registered (AIHW 2002a).

Other data issues include any differences in when the elapsed time commences (for example, when the patient arrives at the triage desk, or when a triage category is allocated) and the precision with which the starting time of treatment is recorded. States have also adopted different approaches to identifying when a patient has been

seen. While the national standard allows being seen by either a nurse or a doctor to be used in this measure, Queensland has reported for 2000-01 only on the basis of time to being seen by a doctor. Other issues arise with the use of benchmarks. A patient in triage category 2 who waits 11 minutes, for example, would be recorded the same as one waiting 18 minutes, even though the latter event may be of much greater concern. There are also differences across jurisdictions in data coverage, with the estimated proportion of emergency visits covered ranging across jurisdictions in 2000-01 from 100 per cent in Tasmania, the ACT and the NT, to 54 per cent in Victoria (table 9.18).

In 2000-01, NSW, Victoria and the NT had the highest proportion of patients seen within the triage timeframe for category 1 (100 per cent) and Tasmania had the lowest proportion (89 per cent). For triage category 2, the ACT had the highest proportion of patients seen within the relevant timeframe (85 per cent) and Tasmania had the lowest (55 per cent). NSW and WA generally had a higher than average proportion of patients who were subsequently admitted in all triage categories (table 9.18).

Waiting times for elective surgery

Elective surgery waiting times are difficult to measure objectively, and the data can be complex to interpret. The 2002 Report noted that variation in performance between jurisdictions was likely to be caused by differences across jurisdictions in the way clinicians allocated patients to urgency categories. Due to uncertainties regarding the consistency with which clinical urgency categories are assigned across jurisdictions, two methods of reporting on waiting times for elective surgery are included in this year's Report.

A new indicator — times waited for admission for elective surgery (regardless of clinical urgency category) — is reported for the first time this year. This is a new national indicator developed by the health sector after a decision by the Australian Health Ministers' Advisory Council (AHMAC) in late 2001 not to report by urgency category. In its decision to develop the new indicator, AHMAC acknowledged that the data by urgency category are not comparable across jurisdictions. Data for the new indicator (included in this year's Report) are comparable.

Table 9.18 **Emergency department waiting time to service delivery, public hospitals 2000-01[a]**

Triage category	*NSW*	*Vic*	*Qld*	*WA*[b]	*SA*	*Tas*[c]	*ACT*	*NT*	*Aust*
Waiting times (per cent of patients seen within triage category)									
1 – Resuscitation	100	100	98	98	94	89	98	100	98
2 – Emergency	74	78	70	78	64	55	85	69	73
3 – Urgent	59	69	59	64	51	57	82	71	61
4 – Semi-urgent	63	56	65	59	46	64	71	64	60
5 – Non-urgent	87	82	86	75	51	90	83	88	83
Total	**67**	**65**	**66**	**65**	**49**	**65**	**78**	**68**	**65**
Estimated proportion of patients who were subsequently admitted (per cent)[d]									
1 – Resuscitation	86	65	83	82	79	83	74	63	79
2 – Emergency	71	47	68	63	63	61	51	60	63
3 – Urgent	50	34	38	49	42	33	37	39	43
4 – Semi-urgent	22	16	14	26	14	14	16	14	18
5 – Non-urgent	7	6	4	8	4	4	4	3	6
Total	**32**	**24**	**24**	**36**	**25**	**24**	**18**	**24**	**28**
Data coverage									
Estimated proportion of emergency visits (per cent)	80	54	80	82	77	100	100	100	..
Hospitals (number)	52	12	20	6	13	4	2	2	111

a Care needs to be taken in interpreting these data. Nationally agreed definitions exist but there may be differences in how data are collected. Data may vary across jurisdictions as a result of differences in clinical practices (for example, on the allocation of cases to urgency categories). States have also adopted different approaches to identifying when a patient has been seen. A new national standard has now been adopted that allows being seen by either a nurse or a doctor to be used in this measure. **b** Estimated proportion of patients who were admitted is based on four hospitals. **c** Estimated proportion of patients who were admitted is based on three hospitals. **d** This may provide an indication of the comparability of triage categorisations across jurisdictions. .. Not applicable.

Source: AIHW (2002a); table 9A.13.

Note: SA country hospitals reported incomplete waiting times data. Percentages for patients seen within triage categories excluding country hospitals are shown in the SA jurisdiction comments on page 11.77.

As in previous reports, data are also presented on waiting times for patients by clinical urgency category. To reflect the importance of treating patients according to the urgency of their condition, the Steering Committee has decided to continue to report the old indicator. It is, however, acknowledged that systematic differences across jurisdictions in the judgements applied by clinicians about the urgency of particular cases — as well as in the performance of hospital systems — are likely to

affect reported results. The Steering Committee considers that standardisation of the data for this indicator should be a priority.

In a recent appraisal of waiting lists, the AIHW noted that, while there has been some harmonisation of definitions and waiting list management practice across jurisdictions, the issue of medical staff putting similar cases into different urgency categories due to differing practices would not be easily resolved (Healthdata Services 2001).

The new indicator is based on admissions (or throughput) data. Reporting based on the 'old' method shows both the time waited for surgery by patients on waiting lists at particular census dates, as well as for admitted patients.

For admissions data, waiting times are calculated from the time a patient is first included on the waiting list to the time the patient is admitted. Admissions data exclude patients who were on waiting lists although not subsequently admitted for surgery. It is estimated that between 10 and 20 per cent of patients are removed from waiting lists for reasons other than admission, including admission as an emergency patient for the relevant procedure, death of the patient, treatment at another location, the patient declining the surgery or inability to contact the patient (AIHW 2002c).

Census data reflect the proportion of patients waiting on the date of the census who have been waiting an extended period. Census data do not represent the completed waiting time of patients.

Both indicators will be affected by variations across jurisdictions in the approach to patients who changed clinical urgency category while they were on the waiting list or patients who are transferred from a waiting list managed by one hospital to a waiting list managed by a different hospital (AIHW 2002a). Where patients experience a change in their clinical condition leading to a review of their urgency category, the national definition specifies that waiting times are recorded as the period in the most recent urgency category and in any previous more urgent categories. For 1999-2000, Victoria, Queensland, WA and SA recorded waiting times in the most recent urgency category only, while the NT recorded total waiting time in all categories (AIHW 2002c, Queensland Government). For 2000-01, Victoria recorded waiting times in the most recent urgency category only, while SA and the NT recorded total waiting time in all categories (AIHW 2002a).

Where patients were transferred between waiting lists managed by different hospitals, generally only the time spent on the final list would be included in the waiting time reported. Victoria and WA reported based on the total time waited on all waiting lists. SA has stated that it is uncommon for patients to switch between waiting lists managed by different hospitals in that jurisdiction (AIHW 2002a).

Table 9.19 presents data for the new indicator — the number of days at which 50 per cent (that is, the 50th percentile) and 90 per cent (the 90th percentile) of patients were admitted, based on the time between when a patient was first included on a waiting list to when the patient was admitted. In 2000-01, the days waited at the 50th percentile ranged from 44 days in the ACT to 22 days in Queensland. The days waited at the 90th percentile ranged from 294 in Tasmania to 132 in Queensland. The proportion of patients waiting more than 365 days varied from 7.6 per cent in Tasmania, to 2.3 per cent in the NT (table 9.19).

Table 9.19 **Elective surgery waiting times, public hospitals**

	NSW	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*ACT*	*NT*	*Aust*
1999-2000									
Days waited at 50th percentile	26	28	22	31	30	36	**np**	23	27
Days waited at 90th percentile	168	187	134	242	157	292	**np**	149	175
% waited more than 365 days	2.4	3.6	3.0	5.7	2.2	6.7	**np**	1.6	3.1
Estimated coverage of surgical separations (%)**a**	100	71	95	75	67	99	**np**	100	85
2000-01									
Days waited at 50th percentile	28	28	22	27	34	37	44	23	27
Days waited at 90th percentile	229	205	132	215	199	294	266	198	202
% waited more than 365 days	5.2	4.0	3.3	4.0	3.6	7.6	5.3	2.3	4.4
Estimated coverage of surgical separations (%)**a**	100	70	94	75	67	100	100	100	85

a The number of separations with a surgical procedure for hospitals reporting to the National Elective Surgery Waiting Times Data Collection as a proportion of the number of separations with a surgical procedure for all public hospitals. **np** Not published.

Source: AIHW (2002a), (2002c); table 9A.14.

More information on elective surgery waiting times based on the new method of reporting is included in the attachment. Data on elective surgery waiting times by

hospital peer group, specialty of surgeon and indicator procedure, are contained in tables 9A.14, 9A.15 and 9A.16 respectively.

Data for the 'old indicator' reflect waiting times based on the urgency of the patient's condition. The three generally accepted urgency categories for elective surgery are:

- category 1, for which admission is desirable within 30 days;
- category 2, for which admission is desirable within 90 days; and
- category 3, for which admission at some time in the future is acceptable.

There is no specified or agreed desirable wait for category three patients, so the term 'extended wait' is used for patients waiting longer than 12 months for elective surgery.

As stated earlier, these data are not comparable across jurisdictions because of systematic differences in clinicians' approach to categorisation by urgency. Figures 5.12 and 5.13 of the 2002 Report illustrate differences across jurisdictions in the classification of patients to urgency categories for 1999. States and Territories with large proportions of patients in category 1 were also the States and Territories that had relatively large proportions of patients 'not seen on time'. Thus, the apparent variation in performance is likely to be significantly a result of variation in the classification practices employed (SCRSCCP 2002). Data on classification of patients to urgency categories for 2000-01 are available only for SA, Tasmania and the ACT.

- Of patients on waiting lists in SA at 30 June 2001, 4.8 per cent were in category one, 12.6 per cent were in category two and 82.6 per cent were in category three. Of patients admitted from waiting lists during 2000-01, in SA 25.9 per cent of patients were in category one, 20.0 per cent of patients were in category two and 54.1 per cent were in category three.
- Of those patients on waiting lists in Tasmania at 30 June 2001, 7.8 per cent were in category one, 40.2 per cent were in category two and 52.0 per cent were in category three. Of patients admitted from waiting lists during 2000-01, in Tasmania 44.4 per cent of admitted patients were in category one, 34.2 per cent were in category two and 21.4 per cent were in category three.
- Of those patients on waiting lists in the ACT at 30 June 2001, 4.0 per cent were in category one, 39.7 per cent were in category two and 56.3 per cent were in category three. Of patients admitted from waiting lists during 2000-01 in the ACT, 30.7 per cent were in category one, 45.3 per cent in category two and 24.0 per cent were in category three (State and Territory governments unpublished).

Data for the 'old indicator' have been supplied for this year's Report by Queensland, SA, Tasmania and the ACT. NSW, Victoria, WA and the NT did not provide data for this indicator.

For those jurisdictions that provided data:

- Census data for Queensland suggest that 4.5 per cent of category one patients on the waiting list at 30 June 2001 were subject to extended waits, 14.1 per cent of category two patients on the waiting list were subject to extended waits, 38.3 per cent of category three patients were subject to extended waits and 29.7 per cent of all patients on the waiting list at 30 June 2001 were subject to extended waits. Of patients admitted from waiting lists in 2000-01, 6.8 per cent of patients were subject to extended waits, 10.3 per cent of category two patients were subject to extended waits, 17.5 per cent of category three patients were subject to extended waits and 11.0 per cent of patients overall were subject to extended waits (table 9A.66).
- Census data for SA suggest that 20.3 per cent of category one patients on the waiting list at 30 June 2001 were subject to extended waits, 21.6 per cent of category two patients on the waiting list were subject to extended waits, 17.4 per cent of category three patients were subject to extended waits and 18.1 per cent of all patients on the waiting list at 30 June 2001 were subject to extended waits. Of patients admitted from waiting lists in 2000-01, 13.3 per cent of patients were subject to extended waits, 15.0 per cent of category two patients were subject to extended waits, 5.8 per cent of category three patients were subject to extended waits and 9.6 per cent of patients overall were subject to extended waits (table 9A.77).
- Census data for Tasmania suggest that 50.0 per cent of category one patients on the waiting list at 30 June 2001 were subject to extended waits, 66.0 per cent of category two patients on the waiting list were subject to extended waits, 41.0 per cent of category three patients were subject to extended waits and 52.0 per cent of all patients on the waiting list at 30 June 2001 were subject to extended waits. Of patients admitted from waiting lists in 2000-01, 34.0 per cent of patients were subject to extended waits, 50.0 per cent of category two patients were subject to extended waits, 31.0 per cent of category three patients were subject to extended waits and 36.0 per cent of patients overall were subject to extended waits (table 9A.85).
- Census data for the ACT suggest that 0.2 per cent of category one patients on the waiting list at 30 June 2001 were subject to extended waits, 54.4 per cent of category two patients on the waiting list were subject to extended waits, 45.4 per cent of category three patients were subject to extended waits and 25.3 per cent of all patients on the waiting list at 30 June 2001 were subject to

extended waits. Of patients admitted from waiting lists in 2000-01, 14.2 per cent of patients were subject to extended waits, 66.8 per cent of category two patients were subject to extended waits, 18.9 per cent of category three patients were subject to extended waits and 22.8 per cent of patients overall were subject to extended waits (table 9A.88).

Queensland , SA and Tasmania provided data on patients on waiting lists by clinical speciality for 2000-01 (tables 9A.67, 9A.78 and 9A.86) and SA and Tasmania provided data on elective surgery waiting lists at time of admission by clinical speciality for this period (tables 9A.78 and 9A.86).

