

Health services

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KEY POINTS

- In 2007–08, just over 2% of total health expenditure was for preventive services or health promotion.
- Between 1998–99 and 2008–09, there was an increase in general practitioners' management of some chronic diseases, including hypertension, diabetes and depression.
- Ambulances attended 2.9 million incidents in 2008–09, of which 39% were emergencies.
- The number of hospital admissions rose by 37% in the decade to 2007–08.
- Over half of the hospital admissions (56%) in 2007–08 were same-day admissions, compared with 48% in 1998–99.
- In 2008–09, about 1 in 9 of all prescriptions under the Pharmaceutical Benefits Scheme and Repatriation Pharmaceutical Benefits Scheme were for a mental health-related medication.

This chapter presents an overview of Australia’s health services, which are grouped into five broad categories: public health services; primary care and community health services; hospitals; specialised health services; and goods, such as medicines (see Figure 7.1). The chapter also discusses the safety and quality of health services, an important component of all health service delivery. Figure 7.1 lists examples of the types of services in each category, all of which are described in turn in this chapter.

It should be noted that these categories cannot fully convey how health services are organised in Australia, especially the complex and changing patterns of health service delivery or the similarly complex paths that some patients follow through the health sector. In addition, some types of service can belong to more than one category. For example, dental services are placed here in the primary care and community health care category, but could also be included in the specialised health services category.

For an explanation of how dates and time spans are represented see the ‘Methods and conventions’ section.

Public health services	Primary care and community health care services	Hospitals	Specialised health services	Goods
Health promotion and education Cancer screening Immunisation	General practice activity Dental Private sector allied health Community health Complementary/alternative health Ambulance and Royal Flying Doctor Service Primary health care for Aboriginal and Torres Strait Islanders	Admitted patient care Emergency department care Outpatient care	Specialist medical practitioners Specialised mental health Reproductive health Alcohol and other drug treatment Hearing Palliative care Australian Defence Force	Pharmaceuticals

Figure 7.1: Health service categories

7.1 Public health services

What is public health?

A widely used definition of ‘public health’ in Australia is:

the organised response by society to protect and promote health, and to prevent illness, injury and disability. The starting point for identifying public health issues, problems and priorities, and for designing and implementing interventions, is the population as a whole, or population sub-groups (NPHP 1997).

The term ‘public health’ is often used interchangeably with ‘population health’ and ‘preventive health’.

In essence, public health interventions focus on maintaining the wellbeing of populations rather than only individuals, and are aimed at protecting or promoting health or preventing illness. Public health services deal with the factors and behaviours that cause illness and other health problems, rather than the illness itself. The Australian Institute of Health and Welfare (AIHW) has estimated that governments spent around \$2.2 billion on public health activities in Australia in 2007–08, representing 2.3% of total health expenditure (AIHW 2009a). This was an increase over the 1.9% from previous years, largely due to a substantial increase in spending on immunisation such as the National Human Papillomavirus vaccination program.

Public health activities can take the form of screening, programs, campaigns or events. They draw on different strategies including health education, lifestyle advice, infection control, risk factor monitoring and tax loadings to discourage unhealthy lifestyle choices. They also apply in many settings, such as in schools, homes and workplaces, and through the media and general practitioner (GP) consultations, and relate to a broad spectrum of health issues. They are variously carried out by state, territory and local governments, the Australian Government, and other agencies such as cancer councils and the National Heart Foundation of Australia.

Cancer screening

Population screening involves the systematic use of a test to help identify individuals within a target population who have a particular disease or abnormality that was previously unrecognised. The screening test itself is not diagnostic. Rather, screening aims to identify people who are more likely to have, or be at high risk of, the health problem and require further investigation from diagnostic tests.

Screening for cancer allows disease to be detected and treated earlier, often leading to improved outcomes. It may also allow abnormalities to be treated to prevent cancer from occurring; however, some people will receive false results and may undergo unnecessary procedures. Population screening programs need to balance these benefits and side effects.

In Australia there are national population screening programs for breast, cervical and bowel cancers. Their goals are to reduce illness and death from these cancers through early detection of cancer and pre-cancerous abnormalities and effective follow-up treatment. These programs are BreastScreen Australia (using mammography for screening), the National Cervical Screening Program (using Pap tests) and the National Bowel Cancer Screening Program (using faecal occult blood tests). They provide screening services that are free to individuals in the target populations (for breast and bowel screening) or are covered by a Medicare rebate (for cervical screening). One measure of the effectiveness of population screening programs is the proportion of people in the target population that participates in the program.

BreastScreen Australia

BreastScreen Australia was established in 1991 (see Box 7.1). The program is aimed primarily at females aged 50–69 years, but also screens those aged 40–49 years and 70 years or over.

Of the females who participated in BreastScreen Australia in 2007–2008, 77.6% were aged 50–69 years, 13.9% were aged 40–49 years and 8.6% were aged 70 years or over. This reflects the focus of BreastScreen Australia on actively recruiting the target age group. Over time the proportion of participants who were in the target age group has increased, with a corresponding decrease in the proportion of females screened aged 40–49 years and 70 years and over.

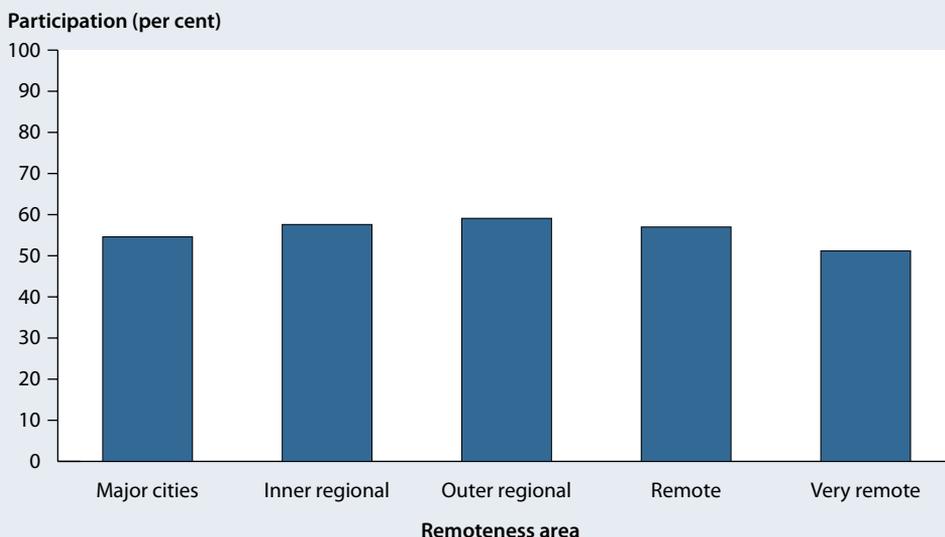
Box 7.1: BreastScreen Australia

BreastScreen Australia was established in 1991 as the National Program for the Early Detection of Breast Cancer, and is a joint program of the Australian and state and territory governments. The main objective of BreastScreen Australia is to reduce illness and death from breast cancer. Females aged 50–69 years are the primary target group, as evidence indicates that these are the years of higher risk and most benefit from screening. Females aged 40–49 years and 70 years and over are also eligible to attend.

BreastScreen Australia provides free mammographic screening and assessment for females in the target age group every 2 years. Females have their screening mammography performed at a screening unit (which may be fixed, relocatable or mobile), and if possible signs of breast cancer are identified they are recalled for further investigation by a multidisciplinary team at an assessment centre. Most of those recalled for assessment are found not to have breast cancer.

The proportion of females in the target age group of 50–69 years who were screened through BreastScreen Australia in a 2-year period rose from 51.4% in 1996–1997 (the first period for which national data are available) to 57.1% in 2001–2002, with subsequent rates fluctuating around 56%. Participation in 2007–2008 was 54.9%.

In 2007–2008, participation in BreastScreen Australia varied by geographical region of residence. Inner regional, outer regional and remote locations showed significantly higher levels of participation than major cities (about 1.1 times major cities) whereas participation was significantly lower in very remote locations (0.94 times Major cities) (Figure 7.2).



Note: Geographical regions were assigned using the participant's residential postcode according to the Australian Standard Geographical Classification for 2006.

Source: AIHW analysis of BreastScreen Australia data.

Figure 7.2: Participation by females aged 50–69 in BreastScreen Australia, by geographical region, 2007–2008

National Cervical Screening Program

Organised cervical screening in Australia began in 1991 under the National Cervical Screening Program, and is aimed at females aged 20–69 years (see Box 7.2). Participation in the National Cervical Screening Program has remained steady at around 61% for most years since reporting began in 1996–1997. The proportion of the target population participating in the 2-year period 2007–2008 was 61.2%. Participation was highest in females aged 55–59 years (69.7%) and lowest in those aged 20–24 years (47.4%) (Figure 7.3). This reflects the trend seen between 1996–1997 to 2007–2008 of declining participation in females aged less than 40 years, most prominent in the 25–29 year age group, and increasing participation in females aged 55 years and over.

In 2007–2008, participation in the National Cervical Screening Program varied by geographical region of residence, although in a different pattern from breast screening. While participation was similar (around 61%) in major cities, inner regional and outer regional locations, it was significantly lower in remote and very remote locations (54.6% and 59.0% respectively) (Figure 7.4).

Box 7.2: National Cervical Screening Program

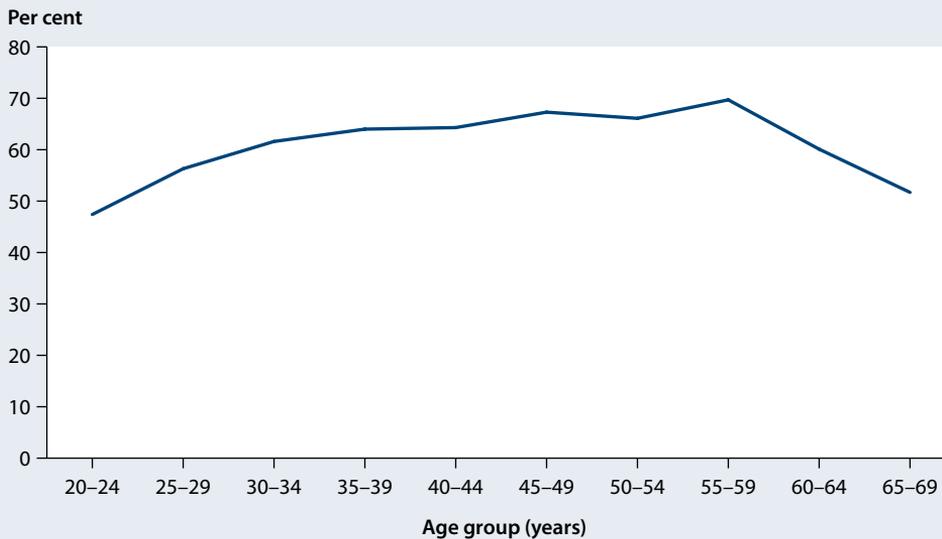
The National Cervical Screening Program was established in 1991 and is a joint program of the Australian and state and territory governments. The program is aimed at females aged 20–69 years. Its objective is to reduce both the incidence of and death from cervical cancer by identifying treatable pre-cancerous lesions as well as cervical cancer. Cervical screening uses the Pap test, which involves examining a sample of cells taken from the uterine cervix under a microscope to look for abnormalities. Referral for diagnostic follow-up will occur if abnormal or cancerous cells are detected. Early detection of pre-cancerous abnormalities allows treatment to prevent possible progression to cervical cancer, while early detection of cervical cancer improves treatment options and outcomes.

Unlike breast cancer screening, cervical screening in Australia does not operate through dedicated services. Instead it is provided as part of mainstream health services, with the great majority of Pap tests performed by general practitioners. Females may claim Medicare rebates for their Pap tests and any subsequent diagnostic follow-up services, including pathology and colposcopy.

National policy for the National Cervical Screening Program currently recommends:

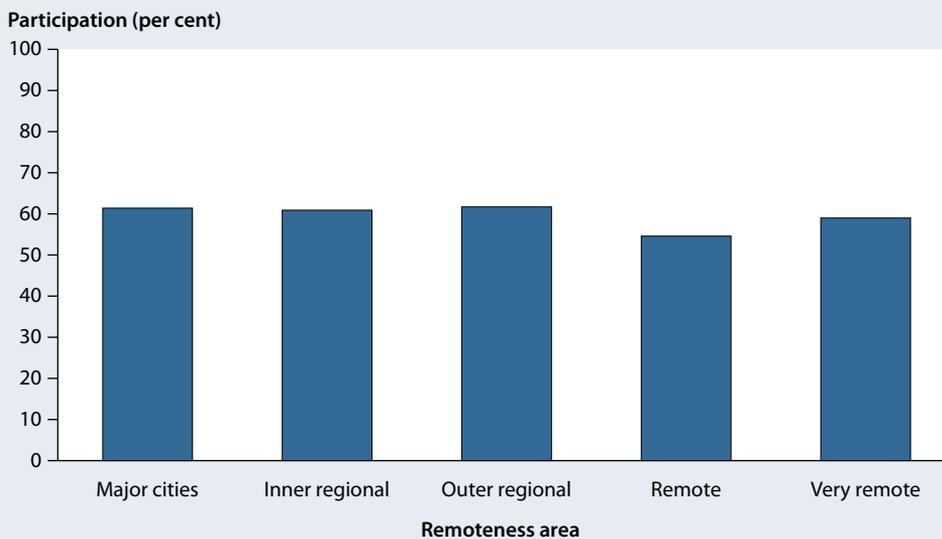
- females who have been sexually active should begin Pap tests between the ages of 18 and 20 years, or 1 or 2 years after first having sexual intercourse, whichever is later
- routine screening with Pap tests should occur every 2 years for females without symptoms or with a history that suggests cervical problems or abnormalities
- Pap tests may cease at the age of 70 years for females who have had two normal results within the last 5 years. Females over 70 years who have never had a Pap test, or who request one, should be screened.

This policy applies to females who have received the vaccine introduced in 2007 against human papillomavirus as well as to unvaccinated females.



Source: AIHW analysis of state and territory cervical cytology register data.

Figure 7.3: Participation by females aged 20-69 in the National Cervical Screening Program, by age, 2007-2008



Note: Geographical regions were assigned using the participant's residential postcode according to the Australian Standard Geographical Classification for 2006.

Source: AIHW analysis of state and territory cervical cytology register data.

Figure 7.4: Participation by females aged 20-69 in the National Cervical Screening Program, by geographical region, 2007-2008

National Bowel Cancer Screening Program

The National Bowel Cancer Screening Program began in August 2006, with screening being offered to both males and females aged 55 and 65 years. In July 2008 the program was extended to people aged 50 years (see Box 7.3). After adjusting for the lag time between receiving an invitation to screen and participating in the program, the proportion of people participating in 2008 was estimated to be 39.3%. This was lower than previous years because of the inclusion of the 50 year old invitees late in 2008.

Box 7.3: National Bowel Cancer Screening Program

The major goals of the National Bowel Cancer Screening Program are to reduce both the incidence of and death from bowel cancer by detecting abnormalities of the colon and rectum early. Early detection of both pre- and non-cancerous abnormalities can prompt medical intervention to avert possible progression to bowel cancer. Where bowel cancer has already developed, detection at an early stage makes treatment much more effective.

The program is being phased in gradually to help ensure that health services, such as colonoscopy and treatment services, are able to meet any increased demand. The first phase of the National Bowel Cancer Screening Program began in August 2006 and invited people aged 55 or 65 years to participate. In July 2008 the program was extended to include people aged 50 years.

Eligible people are individually invited to participate in the program through Medicare Australia. Invitation packs include a faecal occult blood test (FOBT) kit that allows a person's faeces to be tested for blood that is not normally visible to the naked eye but may be a sign of cancer. Participants are asked to post their completed FOBT to the program's pathology laboratory for analysis, using the postal kits provided. The results of this analysis are then sent to the participant, the participant's nominated general practitioner (GP) and the National Bowel Cancer Screening Register. Participants with a positive result, meaning that they have blood in their faeces, are advised to consult their GP to discuss further testing. In most cases this will be colonoscopy, a procedure in which the inside of the large bowel (the colon) is viewed through a long flexible tube inserted through the anus.

The program is coordinated at the national level by the Australian Government Department of Health and Ageing, in partnership with state and territory governments. The National Bowel Cancer Screening Register is maintained by Medicare Australia, and its major functions are to:

- invite eligible people to participate in the screening program
- ensure follow-up of people with positive FOBT results
- provide monitoring data to aid reporting and management.

A change in the FOBT kit in December 2008 was found to yield unreliable results and led to suspension of the program in May 2009. A replacement FOBT kit was subsequently listed by the Therapeutic Goods Administration on the Australian Register of Therapeutic Goods, and the program resumed in November 2009.

Participation rates increased with age, ranging in 2008 from 31.7% for 50 year olds and 38.9% for 55 year olds to 47.7% for 65 year olds. Females were more likely to participate than males (42.6% and 36.0% respectively) (Table 7.1).

In 2008, participation in the program also varied by geographical region of residence. Inner regional and outer regional locations showed significantly higher levels of participation than major cities (1.1 and 1.03 times major cities respectively), while participation was significantly lower in very remote locations (0.7 times major cities) (Figure 7.5) (AIHW 2009b).

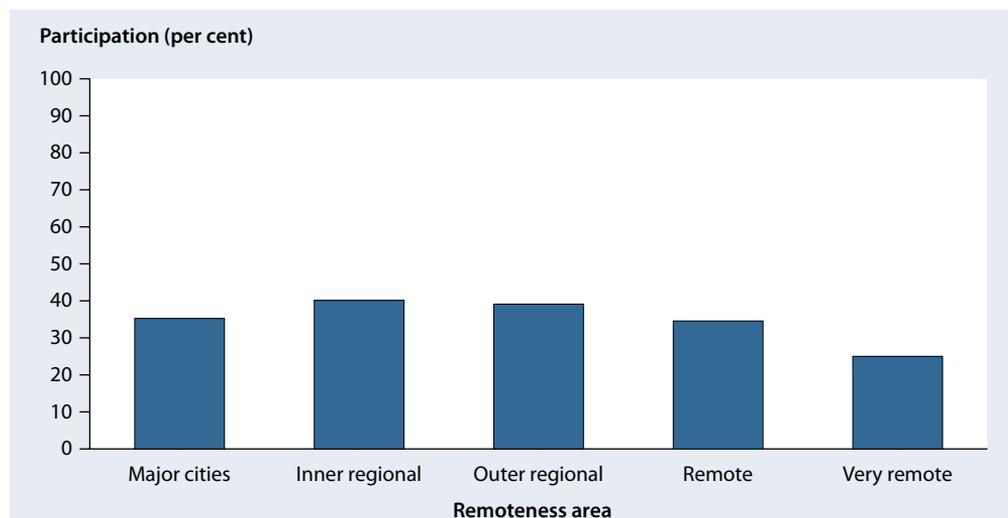
Table 7.1: Estimated participation in the National Bowel Cancer Screening Program, 2008

	Invitations	Participants	Estimated participation (per cent)
Males	344,199	115,021	36.0
Females	341,716	136,131	42.6
Persons	685,915	251,152	39.3

Notes

1. Participants in the program are defined as members of the eligible population who have been sent an invitation to screen and who returned a completed faecal occult blood test (FOBT) kit.
2. Participation rates are the estimated Kaplan-Meier participation rate of people who returned a completed FOBT kit as a proportion of the total number of the eligible population who were invited to be screened in 2008. This excludes people who suspended or opted off the program.
3. People aged 50 years were invited to be screened from 1 July 2008.

Source: AIHW analysis of National Bowel Cancer Screening Register data as at 31 January 2009.



Notes

1. Participants in the program are defined as members of the eligible population who have been sent an invitation to screen and who returned a completed faecal occult blood test (FOBT) kit.
2. Geographical regions were assigned using the participant's residential postcode according to the Australian Standard Geographical Classification for 2006.
3. Participation rates equal the number of people who returned a completed FOBT kit as a proportion of the total number of the eligible population who were invited to be screened in 2008. This excludes people who suspended or opted off the program.
4. People aged 50 years were invited to be screened from 1 July 2008.

Source: AIHW analysis of National Bowel Cancer Screening Register data as at 31 January 2009.

Figure 7.5: Participation in the National Bowel Cancer Screening Program, by geographical region, 2008

Immunisation services

This section provides information on administration of childhood and adult vaccinations, as well as information on the Immunise Australia Program (see Box 7.5). Information on immunisation coverage is presented in Chapter 3.

Box 7.5: Immunise Australia Program

The Immunise Australia Program aims to increase national immunisation rates by funding free immunisation, administering the Australian Childhood Immunisation Register and communicating information to the general public about immunisation. The National Health and Medical Research Council—with expert advice from the Australian Technical Advisory Group on Immunisation—recommends a range of vaccinations for all children, older persons and others (including Indigenous Australians) who are medically at higher risk from vaccine-preventable diseases. It does this by issuing the National Immunisation Program Schedule. For the diseases listed on the schedule, free vaccines are funded by the Australian Government and administered mainly by general practitioners or nurses. States and territories can choose the vaccines on the schedule that best suit the health needs of their jurisdiction.

Childhood vaccinations

The National Immunisation Program Schedule currently covers children's vaccinations for diphtheria, tetanus, pertussis (whooping cough), polio, measles, mumps, rubella, *Haemophilus influenzae* type b, meningococcal type C disease, varicella (chickenpox), pneumococcal disease, hepatitis B, rotavirus and, for females aged 12–13 years, human papillomavirus. Aboriginal and Torres Strait Islander children living in high-risk areas are also immunised for hepatitis A.

In 2008–09, over 4 million vaccinations were administered to children nationally (Table 7.2). Across the six states and the Australian Capital Territory, the great majority of these (74%) were done in general practice. In the Northern Territory, however, most vaccinations (64%) were administered through community health centres. In Victoria about two-fifths were administered by local government councils, while in the Australian Capital Territory about two-fifths were administered through community health centres.

Table 7.2: Childhood vaccinations by type of provider, state and territory, 2008–09

Provider type	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust ^(a)
	Per cent								
General practice	86.8	56.0	83.9	68.7	72.0	91.5	55.9	10.2	74.0
Local government council	4.2	42.5	6.1	3.4	20.3	8.0	—	—	14.8
Community health centre/ nurse	7.5	0.3	6.3	17.9	6.3	0.0	43.4	63.5	7.9
Hospital	0.9	1.0	2.8	1.6	0.6	0.4	0.7	8.1	1.5
State/territory health department	—	—	—	7.9	0.1	—	—	0.4	0.9
Aboriginal health service or worker	0.6	0.2	0.7	0.4	0.6	—	—	17.8	0.8
Other	—	0.1	0.2	0.1	—	—	—	—	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total vaccinations ('000)	1,322	1,038	922	489	294	90	66	69	4,291

(a) Includes Cocos/Keeling Island, Christmas Island, Norfolk Island and unknown; therefore rows do not add up to the total 'Australia' column.

Source: Medicare Australia unpublished data.

Adult vaccinations

Influenza and pneumococcal vaccines are available free to all Australians aged 65 years or over, to Indigenous Australians aged 50 years or over, and to medically at-risk Indigenous Australians aged 15–49 years.

For those in the main target group who were vaccinated in 2006, over 98% received their influenza vaccination from a GP. However, for those aged under 65 years who were vaccinated, about 80% received it from a GP and 15% received it at their place of work (AIHW 2008).

7.2 Primary care and community health services

Primary care and community health services are usually the first health service visited by a patient with a health concern. These services include care from GPs, private dentists, pharmacists, physiotherapists and various other practitioners. They play an important role in monitoring an individual's health and managing many health conditions; and many practitioners establish an ongoing relationship with their patient. This section discusses a range of primary care services, as listed in Figure 7.1.

