

visits within the preceding year, most (80.2%) attended a private dental practice, with the remainder using public dental services funded by state or territory governments. The likelihood of visiting a private dental practice was greater in urban (86.7%) and rural (82.2%) than in remote areas (73.0%).

There was additional geographic variation in the types of dental services provided: rural dwellers were somewhat more likely than urban and remote dwellers to report that they had a tooth extracted in the last year. People living in remote areas were less likely to have had a filling than people in urban or rural areas. When people were asked if they usually visited the dentist for a check-up or because of dental problems, 59% of those in rural and remote areas said it was for dental problems, compared with 45% in urban areas.

## 7.4 Use of medications

According to the 2004–05 National Health Survey, the use of medications is a common health-related action taken by Australians. Whether it be conventional prescription medication (233 million prescriptions filled in 2004), over-the-counter medications such as analgesics (pain-killers) and cough medicines (\$1.7 billion spent in 2003–04), or vitamins, minerals, and natural and other complementary medications (\$0.8 billion spent in 2004), this is an important component of the health system, accounting for over 14% of recurrent health expenditure in 2003–04.

Prescription medications are provided largely through community pharmacies and hospitals, whereas non-prescription medicines and complementary and alternative medicines are available from pharmacies and other retail outlets. At 30 June 2005, there were 4,922 approved community pharmacies and friendly societies in Australia (DoHA 2005b).

### Prescribed medicines

Information on the supply of prescription medicines in the community is compiled by Medicare Australia (formerly the Health Insurance Commission). This information is derived from prescriptions submitted for subsidy payment under the Pharmaceutical Benefits Scheme or the Repatriation Pharmaceutical Benefits Scheme (PBS and RPBS, see Box 7.4). Estimates of the use of non-subsidised prescription medicines are calculated from the Pharmacy Guild of Australia's ongoing survey of community-based pharmacies. Data are not available on the use of prescribed medicines in public hospitals and most private hospitals.

In 2004–05, there were 170 million community PBS prescriptions – 28 million for general patients and 142 million for concessional patients (Medicare Australia 2005). This was an increase of 2.7% over the 166 million in 2003–04 and 7.4% over the 148 million in 2000–01. Additionally, there were 16 million RPBS prescriptions in 2004–05 and 0.4 million PBS doctors bag prescriptions (that is, emergency drugs that the doctor can provide to patients free of charge).

In 2003–04 there were about 42 million prescriptions which did not attract a subsidy (27 million below the co-payment threshold and about 15 million private prescriptions, that is, prescriptions for drugs not covered by the PBS or RPBS).

## **Box 7.4: The Pharmaceutical Benefits Scheme**

*The Pharmaceutical Benefits Scheme (PBS) subsidises the cost of a wide range of prescription medications, providing Australians with access to necessary and cost-effective medicines at an affordable price. As of December 2005, the scheme covered 804 drug substances (generic drugs), available in 2,138 forms and strengths (items) and marketed as 3,659 products (brands).*

*The Repatriation Pharmaceutical Benefits Scheme (RPBS) provides assistance to eligible war veterans and dependants. It is generally similar to the PBS for concessional beneficiaries, but covers a somewhat broader range of pharmaceuticals.*

*Before a medicine can be subsidised by the PBS, it is assessed by the Pharmaceutical Benefits Advisory Committee, which includes medical practitioners, other health professionals and a consumer representative. The committee takes into account the medical conditions for which the medicine has been approved for use in Australia by the Therapeutic Goods Administration, its clinical effectiveness, safety and cost-effectiveness compared with other treatments. Once a medicine has been recommended by the committee, it is considered by the Pharmaceutical Benefits Pricing Authority, the price is negotiated between the manufacturer and the Australian Government Department of Health and Ageing, and the listing is then considered by the Australian Government.*

*Australian residents and visitors from countries with Reciprocal Health Care Agreements are eligible for PBS benefits.*

*Patients are grouped into two classes: general and concessional. As at 1 January 2006 general patients pay the first \$29.50 for each prescription item. Concessional patients (people with low incomes and sickness beneficiaries who hold a health care card) make a co-payment of \$4.70 per prescription item. These co-payments are increased on 1 January each year. Most increases are an adjustment in line with Consumer Price Index increases, but the increase on 1 January 2005 was from \$23.70 to \$28.60 for general patients and from \$3.80 to \$4.60 for concessional patients. This increase was in accord with Australian Government legislation changes.*

*Individuals and families are protected from large overall expenses for PBS-listed medicines by safety nets. Once a general patient and/or immediate family has spent \$960.10 in a calendar year, the patient co-payment per item decreases to the concessional rate of \$4.70 per item. For concessional patients, the \$4.70 co-payment is not required once their expenditure on PBS items exceeds \$253.80 in a calendar year. These figures apply for the 2006 calendar year.*

*Patients may pay more than the standard co-payment where a PBS item is priced above the benchmark price for different brands of the same drug or the benchmark price for a particular therapeutic group of drugs. These additional payments do not count towards safety nets.*

The impact of co-payments on demand for prescriptions is hard to assess. A Commonwealth Fund telephone survey in 2004 found that 12% of Australians interviewed said that in the last 12 months they did not fill a prescription or skipped doses because of cost. This compares to 21% of US citizens, 9% of Canadians and 4% of British citizens responding the same way (Commonwealth Fund 2005).

## Trends in prescribed medicines

There has been a steady increase in the total number of community prescriptions, from 166 million in 1994 to 233 million in 2004 (Table 7.10), representing an average growth every year of 3.5% or a total growth over the period of 41%. The growth in the number of PBS/RPBS scripts is less regular than the growth in overall scripts because of variations in the co-payment schemes over the years. The PBS/RPBS scripts went from 72% of total community scripts in 1994 to 80% in 2004, while scripts below the co-payment threshold went from 20% of the total in 1994 to 12% in 2004. PBS/RPBS scripts increased by 55% in the period, compared with a decline of 17% in scripts below the co-payment level.

**Table 7.10: Number of community prescriptions, 1994–2004**

Type	Year						Change 1994 to 2004 (%)
	1994	1996	1998	2000	2002	2004	
	(Million)						
PBS concession	97.0	105.8	107.3	120.5	132.3	140.8	45
PBS general	17.2	18.5	18.8	21.8	25.2	29.5	71
RPBS	5.4	8.7	10.2	12.5	15.0	15.7	189
<b>PBS/RPBS total</b>	<b>119.6</b>	<b>133.0</b>	<b>136.4</b>	<b>154.8</b>	<b>172.5</b>	<b>186.0</b>	<b>55</b>
Private	11.6	11.7	12.6	13.3	16.0	18.1	56
Under co-payment	33.9	34.1	37.9	31.7	27.6	28.2	-17
Other	0.8	0.8	0.8	0.5	0.5	1.0	27
<b>Total</b>	<b>165.9</b>	<b>179.6</b>	<b>187.6</b>	<b>200.3</b>	<b>216.6</b>	<b>233.4</b>	<b>41</b>

Source: Drug Utilisation Sub Committee drug utilisation database (DoHA, unpublished).

## Which drugs are prescribed the most?

Apparent use of prescription medicine can be described using defined daily dose per 1,000 population per day (DDD/1,000/day) as the unit of measurement. The DDD is based on the assumed average dose per day of the drug, used for its main indication (reason for use) by adults. It provides an estimate of how many people per 1,000 population are taking the standard dose of the drug each day, on average, and allows for comparisons independent of differences in quantities of drugs per prescription. These measures assume, however, that the amount of medicines supplied is the same as the amount used, and that will not always be the case.

In 2004–05, atorvastatin (used for lowering blood cholesterol) was the most commonly-used drug measured by DDD/1,000/day (Table 7.11), followed by simvastatin (also for lowering blood cholesterol) and ramipril (for treating chest pain and high blood

pressure). The top three generic medications by prescription volume in 2004–05 were atorvastatin and simvastatin (8.1 million and 6.3 million prescriptions respectively), followed by paracetamol (a pain-killer, 4.9 million prescriptions) and amoxicillin (an antibiotic, 4.9 million prescriptions). For most of these high-volume prescriptions, the vast majority were provided through the PBS or RPBS; however, amoxicillin was provided as a non-PBS/RPBS prescription on 2.5 million occasions (50.6%).

**Table 7.11: Top 15 generic medications, 2004–05**

Generic name	Action	Defined daily dose per 1,000 population			Prescriptions ('000)		
		PBS/ RPBS <sup>(a)</sup>	Other <sup>(b)</sup>	Total	PBS/ RPBS	Other	Total
Atorvastatin	Lowers blood cholesterol	98.2	0.2	98.4	8,075	19	8,095
Simvastatin	Lowers blood cholesterol	56.0	0.1	56.1	6,276	11	6,287
Paracetamol	Pain-killer	11.0	0.2	11.2	4,774	123	4,898
Amoxicillin	Antibiotic	n.a.	n.a.	n.a.	2,406	2,465	4,871
Omeprazole	Lowers gastric acid	20.6	0.1	20.7	4,413	12	4,425
Salbutamol	Opens airways	18.9	7.9	26.7	3,063	1,178	4,241
Atenolol	Lowers blood pressure	9.9	2.7	12.6	3,248	873	4,121
Codeine with paracetamol	Pain-killer	4.9	2.2	7.1	2,693	1,343	4,035
Irbesartan	Lowers blood pressure	20.2	1.3	21.5	3,371	346	3,717
Cefalexin	Antibiotic	n.a.	n.a.	n.a.	2,119	1,516	3,635
Ramipril	Lowers blood pressure	33.8	3.1	36.8	2,903	416	3,320
Perindopril	Lowers blood pressure	12.3	1.5	13.8	2,837	461	3,298
Metformin hydrochloride	Lowers blood glucose	11.3	2.7	14.0	2,661	613	3,274
Irbesartan with hydrochlorothiazide	Lowers blood pressure	n.a.	n.a.	n.a.	2,939	118	3,057
Esomeprazole	Lowers gastric acid	11.5	0.0	11.5	2,984	8	2,992

(a) PBS—Pharmaceutical Benefits Scheme; RPBS—Repatriation Pharmaceutical Benefits Scheme.

(b) Prescriptions not subsidised by the PBS or RPBS, because they were private prescriptions or the cost to the patient was not more than the patient co-payment.

*Note:* Data relate to prescriptions written by GPs and specialists and then filled at a pharmacy by the patient. Table 7.12, in contrast, refers only to prescriptions written by GPs.

