

Expenditure and workforce

8.1 Health expenditure and health funding.....	408
8.2 Health workforce.....	444
References	462



KEY POINTS

- Health expenditure during 2007–08 was \$103.6 billion, exceeding \$100 billion for the first time.
- Health expenditure in 2007–08 equalled 9.1% of gross domestic product (GDP).
- As a share of its GDP, Australia spent more than the United Kingdom in 2007–08 (8.4%), a similar amount to the OECD median (8.9%) and much less than the United States (16%).
- Governments funded almost 70% of health expenditure in 2007–08.
- For Indigenous Australians in 2006–07, spending per person on health and high-level residential aged care was 25% higher than for other Australians.
- In 2007–08, public health was the area of expenditure with the highest growth (20.7%), mainly due to organised immunisation programs, particularly the national human papillomavirus vaccination.
- Employment in health occupations is still growing—23% growth between 2003 and 2008, almost double that across all occupations (13%).
- Between 2002 and 2007, there was a 26% increase in people completing health occupation university courses.
- The profile of the health workforce continues to age—in 2008, 18% of the workforce was aged 55 years and over compared with 13% in 2003.
- The health workforce in 2008 was 75% female, compared with 45% for all occupations.
- The mix of the medical workforce changed between 1997 and 2007
 - the supply of primary care doctors (in ‘full-time equivalent’ numbers per 100,000 population) has fallen
 - the supply of specialists, specialists-in-training and hospital-based non-specialists has increased.

Services such as those described in the previous chapter depend on extensive resources. These include a large workforce of trained health professionals, the various methods and therapies they use, and the associated facilities and technology. These in turn depend on the universal resource of money. It is provided at a more general level by governments (and therefore by taxpayers), at a more specific level by individuals when they pay out of their own pockets for services, by health insurance companies on behalf of their contributors—and often by some mix of these.

As with all resources, however, those for health are ultimately limited at the level of both government and individual Australians. Only so much can be afforded overall and health expenses compete with expenses for other important aspects of life.

Governments and other funders of health services make policies and choices about which health services should be provided or used. Changes in policy can mean that health resources are increased in some areas and reduced in others. These decisions are illustrated by the patterns of expenditure on health services.

It is therefore of interest to examine the levels and patterns in health spending over the years. For example, is expenditure rising and if so in what areas? How is the health dollar allocated to—or consumed by—various areas of health care or types of ill health? And who pays for what and is this changing? It is also of interest to focus on one key resource that has attracted much attention in recent years, the health workforce. These are the subjects of this chapter. (In considering those patterns of spending over the years, it should be noted that there have been some revisions to previously published estimates of health expenditure—see Box 8.1).

Box 8.1: Revisions to previous estimates

There have been some revisions to previously published estimates of health expenditure, due to the receipt of additional or revised data, or to changes in the methods of analysis. Comparisons over time should be based on the estimates provided in this publication or *Health expenditure Australia 2007–08*, and online data, rather than by reference to earlier editions of *Australia's health*. Estimates in this report are also not comparable with the data published in *Health expenditure Australia* issues before 2005–06, because the expenditure on high-care residential aged care services was reclassified after that time from 'health services' to 'welfare services'.

In addition, capital consumption, which had in previous editions of this report been shown as a separate (non-recurrent) form of expenditure, has now been included as part of recurrent health expenditure estimates for the various types of health goods and services for all years.

8.1 Health expenditure and health funding

This section describes the main components of health expenditure and who provides the health funding. It answers the following questions about health services in Australia:

- How much does Australia spend on health?
- What are the trends in expenditure and funding during the decade up to 2007–08?
- Who provides funding for what types of services?
- How does Australia's health expenditure compare with that of other developed countries, namely those of the Organisation for Economic Co-operation and Development (OECD)?
- What is the average amount spent on each person, and on specific population groups and diseases?
- How much is spent on the different types of health services and on health infrastructure, and who spends it?
- What is the contribution of private health insurance?

First, it is important to understand two terms that are used to describe health finances—'health expenditure' and 'health funding'. They express concepts that are distinct but related (Box 8.2). Both concepts are needed to explain the financial resources used by the overall health system, and those used by the various segments of the system (such as general practice or hospitals).

The bulk of health expenditure is on health goods and services, such as medications and hospital care. Health expenditure also includes spending on a number of health-related activities, such as research and administration. However, spending on the training of health professionals is not treated in Australia's national accounts as health expenditure, as it is regarded as expenditure on education.

Box 8.2: Defining 'health expenditure' and 'health funding'

Health expenditure

Health expenditure is reported in terms of who spends the money, rather than who ultimately provides the money for any particular expenditure. In the case of public hospital care, for example, all expenditures (that is, expenditure on accommodation, medical and surgical supplies, drugs, salaries of doctors and nurses, and so forth) are incurred by the states and territories, but a considerable proportion of those expenditures is funded by transfers from the Australian Government.

Health funding

Health funding is reported in terms of who provides the funds that are used to pay for health expenditure. In the case of public hospitals, for example, the Australian Government funded 39.2% in 2007–08 and the states and territories funded 52.8%, together providing over 90% of the funding. These funds are derived ultimately from taxation and other sources of government revenue. Some of the other funding, in this case, comes from private health insurers and from individuals who incur an out-of-pocket cost when they choose to be treated as private patients in public hospitals.

Expenditure on health comprises recurrent expenditure (which includes depreciation) and capital expenditure, and together they are reported as total health expenditure. Recurrent expenditure, which relates largely to operating costs, is split in this chapter according to the major types of health goods and services, and health-related activities. Recurrent expenditure is also presented in this chapter for Aboriginal and Torres Strait Islander people and other Australians, and by disease.

Sources of funding are described in relation to current expenditure under ‘Health care—who provides the funds?’.

How much is spent on health and is it increasing?

One measure commonly used to describe and compare the relative sizes of health systems in different countries is their expenditure on health as a percentage of their expenditure on all goods and services (known as the gross domestic product: GDP).

The estimated total expenditure on health in Australia in 2007–08 was \$103.6 billion. The health-to-GDP ratio has grown over the past decade, from 7.8% in 1997–98 to 9.1% in 2006–07 and 2007–08 (Table 8.1).

Table 8.1: Total health expenditure and GDP, current prices, and annual health-to-GDP ratios, 1997–98 to 2007–08

Year	Total health expenditure (\$ million)	GDP (\$ million)	Ratio of health expenditure to GDP (per cent)
1997–98	44,802	577,373	7.8
1998–99	48,428	607,759	8.0
1999–00	52,570	645,058	8.1
2000–01	58,269	689,262	8.5
2001–02	63,099	735,714	8.6
2002–03	68,798	781,675	8.8
2003–04	73,509	841,351	8.7
2004–05	81,060	897,642	9.0
2005–06	86,685	967,454	9.0
2006–07	94,938	1,045,674	9.1
2007–08	103,563	1,131,918	9.1

GDP Gross domestic product.

Source: AIHW 2009a.

Over the decade, estimated real growth in health expenditure (that is, after removing the effects of inflation) averaged 5.2% per year (Table 8.2). Real growth in expenditure is measured using constant prices (see Box 8.3).

Table 8.2: Total health expenditure and GDP, constant prices^(a), and annual growth rates, 1997–98 to 2007–08

Year	Total health expenditure		GDP	
	Amount (\$ million)	Growth rate (per cent)	Amount (\$ million)	Growth rate (per cent)
1997–98	62,305	..	803,636	..
1998–99	65,679	5.4	845,425	5.2
1999–00	69,637	6.0	879,242	4.0
2000–01	74,321	6.7	895,947	1.9
2001–02	77,886	4.8	929,993	3.8
2002–03	82,020	5.3	959,753	3.2
2003–04	84,657	3.2	998,143	4.0
2004–05	89,634	5.9	1,026,092	2.8
2005–06	92,191	2.9	1,056,874	3.0
2006–07	97,720	6.0	1,091,751	3.3
2007–08	103,563	6.0	1,131,918	3.7
Average annual growth rate				
1997–98 to 2002–03		5.7		3.6
2002–03 to 2007–08		4.8		3.4
1997–98 to 2007–08		5.2		3.5

GDP Gross domestic product.

.. Not applicable.

(a) Constant price health expenditure for 1997–98 to 2007–08 is expressed in terms of 2007–08 prices.

Source: AIHW 2009a.

Box 8.3: Constant price and current price expenditure

The use of ‘constant prices’ is a way of comparing expenditure over time without the distorting effects of inflation. In general, the prices of most goods and services rise over time, although some goods become cheaper because of changes in technology or other factors.

‘Current prices’ refers to expenditure reported for any year, unadjusted for inflation.

To obtain constant prices, the current prices for all years are adjusted to reflect the prices in a chosen reference year. This process enables comparisons of the volumes of health goods and services used over the years. Constant prices are also referred to as ‘real’ expenditure and growth in turn is referred to as ‘real growth in expenditure’.

By using constant prices the comparison of expenditure in different years will reflect only the changes in the amount of health goods and services used, not the changes in the prices of these goods and services caused by inflation. The reference year used in this report is 2007–08.

In contrast, changes in current price expenditure reflect changes in prices through inflation, as well as changes in the amount of health goods and services that are used.

Just as prices can increase generally (general inflation), so can those for health items in particular (health inflation). If there is a difference between health inflation and general inflation, this can have an influence on the ratio of health expenditure to GDP (see Box 8.4).

Box 8.4: Inflation

Inflation refers to changes in prices over time. Inflation is usually positive (that is, prices are increasing over time) but can be negative (deflation).

General inflation

General inflation refers to the change in prices throughout the economy over time. The implicit price deflator for gross domestic product (GDP) is calculated by the Australian Bureau of Statistics as a measure of general inflation.

Health inflation

Health inflation is a measure of the average rate of change in prices within the health goods and services sector of the economy. It is measured by changes in the total health price index (the ratio of national health expenditure at current prices, to total national health expenditure at constant prices).

Excess health inflation

Excess health inflation is the amount by which the rate of health inflation exceeds the general rate of inflation. Excess health inflation will be positive if health prices are increasing at a more rapid rate than prices generally throughout the economy. It will be negative when the general level of prices throughout the broader economy is increasing more rapidly than health prices.

Australia's health inflation over the first half of the decade (1997–98 to 2002–03) for the most part outpaced general inflation, but between 2002–03 and 2007–08 general inflation grew faster than health inflation. As a result, between 1997–98 and 2007–08, both health and general inflation averaged 3.4% a year (Table 8.3).

Table 8.3: Annual rates of health inflation, 1997–98 to 2007–08 (per cent)

Years	Health inflation ^(a)	General inflation ^(b)	Excess health inflation
1997–98 to 1998–99	2.5	0.1	2.5
1998–99 to 1999–00	2.4	2.1	0.3
1999–00 to 2000–01	3.9	4.9	-1.0
2000–01 to 2001–02	3.3	2.8	0.5
2001–02 to 2002–03	3.5	3.0	0.6
2002–03 to 2003–04	3.5	3.5	—
2003–04 to 2004–05	4.2	3.8	0.4
2004–05 to 2005–06	4.0	4.6	-0.6
2005–06 to 2006–07	3.3	4.6	-1.2
2006–07 to 2007–08	2.9	4.4	-1.4
Average annual growth rate			
1997–98 to 2002–03	3.1	2.5	0.6
2002–03 to 2007–08	3.6	4.2	-0.6
1997–98 to 2007–08	3.4	3.4	—

— Nil or rounded down to zero.

(a) Based on the total health price index.

(b) Based on the implicit price deflator for gross domestic product.

Note: Components may not add to totals due to rounding.

Source: AIHW 2009a.

Health care—who provides the funds?

Funding for health goods and services comes from different sources, including the Australian Government, state, territory and local governments, non-government sources such as private health insurers, out-of-pocket payments by individuals and injury compensation insurers. The major two levels of government provide the bulk of the funding (68.7% in 2007–08).

Australian Government

The Australian Government provides most of the funding for recurrent expenditure on:

- services provided by general practitioners and medical specialists (together known as ‘medical services’), and, to a lesser extent, on services provided by other health practitioners. The Australian Government provided 78.2% of the funding for medical services in 2007–08 through Medicare, private health insurance subsidies and benefits for veterans. It also provided 30.9% of the funding for other health practitioners
- pharmaceuticals that are covered or partly covered by the Pharmaceutical Benefits Scheme (PBS) and Repatriation Pharmaceuticals Benefits Scheme (RPBS). In 2007–08, 83.7% of the funding for these pharmaceuticals was contributed by the Australian Government
- health research (78.1%).

The Australian Government also partly funds:

- public hospital services (39.1% in 2007–08) and public health activities such as infectious disease control and health promotion campaigns (60.2%), through direct funding and through Specific Purpose Payments to the states and territories. The main health Specific Purpose Payments in 2007–08 were
 - the Australian Health Care Agreements (AHCAs)
 - the Public Health Outcomes Funding Agreements
 - the provision of highly specialised drugs to outpatients in public and private hospitals
- private hospitals, through subsidising private health insurance premiums. This subsidy amounts to 31.3% of the gross funding that is provided through private health insurance funds.

State and territory governments

State and territory governments provided funding in 2007–08 for:

- community health services (81.8% of the total funding of these services)
- patient transport (64.7%)
- public hospital services (53.7%)
- public health activities (33.5%).

Non-government sources

Non-government recurrent health expenditure funding in 2007–08 came from:

- out-of-pocket funding by individuals (18.2% of the total funding of health services)
- benefits paid and funded by private health insurance (8.0%)
- providers of compulsory motor vehicle third-party insurance and workers' compensation insurance (2.2%)
- other private sources (1.5%).

Non-government sources provided funding in 2007–08 for:

- aids and appliances (84.6% of these goods)
- dental services (79.9% of these services)
- private hospitals (60.4%)
- medications (48.3%).

Health care funding—how much?

In 2007–08, total health expenditure exceeded \$100 billion for the first time, at \$103,563 million. Government funding of health expenditure was \$71.2 billion (68.7% of total health expenditure), with the Australian Government contributing \$44.8 billion (43.2%) and state, territory and local governments contributing \$26.4 billion (25.5%). The non-government sector funded the remaining \$32.4 billion (31.3%) (Table 8.4).

In current prices, from 2006–07 to 2007–08, Australian Government funding of health expenditure increased by 12.3%; state, territory and local government funding increased by 7.7%; and non-government funding increased by 6.0%.

At the broad level, the relative shares of funding of total health expenditure remained fairly stable for both the government and non-government sectors between 1997–98 and 2007–08, with over two-thirds of funding provided by governments and almost a third by non-government providers (Table 8.4). The Australian Government contribution ranged from a low of 42.0% in 2006–07 to a high of 44.4% in 2000–01, while the state, territory and local governments' contribution ranged from a low of 23.2% in 2001–02 to a high of 25.8% in 2006–07. Funding by the non-government sector ranged from 30.8% to 33.0%. Part of the reason for the increase in the Australian Government's share was private health insurance incentives, introduced in July 1997. They are regarded as a form of subsidy in the health expenditure statistics and are allocated across the areas of expenditure in accordance with the health insurance funds' expenditure ratios. The effect has been a substantial shift of funding responsibility from the private health insurance funds to the Australian Government.

Table 8.4: Total health expenditure by broad source of funds, as a proportion of total health expenditure, current prices, 1997–98 to 2007–08

Year	Government			Non-government				Total	Total
	Australian Government ^(a)	State/territory and local	Total	Health insurance funds	Individuals ^(a)	Other	Total		
	Per cent								
1997–98	42.1	25.3	67.4	9.5	16.3	6.8	32.6	100.0	
1998–99	43.3	23.7	67.0	8.0	17.3	7.8	33.0	100.0	
1999–00	44.3	24.9	69.2	6.9	16.7	7.3	30.8	100.0	
2000–01	44.4	23.3	67.7	7.1	18.0	7.2	32.3	100.0	
2001–02	44.0	23.2	67.2	8.0	17.5	7.2	32.8	100.0	
2002–03	43.6	24.4	68.0	8.0	16.7	7.3	32.0	100.0	
2003–04	43.6	23.6	67.2	8.1	17.4	7.3	32.8	100.0	
2004–05	43.8	24.0	67.7	7.7	17.4	7.1	32.3	100.0	
2005–06	42.8	25.3	68.0	7.6	17.4	6.9	32.0	100.0	
2006–07	42.0	25.8	67.8	7.6	17.4	7.2	32.2	100.0	
2007–08	43.2	25.5	68.7	7.6	16.8	6.9	31.3	100.0	
	Amount (\$ million)								
2007–08	44,773	26,379	71,152	7,862	17,416	7,133	32,411	103,563	

(a) Funding of expenditure has been adjusted for non-specific tax expenditures.

Note: Components may not add to totals, because of rounding.

Source: AIHW 2009a.

Australian Government

In 2007–08, the Australian Government provided \$44.8 billion for health goods and services (43.2% of total expenditure) (Table 8.4). The three areas in which it contributed the most funding were medical services (\$14,335 million), public hospital services (\$12,063 million) and benefit-paid pharmaceuticals (\$6,789 million) (Table S29 📄). Much of this funding was provided through Medicare, the AHCAs, the PBS and RPBS.

The Australian Government Medicare levy (see Box 8.5) raised \$8,049 million in 2007–08 (Table S28 📄). This was equivalent to 18.2% of the Australian Government's total health funding for that year.

Box 8.5: Medicare levy

All Australian Government funding for health services comes from its general revenues, one part of which is notionally health-related—the Medicare levy. In 2007–08, this levy was equal to 18.2% of total health funding by the Australian Government.

The levy was introduced in 1984 and was originally set at 1.0% of taxable income. It has increased several times since then and is currently set at 1.5% of taxable income. It has also been subject to one-off surcharges from time to time to cover non-health initiatives of the Australian Government.

Since October 1997, a further surcharge of 1.0% was levied on ‘high-income’ earners (individuals earning more than \$50,000 per year and couples earning more than \$100,000 per year) who did not have private insurance cover for hospital care. In 2008, these thresholds increased to \$70,000 for individuals and \$140,000 for couples.

State and territory, and local governments

Almost all of the funding from the remaining two levels of government comes from state and territory governments, with local governments contributing some of the funding for public and community health services. (Estimates of local government funding have only been included in the Australian Institute of Health and Welfare (AIHW) health expenditure database for the years up to 2000–01 because in recent years the data have not been of high quality.) In 2007–08, state and territory governments provided \$26,379 million for health goods and services (25.5% of total expenditure) (Table 8.4). State and territory governments were the major source of funding for community health services (\$4,251 million) and patient transport services (\$1,296 million). Nationally, more than half of the funding by state and territory governments was directed to public hospital services (\$16,537 million or 62.7% of total state and territory government health funding for 2007–08).