General practitioner and other non-specialist services

Medicare provides funding for general practitioner services, medical specialist services and other services (such as optometry and practice nurse services). The information in this section uses both Medicare data (see boxes 7.5 and 7.6) and data from the Bettering the Evaluation and Care of Health (BEACH) survey of general practice activity (see Box 7.7).

Medicare data provide an overview of the use of GP and other non-medical specialist services funded through Medicare, including services provided outside hospitals as well as non-medical specialist services for private patients in public and private hospitals. Medicare data on specialist medical services is presented in Section 7.4, later in this chapter.

Medicare provided benefits for 131.6 million non-specialist medical services during 2008–09, representing an increase of 5.9% over the 124.3 million services the previous year. Some of this increase in numbers can be attributed to population growth but it also represents an overall 4.3% increase in the number of GP and non-specialist items per 100,000 population (Medicare 2009). In 2008–09, an average 6.10 non-specialist services per Australian were provided under Medicare.

Non-referred medical attendances (that is, GP services, emergency attendances after hours, other prolonged attendances, group therapy, and acupuncture) accounted for 86% of these services with the remaining services being *Optometry*, *Practice nurse* and *Other allied health items* (Table 7.3). Between 2006–07 and 2008–09 the largest increases were recorded for the allied health group.

In 2007–08, an average 5.85 non-specialist services per Australian were provided. The largest areas of increase from 2007–08 to 2008–09 occurred in *Non-referred medical attendances* (from 5.16 to 5.24) and in *Other allied health* (from 0.18 to 0.32). The introduction of new service items—that is, new services eligible for Medicare funding—accounted for some of this increase.

Box 7.5: Medicare and Medicare benefits

Australia's universal health insurance scheme, Medicare, came into operation on 1 February 1984. As with the Pharmaceutical Benefits Scheme (see Box 7.12), it aims to make health care affordable for all Australians. Administered by Medicare Australia, the scheme provides for free or subsidised treatment by medical practitioners, participating optometrists, services delivered by a practice nurse on behalf of a general practitioner (GP), certain diagnostic and therapeutic procedures and, for certain services, eligible dentists and allied health practitioners.

All Australian residents are eligible for Medicare. Short-term visitors are not eligible unless they are covered by a reciprocal health-care agreement and the services are of immediate medical necessity. The majority of Australian taxpayers contribute indirectly to the cost of Medicare through a Medicare levy, which is presently 1.5% of taxable income. Individuals and families on higher incomes may have to pay a 1% surcharge in addition to the Medicare levy if they do not have private hospital insurance.

Medicare has established a schedule of fees for medical services that private practitioners can charge for their various services. The payments—known as 'benefits'—that Medicare contributes for those services are based on those fees (see below). Practitioners are not obliged to adhere to the schedule fees, except in the case of participating optometrists and when practitioners bill Medicare directly, known as bulk-billing. However, if they bulk-bill Medicare Australia for any service rather than issuing a patient with an account, Medicare then pays the benefit amount and additional charges cannot be raised for the service and the patient pays nothing for it.

For private patients who are admitted to hospitals or day-hospital facilities, the Medicare benefit is 75% of the schedule fee. For non-hospital services, Medicare pays up to 100% of the schedule fee for GP consultations and up to 85% for services provided by medical specialists. The patient is responsible for the gap between the benefit paid and the schedule fee, up to a maximum of \$69.10 per service item (from 1 November 2009), indexed annually. Patients are also responsible for payments of amounts charged above the schedule fee.

Further measures take into account situations where, despite normal Medicare benefits, the costs over time for a patient or family may still become a burden. First, for out-of-hospital services the maximum amount of gap payable by a family group or an individual in any one calendar year is \$388.80 (from 1 January 2010), indexed annually. Thereafter, patients are reimbursed 100% of the schedule fee unless the service was billed at less than the schedule fee. Second, under the extended safety net, Medicare will meet 80% of the out-of-pocket costs (that is, the difference between the fees charged by the doctor and the Medicare benefits paid) for out-of-hospital medical services, once an annual threshold is reached (\$562.90 for families in receipt of Family Tax Benefit Part A and for concession card holders, or \$1,126.00 for all other individuals and families). In addition, for medical expenditure in certain categories (including Medicare payable items), a 20% rebate on net medical expenses over \$1,500 can be claimed through the income tax system.

Another component of Medicare—sometimes termed ‘hospital Medicare’—provides free public hospital care for all Australian residents, either as an admitted patient, outpatient or emergency department patient. Doctors appointed by the hospitals provide medical care for such ‘public’ patients at no cost to the patient. Patients who choose to be treated in private hospitals, or as private patients in public hospitals, are liable for hospital accommodation and other charges, and for a portion of the medical fees charged by private practitioners.

Box 7.6: Medicare statistics

Medicare data provide information on all health services subsidised through the Medical Benefits Schedule (MBS). The MBS covers a range of different services, from a single doctor consultation to multiple pathology tests for a single patient episode, each of which is counted as a separate item. Consequently, it is not possible to directly compare different types of services based on the number of Medicare items. Also, for this reason the terms ‘items’ or ‘items of service’ are generally used when referring to Medicare services.

The count of items is subject to changes in bundling and unbundling of services, so the count is not always completely comparable between years. Further, the scope of coverage has changed over time; in particular, new items have been introduced in the past few years to cover things such as:

- practice nurses providing services on behalf of a GP
- mental health services provided by registered psychologists, clinical psychologists, occupational therapists and social workers
- allied health practitioner services for people with complex conditions who are being managed by a medical practitioner under an Enhanced Primary Care multidisciplinary care plan.

Benefits paid

In 2008–09, a total of \$5,670 million was paid in Medicare benefits for non-specialist services, accounting for 40% of total Medicare benefits paid. The vast majority of these were paid for the 113 million *Non-referred medical attendances* (82% of non-specialist benefits or \$4,624 million). A further \$281.5 million (5%) was paid for 6.1 million *Optometry* items and \$702.4 million (12%) for 6.9 million *Other allied health* items (Table 7.3). Between 2006–07 and 2008–09 the number of services processed for GP and other non-specialist services increased, in particular for *Other allied health* items, reflecting the introduction of new mental health items noted in Box 7.6.

Table 7.3: Medicare services processed for GP and other non-specialist services, 2006–07 to 2008–09

Broad type of service	Services per person				Items in 2008–09		
	Number			Average annual change (%)	Number ('000)	Benefits paid (\$ million)	Proportion of total benefits (%)
	2006–07	2007–08	2008–09				
Non-referred medical attendances ^(a)	4.9	5.2	5.2	3.0	113,045	4,623.9	81.6
Optometry	0.3	0.3	0.3	4.4	6,138	281.5	5.0
Other allied health	0.1	0.2	0.3	108.1	6,934	702.4	12.4
Practice nurse	0.2	0.2	0.3	20.4	5,468	62.0	1.1
Total non-specialist items ^(b)	5.5	5.9	6.1	5.8	131,585	5,669.8	100.0

(a) Includes GP attendances, emergency attendances, attendances after hours, other prolonged attendances, group therapy and acupuncture.

(b) Excludes dental services covered by Medicare.

Source: Medicare Australia 2009.

General practice activity

An insight into GP clinical activity and practice patterns since 1998 can be derived from data from the BEACH study, a continuous survey of general practice activity in Australia (see Box 7.7). The following pages provide an overview of results from the eleventh year of the BEACH study, and describes some changes in practice patterns from 1998–99 to 2008–09. This section also includes some data relating to the Medicare Benefits Schedule (MBS) and data from the Department of Health and Ageing data on general practice services for particular population groups and for specific health problems. For each BEACH year of reporting, data are based on the 12-month period April to March.

Box 7.7: The BEACH study of general practice activity

The Bettering the Evaluation and Care of Health (BEACH) study is run by the Australian General Practice Statistics and Classification Centre (a collaborating unit of the Australian Institute of Health and Welfare) and the Family Medicine Research Centre, University of Sydney. BEACH began in April 1998 and each year about 1,000 general practitioners (GPs) participate from a random sample of GPs who claimed at least 375 general practice Medicare items of service in the previous 3 months. These GPs provide details of about 100,000 GP–patient encounters, which represent more than 100 million such encounters across the country each year. No information identifying patients is collected.

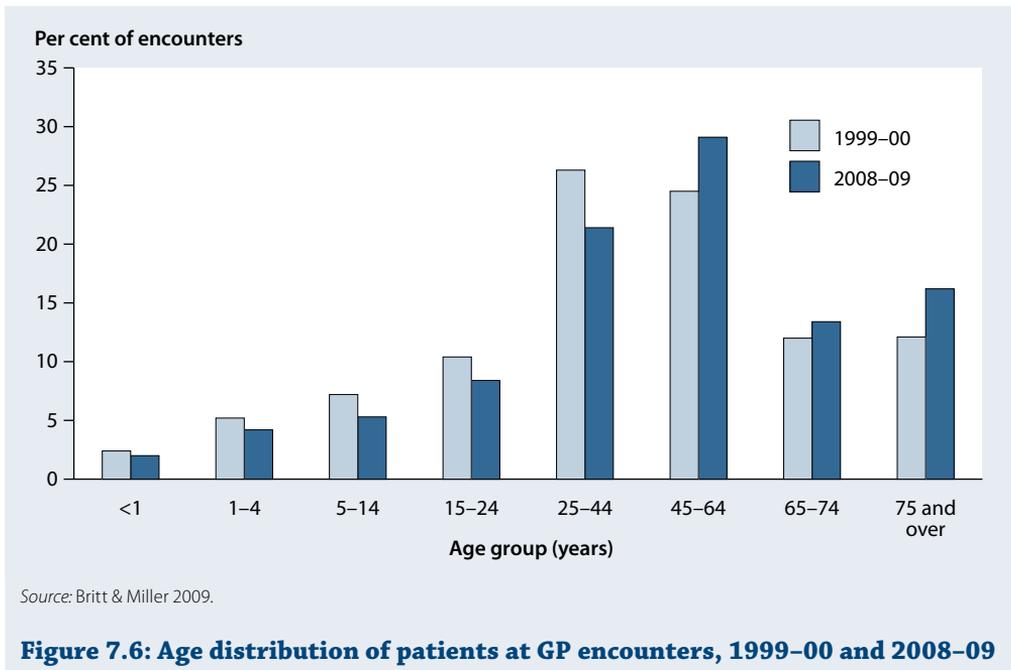
The figure of 375 general practice Medicare items of service in 3 months ensures that most part-time GPs are included in the study, while excluding those who are not in private practice but may claim for a few consultations a year. Each participating GP completes details for 100 consecutive patient encounters on structured paper encounter forms and provides information about themselves and their practice. Questions about selected patient health risk factors and health conditions are asked of subsamples of patients.

From April 2008 to March 2009 inclusive, 1,011 GPs provided details for 101,100 patient encounters. After statistically adjusting for the fact that young GPs were under-represented, there were 96,688 encounters on which the following results in this section are based.

In the BEACH study, GPs record their diagnosis or description of the problem managed and also the reasons given by the patient for the visit.

Who accounts for most encounters with general practitioners?

In 2008–09, patients aged 45 years and over accounted for the majority (59%) of GP encounters—patients aged less than 25 years accounted for 20% of encounters, 25–44 years for 21%, 45–64 years for 29% and patients aged 65 years and over for 30%. The age profile of patients seen at encounters with GPs is changing. In the ten years between 1999–00 and 2008–09, there was an increase in the proportion of encounters with patients aged 45–64 years (from 24.5% to 29.1% of total encounters recorded) and 75 years and over (12.1% to 16.2%). There was a corresponding decrease in the proportion of younger patients. Specifically, encounters with patients aged under 1 year fell (from 2.4% to 2.0% of all encounters), as did those with patients aged 1–4 years (5.2% to 4.2%) and 5–14 years (7.2% to 5.3%). There was also a statistically significant decrease in the proportion of patients aged 25–44 years (from 26.3% to 21.4%) (Figure 7.6). Females accounted for 57.5% of all GP encounters in 2008–09.



Why do people see a general practitioner?

For every 100 GP-patient encounters, patients presented with an average of 157 reasons for their encounters. These are the patients' reasons for seeing the doctor, as stated or implied by the patient to the GP.

A request for a partial or full check-up was the most common reason for encounter (15.2 per 100 encounters), followed by the need for medication or repeat prescriptions (12.6 per 100) and attendance to receive test results (7.8 per 100). The fifth most common reason was a need for immunisation or vaccination (Table 7.4). Frequent symptoms included cough, throat complaints, back complaints, rash, fever and abdominal pain.

Since 1998, the frequency of patient presentations to GPs to get test results has doubled, and requests for prescriptions have risen 40%. Patient reasons for encounters associated with symptoms such as abdominal pain, headache and ear pain fell by 20-27% over these years.

Table 7.4: GP consultations: 20 most frequent patient reasons for encounter, 2008–09

Patient reason for encounter	Per cent of total reasons	Per 100 encounters
Check-up	9.7	15.2
Prescription	8.0	12.6
Test results	5.0	7.8
Cough	4.3	6.8
Immunisation and vaccination	3.4	5.3
Throat complaint	2.0	3.2
Back complaint	2.0	3.1
Rash	1.7	2.6
Upper respiratory tract infection	1.5	2.3
Hypertension and high blood pressure	1.4	2.1
Administrative procedure, not otherwise stated	1.3	2.1
Depression	1.3	2.1
Fever	1.2	1.9
Abdominal pain	1.1	1.7
Headache	1.0	1.6
Skin complaint	0.9	1.5
Weakness or tiredness	0.9	1.5
Ear pain	0.9	1.4
Shoulder complaint	0.9	1.4
Knee complaint	0.8	1.3

Source: Britt et al. 2009.

What problems do general practitioners manage?

GPs report the problems managed at each encounter. Sometimes the problems are described in terms such as ‘check-up’, or in terms of a symptom or complaint if they remain undiagnosed at the end of the consultation. GPs managed an average 1.5 problems at each patient encounter in 2008–09. The number of problems managed increased with age, from 119 problems per 100 encounters among babies (under 1 year) to 176 with the elderly (75 years and older).

In 2008–09, problems related to the respiratory system, the cardiovascular system, the musculoskeletal system and the skin together accounted for about 50% of all problems managed. The 20 problems most frequently managed accounted for 44% of all problems managed. The most common problem was hypertension (high blood pressure) followed by check-up, upper respiratory tract infection, immunisation/vaccination, depression, diabetes, lipid disorders (high cholesterol) and arthritis (Table 7.5).

Over one-third of the problems managed were chronic in nature. At least one chronic problem was managed at 42% of all encounters and chronic problems were managed at an average rate of 55 per 100 encounters.

The chronic problems managed most often by GPs were hypertension, depressive disorder, diabetes, lipid (cholesterol-related) disorders, chronic arthritis, oesophageal disease and asthma. Together these seven accounted for more than half of chronic problems managed. However, they accounted for only 20% of the total problems managed.

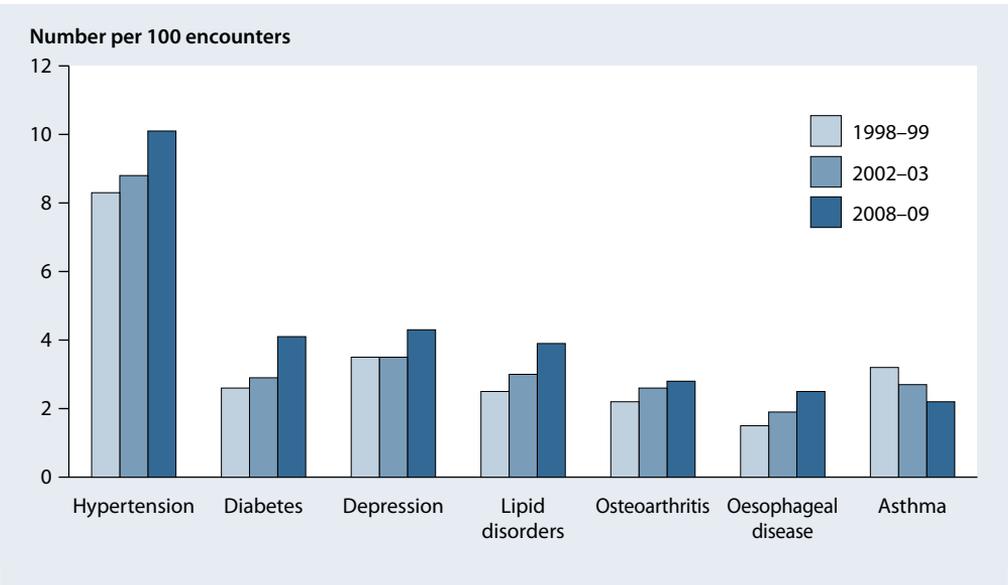
Table 7.5: GP consultations: 20 problems most often managed, 2008–09

Problem managed	Per cent of total problems	Per 100 encounters
Hypertension	6.5	10.1
Check-up	4.3	6.7
Upper respiratory tract infection	4.0	6.1
Immunisation and vaccination	3.7	5.7
Depression	2.8	4.3
Diabetes	2.6	4.1
Lipid disorders	2.5	3.9
Arthritis	2.5	3.8
Back complaint	1.8	2.7
Acute bronchitis and bronchiolitis	1.7	2.6
Oesophageal disease	1.6	2.5
Asthma	1.4	2.2
Prescription	1.4	2.1
Anxiety	1.2	1.9
Contact dermatitis	1.2	1.9
Urinary tract infection	1.1	1.7
Sleep disturbance	1.0	1.6
Test results	1.0	1.5
Sprain and strain	0.9	1.4
Gastroenteritis	0.9	1.4

Source: Britt et al. 2009.

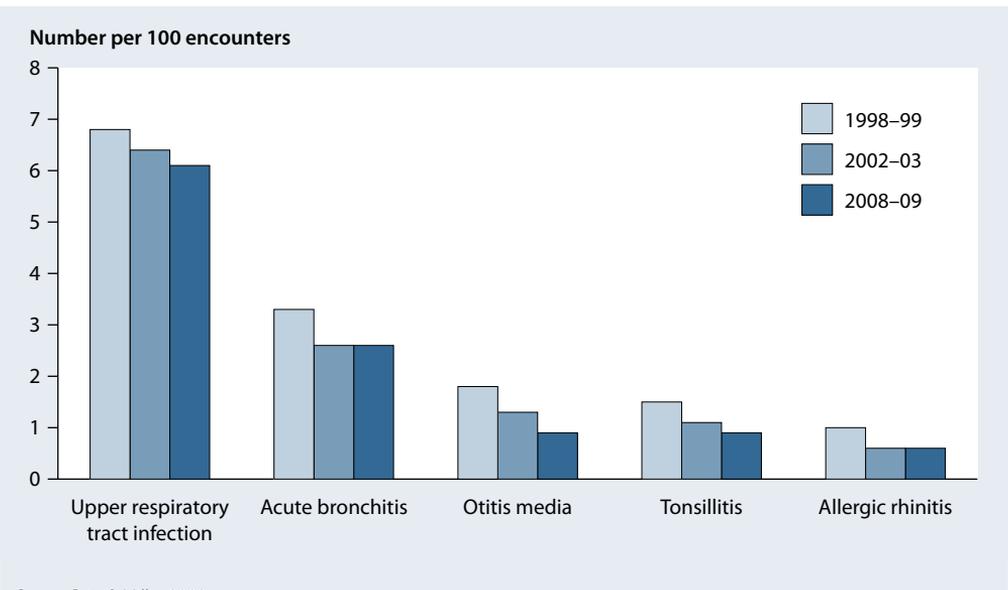
Between 1998–99 and 2008–09, there were statistically significant increases in the management rate of certain chronic problems including: hypertension, diabetes, depression, lipid disorders and oesophageal disease; and there was a marginal increase in the management rate of osteoarthritis (Figure 7.7). Over the same period there was a statistically significant decrease in the management rate of asthma.

Some acute problems are being managed less often than they were previously, including upper respiratory tract infections, acute bronchitis, otitis media, tonsillitis and allergic rhinitis (Figure 7.8).



Source: Britt & Miller 2009.

Figure 7.7: Changes in GP management rate of selected individual problems



Source: Britt & Miller 2009.

Figure 7.8: Changes in GP management rate of selected acute problems

How do general practitioners manage problems?

GPs have a variety of techniques to manage patients' health problems. One is the provision of medications, either by prescription, by recommendation for over-the-counter purchase, or by direct supply of some vaccines and product samples. Other techniques are to carry out or order tests and investigations, undertake procedures, refer the patient to other services, and provide advice and counselling. At the 96,688 encounters recorded in the 2008–09 BEACH sample, GPs undertook 219,525 management activities in total—227 per 100 encounters and 147 per 100 problems managed. For 14% of problems managed, no specific management actions were recorded.

The most common form of management was provision of medications (prescribed, GP-supplied, or advised). For an 'average' 100 GP–patient encounters, GPs provided 86 prescriptions, carried out 34 clinical treatments, undertook 17 procedures, made 9 referrals to specialists and 4 to allied health services, and placed 46 pathology test orders and 10 imaging test orders (Table 7.6).

Table 7.6: GP consultations: management activities, 2008–09

Management type	Number per 100 encounters	Number per 100 problems
Medications	106.3	68.7
Prescribed	86.4	55.9
GP-supplied	11.0	7.1
Advised for over-the-counter purchase	8.9	5.7
Other treatments	50.7	32.8
Clinical (advice or counselling)	34.0	22.0
Procedures	16.7	10.8
Referrals	13.7	8.9
Specialist	9.0	5.8
Allied health	3.9	2.5
Hospital	0.3	0.2
Emergency department	0.2	0.1
Other medical services	0.1	0.0
Other referral	0.3	0.2
Pathology	45.6	29.5
Imaging	9.8	6.3
Other investigations	1.0	0.6
Total management activities	227.1	146.8

Source: Britt et al. 2009.

There were 106 medications recorded per 100 encounters, or 69 per 100 problems managed. The great majority of these (81.3%) were prescribed. Medications were prescribed at a rate of 86 per 100 encounters or 56 per 100 problems managed. At least one medication was prescribed for 45% of problems managed.

Over the latest eleven years there was a statistically significant decrease in the rate of prescribed medications, from 94 per 100 encounters in 1998–99 to 86 per 100 in 2008–09.

The use of advice or counselling in managing problems increased from 31 per 100 encounters in 1998–99 to 39 per 100 in 2004–05 but then declined to 29 per 100 in 2005–06. It increased again to 34.0 per 100 in 2008–09. The reasons for the fluctuations in these rates are unclear but may be related to the changing role of practice nurses in general practice.

GPs are undertaking more procedures, with numbers increasing from 12 per 100 encounters in 1998–99 to 17 in 2008–09. They are also referring their patients more often (from 11 per 100 encounters in 1998–99 to 14 in 2008–09). There have been statistically significant increases in referrals to specialists (from 7 to 9 per 100 encounters), and to allied health professionals (from 3 to 4 per 100 encounters).

Since 2000–01, the rate of pathology test ordering has increased by over 50%, from 30 test orders per 100 encounters to 46 in 2007–08. There was also a smaller but statistically significant increase in the rate of imaging tests ordered, from 8 per 100 encounters in 2000–01 to 10 in 2008–09.

In 1999–2000, Medicare Enhanced Primary Care items were introduced for GPs as incentives to use more health assessments, care plans and case conferencing, provide more preventive care, and improve coordination of care for older patients and those with chronic conditions and complex care needs. Health assessments were not commonly recorded by GPs during 2008–09, comprising only 0.3% of all Medicare items recorded at BEACH encounters.

