

# Australia's health performance

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Separate chapters of this report provide detailed information about the health status of Australians, the determinants of that health status and the health services provided in Australia. Wherever possible, previous chapters have also highlighted whether those factors vary for different population groups and over time.

It is also helpful to bring key information about health and health interventions together for a concise and integrated picture of Australia's health performance. Accordingly, Australia's health ministers have selected 42 indicators to provide a broad perspective of health and health system performance. The indicators are presented here against a revised version of the National Health Performance Framework (NHPF) and the ministers have asked the Australian Institute of Health and Welfare (AIHW) to report against them in each issue of *Australia's health*. This chapter is the result of that request, with the AIHW having first presented a similar chapter in *Australia's health 2008*.

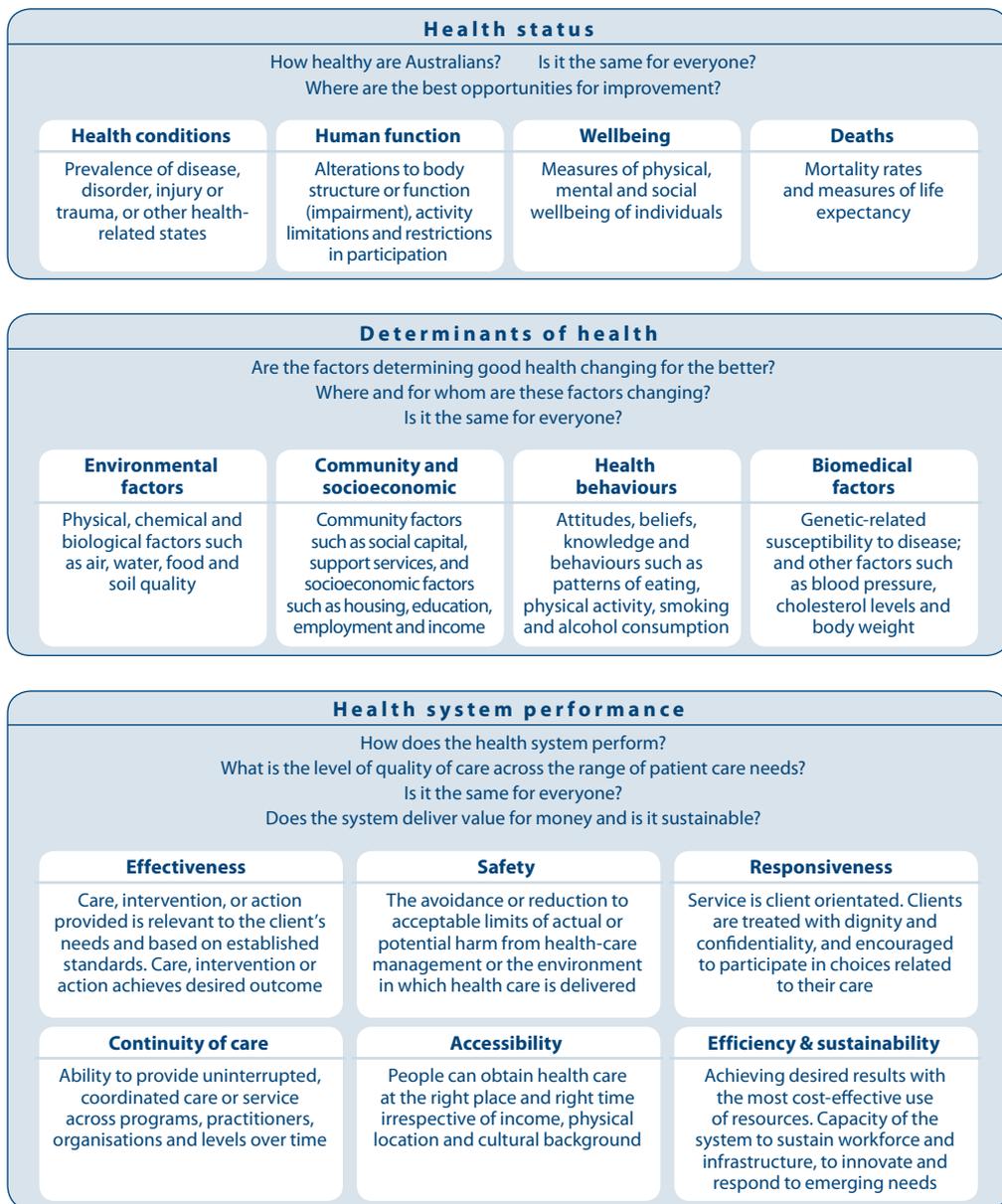
The chapter begins with a brief description of the NHPF and the various factors considered in selecting the indicators. The indicator findings are then presented against each of the three framework 'domains', namely health status, determinants of health and health system performance. The focus is on the key questions about performance: 'Where are we improving and by how much?' and 'Is performance the same for different population groups?'. Within this broad approach, a selection of the most interesting available information is presented for each indicator—for example, trends over time, population group variations or, where possible, international comparisons. Readers are referred to other chapters of this report where appropriate.