*Source:* Drug Utilisation Sub Committee drug utilisation database (DoHA, unpublished).

## Changes in the use of PBS medications

The use of some prescription medicines has changed markedly over the last few years. For example, between 2000–01 and 2004–05 there was a 185% increase in the DDD/1,000 population/day for ramipril (for lowering blood pressure). Conversely there was a 27% decrease in the DDD/1,000/day for celecoxib (an anti-inflammatory) over this period (Table S34).

Atorvastatin, simvastatin and omeprazole were the highest cost drugs for the PBS in 2004–05, with PBS expenditure on them totalling \$508.3 million, \$389.0 million and \$174.6 million respectively. The next most costly were salmeterol and fluticasone (a combination drug that opens the airways and reduces inflammation, \$164.0 million)

and esomeprazole (which reduces gastric acid, \$157.3 million) (DoHA 2005a). Between 2000–01 and 2004–05, PBS benefits for salmeterol and fluticasone rose by 246%. For atorvastatin and simvastatin benefits paid increased by 92% and 46% respectively.

## GP prescribing patterns

The BEACH survey of general practice activity collects information on drugs prescribed by GPs (AIHW: Britt et al. 2005). In 2004–05, medications were prescribed at a rate of 83 per 100 encounters. Antibiotics were the most commonly prescribed group, accounting for 20.9% of all prescriptions. The next most common were cardiovascular medications (15.5%), central nervous system and psychological medications (21.1%), musculoskeletal medications (6.9%) and respiratory medications (6.5%).

Four of the 10 most frequently prescribed medications are from the antibiotic group (Table 7.12). Simple analgesics (pain-killers) were also frequently prescribed, reflecting their prescription for health care card holders for whom they are a cheaper option than over-the-counter purchase.

**Table 7.12: Medications most frequently prescribed by GPs, 2004–05**

Generic name	Action	Proportion of prescriptions (%)	Prescriptions per 100 encounters
Amoxicillin	Antibiotic	4.2	3.5
Paracetamol	Pain-killer	3.2	2.7
Cephalexin	Antibiotic	2.9	2.4
Paracetamol/codeine	Pain-killer	2.4	2.0
Amoxicillin with potassium clavulanate	Antibiotic	2.0	1.7
Salbutamol	Opens airways	1.7	1.4
Atorvastatin	Lowers blood cholesterol	1.7	1.4
Temazepam	Sleeping tablet	1.4	1.1
Roxithromycin	Antibiotic	1.4	1.1
Diazepam	Reduces anxiety	1.3	1.1

*Note:* These data refer to prescriptions written by GPs. Actual prescriptions filled per 100 encounters may be higher than the numbers in this table, because many prescriptions have ‘repeats’—drugs for chronic disorders frequently have five repeats. This ‘repeats’ issue is a reason the order of drugs in this table is different from the order of drugs in Table 7.11.

*Source:* AIHW: Britt et al. 2005.

## Non-prescribed medicines via GPs

The BEACH survey collects and reports information on drugs that GPs advise patients to purchase over the counter, and those that the GPs supply directly.

In 2004–05, 9.9% of medications prescribed, advised or provided by GPs were advised for over-the-counter purchase, and 8.0% were supplied by the GP. Australia-wide, this would represent nearly 10 million recommendations for the purchase of drugs, and almost 8 million supplies of drugs by GPs. Nearly a quarter of drugs (23.1%) advised for over-the-counter purchase were for paracetamol and 5.3% for ibuprofen (an anti-inflammatory drug). The most common medications supplied by GPs were vaccines.

## Complementary and alternative medicines

In addition to prescribed pharmaceuticals and other conventional medications, many Australians use a range of complementary and alternative medicines, including homoeopathic, herbal and nutritional medications.

Any product that is regarded as being a therapeutic good must be entered on the Australian Register of Therapeutic Goods before it can be supplied in Australia (with the exception of a few 'exempt' goods). Further, to be *registered*—rather than just *listed* on the register—a product must undergo a scientific evaluation for quality, safety and efficacy.

The 2004–05 National Health Survey asked respondents with selected conditions about the type of medications they used for those conditions. The survey results show that in any two-week period around 40% of people with arthritis and/or osteoporosis used vitamins, minerals and/or herbal treatments for their condition. Lower proportions used these medicines for circulatory conditions (8%), diabetes (4%) or asthma (2%). The survey also reports that in any two-week period around 46% of Australians aged 18 years or over used vitamins, minerals and/or herbal treatments for their mental wellbeing.

A study in 2004 estimated that 58% of women and 46% of men in South Australia had used alternative medicines in the previous year. Most commonly used were non-prescribed vitamins (36% of males and 43% of females), aromatherapy oils (5% and 17%), herbal medicines (16% and 25%) and mineral supplements (11% and 16%) (MacLennan et al. 2006).

Applying these results to Australia, MacLennan and others estimate that total expenditure on complementary and alternative medicines in 2004 was \$810 million. This was a decline since the estimated expenditure in 2000 of \$1,060 million. This decline may have been due to the Pan Pharmaceuticals crisis of 2003, when the Therapeutic Goods Administration suspended Pan's licence to manufacture. At the time, Pan Pharmaceuticals manufactured 40% of complementary and alternative medicines in Australia (MacLennan et al. 2006).

## 7.5 Hospital services

Hospitals are a prominent component of the Australian health care system: they account for more than one-third of recurrent health expenditure (more than \$27 billion) and arguably attract the most media attention. The hospital sector comprises more than 1,300 hospitals around Australia, with around 80,000 beds available for providing care. The public hospital system employs the equivalent of more than 200,000 full-time staff, almost half of whom are nurses and one-tenth are doctors.

Most hospital resources are consumed in providing care for the patients they admit, but hospitals provide a much higher volume of *non-admitted* services, such as those provided by emergency departments and outpatient clinics (see Box 7.5 for details on terminology). On a typical day around 19,000 Australians are admitted to a hospital, with about the same number leaving (separating), and there are almost 125,000 non-admitted services.

## **Box 7.5: Terms and data sources relating to the use of hospitals**

### ***Admitted patients and the National Hospital Morbidity Database***

*Statistics on admitted patients are compiled when they complete an episode of care and are therefore considered to have 'separated'. An admitted patient is a patient who undergoes a hospital's formal admission process. The statistics are compiled at the end of the episode because that is when all of the data pertaining to that episode of care, such as the length of stay and the procedures carried out, are known, and the diagnostic information is more accurate.*

*'Separation' is the term used to refer to the episode of care, which can be a total hospital stay (from admission to discharge, transfer or death), or a portion of a hospital stay beginning or ending in a change of type of care (for example, from acute to rehabilitation). 'Separation' also means the process by which an admitted patient completes an episode of care by being discharged, dying, transferring to another hospital or changing type of care.*

*For each separation, patients are assigned a principal diagnosis, which describes the condition or its management considered the chief reason for the patient's episode of care. The principal diagnosis recorded for each separation is usually a disease, injury or poisoning, but can also be a specific treatment of an already diagnosed condition, such as dialysis for renal disease, or other reasons for hospitalisation. If applicable, procedures may also be reported. These can be surgical or non-surgical, and therapeutic or diagnostic. Diagnoses and procedures were reported using the third edition of the ICD-10-AM classification in 2003–04 (see Box 7.6). The term 'patient day' means the occupancy of a hospital bed (or chair in the case of some same-day patients) by an admitted patient for all or part of a day.*

*The state and territory health authorities compile information on patients admitted to hospitals and supply it to the AIHW for collation into the National Hospital Morbidity Database. This database is an electronic record for each separation from almost every hospital in Australia, including public acute and psychiatric hospitals (public sector), and private free-standing day hospital facilities and other private hospitals (private sector). Data are provided for all public hospital separations and about 95% of private hospital separations for most years.*

*As indicators of ill health, hospital separations data have limitations. When sick people are attended to by the hospital but not admitted this is not counted in the separations data. Also, the counting unit is the episode of care (the separation), not the patient. Further, the patient cannot be identified in the national database, so one patient admitted five times cannot be distinguished from five patients admitted once each. Finally, hospital separation data are also affected by variations in admission practices, and in the availability of and access to hospitals and non-hospital services.*

### ***Non-admitted patients***

*Hospitals provide services to non-admitted patients through emergency departments, outpatient clinics and a range of other specialised services. Summary information on these services is collated nationally for public hospitals by the AIHW and for private hospitals by the Australian Bureau of Statistics (ABS).*

*An occasion of service for a non-admitted patient is defined as any examination, consultation, treatment or other service provided to a patient in each functional unit of a health service establishment each time the service is provided. National data are categorised into broad clinic- or service-based groupings.*

*Definitions used for non-admitted patient hospital care are not completely uniform among the states and territories, and have varied over time. Existing national systems for counting and classifying this care are being revised with the aim of improving consistency and comparability. For example, collection of more detailed data on clinic type for non-admitted patient care in hospital outpatient clinics began on 1 July 2005 in selected public hospitals.*

## **Distribution and trends in admitted patient care**

In 2003–04 there were 6.8 million separations of admitted patients from public acute, public psychiatric and private hospitals—equivalent to one episode for every three Australians (see Tables S26–S33). These separations are shared across the public and private sector in the ratio of about 3:2, with 4.1 million separations from public acute hospitals, around 17,000 from public psychiatric hospitals and 2.6 million from private hospitals (which include private psychiatric hospitals and private free-standing day hospital facilities). These separations accounted for 23.6 million patient days, with a relatively greater share in the public sector: 67% in public acute hospitals, 3% in public psychiatric hospitals and 30% in private hospitals.

In 2002–03 the rate of overnight separations (that is, separations that include at least one night's stay) was in the middle of the range reported by other OECD countries for recent years (AIHW 2005b).

Between 1999–00 and 2003–04, there was an 8.5% increase in separations from public acute hospitals and a 30.3% increase in separations from private hospitals. Increases in patient days over this period were more modest (0.4% for public acute hospitals and 12.6% for private hospitals), meaning that average length of stay has become shorter over this period.

After adjusting for changes in the age structure and size of the population, between 1999–00 and 2003–04 the number of separations per 1,000 population rose by 8.0% overall, due to an increase of 20.8% for private hospitals and 1.5% for public acute hospitals (calculated from Table 7.13). Part of the increase in private hospital activity can be attributed to the growth in the number of private same-day hospitals (see below). The number of patient days per 1,000 population fell by 4.3% overall over the period: this included an overall decrease of 6.9% for public hospitals, but an increase of 2.6% for private hospitals.