Data are available for 1999-2000 for Victoria, WA and the NT on patients on waiting lists by clinical speciality and data on elective surgery waiting lists at time of admission by clinical speciality (tables 9A.61, 9A.73 and 9A.91).

Separations by target group

Equity of access to hospital services is another measure of accessibility and hence, of the effectiveness of the health sector. Without appropriate access to hospital services, the consequences of any injury or illness are more likely to be either permanent disability or premature death for a patient. Equity of access has been measured using data on Indigenous and non-Indigenous separations.

Data on Indigenous people are limited by the extent to which Indigenous people are identified in hospital records and completeness is likely to vary across States and Territories. The Australian Bureau of Statistics (ABS) (2000) noted that studies of a limited number of individual hospitals suggest that the proportion of Indigenous people correctly identified in hospital records ranges from less than 50 per cent to close to 100 per cent. It found that for 1998-99, the quality of data on Indigenous hospitalisations was considered acceptable only in the NT, SA and WA (ABS 2000). National reporting on data quality in hospitals is expected in 2002. In the meantime, few jurisdictions have data of consistent quality — with the exception of the NT (ABS 2000, Condon *et al.* 1998). In addition, difficulties in estimating the size of the Indigenous population limits the comparability of data over time.

Descriptive data on Indigenous and non-Indigenous separations in public hospitals in 2000-01 are provided in table 9.20. Indigenous separations accounted for around 3 per cent of total separations in 2000-01 (and around 4.5 per cent of separations in public hospitals), although Indigenous people represented around 2 per cent of the total population in 1998 (AIHW 2002a). Most Indigenous separations occurred in public hospitals (98 per cent). The low proportion of private hospital separations for Indigenous people may be due partly to a lower proportion of Indigenous patients

being correctly identified in private hospitals and partly to a lower use of private hospitals (ABS 2000). Data in table 9.20 need to be interpreted with care. The AIHW advise that only data from SA and the NT are considered to be of acceptable quality (AIHW 2002a).

Table 9.20 **Separations by Indigenous status, 2000-01[a]**

	NSW	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*ACT* [b]	*NT* [c]	*Aust*
Number of public hospital separations ('000)									
Indigenous	33.0	7.4	48.6	34.7	12.1	1.0	1.1	35.0	173.0
Non-Indigenous	1 203.2	1 021.2	621.6	327.9	335.9	66.6	58.6	23.8	3 658.8
Not reported	2.3	0.0	18.4	0.0	9.1	4.2	1.6	0.2	35.8
Total	**1 238.4**	**1 028.6**	**688.6**	**362.6**	**357.1**	**71.9**	**61.3**	**59.0**	**3 867.6**
Number of private hospital separations ('000)									
Indigenous	0.4	0.3	1.4	1.9	0.2	0.1	0.1	**na**	4.4
Non-Indigenous	638.0	580.2	417.7	248.2	177.1	25.1	24.3	**na**	2 110.6
Not reported	1.4	0.0	107.2	0.0	7.0	40.0	0.3	**na**	155.8
Total	**639.8**	**580.4**	**526.3**	**250.1**	**184.3**	**65.3**	**24.6**	**na**	**2 270.8**
Separations in public hospitals as a proportion of separations in all hospitals (%)									
Indigenous	99	97	97	95	98	79	95	**na**	98
Non-Indigenous	65	64	60	57	65	73	71	**na**	63

a Identification of Indigenous patients is not considered complete and completeness varies across jurisdictions. **b** Rates reported for the Aboriginal and Torres Strait Islander population in the ACT are subject to variability due to the small population of Aboriginal and Torres Strait Islanders in the jurisdiction. **c** Data for the private hospital in the NT not available. **na** Not available.

Source: AIHW (2002a); table 9A.17.

A performance indicator of Indigenous access to hospitals is given by the rate of separations per 1000 people. Data on separation rates for Indigenous people and all people by State and Territory for all public hospitals are presented in table 9.21. Data regarding private hospital separation rates are contained in table 9A.18.

In 2000-01, on an age-standardised basis, 520 separations (including same day separations) for Indigenous patients were reported per 1000 Indigenous population in Australian public hospitals. This was markedly higher than the corresponding figure for the total population of 195 per 1000. Indigenous separation rates for public hospitals were highest in the NT (875 separations per 1000 Indigenous people) and lowest in Tasmania (91) (table 9.21). It should be noted that the AIHW advise that only data from SA and the NT are considered to be of acceptable quality (AIHW 2002a). Incomplete identification of Indigenous people limits the validity of comparisons over time.

Table 9.21 **Estimates of separations per 1000 people by reported Indigenous status, public hospitals[a, b]**

	NSW	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*ACT*[c]	*NT*	*Aust*
1997-98									
Indigenous people	316	339	503	715	603	152	368	827	504
Total population	195	191	192	192	213	161	204	326	195
1998-99									
Indigenous people	336	331	590	805	673	23	33	887	550
Total population	194	201	205	198	224	165	208	352	201
1999-2000									
Indigenous people	344	380	631	800	771	132	1815	963	592
Total population	187	205	201	196	227	156	215	365	199
2000-01									
Indigenous people	320	356	558	702	646	91	670	875	520
Total population	181	206	191	193	222	145	207	356	195

[a] The rates are directly age-standardised to the Australian population at 30 June 1991. The rates for the years 1997-98 to 1999-2000 are calculated using population estimates based on the 1996 Census. The rates for 2000-01 are calculated using the actual census population counts. [b] Identification of Aboriginal and Torres Strait Islander patients is not considered complete and completeness varies across jurisdictions. [c] Rates reported for the Aboriginal and Torres Strait Islander population in the ACT are subject to variability due to the small population of Aboriginal and Torres Strait Islanders in the jurisdiction.

Source: AIHW (unpublished); table 9A.18.

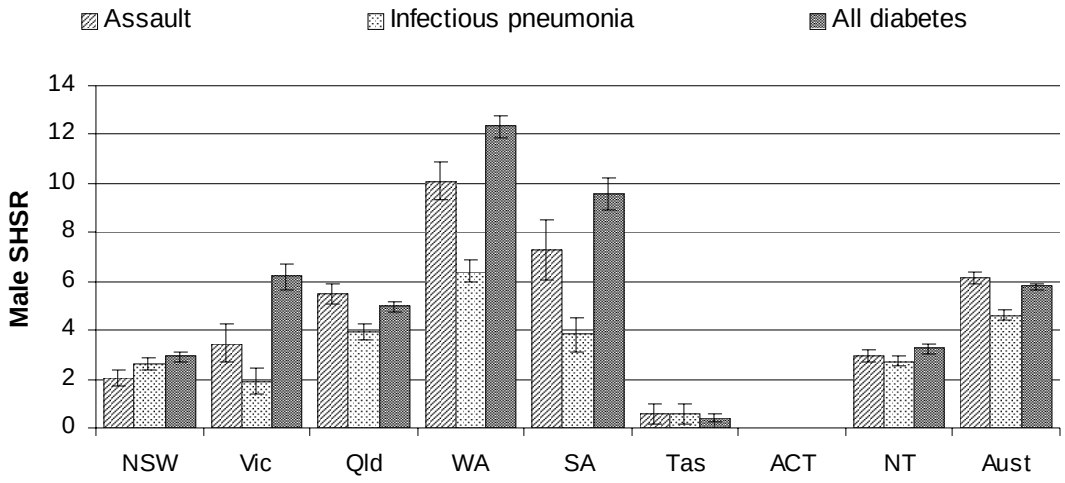
Data on Indigenous separations for selected conditions are presented for one of the refined national health performance indicators for Aboriginal and Torres Strait Islanders endorsed by AHMAC in 2000 — Standardised Hospital Separation Ratios. It should be noted, however, that the ratios are included in this chapter for descriptive purposes only. The data do not signal the performance of hospitals, but reflect a range of factors, such as the spectrum of public, primary care and post-hospital care available; Indigenous access to these as well as hospital services, social and physical infrastructure services for Indigenous people; and differences in the complexity, incidence and prevalence of disease between the Indigenous and non-Indigenous populations.

The Standardised Hospital Separation Ratios are calculated by dividing Indigenous separations by 'expected' separations. Expected separations are calculated as the product of the all Australian separation rates and the Indigenous population. They therefore illustrate differences between the rates of Indigenous hospital admissions and those of the total Australian population, taking into account differences in age distributions. Ratios are presented for six major conditions — circulatory diseases, injury and poisoning, respiratory diseases and lung cancer, diabetes, tympanoplasty associated with otitis media, and mental health conditions and selected associated ICD-9 and ICD-10 codes (tables 9A.19 and 9A.20).

There was variation across jurisdictions in the proportion of Indigenous people who were identified as such in the hospital morbidity data collections and/or in the total population. The data should therefore be used with care as only the NT and SA data were considered of acceptable quality by the AIHW.

In 2000-01, for all causes and across all hospitals, Indigenous people were close to twice as likely to be hospitalised as all Australians. For males, there was a marked difference between Indigenous separation rates and those of the total population for assault (Indigenous separation rates were 6.2 times higher than for all Australians), all diabetes[5] (Indigenous separation rates were 5.8 times higher than for all Australians), and infectious pneumonia (Indigenous separation rates were 4.6 times higher than for all Australians) (figure 9.11). (While the standardised rates for Indigenous males for rheumatic heart disease and tympanoplasty associated with otitis media also appear markedly higher than for the Australian population, the number of separations for these conditions was very small [table 9A.19].)

Figure 9.11 **Indigenous males: standardised hospital separation ratios for selected conditions, 2000-01[a, b, c]**



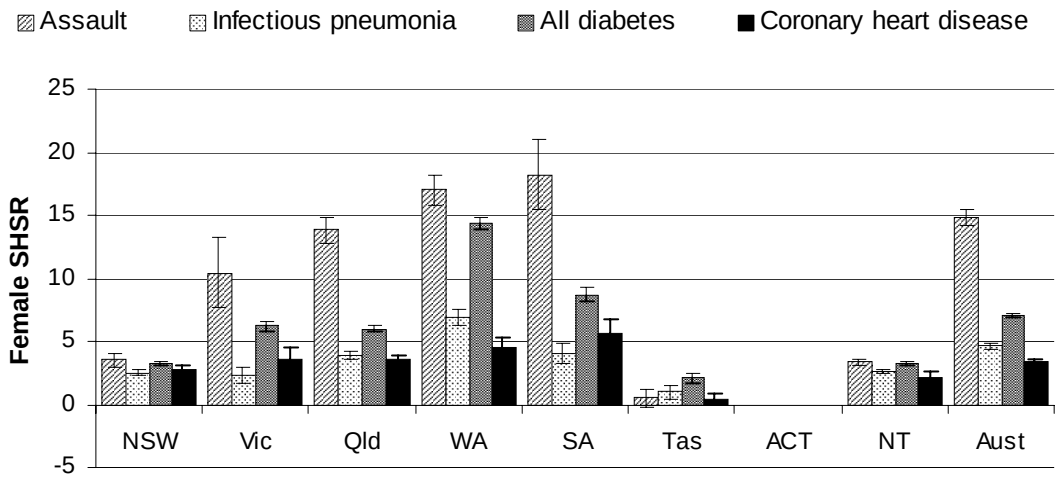
a The ratios are indirectly age-standardised to the Australian population aged 0–74 years at 30 June 1999. **b** The ACT data are not considered reliable due to the small size of the Indigenous population in that jurisdiction. **c** It should be noted that these data do not signal the performance of hospitals, but reflect a range of factors such as the spectrum of public, primary care and post hospital care available; Indigenous access to these as well as hospital services, social and physical infrastructure services for Indigenous people; and differences in the complexity, incidence and prevalence of disease between the Indigenous and non-Indigenous populations. Information on the Indigenous population in each jurisdiction is contained in the statistical appendix.

Source: AIHW (unpublished); table 9A.19.

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

Indigenous females' separation rates were markedly higher than those for all females for assault (the rate for Indigenous females was 14.9 times the rate for all females), all diabetes (the rate for Indigenous females was 7.1 times the rate for all females), infectious pneumonia (the rate for Indigenous females was 4.6 times the rate for all females) and coronary heart disease (the rate for Indigenous females was 3.4 times the rate for all females) (figure 9.12). (While the standardised rates for Indigenous females for rheumatic heart disease and tympanoplasty associated with otitis media also appear markedly higher than for the Australian population, the number of separations for these conditions was very small [table 9A.20].)

Figure 9.12 **Indigenous females: standardised hospital separation ratios for selected conditions, 2000-01[a, b, c]**



a The ratios are indirectly age-standardised to the Australian population aged 0–74 years at 30 June 1999. **b** The ACT data are not considered reliable due to the small size of the Indigenous population in that jurisdiction. **c** It should be noted that these data do not signal the performance of hospitals, but reflect a range of factors such as the spectrum of public, primary care and post hospital care available; Indigenous access to these as well as hospital services, social and physical infrastructure services for Indigenous people; and differences in the complexity, incidence and prevalence of disease between the Indigenous and non-Indigenous populations. Information on the Indigenous population in each jurisdiction is contained in the statistical appendix.

Source: AIHW (unpublished); table 9A.20.