Use of antibiotics to treat upper respiratory tract infections

This section presents information on the management of upper respiratory tract infections (URTIs) by GPs. In 2008–09, URTI was the third most frequently managed problem in Australian general practice, managed 6.1 times per 100 encounters (compared with 7.2 per 100 encounters for 1999–2000) (Britt & Miller (eds) 2009).

URTI was the second most common problem for which antibiotics were prescribed or supplied in 2007–08 (14.4% of such problems), followed by acute bronchitis/bronchiolitis (14.5%) (unpublished BEACH data). However, URTIs without complications are most often caused by viruses, and the use of antibiotics is not recommended as they are ineffective in treating viral infections. Overuse of antibiotics increases antibiotic resistance in the general population, so a decline in their prescribing rate for URTI may be an indication of more appropriate management of viral infections.

The rate in prescription or supply of antibiotics for URTI declined from 38.7 per 100 URTI problems in 2000–01 to 34.6 per 100 in 2006–07, but increased in 2008–09 to 39.1.

Antibiotics prescribed for URTIs broadly fall into four categories: cephalosporins, narrow spectrum antibiotics (penicillin), broad spectrum antibiotics and ‘other’ (includes tetracyclines and macrolides). The increase in the rate between 2006–07 and 2008–09 reflected small, but not statistically significant, increases in each of the groups except the narrow spectrum penicillins.

How are general practitioners’ services funded?

Most GP services are funded through Medicare. Small proportions are funded by the Department of Veterans’ Affairs (DVA), and by additional fees to the patient (out-of-pocket), by workers’ compensation, employers, states and territories (hospitals or other state agencies), the Australian Defence Force, and privately by individuals who do not

qualify for Medicare, such as visitors from overseas. A small proportion of GP services are also delivered without charge.

For 96,688 GP-patient encounters in 2008–09, Table 7.7 shows the breakdown of encounter type (by payment source), counting a single Medicare item number per GP-patient encounter. Direct encounters (where the patient was seen by the GP) accounted for 98.6% of all encounters, with about 95% of all direct encounters claimable either through Medicare or the DVA. Direct encounters where the GP indicated that no charge was made accounted for 0.5% of encounters and indirect encounters (where the patient was not seen by the GP) accounted for 1.4%. Encounters payable through workers' compensation accounted for 2.2% of all encounters.

Table 7.7: BEACH GP encounter type by payment source, 2008–09

Type of encounter	Number	Per cent of all encounters
Direct encounters	89,185	98.6
Medicare/DVA items of service	86,118	95.2
Workers' compensation	1,950	2.2
Other paid (hospital, state, etc.)	707	0.8
No charge	424	0.5
Indirect encounters	1,303	1.4
Practice nurse only items (indirect encounters)	9	0.0
Other indirect encounters	1,294	1.3
Practice nurse only items (unspecified)	3	0.0

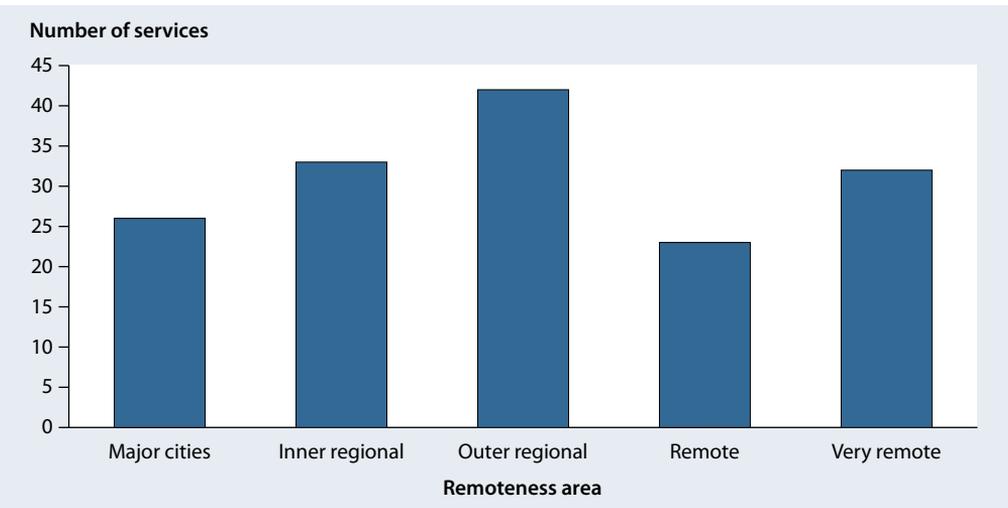
Note: Does not include 6,197 encounters for which payment source was not specified.

Source: Britt et al. 2009.

Primary health-care services for Aboriginal and Torres Strait Islander people

While Aboriginal and Torres Strait Islander people can access a wide range of primary care services, mainstream services such as hospitals and general practices are not always accessible to, or the most appropriate provider for, Indigenous Australians. In fact, *Australia's health 2008* concluded that Indigenous Australians tend to use mainstream services differently from the rest of the Australian population (AIHW 2008). Because of this, and the relatively poor health status of Aboriginal and Torres Strait Islander people generally, the Australian Government and state and territory governments provide funds for specific health-care services to meet their needs.

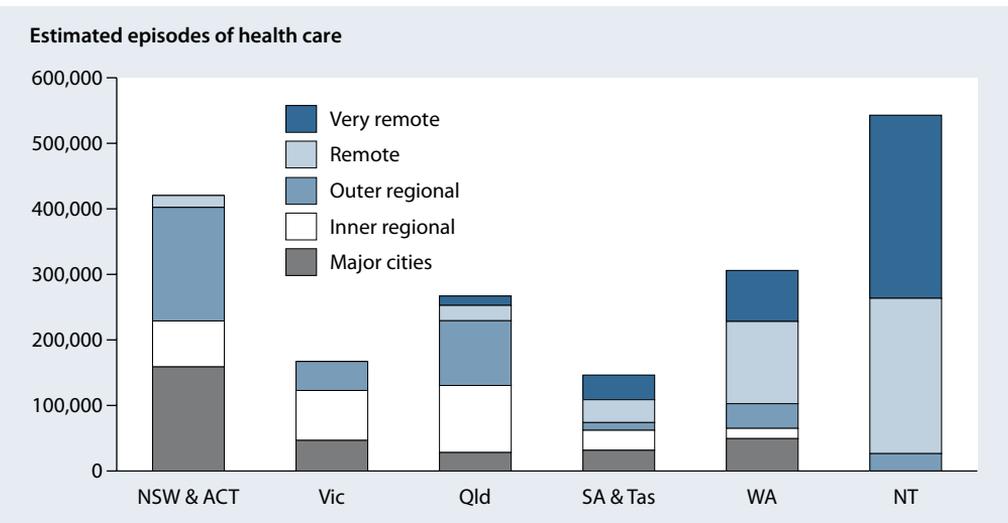
The state and territory governments provide funding primarily through hospitals, community clinics and Aboriginal Community Controlled Health Services. The Australian Government, through the Office for Aboriginal and Torres Strait Islander Health, provides funding for a range of Indigenous-specific primary health-care and substance misuse services, which are largely delivered in community-based settings. In 2007–08, the Office for Aboriginal and Torres Strait Islander Health funded 156 organisations to provide or facilitate access to primary health care for Aboriginal and Torres Strait Islander people. Overall, 55 of these organisations (35%) were in remote or very remote locations (Figure 7.9).



Source: Department of Health and Ageing, Service Activity Reporting, unpublished data.

Figure 7.9: Geographical distribution of Australian Government-funded Aboriginal Community Controlled Health Organisations, 2007–08

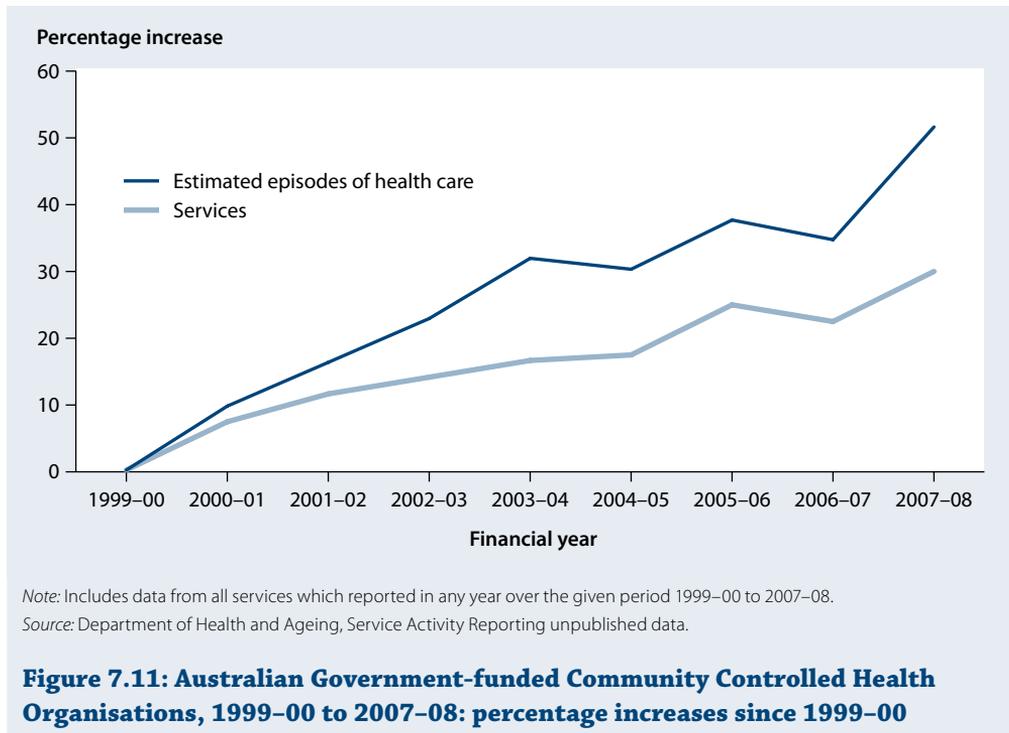
In 2007–08, about 87% of the estimated episodes of health care in 2007–08 were provided to Aboriginal and Torres Strait Islander clients through these Australian Government-funded services. The number of episodes of health care provided across each state and territory varies considerably by remoteness area. In 2007–08, the majority of episodes of health care reported for Western Australia and the Northern Territory were provided in Remote and very remote areas, while for other jurisdictions the majority of episodes of health care were provided in major cities, inner regional and outer regional areas (Figure 7.10). This reflects the geographical distribution of the Indigenous population in these jurisdictions.



Source: Department of Health and Ageing, Service Activity Reporting, unpublished data.

Figure 7.10: Australian Government-funded Aboriginal Community Controlled Health Organisations, by geographical region, 2007–08

There has been a steady rise in the number of Aboriginal and Torres Strait Islander primary health-care services that have been set up, and in the total estimated episodes of health care they have provided in recent years. Over the period 1999–00 to 2007–08, there has been a 30% rise in the number of services (from 120 to 156) and a 52% rise in the total estimated episodes of health care provided to Indigenous and non-Indigenous clients (from 1.2 million to 1.9 million) (Figure 7.11).



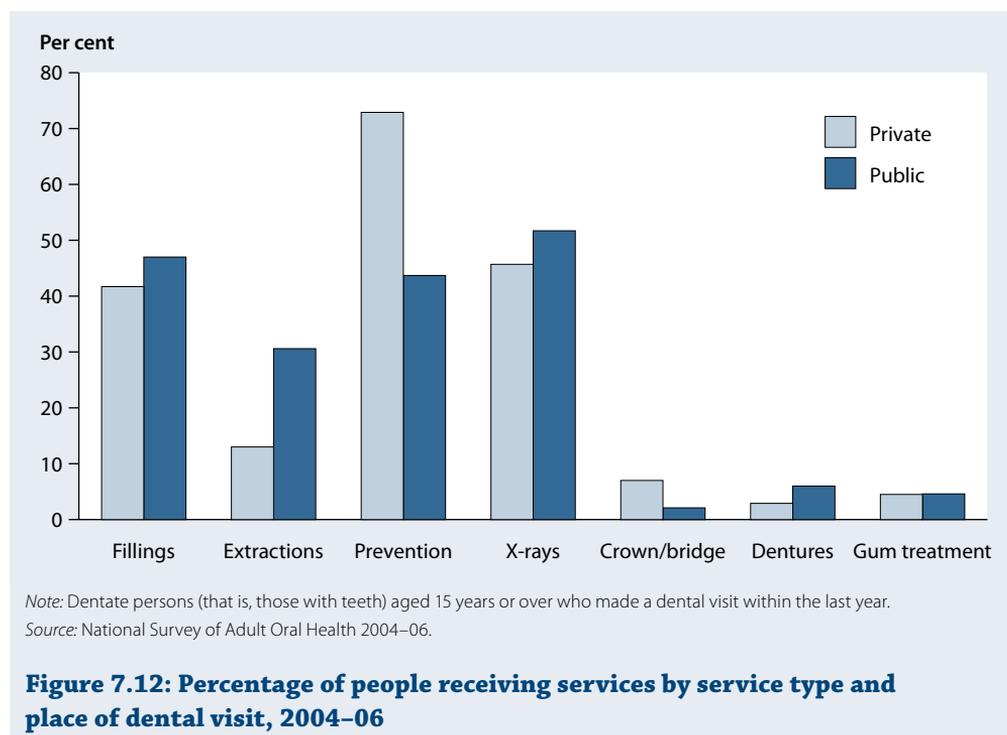
Dental services

Most dental care in Australia is provided in the private sector. In the 2004–06 National Survey of Adult Oral Health, only 13.5% of respondents were public dental patients. Those who attend for public dental care are generally health care card holders and socioeconomically disadvantaged.

The Survey of Adult Oral Health provided information on dental services received by 14,123 Australians aged 15 years and over (Slade et al. 2007). Respondents supplied information on their dental treatment in the categories of fillings, extractions, oral prophylaxis (preventive treatment), X-rays, crowns and bridges dentures and gum treatment within the last year, as well as whether they received private or public dental care (Brennan et al. 2008).

The survey showed marked differences in the treatments received by private and public patients. Private patients received more preventive treatment than public patients (72.9% compared with 43.7%) and crown and bridge services (7.0% compared with 2.1%) (Figure 7.12). Overall, public dental patients received more fillings, extractions and X-rays than private patients.

The different patterns of service between public and private dental patients may partly reflect resource constraints in the public sector, and the higher rates of extractions may reflect a greater reliance on emergency, rather than preventive, care.



Other health professionals

In addition to medical practitioners and dentists, many other professionals provide a range of health services. This section provides an overview of consultations with a number of these health professionals, including pharmacists, nurses, allied health workers, complementary therapists and other workers (ABS 2006). Results from the 2007–08 National Health Survey showed that 46% of Australians consulted one of these other health professionals in the 12 months before the survey interview (Table 7.8). Females were more likely to do this (51%) than males (42%), and the most common health professionals consulted were opticians or optometrists, chemists, and physiotherapists or hydrotherapists. Not surprisingly, people aged 65 years or over were more likely to consult a health professional (51%) than people aged 15–24 years (39%). Consultations with medical imaging workers are not included in this analysis.

Table 7.8: Persons consulting other health professionals, 2007–08^(a) (per cent)

Selected health professional	Age group (years)				Total		
	15–24	25–44	45–64	65 and over	Males	Females	Persons
Accredited counsellor	1.1	2.6	1.5	0.6	1.4	2.3	1.9
Acupuncturist	*1.3	3.3	3.2	1.9	2.0	3.3	2.7
Chemist (for advice only)	7.8	15.2	11.9	11.0	9.8	16.2	13.0
Chiropodist or podiatrist	2.5	2.7	4.8	14.0	3.1	7.0	5.1
Chiropractor	7.2	11.1	9.7	4.9	8.9	9.1	9.0
Dietitian or nutritionist	3.2	3.9	4.7	6.3	4.0	4.4	4.2
Naturopath	2.1	4.7	3.8	1.6	1.9	5.1	3.5
Nurse	2.6	3.6	2.6	4.9	3.2	3.8	3.5
Occupational therapist	**	0.7	1.1	1.3	1.0	0.9	1.0
Optician or optometrist	10.2	10.7	17.3	26.6	12.8	16.8	14.8
Osteopath	1.1	2.3	2.0	*1.5	1.6	2.2	1.9
Physiotherapist or hydrotherapist	7.3	10.0	9.6	9.2	9.2	10.0	9.6
Psychologist	2.0	4.4	2.6	0.9	2.6	3.5	3.0
Social worker or welfare worker	0.9	1.6	1.1	2.4	1.2	2.0	1.6
Other	2.9	3.5	3.0	3.7	3.1	3.4	3.3
Total^(b)	38.9	47.4	46.3	51.2	41.7	50.5	46.2

* Estimate has a relative standard error of 25% to 50% and should be used with caution.

** Figure omitted as relative standard error greater than 50%.

(a) Consultations in the 12 months before the interview. Excludes consultations in/at hospitals or day clinics.

(b) Totals will not necessarily be the sum of rows, as some persons reported consultations with more than one type of professional.

Source: ABS National Health Survey 2007–08.

Several of the health professionals listed in Table 7.8 are eligible to participate in the Medicare Allied Health Initiative. Under this initiative, Medicare benefits are paid for up to five services to eligible patients managed by a GP under an Enhanced Primary Care plan. For example, in 2008–09, about 89,800 chiropractic and 45,500 osteopathic services were provided under these arrangements, with total Medicare benefits of around \$4.3 million and \$2.2 million, respectively (Medicare Australia 2009).

Most private health ancillary (or ‘extras’) insurance organisations offer rebates for allied and complementary health services that their members receive. In the quarter ending September 2009, 2.2 million benefits were paid for physiotherapy, 2.2 million for chiropractic services, 1.8 million for optical services, 693,000 for natural therapy services, 557,000 for chiropodist and podiatrist services, 412,000 for acupuncture and acupressure services, and 62,000 for psychologist and group therapy services (PHIAC 2009). For data on the number of benefits paid for other health professional services, see PHIAC 2009.

Community health services

Government-funded community health services in each state and territory provide a diverse range of services not described elsewhere in this chapter. They are either provided directly by governments (including local governments) or funded by governments and managed by local health services or community organisations (SCRGSP 2010). Community health services are delivered in a variety of settings, including purpose-built community health centres, local council buildings, schools and clients’ homes.

Statistical information on these services is not as highly developed as for other services (such as hospitals) and there is no nationally agreed basis for describing their nature or for measuring the number of services provided. Therefore, a comprehensive national picture of community health services is not available. However, some information on the nature of the services follows (SCRGSP 2010).

In 2009–10, the Australian Government funded community health services that included:

- the Rural Primary Health Services program, which was implemented on 1 January 2010 and is a consolidation of four primary and allied health programs. The program funds a range of primary and allied health-care services and activities for rural and remote communities
- a discrete preventive health component of the Rural Primary Health Services program, which provides services to remote and very remote communities.

States and territories provide a variety of community health services, including:

- maternal and child community health services, which include antenatal and postnatal parenting support services, early childhood nursing programs, disease prevention programs and treatment programs relating to child development and health
- women's health services that provide services and health promotion programs for females across a range of health-related areas
- men's health programs, including mainly promotional and educational programs
- community rehabilitation programs, including case management, prosthetic services and equipment schemes, and home modification.

Ambulance services

Ambulance services are provided directly by state and territory governments, except in Western Australia and the Northern Territory, which contract St John Ambulance Australia to provide the services.

The role of ambulance services generally includes providing emergency pre-hospital patient care and transport in response to sudden illness and injury, retrieving emergency patients, transporting patients between hospitals, conducting road accident rescues and coordinating patient services in multicasualty events. Some government ambulance services also provide first aid training courses, as do non-government providers such as St John Ambulance and the Red Cross.

In 2008–09, ambulance service organisations attended 2.9 million incidents nationally (excluding Northern Territory), of which most were emergency incidents (39%), followed by non-emergency incidents (35%), and urgent incidents (26%) (SCRGSP 2010).

The numbers of incidents, responses and patients are interrelated: multiple responses/vehicles may be sent to a single incident, and there may be more than one patient per incident. There may also be responses to incidents that do not involve patients because no one at the scene requires treatment. For every 100,000 Australians in 2008–09, there were about 15,800 responses and 12,600 patients.

Royal Flying Doctor Service

The Royal Flying Doctor Service (RFDS) uses aircraft and other transport, as well as communication technology, to improve the health and wellbeing of regional and remote Australians. It provides primary and community health-care clinics at remote sites (for routine health checks and advice, immunisation, child health care, and dental, eye and ear care), telehealth consultations by radio, telephone or video conference, pharmaceutical supplies at remote sites and emergency air transport services (both to and between hospitals).

During the past decade there has been a steady increase in the services that the RFDS provides (Table 7.9). In 2008–09, there were 274,200 patient contacts with the RFDS. The service conducted 14,000 health-care clinics, 85,000 telehealth services and nearly 37,000 aerial medical evacuations.

Table 7.9: Services provided by the Royal Flying Doctor Service, 1998–2008 (selected years)

	1998–99	1999–00	2001–02	2003–04	2005–06	2008–09
Patient contacts	181,621	183,587	196,996	210,423	237,143	274,237
Aerial medical evacuations	21,604	22,191	25,977	31,231	34,203	36,832
Number of aircraft	40	45	40	45	50	53
Distance flown (million km)	13.3	14.6	16.6	19.5	20.4	23.9
RFDS bases	19	20	22	23	22	21

Sources: RFDS 2009; previous editions of RFDS annual report.

7.3 Hospitals

Hospitals accounted for more than one-third of recurrent health expenditure (\$39 billion) in Australia in 2007–08 (AIHW 2009c). The hospital sector comprises more than 1,310 public and private hospitals around Australia. The public hospital system employs the equivalent of more than 240,000 full-time staff, with about 45% of these being nurses and 10% being doctors.

Most hospital resources are consumed in providing care to admitted patients (inpatients). However, hospitals also provide high numbers of non-admitted services, such as those provided by emergency departments and outpatient clinics (Box 7.8). On a typical day in 2007–08, almost 22,000 people were admitted to Australian hospitals, and about 134,000 non-admitted services were provided.

The National Health Performance Framework includes six areas in which to assess how well the health system is performing. 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, as an indicator of sustainability and efficiency
- average length of stay per separation, as an indicator of sustainability and efficiency
- waiting times for elective surgery, as an indicator of access
- emergency department waiting times, as an indicator of access
- hospital separations (see Box 7.8) with an adverse event, as an indicator of safety
- falls resulting in patient harm in hospitals (as an indicator of safety).

This section contains data on all of these indicators except hospital separations with an adverse event (Section 7.6) and falls resulting in patient harm in hospitals (see Chapter 9).

Box 7.8: Terms and data sources relating to the use of hospitals

Admitted patients

An 'admitted patient' is a patient who undergoes a hospital's formal admission process. Statistics on admitted patients are compiled when patients complete an 'episode of care' and are therefore considered to have 'separated' from that episode. The statistics are compiled at the end of the episode because that is when all 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.

A 'separation' 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 (such as 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 their type of care.

For each separation, patients are assigned a principal diagnosis, which describes 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 described as surgical or non-surgical, and therapeutic or diagnostic. In 2007–08, diagnoses and procedures were reported using the fifth edition of the ICD-10-AM/ACHI classification (see Box 7.9). 'Casemix' is the range and type of patients (the mix of cases) treated by a hospital or other health service.

National Hospital Morbidity Database

The state and territory health authorities compile information on patients admitted to hospitals and supply it to the AIWH 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). Since 1993–94, data have been provided for all public hospital separations and, for most years, about 95% of private hospital separations.