Thus there was some shift from the use of public acute to private sector hospitals during the four-year period. In 1999–00, 65.3% of total separations were in public acute hospitals, whereas in 2003–04 this proportion had fallen to 61.2%. There was, however, no change in the proportion of total patient days spent in public acute hospitals (66.7%). Within public acute hospitals, the proportion of patients admitted as public (Medicare) patients (see Box 7.5) remained relatively stable between 1999–00 (87.5%) and 2003–04 (86.8%).

The rise in separations for private hospitals was reflected in increases in the number of separations for a range of treatments or investigations for the private sector between 1999–00 and 2003–04. The greatest increase was for renal dialysis: 71,000 more separations (114.0%). Other relatively large increases were for chemotherapy (53,000 more separations, 58.4%) and colonoscopy (33,000 more separations, 31.4%).

**Table 7.13: Hospital use by admitted patients, 1999–00 to 2003–04**

Measure/sector	1999–00	2000–01	2001–02	2002–03	2003–04
<b>Separations per 1,000 population<sup>(a)</sup></b>					
Public hospitals	204.6	201.8	202.6	205.7	207.7
Public acute hospitals	203.7	200.9	201.8	204.8	206.8
Public psychiatric hospitals	0.9	0.9	0.9	0.8	0.9
Private hospitals <sup>(b)</sup>	108.4	119.8	125.1	129.0	130.9
Private free-standing day hospital facilities	15.1	18.1	20.2	23.9	25.1
Other private hospitals	93.5	98.9	104.7	105.1	105.8
<i>Total</i>	<i>312.3</i>	<i>320.2</i>	<i>327.7</i>	<i>333.5</i>	<i>337.2</i>
<b>Patient-days per 1,000 population<sup>(a)</sup></b>					
Public hospitals	865.1	820.0	827.8	821.1	804.9
Public acute hospitals	804.2	782.8	775.9	774.7	771.3
Public psychiatric hospitals	60.9	37.1	51.9	46.4	33.6
Private hospitals <sup>(b)</sup>	342.4	356.8	357.0	356.9	351.3
Private free-standing day hospital facilities	15.1	18.1	20.2	23.9	25.1
Other private hospitals	327.4	336.7	334.9	331.8	325.2
<i>Total</i>	<i>1,205.4</i>	<i>1,172.0</i>	<i>1,182.5</i>	<i>1,175.6</i>	<i>1,153.9</i>
<b>Same-day separations as a percentage of total</b>					
Public acute hospitals	45.8	46.4	47.8	49.0	49.1
Private hospitals	56.1	58.5	60.0	61.4	62.6
Other private hospitals	49.2	51.6	52.8	53.2	54.3
<i>Total<sup>(c)</sup></i>	<i>49.2</i>	<i>50.8</i>	<i>52.3</i>	<i>53.7</i>	<i>54.3</i>
<b>Average length of stay (days)</b>					
Public acute hospitals	3.9	3.9	3.9	3.8	3.8
Private hospitals	3.1	3.0	2.9	2.8	2.7
Other private hospitals	3.5	3.3	3.2	3.2	3.1
<i>Total<sup>(c)</sup></i>	<i>3.8</i>	<i>3.7</i>	<i>3.6</i>	<i>3.5</i>	<i>3.4</i>
<b>Average length of stay, excluding same-day separations (days)</b>					
Public acute hospitals	6.4	6.4	6.5	6.5	6.4
Other private hospitals	5.9	5.8	5.7	5.6	5.6
<i>Total<sup>(c)</sup></i>	<i>6.6</i>	<i>6.4</i>	<i>6.5</i>	<i>6.5</i>	<i>6.3</i>

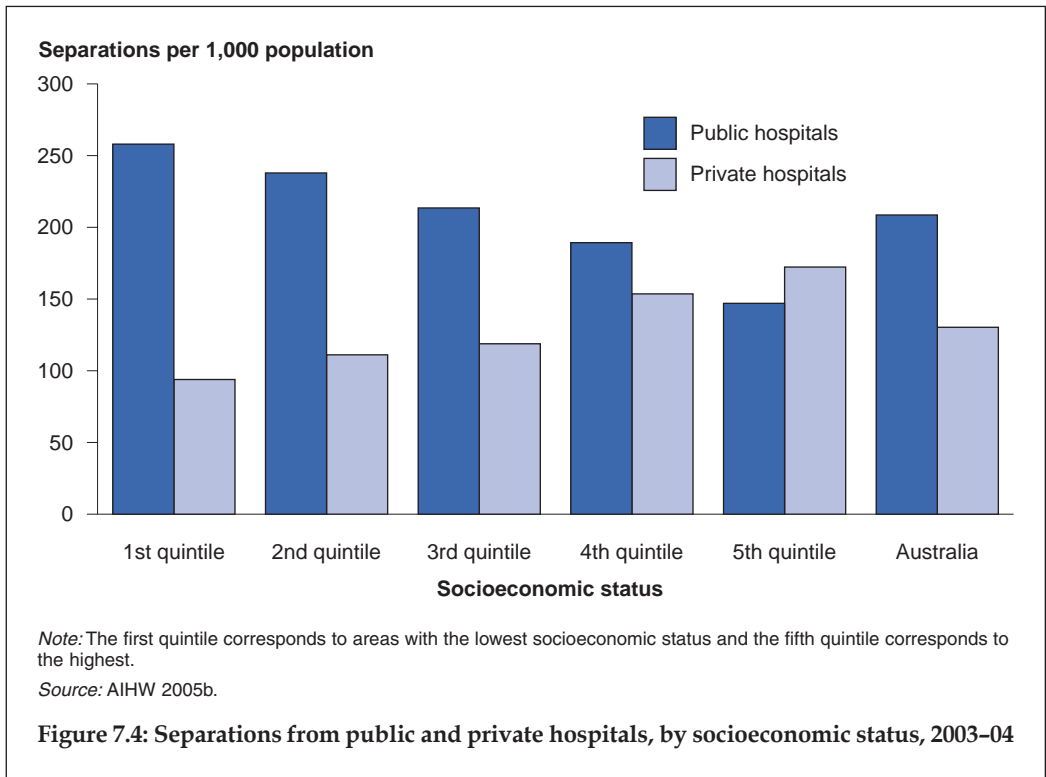
(a) Figures are rates (per 1,000 population) directly age-standardised to the Australian population as at 30 June 2001. For private hospitals, rates were derived using populations of the reporting states and territories only, without adjustment for incomplete reporting.

(b) From 2000–01 to 2003–04 the hospital type was not specified for Tasmanian private hospitals, so data for Tasmania are included in the private hospitals total but not in the private hospital subcategories.

(c) Public psychiatric hospitals and private free-standing day hospital facilities are included in these totals.

Source: AIHW 2005b.

Although the public sector has a larger share of overall hospital activity than the private sector, better-off Australians tend to use private hospitals, while less advantaged people tend to use public hospitals. There is a clear gradient of higher use of public hospitals by residents of areas of greatest socioeconomic disadvantage (258 separations per 1,000 population), compared with the least disadvantaged (147 per 1,000) (Figure 7.4). Conversely, in the private sector the highest separation rates were reported for residents of areas of least disadvantage (172 per 1,000), compared with those of greatest disadvantage (94 per 1,000).



## Hospital length of stay

Although some categories of patients (such as those requiring rehabilitation, some specialised mental health services or palliative care) can have relatively long stays in hospital, most patients are admitted for acute care services and require a relatively short stay. There is an increasing trend towards day surgery and procedures for these acute care patients, with improvements in medical technology (anaesthetics and microsurgery, for example) enabling a wider range of procedures to be performed on a same-day basis (Duckett 2002). Improved drug treatments and efforts to increase hospital productivity have also tended to result in shorter lengths of stay. (Potentially affecting the reporting of increased average length of stay, however, is that some treatments that have previously been undertaken during short-stay admissions are not now included in these data as they are being provided in outpatient clinics and day care

facilities or by community health services. This means that the calculated average length of stay, whether increasing or decreasing over time, will still be higher than it would have been previously.)

With public psychiatric hospitals excluded, the average length of stay was 3.4 days overall in 2003–04: 3.8 days in public acute hospitals and 2.7 days in private hospitals (Table 7.13). Excluding same-day separations, the average length of stay was 6.4 days in public acute hospitals and 5.6 days in private hospitals.

The difference between public and private hospitals at least partly reflects the different range of patients cared for and treatments undertaken (casemix) in the two hospital sectors. For example, public hospitals had more children under the age of 5 years as patients (6.2% of separations), compared with private hospitals (2.1% of separations) (Tables S26 and S27). There were also differences in the socioeconomic status of the patient's residential area (described above), in the proportion of separations for which procedures were reported, and in the average number of procedures reported per separation.

If same-day separations are included, the average length of stay in hospital decreased from 3.8 days in 1999–00 to 3.4 in 2003–04. If those same same-day separations are excluded, the average length of stay still fell over the period, though less markedly, from 6.6 days to 6.3. These figures are within the range of those reported for other OECD countries.

### **Same-day separations**

In 2003–04, there were 3.7 million same-day separations: 2.1 million from public acute hospitals, around 3,000 from public psychiatric hospitals and 1.7 million from private hospitals. There was a strong upward trend over the period 1999–00 to 2003–04 in the proportion of separations that were day-only. In 1999–00, 49.2% of separations were same-day separations, but by 2003–04 this had increased to 54.3% (Table 7.13).

The number of private free-standing day hospital facilities has risen dramatically over recent years (from 140 in 1995–96 to 234 in 2003–04; Table 7.16), and this is reflected in a relatively large increase in same-day separations from these hospitals between 1999–00 and 2003–04. The number of same-day separations increased by 74.8% for private free-standing day hospitals (excluding Tasmania – see note to Table 7.13), compared with an increase of 35.3% for other private hospitals (excluding Tasmania). More modestly, the number of same-day separations in public hospitals increased by 16.5%.