Non-government sources

In 2007–08, around one-third of funding on health goods and services was provided by the non-government sector (\$32,411 million or 31.3% of total expenditure). A little over half of this funding came from out-of-pocket payments by individuals (\$17,416 million or 16.8% of total funding). This included circumstances where individuals met the full cost of a service or good, as well as where they shared that funding with third-party payers—for example, with private health insurance funds or the Australian Government. Private health insurance funds provided a further \$7,862 million of non-government funding. The remaining \$7,133 million came from other non-government sources (mainly compulsory third-party motor vehicle and workers’ compensation insurers).

Non-government sources provided the bulk of funding for dental services (\$4,881 million) and aids and appliances (\$2,634 million). Funding for medications was shared mainly between the Australian Government (\$7,097 million) and individual out-of-pocket payments (\$6,506 million).

Over the decade from 1997–98 to 2007–08, funding by private health insurance funds decreased from 9.5% to 7.6% of total health expenditure (Table 8.4). This partly reflected the Australian Government’s rebate incentive. Private health insurance benefits that were previously funded almost entirely by premiums were instead funded 30–40% by the Australian Government. In 2007–08, 3.5% of total health expenditure was funded by the

Australian Government's private health insurance rebate and 7.6% was funded through private health insurance funds (AIHW 2009a).

What is the role of private insurance in health funding?

All Australians are entitled to receive treatment as public patients in public hospitals at no direct personal cost. As an alternative, private health insurance funds provide cover for their members who choose to be treated as private patients in either public or private hospitals. They may also provide a range of non-hospital benefits to insured people. The health benefits paid out by private insurers finance part of the health costs incurred by their members.

Since the introduction of private health insurance subsidies in 1997 (Box 8.6), the funding for members' health benefits now comes from a combination of:

- the net premiums paid by members of the funds (that is, the cost of their premiums over and above the rebates paid by the Australian Government)
- the rebates on premiums paid by the Australian Government.


Box 8.6: Private health insurance arrangements

Since 1984, private health insurance funds in Australia have offered insurance cover for various services provided in public and private hospitals. They also offer cover for a range of non-hospital health and health-related services such as dentistry, physiotherapy, podiatry, pharmaceuticals and spectacles.


Through the *Private Health Insurance Incentives Act 1997*, the Australian Government introduced a means-tested subsidy, the Private Health Insurance Incentives Scheme, to help low- to middle-income earners obtain private health insurance cover. This was replaced in January 1999 by a 30% premium rebate payable to anyone with private health insurance cover. From April 2005, the rebate for people aged 65–69 years increased to 35% of the premium, and for people aged 70 years and over it increased to 40% of the premium. Changes to the private health insurance legislation, which took effect on 1 April 2007, allowed health insurers to expand hospital policies to cover those medical treatments outside hospital that substitute for or prevent hospitalisation. They are also able to cover programs to manage chronic diseases.

For members of private health insurance funds, health insurance arrangements changed substantially on 1 July 2000, with the introduction of Lifetime Health Cover incentives. These encourage people to continue private health insurance cover throughout their lives. From that date, people who join a health insurance fund before the July following their 30th birthday, and maintain their hospital cover, pay lower premiums throughout their lives than those who join later in life. People aged over 30 years who take out hospital cover pay a loading of 2% for each year their entry age is over 30. Fund members who had hospital cover at 1 July 2000 and maintain it are exempt from the loading. People who were aged 65 years or over at 1 July 1999 are also exempt from premium loading. Changes to Lifetime Health Cover were announced in 2006 and were being implemented progressively from 2007. Under the new legislation, people who keep their health insurance for 10 continuous years, and remain members, will stop paying a loading.

Who funds private health insurance?

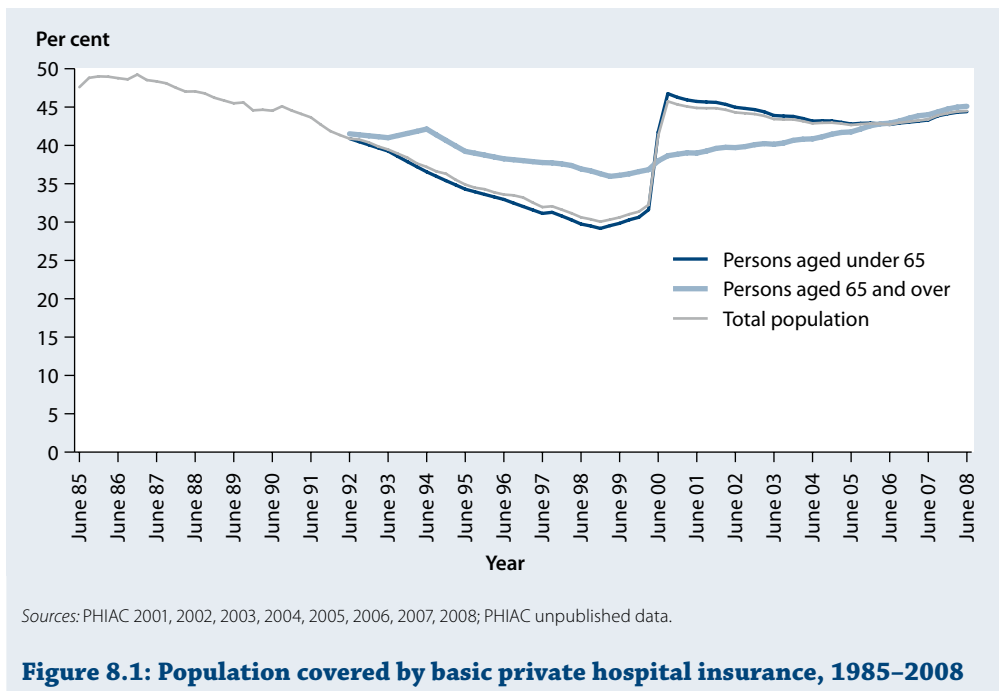
In 2007–08, the amount of funding for health services through private health insurance funds, including the Australian Government private health insurance premium rebate, was \$11,449 million. This was 11.7% of recurrent expenditure on health in that year. Of that, \$3,587 million (31.3%) was funded from the rebates on private health insurance premiums provided by the Australian Government. The net funding of health services by the funds themselves (that is, by contributors or members) increased from \$7,216 million in 2006–07 to \$7,862 million in 2007–08 (Table S37 ) .

What health services are funded?

Funding by private health insurers is chiefly directed towards private hospital services. During 2007–08, private hospitals received \$3,762 million (47.8%) of the \$7,862 million in funding provided by health insurance funds. Other major health areas that received funding were dental services (\$927 million or 11.8%), administration (\$881 million or 11.2%) and medical services (\$813 million or 10.3%) (Table S37 ) . The funding for medical services covers some of the cost of in-hospital medical services that are provided to private patients in hospitals.

Trends in coverage

At the end of June 2008, 44.5% of the Australian population was covered by private hospital insurance (PHIAC 2008). This was similar to the coverage in the March 2008 quarter (44.4%) but was a fall from a peak of 45.7% at the end of the September 2000 quarter that followed the introduction of the lifetime cover arrangements in July that year (Figure 8.1). Private hospital coverage increased from a low of 30.2% in December 1998 to a high of 45.7% in September 2000 and was 44.7% in December 2009.



How does Australia's health expenditure compare?

For the international comparisons shown in this section, the estimates of Australia's total health expenditure have been adjusted to fit the OECD's System of Health Accounts framework (see Box 8.7).

Box 8.7: OECD definition of 'health expenditure'

This section uses a slightly different definition of 'health expenditure' from the rest of the chapter. This is because for national (that is, internal) reporting, Australia uses the concept of health expenditure that was adopted by the World Health Organization (WHO) in the 1970s. In 2000, however, the Organisation of Economic Co-operation and Development (OECD) and the WHO adopted the OECD's System of Health Accounts (International Classification of Health Accounts) as the basis for international reporting of health expenditure. The major difference is the exclusion from health expenditure by the OECD of expenditure on health research and development, food standards and hygiene, and environmental health.

Despite recent moves to standardise the international reporting of health expenditure, there continue to be some small differences between countries in terms of what is included as 'health goods and services'. Consequently, while comparative reporting of health expenditure is becoming more meaningful, readers are urged to be cautious in drawing conclusions from these comparisons.

The OECD median health-to-GDP ratios for 1997, 2002 and 2007 were 7.7%, 8.4% and 8.9% respectively. Australia's ratio was similar for these periods—slightly lower in 1997 (7.6%), higher in 2002 (8.6%) and the same in 2007 (8.9%) (Table 8.5).

Australia's health-to-GDP ratio in 2007 was comparable to Norway's (8.9%), Sweden's (9.1%), New Zealand's (9.2%) and Italy's (8.7%), was more than the United Kingdom's (8.4%) and much lower than the United States (16.0%), which had by far the highest ratio.

Australia's average per-person expenditure on health was higher than the OECD median in each of the 3 years reported. In 2007 Australia's average was \$4,732 per person, which was similar to that of Sweden, Iceland and Ireland—all far below the United States at \$10,352 per person. (All these values are expressed here in Australian dollars.)


Australia's per-person out-of-pocket expenditure for health was \$186 above the median for OECD countries in 2007, compared with \$17 above the median in 1997 (Table S36 ). As a percentage of total health expenditure and total household expenditure, Australia's out-of-pocket health expenditure rose between the two periods from 16.6% to 18.0% and from 2.2% to 2.9%, respectively. For the OECD as a whole, although the weighted average of out-of-pocket expenditure as a proportion of household final consumption expenditure rose from 2.6% to 2.7% between 1997 and 2007, the weighted average fell as a percentage of total health expenditure (16.2% to 14.5%) over the same period.

Table 8.5: Health expenditure as a proportion of GDP and per person, OECD countries, 1997 to 2007^(a)

Country ^(b)	1997		2002		2007	
	Health-to-GDP ratio (per cent)	Per person (A\$)	Health-to-GDP ratio (per cent)	Per person (A\$)	Health-to-GDP ratio (per cent)	Per person (A\$)
United States	13.4	5,353	15.1	7,307	16.0	10,352
France	10.2	2,938	10.5	3,915	11.0	5,113
Switzerland	10.0	3,757	10.9	4,922	10.8	6,272
Germany	10.2	3,185	10.6	3,936	10.4	5,095
Belgium	8.3	2,599	9.0	3,598	10.2	5,105
Austria	9.8	3,189	10.1	4,096	10.1	5,343
Canada	8.8	2,841	9.6	3,854	10.1	5,531
Denmark	8.2	2,719	8.8	3,613	9.8	4,987
Netherlands	7.9	2,529	8.9	3,796	9.8	5,449
Greece	8.4	1,787	9.1	2,633	9.6	3,872
Iceland	8.1	2,790	10.2	4,229	9.3	4,713
New Zealand	7.3	1,785	8.2	2,468	9.2	3,564
Sweden	8.1	2,491	9.3	3,614	9.1	4,719
Australia^(c)	7.6	2,371	8.6	3,398	8.9	4,732
Norway	8.4	3,102	9.8	4,863	8.9	6,763
Italy	7.7	2,281	8.3	2,979	8.7	3,814
Spain	7.3	1,715	7.3	2,338	8.5	3,793
United Kingdom	6.6	1,964	7.6	2,935	8.4	4,249
Finland	7.6	2,120	7.8	2,873	8.2	4,033
Slovak Republic	5.8	744	5.6	978	7.7	2,208
Ireland	6.4	1,843	7.1	3,172	7.6	4,862
Hungary	6.8	896	7.6	1,493	7.4	1,971
Czech Republic	6.7	1,217	7.1	1,601	6.8	2,309
Korea	4.3	822	5.3	1,336	6.8	2,397
Poland	5.6	657	6.3	982	6.4	1,470
Mexico	4.8	537	5.6	783	5.9	1,169
Japan	7.0	2,237	8.0	2,864	n.a.	n.a.
Luxembourg	5.6	2,603	6.8	4,129	n.a.	n.a.
Portugal	8.0	1,566	9.0	2,220	n.a.	n.a.
Turkey	3.1	330	5.9	647	n.a.	n.a.
Weighted average^{(d)(e)}	9.6	2,725	10.7	3,722	11.3	5,213
Median^(d)	7.7	2,259	8.4	3,075	8.9	4,481

n.a. Not available.

GDP Gross domestic product.

OECD Organisation for Economic Co-operation and Development.

(a) See definition of 'OECD financial year' in Box 5.1 in AIHW 2009a.

(b) Countries in this table are sorted in descending order according to the 2007 health-to-GDP ratio.

(c) Expenditure based on the OECD System of Health Accounts framework.

(d) Averages for 2007 incorporate 2006 data for Japan, Luxembourg and Portugal, and 2005 data for Turkey.

(e) Average weighted by GDP or population.

Note: Expenditures converted to Australian dollar values using GDP purchasing power parities.

Source: AIHW 2009a.

How much is health expenditure per person?

To make international comparisons, health expenditure per person is expressed in Australian dollar values and is calculated after adjusting for differences in the purchasing powers of national currencies.

In 2007–08, Australia spent around \$4,874 per person on average on health (Table 8.6). This includes expenditure funded by government, non-government organisations such as private health insurance funds, and by individuals through out-of-pocket expenses. After adjustment for inflation, per-person health expenditure grew at an average of 3.8% per year between 1997–98 and 2007–08.

Table 8.6: Average health expenditure per person^(a), current and constant prices^(b), and annual growth rates, 1997–98 to 2007–08

Year	Amount (\$)		Annual change in expenditure (per cent)	
	Current	Constant	Current prices	Real growth
1997–98	2,407	3,347	..	..
1998–99	2,573	3,490	6.9	4.3
1999–00	2,760	3,657	7.3	4.8
2000–01	3,022	3,854	9.5	5.4
2001–02	3,230	3,987	6.9	3.4
2002–03	3,479	4,147	7.7	4.0
2003–04	3,672	4,229	5.6	2.0
2004–05	4,001	4,424	8.9	4.6
2005–06	4,218	4,486	5.4	1.4
2006–07	4,546	4,679	7.8	4.3
2007–08	4,874	4,874	7.2	4.2
			Average annual growth rate	
1997–98 to 2002–03			7.6	4.4
2002–03 to 2007–08			7.0	3.3
1997–98 to 2007–08			7.3	3.8

.. Not applicable.

(a) Based on annual average resident population.

(b) Constant price health expenditure for 1997–98 to 2007–08 is expressed in terms of 2007–08 prices.

Source: AIHW 2009a.

From 2005–06 to 2007–08, estimated per-person expenditure on health grew at an average of 4.3% per year. Five jurisdictions—Tasmania (7.0%), Queensland (5.9%), Western Australia (5.4%), the Northern Territory (5.1%) and South Australia (5.0%)—all had annual growth rates that were higher than the national average (Table 8.7).

Table 8.7: Average health expenditure per person^(a) by state and territory^(b), constant prices^(c), 2005–06 to 2007–08 (\$)

State/territory ^(d)	2005–06	2006–07	2007–08	Average annual growth rate 2005–06 to 2007–08 (per cent)
New South Wales	4,292	4,448	4,613	3.7
Victoria	4,255	4,374	4,513	3.0
Queensland	4,003	4,255	4,492	5.9
Western Australia	4,210	4,413	4,677	5.4
South Australia	4,389	4,488	4,840	5.0
Tasmania	4,045	4,225	4,630	7.0
Northern Territory	5,417	5,571	5,981	5.1
Australia	4,242	4,409	4,613	4.3

(a) Based on annual average resident population.

(b) Per-person expenditure includes all monies spent on health within a state or territory regardless of funding source. That is, it includes expenditure funded by the Australian Government, by state and territory, and local governments, and by non-government organisations.

(c) See Box 8.3 for explanation of constant price estimation.

(d) ACT per-person figures are not included, as the expenditure estimates for the ACT include substantial expenditure for NSW residents. Thus, the ACT population is not an appropriate denominator.

Source: AIHW health expenditure database.

How much is health expenditure for Aboriginal and Torres Strait Islander people?

Expenditure on health for Aboriginal and Torres Strait Islander people is of interest given their considerably poorer health status when compared with the non-Indigenous population. In 2004–05, 22% of Aboriginal and Torres Strait Islander adults surveyed reported their health as fair or poor. After adjusting for differences in the age structures of Indigenous and non-Indigenous populations, Indigenous Australians were twice as likely as non-Indigenous Australians to report their health as fair or poor (ABS & AIHW 2008).

Life expectancy is much lower for the Indigenous population—particularly for Indigenous males. According to estimates by the Australian Bureau of Statistics, overall male Aboriginal and Torres Strait Islander persons have a life expectancy of 67.2 years, 11.5 years less than non-Indigenous males (78.7 years). Female Aboriginal and Torres Strait Islander persons have a life expectancy of 72.9 years, 9.7 years less than non-Indigenous females (82.6 years) (ABS 2009). See Section 5.1 for information on Indigenous health.

Estimates of recurrent expenditure on health for Aboriginal and Torres Strait Islander people have been undertaken by the AIHW at 2-yearly intervals; the estimates include expenditure on high-care residential aged care services. The latest in the series is for 2006–07 (AIHW 2009b); the previous report was for 2004–05 (AIHW 2008).

In 2006–07, the total health and high-care residential aged care expenditure for Aboriginal and Torres Strait Islander people was estimated at \$2,976 million, or 3.1% of corresponding national expenditure. This represents an average expenditure per Aboriginal and Torres Strait Islander person of \$5,696 compared with \$4,557 for each non-Indigenous person.