Efficiency

Two approaches to measuring the efficiency of public hospital services are used in this Report. One is the cost per casemix-adjusted unit of output (the unit cost) and the other is the casemix-adjusted relative length of stay index, because costs are correlated with the length of stay at aggregate levels of reporting. Both indicators represent marked improvements since efficiency indicators were first reported in the 1995 Report.

The Review'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 Review seeks to report estimated costs that are comparable. Where differences in comparability remain, the differences are documented.

The Review has identified a range of financial reporting issues that have affected the accuracy and comparability of unit costs for acute care services. These include the treatment of payroll tax, superannuation, depreciation and the user cost of capital associated with buildings and equipment. A number of issues remain to further improve the quality of these estimates.

Costs associated with non-current physical assets (such as depreciation and the user cost of capital) are potentially important components of the total costs of many services delivered by government agencies. Differences in the techniques for measuring non-current physical assets (such as valuation methods) may reduce the comparability of cost estimates across jurisdictions.

In response to concerns regarding data comparability, the Steering Committee initiated a study, *Asset Measurement in the Costing of Government Services* (SCRCSSP 2001b). The aim of the study was to examine the extent to which differences in asset measurement techniques applied by participating agencies 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. Considered in the context of total unit costs, however, the differences created by these asset measurement effects were relatively small as capital costs represent a relatively small proportion of total cost — although the differences may affect cost rankings between jurisdictions. A key message from the study was that the adoption of national uniform accounting standards across all service areas would be a desirable outcome from the perspective of the Review. The results are discussed in more detail in chapter 2.

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

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

Recurrent costs per casemix-adjusted separation

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

While all admitted patient separations and their costs are included in the calculations, cost weights are not available for non-acute admitted patients which now comprise approximately 3 per cent of total admitted patient episodes. An approximation of the cost per separation for the acute separations is therefore applied to the non-acute patients. Average cost weights for acute patients typically underestimate the costs of non-acute separations, however, as these patients typically have very long lengths of stay (AIHW 2001b).

The AIHW (2001d) has shown that hospital recurrent expenditures on Indigenous and non-Indigenous people may differ (box 9.6). This may also influence unit cost outcomes.

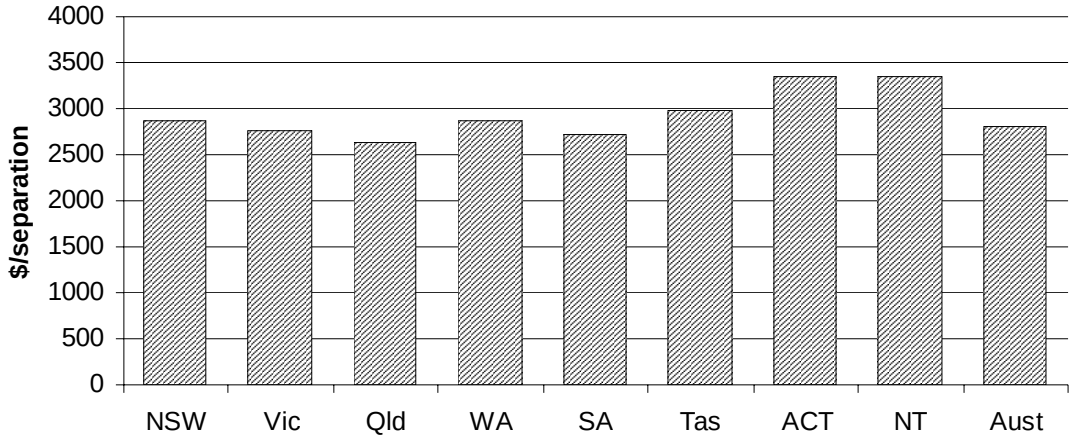
The data exclude spending on non-admitted patient care, the user cost of capital and depreciation, research costs and payroll tax. Overnight stays, same day separations, private patient separations in public hospitals and private patient recurrent costs are included.

The scope is hospitals that mainly provide acute care — that is, principal referral and specialist women's and children's hospitals, large hospitals, medium hospitals and small acute hospitals. Excluded are psychiatric hospitals, drug and alcohol services, mothercraft hospitals, unpeered and other hospitals, hospices, rehabilitation facilities, small non-acute and multi purpose services. Also excluded are hospitals that cannot be classified due to atypical events such as being opened or closed mid-year. Separations in the excluded hospitals comprised 4.4 per cent of separations (on average) in 2000-01 — although the proportion of separations excluded varies across jurisdictions (table 9A.25).

Recurrent cost per casemix-adjusted separation for each jurisdiction in 2000-01 is presented in figure 9.13. It should be noted that these data are based on 2000-01 cost weights and therefore differ from data in the AIHW's *Australian Hospital Statistics 2000-01*, which were based on 1999-2000 cost weights.

The recurrent cost per casemix-adjusted separation in 2000-01 was highest in the NT ($3355) and lowest in Queensland ($2636) (figure 9.13).

Figure 9.13 **Recurrent cost per casemix-adjusted separation (current prices)[a, b, c, d, e, f, g, h]**



a Excludes depreciation. **b** Psychiatric hospitals, drug and alcohol services, mothercraft hospitals, unpeered and other hospitals, hospices, rehabilitation facilities, small non-acute and multi-purpose services are excluded. **c** Separations from the National Hospital Morbidity Database whose type of episode of care is acute, newborn with qualified days or unspecified. **d** Average cost weights from the National Hospital Morbidity Database, based on acute and unspecified separations and newborn episodes of care with qualified days, using the 2000-01 AR-DRG v 4.1 cost weights (DHA, unpublished) applied to version 4.2 AR-DRGs. **e** Casemix-adjusted separations are the product of total separations and average cost weight. **f** Estimated private patient medical costs calculated as the sum of salary/sessional and VMO payments divided by the number of public patient days multiplied by the number of private patient days. This is a notional estimate of the medical costs for all non-public patients. **g** Queensland pathology services are now being purchased from the Statewide pathology service rather than being provided by each hospitals' employees. **h** These figures need to be interpreted in conjunction with the consideration of cost disabilities associated with hospital service delivery in the NT.

Source: AIHW (unpublished); table 9A.25.

Box 9.6 **Admitted patient costs for Indigenous people, 1998-99**

The AIHW (2001d) notes that there are a number of factors driving differences in admitted patient expenditures between Indigenous people and non-Indigenous people.

- The average AR-DRG cost weight for Indigenous patients is lower than for non-Indigenous patients due to their higher numbers of low cost AR-DRGs, such as dialysis, and lower numbers of high cost surgical AR-DRGs.
- The average length of hospital stay for Indigenous people tends to be longer than for non-Indigenous people within the same AR-DRG. This leads to higher costs per episode and can be attributed to case complexity, hospital and regional cost variations, differences in clinical practice and post-discharge support.
- A high proportion of Indigenous people live in areas where the hospitals are relatively high cost, such as those in remote parts of Australia. On the other hand, in some cases, a high proportion of Indigenous people live in the vicinity of lower cost hospitals, such as small non-remote rural hospitals and remote Queensland hospitals.[6]
- In addition, there is evidence that cost per separation for Indigenous people is higher due to the higher costs of caring for patients with greater comorbidities. These costs are in addition to those associated with longer lengths of stay. The AIHW (2001d) added a 5 per cent cost loading for Indigenous admitted patients to account for this effect.

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

Source: AIHW (2001d).

To address the problem associated with a lack of cost weights for non-acute admitted patients, last year Victoria and NSW also reported recurrent cost per casemix-adjusted separation for acute patients only. These data are unavailable for the 2003 Report. It is anticipated that jurisdictions will be better able to isolate acute care costs in the near future.

Comparisons across jurisdictions are affected by differences in the mix of outputs (or admitted patient services) produced by hospitals in each jurisdiction. Hospitals

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

have therefore been categorised according to a set of 'peer groups' — developed by the National Health Performance Committee (and its predecessor, the National Health Ministers' Benchmarking Working Group) — to enable hospitals with similar activities to be compared. The data by peer group are presented in detail in table 9A.28. The dominant peer classification is the principal referral and specialist women's and children's category. In 2000-01, these hospitals accounted for 67 per cent of public acute and psychiatric hospital expenditure and 65 per cent of separations (AIHW 2002a). The data for principal referral hospitals (excluding specialist women's and children's hospitals) are presented in table 9.22. Australia-wide, recurrent cost per casemix-adjusted separation for principal referral hospitals in 2000-01 was $2817. For those jurisdictions where publishable data were available, the recurrent cost per casemix-adjusted separation for principal referral hospitals was highest in NSW ($2935) and lowest in Queensland ($2714).

Table 9.22 **Recurrent cost per casemix-adjusted separation, principal referral hospitals (public), 2000-01[a, b, c]**

	NSW	*Vic*	*Qld*	*WA*	*SA*	*Tas*	*ACT*	*NT*[d]	*Aust*
No. of hospitals	20	14	12	3	3	2	1	1	56
Av. beds per hospital	392	585	402	598	474	382	504	297	458
Separations per hospital	34 261	51 680	34 488	58 221	55 117	29 175	49 712	31 187	41 105
Av. cost weight	1.12	1.00	1.05	1.01	1.08	1.12	0.95	0.83	1.05
Cost per casemix-adjusted separation ($)	**2 935**	**2 759**	**2 714**	**np**	**np**	**2 828**	**np**	**np**	**2 817**
Expenditure									
Principal referral hospitals ($m)	3 169	2 908	1 487	**np**	**np**	255	**np**	**np**	9 437
Total ($m)	**5 519**	**4 040**	**2 460**	**1 479**	**1 239**	**341**	**263**	**199**	**15 541**

a Principal referral hospitals are classified as metropolitan hospitals with greater than 20 000 acute casemix-adjusted separations and rural hospitals with greater than 16 000 acute casemix-adjusted separations a year. **b** Expenditure data exclude depreciation. **c** Average cost weight from the National Hospital Morbidity Database, based on acute and unspecified separations and newborn episodes of care with qualified days, using the 2000-01 AR-DRG v 4.1 cost weights (DHAC, unpublished) applied to version 4.2 AR-DRGs. **np** Not published.

Source: AIHW (unpublished); table 9A.28.

Inclusion of capital costs

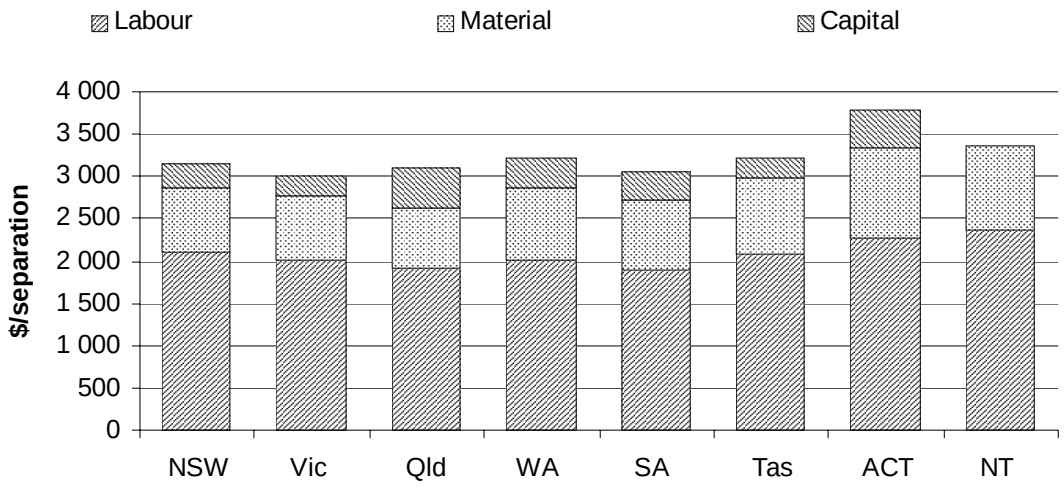
The estimated unit cost of admitted care services inclusive of capital costs is reported below. Total cost per casemix-adjusted separation is defined as the recurrent cost per casemix-adjusted separation plus the capital costs (depreciation

and the user cost of capital of buildings and equipment) per casemix-adjusted separation. The indicator is reported only for admitted patients.

Depreciation is defined as the cost of consuming an asset's services, and 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 and is equivalent to the return forgone from not using the funds to deliver other government services or to retire debt. Interest payments represent a user cost of capital and so should be excluded from recurrent expenditure where user costs of capital are calculated separately and added to recurrent costs. Interest expenses were deducted directly from capital costs in all jurisdictions to avoid double counting.

Total costs per casemix-adjusted separation by jurisdiction (including capital costs) are presented in figure 9.14. These data exclude the user cost of capital associated with land. Excluding the user cost of capital for land, the total cost per casemix-adjusted separation ranged from $3785 in the ACT to $3007 in Victoria. The NT was unable to provide cost of capital or depreciation data.

Figure 9.14 **Total cost per casemix-adjusted separation, 2000-01**[a, b, c, d]



[a] 'Labour' includes medical and non-medical labour costs. 'Material' includes other non-labour recurrent costs. 'Capital' is defined to include the user cost of capital plus depreciation associated with the delivery of inpatient services in the public hospitals described in the data for recurrent cost per casemix-adjusted separation. [b] Excludes the user cost of capital associated with land. This is reported in table 9A.21. [c] Variation across jurisdictions in the collection of capital-related data suggests that the data should be treated as indicative. [d] The NT did not provide cost of capital or depreciation data and therefore NT data reflect only recurrent costs.

Source: AIHW (2002a); State and Territory governments; table 9A.25 and table 9A.21.