## 9.1 The National Health Performance Framework and indicators

### The framework

The NHPF was developed by the National Health Performance Committee (NHPC) under the auspices of the Australian Health Ministers' Advisory Council (AHMAC). The framework aims to help us understand and evaluate the health system, making it easier to determine how well the system is performing (NHPC 2001). The NHPF was reviewed by AHMAC in 2008 and this chapter is the first comprehensive presentation to meet the requirements of the revised version (AIHW 2009a).

The framework contains 14 health performance dimensions, grouped under the three broad domains (Figure 9.1). For example, 'health conditions' is one of four dimensions in the 'health status' domain, 'environmental factors' is one of four in the 'determinants of health' domain, and 'effectiveness' is one of six in the 'health system performance' domain.



Source: AIHW 2009a.

**Figure 9.1: National Health Performance Framework (2nd edition)**

## Developing indicators under the framework

In general terms, ‘indicators’ can be defined as statistical measures selected to describe a situation concisely; to track change, progress and performance; and to act as a guide in decision making. Chosen carefully within a suitable framework, indicators should provide a systematic and efficient aid to monitoring and planning. Indicators can range from the very specific to the very broad. It is important to keep in mind that indicators *indicate: they are generally not designed to give a perfect or full picture*. While the best indicators are robust and present a simple picture that can be used confidently as a basis for decisions, other indicators may serve as flags for issues that need further investigation before conclusions can be drawn and action taken. For example, an increasing incidence of a type of cancer may represent an underlying growth in rates of disease. Alternatively, it may be due to improved detection. The policy implications for these two possibilities are quite different.

Performance indicators, in particular, are defined as ‘statistics or other units of information that reflect, directly or indirectly, the extent to which an anticipated outcome is achieved or the quality of the processes leading to that outcome’ (NHPC 2001). Such indicators commonly cover health system structures, processes and outcomes. Because outcomes tend to be more difficult to measure, process indicators are often used instead, on the assumption that a good process will lead to a good outcome. However, the extent to which outcomes can be attributed to interventions varies (Box 9.1).

### Box 9.1: The health system and outcomes

How much credit or blame can the health system take for our health? Health status and health determinants are often described as ‘outcomes’ because the health system aims to improve them. However, as discussed in chapters 1 and 3, so many factors can influence health. The health system is one influence, and probably a major one for many people. But the system itself has many parts, involving many forms of prevention and treatment, and delivered in a range of settings such as a general practice or hospitals or through mechanisms such as the mass media.

At a broad level, this makes it difficult to know which aspects of our health status can be attributed to the health system rather than to other influences in our lives, to what extent, and to which parts of the system. Outcomes can be clear when the focus is narrow. For example, a clinical trial can show the benefit of a particular medication or surgical procedure for a particular health condition. In contrast, some indicators aim to provide information about the performance of the health system as a whole and cannot be used to assess the extent to which the health system, or any particular component of the system, can take the credit or blame.

The indicators selected for presentation here are an update of the NHPC set presented in the previous edition of *Australia's health*, revised to reflect current priorities in the health sector and to focus (more than before) on the indicators for which data are available and able to be interpreted.

The indicators presented cover all dimensions of the revised NHPF and were selected based on the original NHPC criteria for good performance indicators, specifically that indicators should:

- be worth measuring
- be measurable for diverse populations
- be understood by people who need to act
- galvanise action
- be relevant to policy and practice
- reflect results of actions when measured over time
- be feasible to collect and report
- comply with national processes of data definitions (NHPC 2004).

The chapter includes a selection of indicators developed for a range of new intergovernmental agreements (see Box 9.2) and a small number of indicators that describe broader factors influencing the health system. These broader factors are generally not the direct responsibility of health authorities but they may be considered in the authorities' objectives and planning. For example, many preventable diseases and risk factors (such as obesity) are seen as amenable to health intervention, and therefore within the responsibility of health authorities. On the other hand, community characteristics such as income levels and educational attainment are largely beyond the influence of health authorities but, as important determinants of health, may be considered in designing and evaluating policies and services.