### **What problems are people being admitted for?**

The conditions that hospitals treat are of interest to health service managers, planners, funders and researchers. These conditions, the procedures that patients undergo in hospital and the consequent casemix of hospitals are detailed in the National Hospital Morbidity Database using the classification systems described in Box 7.6. Regardless of the classification used, the consistent picture is that a relatively small number of conditions and treatments account for a substantial portion of hospital separations: renal dialysis (for which patients typically have around 150 separations a year), chemotherapy (also involving multiple stays for each patient), gastrointestinal endoscopies (viewing the inside of the stomach, bowel, and so forth), replacement of the eye's lens (usually because of cataracts), and childbirth (including caesarean sections).

## **Box 7.6: Classification of diagnoses, procedures and separations for admitted patients**

### ***Diagnoses and procedures***

Hospital patient records contain information about a patient's diagnosis and about procedures performed during the hospital stay. To allow efficient storage and analysis of this information, detailed classification and coding systems are used to describe and record diagnoses and procedures. The classification used in 2003–04 in Australia was the third edition of the *International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Australian Modification (ICD-10-AM)* (NCCH 2002). It comprises classifications of diseases and external causes of injuries and poisoning, based on the WHO version of ICD-10, and a classification of procedures known as the *Australian Classification of Health Interventions*. These ICD-10-AM codes can be a source of information on the diseases treated in hospitals and the operations performed, at very detailed levels or combined into broad groupings.

### ***Diagnosis-related groups***

*Australian Refined Diagnosis Related Groups (AR-DRGs)* is a classification system used mainly for acute care admitted patient episodes. 'Acute' care applies to more than just emergency care and acute illnesses; it includes care and treatment for chronic conditions. The term distinguishes this type of care from other types, such as rehabilitation or palliative care. The AR-DRG classification provides a means of summarising and relating the number and type of acute admitted patients treated in a hospital (that is, its casemix) to the resources expected to be used in their treatment. This classification groups episodes with similar clinical conditions and similar usage of hospital resources using information in the hospital separation record such as diagnoses, procedures, and age of the patient. This grouping is first to broad Major Diagnostic Categories, then to 'surgical', 'medical' (that is, care not involving surgery) and 'other' partitions, and then to the individual AR-DRGs that they comprise.

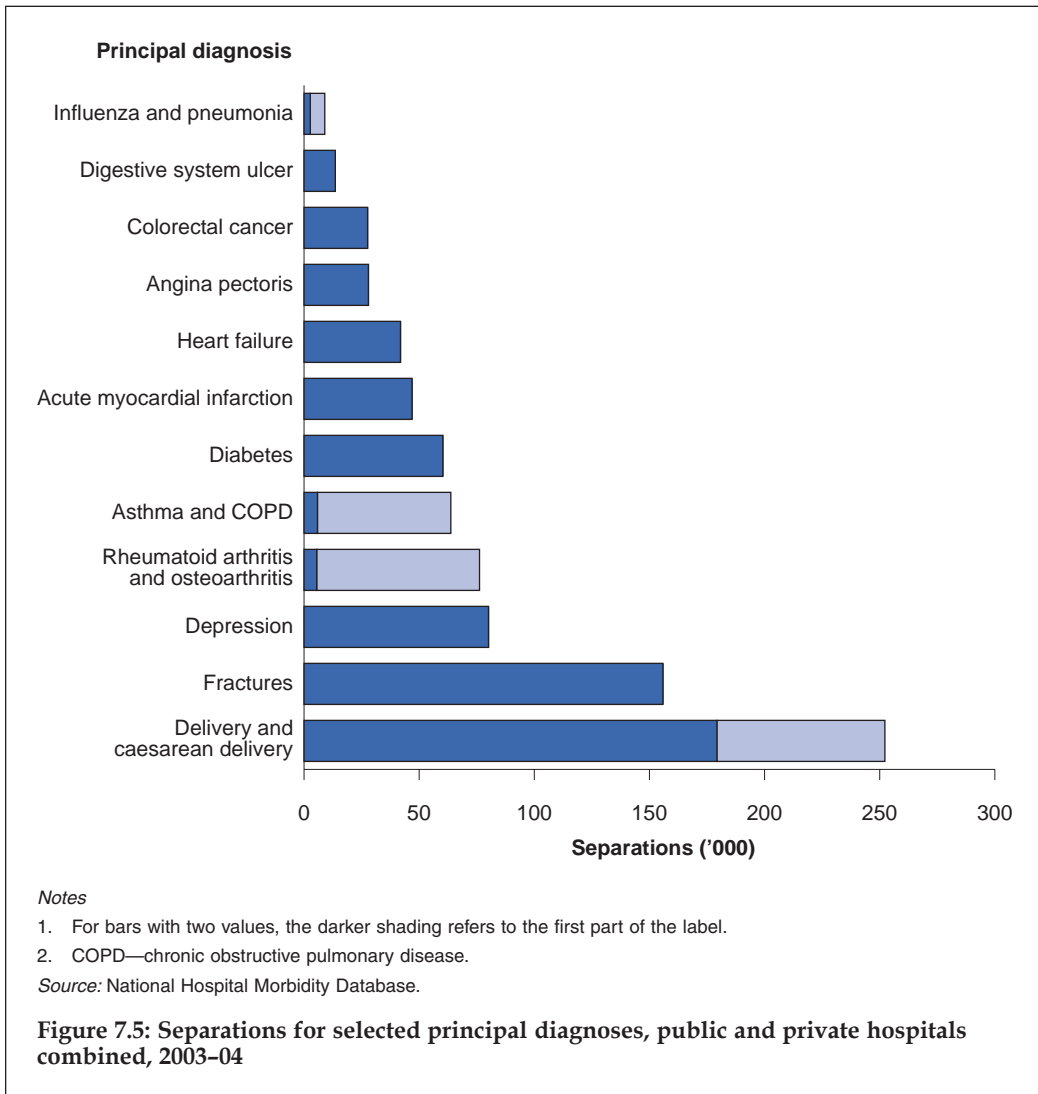
Each AR-DRG is associated with information on the average length of stay and estimated average cost for patients in the group in the public and private sectors. This classification therefore has use in measuring the outputs and performance of hospitals, and in planning and funding hospital service provision.

## **The diagnoses view of hospital activity**

For patients with a disease or injury recorded as a principal diagnosis (see Boxes 7.5 and 7.6), over half of all separations in Australian hospitals in 2003–04 had a principal diagnosis in five of the broad ICD-10-AM chapter groups. These were *Diseases of the digestive system*, *Neoplasms*, *Diseases of the circulatory system*, *Injury and poisoning* and *Contact with health services* (including dialysis, chemotherapy and rehabilitation) (Tables S28 and S29).

Chronic diseases (see Chapter 2) were represented in some high-volume diagnoses in 2003–04. There were around 64,000 separations with a principal diagnosis of *Asthma and chronic obstructive pulmonary disease*, 76,000 for *Rheumatoid arthritis and osteoarthritis*, and 42,000 for *Heart failure* (Figure 7.5). Also of high volume was childbirth: there were

73,000 separations with a principal diagnosis of *Childbirth by caesarean section* and 180,000 for *Other delivery*.

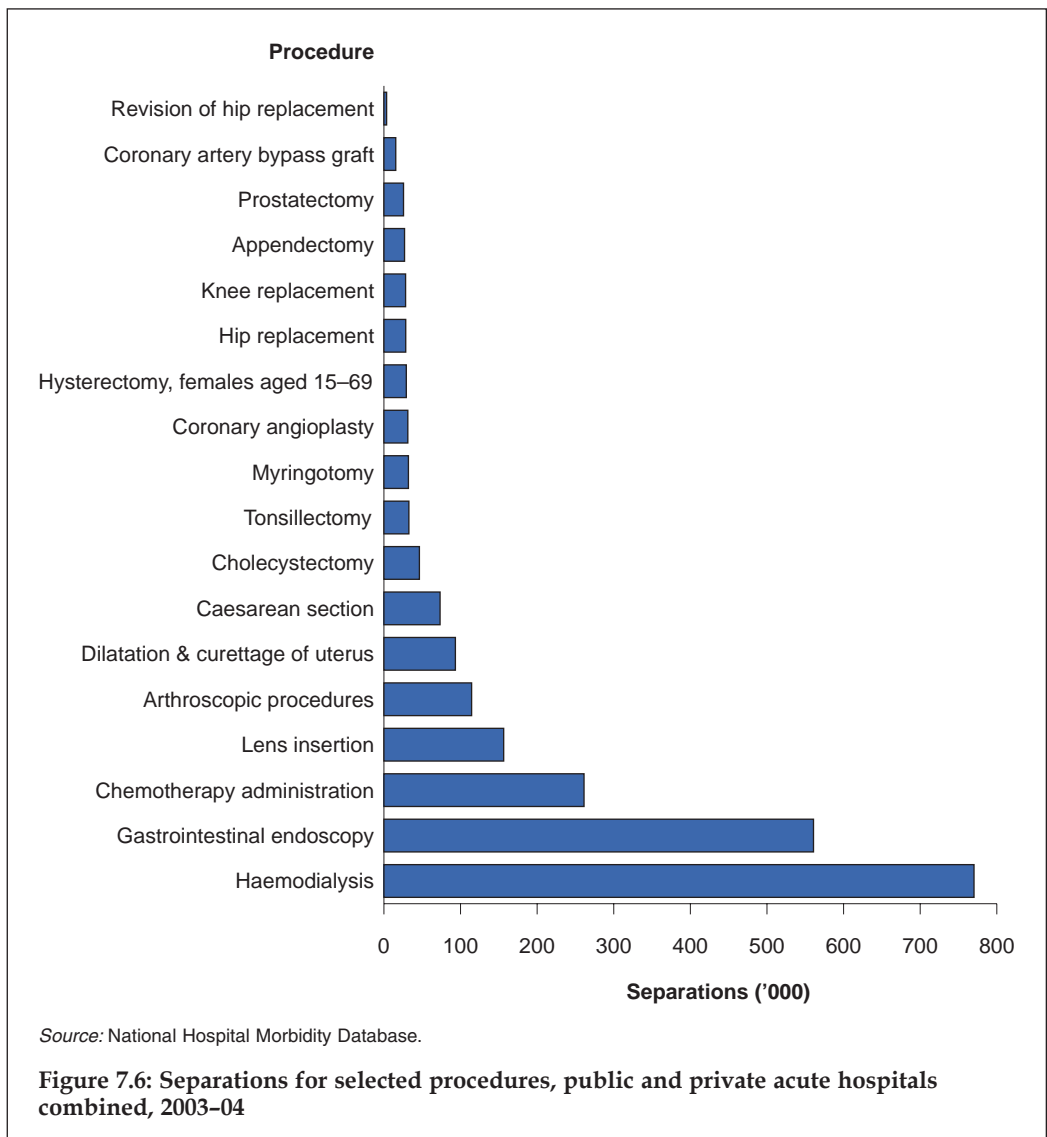


## The procedures view of hospital activity

Procedures are a very common part of hospital treatment, especially so for private hospitals: a procedure was reported for 80.6% of separations from Australian hospitals in 2003-04. Of these, 56.1% were from public hospitals, although public hospitals accounted for 61.4% of separations overall. Similarly, although 69.6% of overall patient-days were in public hospitals, only 66.9% of patient-days associated with procedures were in public hospitals. This reflects the higher proportion of separations in private hospitals (91.7%) that had a procedure, compared to public hospitals (73.6%).