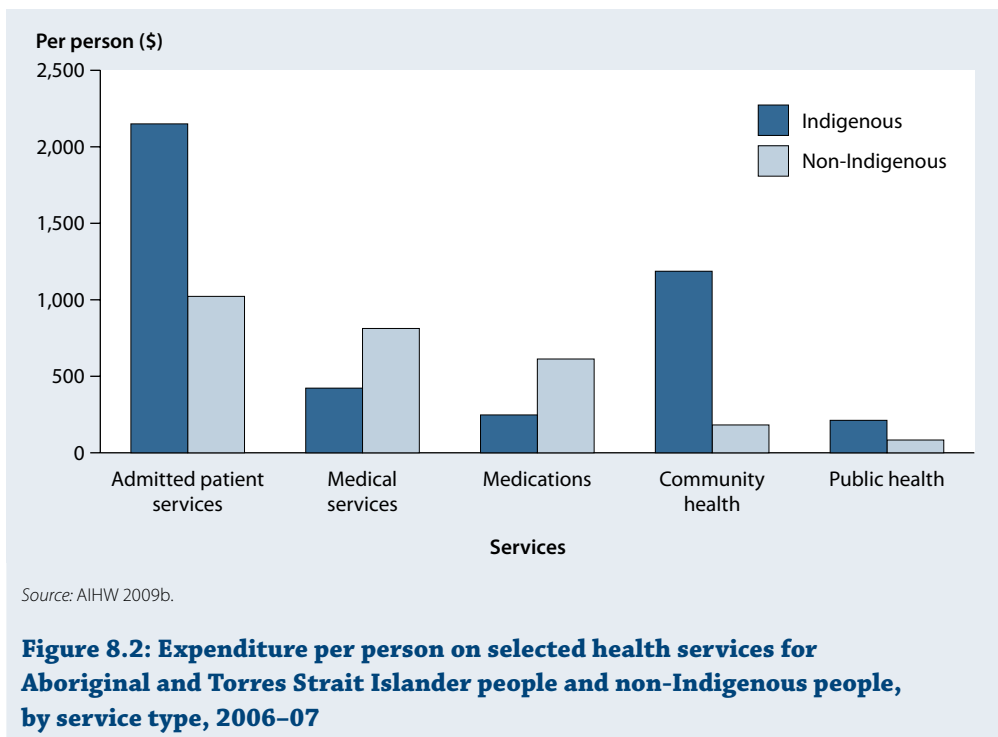


Figure 8.2 shows the differences between the patterns of expenditure on health services for Aboriginal and Torres Strait Islander people and those for non-Indigenous Australians. Indigenous people were more likely to use the kinds of health services for which states and territories are mainly responsible, such as admitted patient services and community health services.

Benefits to Aboriginal and Torres Strait Islander people through Medicare—including some benefits for non-medical services—were estimated at \$175 million. Their benefits through the PBS were estimated at a further \$92 million.

Medicare expenditure per person for Aboriginal and Torres Strait Islander people was well below the non-Indigenous average (58%). For the PBS, the corresponding percentage was similar at 60%.

The ratio of health expenditure for Aboriginal and Torres Strait Islander people to the health expenditure for non-Indigenous Australians in 2006–07 was 1.31, and the ratio for health and high-level residential aged care expenditure was 1.25. This means that \$1.25 was spent on health and high-care residential aged care services for an Aboriginal and Torres Strait Islander person for every \$1 spent for a non-Indigenous person (Table 8.8).

This represents an increase from 2004–05, where the ratio was 1.17. Part of this increase may be due to better methods for estimating Aboriginal and Torres Strait Islander health expenditure, particularly for Medicare Benefits Scheme and PBS expenditure. Some of the increase is due to greater growth since 2004–05 for some types of services for Aboriginal and Torres Strait Islander people, particularly public hospital services.

Table 8.8: Expenditure on health and high-care residential aged care services for Aboriginal and Torres Strait Islander and non-Indigenous people, 2006–07

Area of expenditure	Expenditure (\$ million)			Indigenous share (per cent)	Expenditure per person (\$)			Ratio (Indigenous to non-Indigenous)	
	Indigenous	Non-Indigenous	Total		Indigenous	Indigenous	Non-Indigenous	2006–07	2004–05
Total hospitals	1,483.1	33,687.6	35,170.7	4.2	2,838.3	1,654.6	1.72	1.60	
Public hospital services ^(a)	1,450.9	26,565.3	28,016.2	5.2	2,776.6	1,304.8	2.13	2.01	
Admitted patient services ^(b)	1,123.5	20,817.0	21,940.5	5.1	2,150.0	1,022.4	2.10	1.99	
Non-admitted patient services	327.4	5,748.3	6,075.7	5.4	626.5	282.3	2.22	2.09	
Private hospitals ^(c)	32.3	7,122.3	7,154.5	0.5	61.7	349.8	0.18	0.21	
Patient transport	115.9	1,672.4	1,788.3	6.5	221.8	82.1	2.70	3.05	
Medical services	220.8	16,544.5	16,765.3	1.3	422.6	812.6	0.52	0.46	
Medicare services	193.2	13,441.1	13,634.3	1.4	369.7	660.2	0.56	0.42	
Other	27.6	3,103.4	3,131.0	0.9	52.9	152.4	0.35	0.59	
Dental services	72.9	5,676.2	5,749.1	1.3	139.5	278.8	0.50	0.40	
Community health services	620.1	3,706.3	4,326.4	14.3	1,186.7	182.0	6.52	6.59	
Other professional services	22.3	3,250.8	3,273.1	0.7	42.8	159.7	0.27	0.40	
Public health	110.9	1,700.2	1,811.0	6.1	212.2	83.5	2.54	2.66	
Medications	129.4	12,481.0	12,610.3	1.0	247.5	613.0	0.40	0.40	
Aids and appliances	21.0	3,004.6	3,025.6	0.7	40.3	147.6	0.27	0.29	
Research	32.1	2,317.0	2,349.1	1.4	61.5	113.8	0.54	1.11	
Health administration	75.7	2,294.0	2,369.7	3.2	144.8	112.7	1.29	1.34	
Other health services (nec) ^(d)	5.5	141.9	147.4	3.7	10.5	7.0	1.51	—	
Total health	2,909.7	86,476.4	89,386.1	3.3	5,568.5	4,247.3	1.31	1.25	
High-care residential aged care	66.7	6,305.0	6,371.7	1.0	127.6	309.7	0.41	0.27	
Total health and high-care residential aged care	2,976.4	92,781.4	95,757.9	3.1	5,696.1	4,557.0	1.25	1.17	

— Nil or rounded down to zero.

(a) Excludes dental services, community health services, patient transport services, public health and health research undertaken by the hospital.

(b) Admitted patient expenditure estimates allow for Aboriginal and Torres Strait Islander underidentification, except for Tasmania.

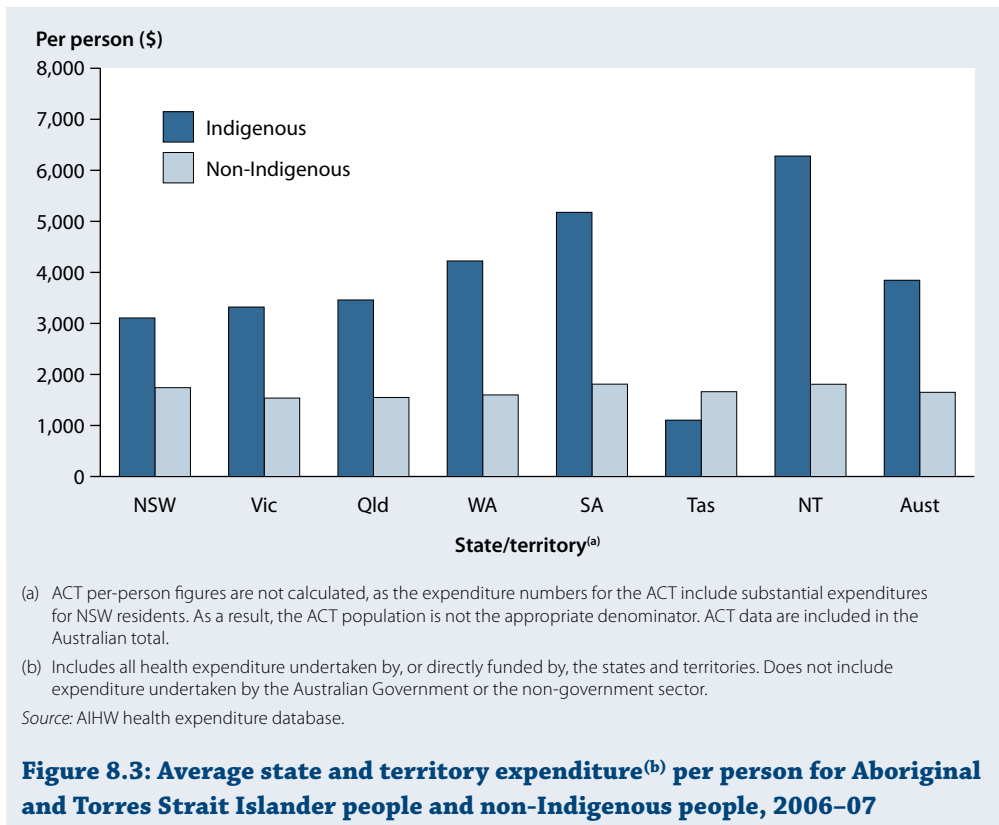
(c) Includes state and territory government expenditure for services provided for public patients in private hospitals (\$249.5 million).

(d) Other health services (not elsewhere classified) includes expenditure on health services such as family planning.

Source: AIHW health expenditure database.

Expenditure by state and territory governments

State and territory governments spent \$35,614 million on health services in 2006–07 for Indigenous and non-Indigenous people.



There were some quite large differences across the states and territories in their expenditure per Aboriginal and Torres Strait Islander person, and rather less marked ones for non-Indigenous people (Figure 8.3).

For example, at \$6,280 per person in 2006–07, the Northern Territory's spending on Aboriginal and Torres Strait Islander people was more than twice the amount spent in New South Wales, at \$3,107. For non-Indigenous people, the Northern Territory's spending was \$1,808 per person in 2006–07, slightly higher than that in New South Wales, where it was \$1,741.

Economies of scale and the relative isolation of some Aboriginal and Torres Strait Islander target populations influence the costs of both producing and delivering health goods and services. These factors can have large effects on both the levels of health expenditure and the quantity of goods and services that can be provided to particular population groups. For example, the Northern Territory, with its relatively small population, faces substantial cost disadvantages in comparison with, say, Victoria, in providing health goods and services to its population. Differences in the relative isolation of the two jurisdictions' populations further compound this comparative disadvantage. This disparity is even more pronounced for the Aboriginal and Torres Strait Islander populations of the two jurisdictions (AIHW 2009b).

The different pattern for Tasmania is consistent with the ratio published for the 2004–05 reference period.

Growth in expenditure per person

Over the period from 2004–05 to 2006–07, government expenditure per person for health and high-care residential aged care for Aboriginal and Torres Strait Islander people rose by 9.1% (in constant prices). The major contribution (about 70%) to the growth rate was state and territory expenditure on admitted patient services.

This increase amounted to \$446 more per person in 2006–07 than in 2004–05. State and territory government expenditure per person grew by 10.5% between 2004–05 and 2006–07, and Australian Government expenditure by 5.8%.

The increase in the Indigenous to non-Indigenous health expenditure per-person ratio between 2006–07 and 2004–05 is partly due to greater growth in expenditure for Aboriginal and Torres Strait Islander people for certain types of services, particularly public hospital services. Public hospital services expenditure is the most significant area of health expenditure for Indigenous people. In 2004–05, that share of total expenditure on public hospital services was 4.7% but in 2006–07 it had increased to 5.2%. Some of the increase in the Indigenous to non-Indigenous health expenditure per-person ratio may be due to method changes, particularly the new method for estimating medical and pharmaceutical expenditure.

Sources of funding

Governments fund the vast majority of health services for Aboriginal and Torres Strait Islander people, with the state and territory governments and the Australian Government contributing fairly similar amounts. In 2006–07, the funding contributions were:

- state and territory governments, 51.4%
- Australian Government, 42.0%
- non-government, 6.6% (including out-of-pocket payments).

In contrast, the funding for health services provided to non-Indigenous people were split between:

- state and territory governments, 24.2%
- Australian Government, 44.0%
- non-government, 31.8% (including out-of-pocket payments).

How does per-person expenditure vary by region?

The average per-person health spending is examined on a regional basis, as defined by the Australian Standard Geographical Classification (ASGC) system. The expenditure categories are:

- services for patients admitted to hospitals
- Medicare medical and other services
- PBS and Section 100 drugs.

These categories account for 47% of total recurrent health expenditure.

Areas of health expenditure that are not included in this analysis are community health, patient transport, programs aimed specifically at rural health, aids and appliances, over-the-counter pharmaceuticals, dental services not funded by Medicare, and other health professional services.

Table 8.9: Expenditures per person on health services, by ASGC region^(a), 2007–08 (\$)

Service	Major city	Inner regional	Outer regional	Remote and very remote	Total
Admitted patient ^(b)	1,311	1,428	1,468	1,723	1,369
Medicare	753	661	576	409	710
PBS pharmaceuticals ^(c)	312	346	318	243	318
Total	2,376	2,436	2,362	2,375	2,397

ASGC Australian Standard Geographical Classification.

PBS Pharmaceutical Benefits Scheme.

(a) By area of patient residence.

(b) Data for which the care type was reported as *Newborn* with no qualified days and records for *Hospital boarders* and *Posthumous organ procurement* have been excluded.

(c) Includes Section 100 pharmaceuticals distributed through Aboriginal Community Controlled Health Organisations in *Remote* and *Very remote* areas.

Source: AIHW health expenditure database.

The average expenditure per person for these selected areas ranged from \$2,362 per person on those in outer regional areas to \$2,436 for those in inner regional areas (Table 8.9). However, differences in expenditure between remoteness areas may simply reflect the different age structures of populations rather than any differences in the levels of services. For example, people living in remote and very remote regions are generally younger than the Australian average; there are proportionally more children and fewer older people in these regions. In inner regional and outer regional areas there is a higher than average proportion of people in their 50s, 60s and 70s, but fewer people in their 20s and 30s. Age standardisation has been used to adjust for such differences (Table 8.10).

The age-standardised average expenditure per person for these selected areas ranged from \$2,311 per person on average for inner regional residents to \$2,791 for those in remote and very remote areas. Expenditure on patients admitted to hospitals increased with remoteness while expenditure through Medicare declined (Table 8.10).

Table 8.10: Age-standardised expenditures per person on health services, by ASGC region^(a), 2007–08 (\$)

Service	Major city	Inner regional	Outer regional	Remote and very remote	Total
Admitted patient ^(b)	1,324	1,359	1,460	2,036	1,369
Medicare	761	636	569	453	710
PBS pharmaceuticals ^(c)	321	317	306	302	318
Total	2,406	2,311	2,335	2,791	2,397

ASGC Australian Standard Geographical Classification.

PBS Pharmaceutical Benefits Scheme.

(a) By area of patient residence.

(b) Data for which the care type was reported as *Newborn* with no qualified days and records for *Hospital boarders* and *Posthumous organ procurement* have been excluded.

(c) Includes Section 100 pharmaceuticals distributed through Aboriginal Community Controlled Health Organisations in *Remote* and *Very remote* areas.

Source: AIHW health expenditure database.

Table 8.11 shows the number of hospital separations and the average expenditure per separation according to regional area. In general, average expenditure per separation increased with remoteness.

Expenditure per separation was calculated from data in the AIHW Hospital Morbidity Cost Model. Cost estimates take into account differences in hospital operating costs across the regions, but the expenditure per separation is not adjusted for casemix.

Table 8.11: Hospital separations and average expenditure per separation^{(a)(b)}, 2007–08

Region	Public and private hospitals	
	Separations (million)	Expenditure per separation (\$)
Major cities	5.12	3,651.62
Inner regional	1.52	3,887.49
Outer regional	0.74	3,965.07
Remote	0.12	4,328.61
Very remote	0.08	4,422.33
Total separations/average expenditure	7.60	3,759.35

(a) The expenditure on private medical services delivered to private admitted patients is not included in these expenditures.

(b) Data for which the care type was reported as *Newborn* with no qualified days and records for *Hospital boarders* and *Posthumous organ procurement* have been excluded.

Source: AIHW health expenditure database.

How much is spent on each type of disease and injury?

Along with understanding the patterns of disease, it is also of some interest to examine expenditure on different types of disease. The latest analysis of that expenditure applies to 2004–05.

In 2004–05, total health expenditure in Australia was \$81.1 billion. Of this, \$52.7 billion (65%) could be allocated to specific disease categories. The largest expenditure categories that could be allocated in this way were admitted patient hospital services (29% of recurrent health expenditure), out-of-hospital medical services (16%), prescription pharmaceuticals (11%), and optometrical and dental services (7%).

The remaining \$28.4 billion of health expenditure that could not be allocated by disease included recurrent expenditure of \$23.7 billion, including such categories as non-admitted patient expenditure (9% of total recurrent expenditure) and over-the-counter pharmaceuticals (4%), as well as capital expenditure of \$4.7 billion.

Which diseases have the most spent on them?

Seven broad disease groups accounted for an estimated \$29,834 million, or 57% of the allocatable health expenditure in Australia in 2004–05 (Table 8.12). Cardiovascular disease was the disease group that accounted for the greatest amount of this expenditure (\$5,942 million or 11% of expenditure), followed by oral health (\$5,305 million or 10%).

Different diseases have different patterns of expenditure by type of health service (Figure 8.4). For cardiovascular diseases, injuries, neoplasms and musculoskeletal diseases, expenditure on hospital admitted patient services accounted for a relatively high proportion of total expenditure.

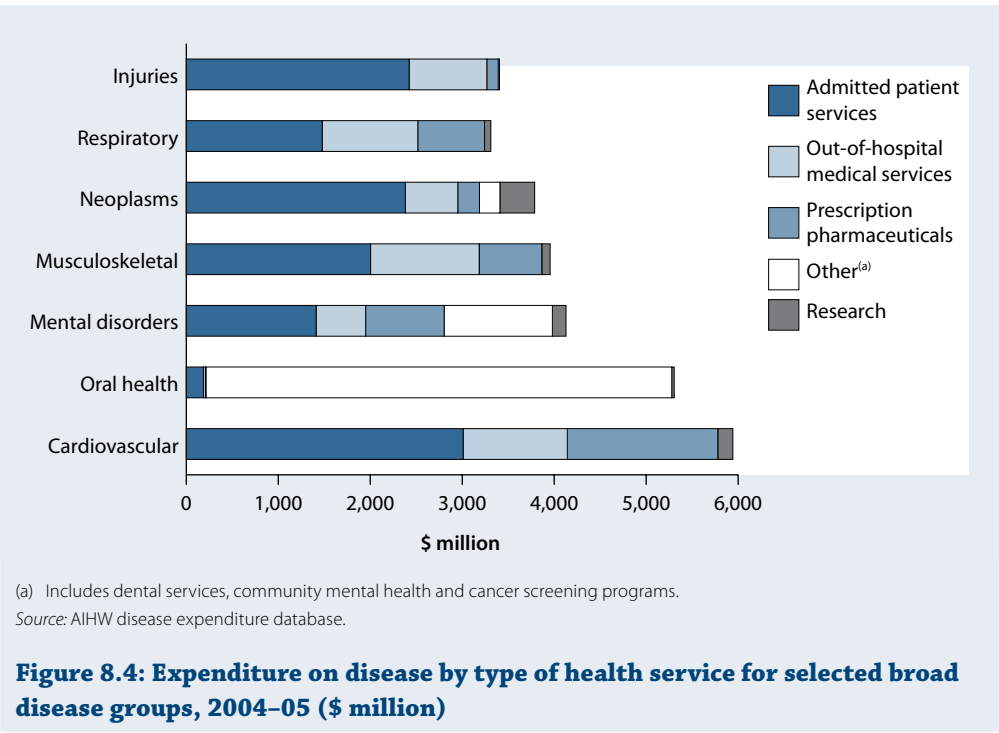


Table 8.12: Diseases and injury by broad groups: expenditure by area of health expenditure, 2004–05 (\$ million)

Disease group	Admitted patients ^(a)	Out-of-hospital medical services	Optometrical and dental services	Prescription pharmaceuticals ^{(b)(c)}	Community and public health ^(d)	Research	Total expenditure allocated by disease	Per cent of total allocated expenditure 2004–05
Infectious and parasitic	482	451		199		184	1,315	2.5
Respiratory	1,477	1,039		725		69	3,311	6.3
Maternal conditions	1,539	116		4		12	1,671	3.2
Neonatal causes	422	20		1		12	455	0.9
Neoplasms	2,381	570		236	222	378	3,787	7.2
Diabetes mellitus	371	288		275		55	989	1.9
Other endocrine, nutritional and metabolic	448	500		1,042		110	2,100	4.0
Mental disorders	1,411	538		854	1,177	148	4,128	7.8
Nervous system disorders	985	782	218	464		291	2,739	5.2
Cardiovascular	3,009	1,133		1,636		164	5,942	11.3
Digestive system	1,849	447		764		48	3,107	5.9
Genitourinary	1,431	779		111		24	2,345	4.5
Skin diseases	398	454		102		13	966	1.8
Musculoskeletal	2,003	1,181		680		92	3,956	7.5
Congenital anomalies	209	24		2		54	290	0.6
Oral health	186	22	5,064	6		27	5,305	10.1
Injuries	2,422	845		124		14	3,405	6.5
Signs, symptoms, ill-defined conditions and other contact with health system ^(e)	3,195	2,712		919		22	6,848	13.0
Total	24,221	11,900	5,282	8,144	1,399	1,715	52,660	100.0
Proportion of total allocated expenditure (%)	46.0	22.6	10.0	15.5	2.7	3.3	100.0	

(a) Includes admitted patients in public and private acute hospitals, and psychiatric hospitals. Also includes medical services provided to private admitted patients in hospital.