### **Box 9.2: Other health system performance indicators**

Since the last edition of *Australia's health* (2008), a new landscape for health sector performance reporting has emerged in Australia. In late 2008, the Australian Government and state and territory governments signed the Intergovernmental Agreement on Federal Financial Relations and a series of associated agreements. Among these was the new National Healthcare Agreement, which outlines the goals of the health system and specifies roles and responsibilities of these governments in managing and providing health services. Under these arrangements, the Australian Government and state and territory health authorities have committed to regularly report on a range of performance indicators and performance benchmarks specified in the National Healthcare Agreement (COAG 2008). There are also a significant number of indicators contained in various health-related National Partnership Agreements, such as the National Partnership Agreement on Preventative Health. Some of the indicators developed for these agreements are presented in this chapter.

The result of these considerations is that some indicators that were previously reported in *Australia's health* and by the NHPC are not included in this set. These include some 'health status and outcome' indicators (for example, mortality for any specific health conditions), some 'determinants of health' indicators (for example, informal care), and some 'health system performance' indicators (for example, hysterectomy rates and delivery by caesarean section). While clearly worth measuring for other purposes, these indicators did not sufficiently meet the criteria for inclusion in this set.

## How are indicators presented here?

The following sections present indicators against the health performance framework domains of health status (Section 9.2), determinants of health (Section 9.3) and health system performance (Section 9.4). Sections start with a brief overview of the domain before presenting a summary table that provides the most current measures of the indicators and describes whether there have been favourable or unfavourable trends over time.

A trend may be marked for any indicator in the summary table, provided that:

- the time span of comparable information is at least 5 years
- there are three or more pieces of comparable information spread over that period (not just at the beginning and end)
- the change in levels is generally progressive over the period cited.

A trend is marked as 'favourable' where the measure of interest has generally moved in the desired direction for that indicator, over the time period presented. This movement can be either an increase or decrease in the indicator value. For example, an increase in life expectancy is considered favourable as it means that people are living longer on average, but a decrease in the proportion of adults who smoke is also considered favourable. Conversely, a trend is considered 'unfavourable' if the measure has moved in the opposite direction to what is desired. It is important to note that for simplicity this report takes all trends at face value and marks them accordingly as favourable or unfavourable.

For indicators where the measure does not appear to have changed over the time period, the trend is described as 'no change' and, for indicators where there are insufficient data to support trend analysis (or where the result of that analysis is not clear), the trend is described as 'not available/not clear'.

Each indicator is then presented separately, highlighting its most interesting features. Cross-references are provided also to material in this report and elsewhere, and to directly related National Healthcare Agreement indicators.

	Complementary content in <i>Australia's health 2010</i>
	Data source reference
	Indicator part of the National Healthcare Agreement

## 9.2 Health status

This domain covers health status as the overall measure of Australia's success or failure in improving the population's health. Indicators are intended to reflect health outcomes, which are defined as a change in the population's health that may be wholly or partially attributed to a health service or intervention (but see Box 9.1). It should be noted that some of the indicators presented in this section are long-term health outcomes, reflecting actions that have taken place over years or even decades previously.

The domain 'Health status' has four components that summarise the impact of disease and injury on Australians:

- *Health conditions* are measured through the incidence of selected diseases.
- *Human function* focuses on disability measured as core activity limitation; that is, a limitation in self-care, mobility and communication.
- *Wellbeing* incorporates measures of self-assessed health status and psychological distress as indicators of overall wellbeing.
- *Deaths* information incorporates life expectancy as the summary statistic of the overall health status of the population. Premature deaths are represented by indicators for infant and young child mortality.