At the broad ICD-10-AM chapter level, if miscellaneous diagnostic and therapeutic procedures are not included, procedures on the urinary system accounted for the largest proportion of public hospital separations for which a procedure was reported (738,000 separations) (Table S30). *Haemodialysis* accounted for 86% (636,000) of these separations. The most commonly reported procedure group for the private sector was *Operations on the digestive system* (566,000) (Table S31). Within that grouping, *Panendoscopy with excision* was reported for 29% of such separations, and *Fibreoptic colonoscopy with excision* for 23%.

Other commonly reported procedures across both sectors were *Gastrointestinal endoscopy* (561,000 separations), *Chemotherapy administration* (261,000), *Lens insertion* (156,000) and *Arthroscopic procedures* (114,000) (Figure 7.6).



Some procedures are being increasingly undertaken in the private sector rather than in the public sector. For example, between 1999–00 and 2003–04 the number of separations for caesarean section rose by 56.5% in the private sector, compared with 18.4% in the public sector. For gastrointestinal endoscopy, the number of separations increased by 25.2% in private hospitals across the same period, compared with a fall of 6.9% in public hospitals.

### **The AR-DRGs view of hospital activity**

The AR-DRG classification takes both diagnoses and procedures (if relevant) into account, along with length of stay and other patient factors. It is therefore a composite view of hospitalisations and is useful for describing the overall nature of hospital care.

In 2003–04, 72.4% of acute hospital separations in the public sector were for medical (that is, non-surgical) AR-DRGs (2.9 million), compared with 37.8% in the private sector (1.0 million). In contrast there was a larger proportion of separations for surgical AR-DRGs in the private sector (41.1%) than in the public sector (20.7%) (see also Tables S32 and S33).

In public hospitals, separations with medical AR-DRGs increased by 13.8% between 1999–00 and 2003–04, while those with surgical AR-DRGs decreased by 3.9% and other AR-DRGs decreased by 3.7% in the same period. In private hospitals, separations with medical AR-DRGs also increased, by 36.4%, and those with surgical and other AR-DRGs increased by 26.6% and 27.1% respectively. Thus in 2003–04 the number of surgical separations from private hospitals (1.0 million) exceeded those from public hospitals (0.8 million).

The AR-DRGs with the highest numbers of separations in 2003–04 featured several for which same-day separations dominated (Table 7.14). Among these were the top two groups in public hospitals, *Admit for renal dialysis* (621,000 public sector separations) and *Chemotherapy* (127,000 separations). *Chemotherapy* topped the list in the private sector (144,000 separations), followed by *Other colonoscopy, same-day* (140,000 separations). *Vaginal delivery without complicating diagnosis* was the most common AR-DRG that was usually not a same-day hospitalisation. This group was the third most common in public hospitals (90,000 separations) and the fifteenth most common in private hospitals (35,000 separations).

### **Admitted patient care for war veterans**

Veterans receive admitted patient care in both public and private hospitals. In 2003–04, just under 344,000 separations for veterans were reported to the National Hospital Morbidity Database: 138,000 from public hospitals and 205,000 from private hospitals. The most frequently reported AR-DRGs were *Admit for renal dialysis* (23,000 in public hospitals and 16,000 in private hospitals), *Lens procedure, same-day* (1,400 and 14,000 respectively), and *Chemotherapy* (3,000 and 10,000 respectively). Eligibility to receive hospital treatment as a DVA patient may not necessarily have been confirmed by the DVA for these separations.

### **Non-admitted occasions of service**

In 2003–04 there were 43.6 million occasions where individuals received a service through public acute hospitals but were not admitted. This corresponds to over two such services per Australian in that year. Of these, 5.9 million (13.4%) were accident and emergency occasions of service, 4.5 million (10%) were allied health services, and 9.7 million (22%) were other services such as radiology and organ imaging. In addition to the services

provided to individuals, around 444,000 services for groups of patients were delivered through public acute hospitals (around 1% of the total non-admitted services).

**Table 7.14: Top 12 AR-DRGs version 5.0 with the highest number of separations from acute hospitals, 2003–04<sup>(a)</sup>**

AR-DRG	Separations	Same-day separations (%)	Patient-days	Average length of stay (days)
Admit for renal dialysis	754,300	99.9	754,500	1.0
Chemotherapy	271,300	99.9	271,600	1.0
Other colonoscopy, same-day	189,800	100.0	189,800	1.0
Other gastroscopy for non-major digestive disease, same-day	147,300	100.0	147,300	1.0
Lens procedure, same-day	140,500	100.0	140,500	1.0
Vaginal delivery without catastrophic or severe complications or co-morbidities	125,300	2.0	433,300	3.5
Dental extractions and restorations	103,300	95.2	105,200	1.0
Mental health treatment same-day without electroconvulsive therapy	91,800	100.0	91,800	1.0
Other skin, subcutaneous tissue and breast procedures	89,200	92.1	102,300	1.1
Follow-up after completed treatment with endoscopy	84,000	97.0	85,200	1.0
Complex gastroscopy, same-day	79,000	100.0	79,100	1.0
Other factors influencing health status, same-day	78,800	100.0	78,800	1.0

(a) Separations for which the care type was reported as acute, or as newborn (with qualified patient days), or was not reported. Public and private hospitals included.

Source: AIHW National Hospital Morbidity Database.

The states and territories vary in how they collect data on non-admitted patient occasions of service, and in the extent to which they provide these types of services in non-hospital settings (such as community health centres), and this may affect the comparability of data on this type of hospital activity (see Box 7.5).

Private hospitals also provide non-admitted patient services, with a different mix of types compared with the public hospitals. In 2003–04, private hospitals reported 1.9 million occasions of service (ABS 2005), with the largest numbers being for accident and emergency (472,000 or 25%) and allied health services (344,000 or 18%).

## Geographic variation in the use of accident and emergency services

The ratio of services provided in an area to the number of residents in that area is an approximation of population use, although services provided in an area may be used by persons residing in other areas.

In terms of public hospital accident and emergency services in 2003–04, nationally the rate varied from 240 per 1,000 population in major cities to 369 in regional areas and 836 in remote areas (Table 7.15). This variation may reflect a number of factors, including the availability of other health care services, patterns of disease and injury, and the

generally poorer health of Aboriginals and Torres Strait Islanders, who have higher population concentrations in remote areas.

By contrast there were fewer accident and emergency occasions of service per 1,000 population for private hospitals in regional and remote areas than in major cities. The rates ranged from 27 per 1,000 population in major cities to 19 in regional areas and 8 in remote areas in 2003–04 (ABS 2005).

**Table 7.15: Accident and emergency occasions of service in public acute hospitals, 2003–04**

Region	NSW	Vic <sup>(a)</sup>	Qld	WA	SA	Tas	ACT	NT	Total
<b>Services ('000)</b>									
Major Cities	1,147	845	480	278	313	..	97	..	3,159
Inner Regional	600	332	362	52	47	64	0	..	1,456
Outer Regional	205	113	271	101	66	31	..	42	828
<i>Total regional</i>	<i>804</i>	<i>445</i>	<i>632</i>	<i>154</i>	<i>113</i>	<i>94</i>	<i>0</i>	<i>42</i>	<i>2,284</i>
Remote	25	n.a.	77	90	25	6	..	43	265
Very Remote	10	..	59	58	11	1	..	17	156
<i>Total remote</i>	<i>36</i>	<i>n.a.</i>	<i>136</i>	<i>148</i>	<i>35</i>	<i>7</i>	<i>..</i>	<i>60</i>	<i>421</i>
<b>Total</b>	<b>1,986</b>	<b>1,289</b>	<b>1,248</b>	<b>580</b>	<b>461</b>	<b>101</b>	<b>97</b>	<b>102</b>	<b>5,864</b>
<b>Services per 1,000 population resident in area<sup>(b)</sup></b>									
Major Cities	240	234	240	202	285	..	301	..	240
Inner Regional	435	318	367	212	244	209	0	..	351
Outer Regional	423	444	406	544	369	190	..	392	406
<i>Total regional</i>	<i>432</i>	<i>342</i>	<i>383</i>	<i>355</i>	<i>304</i>	<i>202</i>	<i>0</i>	<i>392</i>	<i>369</i>
Remote	651	n.a.	825	989	534	688	..	1,031	817
Very Remote	1,252	..	1,109	1,152	791	354	..	351	871
<i>Total remote</i>	<i>753</i>	<i>n.a.</i>	<i>928</i>	<i>1,047</i>	<i>593</i>	<i>610</i>	<i>..</i>	<i>662</i>	<i>836</i>
<b>Total</b>	<b>297</b>	<b>262</b>	<b>328</b>	<b>297</b>	<b>302</b>	<b>212</b>	<b>300</b>	<b>515</b>	<b>295</b>

n.a. Not available.

.. Not applicable.