(b) Includes all pharmaceuticals for which a prescription is needed, including benefit-paid prescriptions, private prescriptions and below-co-payment prescriptions.

(c) Excludes over-the-counter medications such as vitamins and minerals, patient medicines, first aid and wound care products, analgesics, feminine hygiene products, cold sore preparations, and a number of complementary health products that are sold in both pharmacies and other retail outlets.

(d) Comprises expenditure on community mental health services and public health cancer screening programs.

(e) 'Signs, symptoms and ill-defined conditions' includes diagnostic and other services for signs, symptoms and ill-defined conditions where the cause of the problem is unknown. 'Other contact with the health system' includes fertility control, reproduction and development; elective plastic surgery; general prevention, screening and health examination; and treatment and aftercare for unspecified disease.

Source: AIHW disease expenditure database.

Expenditure differences by age and sex

Health expenditure classified by disease in 2004–05 was 18% higher for females than for males—\$28.5 billion compared with \$24.1 billion. Expenditure per person was \$2,781 for females, which was 17% higher than the \$2,380 for males. When maternal conditions are excluded, expenditure per person for females was 10% higher than for males (Table 8.13). The remaining difference is due to the higher numbers of females in the older age groups, where expenditure is highest.

In 2004–05, total allocated health expenditure for males was higher than for females for the young age groups (up to 14 years) and for the older age groups (from 55 years onwards). In contrast, total allocated health expenditure for females was higher than males for the age groups between 15 and 54 years, reflecting costs for child bearing and health expenditure related to the genitourinary system (Table 8.13). The per-person pattern of health expenditure was similar for both sexes with the exception of the peak for females at ages 25–34, when they are in their child-bearing years.

Total allocated health expenditure per person in 2004–05 ranged from \$786 for females aged 5–14 years to \$11,131 for males aged 85 years and over. The male–female difference in per-person cost was the greatest, in dollar terms, for the 85 and over age group (\$11,131 for males and \$9,053 for females) (Table 8.13).

Table 8.13: Allocated health expenditure per person by age, sex and disease group, 2004–05 (\$)

Disease group and sex	Age group (years)										Total
	0–4	5–14	15–24	25–34	35–44	45–54	55–64	65–74	75–84	85 and over	
Cardiovascular											
All persons	10	7	14	36	85	229	533	1,091	1,718	1,858	291
Male	11	7	14	37	94	276	652	1,333	1,990	2,195	322
Female	8	7	14	34	77	183	414	861	1,511	1,699	261
Neoplasms^(a)											
All persons	32	18	28	44	88	188	353	656	831	755	186
Male	32	19	22	30	61	134	350	732	1,115	1,157	183
Female	33	18	33	59	116	241	356	584	613	567	189
Musculoskeletal											
All persons	15	27	46	71	119	207	373	612	777	611	194
Male	16	28	53	76	125	190	327	513	652	561	169
Female	15	26	40	67	114	224	419	705	872	634	218
Nervous system^(b)											
All persons	73	49	41	57	80	115	168	339	643	731	134
Male	81	49	36	51	73	111	163	330	664	854	125
Female	64	48	47	63	86	119	174	347	627	673	143

Disease group and sex	Age group (years)										Total
	0-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85 and over	
Injuries											
All persons	74	84	147	124	115	126	165	267	571	1,099	167
Male	82	102	203	165	140	142	178	264	502	916	178
Female	65	65	89	84	90	110	151	270	623	1,185	156
Maternal conditions											
Female	—	—	249	679	223	3	—	—	—	—	163
Other causes^(c)											
All persons	1,554	628	1,204	1,216	1,201	1,379	1,851	2,749	3,959	4,663	1,528
Male	1,695	633	952	1,011	1,037	1,227	1,800	2,782	4,191	5,447	1,403
Female	1,404	623	1,467	1,421	1,363	1,529	1,903	2,717	3,782	4,296	1,651
Total											
All persons	1,757	812	1,601	1,888	1,801	2,246	3,443	5,714	8,499	9,717	2,582
Male	1,917	837	1,279	1,369	1,530	2,080	3,469	5,955	9,114	11,131	2,380
Female	1,589	786	1,937	2,407	2,068	2,409	3,416	5,485	8,028	9,053	2,781
Female (excluding maternal conditions)	1,589	786	1,689	1,727	1,845	2,406	3,416	5,485	8,028	9,053	2,618

— Nil or rounded to zero.


(a) Comprises expenditures on cancer (malignant neoplasms) and other benign, in situ and unspecified neoplasms.

(b) Excludes mental disorders.

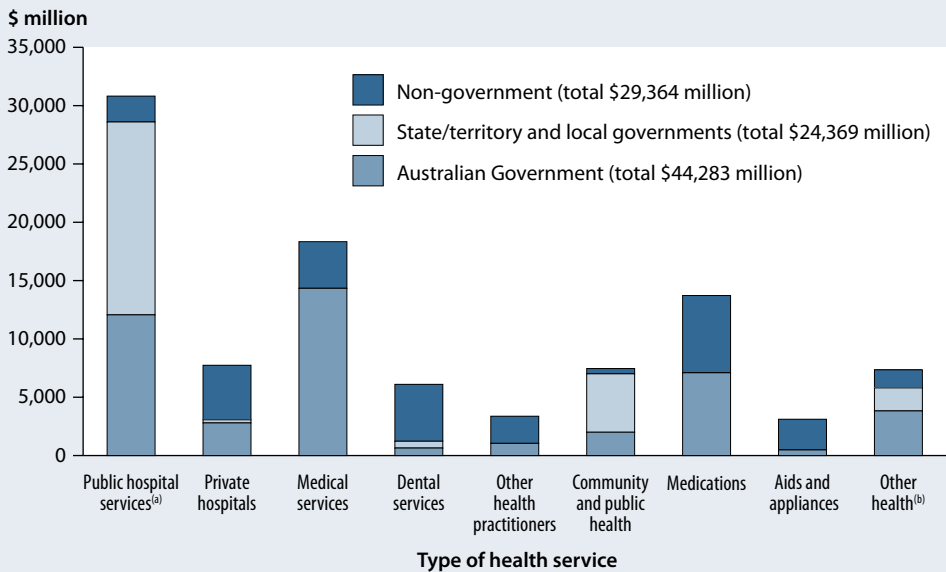
(c) 'Other causes' includes infectious and parasitic, respiratory, neonatal causes, oral health, diabetes mellitus, other endocrine, nutritional and metabolic, mental disorders, digestive system, genitourinary, skin diseases, congenital anomalies, and signs, symptoms, ill-defined conditions and other contact with the health system.

Source: AIHW disease expenditure database.

How much was spent on each kind of health service and who provided the funding?

This section is derived from *Health expenditure Australia 2007–08* (AIHW 2009a), which contains more detailed information about expenditure on, and funding of, different types of health services. Recurrent expenditure on health in 2007–08 was estimated at \$98,017 million (94.6% of total health expenditure). The largest component was expenditure on hospital services, totalling \$38,557 million (39.3% of recurrent expenditure) (Figure 8.5; Table S30 ) .

The next largest component was medical services, comprising mainly services provided by general practitioners and specialists, excluding those provided to public admitted patients or public outpatients in public hospitals (\$18,338 million or 18.7% of recurrent health expenditure). Medications (excluding those dispensed in hospitals) came next at \$13,720 million or 14.0%. Expenditure on dental services (\$6,106 million) and community health (\$5,195 million) accounted for 6.2% and 5.3% respectively.



(a) Public hospital services exclude certain services undertaken in hospitals, can include services provided off-site such as hospital in the home, dialysis or other services.

(b) Other health comprises patient transport services, administration and research.

Source: AIHW 2009a.

Figure 8.5: Recurrent health expenditure by type of health service and source of funds, 2007–08

Hospitals

Expenditure

In 2007–08, recurrent hospital expenditure was \$38,557 million or 39.3% of total recurrent health expenditure. Spending on public hospital services in 2007–08 was estimated at \$30,817 million or 31.4% of total recurrent health expenditure, while an estimated \$7,740 million or 7.9% was spent on private hospitals. In real terms, this expenditure on hospitals (both public and private) grew by 4.5% per year between 1997–98 and 2002–03, and by 5.1% between 2003–04 and 2007–08 (Table S30 📄).

For public hospitals, real growth in expenditure was 4.2% per year from 1997–98 to 2002–03. This expenditure increased on average by 5.7% per year from 2003–04 to 2007–08 (Table S30 📄).

Real growth in expenditure on private hospitals was slightly lower at 4.2% each year between 1997–98 and 2007–08.

Funding

In 2007–08, governments provided 82.1% of the funding for hospitals.

Over the decade to 2007–08, governments increased their share of hospital funding by 5.1 percentage points—the Australian Government by 1.3 percentage points and the states and territories by 3.8 percentage points. At the same time, the non-government funding of public and private hospitals decreased from 23.0% to 17.9% (Table 8.14).

Table 8.14: Recurrent expenditure on hospitals^(a) by source of funds, 1997–98 to 2007–08 (per cent)

Year	Government			Non-government ^(b)	
	Australian Government ^(b)	State/territory and local	Total		Total
1997–98	37.2	39.8	77.0	23.0	100.0
1998–99	40.4	38.3	78.7	21.3	100.0
1999–00	42.3	38.1	80.3	19.7	100.0
2000–01	43.4	37.1	80.5	19.5	100.0
2001–02	42.6	37.1	79.7	20.3	100.0
2002–03	42.1	39.4	81.5	18.5	100.0
2003–04	40.9	40.8	81.7	18.3	100.0
2004–05	40.4	41.1	81.5	18.5	100.0
2005–06	38.8	43.0	81.8	18.2	100.0
2006–07	37.6	44.2	81.8	18.2	100.0
2007–08	38.5	43.6	82.1	17.9	100.0

(a) Includes public and private hospitals. For public hospitals, this includes dental services, community health services, patient transport services, public health and health research undertaken by public and public psychiatric hospitals.

(b) Funding by the Australian Government and private health insurance funds has been adjusted for the private health insurance rebate (see Box 3.1 in AIHW 2009a).

Note: Components may not add to totals because of rounding.

Source: AIHW 2009a.

The subsidies for private health insurance are an important component of the Australian Government’s funding for hospitals. The introduction of these subsidies led to a fall in the share of funding by private health insurance funds.

From 2002–03, state and territory governments began identifying services purchased from private hospitals as part of their funding of private hospital expenditure. This change in practice resulted in a rise in the estimated state and territory share of funding of hospital expenditure from 37.1% in 2001–02 to over 39% in 2002–03, with a corresponding fall in the non-government share of funding of this expenditure (Table 8.14).

In 2007–08 the state and territory governments maintained a higher share of overall hospital funding (43.6%) than the Australian Government (38.5%). For the first time in several years, however, the Australian Government’s share of hospital funding increased in that year (having previously decreased from 43.4% in 2000–01 to 37.6% in 2006–07), and that of state and territory governments decreased (having previously increased from 37.1% in 2001–02 and 2002–03 to 44.2% in 2006–07).

Changes affecting time series

In considering the following data, it is important to note that there have been changes in the methods used that have led to two different time series for expenditure on public hospitals.

Before 2003–04, the AIHW’s public hospital expenditure data were based on total hospital operating expenses, including expenditure on community health services, public health services, non-admitted dental services, patient transport services and health research where these were delivered by or on behalf of a public hospital. This expenditure was referred to as ‘public hospital’ expenditure.

From 2003–04, the AIHW has collected these data from states and territories using a uniform data collection template, making the data more consistent among jurisdictions. Since then, the expenditure by public hospitals on community health services and the other specific services listed above have been reported separately. The balance of public hospital expenditure is now referred to as ‘public hospital services’ expenditure.

As a result, ‘public hospital services’ expenditure from 2003–04 onwards cannot be compared with ‘public hospital’ expenditure from previous years. However, in order to provide a longer time series across this break, the AIHW continues to make an estimate of aggregate ‘public hospital’ expenditure from 2003–04 onwards so it can be compared with previous expenditure (see Figure 8.6). The following pages first report on ‘public hospital’ expenditure and then on ‘public hospital services’ expenditure.

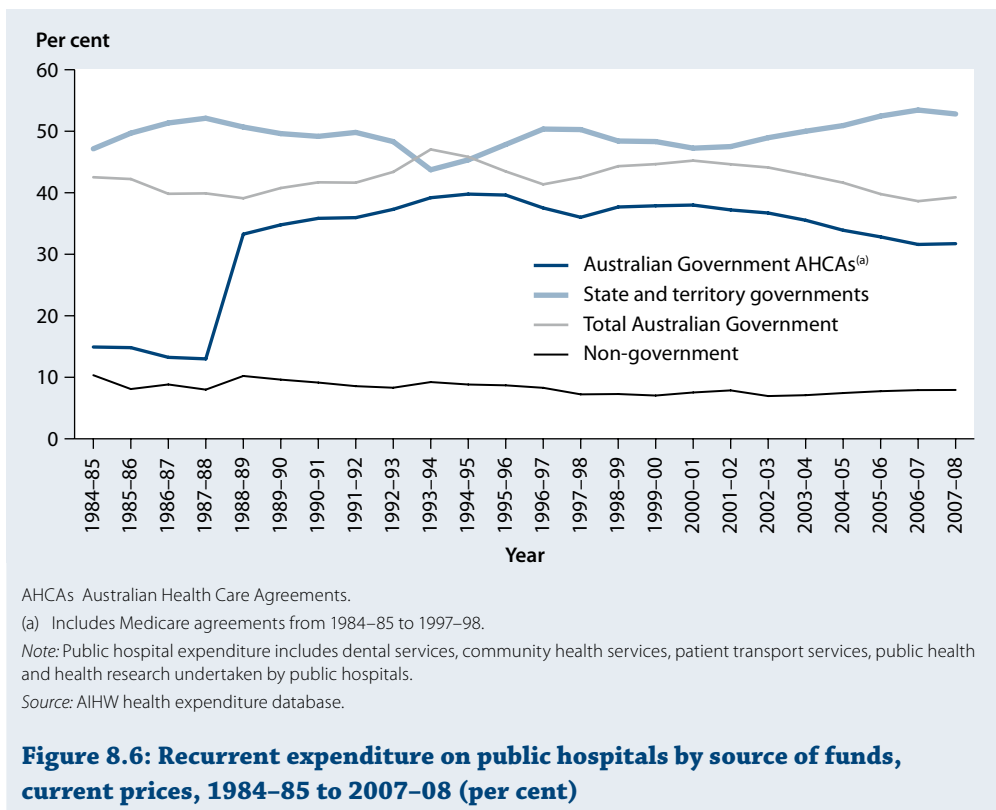


Figure 8.6: Recurrent expenditure on public hospitals by source of funds, current prices, 1984–85 to 2007–08 (per cent)

‘Public hospital’ expenditure

This section covers the category of ‘public hospital’ expenditure as described above, with the category being carried forward to 2007–08 to provide a continuous time series since its origin in 1984–85.

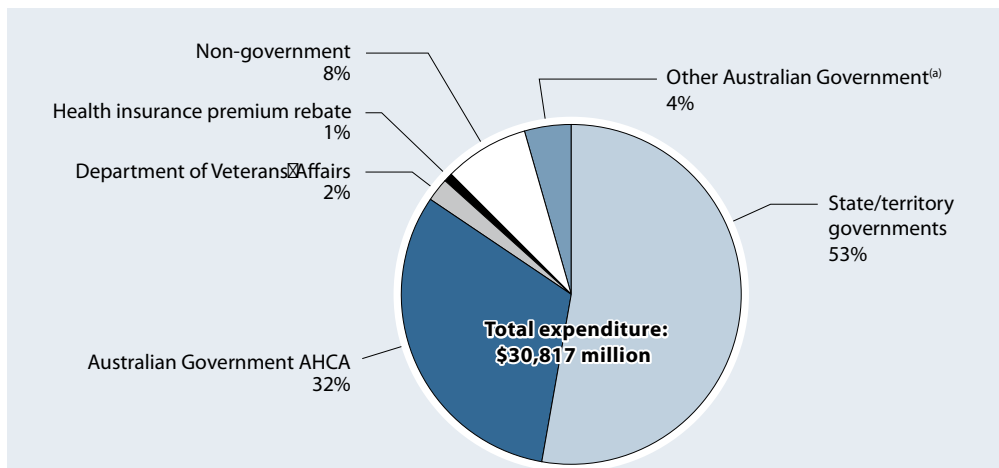
Considering this category, governments provided more than 90% of total funding for public hospitals. The Australian Government’s contribution—estimated at 39.1% in 2007–08—was largely in the form of Specific Purpose Payments (SPPs) under the AHCA's (Table 8.15). The states and territories, which have the major responsibility for operating and regulating public hospitals that operate within their jurisdictions, provided 53.7% of the funding for public hospitals in 2007–08.