Casemix-adjusted relative stay index

The casemix-adjusted length of stay — or 'relative stay index' — is defined as the actual number of acute bed days divided by the expected number of acute bed days adjusted for casemix. Casemix-adjustment is important, since hospitals with more complex patients will appear to have relatively higher lengths of stay, and may erroneously appear less efficient. As indicated, States and Territories vary in the thresholds applied for classifying patients as either same day admitted patients or outpatients. These variations will affect this indicator.

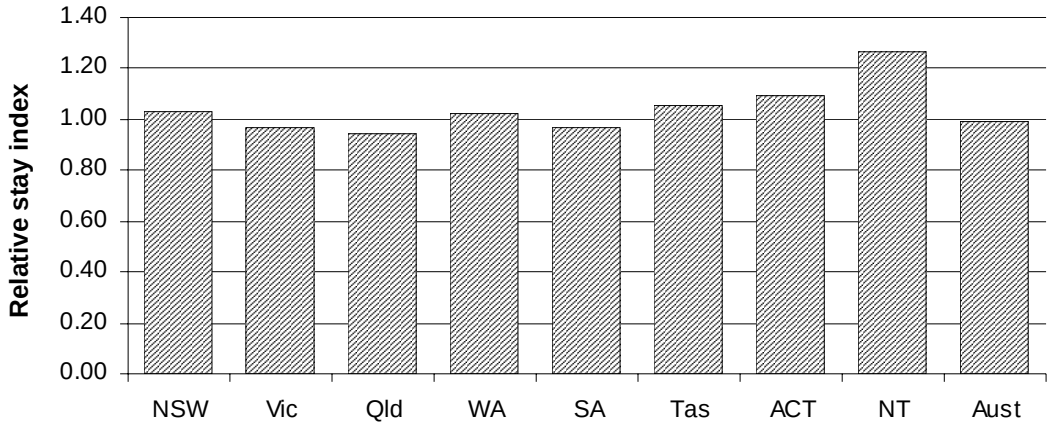
The relative length of stay for Australia for all hospitals is one. A relative stay index greater than one indicates that a patient's average length of stay is higher than would be expected given the jurisdiction's casemix distribution. A relative stay index of less than one indicates that the number of bed days used was less than would have been expected. Same day dialysis and chemotherapy patients have been excluded from the calculations for this indicator. The standardised relative stay index for acute patients in public hospitals in 2000-01 was highest in the NT (1.26) and lowest in Queensland (0.95) (figure 9.15).

Due to improvements in the way the index has been calculated, these data differ from those published in the AIHW's *Australian Hospital Statistics 2000-01*. The relative stay index compares groups of hospitals with the overall average. Where there are differences in the mix of AR-DRGs between groups it becomes less valid to compare their relative stay indexes. These issues are exacerbated where one group of hospitals has no separations for a particular AR-DRG. This can have a material effect on comparisons of performance. The alternative reported here attempts to standardise the relative stay index for the mix of AR-DRGs; for example to reflect the mix of AR-DRGs for Australian hospitals overall. Titulaer & Hargreaves (2002) compared the relative stay index and a standardised relative stay index between the public and private sectors. For medical, surgical and other groups, the differences between the relative stay index and a relative stay index standardised for the mix of AR-DRGs across Australia are minor. The difference between the relative stay index and a standardised relative stay index, however, is significant for the private sector as a whole. This is because the private sector has a lower proportion of medical separations, and when the distribution is standardised to the Australian total, the contribution of medical patients to the total is increased from 45 per cent of the expected bed days to 62 per cent, and the contribution of surgical and other patients scaled down accordingly, resulting in a difference in the totals that is higher than any of the differences in the components.

The problems encountered are analogous to the direct versus indirect age-standardisation dilemma. Direct age-standardisation is used where the

populations and their characteristics are stable and reasonably similar. Where either populations are sparse or the characteristics are rare indirect standardisation is typically used. The traditional relative stay index is analogous to indirect standardisation. The standardised relative stay index is similar to direct standardisation.

Figure 9.15 **Standardised relative stay index, acute patients in public hospitals, 2000-01[a, b]**



a Relative stay index based on all hospitals. **b** Stays of 200 days and over are excluded. Index includes acute patients only (including unknowns and newborns with qualified days). Same day dialysis and chemotherapy are excluded.

Source: AIHW (unpublished); table 9A.23.

The relative stay index by accommodation status and by medical, surgical and other AR-DRGs is reported in tables 9A.23 and 9A.24.

Recurrent cost per non-admitted occasion of service

The cost per non-admitted occasion of service is the proportion of 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.

These data are not comparable across jurisdictions because, to date, there is no agreed non-admitted patient classification system. There is variation in reporting categories across jurisdictions and inconsistencies arise because of differences in outsourcing practices. (In some cases, for example, outsourced occasions of service may be included in expenditure on non-admitted services, but not in the count of

occasions of service.) In addition, this indicator does not adjust for complexity of service — for example, a simple urine glucose test is treated equally with a complete biochemical analysis of all body fluids (AIHW 2000b).

Jurisdictions able to supply 2000-01 data for this indicator reported the following results.

- In NSW, emergency department cost per occasion of service was $166 for 1.6 million occasions of service, outpatient cost per occasion of service was $117 for 5.2 million occasions of service, and overall, cost per occasion of service was $111 for 12.9 million occasions of service (table 9A.55).
- In WA in 2000-01, emergency department cost per occasion of service was $113 for 566 111 occasions of service, outpatient cost per occasion of service was $92 for 2.6 million occasions of service, and overall, cost per occasion of service was $88 for 4.2 million occasions of service (table 9A.76).
- In SA in 2000-01, emergency department cost per occasion of service was $189 for 208 136 occasions of service; outpatient cost per occasion of service was $140 for 1.0 million occasions of service; and overall, cost per occasion of service was $148 for 1.2 million occasions of service (table 9A.81).
- In Tasmania, emergency department cost per occasion of service was $237 for 91 843 occasions of service and outpatient cost per occasion of service was $140 for 233 578 occasions of service. Overall, cost per occasion of service was $167 for 325 421 occasions of service (table 9A.84).
- In the ACT, emergency department cost per occasion of service was $243 for 92 884 occasions of service; outpatient cost per occasion of service was $63 for 442 363 occasions of service. Overall, cost per occasion of service was $94 for 535 247 occasions of service (table 9A.89).

Victoria collects data on the basis of cost per encounter. An encounter includes the clinic visit and all ancillary services provided within a 30-day period either side of the clinic visit. Based on cost data from 13 major hospitals, the average cost per encounter was $114 in 2000-01, compared with $109 in 1999-2000, $104 in 1998-99 (based on cost data from 13 major hospitals) and $105 in 1997-98 (based on cost data from nine major hospitals) (table 9A.64).

In light of the difficulties associated with the lack of a nationally consistent non-admitted patient classification system, the Review has included national data from the Commonwealth Department of Health and Aged Care, National Hospital Cost Data Collection (NHCDC) for cost per occasion of service for emergency departments (table 9.23) and cost per occasion of service for outpatients (table 9.24). The NHCDC collects data on a consistent basis across a sample of

hospitals which is expanding over time. The samples for each jurisdiction are, however, not necessarily representative since hospitals contribute data on a voluntary basis. The emergency department data are based on figures provided by 147 hospitals across Australia, whereas the outpatient (tier 1) data are based on figures provided by 25 hospitals. (Outpatient tier 0 data are included in the attachment and were contributed by 163 hospitals (attachment table 9A.30). These data suggest that cost per occasion of service for the public sector in 2000-01 was $120.) The NHCDC data are affected by differences in costing and admission practices across jurisdictions and hospitals.

Table 9.23 **Emergency department average cost per occasion of service by triage class, public sector, Australia, 2000-01**[a, b, c, d, e, f]

	Population estimated	*Actual*
Triage category	*Average cost per occasion of service ($)*	*Average cost per occasion of service ($)*
Admitted triage 1	609	608
Admitted triage 2	307	313
Admitted triage 3	304	314
Admitted triage 4	253	270
Admitted triage 5	189	226
Non-admitted triage 1	595	593
Non-admitted triage 2	343	346
Non-admitted triage 3	253	255
Non-admitted triage 4	172	176
Non-admitted triage 5	124	132
Did not wait[g]	57	58
Total	**206**	**219**

[a] Population estimates are derived as not all hospitals submit emergency department data to the NHCDC. The emergency department national database differs from the acute national database in that acute hospitals without emergency department cost and activity are excluded from this database. [b] Based on data from 147 public sector hospitals across Australia out of the 187 hospitals participating in the Round 5 collection. [c] Cost and activity emergency department data for Victoria were only captured for cost-modelled sites representing approximately 12 per cent of the available ED data for that State. [d] The NT did not submit emergency department data. [e] Costing and admission practices vary between jurisdictions and hospitals. [f] Depreciation costs are included. [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: Commonwealth Department of Health and Ageing, NHCDC, Round 5; table 9A.29.

Table 9.24 **Non-admitted clinic occasions of service for tier 1 clinics, actual results, public sector, 2000-01[a, b]**

Tier 1 clinic	*Occasions of service (no.)*	*Average cost per occasion of service ($)*
Allied health and/or clinical nurse spec.	640 708	54
Dental	11 043	133
Medical	616 048	217
Obstetrics and gynaecology	180 682	139
Paediatric	37 793	192
Psychiatric	47 191	239
Surgical	506 713	109
Total	**2 040 178**	**132**

a Depreciation costs are included. **b** Tier 1 results incorporate Tier 2 results rolled into Tier 1 clinic data. Data based on 25 public sector hospitals.

Source: Commonwealth Department of Health and Ageing, NHCDC, Round 5; table 9A.31.

9.3 Maternity services

Framework of performance indicators

The performance framework for maternity services is outlined in figure 9.16, and has the same objectives as for public hospitals in general. The framework is under development by the Steering Committee and, as is the case with all the performance indicator frameworks, will be subject to regular review.

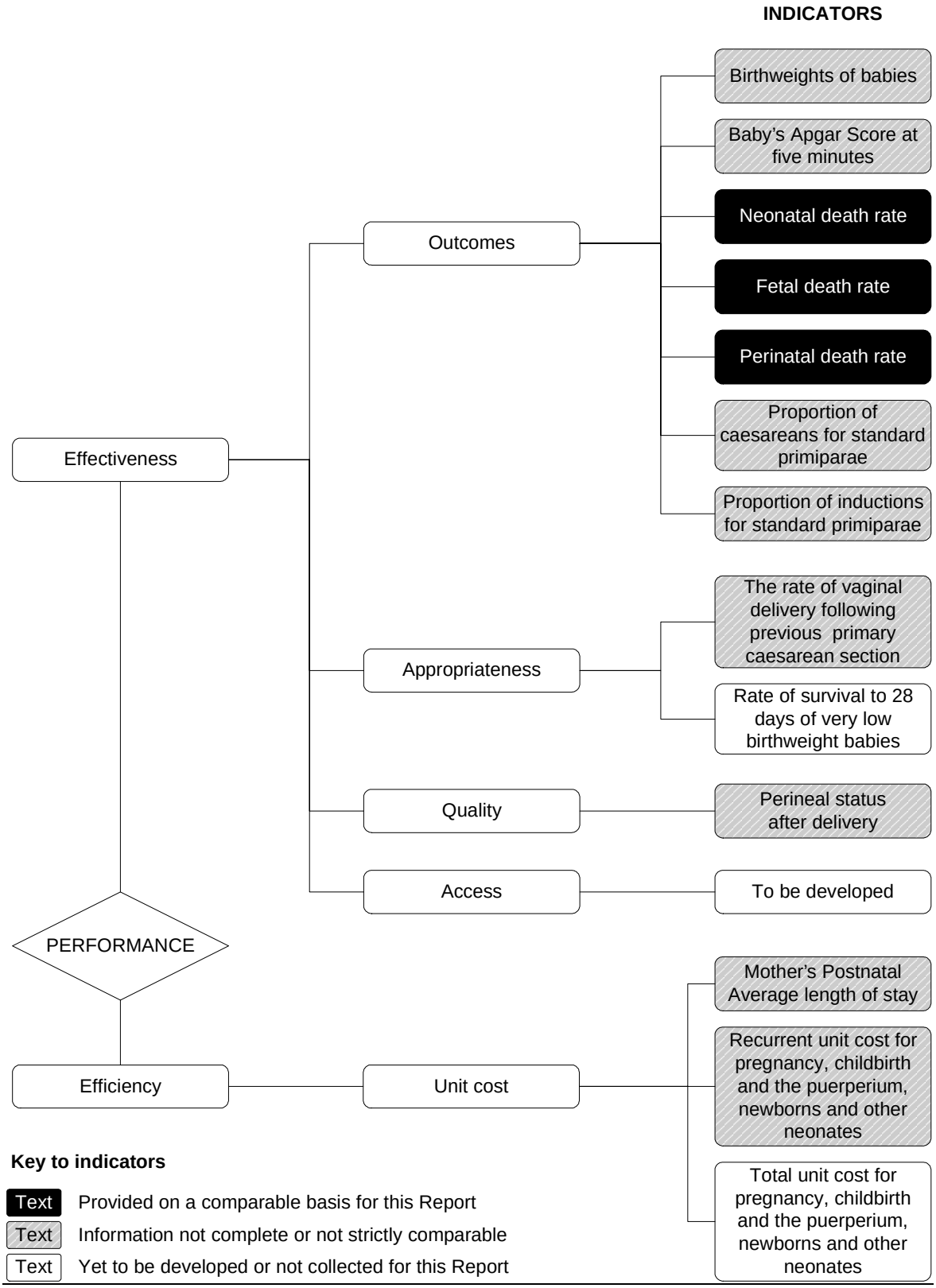
The performance indicator framework shows which data are comparable in the 2003 Report (figure 9.16). For data that are not considered strictly comparable, the text includes relevant caveats and supporting commentary. Chapter 1 discusses data comparability from a Report-wide perspective (see section 1.6).