As indicators of ill health in the population, hospital separations data have limitations. First, people who are attended to by the hospital but not admitted are 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, for example, one patient admitted five times cannot be distinguished from five patients admitted once each. Finally, hospital separations data are also affected by variations in admission practices, and in the availability of, and access to, hospital and non-hospital services.

(continued)

Box 7.8 (continued): Terms and data sources relating to the use of hospitals**Non-admitted patients**

Hospitals provide services to many patients without admitting them (although in the case of emergency department care, many patients may go on to be admitted). These patients receive care 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.

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.

Hospitals and bed numbers

Nationally, the number of public acute care hospitals increased from 738 in 1997–98 to 742 in 2007–08. Over the same period, the number of private hospitals, other than free-standing day hospital facilities, decreased from 317 to 280 (Table 7.10). The number of private free-standing day hospital facilities reporting admitted patient data, however, increased from 175 in 1997–98 to 272 in 2007–08. These facilities provide investigation and treatment services for admitted patients on a day-only basis.

The number of public psychiatric hospitals has remained relatively stable in recent years, with a small decline from 22 in 1997–98 to 20 in 2007–08. These hospitals mainly treat and care for admitted patients with psychiatric, mental or behavioural disorders. Their role declined in the early to mid-1990s because of reforms under the National Mental Health Strategy that led to more services being provided in acute care hospitals and community settings.

Bed numbers

The concept of an available bed has become less important in recent years due to increasing same-day hospitalisations and the provision of 'hospital in the home' care. Bed numbers in hospitals can also be affected by the range and types (casemix) of patients admitted to those hospitals.

In 2007–08, there were 84,235 available beds in Australia, with 56,467 (67% of the total) beds in public acute and public psychiatric hospitals (Table 7.10). Between 1997–98 and 2007–08, there was an overall 5.2% increase in available beds across the public and private sectors, but this amounted to a 7.9% reduction in available beds per 1,000 population. The latter change was not evenly distributed across the two sectors, with private sector beds per 1,000 population remaining stable during this period and the public sector rate decreasing by around 11%.

Table 7.10: Hospitals and available beds, 1997–98 to 2007–08 (selected years)

	1997–98	1999–00	2001–02	2003–04	2005–06	2007–08
Hospitals						
Public acute	738	726	724	741	736	742
Public psychiatric	22	22	22	20	19	20
<i>Total public</i>	760	748	746	761	755	762
Private free-standing day hospital facilities	175	190	246	234	256	272
Private other ^(a)	317	312	314	291	291	280
<i>Total private</i>	492	502	560	525	547	552
Total public and private	1,252	1,250	1,306	1,286	1,302	1,314
Available beds^(b)						
Public acute	52,801	50,188	49,004	51,038	52,236	54,137
Public psychiatric	2,935	2,759	2,457	2,560	2,366	2,330
<i>Total public</i>	55,736	52,947	51,461	53,599	54,601	56,467
Private free-standing day hospital facilities	1,348	1,581	1,851	1,947	2,114	2,151
Private other ^(a)	23,019	23,665	25,556	24,642	24,113	25,617
<i>Total private</i>	24,367	25,246	27,407	26,589	26,227	27,768
Total public and private	80,103	78,193	78,868	80,188	80,828	84,235
Available beds per 1,000 population^(b)						
Public acute	2.8	2.6	2.5	2.6	2.5	2.5
Public psychiatric	0.2	0.1	0.1	0.1	0.1	0.1
<i>Total public</i>	3.0	2.8	2.6	2.7	2.7	2.7
Private free-standing day hospital facilities	0.1	0.1	0.1	0.1	0.1	0.1
Private other ^(a)	1.2	1.2	1.3	1.2	1.2	1.2
<i>Total private</i>	1.3	1.3	1.4	1.3	1.3	1.3
Total	4.3	4.1	4.0	4.0	3.9	4.0

(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 2009c and earlier editions of *Australian hospital statistics*.

Admitted patient care

In 2007–08, there were 7.9 million separations in Australian hospitals, of which 4.7 million (60%) were in public hospitals and 3.1 million (40%) were in private hospitals. Over the past decade, hospitals have become increasingly busy, even allowing for increases in the population, and this has especially been the case for private hospitals.

Between 1998–99 and 2007–08, the number of separations increased overall by 37.3%—by 23.1% in public acute hospitals and by 66.9% in private hospitals. Separation rates (which adjust for increases in the population) increased by 5.2% for public acute hospitals and by 39.6% for private hospitals.

Between 1998–99 and 2007–08, the number of patient days in public acute hospitals increased by 13.5% and in private hospitals by 29.1%. Over the same period, patient days per 1,000 population decreased by 5.8% for public acute hospitals and increased by 5.4% for private hospitals.

Length of stay in hospital

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, with one reason being improvements in medical technology such as keyhole surgery. Improved drug treatments and efforts to increase hospital productivity have also tended to result in shorter lengths of stay. Some treatments that have previously been undertaken during short-stay admissions are not included in these data because they are now being delivered without the person being formally admitted to the hospital.

In 2007–08, over 4.4 million separations were for same-day care: 2.4 million from public acute hospitals, around 1,800 from public psychiatric hospitals and 2.1 million from private hospitals. The proportion of separations that are same-day increased from 47.9% of separations in 1998–99 to 56.2% in 2007–08 (AIHW 2009c).

With public psychiatric hospitals excluded, the average length of stay was 3.2 days in 2007–08 (3.6 days in public acute hospitals and 2.5 in private hospitals). Excluding same-day separations, however, the average length of stay was 6.2 days in public acute hospitals and 5.4 in private hospitals.

The difference in average length of stay between public and private hospitals at least partly reflects the different casemixes in the two hospital sectors. For example, there were differences in the socioeconomic status of the patients' residential areas, in the proportion of separations for which procedures were reported, and in the average number of procedures reported per separation.

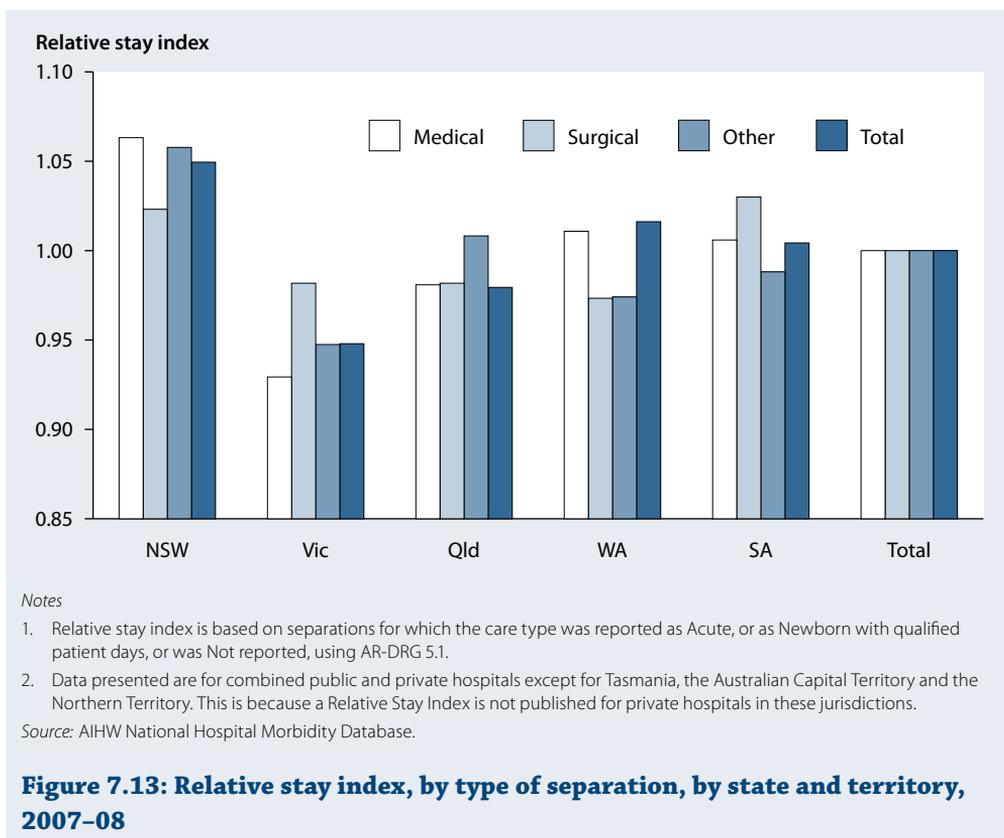
The average length of stay for all hospitals declined from 3.4 days in 2003–04 to 3.3 in 2007–08. This partly reflects the steady upward trend in the proportion of separations that were day-only. If those same-day separations are excluded, the average length of stay still fell over the period, from 6.3 days to 6.2.

The average length of hospital stay per separation is considered to be a measure of the efficiency of acute care hospitals. However, because hospitals and jurisdictions vary in terms of their casemix, it is appropriate to adjust length-of-stay measures to account for casemix.

The relative stay index (RSI) compares the actual length of stay in a hospital with the 'expected' length of stay. If the RSI is more than 1.00, the average stay is longer than expected and if it is less than 1.00 it is shorter than expected. The RSIs presented here are calculated using the direct standardisation method. This method uses Australian Refined Diagnosis Related Groups (AR-DRGs) (Box 7.9) to adjust the casemix of the jurisdiction or hospital sector to the national casemix (which then has a value of 1.00, by definition), allowing values to be directly comparable.

There were variations between jurisdictions (Figure 7.13) and between the public and private sectors in the RSI for 2007–08. For public hospitals the RSI was 0.99 in 2007–08 (shorter stay than expected) and for private hospitals it was 1.03 (longer stay than expected). In the public sector, the Northern Territory (1.15) had the highest RSI, followed by New South Wales (1.05) and South Australia (1.01).

For surgical separations, the RSI was 1.04 for public hospitals and 0.95 for private hospitals. For medical separations, the RSI was 0.96 for public hospitals and 1.14 for private hospitals.



What are people being admitted for?

The conditions that hospitals treat are of interest to consumers, health service managers, planners, funders and researchers. These conditions, the procedures that patients undergo in hospital and the consequent casemix of hospitals are recorded in the National Hospital Morbidity Database using the classification systems described in Box 7.9. The consistent picture is that a large proportion of hospital separations are due to a relatively small number of conditions and treatments. These conditions and treatments include renal (kidney) 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 on), replacement of the eye’s lens (usually because of cataracts) and childbirth (including caesarean sections). The reasons for which people are being admitted are presented below in three ways—as the diagnosis view, the procedures view and the AR-DRG view. A later section focuses on elective surgery as the reason for about 22% of hospital admissions.

Box 7.9: Classification of diagnoses and procedures 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.

In 2007–08, diagnoses and external causes of injury were recorded using the fifth edition of the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM) (NCCH 2006). It comprises classifications of diseases and external causes of injuries and poisoning, based on the World Health Organization's version of ICD-10. Procedures were recorded using the Australian Classification of Health Interventions (ACHI) (NCCH 2006).

These classifications can be a source of information on the diseases and conditions treated in hospitals and the operations performed, either at very detailed levels or combined into broad groupings.

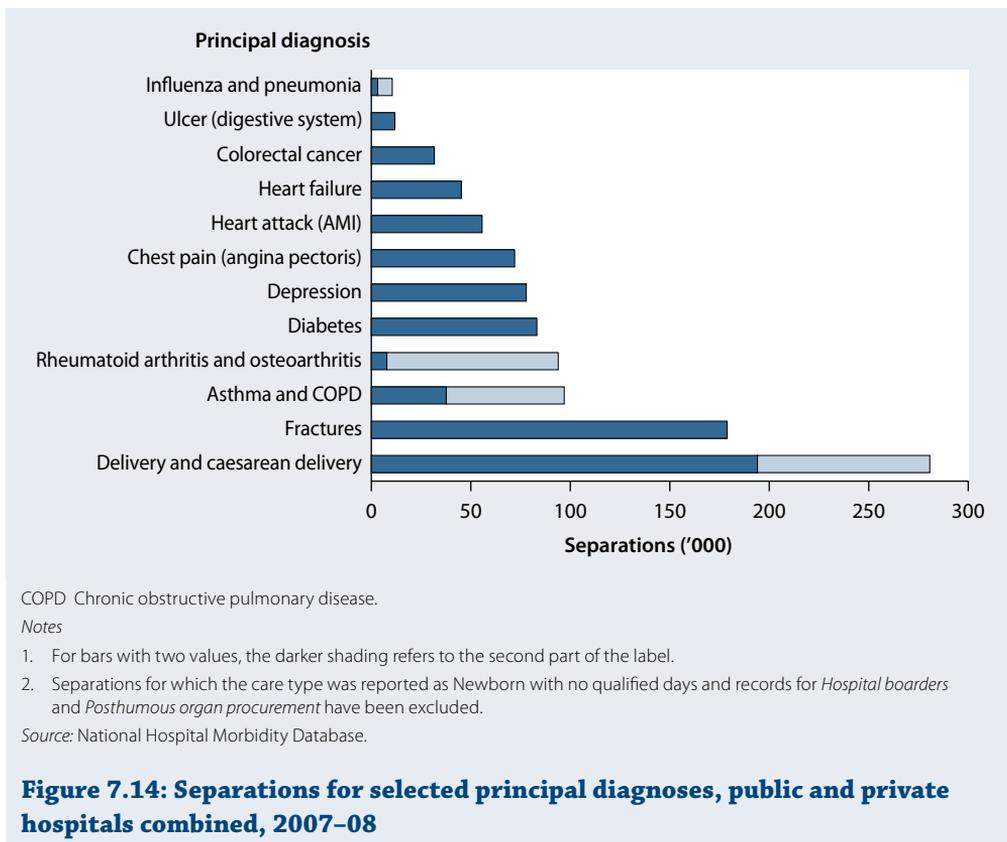
Diagnosis Related Groups

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 the number and type of acute admitted patients treated in a hospital (that is, its casemix) and relating this to the resources expected to be used in their treatment. This classification groups episodes with similar clinical conditions and similar use of hospital resources, using information in the hospital separation record such as diagnoses, procedures and age of the patient. 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 diagnosis view of admitted patient care activity

Nearly 37% of all separations in Australian hospitals in 2007–08 had a principal diagnosis in six of the broad ICD-10-AM chapter groups (see boxes 7.8 and 7.9). These were *Diseases of the digestive system; Neoplasms; Diseases of the circulatory system; Pregnancy, childbirth and the puerperium; Injury, poisoning and certain other consequences of external causes; and Factors influencing health status and contact with health services* (including dialysis, chemotherapy and rehabilitation) (tables S16 and S17 .

At a more detailed level, in 2007–08 there were around 99,000 separations with a principal diagnosis of *Asthma and chronic obstructive pulmonary disease*, 94,000 for *Rheumatoid arthritis and osteoarthritis*, and 45,000 for *Heart failure* (Figure 7.14). Also of high volume was childbirth—there were 87,000 separations for *Childbirth by caesarean section* and 194,000 for *Other delivery*.

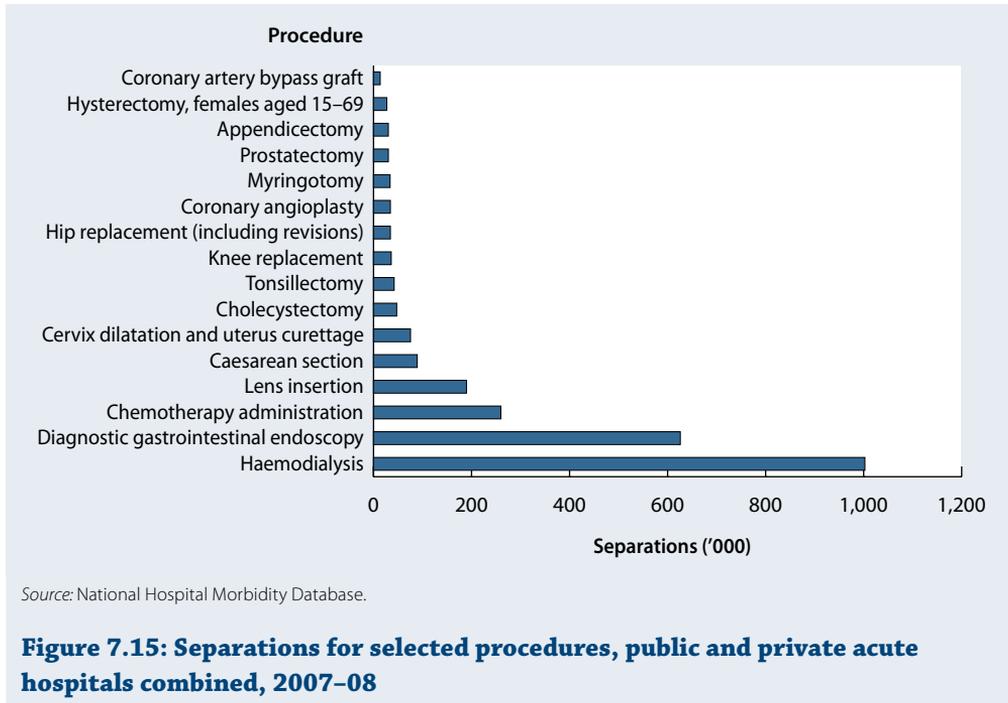


The procedures view of admitted patient care activity

Procedures are clinical interventions that are surgical in nature, carry a procedural or anaesthetic risk, require specialised training, and/or require special facilities or equipment available only in an acute care setting. Procedures are a very common part of hospital treatment, especially so for private hospitals. A procedure was reported for 82.6% of separations from Australian hospitals in 2007–08 (AIHW 2009c). Of these, 55.1% were from public hospitals, although public hospitals accounted for 60.3% of separations overall. Similarly, although 69.6% of overall patient days were in public hospitals, only 67.0% of patient days associated with procedures were in public hospitals. This reflects the higher proportion of separations in private hospitals (93.4%) that had a procedure, compared with public hospitals (75.5%).

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 (952,000 separations) (Table S18 🗳️). *Haemodialysis* accounted for 87.8% (836,000) of those urinary system separations. The most commonly reported procedure group for the private sector was *Procedures on the digestive system* (673,000) (Table S19 🗳️), with 87.9% of these being for *Fibreoptic colonoscopy*, *Panendoscopy with excision* and *Fibreoptic colonoscopy with excision*.

Other commonly reported procedures across both sectors were *Diagnostic gastrointestinal endoscopy* (626,000 separations), *Chemotherapy administration* (260,000) and *Lens insertion* (190,000) (Figure 7.15).

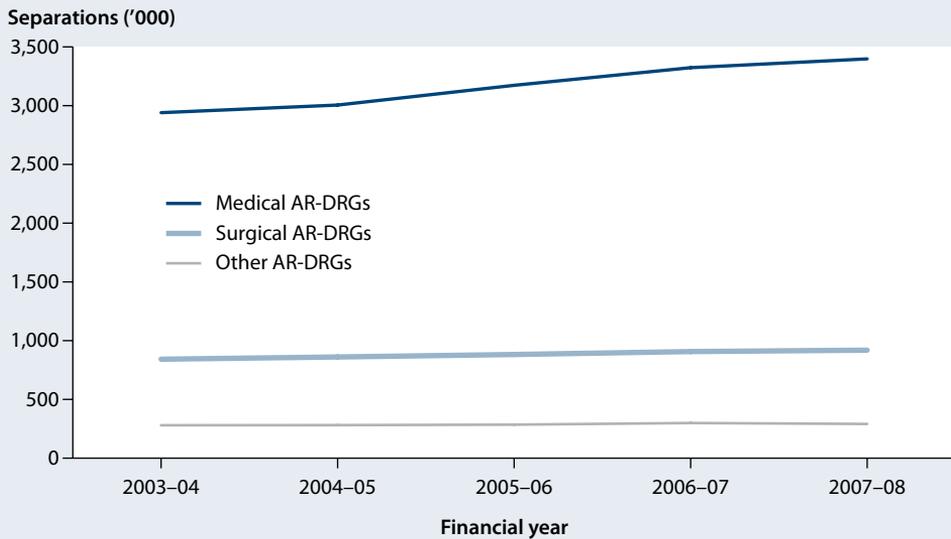


The AR-DRG view of hospital activity

The AR-DRG classification takes into account diagnoses, procedures, length of stay and other patient factors to create groups of similar conditions and/or similar expected resource use (see Box 7.9). It provides a composite view of hospitalisations and is useful for describing the overall nature of the care received in hospital. AR-DRGs can be classified as surgical, medical and other.

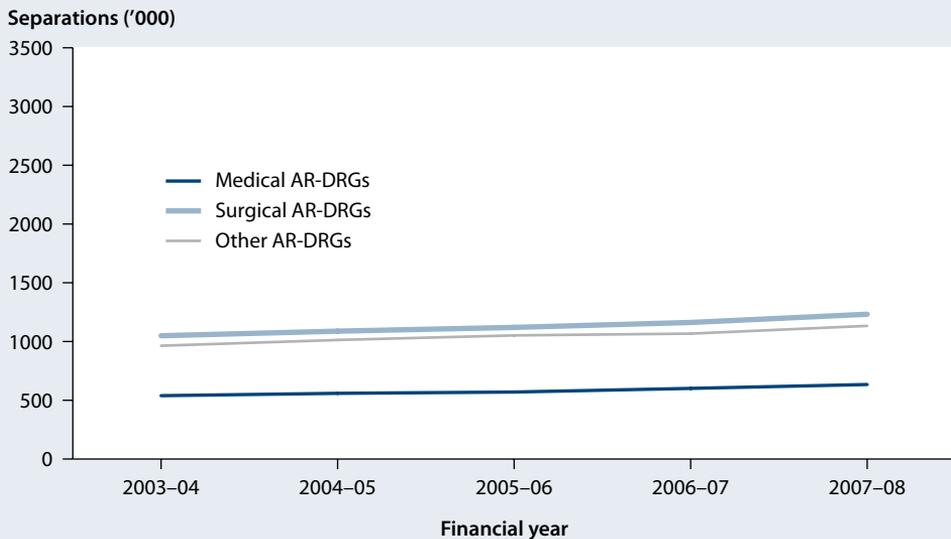
In 2007-08, 73.7% of acute hospital separations in the public sector were for medical AR-DRGs (3.4 million), compared with 37.8% in the private sector (1.1 million). In contrast, there was a larger proportion of separations for surgical AR-DRGs in the private sector (41.1%) than in the public sector (19.9%). A small proportion of separations were for other AR-DRGs, 6.4% in the public sector and 21.1% in the private sector.

In public hospitals, separations with medical AR-DRGs increased by 15.6% between 2003-04 and 2007-08, those with surgical AR-DRGs increased by 9.2% and other AR-DRGs increased by 3.9% (Figure 7.16). In private hospitals, the distribution remained similar, with all three AR-DRG groups increasing by around 18% (Figure 7.17). In 2007-08 the number of surgical separations from private hospitals (1.2 million) exceeded those from public hospitals (0.9 million) (AIHW 2009c).



Source: National Hospital Morbidity Database.

Figure 7.16: Separations for surgical, medical and other AR-DRGs, public acute hospitals, 2003-04 to 2007-08



Source: National Hospital Morbidity Database.

Figure 7.17: Separations for surgical, medical and other AR-DRGs, private hospitals, 2003-04 to 2007-08

The AR-DRGs with the highest numbers of separations in 2007–08 featured several for which same-day separations dominated (Table 7.11). Renal dialysis and chemotherapy dominated for both public and private hospitals, but for public hospitals dialysis was by far the more common (817,000 public sector separations). In private hospitals, chemotherapy (176,000 separations) was a little more common than dialysis (164,000). *Vaginal delivery* (without complications) was the most common AR-DRG that was usually not a same-day hospitalisation.