Over the two decades since 1984–85, the relative contributions to public hospital funding by governments and non-government have varied. In 1984–85, the Australian Government and the state and territory governments funded around 45% each and non-government sources funded the balance (10%) (Figure 8.6). This was the highest proportion of funding by the non-government sector over these two decades. Funding by the Australian Government peaked at 47.0% in 1993–94 and by the state and territory governments at 53.4% in 2006–07.

In 1997–98, the Australian Government’s share of public hospital funding was 42.5% and the state and territory governments’ share was 50.3%. In 2007–08, the difference in the relative shares had increased, with the Australian Government providing 39.2% of public hospital funding and state and territory governments providing 52.8% (Figure 8.7).

The Australian Government’s funding growth from 2006–07 to 2007–08 (12.3%) was greater than that of the state and territory governments (8.2%). This resulted in an increase in the Australian Government’s share of funding from 38.6% to 39.2% and a fall in the share met by state and territory governments, from 53.4% to 52.8% (Figure 8.6). The increase in the Australian Government’s share of public hospital funding in 2007–08 reflects additional national funding in 2008 for the AHCA’s base grants, the Elective Surgery Waiting List Reduction program and funding to Tasmania for the Mersey Community Hospital.

The non-government contribution was 7.2% in 1997–98 and 7.9% in 2007–08. In 2007–08, this non-government funding consisted of funding from private health insurance (1.7%), individual out-of-pocket payments (0.9%) and other non-government funding (5.3%) such as workers’ compensation insurers, motor vehicle third-party insurers and other revenue (Figure 8.7).



AHCA Australian Health Care Agreement.

(a) Includes Department of Health and Ageing direct expenditure on public hospitals, such as for blood sector payments and non-AHCA Specific Purpose Payments such as highly specialised drugs, hepatitis C funding, health program and positron emission tomography scanner grants.

Source: AIHW health expenditure database.

Figure 8.7: Recurrent expenditure on public hospitals, by source of funds, 2007–08

'Public hospital services' expenditure

This section covers 'public hospital services' expenditure. It therefore applies only to the period beginning in 2003–04, when this category was created.

In 2007–08, the Australian Government provided 39.1% (\$12,063 million) of the funding for 'public hospital services', a 3.5 percentage point decrease in the share of funding from 2003–04 but an increase from 2006–07 (38.3%) (Table 8.15). In comparison, state and territory governments contributed 53.7% (\$16,537 million) of funding in 2007–08, an increase from 2003–04, but a slight decrease from 54.5% in 2006–07.

Non-government funding of public hospital services represented 7.2% of total funding for public hospital services in 2007–08 (\$2,218 million), also higher than in 2003–04.

Table 8.15: Recurrent expenditure on public hospital services^{(a)(b)} by source of funds, current prices, 2003–04 to 2007–08

Year	Australian Government					State/ territory govern- ments	Non- govern- ment	Total
	DVA	AHCA	Rebates of health insurance premiums	Other Australian Govern- ment ^(c)	Total			
Amount (\$ million)								
2003–04	743	7,500	140	677	9,059	10,881	1,303	21,243
2004–05	814	7,919	169	826	9,727	11,937	1,607	23,271
2005–06	685	8,321	187	896	10,089	13,577	1,763	25,429
2006–07	770	8,781	207	983	10,741	15,279	1,996	28,016
2007–08	738	9,747	244	1,334	12,063	16,537	2,218	30,817
Proportion (per cent)								
2003–04	3.5	35.3	0.7	3.2	42.6	51.2	6.1	100.0
2004–05	3.5	34.0	0.7	3.6	41.8	51.3	6.9	100.0
2005–06	2.7	32.7	0.7	3.5	39.7	53.4	6.9	100.0
2006–07	2.7	31.3	0.7	3.5	38.3	54.5	7.1	100.0
2007–08	2.4	31.6	0.8	4.3	39.1	53.7	7.2	100.0

AHCA Australian Health Care Agreement.


DVA Department of Veterans' Affairs.

- (a) Public hospital services exclude dental services, community health services, patient transport services, public health and health research undertaken by the hospital, but can include services provided off-site such as hospital in the home, dialysis or other services.
- (b) Public hospital services expenditure does not include expenditure on public patients who are contracted with private hospitals as this is part of private hospital expenditure. In 2007–08, this expenditure was \$269 million.
- (c) Includes Department of Health and Ageing direct expenditure on public hospital services, such as for blood sector payments and Specific Purpose Payments for public hospital services which are not AHCA's. These include Specific Purpose Payments for highly specialised drugs, hepatitis C funding, health program and positron emission tomography scanner grants.

Source: AIHW 2009a.

Private hospitals

In 2007–08, more than two-thirds of the \$7,740 million spent on private hospitals was funded by private health insurance (\$5,478 million). Almost half of the total was from premiums paid by contributors and other revenues, and the remaining 22.2% was indirectly funded out of the 30–40% premium rebates paid by the Australian Government.

In 2007–08, those rebates totalled \$3,587 million, and \$1,716 million of that was estimated to have been used in the funding of private hospitals (Table S37 ).

Private hospital funding also includes payments from public hospitals where they contract a private hospital to provide a service for public patients.


Medical services

The term ‘medical services’ refers to services provided by private medical practitioners operating on a fee-for-service basis, notably general practitioners and specialists operating privately. Most of these services are generally funded by a combination of Medicare benefits and payments by individuals in the form of patient copayments under the Medicare Benefits Scheme, both of which are included in the estimates presented here. Also included are:

- medical services provided to private patients in both public and private hospitals
- expenditure under some Australian Government programs, such as those encouraging the supply of medical practitioners in regions where there is a shortage.


Medical services provided to public patients in public hospitals are excluded.

Expenditure


Expenditure on medical services increased from \$8,539 million in 1997–98 to \$18,338 million in 2007–08, an increase in real terms of 3.3% per year over the decade (Table S30 .

Funding

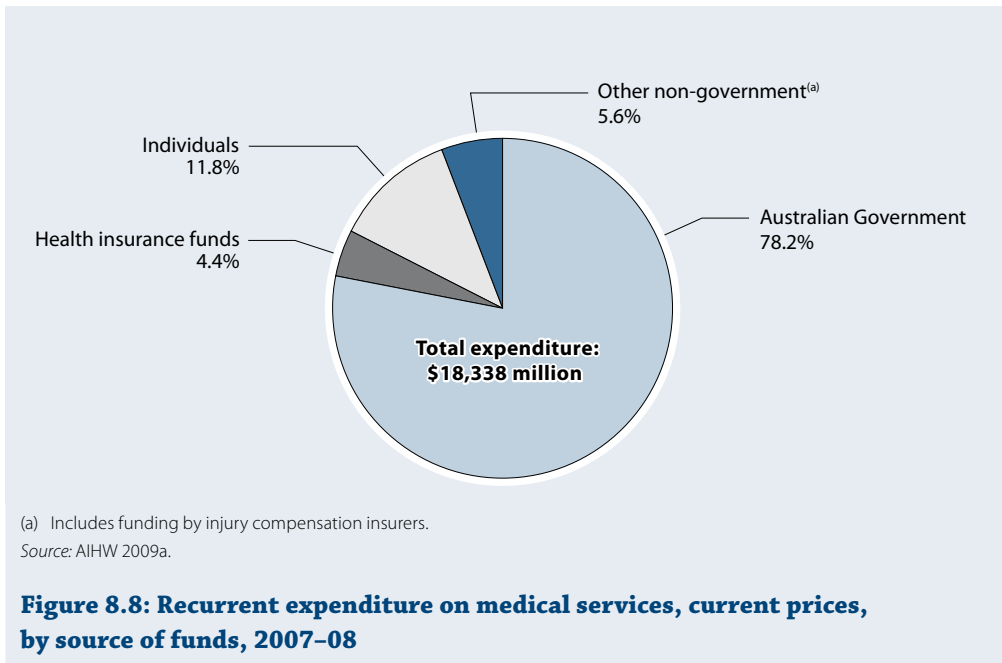
Most Australian Government funding for medical services was through Medicare benefits (Figure 8.8). The Australian Government also funded medical services for veterans and their dependants through the Department of Veterans’ Affairs.

Most of the non-government funding for medical services (estimated at \$4,003 million in 2007–08) was in the form of copayments by individuals for services provided under Medicare (Table S29 ). It also includes contributions paid by health insurance funds for services to individuals provided in hospitals and payments by other non-government sources (mostly workers’ compensation and compulsory motor vehicle third-party insurers).

Of the \$18,338 million spent on medical services in 2007–08, 78.2% (\$14,335 million) was funded by the Australian Government. This was made up almost exclusively of medical benefits paid under Medicare, with some funding from the Department of Veterans’ Affairs for medical services to veterans and their dependants, as well as payments to general practitioners under alternative funding arrangements to Medicare. Of the remaining 21.8% expenditure, 11.8% was funded out-of-pocket by individuals, 4.4% was from health insurance funds and 5.6% was other non-government funding.

In 2007–08, individuals’ funding of medical services through out-of-pocket payments increased by \$164 million (8.2%) over the previous year to reach \$2,170 million (Table S29 .

Between 1997–98 and 2007–08, the Australian Government’s share of funding for medical services decreased from 81.7% to 78.2%, reflecting a rise in the share being met by all parts of the non-government sector (Table 8.16).



Bulk-billing

Bulk-billing affects the relative shares of funding by the Australian Government and individuals, because services that are bulk-billed do not require any copayment by individuals. Trends in the bulk-billing rate parallel trends in the proportion of medical services expenditure funded by individuals. Therefore, the peak for individuals' payments in 2003-04 of 12.4% of medical services expenditure also represented the lowest bulk-billing rate in this period (67.5%). Bulk-billing rates have fluctuated over the last 10 years and in 2007-08 the rate was 73.4%—higher than at any other time in the previous decade (Table 8.16).

The increase in the Australian Government proportion and the corresponding decrease in the individual proportion in 2004-05 were the result of the introduction of the Strengthening Medicare program. This program included the introduction of the Extended Medicare Safety Net, the Bulk-Billing Incentive Scheme and the increase to the Medicare benefit paid for general practitioner services from 85% to 100% of the schedule fee.

Table 8.16: Recurrent expenditure on medical services by source of funds and proportion of medical services bulk-billed, 1997–98 to 2007–08 (per cent)

Year	Australian Government	Non-government				Total	Total	Bulk-billing rate
		Health insurance funds	Individuals	Other	Total			
1997–98	81.7	2.5	10.6	5.2	18.3	100.0	71.8	
1998–99	81.7	2.2	10.7	5.3	18.3	100.0	72.0	
1999–00	82.1	2.2	10.3	5.3	17.9	100.0	72.3	
2000–01	81.4	2.8	10.6	5.2	18.6	100.0	71.4	
2001–02	80.0	3.7	10.7	5.6	20.0	100.0	70.4	
2002–03	78.2	4.1	11.9	5.8	21.8	100.0	67.8	
2003–04	77.1	4.4	12.4	6.1	22.9	100.0	67.5	
2004–05	79.0	4.2	11.1	5.8	21.0	100.0	70.2	
2005–06	78.8	4.3	11.3	5.6	21.2	100.0	71.7	
2006–07	78.1	4.4	12.0	5.6	21.9	100.0	72.9	
2007–08	78.2	4.4	11.8	5.6	21.8	100.0	73.4	

Source: AIHW 2009a.

Medications

Medications comprise:

- pharmaceuticals whose payments are subsidised by the PBS or the RPBS, including Section 100 payments for human growth hormones, in-vitro fertilisation drugs and other subsidised medications
- other medications for which no benefit was paid by the PBS or the RPBS, including
 - private prescriptions that do not fulfil the criteria for a benefit
 - below-copayment prescriptions, which are items listed on the PBS or the RPBS that are equal to or less than the cost of the statutory patient contribution (copayment)
 - over-the-counter medicines such as pharmacy-only medicines, pain-killers, cough and cold medicines, vitamins and minerals
 - a range of medical non-durables such as bandages, bandaids and condoms.

Expenditure on medications also includes drugs used in hospitals, including highly specialised drugs, for the care of admitted patients, but this is included in estimates of hospital expenditure (and excluded from Table 8.17).

Expenditure

In 2007–08, total expenditure on medications was \$13,720 million, comprising \$8,110 million spent on benefit-paid pharmaceuticals and \$5,611 million spent on other medications; this represented 14.0% of recurrent health expenditure. For the period 1997–98 to 2007–08, real growth in medications expenditure averaged 8.3% per year. In 2007–08, growth in medication expenditure from 2006–07 was 7.7% (Table S30; AIHW 2009a).

In 2007–08, expenditure on pharmaceuticals for which a prescription is required was \$12,203 million (Table 8.17). This excludes the cost of vaccines purchased and administered under public health programs and is 89% of total expenditure on medications. The majority of pharmaceutical expenditure was for benefit-paid pharmaceuticals (66.5% or \$8,110 million)—including \$313 million for Section 100 payments—and most of this was funded by the Australian Government (83.7%). Individuals' out-of-pocket expenses accounted for the remaining 16.3% of benefit-paid pharmaceuticals expenditure.

In-hospital drugs expenditure amounted to \$1,982 million by public hospitals and \$175 million by private hospitals (Table 8.17). This expenditure included \$677 million for Section 100 highly specialised drugs.

Table 8.17: Expenditure on pharmaceuticals for which a prescription is required, dispensed in the community and by hospitals^(a), 2007–08 (\$ million)

Provider and funder	Benefit-paid pharmaceuticals	All other pharmaceuticals		Total
		Non-hospital ^(b)	Hospital ^(c)	
Community pharmacies				
Funded by				
Australian Government DVA	461	..	..	461
Australian Government DoHA ^{(d)(e)}	6,329	308	..	6,636
Health insurance funds	..	46	..	46
Individuals	1,321	1,511	..	2,831
Injury compensation insurers and other	..	71	..	71
<i>Total community pharmacies</i>	<i>8,110</i>	<i>1,936</i>	<i>..</i>	<i>10,046</i>
Public hospitals^(f)	..	..	1,982	1,982
Private hospitals^(g)	..	..	175	175
Total	8,110	1,936	2,157	12,203

.. Not applicable.

DoHA Department of Health and Ageing.

DVA Department of Veterans' Affairs.

(a) Excludes complementary and alternative medicines and over-the-counter medicines for which a prescription is not required.

(b) Includes private prescriptions and under-copayment prescriptions.

(c) Does not include the costs of paying hospital staff to dispense these medications. Dispensary costs are, however, included in the first two columns of this table.

(d) Does not include \$677 million in payments for highly specialised drugs, which are included in the public hospitals and private hospitals rows.

(e) Includes \$313 million in Section 100 payments for human growth hormones, in-vitro fertilisation drugs and other subsidised medications. Also includes the cost of doctor's bag pharmaceuticals, safety net cards and other DoHA-administered expenses items related to the PBS.

(f) Includes \$502 million in Australian Government payments to states for highly specialised drugs.

(g) Comprises Australian Government payments for highly specialised drugs only.

Source: AIHW 2009a.

Funding

The Australian Government contributed \$6,790 million for pharmaceuticals under the PBS and the RPBS in 2007–08. Individuals paid \$1,321 million in copayments under these schemes and an estimated \$1,511 million for non-benefit medications (Table 8.17).

For 2007–08, government funding under the PBS alone for benefit-paid pharmaceuticals was estimated at \$5,912 million, an increase of \$446 million from 2006–07 (Table 8.18). The shares of funding for the PBS provided by the Australian Government through benefits and by individuals through their copayments changed little until 1 January 2005, when the copayment increased from \$23.70 per prescription to \$28.60 for general patients and from \$3.80 to \$4.60 for concessional patients. From 1 January 2010, PBS copayments have been adjusted, increasing from \$32.90 to \$33.30 for general patients and from \$5.30 to \$5.40 for concessional patients (DoHA 2009).

Table 8.18: Funding of Pharmaceutical Benefits Scheme^(a) subsidised medications, 2003–04 to 2007–08 (\$ million)

Funding source	2003–04	2004–05	2005–06	2006–07	2007–08
Patient contributions					
General patients	545	597	634	619	630
Concessional patients	393	444	489	533	560
Total patient contributions	938	1,041	1,123	1,151	1,189
Government benefits					
General patients—no safety net	824	851	850	890	1,039
General patients—safety net	191	223	216	174	173
<i>Total general patients</i>	<i>1,015</i>	<i>1,073</i>	<i>1,066</i>	<i>1,064</i>	<i>1,213</i>
Concessional patients—no safety net	2,972	3,077	3,145	3,334	3,561
Concessional patients—safety net	1,005	1,145	1,173	1,067	1,138
<i>Total concessional patients</i>	<i>3,977</i>	<i>4,223</i>	<i>4,318</i>	<i>4,401</i>	<i>4,699</i>
<i>Total funding by government</i>	<i>4,992</i>	<i>5,296</i>	<i>5,384</i>	<i>5,466</i>	<i>5,912</i>
Total cost of PBS benefit-paid items^(b)	5,929	6,337	6,508	6,617	7,102

(a) Does not include Repatriation Pharmaceutical Benefits Scheme or doctor's bag pharmaceuticals.

(b) Excludes Section 100 payments for human growth hormones, in-vitro fertilisation and other non-subsidised medications. Also excludes the cost of safety net cards and other DoHA-administered expenses items related to the PBS that were included in Table 8.17.

Note: Components may not add to totals, because of rounding.

Source: AIHW 2009a.

Dental services

Expenditure

In 2007–08, expenditure on dental services was \$6,106 million, representing 6.2% of total recurrent expenditure on health. For the period 2003–04 to 2007–08, real growth in dental services expenditure averaged 1.9% per year—1.8% for state and territory dental services and 1.9% for private providers. This was just over one-third of the annual real growth in total recurrent health expenditure of 5.0% (Table S30 📄).

Funding

Just under two-thirds (\$3,944 million or 64.6%) of dental services expenditure was funded by individual out-of-pocket payments, 20.1% by governments and 15.2% by health insurance funds (Table S29 📄).