**Table 9.1: Health status—indicator values and trends**

Indicator	Measure	Year(s)	Value <sup>(a)</sup>	Trend
<b>Health conditions</b>				
Incidence of heart attacks	Number of deaths recorded as coronary heart disease deaths plus the number of heart attacks, per 100,000 population	1997–2007	506	✓
Incidence of selected cancers	Number of new cases of:			
	• bowel cancer, per 100,000 population	1996–2006	62.2	~
	• melanoma, per 100,000 population	1996–2006	47.9	~
	• lung cancer, per 100,000 population	1996–2006	43.8	~
	• female breast cancer, per 100,000 females	1996–2006	112.4	~
Incidence of sexually transmissible infections and bloodborne viruses	Number of new cases, per 100,000 population, of:			
	• syphilis (congenital, and cases of < 2 years duration)	1999–2009	5.3	..
	• HIV (human immunodeficiency virus)	1999–2008	4.7	✗
	• hepatitis B (whether or not sexually transmitted)	2004–2009	36.0	✗
	• hepatitis C (whether or not sexually transmitted)	2005–2009	58.8	~
	• chlamydia	1999–2009	284.3	✗
Incidence of end-stage kidney disease (ESKD)	• gonococcal infection	1999–2009	36.6	✗
	Number of people commencing kidney replacement therapy for ESKD plus the number who died from ESKD each year, per 100,000 population	2003–2006	21.3	..

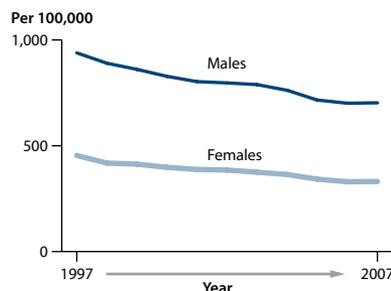
Indicator	Measure	Year(s)	Value <sup>(a)</sup>	Trend
Hospitalisations for injury and poisoning	Number of hospitalisations with a principal diagnosis of injury and poisoning, per 1,000 population	2002–03 to 2007–08	24.1	✗
<b>Human function</b>				
Severe or profound core activity limitation	Percentage of people who sometimes or always need help with core activities of daily living (mobility, self-care or communication)	1981–2003	6.3	~
<b>Wellbeing</b>				
Self-assessed health status	Percentage of persons aged 15 years or over who self-assess their health as very good or excellent	2001 to 2007–08	55.8	~
Psychological distress	Percentage of adults with very high levels of psychological distress, measured using the Kessler 10 scale	2001 to 2007–08	3.5	~
<b>Deaths</b>				
Infant/young child mortality rate	Number of deaths:			
	• of infants (< 1 year), per 100,000 live births	1997–2007	420	✓
	• of Indigenous infants (< 1 year), per 100,000 live births (5-year average)	2003–2007	1,030	..
	• of children aged 1–4 years, per 100,000 population	1997–2007	21.2	✓
Life expectancy	The average number of years a person could expect to live from birth:			
	• for all males	1995–1997 to 2005–2007	79	✓
	• for all females	1995–1997 to 2005–2007	84	✓
	• for Indigenous males	2005–2007	67	..
	• for Indigenous females	2005–2007	73	..

(a) Value at most recent point.

**KEY** ✓ favourable ✗ unfavourable ~ no change .. trend data unavailable/not clear

**Incidence of heart attacks.** The number of major coronary events among people aged 40–90 years; that is, the number of deaths from coronary heart disease (heart attacks) plus the number of non-fatal hospitalisations for heart attacks. Presented as an age-standardised number per 100,000 people.

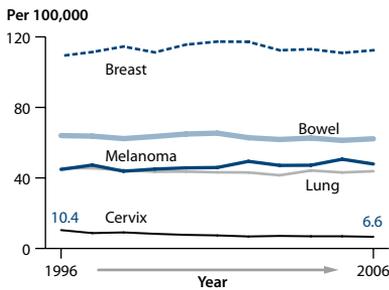
- ▶ Around 49,400 major coronary events in 2006—506 per 100,000 people.
- ▶ Twice as common among males as among females.
- ▶ Rate fell by more than a quarter between 1997 and 2007, despite increased use of more sensitive diagnostic tests, that may have led to a rise in the number of less severe heart attacks being diagnosed over time.



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**Incidence of selected cancers.** The number of new cases of selected cancers of public health importance (breast, bowel, cervical and lung cancers, and melanoma). Presented as age-standardised numbers per 100,000 people (or, for breast and cervical cancer, per 100,000 females).



- ▶ Lung cancer, bowel cancer and melanoma all more common in males than females.
- ▶ Cervical cancer rates fell by one-third between 1996 and 2006.
- ▶ Breast cancer and melanoma incidence rose during the 1980s and early 1990s but have since stabilised; lung cancer and bowel cancer rates are also flat.