Table 7.11: Top 12 AR-DRGs version 5.1 with the highest number of separations from public and private hospitals, 2007–08

AR-DRG		Separations	Same-day separations (per cent)	Patient days	ALOS (days)
L61Z	Admit for renal dialysis	981,830	99.8	982,278	1.0
R63Z	Chemotherapy	298,158	99.9	298,330	1.0
G44C	Other colonoscopy, same day	222,619	100.0	222,619	1.0
C16B	Lens procedures, same day	173,085	100.0	173,085	1.0
O60B	Vaginal delivery without catastrophic or severe complications or comorbidities	141,633	2.3	444,622	3.1
G45B	Other gastroscopy for non-major digestive disease, same day	131,918	100.0	131,918	1.0
Z64B	Other factors influencing health status, same day	122,424	100.0	122,424	1.0
D40Z	Dental extractions and restorations	118,516	96.5	120,643	1.0
G46C	Complex gastroscopy, same day	113,044	100.0	113,044	1.0
F74Z	Chest pain	100,682	39.7	150,440	1.5
U60Z	Mental health treatment, same day, without electroconvulsive treatment	96,752	100.0	96,752	1.0
Z40Z	Follow-up with endoscopy	92,247	96.9	93,737	1.0

ALOS Average length of stay.

Note: Includes separations for which the care type was reported as Acute, or as Newborn with qualified patient days, or was not reported.

Source: AIHW National Hospital Morbidity Database.

Elective surgery

In 2007–08, elective surgery accounted for about 22% of hospital separations: 13% of public hospital separations (619,000) and 36% of private hospital separations (1.1 million). The information on separations per 1,000 population is from the National Hospital Morbidity Database, in which separations were classified as elective surgery if they had an elective urgency of admission and a surgical procedure, using AR-DRGs, version 5.1 (DoHA 2004).

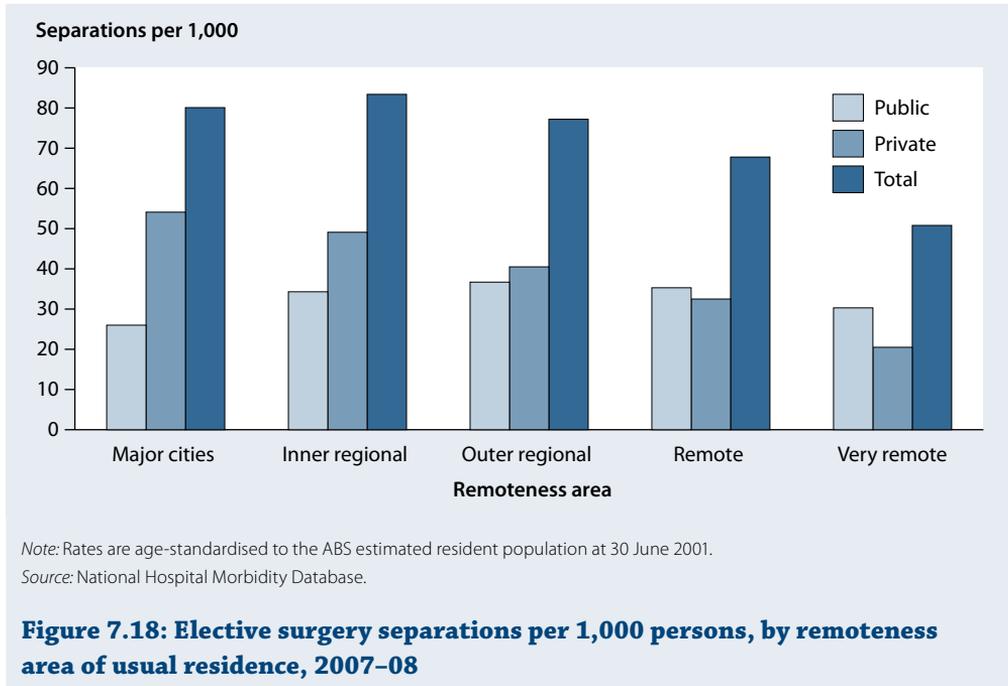
Separations per 1,000 population

There were 52 elective surgery separations per 1,000 persons in private hospitals and 29 elective surgery separations per 1,000 in public hospitals.

Separation rates varied by remoteness area of the usual residence of the patient. The rate of private hospital elective surgery was highest for those living in major cities (54 per 1,000) and decreased to 21 per 1,000 for very remote areas (Figure 7.18), reflecting the lower availability of private hospital services in the more remote areas of Australia. In contrast,

the rate of public hospital elective surgery was lowest for those living in major cities (26 per 1,000) and highest for those living in outer regional areas (37 per 1,000).

There was also some variation in both private and public hospital elective surgery rates by socioeconomic status. Overall elective surgery rates were highest for patients from the most advantaged areas (86 per 1,000 persons) and tended to decrease with increasing disadvantage to 76 per 1,000 persons from the most disadvantaged areas.



The rate of private hospital elective surgery was highest for the most advantaged areas (69 per 1,000 persons) and decreased to 38 per 1,000 persons for the most disadvantaged areas. The rate of public elective surgery was lowest for the most advantaged areas (17 per 1,000) and highest for the most disadvantaged areas (38 per 1,000).

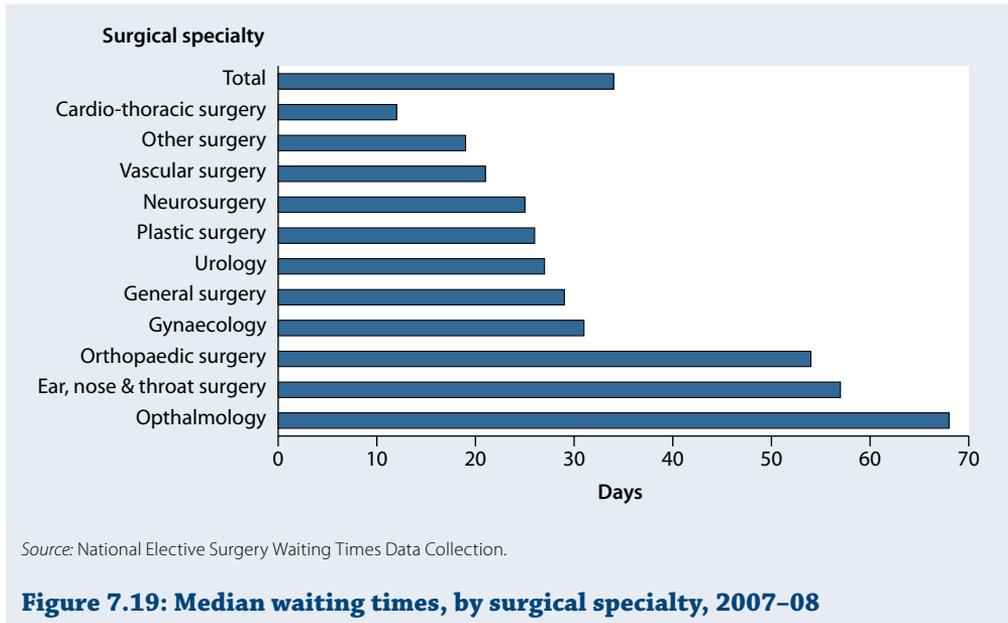
The overall rate of elective surgery for Indigenous Australians was 48 per 1,000, about 61% of the rate for other Australians (78 per 1,000). Over 85% of these elective surgery separations for Indigenous Australians (13,000) were for public elective surgery. The rate of public elective surgery for Indigenous Australians (38 per 1,000) was about 37% higher than for other Australians (28 per 1,000).

Elective surgery waiting times

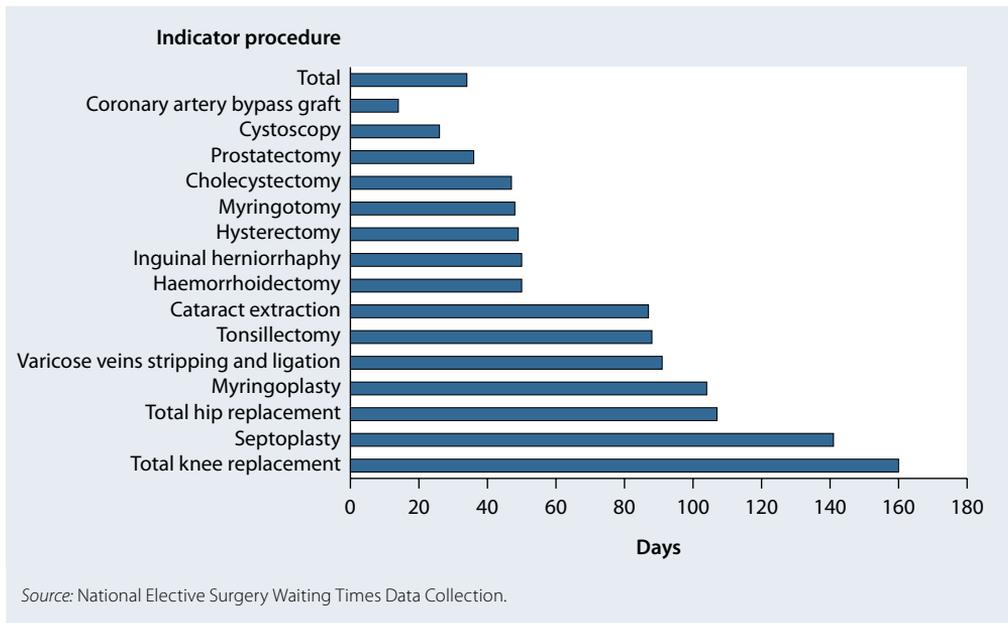
Waiting times for elective surgery are indicators of access to public hospital services. They are an indicator of the provision of timely care according to need. The information on waiting times is sourced from the National Elective Surgery Waiting Times Data Collection. For that collection, elective surgery comprises elective care where the procedures required by patients are listed in the surgical operations section of the Medicare Benefits Schedule, with the exclusion of specific procedures frequently done by non-surgical clinicians (HDSC 2006).

Overall, the median waiting time for elective surgery has increased over time, from 28 days in 2003–04 to 34 days in 2007–08 (AIHW 2009c). *Ophthalmology, Ear, nose and*

throat surgery and *Orthopaedic surgery* were the surgical specialties with the longest median waiting times in 2007–08 (68, 57 and 54 days respectively). Most other surgical specialties had median waiting times of less than 30 days; and *Cardio-thoracic surgery* had the shortest median waiting time (12 days) (Figure 7.19).

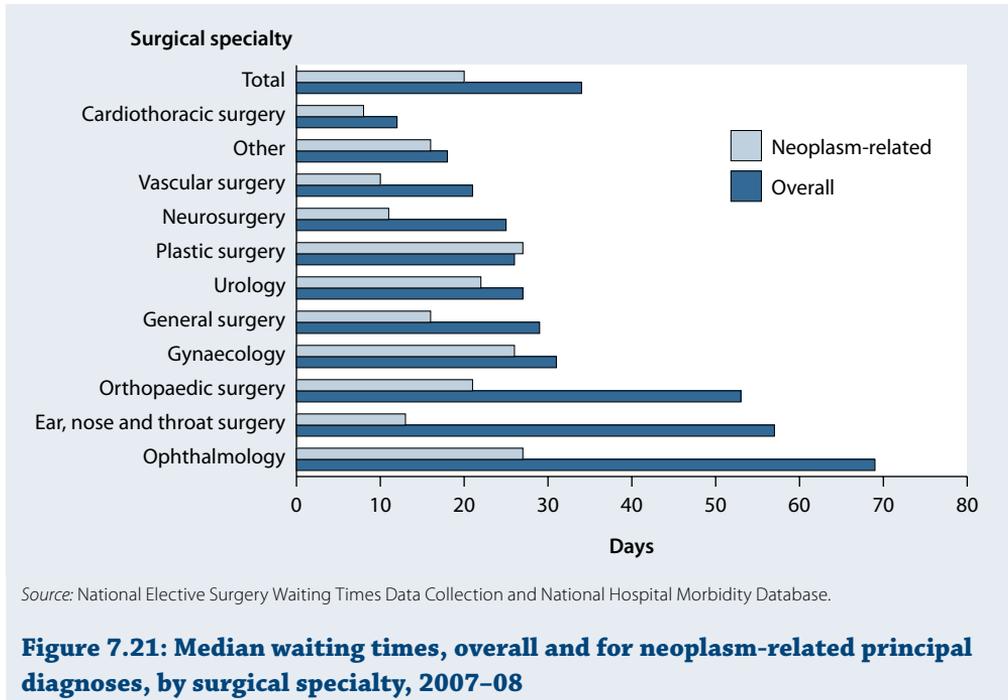


Another view of the waiting times is through ‘indicator procedures’. These are 15 high-volume procedures sometimes associated with long waits (Figure 7.20). In 2007–08, Total knee replacement was the indicator procedure with the longest median waiting time at 160 days, and Coronary artery bypass graft had the lowest median waiting time at 14 days.



Waiting times for elective surgery for cancer and benign tumours

Overall, the median waiting time for patients with cancer and benign tumour-related principal diagnoses was 20 days, 14 days shorter than the median waiting time for patients with other conditions (34 days) (Figure 7.21). The largest variation in median waiting times by surgical specialty was for *Ear, nose and throat surgery*, for which patients with a neoplasm waited 13 days, compared with 57 days overall. The only specialty with a longer median waiting time for cancer and benign tumour than for other diagnoses was *Plastic surgery*.



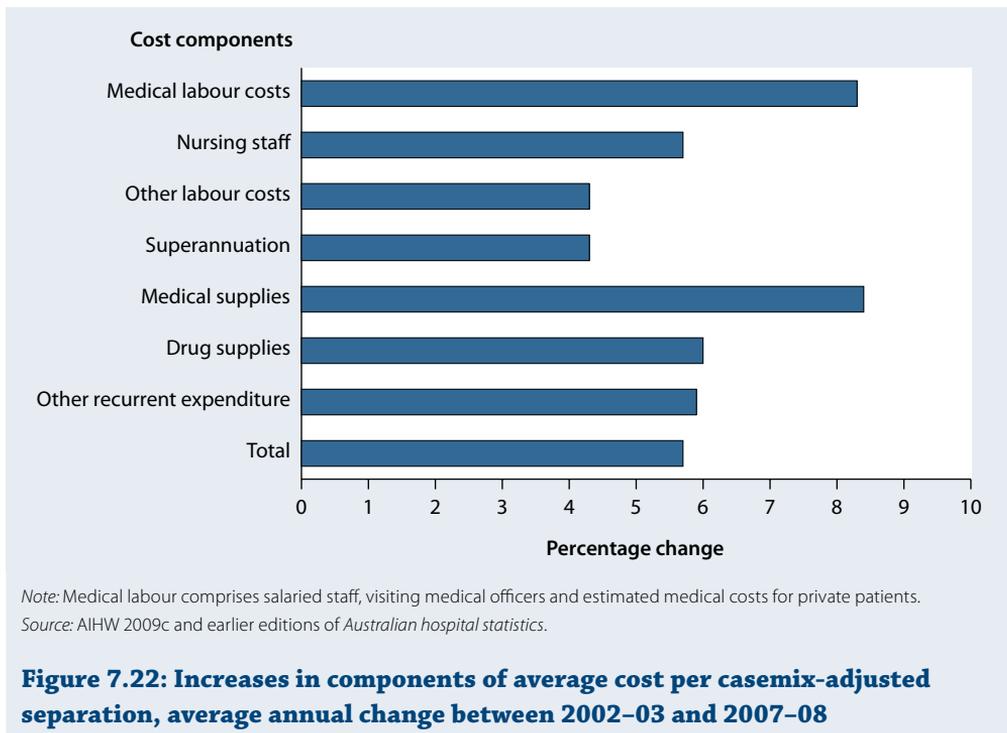
Costs of public hospital admitted care

The cost per casemix-adjusted separation is an indicator of the efficiency of public acute care hospitals. It is a measure of the average recurrent expenditure for admitted patients, adjusted for the relative complexity of the patients' conditions and the resources expected to be used (Box 7.9).

Nationally, the average cost per casemix-adjusted separation was \$4,215 (Table S20), varying from \$3,887 for South Australia to \$4,619 for the Northern Territory, and from \$4,125 for *Large hospitals* to \$4,743 for *Small acute hospitals*.

In 2007–08, nursing staff costs accounted for 26% of the cost per casemix-adjusted separation, medical labour 21%, other labour costs 19%, medical supplies 9%, drug supplies 5%, superannuation 5% and other recurrent expenditure 14%.

Between 2002–03 and 2007–08, the average cost per casemix-adjusted separation rose on average by 5.7% annually (in current prices—not adjusted for inflation) (Figure 7.22). The rate of cost increase was not equal across all components. For example, the average annual cost increases in medical supplies (8.4%) and medical labour (8.3%) were higher than the average overall cost increase, and growth in the categories of superannuation (4.3%) and other labour costs (4.3%) was lower than the average overall cost increase.



7

Accident and emergency services

In 2007–08, there were 7.1 million accident and emergency occasions of service provided in public hospitals. Private hospitals reported 454,000 accident and emergency occasions of service in 2006–07 (ABS 2008). Of the public hospital emergency department presentations in 2007–08, 28% resulted in a hospital admission (AIHW 2009c).

Geographical variation in the use of accident and emergency services

The ratio of services provided in an area to the number of residents is an approximation of population use, although services provided in one area may be used by people residing in others.

There is a progressive increase in rates of emergency department usage as remoteness increases. Nationally, for public hospitals the ratio varied from 271 occasions of service per 1,000 people in major cities to 466 per 1,000 in inner and outer regional areas and 908 in remote and very remote areas in 2007–08 (Table 7.12). This variation may reflect several factors, including the availability of other health care services, patterns of disease and injury, and the generally poorer health of Aboriginal and Torres Strait Islander people, who have higher population concentrations in remote areas. Rates for the Northern Territory were markedly higher than for other jurisdictions.

Table 7.12: Accident and emergency occasions of service in public acute hospitals^(a), 2007–08

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Services per 1,000 population resident in area^(b)									
Major cities	282	265	231	267	330	..	295	..	271
Inner regional	531	380	464	397	279	244	436
Outer regional	550	450	581	680	430	368	..	488	530
<i>Total regional</i>	<i>536</i>	<i>394</i>	<i>512</i>	<i>517</i>	<i>353</i>	<i>286</i>	<i>..</i>	<i>488</i>	<i>466</i>
Remote	957	n.a.	922	992	574	527	..	1,065	893
Very remote	2,359	..	1,020	1,273	904	620	..	406	937
<i>Total remote</i>	<i>1,133</i>	<i>n.a.</i>	<i>958</i>	<i>1,089</i>	<i>649</i>	<i>550</i>	<i>..</i>	<i>724</i>	<i>908</i>
Total	355	297	360	378	347	291	295	595	343

.. Not applicable.

n.a. Not available.

(a) Remoteness area of hospital was based on the ABS 2001 remoteness area classification.

(b) The ratio of services provided in the area to the number of residents in the area only approximates population use because services provided in an area may be provided to persons residing in other remoteness area categories or states. Number per 1,000 population was based on the 30 June 2006 population.

Source: AIHW 2009c.

Age and sex distribution

For 2007–08, data on age and sex were available for over 5.5 million emergency department presentations in public hospitals (about 78% of all emergency department presentations). Most of these data were for hospitals classified as *Principal referral and Specialist women's and children's hospitals* and *Large hospitals* (AIHW 2009c). Males accounted for 52% of all emergency department presentations, and there were more males than females for all age groups except for those aged 25–34 years and 75 years and over (Figure 7.23). The use of emergency departments was highest in the 15–24 and 25–34 year age groups, and was different from the use of admitted patient care, which rises with age.

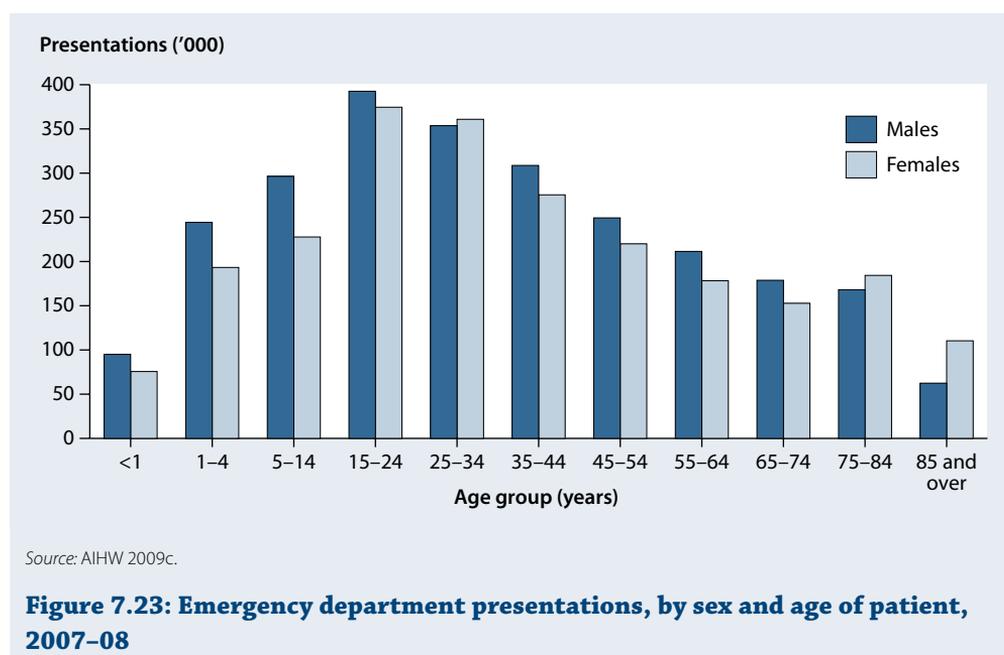


Figure 7.23: Emergency department presentations, by sex and age of patient, 2007–08

Emergency department waiting times

Emergency department waiting times data are reported by some public acute hospitals selected according to their hospital peer group. The majority of these hospitals are *Principal referral and Specialist women's and children's hospitals* and *Large hospitals*.

Emergency department waiting times in public hospitals are indicators of access to public acute hospital services. This information is summarised as the proportions of patients who are treated within an appropriate time (for the urgency of their condition).

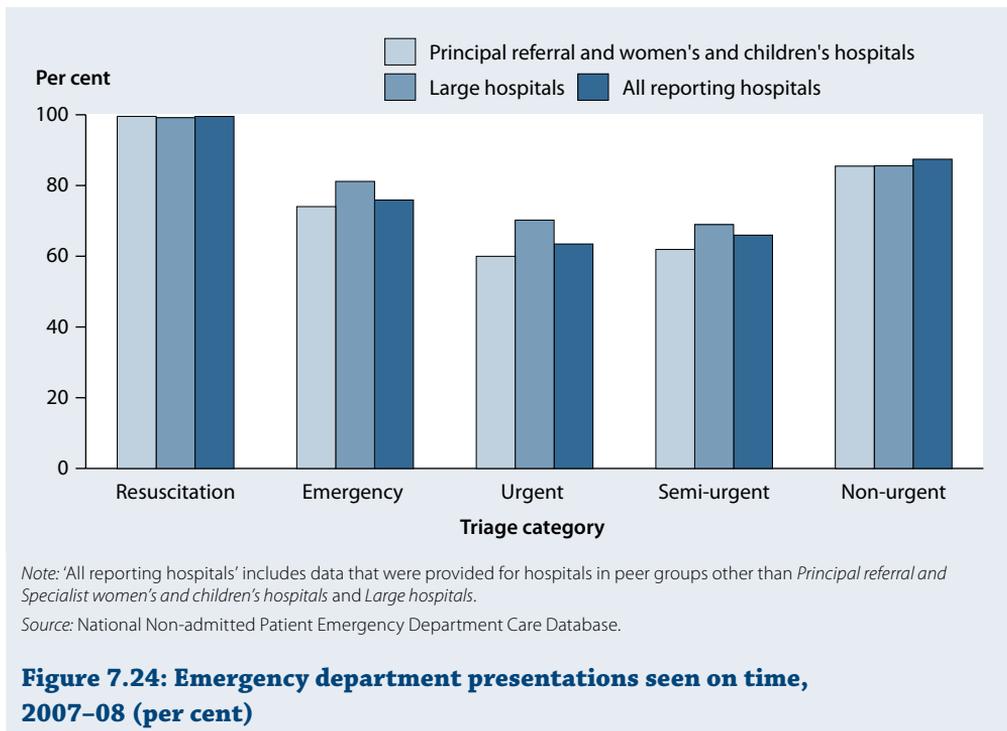
The urgency of the patient's need for medical and nursing care is indicated by a triage category. When patients present to the emergency department a triage nurse assesses their overall condition and assigns them to one of five categories that indicate how soon they should receive care. The categories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

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

Between 2003–04 and 2007–08, information on emergency department waiting times was available for between 73% and 78% of all public hospital emergency department visits. In 2007–08, this information was available for about 78% of all public hospital emergency department presentations, including almost 100% of emergency department presentations in *Principal referral and Specialist women's and children's hospitals* and *Large hospitals* (AIHW 2009c). Over the 5-year period, the proportion of patients assigned to each triage category remained fairly stable, with about 1% of patients assigned to the triage category of resuscitation, 8% as emergency, and about 78% as either urgent or semi-urgent (AIHW 2009c).