Key performance indicator results

Outcomes

Seven maternity service outcome indicators are included in the Report this year: birthweights of babies born to all mothers and to Indigenous mothers, Apgar scores (which indicate a baby's wellbeing soon after birth); neonatal, fetal and perinatal death rates; and caesarean and induction rates for standard primiparae.

Figure 9.16 **Performance indicators for maternity services**



Birthweight of babies

For the first time this year, the Report contains information on the birthweights of babies born to all mothers and to Indigenous mothers. These data are included in the health preface. This indicator is not intended to indicate the performance of hospitals, with results influenced by the state of public health and pre-natal care generally. It is reported as part of the Steering Committee's focus on improving reporting on the Indigenous population, and is a key signal of the health and life expectancy of Indigenous people compared with the population generally.

Apgar score

The Apgar score is a numerical score used to evaluate a baby's condition shortly after birth. It is based on an assessment of the baby's heart rate, breathing, colour, muscle tone and reflex irritability. Between zero and two points are given for each of these five characteristics, and the total score may vary between zero 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). Low Apgar scores of less than four are strongly associated with babies' birthweights.

The reporting of this indicator has changed for this year's Report, with Apgar scores being reported only at five minutes after birth. Reporting of Apgar scores at one minute after birth has been discontinued as reporting at both one and five minutes was seen as unnecessary.

Table 9.25 illustrates the relationship between low birth weight and low Apgar score. In 2000, NSW had the highest proportion of babies weighing 0–1499 grams reporting an Apgar score of three or less five minutes after delivery (14.4 per cent), while WA reported the smallest proportion (8.9 per cent). For babies weighing 1500–1999 grams, Queensland reported the highest proportion of babies with Apgar scores of three or less (2.0 per cent) and Tasmania and the ACT reported the lowest (0.0 per cent). For other birthweights, Apgar scores of three or less were relatively rare and the proportion was fairly similar across jurisdictions. NSW, Victoria, WA and SA were also able to provide data for 2001, and these data are shown in table 9A.35.

Table 9.25 **Number of live births and proportion of babies with an Apgar score of three or less, five minutes post-delivery, public hospitals, 2000**

Birthweight (grams)	*Unit*	*NSW*	*Vic* [a]	*Qld* [b]	*WA*[c]	*SA*[d]	*Tas*	*ACT* [e]	*NT*
0–1499	No. live births	845	548	470	248	243	70	67	**na**
	%	14.4	13.3	13.6	8.9	11.5	11.5	10.5	**na**
1500–1999	No. live births	959	687	561	241	219	57	71	**na**
	%	0.7	0.9	2.0	1.2	0.9	0.0	0.0	**na**
2000–2499	No. live births	2 839	1 925	1 493	748	632	147	150	**na**
	%	0.5	0.3	0.5	0.5	0.2	0.0	0.7	**na**
2500 and over	No. live births	65 610	42 620	33 655	14 917	12 724	3 351	3 183	**na**
	%	0.2	0.1	0.2	0.1	0.1	0.3	0.3	**na**

a For Victoria, 2000 data for babies with birthweight 0–1499g, exclude six cases with unknown Apgar scores at five minutes. Data for babies with birthweight 1500–1999g exclude five cases with unknown Apgar scores at five minutes. Data for babies with birthweight 2000–2499g exclude three cases with unknown Apgar scores at five minutes. Data for babies with birthweight 2500g and over exclude 51 cases with unknown Apgar scores at five minutes. **b** Queensland data for 2000 are preliminary and subject to change. **c** For WA, 2000 data for babies with birthweight 0–1499g, exclude one case with an unknown Apgar score at five minutes. Data for babies with birthweight 1500–1999g exclude one case with an unknown Apgar score at five minutes. Data for babies with birthweight 2000–2499g exclude five cases with unknown Apgar scores at five minutes. Data for babies with birthweight 2500g and over exclude 18 cases with unknown Apgar scores at five minutes. **d** SA data exclude live births if Apgar scores are not recorded. **e** In previous years both the Apgar score at one minute and five minutes were requested. The differences between the two scores is an indication of those babies that required some form of resuscitation and the effectiveness of that resuscitation. Six records for the ACT in 2000 of the Apgar score at five minutes have been excluded from this analysis. **na** Not available.

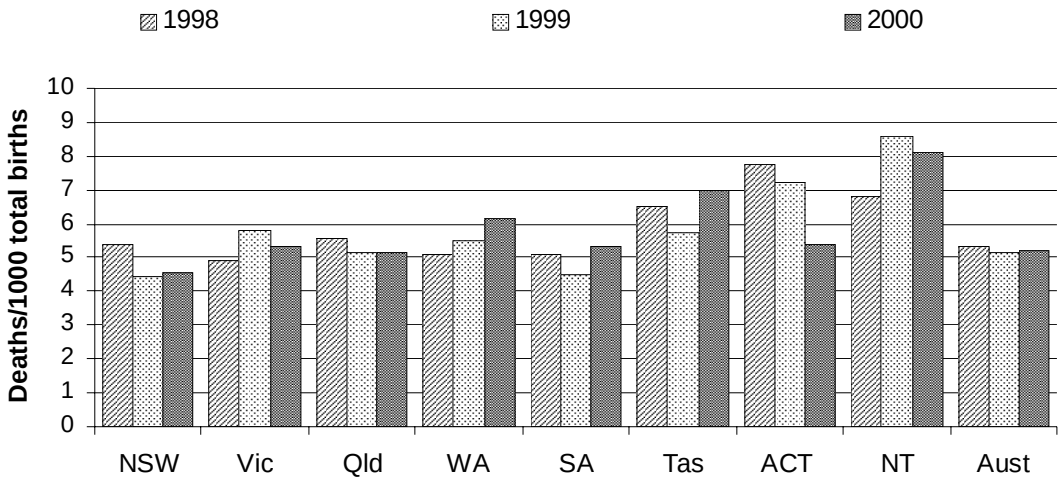
Source: State and Territory governments (unpublished); table 9A.35.

The following data for fetal, neonatal and perinatal death rates may fluctuate due to the low incidence of these events.

Fetal deaths

Fetal death (stillbirth) is the delivery of a child who did not at any time after delivery breathe or show any other evidence of life, such as heartbeat. Fetal deaths by definition only include infants weighing at least 400 grams or of a gestational age of at least 20 weeks. The rate of fetal deaths is expressed per 1000 total births. In 2000, the national rate was 5.2 per 1000 births. This rate was slightly higher than the 1999 rate (5.1) and slightly lower than the rate in 1998 (5.3). In 2000, the fetal death rate was highest in the NT (8.1 deaths per 1000 births) and lowest in NSW (4.6 deaths per 1000 births) (figure 9.17).

Figure 9.17 **Fetal death rate[a, b]**



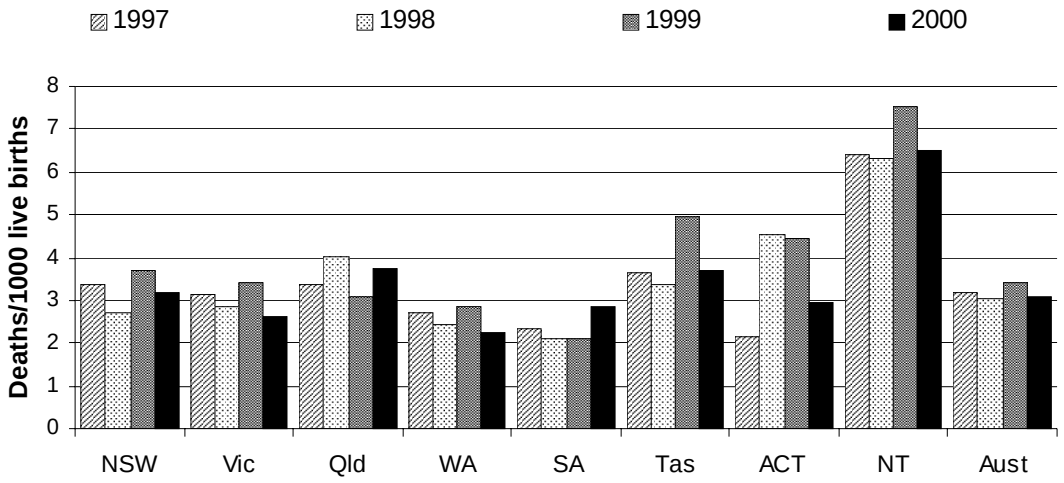
a Rate expressed as a proportion of total births in Australia. **b** Statistics relate to the number of deaths registered, not those which actually occurred, in the years shown. The ABS estimates that about 5 to 6 per cent of deaths occurring in one year are not registered until the following year or later.

Source: ABS (2001); table 9A.39.

Neonatal deaths

Neonatal death is the death of a live born infant within 28 days of birth. The rate of neonatal deaths is expressed per 1000 live births. In 2000, the national rate was 3.1 deaths per 1000 live births. This was lower than the 1999 rate (3.4) and the 1997 rate (3.2) and slightly higher than the 1998 rate (3.0). In 2000, the neonatal death rate was highest in the NT (6.5 deaths per 1000 live births) and lowest in WA (2.2 deaths per 1000 live births) (figure 9.18).

Figure 9.18 **Neonatal death rate[a, b]**



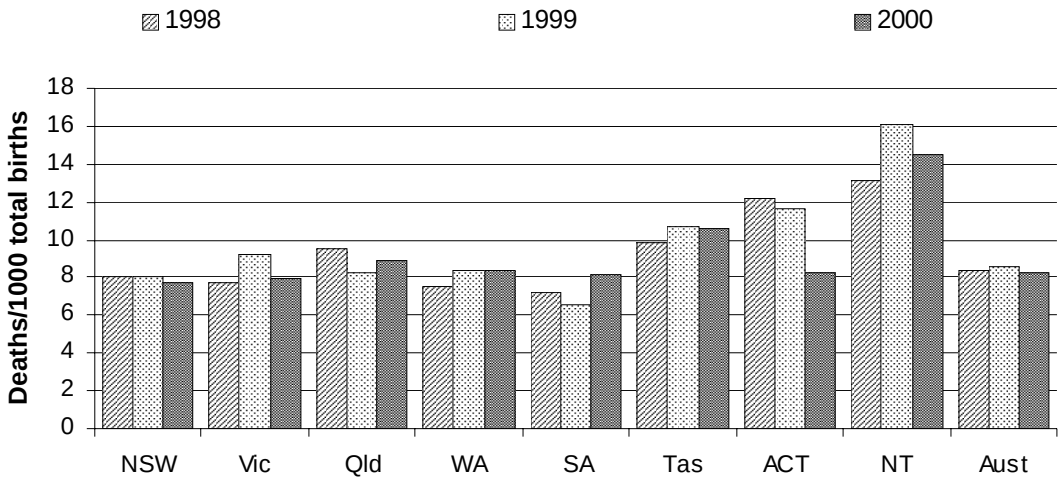
a Rate expressed as a proportion of live births in Australia. **b** Statistics relate to the number of deaths registered, not those which actually occurred, in the years shown. The ABS estimates that about 5 to 6 per cent of deaths occurring in one year are not registered until the following year or later.

Source: ABS (2001); table 9A.37.

Perinatal deaths

A perinatal death is a fetal death or neonatal death of an infant weighing at least 400 grams or of gestational age of at least 20 weeks. The rate of perinatal deaths is expressed per 1000 total births. In 2000, the perinatal death rate Australia-wide was 8.3 deaths per 1000 total births, down slightly from the 1999 rate (8.5) and equal to the 1998 rate. In 2000, the perinatal death rate was highest in the NT (14.5 deaths per 1000 total births) and lowest in NSW (7.7 deaths per 1000 total births) (figure 9.19).

Figure 9.19 **Perinatal death rate[a, b]**



a Rate expressed as a proportion of total births in Australia. **b** Statistics relate to the number of deaths registered, not those which actually occurred, in the years shown. The ABS estimates that about 5 to 6 per cent of deaths occurring in one year are not registered until the following year or later.

Source: ABS (2001); table 9A.38.

Intervention rates for standard primiparae

Caesarean and induction rates for standard primiparae are being developed as an indicator by the Review and preliminary data are presented for the second time in this Report. There is no nationally agreed definition of standard primiparae so the data are not comparable across jurisdictions. Standard primiparae are by definition considered low risk parturients.[7] Intervention (caesarean or induction) rates should therefore be low in this population. High rates may indicate a need for investigation. A recent definition suggested by some members of the National Perinatal Data Development Committee (NPDDC) refers to standard primiparae as mothers aged 25–29 years, with a singleton pregnancy and with a vertex presentation. This definition, however, has not been applied across all States and Territories.

Preliminary data for induction and caesarean rates for standard primiparae for the jurisdictions supplying data are outlined below. As stated earlier, the data are not comparable across jurisdictions. The data are for public hospitals and definitions of standard primiparae are provided.