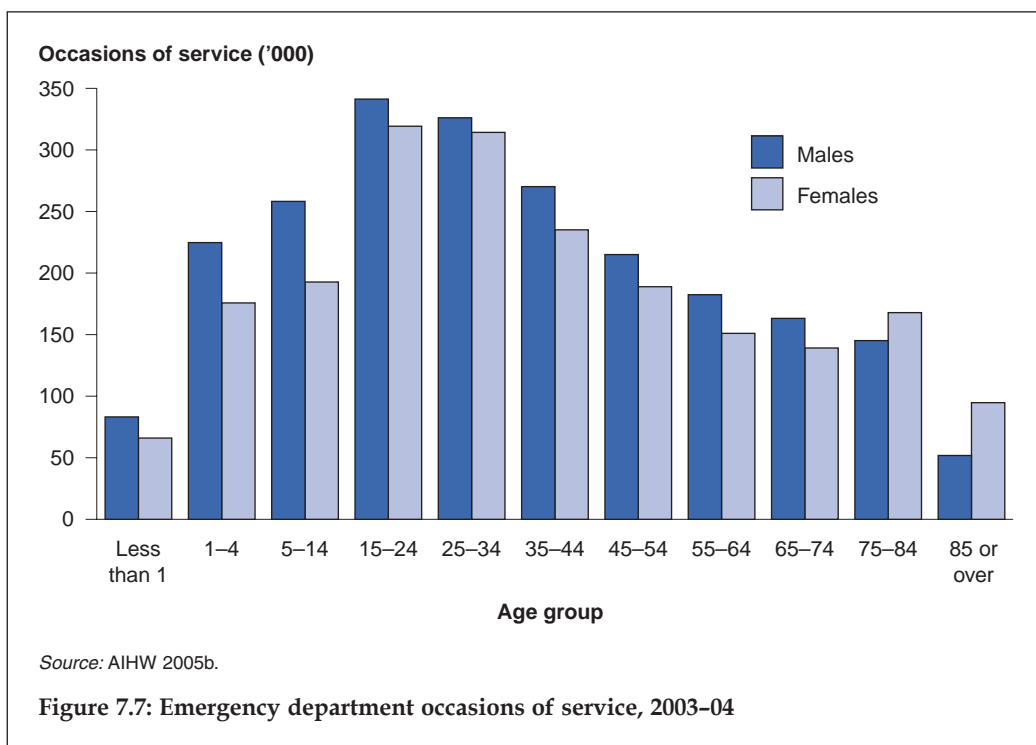
(a) In Victoria, it is not possible to separately identify emergency occasions of service in hospital campuses located in remote areas.

(b) The ratio of services provided in the area to the number of residents in the area only approximates population use, as services in one area may be provided to persons residing in other areas.

Source: AIHW 2005b.

## Age and sex distribution of the use of accident and emergency services

For 2003–04, data on the patient's age group and sex were available for over 4.3 million emergency department occasions of service in public hospitals (about 73% of all emergency department occasions of service), mostly in hospitals classified as *Principal referral and specialist women's and children's hospitals* and *Large hospitals* (AIHW 2005b). Almost 53% of all emergency department occasions of service were for male patients, and there were more male patients than female patients for all age groups except for patients aged 75 years or over (Figure 7.7). The use of emergency departments was highest in the 15–24 and 25–34 years age groups, and the overall pattern is quite different from that for admitted patient care, which essentially rises with age.



## How many hospitals and beds are there?

Nationally, public acute care hospital numbers grew from 704 in 1995-96 to 741 in 2003-04. In contrast, over the same period, private hospitals other than free-standing day hospital facilities decreased from 323 to 291 (Table 7.16). The number of private free-standing day hospital facilities experienced an increase from 140 in 1995-96 to 248 in 2002-03 and then decreased to 234 in 2003-04. These facilities provide investigation and treatment services for admitted patients on a day-only basis.

The number of public psychiatric hospitals declined from 37 in 1993-94 to 23 in 1996-97 and has remained relatively stable since then. These hospitals are devoted mainly to the treatment and care of admitted patients with psychiatric, mental or behavioural disorders. Reforms under the National Mental Health Strategy meant that their role declined in the early to mid-1990s, with more services provided in acute care hospitals and community settings.

## Comparing hospital services capacity

Public acute hospitals can be described in terms of 'peer groups' (Table 7.18), based on their volume of admitted patient activity and geographical location (AIHW 2005b). This peer grouping was developed to explain variability in the average cost per casemix-adjusted separation and also illustrates some of the attributes of the state and territory hospital systems. Thus, *Small hospitals* had an average of 23 beds in 2003-04, and were most numerous in New South Wales and Queensland. *Principal referral and specialist women's and children's hospitals* averaged 428 beds each nationally.

Changes in the numbers of hospitals are often due to changes in administrative or reporting arrangements and not necessarily to changes in the number of hospital campuses or buildings. A more reliable indicator of the availability of hospital services may be numbers of hospital beds. However, the concept of an available bed is also becoming less important, for example in the light of increasing same-day hospitalisations and provision of 'hospital in the home' care. The comparability of bed numbers can also be affected by the casemix of hospitals with, for example, differing proportions of beds available for special and more general purposes.

Between 1995–96 and 2003–04, there was a 2.8% decrease in available beds and an 11% reduction in available beds per 1,000 population (Table 7.16). The change in beds per 1,000 population was not evenly distributed between the public and private sectors, with private sector beds per 1,000 population remaining stable during this period and public sector beds per 1,000 population decreasing by 18%.

**Table 7.16: Hospitals and available beds, 1995–96 to 2003–04**

Measure/sector	1995–96	1996–97	1997–98	1998–99	1999–00	2000–01	2001–02	2002–03	2003–04
<b>Hospitals</b>									
Public acute	712	707	738	733	726	727	725	729	741
Public psychiatric	26	20	22	22	22	22	21	19	20
<i>Total public</i>	<i>738</i>	<i>727</i>	<i>760</i>	<i>755</i>	<i>748</i>	<i>749</i>	<i>746</i>	<i>748</i>	<i>761</i>
Private free-standing day hospital facilities	140	153	175	175	190	207	236	248	234
Private other <sup>(a)</sup>	323	319	317	317	312	302	301	301	291
<i>Total private</i>	<i>463</i>	<i>472</i>	<i>492</i>	<i>492</i>	<i>502</i>	<i>509</i>	<i>537</i>	<i>549</i>	<i>525</i>
<b>Total</b>	<b>1,201</b>	<b>1,199</b>	<b>1,252</b>	<b>1,247</b>	<b>1,250</b>	<b>1,258</b>	<b>1,283</b>	<b>1,297</b>	<b>1,286</b>
<b>Available beds<sup>(b)</sup></b>									
Public acute	55,891	53,478	52,801	51,423	50,188	49,979	49,052	49,791	50,915
Public psychiatric	3,867	3,359	2,935	3,571	2,759	2,430	2,409	2,523	2,560
<i>Total public</i>	<i>59,758</i>	<i>56,837</i>	<i>55,736</i>	<i>54,994</i>	<i>52,947</i>	<i>52,409</i>	<i>51,461</i>	<i>52,314</i>	<i>53,475</i>
Private free-standing day hospital facilities	1,023	1,163	1,348	1,460	1,581	1,688	1,851	1,910	1,947
Private other <sup>(a)</sup>	22,757	22,966	23,019	23,746	23,665	24,465	25,556	24,454	24,642
<i>Total private</i>	<i>23,780</i>	<i>24,129</i>	<i>24,367</i>	<i>25,206</i>	<i>25,246</i>	<i>26,153</i>	<i>27,407</i>	<i>26,364</i>	<i>26,589</i>
<b>Total</b>	<b>83,538</b>	<b>80,966</b>	<b>80,103</b>	<b>80,200</b>	<b>78,193</b>	<b>78,562</b>	<b>78,868</b>	<b>78,678</b>	<b>80,064</b>
<b>Available beds (per 1,000 population)<sup>(b)</sup></b>									
Public acute	3.1	2.9	2.8	2.7	2.6	2.6	2.5	2.5	2.5
Public psychiatric	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1
<i>Total public</i>	<i>3.3</i>	<i>3.1</i>	<i>3.0</i>	<i>2.9</i>	<i>2.8</i>	<i>2.7</i>	<i>2.6</i>	<i>2.6</i>	<i>2.7</i>
Private free-standing day hospital facilities	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Private other <sup>(a)</sup>	1.3	1.2	1.2	1.3	1.2	1.3	1.3	1.2	1.2
<i>Total private</i>	<i>1.3</i>	<i>1.3</i>	<i>1.3</i>	<i>1.3</i>	<i>1.3</i>	<i>1.4</i>	<i>1.4</i>	<i>1.3</i>	<i>1.3</i>
<b>Total</b>	<b>4.5</b>	<b>4.4</b>	<b>4.3</b>	<b>4.2</b>	<b>4.1</b>	<b>4.1</b>	<b>4.0</b>	<b>4.0</b>	<b>4.0</b>

(a) Includes private acute and private psychiatric hospitals.

(b) Average available beds through the course of the year where possible, otherwise available beds at 30 June.

Sources: AIHW 2005b and earlier editions.

## State and territory variation in hospital capacity

In 2003–04, the average number of public hospital beds per 1,000 population ranged from 2.1 in the Australian Capital Territory to 3.2 in South Australia. For the private sector, there was a range from 1.1 in the New South Wales to 1.6 in Queensland (Table 7.17). The ratio of public beds per 1,000 population to private beds per 1,000 population was 2.0 nationally, ranging from 1.6 in Queensland and Western Australia to 2.7 in New South Wales.

**Table 7.17: Available hospital beds per 1,000 population, 2003–04**

Sector	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Public acute hospitals	2.7	2.4	2.4	2.4	2.9	2.2	2.1	2.9	2.5
Public psychiatric hospitals	0.2	0.0	0.1	0.1	0.2	0.1	..	..	0.1
<i>Total public</i>	<i>2.9</i>	<i>2.4</i>	<i>2.5</i>	<i>2.5</i>	<i>3.2</i>	<i>2.4</i>	<i>2.1</i>	<i>2.9</i>	<i>2.7</i>
Private free-standing day hospital facilities	0.1	0.1	0.1	0.1	0.1	n.a.	n.a.	n.a.	0.1
Other private hospitals <sup>(a)</sup>	1.0	1.3	1.5	1.5	1.3	n.a.	n.a.	n.a.	1.2
<i>Total private</i>	<i>1.1</i>	<i>1.4</i>	<i>1.6</i>	<i>1.5</i>	<i>1.4</i>	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	<i>1.3</i>
<b>Total available beds per 1,000 population</b>	<b>4.0</b>	<b>3.8</b>	<b>4.1</b>	<b>4.1</b>	<b>4.5</b>	<b>n.a.</b>	<b>n.a.</b>	<b>n.a.</b>	<b>4.0</b>

(a) Includes private acute and private psychiatric hospitals.

n.a. Not available but included in totals.

.. Not applicable.

Source: AIHW 2005b.

## How well are hospitals performing?

Given the extensive activity of hospitals, the serious health cases they manage, and the great public expenses they incur, it is important to try to measure their performance.