Overall, the proportion of patients seen on time also remained stable at around 69%. Almost all resuscitation cases and over three-quarters of emergency cases received treatment within the recommended time.

In 2007–08, there was some variation among hospital peer groups in the proportion of patients receiving care on time (Figure 7.24). Overall, 65% of patients in the *Principal referral and Specialist women's and children's hospitals* and 73% of patients in the *Large hospitals* were treated in an appropriate time for their condition.



Outpatient services

In 2007–08, there were 16.4 million occasions where individuals received a service through specialised public hospital outpatient clinics, which provide allied health, obstetrics, oncology, dental, orthopaedic and other medical services. Additionally there were 24.9 million other services provided to non-admitted patients of public hospitals, including pathology (8.1 million), pharmacy (4.7 million), radiology and organ imaging (3.4 million), and community health services (2.8 million).

Private hospitals also provide non-admitted patient services, with a different mix of services from public hospitals. In 2006–07, there were over 1.7 million non-admitted patient services provided in private hospitals, including 454,000 accident and emergency services.

It should be noted that states and territories vary in how they collect data on non-admitted services, and in admission practices for some services (such as chemotherapy). This variation may affect the comparability of data on this type of hospital activity.

7.4 Specialised health services

Medicare-subsidised specialist services

Medicare data provide an overview of the use of medical specialist services funded through Medicare (see Box 7.5 for information on Medicare and Medicare benefits). These services include those provided by specialists both out of hospital and in private practice, as well as medical services for private patients in public and private hospitals.

During 2008–09, an average of 7.1 specialist services per Australian were provided under Medicare. These services included 4.6 *Pathology* items per person (including administrative items associated with the collection of specimens), 1.1 *Specialist attendances* and 0.8 *Diagnostic imaging* items (Table 7.13).

The number of Medicare services processed increased over the 3 years from 2006–07 to 2008–09 across all types of specialist services. *Radiotherapy and therapeutic nuclear medicine* had the largest average annual increase over the period (18.9%). *Pathology* had the next largest average annual increase over the period (5.6%) followed by *Anaesthetics* (4.9%).

In 2008–09, a total of \$7,462 million was paid in Medicare benefits for specialist services (Table 7.13), accounting for 52% of total Medicare benefits paid (\$14,322 million). The items contributing to these benefits and the expenditure on these are also shown below.

Table 7.13: Medicare services processed for specialist services, 2006–07 to 2008–09

Broad type of service	Services per person				Items in 2008–09		
	Number			Average annual change (%)	Number ('000)	Per cent of total (%)	Benefits paid (\$ million)
	2006–07	2007–08	2008–09				
Pathology	4.2	4.5	4.7	5.6	100,445	65.0	1,972.1
Specialist attendances	1.0	1.0	1.1	1.8	23,125	15.0	1,536.8
Diagnostic imaging	0.7	0.8	0.8	3.7	17,331	11.2	1,952.5
Operations	0.3	0.4	0.4	3.1	7,929	5.1	1,210.0
Anaesthetics	0.1	0.1	0.1	4.9	2,451	1.6	306.6
Obstetrics	0.1	0.1	0.1	1.0	1,577	1.0	238.4
Radiotherapy and therapeutic nuclear medicine	0.0	0.0	0.1	18.9	1,272	0.8	191.7
Assistance at operations	0.0	0.0	0.0	4.2	396	0.3	54.3
Total specialist items^(a)	6.5	6.9	7.2	4.7	154,526	100.0	7,462.5

(a) Excludes specialist dental services.

Source: Medicare Australia 2009.

Specialised mental health services

Mental health is a matter of national importance. The 2007 National Survey of Mental Health and Wellbeing found that almost 1 in 2 Australians (46%) had a mental illness at some stage in their lives and 1 in 5 (3.2 million) Australians had experienced a mental disorder in the 12 months before the survey. The survey results are discussed in more detail in Section 4.5.

Australia's National Mental Health Policy (DoHA 2009) and the accompanying plan seek to create a mental health system that focuses on early detection and intervention while ensuring that all Australians with a mental illness have access to effective treatment and community supports to help them to recover and participate fully.

Total recurrent expenditure on specialised mental health services by Australian states and territories exceeded \$3.3 billion during 2007–08 (over 3% of all recurrent spending on health that year). The largest proportion of recurrent expenditure on these specialised services was spent on providing public hospital services for admitted patients (\$1.5 billion), followed closely by community mental health services (\$1.2 billion).

A variety of public and private health-care providers operate mental health services. GPs offer non-specialised services whereas specialised services are provided by psychiatrists, psychologists, community-based mental health services, psychiatric hospitals, psychiatric units within general acute hospitals and residential care facilities. The various services are described below.

Ambulatory mental health care

Ambulatory services for mental health are those that do not involve overnight admission to a hospital or residential mental health facility. They can be provided by GPs, community mental health services, hospital outpatient services, emergency departments and even hospital admitted day services.

According to estimates from the 2008–09 BEACH survey of general practice activity, 11.7% of all GP encounters involved the management of a mental health-related problem. This proportion rose from 10.4% in 2006–07 (Table 7.14). Depression and anxiety were the most commonly managed problems, accounting for half of all mental health-related problems managed and 4% of all health problems managed (AIHW 2010a).

Table 7.14: Ambulatory mental health services, 2004–05 to 2008–09

Mental health services	2004–05	2005–06	2006–07	2007–08	2008–09 ^(a)
Estimated proportion of total GP encounters that are mental health-related (per cent)	10.8	10.5	10.4	10.8	11.7
Medicare-subsidised mental-health related services	2,091,274	2,137,299	3,271,157	5,159,294	6,206,833
GP/other medical practitioner services	60,216	73,087	615,722	1,237,049	1,600,063
Psychiatrist services	2,007,218	2,015,941	1,986,533	1,949,702	1,967,222
Psychologist services	23,092	45,541	646,253	1,877,834	2,489,799
Other allied mental health services	748	2,730	22,649	94,709	149,749
Mental health-related occasions of service in emergency departments in public hospitals	138,729	149,566	178,595	162,721	n.a.
Ambulatory-equivalent mental health-related hospital separations	116,787	117,924	120,602	121,651	n.a.
With specialised psychiatric care	92,369	93,202	92,304	88,348	n.a.
Public hospitals	12,285	8,994	6,484	5,127	n.a.
Private hospitals	80,084	84,208	85,820	83,221	n.a.
Without specialised psychiatric care	24,418	24,722	28,298	33,303	n.a.
Public hospitals	14,248	15,379	17,795	18,527	n.a.
Private hospitals	10,170	9,343	10,503	14,776	n.a.
Community mental health care service contacts	5,108,524	5,665,408	5,966,277	6,374,267	n.a.

n.a. Not available.

(a) 2008–09 hospital data were not available at time of drafting.

Source: AIHW 2010a.

Almost two-thirds of mental health-related problems were managed through a medication being prescribed, recommended or supplied (66.2 per 100 mental health-related problems managed). Antidepressants (26.4 per 100 mental health-related problems managed) and anxiolytics (anti-anxiety medications—12.7 per 100) were most commonly prescribed. The second most common form of management was the GP providing counselling or advice (47.6 per 100). A referral was given at a rate of 13.0 per 100 mental health-related problems managed. The most common referrals given were to psychologists (6.1 per 100 mental health-related problems managed) and to psychiatrists (1.8 per 100) (AIHW 2010a).

Medicare-subsidised services

During 2008–09, 6.2 million Medicare-subsidised mental health-specific services were provided. This included 2.0 million services provided by psychiatrists, 2.5 million services provided by psychologists, 1.6 million provided by GPs and the remainder provided by other allied health professionals. There was an average annual decrease in Medicare-subsidised mental health services provided by psychiatrists from 2004–05 to 2008–09 of 1% per year. However, the total number of Medicare-subsidised mental health services by all providers, not just psychiatrists, increased markedly at an average annual rate of 31% per year over the same period. This was due to the addition of items to the Medicare Benefits Schedule in 2002 and 2006 for services provided by psychologists, other allied health professionals and GPs (AIHW 2010a).

Emergency department occasions of service

Public hospital emergency departments had 162,700 occasions of service specifically related to mental health during 2007–08 (Table 7.14). Four diagnosis categories accounted for the majority (85%) of mental health-related occasions of service. These were *Neurotic, stress-related and somatoform disorders* (28%), *Mental and behavioural disorders due to psychoactive substance use* (24%), *Mood (affective) disorders* (18%) and *Schizophrenia, schizotypal and delusional disorders* (15%) (AIHW 2010a).

Ambulatory-equivalent hospital separations

In 2007–08, there were about 121,700 ambulatory-equivalent mental health-related hospital separations (essentially, same-day hospitalisations that involved only ambulatory-type procedures) (Table 7.14). Of these, 19% were in public hospitals and 81% in private hospitals. Nearly three-quarters (73%) of these separations involved specialised psychiatric care. *Depressive episode* was the most common principal diagnosis, accounting for 17.8% in 2007–08 (AIHW 2010a).

Community and hospital outpatient services

There were 6.4 million mental health service contacts provided in government-operated community mental health services and hospital outpatient services in 2007–08. A greater percentage of service contacts was for males (54%) than females (45%). The most common principal diagnosis reported was *Schizophrenia, schizotypal and delusional disorders* (37%) (Table S23 🗳).

Admitted patient mental health care

During 2007–08, there were 212,890 mental health-related separations (excluding those that were ambulatory-equivalent) (Table S24 🗳). The average length of stay was 14.3 days and most (80%) were in public hospitals. There was an average annual increase of 5% in specialised psychiatric care separations in private hospitals over the period of 2003–04 to 2007–08, but there were declines in public psychiatric hospital separations, both with and

without specialised psychiatric care. Overall, the total number of separations increased by 2% per annum.

In 2007–08, the principal diagnosis of *Schizophrenia* accounted for the largest number of separations involving specialised psychiatric care (21,358, or 17.2%) (Table 7.15). In such cases, it was the most commonly reported diagnosis for both public acute and psychiatric hospitals. *Depressive episode* was the second most common diagnosis overall and the most commonly reported diagnosis for private hospitals

Table 7.15: Admitted patient separations^(a) with specialised psychiatric care, by principal diagnosis in ICD-10-AM groupings and hospital type, 2007–08

Principal diagnosis	Public acute hospitals	Public psychiatric hospitals	Private hospitals	Total	Total (per cent)
Schizophrenia	17,250	2,834	1,274	21,358	17.2
Depressive episode	11,051	1,121	7,220	19,392	15.6
Bipolar affective disorders	7,628	1,157	3,810	12,595	10.1
Reaction to severe stress and adjustment disorders	8,501	1,098	2,811	12,410	10.0
Recurrent depressive disorders	2,997	554	6,300	9,851	7.9
Schizoaffective disorders	5,354	949	1,344	7,647	6.2
Mental and behavioural disorders due to use of alcohol	2,128	690	2,565	5,383	4.3
Mental and behavioural disorders due to other psychoactive substance use	3,155	779	1,004	4,938	4.0
Specific personality disorders	3,834	614	522	4,970	4.0
Other anxiety disorders ^(b)	1,089	99	1,442	2,630	2.1
Other specified mental health-related principal diagnosis ^(c)	10,100	2,005	2,846	14,951	12.0
Other ^(d)	5,832	823	1,467	8,122	6.5
Total	78,919	12,723	32,605	124,247	100.0

(a) Excludes separations for which care type was reported as Newborn with no qualified days and records for *Hospital boarders* and *Posthumous organ procurement*, and ambulatory-equivalent mental health-related separations.

(b) Includes separations for which the principal diagnosis was any other anxiety-related principal diagnosis.

(c) Includes separations for which the principal diagnosis was any other mental health-related principal diagnosis.

(d) Includes all other principal diagnoses.

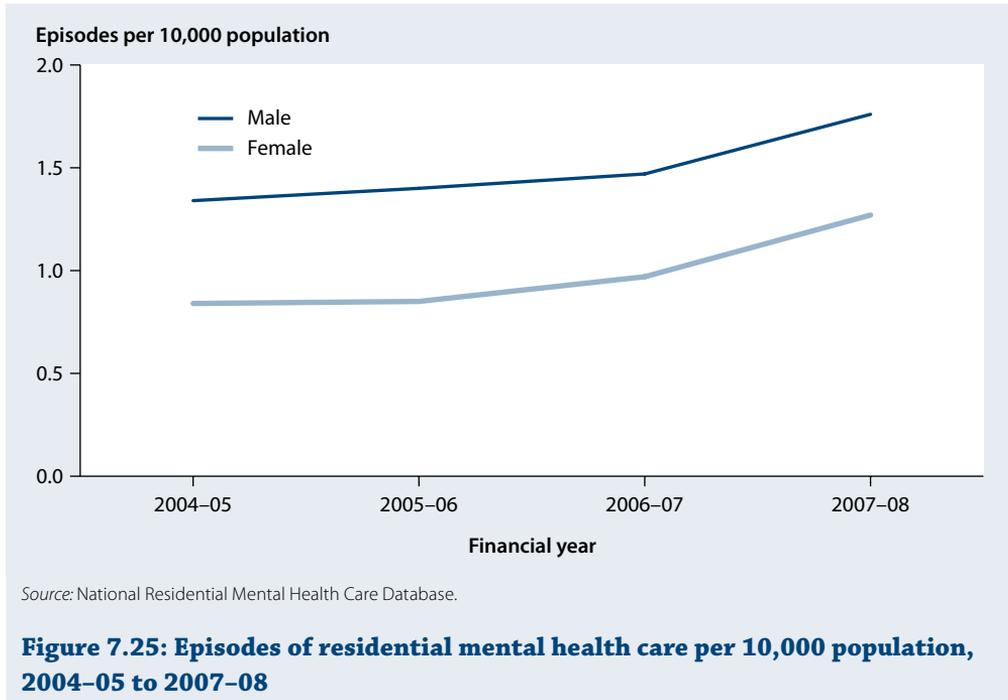
Source: AIHW 2010a.

The principal diagnosis of *Mental and behavioural disorders due to use of alcohol* accounted for the largest number of separations without specialised psychiatric care (18,304 or 21%). Among these cases, it was the most commonly reported diagnosis for both public acute and private hospitals (AIHW 2010a).

There were marked gender differences in the number of separations for the most commonly reported diagnoses involving specialist psychiatric care. For the most commonly reported diagnosis of *Schizophrenia*, the number of separations for males was more than twice that for females. *Mental and behavioural disorders due to other psychoactive substances* also displayed a similar pattern with around double the number of separations for males than females. Separations for females were substantially higher, however, for the principal diagnoses of *Recurrent depressive disorders* and *Specific personality disorders* (AIHW 2010a).

Residential mental health care

Residential mental health care is focused on providing rehabilitation, treatment or extended care for live-in patients in a domestic-like environment. In 2007–08, there were 3,222 episodes of residential mental health care. This equated to 1.5 episodes per 10,000 population, a substantial increase over the rate in previous years, as Figure 7.25 shows. Male patients accounted for a greater proportion (57%) of episodes of residential mental health care than females. The most commonly reported principal diagnosis overall was *Schizophrenia*, reported for 44% of the episodes, followed by *Schizoaffective disorders* (10%), *Bipolar affective disorders* (7%) and *Depressive episode* (6%) (AIHW 2010a).



Mental health prescriptions

There were 21.4 million prescriptions for mental health-related medications subsidised by the Pharmaceutical Benefits Scheme (PBS) and the Repatriation Pharmaceutical Benefits Scheme (RPBS) in 2008–09 (Table S25). This represented 11% of the 196.2 million PBS- and RPBS-subsidised prescriptions for all medications in that year, and was equivalent to 990 mental health-related prescriptions per 1,000 population. In interpreting this information, note that a person may have had several subsidised mental health-related prescriptions during the period covered.

The Australian Government spent \$743 million on PBS and RPBS benefits for mental health-related medications in 2008–09, accounting for 10% of total PBS and RPBS expenditure (AIHW 2010a) and equating to about \$34 per Australian.

Of these mental health-related prescriptions, 85% were provided by GPs, 9% by psychiatrists and 5% by non-psychiatrist specialists. Most of the prescriptions were for antidepressants (57%, or 12.3 million), followed by anxiolytics (15%), hypnotics and sedatives (12%),

and antipsychotics (12%). These proportions varied according to the specialty of the prescriber, with GPs prescribing relatively more anxiolytics, and hypnotics and sedatives, whereas psychiatrists and other specialists prescribed relatively more antipsychotics as well as psychostimulants and nootropics (cognitive enhancers).

Mental health-related prescriptions subsidised by the PBS and RPBS rose from 20.4 million in 2007–08 to 21.4 million in 2008–09 (Table S26 ). This was in contrast to the decline seen over the previous 3 years. There were increases in the number of psychostimulants and nootropics and antipsychotics prescribed (on average by 20% and 11% per year respectively). On the other hand, prescriptions for hypnotics and sedatives decreased on average by 3.4% per year, while prescriptions for anxiolytics, antidepressants and other medications prescribed by psychiatrists decreased on average by around 1% per year.

The number of prescriptions issued through community pharmacies that are not covered by the PBS and RPBS is estimated through the Pharmacy Guild Survey, which is an ongoing survey of community pharmacies that provide records of all dispensed prescriptions for medicines listed on the PBS and RPBS (AIHW 2007). If these prescriptions are included then the total number of community-dispensed mental health-related medications is estimated to have increased from 27 million in 2007–08 to 28 million in 2008–09.

Specialised mental health care facilities

There were a total of 6,551 specialised mental health hospital beds available in public psychiatric wards and hospitals in 2007–08. The 16 public psychiatric hospitals provided 2,156 beds at an estimated recurrent expenditure of \$447 million. In addition, there were 145 public acute hospitals with psychiatric wards or units providing 4,395 beds at a recurrent expenditure of \$1.02 billion. The number of beds and expenditure figures for private psychiatric hospitals were not published for 2007–08. Over the 5-year period of 2003–04 to 2007–08, the annual real (inflation-adjusted) change in recurrent expenditure for public psychiatric hospitals declined on average by 1% in real terms, whereas for public acute hospitals with psychiatric wards or units expenditure grew at an average rate of 8% (AIHW 2010a). Equivalent data for private hospitals for 2007–08 were not available.

In 2007–08, there were 2,184 beds provided in 142 residential mental health facilities, both government and non-government operated, with a total recurrent expenditure of \$189 million. Annual real growth in this expenditure averaged 2% between 2003–04 and 2007–08 (AIHW 2010a).

Nationally, \$1.3 billion was reported as being spent on 958 community mental health care services during 2007–08. Annual average real expenditure growth between 2003–04 and 2007–08 was 7% (AIHW 2010a). These services include hospital outpatient clinics and non-hospital community mental health care services, such as crisis and mobile assessment and treatment services, day programs, outreach services, and consultation and liaison services.

Alcohol and other drug treatment services

Alcohol and other drug treatment services cover a wide variety of treatment interventions and are provided in both residential and non-residential settings. The services provided can include detoxification and rehabilitation programs, information and education courses, pharmacotherapy and counselling treatments.

In 2007–08, 658 treatment agencies that received public funding reported data for the Alcohol and Other Drug Treatment Services National Minimum Data Set (AODTS–NMDS), with half identified as non-government agencies (AIHW 2009d). This data set covers almost all government-funded treatment service agencies. Major exclusions from the data set are services that are specifically for Aboriginal and Torres Strait Islander people and those in which clients only receive treatment with opioid pharmacotherapy (for example methadone maintenance treatment). Any alcohol and drug treatment provided in a general practice setting is also excluded.

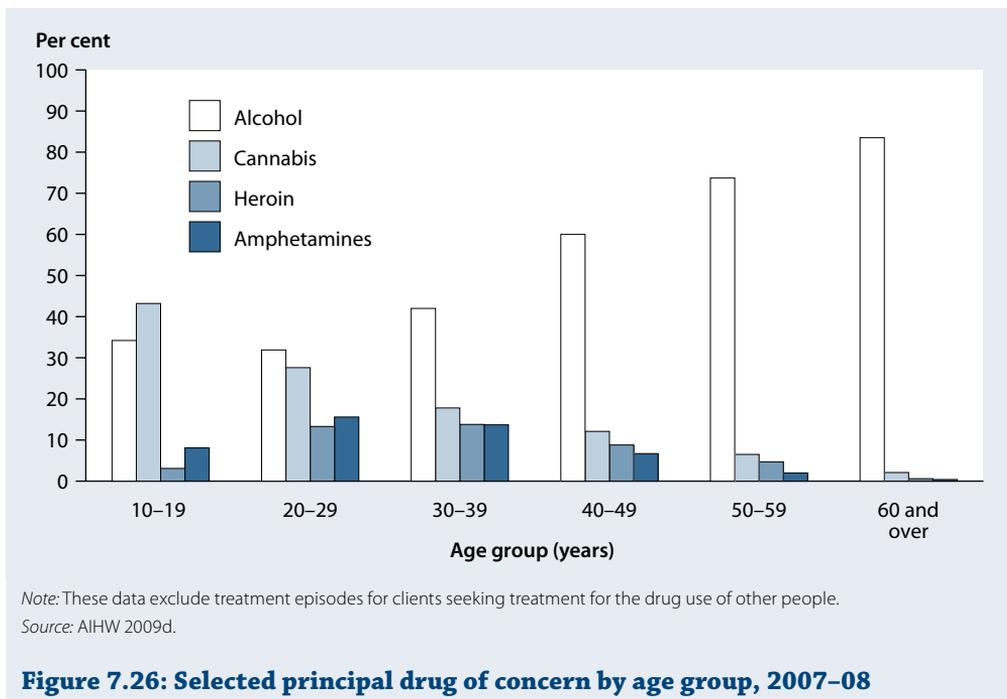
Since 2001–02, data on completed treatment episodes (referred to as ‘closed’ treatment episodes) have been collected for the AODTS–NMDS. A closed treatment episode refers to a period of contact between a client and a treatment agency that has defined start and end dates. A closed treatment episode may be for a single treatment (such as education and information only) or for a combination of treatments that form part of a larger plan.