Public health activities

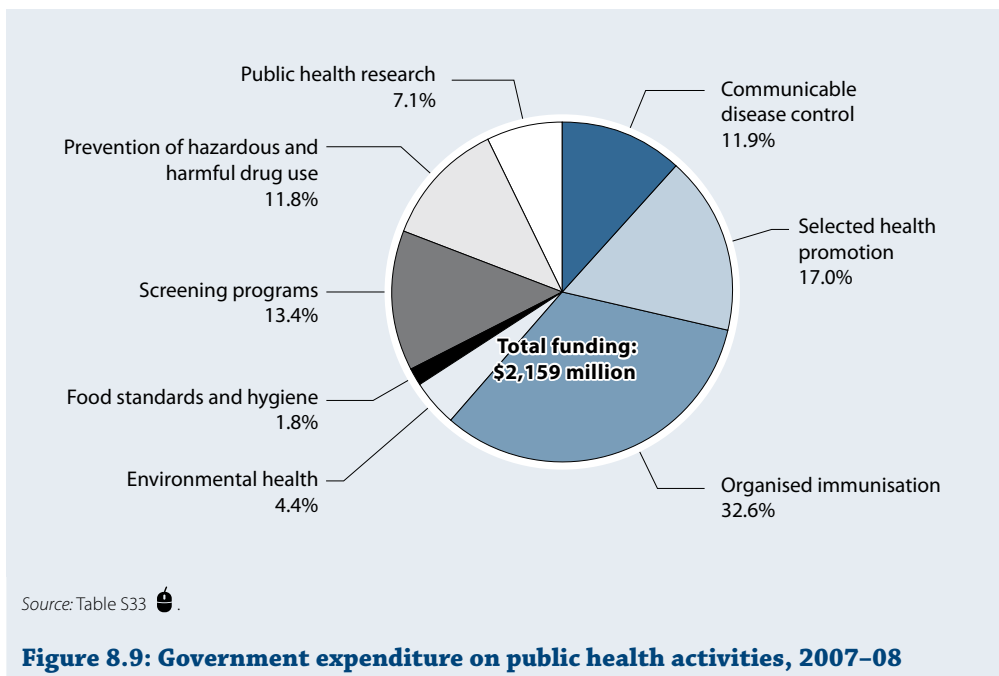
Expenditure

Public health activities are those that focus on the whole population or on population groups, such as those who are targets of cancer screening or immunisation programs. This population approach distinguishes them from treatment services for disease or injury, such as those provided to patients in hospitals.


Public health expenditure was \$1,556 million in 2005–06, \$1,811 million in 2006–07, and \$2,264 million in 2007–08 (AIHW 2009a).

In 2007–08, governments in Australia, through programs administered by their health departments, spent a total of \$2,159 million on public health activities (Figure 8.9); this represented 2.2% of total recurrent expenditure on health — a growth from \$1,715 million, or 2.0% of total recurrent health expenditure, in 2006–07. A large part of this growth in public health expenditure was due to increased spending on organised immunisation programs, mainly resulting from the costs associated with the implementation of the human papillomavirus vaccination program.

Expenditure on organised immunisation accounted for \$704 million (32.6% of all government expenditure on public health activities) during 2007–08 and was the largest single area of such expenditure. Selected health promotion activities accounted for a further \$367 million (17.0%) and screening programs cost \$289 million (13.4%). Screening programs cover breast, bowel and cervical cancer screening activities. Communicable disease control activities cost \$257 million (11.9%) and activities directed at preventing hazardous and harmful drug use accounted for \$254 million (11.8%) (Figure 8.9; Table S33 ).




Funding

In 2007–08, governments in Australia provided \$2,122 million in funding for public health activities. This was split between the Australian Government (\$1,363 million or 60.2% of public health expenditure in 2007–08) and state and territory governments (\$758 million or 33.5%). Individuals account for just a small proportion of total funding (\$30 million or 1.3%) through out-of-pocket payments (Table S29 ) .

Capital expenditure

There are multiple sources of funding for health infrastructure. For example, the Australian Government funds capital expenditure through grants and subsidies to other levels of government and to non-government organisations. State and territory governments fund large capital assets such as hospitals and community health centres.

Total capital expenditure in 2007–08 was estimated to be \$5,546 million—5.4% of total health expenditure (Table S29 ) . Over half of this (61.8%) was funded by non-government sources. State, territory and local governments funded 36.2% of total capital expenditure and the Australian Government funded 1.9% (Table 8.19). Estimates of capital expenditure are sourced from the Australian Bureau of Statistics and they have been revised for most of the earlier years. Therefore comparisons should not be made with data provided in previous editions of *Australia's health*.

The long-term nature and ‘lumpiness’ of capital investments means that trend analysis, even over a period as long as a decade, needs to be done with care.

Table 8.19: Capital health expenditure by source of funds, 1997–98 to 2007–08 (per cent)

Year	Government			Non-government	Total
	Australian Government	State/territory and local	Total		
1997–98	2.6	57.0	59.7	40.3	100.0
1998–99	4.4	36.5	40.9	59.1	100.0
1999–00	1.2	46.0	47.2	52.8	100.0
2000–01	4.0	37.8	41.8	58.2	100.0
2001–02	2.2	40.2	42.4	57.6	100.0
2002–03	1.8	39.2	41.0	59.0	100.0
2003–04	2.4	28.7	31.1	68.9	100.0
2004–05	2.8	36.4	39.2	60.8	100.0
2005–06	2.0	40.9	42.9	57.1	100.0
2006–07	2.0	38.8	40.7	59.3	100.0
2007–08	1.9	36.2	38.2	61.8	100.0

Note: Components may not add to totals, because of rounding.

Source: AIHW health expenditure database.

8.2 Health workforce

Access to health care and advice is regarded as essential to quality of life, and therefore the nature, size, distribution and effectiveness of the health workforce is the subject of much scrutiny by governments, the media and the community. There is great interest—not only among those providing health care but also in the populations they serve—in real and potential changes in the size and composition of the health workforce. For example, there have been numerous reports in the media about shortages of doctors and nurses, particularly for rural areas. These pressures have led to a number of recent government initiatives in relation to the health workforce (see Box 8.8).

Box 8.8: National Partnership Agreement on Hospital and Health Workforce Reform

In 2008 the Council of Australian Governments (COAG) agreed to a National Partnership Agreement on Hospital and Health Workforce Reform. This agreement included a series of reforms aimed at alleviating the shortages in Australia's health workforce and ensuring that the workforce would be able to meet expected increases in the demand for health care resulting from the ageing population, higher levels of chronic disease and rising community expectations. Central to these reforms was the establishment of the National Health Workforce Agency to:

- improve the capacity of the health sector to provide clinical education for health professionals-in-training, and to facilitate complementary reforms in the education and training sectors
- develop, trial and evaluate new workforce strategies and promote and facilitate those strategies that are found to improve the efficiency and effectiveness of the health workforce
- develop new employment structures and funding and payment mechanisms to support new models of care, and new and expanded roles
- streamline the international recruitment of health professionals by consolidating state- and territory-based programs into a single program covering all professions
- build statistical databases using data from the National Registration and Accreditation Scheme and other sources for the effective planning and monitoring of the health workforce.

Source: COAG 2008.

This part of the chapter provides the most recent data on the numbers, demographic characteristics, activity and distribution of health workers. Information on the proportion of females in the workforce is provided and, on average, they work fewer paid hours per week than their male counterparts. The proportion of the workforce aged 55 years and over provides an indication of those likely to retire in the short to medium term.

Data on the health workforce are collected by the ABS through the 5-yearly national population Censuses and monthly labour force surveys; and data on the medical, nursing, midwifery and dental workforces are collated by the AIHW from surveys of those registering as health professionals. These sources are described in Box 8.9.

Box 8.9: Sources of data on the health workforce

There are three main sources of data on the health workforce:

- The Australian Bureau of Statistics (ABS) Labour Force Survey is a monthly sample survey that includes about 30,000 private dwellings. Households selected for the survey are interviewed each month for 8 months, with one-eighth of the sample being replaced each month. Some data from this survey are reported monthly (for example the unemployment rate) while more detailed information (for example, occupation and industry) is reported quarterly. This edition of *Australia's health* uses data from this source as it provides information on the number of people employed according to their industry and occupation, as well as the total hours worked. This allows workload measures, such as full-time equivalents, to be calculated (see Box 8.10).
- The ABS Census of Population and Housing, conducted every 5 years, collects information from all persons aged 15 years or over about their employment status, occupation and industry. The last Census occurred in 2006.
- The Australian Institute of Health and Welfare (AIHW) compiles data from surveys of the medical, nursing and dental workforces that are conducted by the states and territories, usually in conjunction with the registration of these health professionals. These are completed annually.

Each of these data sources has its strengths and weaknesses. The ABS Labour Force Survey allows annual reporting of the size and distribution of the health workforce but, because it is based on a sample population, has limited capacity to provide detailed information about smaller population groups, particularly smaller allied health professions, or those from small areas. Unlike AIHW surveys, which are based on actual health professional registrations, health workforce data from the ABS Labour Force Survey are based on self-reported occupations.

The AIHW health labour force surveys provide more detailed data on a more limited number of health occupations than the ABS collections. The surveys are usually of all people registered or enrolled with the relevant registration boards, regardless of employment status. Information is collected on demographic characteristics, labour force status, type of work and location, specialty fields and qualifications of health professionals. However, the AIHW surveys are not compulsory and response rates vary over time.

The more recent ABS Labour Force Survey has been used rather than Census data in this chapter. Health workforce data from the 2006 Census were reported in *Health and community services labour force 2006* (AIHW 2009c). The most recent information on the medical and nursing workforces, as reported in this chapter, is from the 2007 AIHW surveys. The most recent information on the dental workforce is from the 2006 AIHW survey.

Health occupations and industries

The 'health workforce' refers to people employed to provide health care, including those who are self-employed. It does not include volunteers, individuals taking action to improve their own health, or people who work in other areas related to the wellbeing of the population. This workforce comprises those employed in health occupations, which include medical, dental and nursing workers, medical imaging workers, pharmacists, allied health workers, complementary therapists and other health workers (ABS & Statistics New

Zealand 2006). For the purposes of this publication, social workers have been added to the health workforce.

People in the health workforce work mainly in the health services industries. The health services industries include those organisations that are mainly engaged in providing health services, such as hospitals, medical services, pathology and diagnostic imaging services, allied health services, other health care services and residential care services (ABS & Statistics New Zealand 2008). Retail pharmacies belong to the retail trade industries and are therefore not included in health services industries.

The number of people employed in health occupations and whether they work in the health services industries is shown in Figure 8.10. Most workers in the health services industries (64%) in 2008 were employed in health occupations that is; direct health-care occupations. The remaining workers in the health services industries held other occupations.

	Health services industries	Other industries	Total
Health occupations	525,400 employed persons e.g. doctors, nurses, dentists, allied health workers, ambulance officers, social workers.	129,400 persons employed in health occupations in other industries e.g. retail pharmacists.	654,800
Other occupations	299,600 persons employed in other occupations in the health services industries e.g. clerical workers, service workers, welfare professionals.		
Total	825,000		

(a) Excludes veterinary services.

Note: Numbers are derived for 2008 by averaging the number employed in February, May, August and November of that year.

Source: Unpublished data from ABS Labour Force Survey, 2008.

Figure 8.10: The relationship of health occupations to health and other industries, 2008

The health services industries comprised 7% of the civilian labour force in 2008 (Table 8.20). Over the past two decades, the number of people employed in the health services industries has grown considerably, from 523,600 in 1988 to 825,000 in 2008. In the 5 years from 2003 to 2008, growth in health industries employment was 16%, compared with an 11% growth in the civilian labour force over the same period.

In 2008, there were 654,800 people working in health occupations, of whom 4 in 5 (525,400) were working in the health services industries (Figure 8.10).

Between 2003 and 2008, the number of workers in these occupations increased by 23%, from 533,400 to 654,800. This was higher than the increase of 13% across all occupations over the same period (Table 8.21). Growth over this period was highest for psychologists (66%), complementary therapists (61%) and 'other health workers' (50%). The two groups with the lowest growth rates were dental associate professionals and assistants, which actually declined in numbers by 3%, and midwifery and nursing professionals, which grew by 8%.

Table 8.20: Persons employed in the health services industries^(a), 1988 to 2008

Year	Employed in health services industries ('000) ^{(a)(b)(c)}	All employed persons ('000) ^{(b)(c)}	Proportion of all employed persons (per cent)	Civilian labour force ('000) ^{(c)(d)}	Proportion of civilian labour force (per cent) ^(c)
1988	523.6	7,366.0	7.1	7,932.2	6.6
1993	563.9	7,644.8	7.4	8,589.0	6.6
1998	615.6	8,572.4	7.2	9,300.5	6.6
2003	708.5	9,464.9	7.5	10,060.9	7.0
2008	825.0	10,740.3	7.7	11,210.7	7.4
2003 to 2008 increase (per cent)	16.4	13.5	..	11.4	..
1998 to 2008 increase (per cent)	34.0	25.3	..	20.5	..

.. Not applicable.

(a) Excludes persons employed in veterinary services.

(b) Because of a definitional change in 'employed' and 'unemployed' persons, there is a break in the series for data at the detailed industry level after 1996. Some care should therefore be taken in comparing numbers of employed people within the health industries over time.

(c) Derived by averaging the estimate for February, May, August and November of that year.

(d) Includes unemployed persons looking for work. Civilian labour force excludes members of the permanent defence forces, certain diplomatic personnel of overseas governments customarily excluded from census and estimated population counts, overseas residents in Australia, and members of non-Australian defence forces (and their dependants) stationed in Australia.

Source: Unpublished data from ABS Labour Force Survey, 1988, 1993, 1998, 2003, 2008.

People working in health occupations are mainly female. In 2008, 75% of people working in health occupations were female compared with 45% across all occupations (Table 8.21). The health occupations with the highest proportion of females in 2008 were enrolled and mothercraft nurses (92%), midwifery and nursing professionals (91%), dental associate professionals and assistants (89%), nursing and personal care assistants (82%), psychologists and social workers (both 80%).

Table 8.21: Persons employed in health occupations, 2003 and 2008

Occupation	2003			2008			Per cent increase in numbers, 2003–2008
	Number	Per cent female	Per cent aged 55 years and over	Number	Per cent female	Per cent aged 55 years and over	
Generalist medical practitioners	34,500	36	21	42,000	41	22	22
Specialist medical practitioners ^(a)	17,000	*27	30	24,700	32	*18	45
Medical imaging workers	10,500	58	**8	13,300	68	*13	27
Dental practitioners	8,800	*26	*15	11,100	*22	*32	26
Dental associate professionals and assistants	23,900	87	*5	23,200	89	**6	–3
Midwifery and nursing professionals ^(b)	184,300	92	13	199,500	91	18	8
Enrolled and mothercraft nurses	24,100	92	*11	29,600	92	21	23
Nursing and personal care assistants	64,000	81	16	73,800	82	20	15
Pharmacists	15,700	49	*22	19,200	68	*23	22
Physiotherapists	11,000	73	**5	16,400	72	*16	49
Psychologists	13,100	70	*19	21,700	80	*24	66
Other allied health workers ^(c)	25,800	72	*8	29,200	68	*16	13
Complementary therapists ^(d)	14,500	78	*9	23,400	72	*13	61
Social workers	12,600	78	*9	17,000	80	*14	35
Other health workers ^(e)	73,500	61	10	110,600	64	16	50
<i>All health workers</i>	<i>533,400</i>	<i>75</i>	<i>13</i>	<i>654,800</i>	<i>75</i>	<i>18</i>	<i>23</i>
All other occupations	8,931,500	43	12	10,085,500	43	15	13
Total all occupations	9,464,900	45	12	10,740,300	45	15	13

* Indicates a ratio that has a relative standard error (RSE) of 25% or more. The ABS advises that Labour Force Survey estimates with an RSE of 25% or more should be used with caution.

** Indicates a ratio that has a RSE of 50% or more. The ABS advises that Labour Force Survey estimates with an RSE of 50% or more are too unreliable for general use.

(a) Includes anaesthetists, internal medicine specialists, psychiatrists, surgeons and other specialist medical practitioners.

(b) Includes midwifery and nursing professionals not further defined, midwives, nurse educators and researchers and registered nurses.

(c) Includes dietitians, optometrists, orthoptists, chiropractors, osteopaths, occupational therapists, podiatrists, speech professionals and audiologists.

(d) Includes health therapy professionals not further defined, massage therapists and personal care consultants.

(e) Includes health professionals not further defined, health/welfare service managers and nurse managers, medical laboratory scientists, occupational and environmental health professionals, other health diagnostic and promotion professionals, medical technicians, ambulance officers and paramedics, diversional therapists and Indigenous health workers.

Source: Unpublished data from ABS Labour Force Survey 2003, 2008.

Workforce supply—the stocks and flows

Whether the supply of health workers is adequate to meet future needs is of much interest nationally. To monitor and adjust this supply, the current size, composition and working hours of the existing health workforce must be measured. As well, the entries to and exits from the workforce must be measurable, and the inherent lead and lag times understood.

New entrants to the workforce are mainly from the education system and skilled immigration. Departures from the workforce include resignations, retirements, migration and deaths.

Not all of these elements of workforce supply can be accurately measured. For example, the data on immigration of health workers are not considered to be of sufficient quality to provide a reasonable measure.

Three aspects of supply are examined here in further detail: the number of students completing higher education health courses, the number of health workers who are likely to retire soon from the workforce, and the hours worked by health workers.

How many people are completing health courses?

For the health professions (such as registered nurses, medical practitioners, dental practitioners, pharmacists and so forth), graduation from a relevant university course is a requirement to practise. Accordingly, an important source of entrants into these occupations is Australian residents completing health-related higher education courses each year.

Between 2002 and 2007, there was an overall increase of 26% in those completing such courses (Table 8.22). Increases were recorded for all health fields. The largest growth occurred in the fields of nutrition and dietetics (up 94%), and podiatry (64%). The smallest increases were for occupational therapy (8%) and rehabilitation therapies (11%). It should be noted that enrolled nurses undertake their initial education through the vocational education and training (VET) system, rather than universities, and are not included in these figures.

Table 8.22: Completions of selected health-related higher education courses^(a) by Australian citizens and permanent residents (excluding New Zealand citizens), 2002 and 2007

Field	2002			2007			Per cent change in number, 2002 to 2007
	Number	Per cent female	Per cent under-graduate ^(b)	Number	Per cent female	Per cent under-graduate ^(b)	
Medical studies ^(c)	2,156	54.5	67.3	2,541	58.8	67.7	17.9
Nursing	8,553	89.1	67.9	10,063	88.9	69.9	17.7
Pharmacy	754	63.7	90.6	1,181	65.4	73.3	56.6
Dental studies	336	56.5	84.2	520	58.7	85.6	54.8
Optometry	138	60.1	74.6	188	55.3	59.0	36.2
Public health ^(d)	1,704	69.4	36.9	2,204	69.1	34.8	29.3
Radiography	609	70.3	68.8	781	69.1	65.8	28.2
Physiotherapy	739	65.8	78.8	971	68.0	71.5	31.4
Occupational therapy	698	88.0	89.8	756	89.0	85.1	8.3
Speech pathology/audiology	436	94.7	77.8	543	94.7	63.7	24.5
Podiatry	113	62.8	88.5	185	68.1	97.3	63.7
Rehabilitation therapies ^(e)	740	60.8	53.6	823	67.2	50.4	11.2
Complementary therapies ^(f)	333	76.0	91.0	482	77.8	85.9	44.7
Nutrition and dietetics	302	91.1	68.2	586	91.5	71.7	94.0
Other health ^(g)	2,004	47.7	84.8	2,883	59.3	76.3	43.9
Total	19,529	74.7	69.4	24,560	76.2	67.7	25.8

(a) Health-related courses are defined as those in the Field of Education Classification of Health (06), excluding veterinary science.