- NSW defined standard primiparae according to the suggested NPDDC definition. The 2001 rate of inductions for standard primiparae was

[7] Parturient means 'about to give birth'. Primipara refers to a pregnant woman, who has had no previous pregnancy resulting in a live birth or stillbirth (AIHW 1998).

23.9 per cent. The 2001 rate of caesareans for standard primiparae was 15.5 per cent (table 9A.41).

- Victoria defined standard primiparae as a mother 20–34 years of age, with a baby not small for gestational age (birth weight greater than 10th percentile), singleton pregnancy, at term (37–41 weeks gestation), with a cephalic presentation and free of medical complications of pregnancy. Victoria's 2001 rate of inductions for standard primiparae was 23.6 per cent. The 2001 rate of caesareans for standard primiparae was 16.8 per cent (table 9A.42).
- Queensland defined standard primiparae according to the suggested NPDDC definition. The most recently available preliminary data are for 2000, with a rate of inductions for standard primiparae of 34.1 per cent. The 2000 rate of caesareans for standard primiparae was 22.7 per cent (table 9A.43).
- WA defined standard primiparae as involving maternal age between 20–34 years inclusive, primary issue, a singleton birth, estimated gestation between 37 and 41 weeks inclusive, a vertex presentation and no complications of pregnancy. The 2001 rate of inductions for standard primiparae was 24.2 per cent. The 2001 rate of caesareans for standard primiparae was 16.3 per cent (table 9A.44).
- Based on provisional data, the 2001 rate of inductions for standard primiparae for SA was 33.9 per cent. The 2001 rate of caesareans for standard primiparae was 21.6 per cent. SA defined standard primiparae as a mother aged 25–29 years, with a singleton pregnancy, vertex presentation and a gestation between 37 and 41 weeks (table 9A.45).
- Tasmania defined standard primiparae according to the suggested NPDDC definition. The most recently available data are for 1999, with a rate of inductions for standard primiparae of 37.4 per cent and a rate of caesareans for standard primiparae of 15.2 per cent (table 9A.46).
- The ACT provided data based on the suggested NPDDC definition while noting it did not support this definition as clinically meaningful. The 2000 rate of inductions for standard primiparae was 26.8 per cent. The 2001 rate of caesareans for standard primiparae was 14.2 per cent (table 9A.47).
- The NT defined a standard primipara as a mother 20–34 years of age, with no previous pregnancies resulting in a live or still birth, singleton birth, carrying a child whose gestational age was between 37 and 41 weeks, where the presentation is vertex, there are no medical complications, and where there are no indicators for intrauterine growth retardation. The most recently available data are for 1999. The 1999 rate of inductions for standard primiparae was 19.1. The 1999 rate of caesareans for standard primiparae was 12.4 (table 9A.48).

Appropriateness

One appropriateness indicator is reported this year: the rate of vaginal delivery following previous primary caesarean section. The rate of vaginal delivery following primary caesarean section is defined as the number of patients delivering vaginally following a previous primary (first) caesarean section, as a proportion of the total number of patients delivering who have had a previous primary caesarean section and no intervening pregnancies of greater than 20 weeks gestation (ACHS 2002).

In interpreting results of this indicator it should be noted that there is an ongoing debate about the relative risk to both mother and baby of a repeat caesarean section compared to a vaginal birth following a previous primary caesarean. The inclusion of this indicator reflects the current prevailing view that differences across jurisdictions in rates of vaginal birth following a previous primary caesarean may warrant investigation.

Consistent with reporting on unplanned re-admissions and hospitals infections, the presentation of data for this indicator has changed significantly for the 2003 Report to better reflect the purpose for which the data are collected. The data are sourced from the ACHS Comparative Report Service (Clinical Indicators) and are collected for the purposes of internal clinical review by individual hospitals. The ACHS data are predominately used to demonstrate the potential for improvement across Australian hospitals if all hospitals could achieve the same outcomes as those hospitals with the best outcomes for patients. When interpreting this indicator, emphasis should be given to the potential for improvement. Statewide conclusions cannot be drawn from the data as health care organisations contribute to the ACHS on a voluntary basis and so the data are not necessarily drawn from representative samples. Estimated rates should be viewed in the context of the statistical (standard) errors. High standard errors signal that data are particularly unreliable.

An explanation of the reporting of the clinical indicators sourced from the ACHS is contained in box 9.4.

New South Wales

Among those NSW public hospitals participating in the ACHS Service in 2001, the mean rate of vaginal delivery following a primary caesarean was 22.9 per 100 deliveries (subject to a standard error of 2.7). The ACHS estimates that if the performance of all NSW public hospitals matched the performance of those at the 80th centile nationally, the rate of vaginal delivery following a primary caesarean would be 5.5 per cent higher (table 9.26). See box 9.5 for definitions of terms used.

Table 9.26 **Rate of vaginal delivery following primary caesarean per 100 deliveries, public hospitals, NSW, 2001[a, b]**

No. hospitals	*No. reports*	*Numerator (no VBAC)*	*Denominator (no. deliveries)*	*Rate*	*Standard error* (±)
36	62	529	2 307	22.93	2.66
National performance at 80th centile (rate)	*National performance at 20th centile (rate)*	*Potential centile gains (no. VBAC)*	*% change represented by potential gains*	*Potential outlier gains (no. VBAC)*	*Potential stratum gains (no. VBAC)*
28.40	18.40	126	5.47	17	408

a Defined as the number of patients delivering vaginally following a previous primary caesarean section divided by the total number of patients delivering who have had a previous primary caesarean section and no intervening pregnancies of greater than 20 weeks gestation. **b** Health organisations contribute data voluntarily to the ACHS and therefore the samples are not necessarily representative of all hospitals in each jurisdiction. VBAC = Vaginal birth following primary caesarean.

Source: ACHS (unpublished); table 9A.49.

Victoria

Among those Victorian public hospitals participating in the ACHS Service in 2001, the mean rate of vaginal delivery following a primary caesarean was 20.5 per 100 deliveries (subject to a standard error of 6.8). The ACHS estimates that if the performance of all Victorian public hospitals matched the performance of those at the 80th centile nationally, the rate of vaginal delivery following a primary caesarean would be 7.9 per cent higher (table 9.27). See box 9.5 for definitions of terms used.

Table 9.27 **Rate of vaginal delivery following primary caesarean per 100 deliveries, public hospitals, Victoria, 2001[a, b]**

No. hospitals	*No. reports*	*Numerator (no VBAC)*	*Denominator (no. deliveries)*	*Rate*	*Standard error* (±)
18	28	222	1 085	20.46	6.80
National performance at 80th centile (rate)	*National performance at 20th centile (rate)*	*Potential centile gains (no. VBAC)*	*% change represented by potential gains*	*Potential outlier gains (no. VBAC)*	*Potential stratum gains (no. VBAC)*
28.4	18.4	86	7.94	0	219

a Defined as the number of patients delivering vaginally following a previous primary caesarean section divided by the total number of patients delivering who have had a previous primary caesarean section and no intervening pregnancies of greater than 20 weeks gestation. **b** Health organisations contribute data voluntarily to the ACHS and therefore the samples are not necessarily representative of all hospitals in each jurisdiction. VBAC = Vaginal birth following primary caesarean.

Source: ACHS (unpublished); table 9A.50.

Queensland

Among those Queensland public hospitals participating in the ACHS Service in 2001, the mean rate of vaginal delivery following a primary caesarean was 25.3 per 100 deliveries (subject to a standard error of 6.6 per cent). The ACHS estimates that if the performance of all Queensland public hospitals matched the performance of those at the 80th centile nationally, the rate of vaginal delivery following a primary caesarean would be 3.1 per cent higher (table 9.28). See box 9.5 for definitions of terms used.

Table 9.28 **Rate of vaginal delivery following primary caesarean per 100 deliveries, public hospitals, Queensland, 2001[a, b]**

No. hospitals	*No. reports*	*Numerator (no VBAC)*	*Denominator (no. deliveries)*	*Rate*	*Standard error* (±)
11	17	208	823	25.27	6.57
National performance at 80th centile (rate)	*National performance at 20th centile (rate)*	*Potential centile gains (no. VBAC)*	*% change represented by potential gains*	*Potential outlier gains (no. VBAC)*	*Potential stratum gains (no. VBAC)*
28.4	18.4	26	3.13	0	126

a Defined as the number of patients delivering vaginally following a previous primary caesarean section divided by the total number of patients delivering who have had a previous primary caesarean section and no intervening pregnancies of greater than 20 weeks gestation. **b** Health organisations contribute data voluntarily to the ACHS and therefore the samples are not necessarily representative of all hospitals in each jurisdiction. VBAC = Vaginal birth following primary caesarean.

Source: ACHS (unpublished); table 9A.51.

Western Australia

Among those WA public hospitals participating in the ACHS Service in 2001, the mean rate of vaginal delivery following a primary caesarean was 15.0 per 100 deliveries (subject to a standard error of 2.4 per cent). The ACHS estimates that if the performance of all WA public hospitals matched the performance of those at the 80th centile nationally, the rate of vaginal delivery following a primary caesarean would be 13.4 per cent higher (table 9.29). See box 9.5 for definitions of terms used.

Table 9.29 **Rate of vaginal delivery following primary caesarean per 100 deliveries, public hospitals, WA, 2001[a, b]**

No. hospitals	*No. reports*	*Numerator (no VBAC)*	*Denominator (no. deliveries)*	*Rate*	*Standard error* (±)
8	11	63	419	15.04	2.43

National performance at 80th centile (rate)	*National performance at 20th centile (rate)*	*Potential centile gains (no. VBAC)*	*% change represented by potential gains*	*Potential outlier gains (no. VBAC)*	*Potential stratum gains (no. VBAC)*
28.4	18.4	56	13.36	0	107

a Defined as the number of patients delivering vaginally following a previous primary caesarean section divided by the total number of patients delivering who have had a previous primary caesarean section and no intervening pregnancies of greater than 20 weeks gestation. **b** Health organisations contribute data voluntarily to the ACHS and therefore the samples are not necessarily representative of all hospitals in each jurisdiction. VBAC = Vaginal birth following primary caesarean.

Source: ACHS (unpublished); table 9A.52.

South Australia

Among those SA public hospitals participating in the ACHS Service in 2001, the mean rate of vaginal delivery following a primary caesarean was 30.6 per 100 deliveries (subject to a standard error of 2.6 per cent). The ACHS estimates that if the performance of all SA public hospitals matched the performance of those at the 80th centile nationally, the rate of vaginal delivery following a primary caesarean would be 2.2 per cent lower (table 9.30). See box 9.5 for definitions of terms used.

Table 9.30 **Rate of vaginal delivery following primary caesarean per 100 deliveries, public hospitals, SA, 2001[a, b]**

No. hospitals	*No. reports*	*Numerator (no VBAC)*	*Denominator (no. deliveries)*	*Rate*	*Standard error* (±)
8	13	203	663	30.62	2.62

National performance at 80th centile (rate)	*National performance at 20th centile (rate)*	*Potential centile gains (no. VBAC)*	*% change represented by potential gains*	*Potential outlier gains (no. VBAC)*	*Potential stratum gains (no. VBAC)*
28.4	18.4	-15	-2.22	0	66

a Defined as the number of patients delivering vaginally following a previous primary caesarean section divided by the total number of patients delivering who have had a previous primary caesarean section and no intervening pregnancies of greater than 20 weeks gestation. **b** Health organisations contribute data voluntarily to the ACHS and therefore the samples are not necessarily representative of all hospitals in each jurisdiction. VBAC = Vaginal birth following primary caesarean.

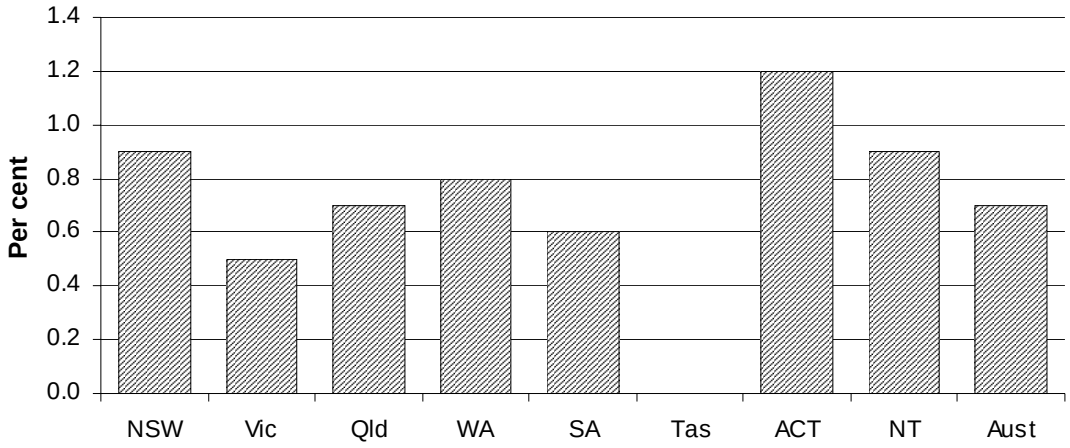
Source: ACHS (unpublished); table 9A.53.