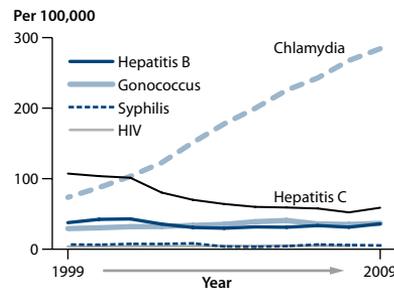
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AIHW 2010a

COAG

**Incidence of sexually transmissible infections and bloodborne viruses.** The number of new cases of syphilis, HIV, hepatitis B, hepatitis C, chlamydia and gonococcal infections. Presented as age-standardised numbers per 100,000 population.

- ▶ Incidence rates higher for males than females for all listed infections except chlamydia.
- ▶ Patterns of incidence by age vary: chlamydia and gonococcal infections peak at 15–24 years; hepatitis B and C peak in the 30s, and syphilis in the early 40s.
- ▶ Chlamydia incidence rose almost fourfold between 1999 and 2009.
- ▶ HIV incidence rose from 3.8 per 100,000 in 1999 to 4.7 in 2008.



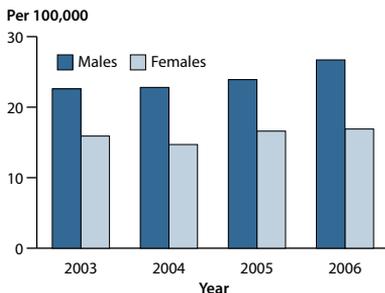
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NCHECR 2008

COAG

**Incidence of end-stage kidney disease (ESKD).** The number of people commencing kidney replacement therapy for ESKD plus the number who died from ESKD each year. Presented as an age-standardised number per 100,000 people.



- ▶ 21 per 100,000 in 2006 (4,700 people).
- ▶ Higher for males (27) than females (17).
- ▶ Indigenous rate 6 times non-Indigenous rate.
- ▶ Statistically significant increase in male rate between 2003 and 2006.

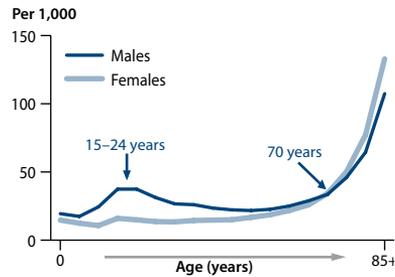
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**Hospitalisations for injury and poisoning.** The number of hospitalisations with a principal diagnosis of injury and poisoning. Presented as an age-standardised rate (per 1,000 population).

- ▶ Almost 520,000 hospitalisations in 2007–08 — 24.1 per 1,000 population.
- ▶ The overall rate increased slightly between 2002–03 and 2007–08.
- ▶ Higher for males than females up to age 70.
- ▶ Indigenous hospitalisation rate twice non-Indigenous rate.



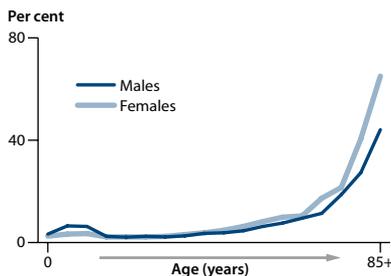
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2009b

COAG

**Severe or profound core activity limitation.** The percentage of people who sometimes or always need help with core activities of daily living (mobility, self-care or communication).



- ▶ 1.2 million people—6.3% of the population (2003).
- ▶ 5.4% of males and 7.1% of females.
- ▶ Higher in children (especially boys) than teenagers or young adults.
- ▶ No change in underlying rate, but population ageing drove a 70% increase in the number of people with severe or profound core activity limitation between 1981 and 2003.

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**Self-assessed health status.** The percentage of people aged 15 years or over who self-assess their health as excellent or very good.

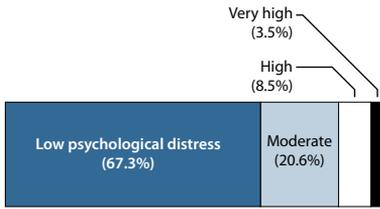
- ▶ Overall, 56% of these Australians describe their health as excellent or very good.
- ▶ Patterns in self-assessed health status have remained similar over time; patterns are similar for males and females.
- ▶ Older people are more likely than younger people to rate their health as only fair or poor.



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2009b

**Psychological distress.** Adults who have very high levels of psychological distress as measured using the Kessler 10 scale. Very high levels of psychological distress are considered an indication of possible need for mental health services. Presented as an age-standardised percentage.