(b) Includes bachelors (graduate entry, honours, pass), associate degree, advanced diploma, diploma, other undergraduate award.

(c) Includes general medicine, surgery, psychiatry, obstetrics and gynaecology, paediatrics, anaesthesiology, pathology, radiology, internal medicine, general practice and medical studies not elsewhere classified.

(d) Includes occupational health and safety, environmental health, Indigenous health, health promotion, community health, epidemiology and public health not elsewhere classified.

(e) Includes chiropractic and osteopathy, massage therapy and rehabilitation therapies not elsewhere classified.

(f) Includes naturopathy, acupuncture, traditional Chinese medicine and complementary therapies not elsewhere classified.

(g) Includes human movement, paramedical studies, first aid and health not elsewhere classified.

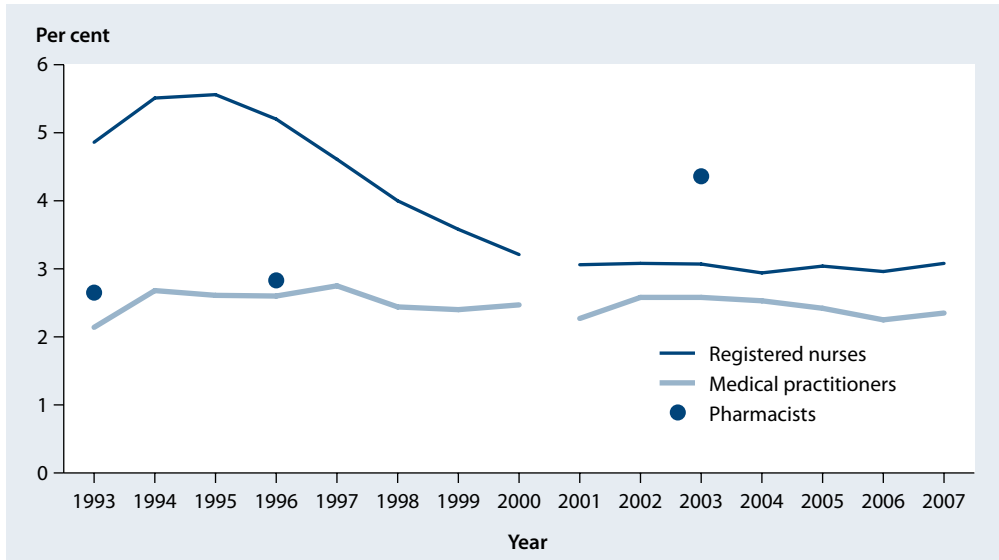
Source: DEEWR Higher Education Student Data Collection.

The sustainability ratio is an indicator developed by the National Health Performance Committee to measure the sustainability of nursing, medical practice and pharmacy. The ratio is the number of graduates in nursing, medicine and pharmacy as a percentage of the total nursing, medical and pharmacy workforce (NHPC 2004).

Between 2002 and 2007 the sustainability ratio for employed registered nurses was around 3% (Figure 8.11). Between 1994 and 1996, this ratio was above 5% due to many registered nurses taking the opportunity to upgrade their hospital-based training to academic qualifications (National Review of Nursing Education 2002). The subsequent decline can be accounted for by fewer nurses upgrading their qualifications.

The sustainability ratio for medical practitioners has remained consistently between 2% and 3%.

The sustainability ratio for pharmacists was 4.4% in 2003 (up from 2.8% in 1996). Course completion information from the Department of Education, Employment and Workplace Relations shows that the number of completions of undergraduate pharmacy courses by domestic students increased from 602 in 2001 to 866 in 2007.



Notes

1. The points in the figure are calculated as the number of Australian citizens and permanent residents (excluding New Zealand citizens) who completed undergraduate degrees at an Australian university in nursing, medicine or pharmacy by the estimated number of employed registered nurses, medical practitioners and pharmacists (respectively) in the following year (multiplied by 100).
2. Care should be taken when interpreting the relationship between completions and employed workforce numbers as the relationship is not always a direct one. That is, not all those who complete an undergraduate course in a particular field will go on to become employed in that field. Some nurses will have already been employed as registered nurses before completing a university course, as training moved from hospitals to universities.
3. Completions refer to undergraduate courses in the relevant field of study (before 2001) and field of education (from 2001 onward). There is a break in the series due to this change in education classification.
4. Registered nurses only are included, as enrolled nurse training is undertaken in the VET sector, not at university.
5. Data on the number of employed registered nurses were not available for 1996, 1998, 2000, 2002 and 2006. Trend estimates have been used to fill in gap years.
6. Only three points are given for pharmacists — 1993, 1996 and 2003. While estimates of the number of employed pharmacists are also available for 1999, completion data for 1998 (and 1997) cannot be used due to a shift from 3-to 4-year training courses at that time.

Sources: AIHW Medical, Nursing and Midwifery and Pharmacy Labour Force Surveys; DEEWR Higher Education Student Data Collection.

Figure 8.11: Australian citizens and permanent residents who completed selected undergraduate health degrees, as a percentage of employed people in the relevant workforce, 1993 to 2007

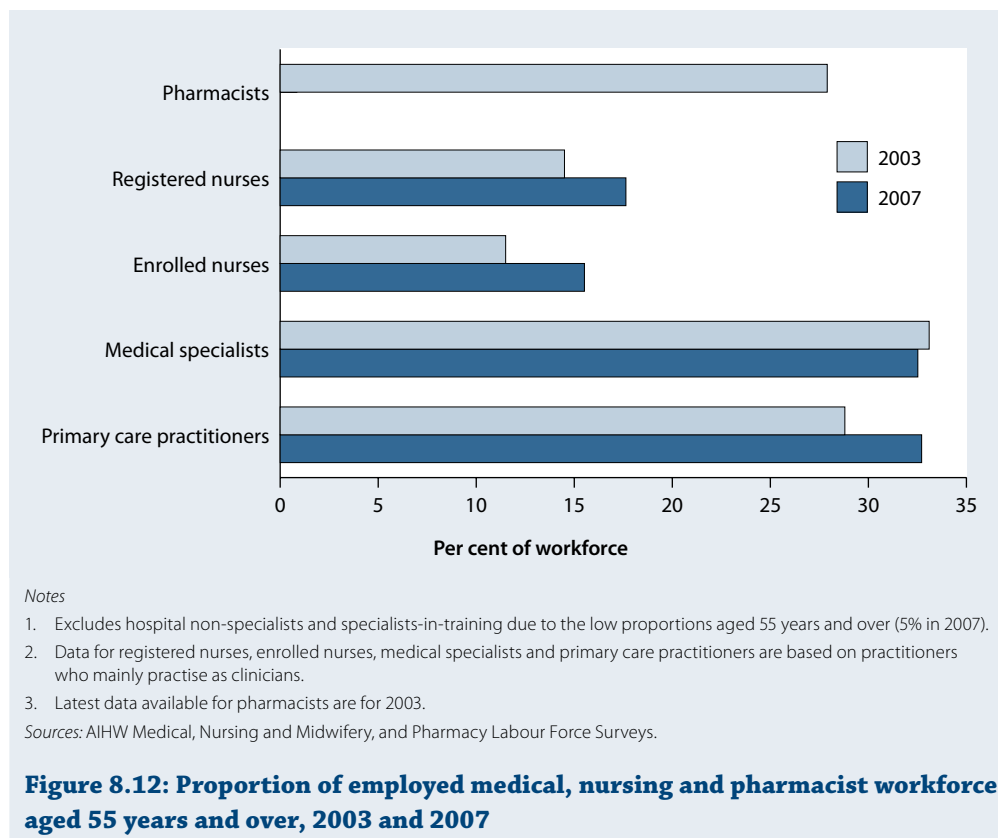
How many health professionals will be retiring from the workforce?

The main reason for permanent loss from the health workforce is the retirement of older workers (although considerable ‘churn’ among younger age groups is also likely to occur). Older people do not leave the workforce in a steady stream—the pattern of exits depends on the age profile of the workforce and other factors such as the desire for early retirement and whether or not the worker can afford to retire.

As with the Australian population and the overall labour force, the health workforce has been ageing. That is, larger proportions of the workforce are in older age groups than previously, because of the progression of the large post-war ‘baby boom’ cohort through the age groups. For example, in 2008, 18% of the health workforce was aged 55 years or more, compared with 13% in 2003, and the proportion is expected to rise over the next few years. The health workforce is ageing faster than the non-health workforce (for which the proportion aged 55 years or more rose from 12% in 2003 to 15% in 2008) (Table 8.21).

While many health workers are replaced by new entrants there is concern that the rate of workforce replacement is not keeping up with the increased demand for health-care services as a result of the ageing population.

According to the AIHW health labour force surveys, one-third of medical specialists and primary care practitioners (both 33%) were aged 55 years and over in 2007 (Figure 8.12). The percentage of registered nurses aged 55 years and over increased from 15% in 2003 to 18% in 2007 and the percentage of enrolled nurses in that age group increased from 12% to 16%. The percentage of pharmacists aged 55 years and over in 2003 (the latest year available) was 28%.



How many hours do health workers work?

Measuring supply is not just a matter of head counts. Equally important is the number of hours spent working. For example, in some professions, particularly those with a high proportion of females such as nursing, a substantial number work part time. In others, such as the medical profession, it is usual to work more than the 'standard' 35 hours per week.

In 2008, health workers worked an average 31.7 hours per week, compared with 34.7 hours for workers in all other occupations (Table 8.23). The health professions with the longest average working weeks were specialist medical practitioners (44.4 hours), generalist medical practitioners (38.5) and dental practitioners (36.4); and those with the shortest average working weeks were complementary therapists (27.3), nursing and personal care assistants (28.1), enrolled and mothercraft nurses (28.5), medical imaging workers, and midwifery and nursing professionals (both 29.2).

Among the health professions, specialist medical practitioners, generalist medical practitioners and 'other health workers' had the lowest proportion of females (32%, 41% and 64% in 2008 respectively). At the other end of the spectrum, with 80% or more being female, were dental associate professionals and assistants, midwifery and nursing professionals, enrolled and mothercraft nurses, nursing and personal care assistants, psychologists and social workers (Table 8.21).

Between 2003 and 2008 there was little change in average hours worked in health occupations. In terms of full-time equivalents (FTE: see Box 8.10), the combination of changes in numbers and hours worked resulted in a 23.0% increase in supply overall (from 481,600 FTE to 593,100 FTE).

Box 8.10: Measuring supply: full-time equivalent numbers and rates per 100,000 population

The full-time equivalent (FTE) number is the number of full-time workloads provided by health workers. This provides a useful measure of supply as it takes into account both the number of health workers who are working and the hours that they work.

FTE is calculated by the number of health workers in a particular category multiplied by the average hours they work divided by the hours considered to be full time. For example, if two health workers work a full-time week and two other health workers work half the hours of a full-time week then the total will equal 3 FTE workloads.

The Australian Bureau of Statistics (ABS) designates 35 hours per week to be full-time work, and this has been used as the basis for calculating FTE for all occupations where ABS data have been sourced. The Australian Institute of Health and Welfare (AIHW) also uses 35 hours per week for estimating FTE, except for medical practitioners (Table 8.25 and Figure 8.13), where 45 hours per week is used.

The FTE rate (the number of FTE health workers per 100,000 population) is a measure of supply. By defining supply in terms of the FTE rate, meaningful comparisons of supply can be made across geographic areas and over time. In Table 8.23 the FTE rate is calculated as: the number of FTE health workers divided by the estimated resident population of Australia respectively at 30 June 2003 and 30 June 2008, multiplied by 100,000.

The FTE rate (see Box 8.10) of the health workforce overall increased by 14% between 2003 and 2008 (from 2,421 to 2,767 per 100,000 population) (Table 8.23). The greatest increases in FTE rates between 2003 and 2008 were for complementary therapists (57%), psychologists (54%), specialist medical practitioners (46%) and 'other health workers' (38%).

Table 8.23: Persons employed in health occupations: average hours worked per week and full-time equivalent (FTE) number^(a) and rate, 2003 and 2008

Occupation	2003			2008		
	Average hours worked per week	FTE number ^(a)	FTE rate ^(b)	Average hours worked per week	FTE number ^(a)	FTE rate ^(b)
Generalist medical practitioners	42.6	42,000	211.1	38.5	46,200	215.6
Specialist medical practitioners ^(c)	41.1	20,000	100.3	44.4	31,300	146.2
Medical imaging workers	35.6	10,700	53.7	29.2	11,100	51.8
Dental practitioners	35.4	8,900	44.7	36.4	11,500	53.9
Dental associate professionals and assistants	29.4	20,100	100.9	32.8	21,700	101.4
Midwifery and nursing professionals ^(d)	28.3	149,000	749.0	29.2	166,400	776.6
Enrolled and mothercraft nurses	29.2	20,100	101.1	28.5	24,100	112.5
Nursing and personal care assistants	27.7	50,700	254.6	28.1	59,300	276.5
Pharmacists	36.4	16,300	82.1	33.2	18,200	85.0
Physiotherapists	33.4	10,500	52.8	31.2	14,600	68.2
Psychologists	31.4	11,800	59.1	31.4	19,500	90.8
Other allied health workers ^(e)	33.2	24,500	123.0	31.5	26,300	122.6
Complementary therapists ^(f)	26.0	10,800	54.1	27.3	18,300	85.2
Social workers	31.8	11,400	57.5	31.3	15,200	70.9
Other health workers ^(g)	35.5	74,500	374.2	34.9	110,300	514.7
<i>All health workers</i>	<i>31.6</i>	<i>481,600</i>	<i>2,420.6</i>	<i>31.7</i>	<i>593,100</i>	<i>2,767.2</i>
All other occupations	34.8	8,880,500	44,635.7	34.7	9,999,100	46,655.3
Total all occupations	34.7	9,383,800	47,165.5	34.5	10,586,900	49,398.0

(a) Based on a standard full-time working week of 35 hours per week.

(b) FTE per 100,000 population.

(c) Includes anaesthetists, internal medicine specialists, psychiatrists, surgeons and other specialist medical practitioners.

(d) Includes midwifery and nursing professionals not further defined, midwives, nurse educators and researchers and registered nurses.

(e) Includes dietitians, optometrists, orthoptists, chiropractors, osteopaths, occupational therapists, podiatrists, speech professionals and audiologists.

(f) Includes health therapy professionals not further defined, complementary health therapists, massage therapists and personal care consultants.

(g) Includes health professionals not further defined, health/welfare service managers and nurse managers, medical laboratory scientists, occupational and environmental health professionals, other health diagnostic and promotion professionals, medical technicians, ambulance officers and paramedics, diversional therapists and Indigenous health workers.

Source: Unpublished data from ABS Labour Force Survey 2003, 2008.

Identified health workforce shortages

For each state and territory, the Department of Education, Employment and Workplace Relations produces a list of occupations where skill shortage or recruitment difficulties exist, based upon the department's labour market research (DEEWR 2008a).

The department identified shortages in a broad range of health occupations across all jurisdictions as at 2007 and 2008 (Table 8.24). In all jurisdictions there was a state-wide shortage in registered nurses, registered midwives, medical diagnostic radiographers and sonographers. In 7 of the 8 jurisdictions there was a state-wide shortage in registered mental health nurses, dentists, dental specialists and physiotherapists. Medical practitioners were not included in the research although studies have shown there to be an overall shortage in Australia (AMWAC 2005; Joyce et al. 2006).

Note that the occupations listed in Table 8.24 are based on the Australian Standard Classification of Occupations, whereas occupations listed elsewhere in this chapter are based on the Australian and New Zealand Standard Classification of Occupations.

Table 8.24: Skills in demand, health occupations, states and territories, 2007 and 2008

Occupation ^(a)	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Director of nursing	*	*	*	*	*	S	*	S
Nurse manager	D	S	S	S	*	D	S	S
Nurse educator	S	D	S	S	*	R-D	*	*
Registered nurse	S	S	S	S	S	S	S	S
Registered midwife	S	S	S	S	S	S	S	S
Registered mental health nurse	S	S	S	S	S	R	S	S
Dentist	S	*	S	S	S	S	S	S
Dental specialist	S	*	S	S	S	S	S	S
Hospital pharmacist	S	*	S	S	*	D	S	S
Retail pharmacist	R	*	S	S	*	D	S	S
Occupational therapist	M-D,R	*	S	S	S	D	S	S
Optometrist	*	*	*	*	*	*	*	*
Physiotherapist	S	D	S	S	S	S	S	S
Speech pathologist	*	*	*	*	*	*	*	*
Chiropractor	*	*	*	*	*	D	*	*
Podiatrist	*	*	*	*	*	*	*	*
Medical diagnostic radiographer	S	S	S	S	S	S	S	S
Nuclear medicine technologist	*	*	S	S	*	*	*	*
Radiation therapist	D	*	S	*	S	*	*	*
Sonographer	S	S	S	S	S	S	S	S
Social worker	S	S	S	S	*	R	S	S
Rehabilitation counsellor	*	*	*	*	D	*	*	*
Clinical psychologist	S	S	S	R-D	S	S	*	S

(continued)

Table 8.24 (continued): Skills in demand, health occupations, states and territories, 2007 and 2008

Occupation ^(a)	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Occupational health and safety officer	D	*	*	*	*	*	*	*
Environmental health officer	R	D	S	D	*	S	*	S
Enrolled nurse	S	*	S	S	D	D	S	*
Dental technician	S	*	S	S	S	S	S	D
Optical dispenser	*	*	*	*	*	*	*	*
Optical mechanic	*	*	*	*	*	*	*	*

(a) Occupation is based on the Australian Standard Classification of Occupations.

Notes

1. Only occupations that attract 60 points on the Department of Immigration and Citizenship Skilled Occupations List and have more than 1,500 workers employed nationally (based on 2006 Census data) are assessed (DEEWR 2008b).
2. S State-wide shortage.
M Shortage in metropolitan (capital city) areas.
R Shortage in regional areas.
D Recruitment difficulty.
R-D Recruitment difficulty in regional areas.
* No shortage assessed.

Source: DEEWR 2008a.