Data for the ACT, the NT and Tasmania were not provided by the ACHS because of the small number of hospitals in those jurisdictions. Nationally, among those public hospitals participating in the ACHS Service in 2001, the mean rate of vaginal delivery following a primary caesarean was 23.3 per 100 deliveries. The ACHS estimates that if the performance of all Australian public hospitals matched the performance of the top 20 per cent of public hospitals, the rate of vaginal delivery following a primary caesarean would be 5.2 per cent higher.

Quality

An indicator of quality for maternity services is reported for the first time in the 2003 Report — perineal status after delivery. A third or fourth degree laceration (that is, a laceration extending to the anal sphincter) occurred in 0.7 per cent of mothers nationally, and in no more than 1.2 per cent of mothers in any single jurisdiction in 1999 (figure 9.20). More information on perineal status after delivery (including episiotomy rates, lesser degree lacerations and definitions) is contained in attachment table 9A.40.

Figure 9.20 **Perineal status after delivery: proportion of mothers with third or fourth degree lacerations, all hospitals 1999[a, b]**



a Data for Tasmania unavailable. In Tasmania, data included under first degree laceration do not identify higher degrees of laceration. **b** Data include all confinements, regardless of the method of birth.

Source: Nassar, N. and Sullivan, E.A. (2001); table 9A.40.

Efficiency

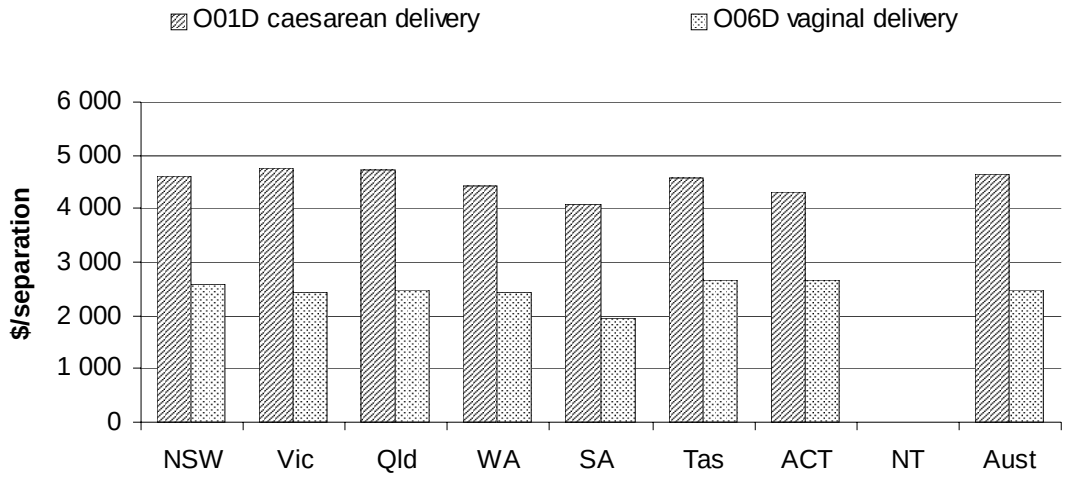
Two efficiency indicators are reported for maternity services — the cost per separation and the average length of stay. Figures 9.21 and 9.22 present data for the

two largest AR-DRGs that account for the largest number of maternity separations. Data for a number of other delivery-related AR-DRGs are shown in table 9A.54.

Data are sourced from the NHCDC and are based on the AR–DRG classification version 4.1. The NHCDC is a voluntary annual collection of hospital cost and activity data covering the financial year prior to the collection period. The NHCDC is coordinated by the Commonwealth Department of Health and Ageing and the results of the NHCDC are published as national and State and Territory cost weights and associated analytical tables in an annual cost report. Since participation in the NHCDC collection is voluntary, the samples are not necessarily representative of the set of hospitals in each jurisdiction, although this is improving over time. A population estimation process is undertaken to create national and State and Territory costing and activity estimates which are more representative of the total population.

The average cost per separation for caesarean delivery without complications in participating hospitals was $4635 for Australia in 2000-01 (figure 9.21). The highest average cost was in Victoria ($4779) and the lowest was in SA ($4090). The average cost per separation for a vaginal delivery without complications was $2491 for Australia. The highest average cost was in the ACT ($2678) and the lowest cost was in SA ($1952).

Figure 9.21 **Average cost per separation for selected AR-DRGs public hospitals, estimated results, 2000-01[a, b, c]**

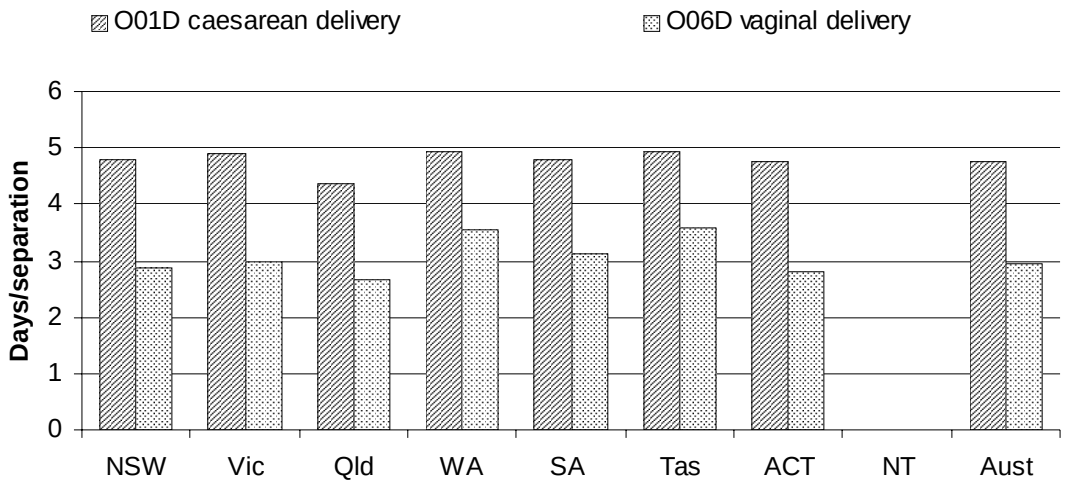


a Includes O01D caesarean delivery without complicating diagnosis and O060D vaginal delivery without complicating diagnosis. **b** The NT data were not included in Round 5 of the NHCDC. **c** Average cost is affected by a number of factors, some of which are admission practices, sample size, remoteness and the type of hospitals contributing to the collection.

Source: Commonwealth Department of Health and Ageing, NHCDC, Round 5; table 9A.54.

The average length of stay for caesarean delivery without complications was 4.74 days for Australia — the longest stay in Tasmania (4.94 days) and the shortest in Queensland (4.37 days). The average length of stay for vaginal delivery without complications was 2.94 days for Australia. The longest length of stay was in Tasmania (3.60) and the shortest in Queensland (2.66) (figure 9.22).

Figure 9.22 **Average length of stay per selected AR-DRG, public hospitals, 2000-01[a, b]**



a Includes O01D caesarean delivery without complicating diagnosis and O060D vaginal delivery without complicating diagnosis. **b** NT data were not included in Round 5 of the NHCDC.

Source: Commonwealth Department of Health and Ageing, NHCDC, Round 5; table 9A.54.

9.4 Future directions in performance reporting

Key challenges for the Steering Committee in future years are to:

- continue to improve the reporting of hospital services (including maternity services) delivered to special needs groups, particularly Indigenous people;
- improve the reporting of indicators for public hospitals and maternity services where data are not complete or not strictly comparable;
- continue to improve reporting on hospital quality; and
- continue to improve the frameworks for reporting.

Quality

Australian governments and health care services place a high priority on improving the quality of care provided in hospitals. Reporting on quality in previous years has

been constrained by a paucity of data, creating an important gap in information. Policy developments, in particular the establishment of the ACSQHC in 2000, are likely to create scope for improved reporting in this area in the medium to long term.

Reporting of clinical indicators

As noted earlier in the chapter, presentation of reporting of clinical indicators obtained from the ACHS changed in the 2003 Report to better reflect the reason for which the data are collected. Until 2000, the ACHS had reported clinical indicator data simply as rates with mean averages and confidence intervals.

Reporting now focuses on the potential for improved performance if rates of individual organisations could be improved to the mean rate or to be equal to the performance of the top 20 percent of organisations who report. If all organisations work towards improving their rates to match this 20th centile, then care for consumers can be substantially improved.

Future reporting of ACHS clinical indicators will highlight those areas where there is the greatest potential to improve. It will also note where there is large variation around the mean averages. Research then needs to be done to determine the reasons for variation, minimising the variation and potentially resulting in improvements to quality of care. These developments in reporting by the ACHS have the potential to lead to improved reporting of quality by the Steering Committee.

Reporting on hospital infections

One of the concerns regarding the infections indicators in the Report has been that they are not casemix- or risk-adjusted. The changes to reporting on hospital-acquired infections taking place from calendar year 2002 should significantly assist in addressing these concerns. Recording by the ACHS of surgical site infection rates will become surgical procedure-specific, while indicators of central line associated blood stream infections will relate to particular clinical units of hospitals.

In 2002, data on surgical site infections will be collected by the ACHS for the following surgical procedures:

- hip prosthesis procedures;
- knee prosthesis procedures;
- coronary artery bypass graft procedures;

- elective resections for diverticular disease or cancer (where there is an anastomosis but no stoma formed) procedures;
- femoral-popliteal procedures;
- open abdominal aortic aneurysm procedures;
- lower segment caesarean section procedures; and
- abdominal hysterectomy procedures.

Data on central line associated blood stream infections will be collected separately for intensive care units, haematology units, oncology units and outpatient intravenous therapy units.

It is anticipated that these changes will lead to improved reporting of hospital infections in future reports. It is yet to be determined which, if any, of the new indicators will be included in the 2004 Report.

Patient safety monitoring

As discussed in previous reports, patient safety is an important policy issue for the health system, including public hospitals. A number of studies have indicated that the incidence of adverse events (sometimes referred to as 'iatrogenic harm'[8]) is potentially high (Brennan *et al*. 1991, Wilson *et al.* 1995, Thomas *et al.* 2000, Davis *et al*. 2001). The costs of adverse events can be considerable (Kohn *et al.* 1999).

Estimating the prevalence of adverse events is hampered by difficulties with recognising when such events have occurred and determining what is preventable, taking the risk of a given outcome into account. Reliability of reporting can also be a problem (McNeil *et al.* 2000). The ACSQHC has determined that routine hospital separations data in their current form cannot be used to reliably estimate the rate of adverse events that occur in hospitals nor the factors that contribute to their occurrence. The extent to which adverse events are recorded and identifiable in routinely collected hospital morbidity data and the validity and usefulness of the data nevertheless requires further investigation. The ACSQHC is funding a study to provide a description of the adverse events identifiable in routinely collected data, an assessment of the validity and coverage of the data and recommendations for changes to the data collections that would improve their value in monitoring adverse events (ACSQHC 2001b).

Estimates of hospital separations associated with an adverse event were produced by Hargreaves (2001) (table 9.31). The data are affected by changes in scope and

8 'Iatrogenic harm' refers to harm arising from health care, rather than from the patient's underlying disease or injury.

coverage of the collection and improvements to the quality of data recording and coding over time, so it cannot be concluded that the rate of adverse events increased over time. The data in table 9.31 underestimate the number of separations associated with adverse events as they are based on the International Classification of Disease (ICD) codes specific to adverse events. There are other ICD categories that can be used to reflect both adverse events and non-adverse events (for example, 'accidental poisoning by drugs, medicaments and biologicals' may reflect both medical mistakes and a drug taken inadvertently by a child). These have been excluded from the data (Hargreaves 2001). Comparisons across States and Territories are affected by differences across jurisdictions in the capacity of data systems to record the necessary codes for adverse events.

Table 9.31 **Hospital separations with an adverse event, 1993-94 to 1997-98[a]**

Year	*Misadventures*	*Complications*	*Drug adverse events*	*Total[b]*	*Per cent of all separations*
1993-94	2 898	133 516	28 890	182 858	3.97
1994-95	3 582	152 584	35 816	209 305	4.29
1995-96	3 928	164 181	41 714	226 563	4.38
1996-97	4 532	178 837	48 202	246 948	4.64
1997-98	4 877	190 739	53 388	264 347	4.75

a The data are affected by changes in scope and coverage of the collection and improvements to the quality of data recording and coding over time, so it cannot be concluded that the rate of adverse events increased over time. **b** Total includes separations with no external cause.

Source: ACSQHC (2001b).

Reporting of sentinel events

Sentinel events are defined as those adverse events that cause serious harm to patients and that have the potential to seriously undermine public confidence in the health care system. The ACSQHC has consulted with jurisdictions about developing a more nationally consistent approach to serious and sentinel adverse events. The proposed national approach aims to improve the safety of patient care through better reporting and analysis of serious adverse events to understand their underlying causes. The intention is to focus on improvement that is based on a systemic understanding of the adverse event, not on punishment of the parties involved, and the implementation of effective change in response to any preventable system failures identified.

At the local level, this work will develop tools, processes and protocols to more effectively manage serious adverse events. At the national level, it will also involve

national aggregation of de-identified data about an agreed core set of sentinel events in order to:

- encourage greater consistency in methodologies used to investigate and analyse sentinel events;
- facilitate learning across Australia and disseminate successful preventive actions;
- analyse patterns and trends at a national level to identify further opportunities for improving patient safety;
- learn and disseminate lessons from analysis as well as from research, international collaboration and other sources of information; and
- facilitate effective change to prevent recurrence where possible and to reduce risks to patients in the future.