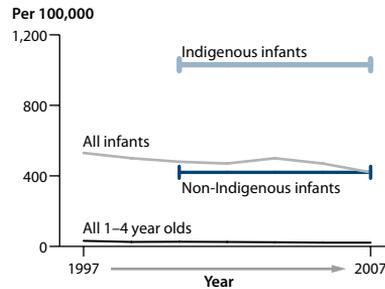
- ▶ 3.5% of adults had very high levels of psychological distress in 2007–08.
- ▶ No change in overall proportion over time.
- ▶ More common in females (4.1%) than males (2.8%).
- ▶ Highest for people aged 45–54 years (4.4%).

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ABS 2009d

**Infant/young child mortality rate (including the gap between Indigenous and non-Indigenous people).** The number of deaths of infants (those aged less than 1 year) divided by the number of live births, and the number of deaths of young children (those aged 1–4 years) divided by the population of the same age.

- ▶ Infant mortality was around 420 deaths per 100,000 live births in 2007—a 20% fall over a decade.
- ▶ Mortality rates for Indigenous infants (1,030 per 100,000 over the period 2003–2007) were much higher than the overall Australian rate, especially in the Northern Territory.
- ▶ The 2007 mortality rate for children aged 1–4 years was 21.2 per 100,000—about a third lower than in 1997.



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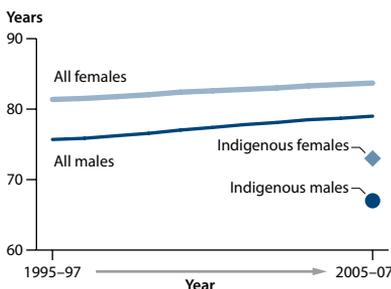
pages 299–301

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COAG

**Life expectancy (including the gap between Indigenous and non-Indigenous people).** The average number of years a person can expect to live from birth.



- ▶ Average life expectancy for girls born between 2006 and 2008 was 83.7 years; for boys it was 79.2 years.
- ▶ Male and female life expectancy continues to increase.
- ▶ The gap in life expectancies between Indigenous and non-Indigenous people is 12 years for males and 10 years for females.
- ▶ Significant changes in the methods used to calculate Indigenous life expectancy mean that trend data are not available.

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## Discussion

At the highest level, health status can be considered in terms of mortality, morbidity, and functioning and wellbeing.

The most common single measure that incorporates mortality at all ages is a population's life expectancy. On this measure, Australia fares exceptionally well—our life expectancy is one of the highest in the world (a position we have held for some years (OECD 2009)) and, even in recent years, life expectancy has continued to increase. It is now well known that Australia's Aboriginal and Torres Strait Islander people have lower life expectancy than other Australians (a gap of 10–12 years).

Another key indicator in this area is the mortality rate for infants and young children. Australia's under-5 mortality rate has been declining; however, Indigenous Australians are still more likely than their peers to die in infancy or early childhood. Australia ranks 20th in the Organisation for Economic Co-operation and Development (OECD) countries in terms of infant mortality, with a rate similar to that of the United Kingdom and New Zealand, but considerably higher than many countries in Europe (OECD 2009).

The indicators in this section that relate to functioning and wellbeing are less easy to interpret or compare. A majority of Australians consider their health status to be very good or excellent—although this decreases with age—but around 6% need daily assistance due to disability and 3.5% report very high levels of psychological distress. There is no evidence to suggest any change in the levels for these indicators over time.

Some of the major causes of morbidity and mortality in Australia are heart disease, cancer, other chronic conditions and injury. The incidence of heart attacks has decreased dramatically over the last decade and the incidence of some common cancers has decreased (cervical) or stabilised (bowel, melanoma, lung, and breast) over this period. On the other hand, hospitalisation rates for injury (the major cause of morbidity and mortality in young people) have been increasing. Similarly, the incidence of chlamydia, one of several sexually transmissible infections with long-term health implications, has risen almost fourfold within 10 years.

Patterns within many indicators of health status (both acute and long-term) vary markedly between population groups, such as between Indigenous and non-Indigenous people, and between people living in different geographic regions or areas of different socioeconomic status. Identifying and reducing these discrepancies plays a role in continuing to improve Australia's health.

## 9.3 Determinants of health

This domain covers the factors that influence how good our health will be at the individual or population level. As described in Chapter 3, determinants can be environmental, socioeconomic, behavioural and biomedical. They can act more directly to cause disease or be further back in the causal chain and act through a number of intermediary causes such as socioeconomic or employment status. Individuals have a degree of control over some determinants (such as physical activity), but other determinants act mainly or entirely at a population level (such as water quality).