Around 154,000 treatment episodes were provided during 2007–08, an increase of about 7,000 clients (5%) compared with 2006–07. The vast majority of treatment episodes (96%) were for people seeking treatment for their own drug use. The largest group of clients was males aged 20–29 years and this finding has been remarkably consistent over time.

Which substances do people seek treatment for?

The ‘principal drug of concern’ refers to the main substance that clients state led them to seek treatment from an agency. In 2007–08, there were around 148,000 episodes where clients sought treatment for their own substance use and in turn nominated a principal drug of concern. Nationally, alcohol (44%) and cannabis (22%) remained the most common principal drugs of concern to clients, followed by amphetamines and heroin (11% each). The proportion of clients seeking treatment for alcohol increased from 38% in 2002–03 to 44% in 2007–08. The proportion of clients seeking treatment for amphetamines and heroin has remained relatively stable since 2001–02. While nicotine was not the main drug for which clients sought treatment (2%), for about one in five episodes (18%) clients reported that nicotine was a concern in addition to their principal drug of concern.

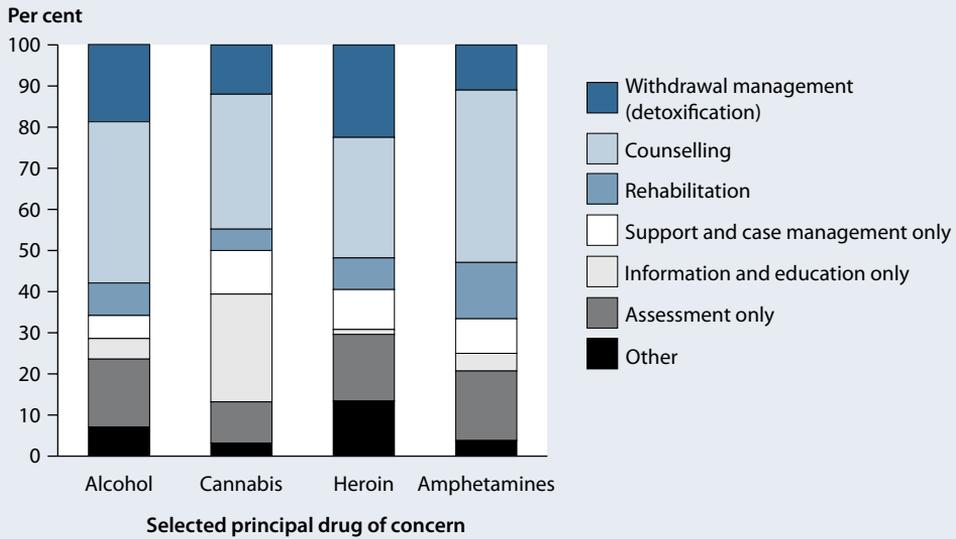
Cannabis was the drug most commonly recorded for clients in the 10–19 years age group (43% of their episodes), whereas alcohol was the most common drug for those aged 20–29 years (32%) (Figure 7.26). As well as alcohol being the most likely principal drug of concern overall, it was especially so for older clients, nominated in 83% of episodes for those aged 60 years or over, and in 74% for those aged 50–59 years.



What types of treatments are provided?

Among clients seeking treatment for their own drug use, counselling was the most common form of main treatment provided (37% of treatment episodes in 2007-08). This was followed by withdrawal management (detoxification) (16%), assessment (14%), information and education only (10%), support and case management (8%), and rehabilitation (7%).

The type of main treatment varied, depending on the principal drug for which the client sought treatment (Figure 7.27). Overall, counselling accounted for the highest proportion of treatment for all drugs of concern except benzodiazepines, methadone, nicotine and 'other' opioids. Where alcohol was the principal drug, the next most common treatment type was withdrawal management (19% of treatment episodes), followed by assessment (16%) and rehabilitation (8%). This treatment mix was similar for clients whose principal drug was heroin. For treatment episodes where amphetamines are reported as the principal drug, counselling (42%) was the most common treatment, followed by assessment (17%) and rehabilitation (14%). For episodes where cannabis was reported as the principal drug, counselling (33%) was the most common treatment, followed by information and education (26%), withdrawal management (12%) and support and case management (11%).



Notes

1. These data exclude treatment episodes for clients seeking treatment for the drug use of others.
2. 'Other' includes 3,178 closed treatment episodes where the main treatment was reported as pharmacotherapy. This represents a small proportion of pharmacotherapy treatment in Australia as agencies whose sole activity is to prescribe and/or dose for methadone or other opioid pharmacotherapies are currently excluded from the AODTS–NMDS.

Source: AIHW 2009a.

Figure 7.27: Selected main treatment type by selected principal drug of concern, 2007–08

What about other services for alcohol and other drugs?

There were 84,889 hospital separations reported in 2007–08 with a substance use disorder as the principal diagnosis, representing 1.1% of all hospital separations in Australia in that year (AIHW 2009d).

That same year, an estimated 93,000 episodes of care were provided to clients of Australian Government-funded Aboriginal and Torres Strait Islander substance use services. The treatment agencies providing these services all reported providing assistance for alcohol-related problems and the great majority also provided treatments for cannabis (96%), tobacco (76%), amphetamines (72%) and multiple drug use (78%). The treatments comprised about 3,500 episodes of residential treatment or rehabilitation, 17,300 of 'sobering up' or residential respite, and 72,000 episodes of 'other' care.

Nationally, an estimated 41,347 clients were receiving pharmacotherapy treatment for opioid use on a 'snapshot or specified' day in June 2008, with 70% of these clients receiving methadone, while the remainder were receiving buprenorphine or buprenorphine–naloxone (around 15% each) (AIHW 2009e). The proportion of clients receiving buprenorphine–naloxone increased markedly between 2006 (5.5%) and 2008 (15.5%). This combination product is now more commonly used as a treatment for opioid dependence than buprenorphine alone.

Reproductive health services

A range of clinical, community education and professional training services in sexual and reproductive health is provided by family planning organisations. These include contraceptive services, counselling and information services, early intervention and health promotion services, and the management of sexual and reproductive health.

Assisted reproduction technology

Assisted reproduction technology (ART) has been used in Australia since 1979. Policies governing its use vary among states and territories—in some jurisdictions, access is restricted to couples, while others allow single females to use ART services. The three main assisted reproduction technology procedures are in-vitro fertilisation, intra-cytoplasmic sperm injection, and gamete intra-fallopian transfer (Box 7.10).

Box 7.10: Main assisted reproduction technology procedures

In-vitro fertilisation (IVF)

Eggs and sperm are combined in the laboratory for fertilisation outside the body and the fertilised eggs are placed in the uterus. In 2007, IVF accounted for 2 in 5 assisted reproduction technology (ART) cycles in which embryos or oocytes were transferred.

Intra-cytoplasmic sperm injection (ICSI)

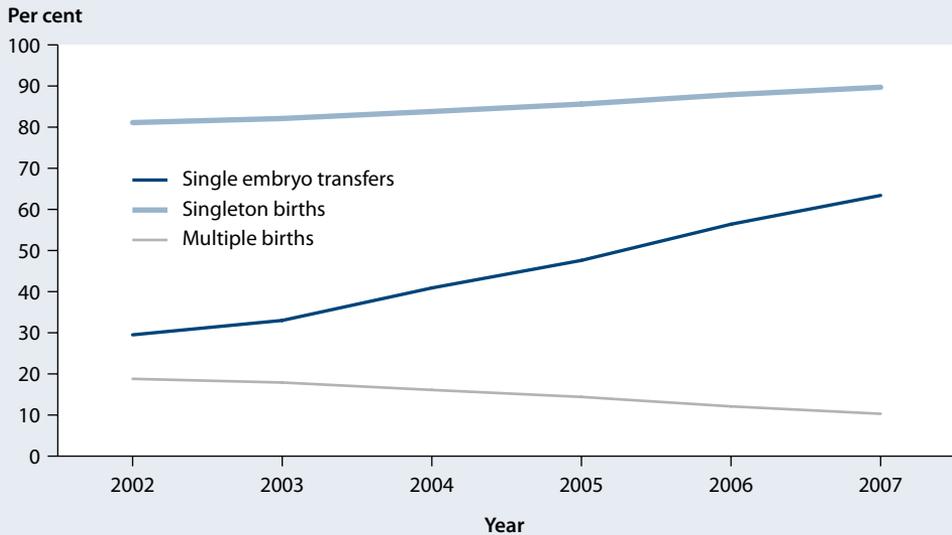
A single sperm is injected into an egg for fertilisation outside the body and the fertilised egg is placed in the uterus. This accounted for over half (58%) of ART transfer cycles in 2006.

Gamete intra-fallopian transfer (GIFT)

Eggs and sperm are placed in the uterus for fertilisation inside the body. In 2007, only 0.2% of transfer cycles used GIFT.

Data from the Australian and New Zealand Assisted Reproduction Database show that, in Australia in 2007, 42,853 ART cycles were started in which embryos or oocytes were transferred—almost 50% more than in 2002. Around 95% of ART transfer cycles involved the use of a female's own egg or embryo (Wang et al. 2009). More than one-quarter (27%) of cycles initiated in 2007 resulted in a pregnancy being detected, and 1 in 5 cycles (21%) resulted in a live birth. The success rate of transfer cycles, both in terms of pregnancies and live births, has risen over recent years (Wang et al. 2009).

A marked recent trend in ART treatment is a reduction in the frequency of multiple births, associated with the increasing practice of transferring a single embryo per cycle (Figure 7.28). Single-embryo transfer cycles accounted for 63% of embryo transfer cycles in 2007, compared with 29% in 2002. Over the same period, the multiple birth rate from ART almost halved from 18% to 10%.



Note: Single embryo transfers expressed as a percentage of all ART transfer cycles; birth plurality expressed as a percentage of all births resulting from ART treatment.

Source: Unpublished ANZARD data provided by NPSU.

Figure 7.28: Single-embryo transfers and birth plurality resulting from ART treatment, 2002–2007

Hearing services

A range of hearing services is provided by private and public practitioners, including hearing assessments and screenings, regular hearing checks to monitor changes in hearing levels, the supply and fitting of hearing devices, the replacement and maintenance of devices, and training to improve listening and communication skills.

The largest public program is administered by the Office of Hearing Services, which operates a voucher scheme covering hearing assessments; audiological rehabilitation and maintenance; prescription, selection and fitting of hearing devices; and subsidiary battery supply and device repair. In some circumstances clients of the voucher scheme may choose to be fitted with a hearing aid with additional features beyond their clinical needs and in these cases clients pay an additional cost. The voucher can be used at either Australian Hearing clinics or private clinics approved to provide services under the program. Groups eligible for the vouchers include pension concession card holders aged over 21 years and their dependents, Department of Veterans' Affairs card holders in certain categories, members of the Australian Defence Force (ADF) and clients undergoing an Australian Government-funded vocational rehabilitation service who are referred by their service provider.

Almost 1 million hearing services were provided through the voucher system in 2008–09 (Table 7.16). The number of hearing services increased by 39% between 2002–03 and 2008–09, with assessments showing the strongest growth of all the hearing service categories.

Table 7.16: Hearing services provided through the voucher system, 2002–03 to 2008–09 (selected years)

Type of service	Number of services				Per cent increase
	2002–03	2004–05	2006–07	2008–09	2002–03 to 2007–08
Assessments	138,492	176,537	184,558	223,839	61.6
Fittings	107,741	127,520	124,657	143,346	33.0
Maintenance	304,159	336,552	376,452	416,370	36.9
Replacements	17,731	17,973	20,388	26,421	49.0
Other ^(a)	139,631	160,299	163,940	170,568	22.2
Total	707,754	818,881	869,995	980,544	38.5

(a) Other includes audiological case management, rehabilitation services, aid adjustments, minor repairs and spare aids.

Source: AIHW analysis of Office of Hearing Services data.

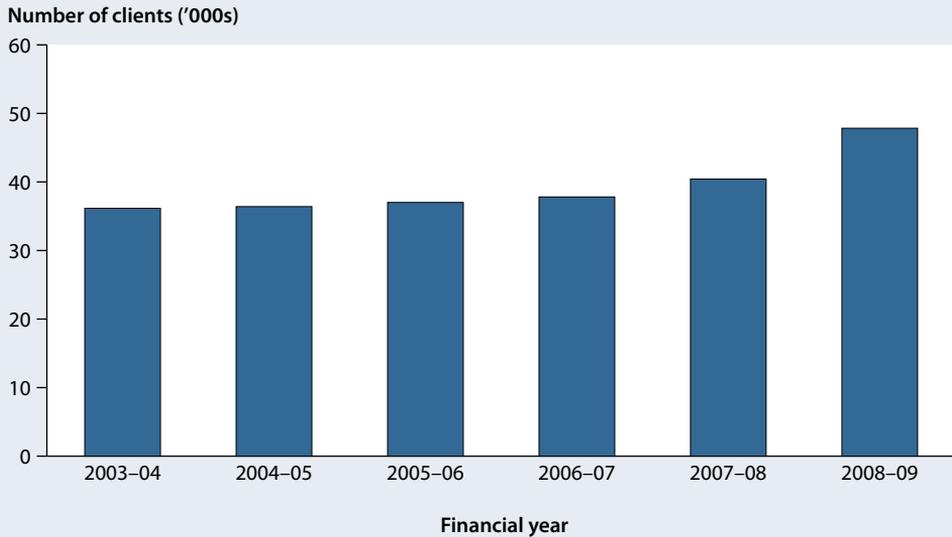
The Australian Government also provides hearing services for special needs groups through Australian Hearing, with funding provided by the Office of Hearing Services (Box 7.11).

Box 7.11: Eligibility for free hearing services provided by Australian Hearing

The following groups are eligible for free hearing services from Australian Hearing under its Community Service Obligations program:

- all Australians under 21 years of age
- adults with complex rehabilitation needs
- Aboriginal and Torres Strait Islander people who are over the age of 50, or are participating in a Community Development Employment Program or have participated in one of these programs between 1 December 2005 and 30 June 2008
- eligible clients living in remote areas.

In 2008–09, Australian Hearing provided services to 47,837 community service obligations program clients—18% more than the previous year (Figure 7.29). The number of services (excluding maintenance) provided to clients under the Community Service Obligations program increased from 73,068 in 2003–04 to 77,098 in 2008–09. During this period services to Indigenous Australians more than tripled.



Source: AIHW analysis of Office of Hearing Services data.

Figure 7.29: Number of clients receiving free hearing services from Australian Hearing from 2003-04 to 2008-09 ('000)

Palliative care services

Palliative care is the specialised care of people who have a terminal illness. The aim is not only to achieve the best possible quality of life for the individual patient under the circumstances but also for their carers and family. Care focuses on the prevention and relief of suffering through the early identification and treatment of pain, disability, and other physical and psychosocial problems. Medical conditions that commonly lead to palliative care include cancer, HIV/AIDS, muscular dystrophy, multiple sclerosis and end-stage dementia.

There is no single model for the delivery of palliative care services. It can be provided in the home, in community-based settings such as nursing homes, in palliative care units and in hospitals. The modern approach to palliative care emphasises flexibility and choice. The care provided is tailored to meet the wishes of the person who is dying, particularly in relation to the place of death.

Palliative care involves coordination of the skills and disciplines of many service providers, some specially qualified in palliative care. Those involved may include:

- specialist providers: medical, nursing and allied health staff who have undertaken further study in palliative care or have significant experience in the area
- generalist providers: those clinicians (medical, nursing and allied health) working in other areas of the health system who have a professional involvement with people requiring palliative care
- support services: those who assist with the processes of daily living, enhancing quality of life, and providing emotional and spiritual support.

In 2006, states and territories identified some 340 government-funded agencies that provided palliative care in Australia. A survey of these agencies found that 63% were specialist palliative care agencies. Sixty-five per cent of agencies delivered care mainly in the community (commonly private residences).

The number of separations for admitted hospital patients receiving palliative care in 2007–08 was 47,100. Public hospitals accounted for some 82% of these separations. Fifty-five per cent were male and 72% were aged 65 years or over. Some 60% of palliative care separations were for cancer patients.

Health services in the Australian Defence Force

All ADF personnel are provided with a comprehensive range of health services including emergency, acute and ongoing clinical care, rehabilitation, health screening, occupational fitness assessment and preventive health activities. Primary health care is provided mainly in-house by ADF staff and contracted health-care providers. ADF health facilities in Australia provide a range of outpatient services, low-dependency inpatient care and limited surgical capability, with some also providing dental, pharmacy, allied health and rehabilitation services. Many of the specialist health services provided to ADF personnel are provided by civilians, using a mix of contract, sessional and fee-for-service arrangements. In general, ADF members are in good health and enjoy a higher than average health status during their term in the ADF (see Section 5.7).

Oral health

The standard of oral health in the ADF is high. Annual dental examinations and biannual dental radiographs and treatment are mandatory for all ADF members. In 2008–09, about 90% of the ADF had no dental problems and were considered unlikely to require treatment within the next 12 months (dentally fit to deploy on operations).

Health promotion

The ADF Health Promotion Program aims to identify and manage health risk factors, lifestyle issues and early disease among ADF members.

All ADF members undergo regular health assessments that include a health questionnaire and physical examination that focus on height, weight and body mass index, blood pressure, vision and hearing; and lifestyle factors including smoking, alcohol consumption, mental health problems, sun protection, dental health and sexual health. Vaccination status is also checked and members are offered appropriate routine screening such as Pap tests, mammography and faecal occult blood tests. Specific assessments are carried out where dictated by an individual's job (for example as aircrew or divers) or as part of a pre-deployment workup.

A specialised health promotion unit within the ADF also provides advice on health promotion issues, and collects and analyses information. An example of this is the recent project on noise-induced hearing loss, in collaboration with the Department of Veterans' Affairs and the Occupational Health and Safety and Compensation Branch of the Department of Defence. This project identified expected work risk areas and validated the safety measures currently in place within the ADF. It also identified recreational risks contributing to noise-induced hearing loss.

Rehabilitation

The ADF regards rehabilitation as an integral part of health care and formalised its rehabilitation program with the introduction of the *Military Rehabilitation and Compensation Act* in 2004. The program combines the elements of health care, occupational health and safety, and personnel management.

In the period from July 2006 to June 2008, the program received 9,361 referrals (Table 7.17), an average of 390 per month. The two most common conditions for which rehabilitation was undertaken were musculoskeletal injuries and conditions (62.9%) and mental health disorders (8.5%). The program had a successful return-to-work rate of 88%.

During the first 2 years of the program's operation, the number of medical discharges from the ADF decreased from 761 to 595. Of this decrease, 136 (82%) were directly attributed to rehabilitation programs that retrained ADF members for alternative duties or trade within the ADF, estimated to represent a saving of \$11.8 million.

Table 7.17: Comparison of days on convalescence and return to work rate

Year	Days absent for convalescence	Referrals to rehabilitation	Return-to-work rate
2005–06	101,546	1,849	n.a.
2006–07	92,664	5,096	88%
2007–08	92,560	4,265	86%

n.a. Not available.

Source: Management and Analysis Reporting Solution Database.

Mental health in the Defence Force

The mental health of ADF personnel is a high priority. As well as being the second most common reason for referrals for rehabilitation in the 2-year period from July 2006 to June 2008, mental health disorders were the third most common reason for time off work during the period July 2007 to June 2009 (Epitrack data). They are also the second most common set of conditions leading to consideration of medical discharge from the ADF.

Mental health support in the ADF is undertaken by multidisciplinary teams, comprising uniformed and civilian specialists from general medicine, psychiatry, psychology, nursing, religion and social work.

In 2009 a comprehensive review of mental health services was undertaken and a mental health reform process is now underway. An ADF Centre for Mental Health is being developed, and regional and local multidisciplinary mental health teams are being created around Australia. Five programs have been established, relating to:

- resilience and prevention
- clinical programs (alcohol and other drugs, depression, suicide prevention)
- mental health strategy and services
- operational mental health
- post-traumatic mental health.

Psychology support to the ADF

The Defence Force Psychology Organisation (DFPO) is one of several psychology support agencies within the ADF and it provides that support across the ADF within Australia. In particular it provides services and interventions that aim to contribute to organisational health and effectiveness, performance enhancement, and psychological health and readiness. These ‘pillars’ of the ADF’s psychological support are in turn underpinned by applied research, policy and governance; for example, regular auditing of post-deployment psychological screening and professional development.

Psychological services are provided by uniformed and non-uniformed psychologists and psychology examiners and assistants. This support includes post-deployment psychological screening and support, administrative referrals, medical referrals, self-referrals, training referrals, critical incident mental health support, administration of surveys which assess the psychological health of the organisation and advice to commanders.

Pharmaceutical use

The 15 most common therapeutic classes of agents provided to ADF personnel during 2007–08 and 2008–09 are set out in Table 7.18. Vaccines were the most common item, reflecting the need to protect ADF personnel from vaccine-preventable diseases, particularly on deployment. Analgesics, antipyretics (anti-fever drugs) and other items for symptomatic relief were also commonly provided, as were anti-infective agents, which include antibiotics, antivirals and antifungals.

Table 7.18: Top 15 provided therapeutic classes for 2007–08 and 2008–09

Item by therapeutic class	Average per cent of provided agents for 2007–09
Vaccines	15.2
Analgesics/antipyretics (simple and combination)	13.3
Anti-infective agents	11.7
Expectorants/antitussives/mucolytics/decongestants	11.7
Sunscreen	8.3
Topical oro- and nasopharyngeal medication	6.9
Non-steroidal anti-inflammatory agents	5.9
Supplements	3.2
Antihistamines	2.3
Antihypertensive agents	1.9
Hyperacidity/reflux/ulcer medication	1.8
Lipid-lowering agents	1.7
Hormonal contraception	1.5
Bronchodilators	1.2
Emollients/antipruritics/protective preparations	1.2

Notes

1. Supplements include oral iron, vitamins and glucosamine.
2. Analgesics/antipyretics include simple, combination and strong analgesics.

Source: ADF unpublished data.

7.5 Use of medicines

The use of medicines is a common health-related action. Medicines are mostly obtained by prescription (there were 262 million prescriptions filled in 2008 in Australia), or purchased over the counter without a prescription. Non-prescription medicines include analgesics (pain-killers), cough medicine, vitamins and complementary medications. The use of medicines is an important component of the health-care system, accounting for \$13.7 billion or 13% of recurrent health expenditure in 2006–07 (AIHW 2009f).

Prescription medications are provided largely through community pharmacies and hospitals, while non-prescription medicines and complementary and alternative medicines are mainly sourced from pharmacies and other retail outlets. At 31 December 2009 there were 5,117 approved community pharmacies in Australia.

Prescribed medicines

Information on the supply of prescription medicines in the community is derived from two sources and compiled by Medicare Australia. Information on prescriptions for medications that are subsidised by the PBS or the RPBS is held by Medicare Australia (see Box 7.12). Estimates of the use of non-subsidised prescription medicines are sourced 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.

Box 7.12: Pharmaceutical Benefits Scheme and the Repatriation 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. At December 2009, the scheme covered 874 drug substances (generic drugs), available in 2,168 forms and strengths, and marketed as 3,949 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, its safety and its cost-effectiveness compared with other treatments. Once the committee has recommended a medicine, 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 Australian Government then considers the listing.

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 2010, general patients paid up to the first \$33.30 for each PBS prescription item. For concessional patients (people with low incomes and sickness beneficiaries who hold a health care card), the payment was \$5.40 per prescription item. These copayments are increased on 1 January each year, generally in line with consumer price index increases.

Individuals and families are protected by the PBS safety net from large overall expenses for PBS-listed medicines. For the calendar year to 2011, once a general patient and immediate family has spent \$1,281.30 in a calendar year, the patient copayment per item decreases to the concessional rate of \$5.40. For concessional patients, the \$5.40 copayment is not required once their expenditure on PBS items exceeds \$324.00.