The National Health Performance Framework includes nine areas in which to assess how well the health system is performing (NHPC 2002; see also Chapter 1). For several of these areas there are indicators that relate to the performance of the acute care or hospital component of the health system. They include:

- the cost per casemix-adjusted separation (see below), as an indicator of efficiency
- waiting times for elective surgery, as an indicator of access
- emergency department waiting times, as an indicator of responsiveness
- hospital separations with an adverse event, as an indicator of safety.

The first three of these indicators are used for public acute hospitals and the last is applicable to all hospitals.

### Costs of public hospital care

The cost per casemix-adjusted separation is a measure of the average cost of providing care for admitted patients, adjusted for the relative complexity of the patients' conditions. It is calculated for selected public acute hospitals as the average recurrent expenditure for each admitted patient, adjusted by the resources expected to be used for the separation.

Nationally, the average cost per casemix-adjusted separation was \$3,293 (Table 7.18), varying from \$2,929 for Queensland to \$4,002 for the Australian Capital Territory, and from \$3,132 for *Large hospitals* to \$3,482 for *Small hospitals*.

**Table 7.18: Public hospital cost per casemix-adjusted separation<sup>(a)</sup>, 2003–04**

Peer group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
<b>Principal referral and specialist women's and children's hospitals</b>									
Number of hospitals	20	16	16	4	5	2	1	2	66
Average beds per hospital	405	553	355	502	377	392	498	230	428
Average cost weight	1.15	1.00	1.06	1.11	1.07	1.05	0.97	0.77	1.06
Cost per casemix-adjusted separation (\$)	3,547	3,360	3,070	3,328	3,014	3,216	n.p.	3,365	3,329
<b>Large hospitals</b>									
Number of hospitals	22	8	7	4	2	1	1	0	45
Average beds per hospital	178	113	128	107	210	131	175	..	152
Average cost weight	1.04	0.86	0.91	0.80	1.10	1.12	0.97	..	0.97
Cost per casemix-adjusted separation (\$)	3,272	3,056	2,360	3,251	3,226	n.p.	n.p.	..	3,132
<b>Medium hospitals</b>									
Number of hospitals	41	21	15	9	13	0	0	0	99
Average beds per hospital	64	50	57	88	55	..	..	..	61
Average cost weight	0.92	0.78	0.79	0.89	0.80	..	..	..	0.85
Cost per casemix-adjusted separation (\$)	3,357	3,172	2,283	3,696	3,075	..	..	..	3,215
<b>Small acute hospitals</b>									
Number of hospitals	33	18	32	16	14	6	0	3	122
Average beds per hospital	26	21	22	27	25	10	..	37	23
Average cost weight	0.81	0.78	0.74	0.80	0.82	0.77	..	0.64	0.78
Cost per casemix-adjusted separation (\$)	3,494	4,030	2,854	4,152	2,682	4,068	..	3,458	3,482
<b>Total selected public acute hospitals</b>									
Number of hospitals	116	63	70	33	34	9	2	5	332
Average beds per hospital	133	177	116	111	99	108	337	114	133
Average cost weight	1.07	0.96	1.00	1.00	1.01	1.05	0.97	0.75	1.01
Cost per casemix-adjusted separation (\$)	3,451	3,333	2,929	3,422	3,036	3,333	4,002	3,377	3,293

n.p. Not published because there was only one hospital in the peer group.

.. Not applicable.

(a) For details of the methods used see AIHW (2005b). Hospital counts refer to facilities with available financial data. As a result, the numbers of hospitals and beds will be different from those reported in Table 7.16.

Source: AIHW 2005b.

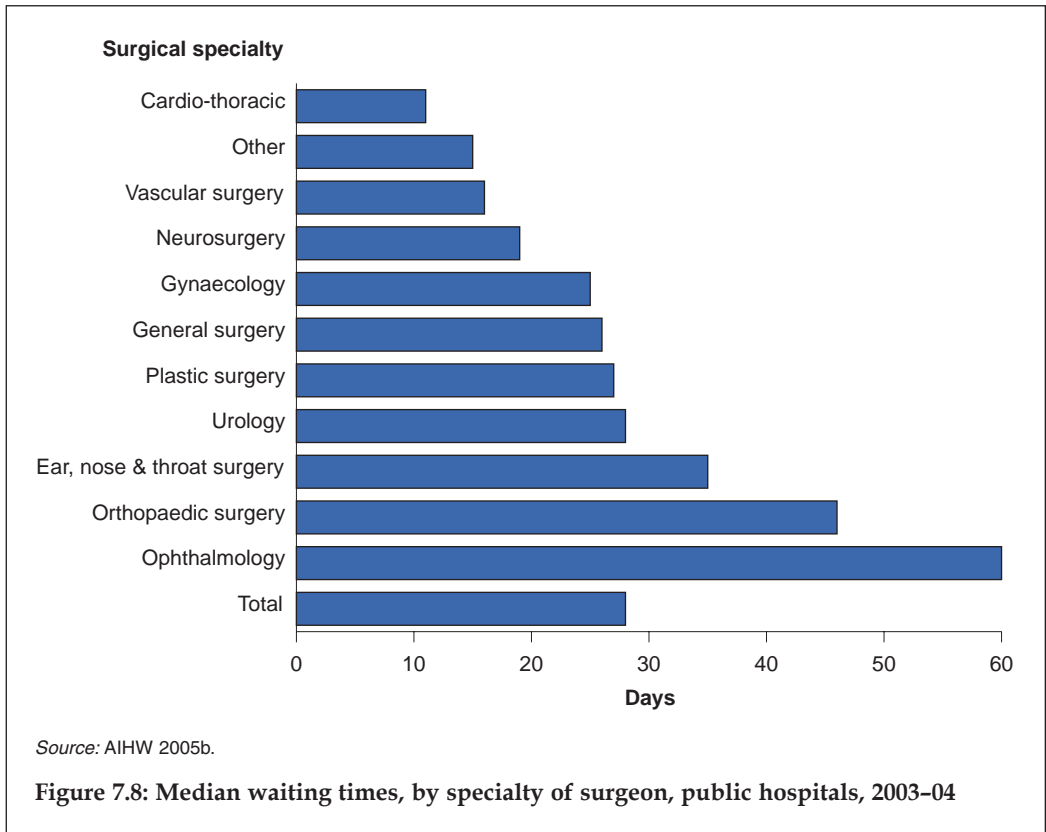
## Elective surgery waiting times

Waiting times for elective surgery are indicators of access to hospital services; that is, they are an indicator of the provision of timely care according to need. The performance measure focuses on the length of time waited, rather than the size of the list. This is because without knowing the rate of turnover of patients on a waiting list, its size is not a reliable indicator of the amount of time that a patient waits for surgery.

In 2003–04, the AIHW National Elective Surgery Waiting Times Data Collection included data for an estimated 87% of public hospital elective surgery admissions

(AIHW 2005b). Data were not available for smaller hospitals in several states; these hospitals may not have had waiting lists or may have had different waiting list characteristics compared with reporting hospitals.

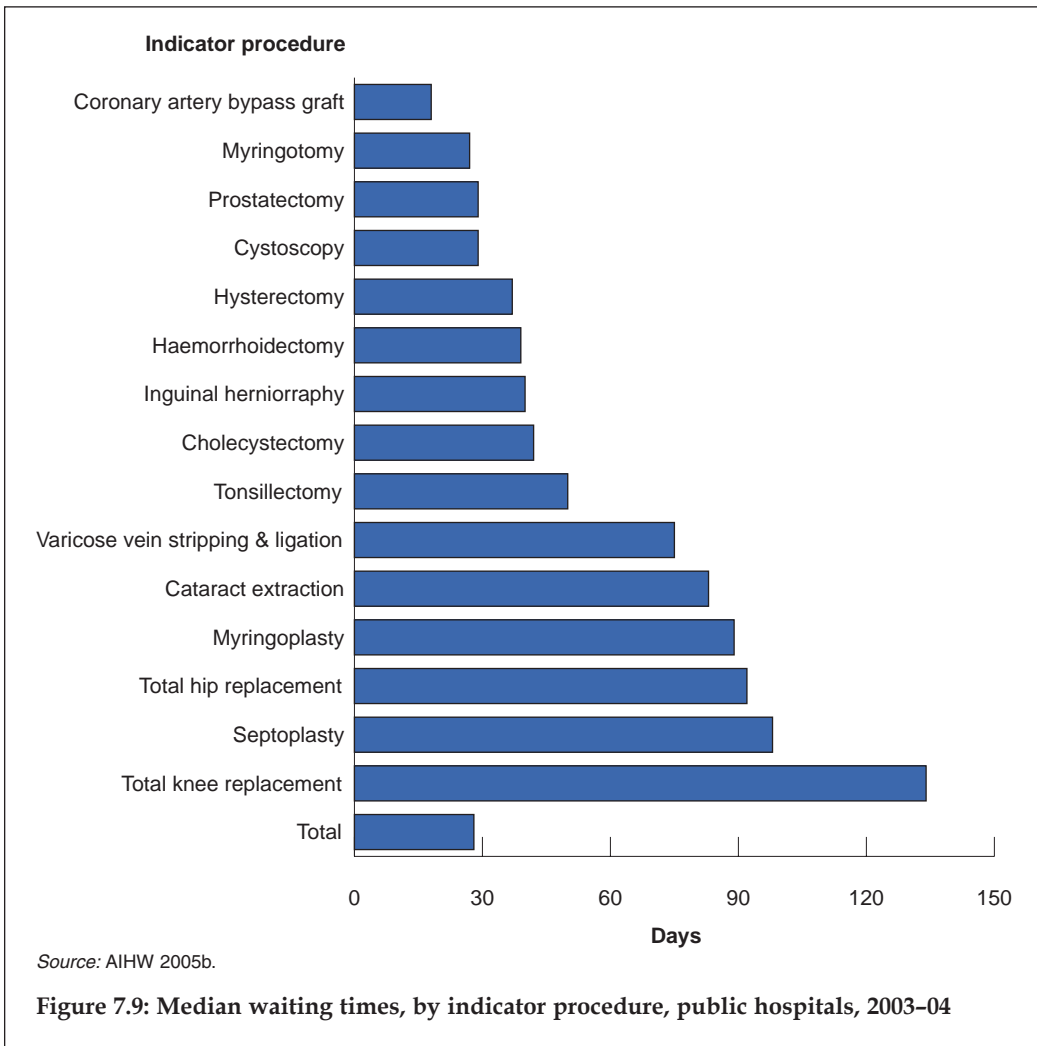
Overall, the median waiting time for elective surgery was 28 days in 2003–04 (Figure 7.8), and this figure has been stable for the previous few years. *Ophthalmology* and *Orthopaedic surgery* were the surgical specialties with the longest median waiting times in 2003–04 (60 and 46 days respectively). All other specialties except *Ear, nose and throat surgery* had median waiting times of less than 30 days; *Cardio-thoracic surgery* had the shortest median waiting time (11 days).