'Determinants of health' has four dimensions:

- *Environmental factors* are summarised with one indicator relating to individual environments (smoking in the home) and another relating to the population-wide environment (water quality).
- *Community and socioeconomic factors* are summarised with indicators of relative income, educational attainment for adults, and levels of health literacy.
- *Health behaviours* are summarised using 5 indicators that relate to the risk for many chronic diseases. (Obesity is included as a 'behaviour' because it relates to behaviours such as diet and physical activity.)
- *Biomedical factors* are determinants that represent bodily states that are risk factors for other conditions, for example high blood pressure or high blood cholesterol. At the time of writing, there were no indicators for this dimension, reflecting the lack of national data.

**Table 9.2: Determinants of health—indicator values and trends**

Indicator	Measure	Year(s)	Value <sup>(a)</sup>	Trend
<b>Environmental factors</b>				
Children exposed to tobacco smoke in the home	Percentage of households with dependent children (aged 0–14 years) where adults report smoking inside the home	1995–2007	7.8	✓
Water quality	Percentage of households connected to mains or town water	2007–08	94	..
<b>Community and socioeconomic factors</b>				
People with low income	Percentage of people living in households with an equivalised disposable income less than 50% of the national median	2003–04 to 2007–08	13.4	✗
Proportion of babies born with low birthweight	Percentage of liveborn singleton babies born with a birthweight of less than 2,500 grams	1997–2007	4.7	~
Health literacy	Percentage of 15–74 year olds with health literacy at or above the minimum level regarded as necessary for understanding and using information relating to health issues	2006	41	..
Educational attainment	Percentage of adults aged 25–64 years with a non-school qualification (diploma, certificate or degree)	1999–2009	62	✓

Indicator	Measure	Year(s)	Value <sup>(a)</sup>	Trend
<b>Health behaviours</b>				
Proportion of adults who are daily smokers	Percentage of persons aged 18 years and over who smoke tobacco every day	2001 to 2007–08	19.1	✓
Proportion of adults at risk of long-term harm from alcohol	Percentage of persons aged 18 years and over with an alcohol consumption pattern that puts them at risk of long-term alcohol-related harm	2001 to 2007–08	14.8	..
Fruit and vegetable intake	Percentage of people aged 12 years and over eating sufficient serves each day of:			
	• fruit	2001 to 2007–08	51.3	✗
	• vegetables	2001 to 2007–08	8.5	✗
Physical inactivity	Percentage of adults who did less than 150 minutes of walking, moderate or vigorous physical activity in a week	2007–08	63	..
Proportion of adults overweight or obese	Percentage of adults classified as overweight or obese	2007–08	61 <sup>(b)</sup>	✗ <sup>(c)</sup>

(a) Value at most recent point.

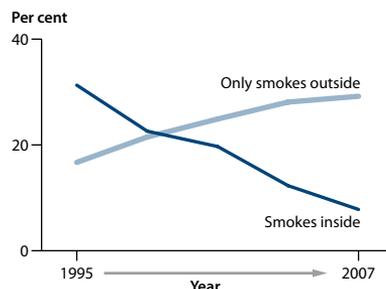
(b) Based on measured height and weight.

(c) Based on self-reported height and weight.

**KEY** ✓ favourable ✗ unfavourable ~ no change .. trend data unavailable/not clear

### Children exposed to tobacco smoke in the home. The percentage of households with dependent children (aged 0–14 years) where adults report smoking inside the home.

- ▶ In 2007, 8% of households with children included a person who smoked inside the home.
- ▶ This proportion has fallen dramatically since 1995.
- ▶ Almost 1 in 3 households with children included a smoker who only smoked outside the home.



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AIHW 2008b

### Water quality. The percentage of households connected to mains or town water.

- ▶ In 2007–08, 94% of all Australian households had access to mains or town water.
- ▶ Water utilities that provide services to more than 10,000 households are regularly tested to ensure microbiological compliance with national water quality standards.
- ▶ In 2007–08, 82% of assessed utility providers recorded 100% compliance with national standards. Almost all utilities provided water that met microbiological requirements to more than 95% of the population served by the utility.

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ABS 2009e

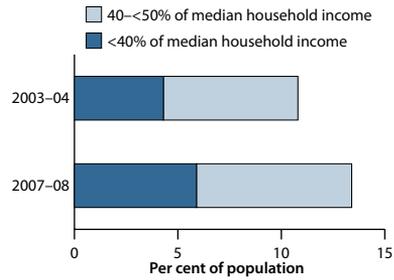
WSAA & NWC 2009

**People with low income.** People living in households with an equivalised disposable household income (that is, after-tax income, adjusted for the number of people in the household) that is less than 50% of the national median. Presented as a percentage of all people.