Patients may pay more than the standard copayment 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 the PBS safety net.

During 2008, there were 179 million PBS prescriptions—26 million for general patients and 153 million for concessional patients (Table 7.19). In addition there were 14 million prescriptions written for war veterans and their dependants under the RPBS.

Also attracting subsidy were 0.4 million PBS doctor's bag prescriptions—that is, drugs provided without charge through the PBS to the doctor, who can then supply them free to patients in an emergency.

In 2008, there were about 68 million prescriptions which did not attract a subsidy under the PBS or the RPBS—50 million below the copayment threshold and 18 million private prescriptions. Private prescriptions are those written by doctors for drugs not eligible for subsidy under the PBS or RPBS, or for a listed medication prescribed for a non-PBS-approved medical reason.

Trends in prescribed medicines

There has been a steady increase in the total number of community prescriptions (PBS and the rest), from 180 million in 1996 to 262 million in 2008 (Table 7.19), representing an average annual growth of 3.2% or a total growth over the period of 46%. The growth in the number of PBS and RPBS prescriptions is less regular than the growth in overall prescriptions because of variations in the copayment schemes over the years. The rate of PBS and RPBS prescriptions as a proportion of the total community prescriptions fluctuated over the period 1996–2006. However, in 2008 it was 74%, the same level as 1996.

Between 1996 and 2006, prescriptions which cost below the copayment threshold decreased from 19% to 15% of total prescriptions. However, in 2008 they increased to 19%. This represents a 45% increase from 35 million prescriptions in 2006 to 50 million in 2008. The rise in under-copayment medications accounted for 62% of the total increase in community prescriptions between 2006 and 2008. The reason for this increase is unclear, although the availability of medications costing less than the copayment threshold due to patent expiry and discounted medications may be contributing to this increase. Policy changes that broaden the eligibility criteria for certain prescription medications may also influence these figures.

Table 7.19: Number of community prescriptions, 1996 to 2008

Type	1996	1998	2000	2002	2004	2006	2008	Change 1996 to 2008	Average annual change 1996 to 2008
	(million)							(per cent)	(per cent)
PBS concession	105.8	107.3	120.5	132.3	141.4	141.9	152.6	44	3.1
PBS general	18.5	18.8	21.8	25.2	29.5	25.8	26.4	43	3.2
RPBS	8.7	10.2	12.5	15.0	15.7	14.7	14.1	62	4.3
<i>PBS/RPBS total</i>	<i>133.0</i>	<i>136.4</i>	<i>154.8</i>	<i>172.5</i>	<i>186.6</i>	<i>182.3</i>	<i>193.1</i>	<i>45</i>	<i>3.2</i>
Private	11.7	15.1	14.3	16.0	18.1	19.3	18.0	55	4.1
Below copayment	34.1	35.4	30.7	27.6	28.2	34.6	50.2	47	3.9
Other ^(a)	0.7	0.6	0.5	0.5	0.4	0.4	0.4	-46	-4.9
Total	179.5	187.5	200.3	216.6	233.3	236.7	261.7	46	3.2

PBS Pharmaceutical benefits scheme.

RPBS Repatriation Pharmaceutical Benefits Scheme.

(a) 'Other' refers to doctor's bag medications.

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

Which drugs are prescribed the most?

One measure of the use of prescription medicine is the defined daily dose per 1,000 population. It is based on the assumed average dose per day of the drug for its main indication (reason for use) by adults. It allows for comparisons of different drugs independent of differences in quantities of drugs per prescription. It is assumed that the amount of medicines supplied is the same as the amount used. However, this will not always be the case.

In 2006–07, atorvastatin (used for lowering blood cholesterol) was the most commonly used generic drug measured by the defined daily dose rate (Table 7.20), followed by ramipril (used for lowering blood pressure) and perindopril (also used for lowering blood pressure). 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 or non-RPBS prescription in 61% of cases (4 million prescriptions).

Table 7.20: Top 15 generic medications, 2007–08

Generic name	Action	Defined daily dose per 1,000 population			Prescriptions ('000)		
		PBS/RPBS	Other ^(a)	Total	PBS/RPBS	Other ^(a)	Total
Atorvastatin	Lowers blood cholesterol	65.6	0.2	65.8	10,555	30	10,585
Ramipril	Lowers blood pressure	28.4	11.8	40.2	2,678	1,029	3,707
Perindopril	Lowers blood pressure	22.5	7.1	29.6	3,840	1,283	5,123
Simvastatin	Lowers blood cholesterol	25.7	0.2	25.8	5,779	113	5,892
Irbesartan	Lowers blood pressure	16.7	6.9	23.6	3,089	1,248	4,337
Salbutamol	Opens airways	16.2	5.3	21.5	2,810	856	3,666
Esomeprazole	Lowers stomach acid	19.0	0.1	19.1	5,229	15	5,244
Paracetamol	Pain-killer	16.2	0.7	16.9	3,674	170	3,844
Omeprazole	Lowers stomach acid	16.3	0.2	16.5	3,707	54	3,761
Metformin hydrochloride	Lowers blood glucose	11.7	4.2	15.9	2,965	1,041	4,006
Atenolol	Lowers blood pressure	9.3	3.0	12.3	3,249	1,030	4,279
Amoxicillin	Antibiotic	2.7	4.1	6.8	2,553	4,000	6,553
Amoxicillin with clavulanic acid	Antibiotic	1.7	2.3	4.1	1,658	2,281	3,940
Cefalexin	Antibiotic	1.4	1.3	2.7	2,330	2,132	4,462
Codeine with paracetamol	Pain-killer	n.a	n.a	n.a	2,496	1,557	4,053

PBS Pharmaceutical Benefits Scheme.

RPBS Repatriation Pharmaceutical Benefits Scheme.

(a) Prescriptions not subsidised by the PBS or RPBS, because they were private prescriptions or the cost to the patient was not more than the copayment.

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

The use of some prescription medicines has changed markedly over the last few years. For most drugs appearing in the top 15 in 2003–04 and 2007–08 there has been an increase in the defined daily dose rate. However, there has been a fall in the rate for omeprazole (17%), paracetamol (20%) and salbutamol (16%) (Table S27 ). Some medications that were in the top 15 in 2003–04 no longer appear, including celecoxib and rofecoxib (ranked tenth and fourteen respectively in 2003–04). Following the identification of cardiovascular risks associated with cox-2 inhibitor drugs such as these, rofecoxib (Vioxx) was withdrawn from the market and doctors were advised to limit the use of celecoxib (TGA 2010).

Atorvastatin, simvastatin (cholesterol lowering drugs) and clopidogrel (reduces blood clot formation) were the highest cost drugs for the PBS in 2007–08, with expenditure on them totalling \$544.1 million, \$221.9 million and \$171.2 million respectively. The next most costly were esomeprazole (a drug that lowers stomach acid, \$166.2 million) and olanzapine (a drug used to treat schizophrenia and bipolar disorders, \$152.3 million) (DoHA 2008).

Prescribing patterns of general practitioners

The BEACH survey of general practice activity collects information on drugs prescribed by GPs (Britt et al. 2008). In 2007–08, GPs wrote an estimated 79,051 prescriptions, at a rate of 82 per 100 encounters. Medications for the nervous system, including analgesics

(pain-killers) and antidepressants, were the most commonly prescribed group, accounting for 21.6% of all prescriptions. The next most common was cardiovascular medications (20.1%), followed by antibiotics (19.3%), alimentary tract and metabolism medications (9.6%), and respiratory medications (6.2%).

Of the top 10 most commonly prescribed medications, four were antibiotics and two were pain-killers (Table 7.21). Other medications commonly prescribed were cholesterol lowering drugs, blood pressure lowering drugs, drugs for the treatment of diabetes and drugs used to treat asthma.

Table 7.21: Medications most frequently prescribed by GPs, 2007–08

Generic name	Action	Proportion of prescriptions (per cent)	Prescriptions per 100 encounters
Amoxicillin	Antibiotic	4.2	3.5
Paracetamol	Pain-killer	3.0	2.5
Cephalexin	Antibiotic	3.0	2.4
Paracetamol with codeine	Pain-killer	2.3	1.9
Atorvastatin	Lowers blood cholesterol	2.1	1.7
Amoxicillin with potassium clavulanate	Antibiotic	2.1	1.7
Salbutamol	Opens airways	1.6	1.3
Roxithromycin	Antibiotic	1.5	1.2
Metformin	Lowers blood glucose	1.4	1.2
Perindopril	Lowers blood pressure	1.4	1.2

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.

Source: Britt et al. 2008.

Non-prescribed medicines

The only information available on the use of non-prescribed medicines is from the BEACH survey, which collects and reports information on drugs that GPs advise patients to purchase over the counter or that the GPs supply directly.

In 2007–08, 9.8% of medications prescribed, advised or provided by GPs in the BEACH survey were advised for over-the-counter purchase, and 9.9% were supplied by the GP. Over a quarter of drugs (25.2%) advised for over-the-counter purchase were for paracetamol and 5.7% for ibuprofen (an anti-inflammatory drug). The most common medications supplied directly by GPs were vaccines.

7.6 Safety and quality

There are many ways of describing health care and the earlier sections of this chapter have focused mainly on the various types of services and their extent. Another perspective is not simply on services being provided but on how well they are performing. Chapter 9 relates to this approach by discussing Australia's overall health performance, as suggested by a range of indicators. This section complements Chapter 9 by focusing in more detail on certain aspects of the health system's performance—health-care safety and quality (Box 7.13). The principles of safety and quality apply to the entire health system, from

community and primary health services to hospital services, as well as across private and public sectors. The broader community, as users and consumers of health care, often have a strong interest in the area.

This section provides an overview of current activities to encourage monitoring and reporting on safety and quality in Australia, with a strong focus on hospitals. It concludes with a brief description of medical indemnity claims. Although medical indemnity claims comprise only a subset of safety and quality events, claims can be regarded as a reflection of patient views of health care, safety and quality, as a patient's decision to pursue legal action against a health-care provider represents significant dissatisfaction with their health-care experience.

Box 7.13: Health-care safety and quality

The safety of the health-care system relates primarily to preventing adverse or undesired health outcomes and can be defined as 'the avoidance or reduction to acceptable levels of actual or potential harm from health care or the environment in which health care is delivered' (NHPC 2001).

Health-care quality is a characteristic of the system that encapsulates how it is performing in an overall sense. There is no universally accepted definition of quality. Typically, quality is defined in terms of different dimensions of performance, including:

- effectiveness—defined as care, intervention or action provided that is relevant to the client's needs, is based on established standards and achieves the desired health outcome
- continuity of care—defined as the ability of the health-care sector to provide uninterrupted, coordinated care or service across programs, practitioners, organisations and levels over time
- responsiveness—defined as the ability of a health-care service to be client oriented: where clients are treated with dignity and confidentiality, participate in choices related to their health care and where services respond to client reported experience and outcomes.

The characteristics of the health-care system that comprise health-care safety and quality are components of the broader concept of 'health performance'. As outlined in Chapter 9, health performance also covers issues such as accessibility of services, population health status and determinants of health.

Measuring and reporting safety and quality

The measurement and reporting of safety and quality occurs at various levels of the health system: at the clinician level (for example, review of surgery outcomes), at the service level (for example, compliance with guidelines or standards), among networks of health services, and at the jurisdictional and national level.

Regardless of the level at which it occurs, the primary aim of safety and quality measurement and reporting is to improve health-care delivery. This could be improvements in the clinical management of patients, refinement of service management policy (for example, infection control) or improvements in broader policy and health system planning (such

as workforce development). In most cases information is shared between clinicians, or between clinicians, service administrators or health department employees. This fosters improvements through measuring and comparing outcomes, and through understanding the potential for self-improvement. To this end, the data must be accurate and properly analysed, interpreted and understood. This process is particularly important because safety and quality indicators are generally not exact measures of performance in the area, but rather a 'flag' that can identify potential areas for further analysis.

There is also a role for making safety and quality information publicly available. For example, some data are published for some hospitals on specific safety and quality indicators. And some safety and quality indicators, such as adverse events, are published annually at a national level (see AIHW 2009c and earlier publications).

In some other countries publication of safety and quality information at the service level occurs routinely, for example, National Health Service Choices in the United Kingdom (see <www.nhs.uk>) or Hospital Quality Compare in the United States (see <www.hospitalcompare.hhs.gov>). The publication of service-level indicators recognises the right of health-care users to be informed and included in choices of care, and creates an environment of transparency and accountability at the service level.

A national approach

Over the last few years, there have been a number of recent developments in the monitoring and reporting of safety and quality data at a national level. In 2008, the Council of Australian Governments (COAG) announced a suite of health-care performance indicators in the National Healthcare Agreement (see Box 9.2). Collectively, this indicator set relates to the performance of the entire health system. It includes, for example, indicators that relate specifically to adverse events that arise or are treated in hospitals. These are: health-care associated infections—*Staphylococcus aureus* bacteraemia (HAI-SAB), including methicillin-resistant strains; pressure ulcers; falls; adverse drug events; and intentional self-harm. Unplanned or unexpected hospital readmissions within 28 days of selected surgical procedures are also included.

Due to data limitations, not all of these indicators can be reported by the COAG Reform Council, charged by COAG to report the indicators. Considerable data development and collection efforts are now in progress, for example in the area of HAI-SAB. Under the guidance of the Australian Commission on Safety and Quality in Health Care, work is also underway to ensure that the monitoring of safety and quality in other sections of the health system, such as primary and community care, is developed further at a national level.

Furthermore, in December 2009 Australian health ministers agreed on a national approach to a core set of nine indicators of quality and safety. This set includes:

- two whole-of-health system indicators—potentially avoidable deaths, and selected potentially preventable hospitalisations (see Chapter 9)
- seven hospital-based outcome indicators that draw on a recommended set of safety and quality indicators (AIHW 2009g)
- the NHA indicators
- safety and quality indicators within the revised National Health Performance Framework set.

This work aims to provide individual hospitals with timely, routine reports that facilitate comparisons with similar hospitals.

Data for two safety and quality indicators, adverse events and standardised hospital mortality ratios, are shown below. 'Adverse events' is one of the few safety and quality indicators that have been reported at a national level over some years and is included in the NHPC set (see Chapter 9). Standardised hospital mortality ratios, although relatively new to Australia (see AIHW 2009h), have been identified as an important and useful tool for safety and quality monitoring (for example, they are routinely reported for hospitals in Canada and the United Kingdom). They are included in the set agreed by health ministers in 2009 and their application in Australia is expected to grow.

Adverse events

Adverse events are defined as incidents involving harm to a person receiving health care. They include infections, falls and other injuries, and reactions or complications due to surgery, medication or medical devices, some of which may be preventable. Adverse events in health care may occur inside or outside hospitals, and can be the cause of hospitalisation as well. The former Australian Council for Safety and Quality in Health Care estimated that an adverse event is associated with about 10% of hospital separations in Australia and other developed countries (ACSQHC 2001). About 2% of separations have been estimated to be associated with serious adverse events causing major disability (1.7%) or death (0.3%) (Runciman et al. 2000).

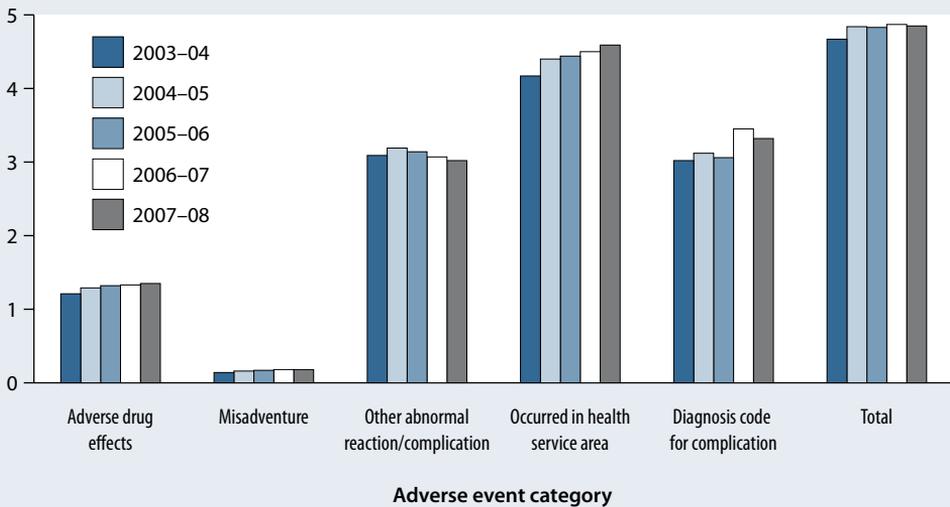
Hospital separations data can be used to indicate the occurrence of adverse events because they include information on diagnoses, places of occurrence and external causes of injury and poisoning that can indicate that an adverse event was treated and/or occurred during the hospitalisation. However, other diagnosis codes may also suggest that an adverse event has occurred, and some adverse events are not identifiable using these codes. The data presented below therefore represent selected adverse events in health care that have resulted in, or have affected, hospital admissions, rather than all adverse events that occurred in hospitals.

In 2007–08, there were over 382,000 separations with an ICD-10-AM code for an adverse event, or 4.8 per 100 separations. The data for public hospitals are not comparable with those for private hospitals because their casemix and recording practices may be different.

Procedures causing abnormal reactions/complications were reported for 238,000 separations, 106,000 separations included a report of *Adverse effects of drugs, medicaments and biological substances* and 75,000 separations were reported with *Complications of internal prosthetic devices, implants and grafts*.

Between 2004–05 and 2007–08, the proportion of separations with an ICD-10-AM code for an adverse event remained relatively stable (Figure 7.30), with the number of separations reporting *Adverse effects of drugs, medicaments and biological substances* increasing from 1.2 to 1.3 per 100 separations. Over the same period the reporting of *Health service area* as the place of occurrence (of injury or poisoning) increased from 4.2 to 4.6 per 100 separations. However, these increases may reflect improvements in documenting adverse events rather than an increase in these events.

Per cent of total annual separations



Notes

1. Separations for which the care type was reported as Newborn with no qualified day as and records for *Hospital boarders* and *Posthumous organ procurement* have been excluded.
2. ICD-10-AM codes used are:
 Adverse drug effects: Y40-Y59 *Adverse effects of drugs, medicaments and biological substances*.
 Misadventure: Y60-Y82 *Misadventures to patients during medical or surgical care*.
 Other abnormal reaction/complication: Y83-Y84 *Procedures causing abnormal reactions/complications*.
 Occurred in a health service area: Y92.22 *Health service area*.
 Diagnosis code for complication: E89, G97, H59, H95, I97, J95, K91, M96, N99, T80-88, T98.3.
3. Categories do not add up to the totals because multiple diagnoses and external causes can be recorded for each separation and can be used together to describe an adverse event.
4. Misadventure can include incidents such as foreign object accidentally left in body or failure in dosage during surgical or medical care.
5. Diagnosis code for complication includes complications of medical and surgical care—such as complications of internal devices or implants, or post-procedural infections or disorders.

Source: AIHW 2009c.

Figure 7.30: Proportion of separations with an adverse event reported, by type of adverse event, all hospitals, 2003-04 to 2007-08

Hospital standardised mortality ratios

The hospital standardised mortality ratio (HSMR) measures whether a death rate for a hospital is higher or lower than would be expected, taking into account factors such as the range and volume of admitted patient care provided by the hospital (Box 7.14).

Box 7.14: Hospital standardised mortality ratios

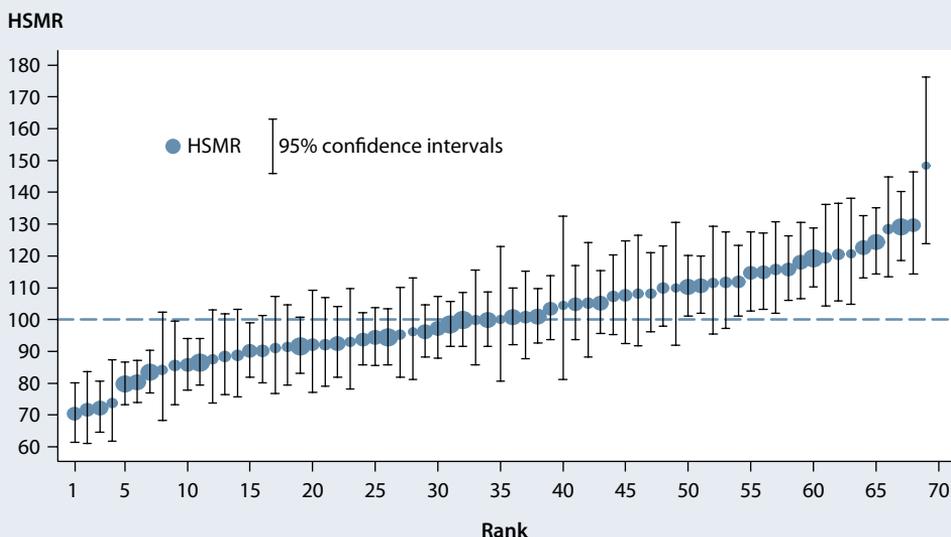
Hospital standardised mortality ratios (HSMRs) are generated from existing hospital data on admitted patients and commonly expressed as the ratio of the observed number of deaths divided by an expected number of deaths, multiplied by 100. In this case, the expected mortality is based on the average mortality of hospitals treating patients of similar complexity.

For example, a hospital with an HSMR of 100 has a mortality rate exactly as expected. An HSMR of 120 implies a mortality rate 20% higher than would be expected, and an HSMR of 80 implies a mortality rate 20% lower.

When calculating HSMRs, compensations known as risk adjustments are made to allow for variation between hospitals in the clinical and demographic characteristics of their patients.

Figure 7.31 displays large variation in HSMRs in Australian *Principal referral and Specialist women's and children's hospitals* (known as Peer Group A public hospitals). The 95% confidence interval associated with each point (represented by a vertical bar) estimates the degree of uncertainty of the HSMR estimate. Hospitals for which the confidence intervals do not overlap can generally be assumed to be different in terms of HSMRs.

HSMRs illustrate variation in mortality among hospitals. Like most safety and quality indicators, they are best regarded as screening tools that indicate where detailed investigation may be required to understand why higher or lower death rates are occurring, rather than as tools to diagnose quality of care.



Source: AIHW 2009h.

Figure 7.31: Variation in hospital standardised mortality ratio for Principal referral and Specialist women's and children's hospitals, 80% of in-hospital mortality, 2005-06

Medical indemnity claims

The patient's view of their health-care experience is of much interest to the safety and quality field and, for example, patient experience measures are to be reported as part of the NHA suite of performance indicators. A number of options are also available to a patient if they are dissatisfied with their health care. Informal and formal complaints can be made, or a patient can pursue legal action against a health-care service or provider, seeking compensation for alleged harm or other loss.

The Medical Indemnity National Collection has been established to collect claims data from both the public and private health sectors, to provide information on trends in the characteristics of claims. Information on medical indemnity claims may complement other data in the safety and quality field, by providing an indication of the types of incidents most likely to result in litigation. However, it must be noted that a number of factors influence whether a medical indemnity claim is made (such as the patient's perception of medical malpractice), and not all claims relate to an adverse event. Health-care complaints, patient surveys and incident reporting systems, like medical indemnity claims, cannot present a 'rate' when aggregated, but should be used to develop insights into types and patterns of adverse events.

The number of new medical indemnity claims in the public sector declined from 2,040 in 2002–03 to 1,292 in 2007–08 (AIHW unpublished data). Issues related to 'procedure' and 'diagnosis' were the most frequent alleged causes for a claim, together accounting for over half of all current claims that were open at 30 June 2007, while 'treatment' and 'general duty of care' were each cited in around 10% of claims (AIHW 2010b).

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