The national activity is not intended to capture all events that would be useful to report, but rather establish a manageable list of events that are of concern to consumers and providers, clearly identifiable, likely to indicate system breakdowns and which all States and Territories agree warrant robust investigation and analysis. A proposed national core set of sentinel events which has been broadly agreed by jurisdictions as potentially suitable for national aggregation and action is shown in box 9.7.

Box 9.7 **Proposed national core set of sentinel events**

1. Procedures involving the wrong patient or body part;
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 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; and
8. Infant discharged to wrong family.

Source: ACSQHC (2002).

Victoria has established a Statewide system for reporting sentinel events, defined as relatively infrequent clear-cut events that occur independently of a patient's condition, that commonly reflect hospital system and process deficiencies and that

result in unnecessary outcomes for patients (DHS [Victoria] 2001).[9] Data collection commenced in 2001-02. Given the relative infrequency of sentinel events, data collected will not be used as a measure of hospital performance to compare hospitals or be reported publicly. Any future release of sentinel event information is subject to review and analysis of data received and to consultation with hospitals and other stakeholders, but would be likely to be descriptive rather than statistical in nature.

The ACT is also investigating patient safety initiatives that may be suitable for inclusion in future reports. The ACT, for example, has implemented the Australian Patient Safety Foundation Australian Incident Monitoring System (AIMS) as a Territory-wide initiative. The AIMS is an incident monitoring system established by the Australian Patient Safety Foundation. The AIMS uses a standardised reporting instrument and classification scheme. Reporting is voluntary and anonymous if desired. In addition to the ACT, the AIMS has been or is being introduced across the public health care system in SA, WA, and the NT. It is also used in some health services in other States and New Zealand.

There are approximately 50 000 records in the AIMS database. An analysis of the AIMS database of incidents routinely reported by the health care facilities found that falls were the main type of event recorded (28.9 per cent), followed by injuries other than falls (13.0 per cent) and medication errors (11.6 per cent). Further analysis found 52.9 per cent of these incidents resulted in no harm, 10.8 per cent in minor harm not requiring treatment, 34.3 per cent in moderate harm requiring treatment and 0.8 per cent that caused significant harm (ACSQHC 2001b). Several examples of use of the data in studies to improve services have been published.

Reporting of patient falls

The ACSQHC has identified prevention of patient falls in health care facilities as a key area for action. In view of the priority hospitals place on avoiding patient falls and the potential for harm these falls may cause, the Steering Committee will

[9] The specified events to be reported are: procedures involving the wrong patient or body part; unexpected/unexplained serious neurological damage following spinal procedures (anaesthetic/surgical/medical) that is likely to be permanent; inadvertent perforation of a viscus during endoscopic procedure; inadvertent perforation or ligation of duct or major vessel during laparoscopic procedure; intravascular gas embolism resulting in serious neurological damage or mortality; haemolytic blood transfusion reaction resulting from ABO incompatibility; patient suicide in hospital; retained instruments or other material after surgery requiring re-operation or further surgical procedure; hypoxic brain damage probably attributable to anaesthesia, airway management or ventilation techniques; post-partum haemorrhage requiring hysterectomy.

consider the feasibility of developing an indicator of patient falls to further enhance reporting on hospital quality.

Maternity services

Improving the quality and comparability across jurisdictions of maternity services data is a high priority for the Steering Committee. Two of the outcomes indicators for maternity services — the proportion of caesareans and the proportion of inductions for standard primiparae — are not able to be compared across jurisdictions as a result of differences in the definition of standard primiparae. The NPDDC suggested a national definition for this year's Report, although the definition has not been agreed by all jurisdictions. It is an aim of the Review to continue to contribute to the development of a nationally consistent definition of standard primiparae in conjunction with the AIHW, the ACHS and Women's Hospitals Australia.

9.5 Definitions

Table 9.32 **Terms**

Term	*Definition*
Aboriginal concept of health	'Not just the physical wellbeing of an individual, but … the social, emotional and cultural wellbeing of the whole community in which each individual is able to achieve their full potential as a human being, thereby bringing about the total wellbeing of their community. It is a whole-of-life view and includes the cyclical concept of life-death-life (NACCHO 1997).
Aboriginal concept of community control	'A process which allows the local Aboriginal community to be involved in its affairs in accordance with whatever protocols or procedures are determined by the community' (NACCHO 1997).
Accessibility index	A measure of hospital access equity, primarily for Indigenous people.
Acute care episode	Clinical services provided to patients, including 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, although acute care services may also be provided to non-admitted patients.
Admission	The process by which an admitted patient commences an episode of care.
Allied health (non-admitted)	All occasions of service to non-admitted patients where services are provided at units/clinics providing treatment/counselling to patients. These include units primarily concerned with physiotherapy, speech therapy, family planning, dietary advice, optometry, and occupational therapy.
Ambulatory services	Services provided by an acute care hospital to non-admitted patients.
Apgar score	Numerical score used to evaluate a baby's condition after birth. The definition of the indicator is the number of babies born with an Apgar score of four or below at five minutes post-delivery as a proportion of the total number of babies born. Foetal death in utero prior to commencement of labour is excluded.
Average length of stay	Equal to the arithmetic mean of the length of stay for all patient episodes, estimated by dividing total occupied bed days by total episodes.
Bulk billed services	Attendances for which the medical practitioner bills the Commonwealth Government directly.
Caesarean section	Operative birth through an abdominal incision.
Casemix-adjustment	Adjustment of data on cases treated to account for the number and type of cases. Cases are sorted into diagnosis related groups (AR-DRGs) which represent a category of patients with similar clinical conditions requiring similar hospital services.
Catastrophic	An acute or prolonged illness usually considered to be life threatening or with the threat of serious residual disability. Treatment may be radical and is frequently costly.
Case weight	The relative costliness of a particular AR-DRG, determined so that the average case weight for all AR-DRGs is 1.00.

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Table 9.32 **(Continued)**

Term	*Definition*
Comorbidity	The simultaneous occurrence of two or more diseases or health-problems.
Community health services	Health services for individuals and groups delivered in a community setting, rather than via hospitals or private facilities.
Community health (non-admitted)	Occasions of service to non-admitted patients provided by designated community health units within the establishment. Such units include baby clinics, immunisation units, aged care assessment teams and so on. Some community health care may involve a hospital employee providing a service away from his or her hospital establishment.
Complication	Additional medical problems that develop following a procedure, treatment or illness. Complications are usually directly or indirectly related to a procedure (risk of the procedure), treatment (side effect or toxicity) or illness.
Condition of capital	Ratio of depreciated replacement value to total replacement value.
Cost per casemix-adjusted separation	Recurrent expenditure * inpatient fraction/total number of casemix-adjusted separations + estimated private patient medical costs.
Cost per non-admitted occasion of service	Recurrent expenditure * (1–inpatient fraction)/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 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 to 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.
Fetal death	Delivery of a child who did not at any time after delivery breathe or show any other evidence of life, such as heartbeat. Excludes infants weighing less than 400 grams or of gestational age less than 20 weeks.
Fetal death rate	Fetal deaths (400 grams/20 weeks) by usual residence divided by the total number of births (that is, live births registered and fetal deaths combined).
General practice	The organisational structure in which one or more general practioners provide and supervise health care for a 'population' of patients. This definition includes medical practitioners who work solely with one specific population, such as women's health and Indigenous health.
Hospital-acquired infection — bacteraemia	The total number of inpatients who acquire bacteraemia during the time period under study, divided by the total number of separations with a length of stay of 48 hours or more during the time period under study. Hospital-acquired bacteraemia is defined as positive blood culture for inpatients who were afebrile on admission — that is, those with a temperature less than 37.4 degrees Celsius, who become febrile 48 hours or more after admission.

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Table 9.32 **(Continued)**

Term	*Definition*
Hospital-acquired infection — wound infection	The number of inpatients having evidence of wound infection on or after the fifth post-operative day following clean (contaminated) surgery during the time period under study, divided by the total number of inpatients undergoing clean (contaminated) surgery with a post-operative length of stay equal to or greater than five days. All endoscopies are excluded, as are intra-cavity procedures such as oral, aural, nasal, urethral, vaginal and anal operations. Clean surgery refers to those operations performed in a sterile field. Contaminated surgery, includes traumatic wounds and those operations which breach the gastro-intestinal, respiratory and genito-urinary tracts or where a break in aseptic technique occurs.
Inpatient fraction (IFRAC)	The ratio of inpatient costs to total hospital costs.
Labour cost per casemix-adjusted separations	([Salary and wages]*[inpatient fraction] + visiting medical officer payments)/total 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. All registered live births regardless of birthweight.
Medicare	The Commonwealth Government funding of private medical and optometrical services (Medicare Benefits Schedule). Some users use the term to include other forms of Commonwealth Government funding: selected pharmaceuticals (Pharmaceutical Benefits Scheme) and public hospital funding (Australian Health Care Agreements), which provide public hospital services free of charge to public patients.
Mortality rate	The number of deaths per 100 000 people.
Neonate	A live birth less than 28 days old. The neonatal period is exactly 28 completed days commencing on the date of birth (day 0) and ending on the completion of day 27.
Neonatal death	Death of a live born infant within 28 days of birth (defined in Australia as deaths of infants weighing at least 400 grams or of gestational age of at least 20 weeks).
Neonatal death rate	Neonatal deaths (400 grams/20 weeks) by usual residence, divided by the number of live births registered.
Non-acute episode of care	Involves clinical services provided to admitted and non-admitted patients, including planned geriatric respite, palliative care, geriatric evaluation and management and services for nursing home type patients. Clinical services delivery by designated psychiatric or psychogeriatric units, designated rehabilitation units and mothercraft services are also considered non-acute.
Non-admitted patient services	Services provided to non-admitted patients of the kind defined in the *National Health Data Dictionary* version 10, data element no. 231 'Type of non-admitted patient care'. Services include: emergency services; outpatient services; and other non-admitted patient services.

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Table 9.32 **(Continued)**

Term	*Definition*
Opportunity cost	The return forgone on the next best investment, calculated as 8 per cent of the depreciated replacement value of buildings, equipment and land.
Overdue patient	A patient whose wait has exceeded the time determined as clinically desirable in relation to the urgency category to which he or she has been assigned for elective surgery.
Percentage of facilities accredited	The ratio of beds accredited by recognised accreditation programs to all hospital beds in the jurisdiction.
Perinatal death	Fetal death or neonatal death of infant weighing at least 400 grams or of gestational age of at least 20 weeks.
Perinatal death rate	Perinatal deaths (400 grams/20 weeks) by usual residence divided by the total number of births (that is live births registered and fetal deaths combined).
Perineal status after delivery	The state of the perineum following a birth.
Primary care	Essential health care 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.
Private patient medical costs (estimated)	The sum of salary/sessional and visiting medical officer payments divided by the number of public patient days multiplied by the number of private patient days.
Public hospital	A hospital that provides free treatment and accommodation to eligible admitted persons who elect to be treated as public patients. It also provides free services to eligible non-admitted patients and may provide (and charge for) treatment and accommodation services to private patients. Charges to non-admitted patients and admitted patients on discharge may be levied in accordance with the Australian Health Care Agreements (for example, aids and appliances).
Puerperium	The period or state of confinement after labour.
Qualified/unqualified newborn	A newborn patient day is qualified if the infant: is the second or subsequent live born infant of a multiple birth whose mother is an admitted patient; is admitted to an intensive care facility in a hospital; or is admitted to, or remains in, hospital without its mother. A newborn patient day is unqualified if the infant does not meet any of these three criteria. Unqualified patient days are excluded from measurement of patient days for newborn episodes of care.
Real expenditure	Actual expenditure adjusted for changes in prices.
Relative stay index	The actual number of acute bed days divided by the expected number of acute bed days adjusted for casemix.
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 seriously undermine public confidence in the health care system.
Sentinel procedures	Procedures that are the most common surgical operations, provided by acute care hospitals during a given period of time.

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Table 9.32 **(Continued)**

Term	*Definition*
Separation	The discharge, transfer or death of a patient admitted to hospital.
Separations per 1000 population	The rates of hospital separations per 1000 population.
Spontaneous vertex	Vaginal birth without intervention in which the baby's head is the presenting part.
Standard primipara	The NPDDC has suggested defining this as mothers aged 25–29 years, with a singleton pregnancy and a vertex presentation.
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-admissions	The total number of unplanned and unexpected re-admissions 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. Unplanned hospital re-admission refers to an unexpected admission for further treatment of the same condition for which the patient was previously hospitalised; an unexpected admission for treatment of a condition related to one for which the patient was previously hospitalised; or an unexpected admission for a complication of the condition for which the patient was previously hospitalised. Day stay patients are included in both the numerator and the denominator. This indicator addresses patients readmitted to the same organisation.
Unreferred attendances	GP services, emergency attendances after hours, other prolonged attendances, group therapy and acupuncture.
Urgency category for elective surgery	Category 1 patients — admission within 30 days is desirable for a condition that has the potential to deteriorate quickly to the point that it may become an emergency. Category 2 patients — admission desirable within 90 days for a condition 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 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.
User cost of capital per casemix-adjusted separation	(Depreciation + opportunity cost)/casemix-adjusted separations.
Vaginal delivery following primary caesarean section	The number of patients delivering vaginally following a previous primary (first) caesarean section as a proportion of the total number of patients delivering who have had a previous primary caesarean section and no intervening pregnancies greater than 20 weeks gestation.

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