Selected health professions

The AIHW health labour force surveys provide more detailed data than the ABS Labour Force Survey on the demographic characteristics, working patterns and distribution of some of the major health professions. The AIHW surveys cover all medical practitioners, nurses, midwives and dental practitioners registered (or enrolled in the case of enrolled nurses) with the relevant professional registration board. AIHW health labour force surveys and ABS Labour Force Survey data should be compared with caution due to differences in scope, occupation definitions and sampling variability in the ABS Labour Force Survey data (see Box 8.9).

Medical labour force

In 2007 there were 77,193 persons registered as medical practitioners in Australia, of whom 67,208 (87%) reported that they were working in medicine at the time of the survey (AIHW 2009d). Between 1997 and 2007 the number of employed medical practitioners increased by 39% (Table 8.25). The FTE supply of practitioners increased by 11% in the same period, from 275 FTE per 100,000 population in 1997 to 305 in 2007.

In 2007, 93% of employed medical practitioners were clinicians (practitioners who spent most of their working time doing clinical work) and the remaining 7% were non-clinicians (administrators, teachers, researchers, public and occupational health physicians, and other non-clinicians). Of the clinicians, 38% were primary care practitioners, 35% were specialists, and the remainder were specialists-in-training (14%) and non-specialists working in hospitals (12%) (Table 8.25).

Table 8.25: Employed medical practitioners: selected characteristics, 1997 and 2007

Type of practitioner	Number	Per cent female	Average age	Per cent aged 55 years or over	Average hours per week	FTE number ^(a)	FTE rate ^(b)
1997							
Clinicians	44,194	27.9	44.5	21.2	48.0	47,140	255
Primary care practitioners	20,134	33.0	46.3	22.5	44.7	19,999	108
Hospital non-specialists	4,321	41.9	30.6	4.5	50.8	4,878	26
Specialists	15,155	15.6	49.6	30.1	50.0	16,839	91
Specialists-in-training	4,584	33.1	31.8	1.9	53.8	5,481	30
Other clinicians	..	..	..	..	..	..	..
Non-clinicians	4,004	29.5	47.5	29.3	42.4	3,773	20
Total	48,198	28.0	44.7	21.9	47.6	50,983	275
2007							
Clinicians	62,652	34.1	45.6	24.7	43.4	60,424	287
Primary care practitioners	24,121	37.6	49.8	32.7	39.0	20,905	99
Hospital non-specialists	7,412	47.2	33.7	4.8	47.5	7,824	37
Specialists	21,702	23.0	49.8	32.5	44.5	21,461	102
Specialists-in-training	8,853	40.0	33.3	—	49.6	9,758	46
Other clinicians	564	43.6	46.0	28.0	34.8	436	2
Non-clinicians	4,556	32.4	51.2	37.7	39.0	3,948	19
Total	67,208	34.0	45.9	25.6	43.1	64,370	305

— Nil or rounded down to zero.

.. Not applicable.

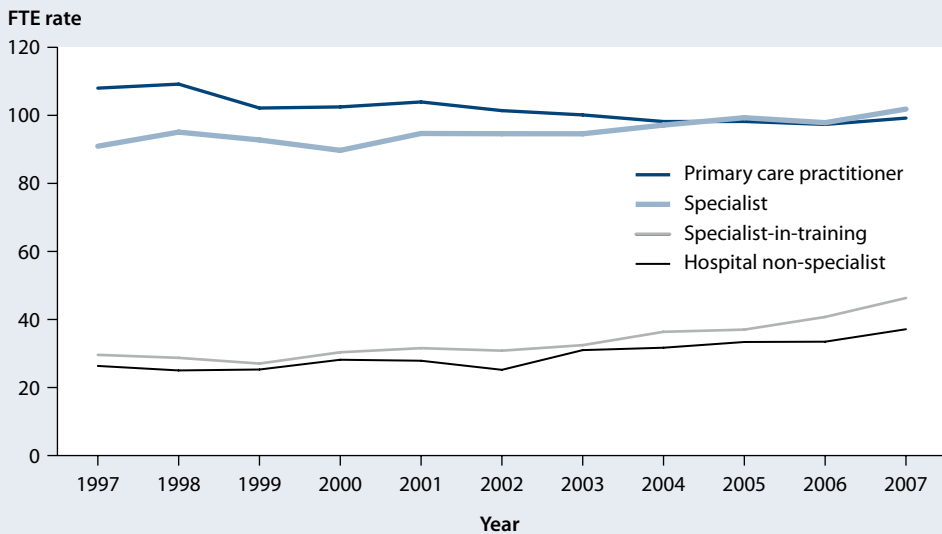
(a) Based on a standard full-time working week of 45 hours.

(b) FTE per 100,000 population.

Source: AIHW Medical Labour Force Survey 2003, 2007.

Medical practitioners are not evenly distributed across Australia, contributing to different levels of health-care access for people living in different geographical areas. The supply of medical practitioners in Australia in 2007 was highest in major cities, with 332 FTE per 100,000 population. This was higher than the rates of 186 and 157 in inner regional and outer regional, areas respectively (tables S38 and S39). The FTE rate of specialists in major cities were 2, 3 and 4 times as high as inner regional, outer regional and remote and very remote areas, respectively. The supply of primary care practitioners was more even across the geographical regions, ranging from 84 FTE per 100,000 population in outer regional areas to 95 in major cities.

Between 1997 and 2007, the number of primary care clinicians rose by 20% (from 20,134 to 24,121), while their average working hours declined from 44.7 hours to 39.0 hours. As a result, the supply of primary care clinicians declined from 108 FTE to 99 FTE per 100,000 population over the period. For other clinicians, however, the supply of specialists, specialists-in-training and hospital non-specialists increased over the period (Figure 8.13).



Sources: AIHW Medical Labour Force Survey 1997, 2007.

Figure 8.13: Employed clinical medical practitioners: FTE rate per 100,000 population by year, 1997 to 2007

The supply of hospital non-specialists, specialists and specialists-in-training increased in all regions between 1997 and 2007 (Table S39 📄).

Nursing labour force

Nurses are the largest occupational group in the health workforce. There are two main types of nurses, registered nurses and enrolled nurses. In 2007 registered nurses made up 81% of the nursing labour force. Enrolled nurses typically work alongside registered nurses to provide basic nursing care, undertaking less complex tasks.

In 2007 there were 305,834 registered and enrolled nurses, of whom 263,331 (86%) were employed in nursing (AIHW 2009e). Between 1997 and 2007 the number of employed nurses increased by 18% (Table 8.26). Between 1997 and 2007 there was a 21% increase in the number of employed registered nurses and a 10% increase in the number of employed enrolled nurses.

Nationally, the supply of nurses increased 13% between 1997 and 2007, rising from 1,054 FTE nurses per 100,000 population in 1997 to 1,189 in 2007 (Table 8.26).

In 2007, the supply of registered and enrolled nurses was highest in remote areas (1,281 FTE nurses per 100,000 population) and lowest in major cities (1,095) (tables S40 📄 and S41 📄).

Table 8.26: Employed registered and enrolled nurses, 1997 and 2007

Type of nurse	Number	Per cent male	Average age	Per cent aged 55 years or more	Average hours per week	FTE number ^(a)	FTE rate ^(b)
1997							
Registered	176,217	8.0	40.5	9.4	31.0	156,078	843
Enrolled	46,311	6.3	39.6	5.9	29.2	38,637	209
Total	222,528	7.6	40.3	8.7	30.7	195,189	1,054
2007							
Registered	212,342	9.6	43.8	18.0	33.6	203,848	967
Enrolled	50,990	9.5	43.4	15.9	31.9	46,473	221
Total	263,331	9.6	43.7	17.6	33.3	250,541	1,189

(a) Based on a standard full-time working week of 35 hours.

(b) FTE per 100,000 population.

Sources: Nursing and Midwifery Labour Force Survey, 1997, 2007.

Between 1997 and 2007 average hours worked by nurses increased from 31 hours to 33 hours per week. Figure 8.14 shows the changing pattern in hours worked by nurses between 1997 and 2007. In 1997, 32% of nurses worked less than 25 hours per week compared with 26% in 2007. The proportion of nurses working 40 hours or more increased from 23% to 36% over the period.



Dental labour force

The dental labour force comprises dentists, dental therapists, dental hygienists and dental prosthetists. The data are collected annually with the assistance of registration boards, state and territory health departments, and professional associations. There are an increasing number of allied dental practitioners (hygienists and therapists) who are dual-qualified as both therapists and hygienists. As of 2006, the estimated numbers of employed dual-registered therapists and hygienists are reported as a separate labour force group.

In 2006, an estimated 10,404 dentists were employed in Australia, an 8% increase in number since 2003. There was also an increase in the practising rate (number per 100,000 population), from 48.7 to 50.3 dentists per 100,000 population. Between 2003 and 2006, the number of employed dental allied practitioners increased by 22%. Between 2003 and 2005, the dental prosthetist labour force remained relatively stable, decreasing marginally by 2%.

Table 8.27: Employed dental labour force, 2005 or 2006^(a)

Dental occupation	Number	Per cent female	Average age	Average hours per week ^(b)	Practising rate ^(c)	FTE number ^(d)	FTE rate ^(e)
Dentists	10,404	28.9	45.1	38.5	50.3	11,444.7	55.3
Dental therapists	1,171	98.7	42.9	28.0	5.7	936.8	4.5
Dental hygienists	675	96.7	37.7	28.8	3.3	555.4	2.7
Dental hygienists–therapists ^(a)	372	94.9	36.4	33.4	1.8	355.0	1.7
Dental prosthetists ^(f)	862	9.8	50.3	42.6	4.2	1,049.2	5.2

(a) As of 2006 the estimated numbers of practising dual-registered therapists and hygienists were reported as a separate labour force group. Dual-registered practitioners may practise in both clinical capacities or may be working principally as a hygienist or as a therapist. A dual-qualified allied practitioner, if not working in both clinical capacities, may choose not to register as both a hygienist and therapist in their state or territory of practice. Therefore, estimates do not include allied practitioners who were dual-qualified but only maintained one registration type.

(b) Average hours based on hours totalled for all practice locations reported.

(c) Number employed per 100,000 population.

(d) FTE based on a full-time working week of 35 hours.

(e) FTE per 100,000 population.

(f) Data for dental prosthetists were not available for 2006; 2005 data have been reported.

Sources: AIHW DSRU Dental Labour Force data collection 2005, 2006.

In 2006, 29% of employed dentists were female; dentists were on average 45.1 years of age and worked 38.5 hours per week (Table 8.27). Dental therapists, dental hygienists and dual-registered practitioners were overwhelmingly female (99%, 97% and 95% respectively). Dental therapists and dental hygienists worked similar average hours per week (28.0 and 28.8 respectively), while dual-registered practitioners worked on average a longer week (33.4 hours per week). Dental therapists were slightly younger than dentists (42.9 years of age), and hygienists and dual-registered practitioners were markedly younger (37.7 and 36.4 years of age respectively). Dental prosthetists tended to be mainly male (90%), work longer hours (42.6 hours per week) and be on average older (50.3 years) than the other dental professionals.

The distribution of the dental labour force varied with remoteness. In 2006, dentists were concentrated in major cities, where the number per 100,000 population (59.5) was over 3 times the rate in remote and very remote areas (17.9). Dental hygienists had a similar distribution to dentists. In contrast, dental therapists were more evenly spread.

The number of prosthetists per 100,000 population in remote and very remote areas was low (0.6 compared to the national rate of 4.2) (Table S42 📊).

How does Australia's health workforce compare with other OECD countries?

The OECD health database includes information on the numbers of health workers in member countries, including those with economies and health systems most similar to Australia's—New Zealand, Canada, the United States and the United Kingdom. In 2007, Australia had higher numbers of general practitioners relative to the population than the four other countries (Table 8.28). The rate of medical specialists ranged from 0.8 to 1.8 per 100,000, with Australia ranking higher than New Zealand and Canada but lower than the United States and the United Kingdom.

The definition of general practitioners used by the OECD includes those medical practitioners working in the ambulatory sector or in hospitals. Of the 31,533 general practitioners in the OECD figures for Australia for 2007 (Table 8.28), 24,121 were primary care practitioners and the remaining 7,412 were non-specialist clinicians working in hospitals (including interns, resident medical officers and career medical officers).

Table 8.28: Health professionals employed in selected OECD countries, number and rate^(a), 2003 and 2007

Occu- pation/ year	Australia		New Zealand		Canada		USA		United Kingdom	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
General practitioners^(b)										
2003	27,834	1.4	3,006	0.8	32,088	1.0	281,957	1.0	40,007	0.7
2007	31,533	1.5	3,195	0.8	34,401	1.0	290,791	1.0	43,640	0.7
Medical specialists										
2003	23,985	1.2	2,873	0.7	34,061	1.1	409,916	1.4	89,480	1.5
2007	30,555	1.4	3,357	0.8	37,404	1.1	441,443	1.5	107,930	1.8
Dentists										
2003	9,666	0.5	1,582	0.4	18,265	0.6	173,574	0.6	n.a.	n.a.
2007	10,404 ^(c)	0.5 ^(c)	1,877	0.4	19,201	0.6	179,594 ^(d)	0.6 ^(d)	25,512	0.4
Nurses										
2003	195,975	9.9	36,514	9.1	269,154	8.5	2,929,020	10.1	604,598	10.2
2007	212,480	10.1	41,980	9.9	297,388	9.0	3,187,580	10.6	610,957	10.0

(a) Number of workers per 1,000 population.

(b) Figures for GPs for Australia include hospital-non-specialists to be consistent with the OECD definition.

(c) Figures for dentists in Australia are 2006 data.

(d) Figures for dentists in USA are 2006 data.

Sources: OECD 2009; data for Australia are from AIHW Medical and Nursing and Midwifery Labour Force Survey 2003, 2007, and AIHW DSRU Dental Labour Force data collection, 2006.

References

- ABS (Australian Bureau of Statistics) 2009. Experimental life tables for Aboriginal and Torres Strait Islander Australians, 2005–2007. ABS cat. no. 3302.0.55.003. Canberra: ABS.
- ABS & AIHW (Australian Institute of Health and Welfare) 2008. The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples 2008. ABS cat. no. 4704.0, AIHW cat. no. IHW 21. Canberra: ABS & AIHW.
- ABS & Statistics New Zealand 2006. ANZSCO—Australian and New Zealand Standard Classification of Occupations: First Edition, Revision 1. ABS cat. no. 1220.0. Canberra: ABS.
- ABS & Statistics New Zealand 2008. Australian and New Zealand Standard Industrial Classification (ANZSIC) 2006 (Revision 1.0). ABS cat. no. 1292.0. Canberra: ABS.
- AIHW (Australian Institute of Health and Welfare) 2007. Health expenditure Australia 2005–06. Health and welfare expenditure series no. 30. Cat. no. HWE 37. Canberra: AIHW.
- AIHW 2008. Expenditures on health for Aboriginal and Torres Strait Islander peoples 2004–05. Health and welfare expenditure series no. 33. Cat. no. HWE 40. Canberra: AIHW.
- AIHW 2009a. Health expenditure Australia, 2007–08. Health and welfare expenditure series no. 37. Cat. no. HWE 46. Canberra: AIHW.
- AIHW 2009b. Expenditure on health for Aboriginal and Torres Strait Islander people 2006–07. Health and welfare expenditure series no. 39. Cat. no. HWE 48. Canberra: AIHW.
- AIHW 2009c. Health and community services labour force 2006. National health labour force series no. 42. Cat. no. HWL 43. Canberra: AIHW.
- AIHW 2009d. Medical labour force 2007. National health labour force series no. 44. Cat. no. HWL 45. Canberra: AIHW.
- AIHW 2009e. Nursing and midwifery labour force 2007. National health labour force series no. 43. Cat. no. HWL 44. Canberra: AIHW.
- AMWAC (Australian Medical Workforce Advisory Committee) 2005. The general practice workforce in Australia: supply and requirements to 2013. AMWAC report 2005.2. Sydney: AMWAC. Viewed 19 November 2009, <<http://www.nhwt.gov.au/documents/Publications/2005/The%20general%20practice%20workforce%20in%20Australia%20-%20Summary.pdf>>.
- COAG (Council of Australian Governments) 2008. National partnership agreement on hospital and health workforce reform. Melbourne: National Health Workforce Taskforce. Viewed 21 September 2009, <<http://www.nhwt.gov.au/documents/COAG/National%20Partnership%20Agreement%20on%20Hospital%20and%20Health%20Workforce%20Reform.pdf>>.
- DEEWR (Australian Government Department of Education, Employment and Workplace Relations) 2008a. State and territory skill shortages list. Canberra: DEEWR. Viewed 11 August 2009, <<http://www.workplace.gov.au/workplace/Publications/LabourMarketAnalysis/SkillShortages/StateandTerritorySkillShortagelists/>>.
- DEEWR 2008b. Skill shortage methodology 2008–09. Canberra: DEEWR. Viewed 22 October 2009, <<http://www.workplace.gov.au/NR/rdonlyres/5155EAC7-0400-438F-A9B5-2DB0B89F20C0/0/WorkplaceMethodologypaper200809.pdf>>.
- DoHA (Australian Government Department of Health and Ageing) 2009. About the PBS. Canberra: DoHA. Viewed 30 January 2009, <<http://www.pbs.gov.au/html/consumer/pbs/about>>.
- Joyce CM, McNeil JJ & Stoelwinder JU 2006. More doctors, but not enough: Australian medical workforce supply 2001–2012. *Medical Journal of Australia* 184(9):441–6.
- National Review of Nursing Education 2002. National review of nursing education 2002: our duty of care. Canberra: Department of Education, Science and Training.
- NHPC (National Health Performance Committee) 2004. National report on health sector performance indicators 2003. AIHW cat. no. HWI 78. Canberra: Australian Institute of Health and Welfare.
- OECD (Organisation for Economic Co-operation and Development) 2009. OECD health data 2009. Paris: OECD.
- PHIAC (Private Health Insurance Administration Council) 2001. Annual report 2000–01. Canberra: AusInfo.

- PHIAC 2002. Private Health Insurance Administration Council annual report 2001–02. Canberra: AusInfo.
- PHIAC 2003. Private Health Insurance Administration Council annual report 2002–03. Canberra: AusInfo.
- PHIAC 2004. Private Health Insurance Administration Council annual report 2003–04. Canberra: AusInfo.
- PHIAC 2005. Private Health Insurance Administration Council annual report 2004–05. Canberra: PHIAC.
- PHIAC 2006. Private Health Insurance Administration Council annual report 2005–06. Canberra: PHIAC.
- PHIAC 2007. Private Health Insurance Administration Council annual report 2006–07. Canberra: PHIAC.
- PHIAC 2008. Private Health Insurance Administration Council annual report 2007–08. Canberra: PHIAC.
- Productivity Commission 2005. Australia's health workforce. Research report. Canberra: Productivity Commission.