Another view of the waiting times is through ‘indicator’ procedures, which are high-volume procedures sometimes associated with long waits. The indicator procedure with the lowest median waiting time in 2003–04 was *Coronary artery bypass graft* (18 days) and the highest was for *Total knee replacement* (134 days) (Figure 7.9).

### Emergency department waiting times

Emergency department waiting times are regarded as indicators of the responsiveness of the acute care sector (NHPC 2002). This information is summarised as the proportions of patients who wait longer for care than is appropriate for their condition, and is presented here for selected public hospital emergency departments.

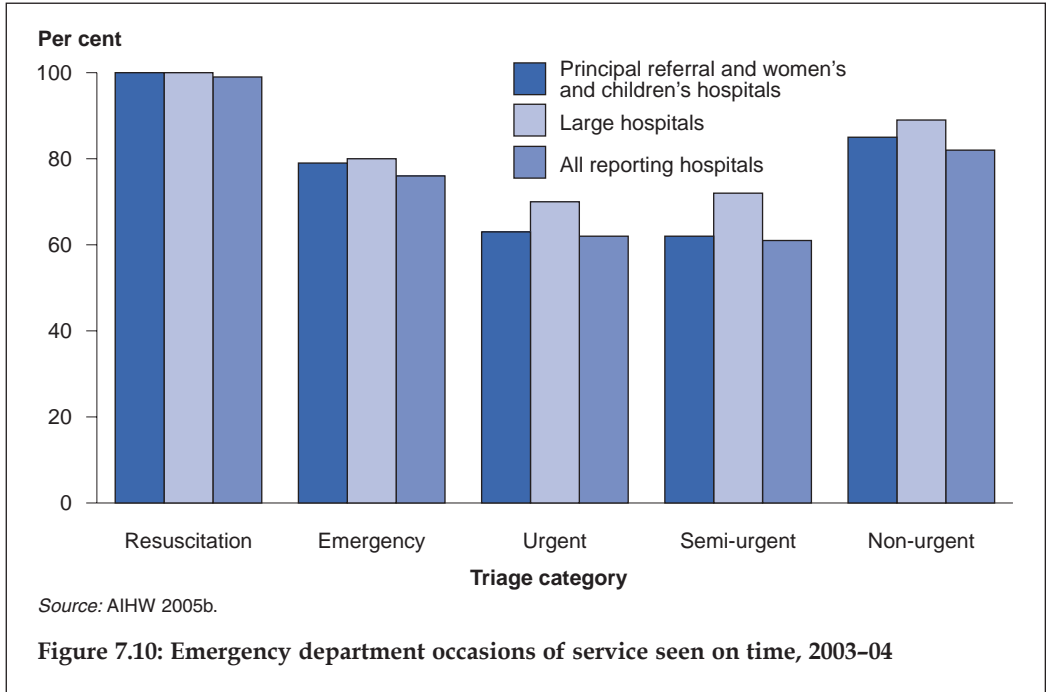


The urgency of the patient’s need for medical and nursing care is indicated by a triage category. When a patient presents to the emergency department a triage nurse promptly assesses their overall condition and assigns them to one of five categories which indicate how soon they should receive care:

- Resuscitation: immediate (within seconds)
- Emergency: within 10 minutes
- Urgent: within 30 minutes
- Semi-urgent: within 60 minutes
- Non-urgent: within 120 minutes.

In 2003-04, information on emergency department waiting times was available for about 73% of all public hospital emergency department occasions of service, including about 98% of emergency department occasions of service in public hospitals that were

classified as *Principal referral and specialist women's and children's hospitals* and *Large hospitals* (AIHW 2005b). The proportion of patients receiving care on time varied by triage category, from 99% for resuscitation patients to 61% for semi-urgent patients. Overall, the proportion of patients receiving emergency department care within the required time was 72% (67% in the *Principal referral and specialist women's and children's hospitals* peer group and 74% in the *Large hospitals* peer group). For the non-urgent triage category, 82% of all patients were seen on time (Figure 7.10).



## Adverse events

Adverse events are defined as incidents in which harm resulted to a person receiving health care. They include infections, falls and other injuries, and medication and medical device problems. The Australian Council for Safety and Quality in Health Care estimated that in the year 2000 an adverse event was associated with about 10% of hospital separations in Australia and other developed countries (ACSQHC 2001). About 2% of separations were also estimated to be associated with serious adverse events causing major disability (1.7%) or death (0.3%) (Runciman et al. 2000).

Hospital separations data can be used to indicate the occurrence of adverse events because they include information on ICD-10-AM diagnoses, places of occurrence and external causes of injury and poisoning (see Box 7.6) that specify that an adverse event was treated and/or occurred during the hospitalisation. However, other ICD-10-AM codes may also suggest that an adverse event has occurred, and some adverse events are not identifiable using these codes. The data presented below can be interpreted as representing selected adverse events in health care that have resulted in, or have affected, hospital admissions, rather than all adverse events involving hospitals.

In 2003–04, there were almost 320,000 separations with an ICD-10-AM code for an adverse event – or 4.7 per 100 separations – comprising 225,000 separations in the public sector (5.4 per 100 separations) and 95,000 separations in the private sector (3.6 per 100 separations) (Table 7.19). The data for public hospitals are not comparable with the data for private hospitals because their casemixes differ and recording practices may be different.

**Table 7.19: Hospital separations<sup>(a)</sup> with an adverse event, by hospital sector<sup>(b)</sup>, 2003–04**

Adverse event	Public hospitals		Private hospitals		All hospitals	
	Separations with adverse events	Adverse event separations per 100 separations	Separations with adverse events	Adverse event separations per 100 separations	Separations with adverse events	Adverse event separations per 100 separations
<b>External cause codes</b>						
Adverse effects of drugs, medicaments and biological substances	65,800	1.6	17,200	0.7	83,000	1.2
Misadventures to patients during surgical and medical care	7,300	0.2	2,500	0.1	9,800	0.1
Procedures causing abnormal reactions/ complications	137,500	3.3	68,800	2.6	206,300	3.0
Other external causes of adverse events	4,300	0.1	700	< 0.1	5,000	0.1
<b>Place of occurrence code</b>						
Health service area	199,300	4.7	86,200	3.3	285,500	4.2
<b>Diagnosis codes</b>						
Selected post-procedural disorders	31,500	0.8	16,200	0.6	47,700	0.7
Haemorrhage and haematoma complicating a procedure, nec	19,300	0.5	10,800	0.4	30,100	0.4
Infection following a procedure, nec	21,000	0.5	9,100	0.3	30,100	0.4
Complications of internal prosthetic devices, implants and grafts	41,700	1.0	21,400	0.8	63,200	0.9
Other diagnoses of complications of medical and surgical care	34,300	0.8	12,800	0.5	47,100	0.7
<b>Total<sup>(c)</sup></b>	<b>224,800</b>	<b>5.4</b>	<b>94,500</b>	<b>3.6</b>	<b>319,300</b>	<b>4.7</b>

(a) Excludes separations for which the care type was reported as *Newborn with no qualified days*, and records for *Hospital boarders* and *Posthumous organ procurement*.

(b) The data for public hospitals are not comparable with the data for private hospitals because their casemixes differ and recording practices may also differ.

(c) Categories do not sum to the totals because multiple diagnoses and external causes can be recorded for each separation and external cause codes and diagnosis codes can be used together to describe an adverse event.

nec Not elsewhere classified.

Source: AIHW 2005b.

*Procedures causing abnormal reactions/complications* were reported for 206,000 separations; 83,000 separations included a report of *Adverse effects of drugs, medicaments and biological substances* and 63,000 separations included a report of *Complications of internal prosthetic devices, implants and grafts*.

## 7.6 Specialised mental health services

Australians use a variety of public and private health service providers for mental health care. They include GPs and specialised mental health services such as private psychiatrists, community-based public mental health services, public and private psychiatric hospitals, and specialised residential mental health care facilities. Public specialised mental health services operate in each state and territory, providing services in community settings, residential care facilities, specialised psychiatric hospitals and specialised psychiatric units within public acute hospitals.

Historically, stand-alone public psychiatric hospitals were the main focus of specialised mental health care. However, the development of effective drugs, changes in clinical practice and the emergence of the human rights movement provided the setting for reform of mental health care. Since 1993, national action to reform mental health care has been driven by a series of national mental health plans under the National Mental Health Strategy and has resulted in a reduced role for public psychiatric hospitals and greater roles for other hospitals and for non-hospital service providers.

### Private psychiatry

In 2004–05, there were an estimated 1,063 full-time equivalent psychiatrists in private practice in Australia, and they were heavily concentrated in the cities (AIHW 2005c). There were 940 in metropolitan areas (7.1 per 100,000 population) and 123 (1.8 per 100,000 population) in regional and remote areas.

Medicare funded 2.0 million services by private psychiatrists in 2004–05. They included 1.7 million patient attendances in consulting rooms, around 209,000 patient attendances in hospitals and around 41,000 group psychotherapy services. Females received more services (1.2 million or 120 per 1,000 population) than males (0.8 million, or 79 per 1,000), and the highest rates were reported for both sexes in the 45–54 years age group (214 per 1,000 population for females and 137 per 1,000 for males).

Medicare expenditure on these services was \$214 million in total, including \$194 million for patient attendances in consulting rooms and \$15 million in hospitals. Note that to receive maximum Medicare benefits, consultation with a specialist psychiatrist generally requires a referral from another medical practitioner.

Private psychiatrists provided 1,996,633 prescriptions subsidised by the PBS and RPBS in 2004–05. The most commonly prescribed drugs were antidepressants (1,081,247) and antipsychotics (334,296). PBS and RPBS expenditure for these pharmaceuticals was \$123 million, including \$65 million for antipsychotics and \$42 million for antidepressants (AIHW 2005c).