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- ▶ In 2007–08, the median equivalised disposable household income was \$692 per week.
- ▶ Almost 2.8 million people lived in households with less than half this income (\$346 per week); including 1.2 million people with a household income less than 40% of the median (\$277 per week).
- ▶ The percentage of people living in low-income households increased from 10.8% in 2003–04 to 13.4% in 2007–08.

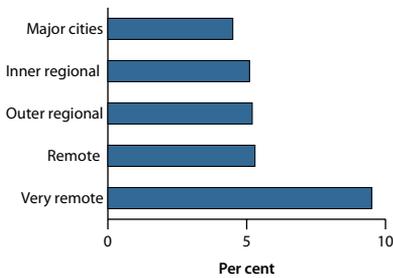


**Proportion of babies born with low birthweight.** The percentage of live-born singleton babies with a birthweight of less than 2,500 grams.

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CRC  
2010

COAG



- ▶ In 2007, 4.7% of singleton births (13,300 babies) were of low birthweight.
- ▶ The rate has not changed markedly over the last 10 years.
- ▶ Babies born to Indigenous mothers, and to mothers in very remote areas, were more than twice as likely as their city counterparts to be of low birthweight.

**Health literacy.** The percentage of adults (aged 15–74 years) whose health literacy is at or above the minimum level regarded as necessary to understand and use information relating to health issues such as drugs and alcohol, disease prevention and treatment, safety and accident prevention, first aid, emergencies and staying healthy.

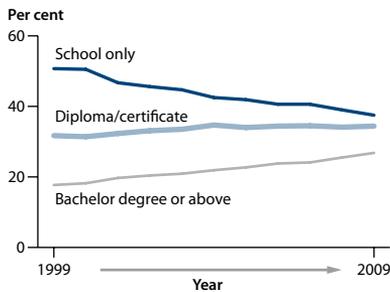
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2008b

- ▶ In 2006, 35% of 15–74 year olds met the minimum level of health literacy and 6% exceeded the minimum (41% in total).
- ▶ 48% of 25–44 year olds met or exceeded the minimum level, compared with 17% of 65–74 year olds.
- ▶ Males and females had similar health literacy levels.



**Educational attainment.** The percentage of people aged 25–64 years with a non-school qualification (diploma, certificate or degree).



- ▶ More than 3 in 5 (62%) had a non-school qualification in 2009, including 1 in 4 with a degree.
- ▶ Particularly strong growth in population with a degree: from 18% to 27% over a decade.
- ▶ Highest qualification levels for younger people: 69% among 25–34 year olds, compared with 54% of 55–64 year olds.

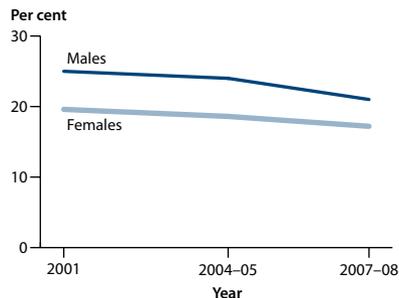
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page 242

ABS 2009a

**Proportion of adults who are daily smokers.** Adults (18 years or over) who smoke tobacco (manufactured or roll-your-own) every day. Presented as an age-standardised percentage.

- ▶ In 2007–08, 19% of adults were daily smokers—21% of males and 17% of females.
- ▶ The long-term downward trend in smoking rates, for both males and females, has continued in recent years.
- ▶ Among males, daily smoking is most common in the 25–34 years age group. For females, it is most common in the 40–49 years age group.

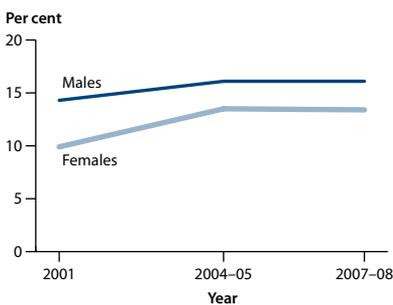


pages 87–88

ABS 2009b

COAG

**Proportion of adults at risk of long-term harm from alcohol.** Persons aged 18 years or over whose alcohol consumption pattern puts them at risk of long-term alcohol-related harm according to 2001 National Health and Medical Research Council guidelines. Presented as an age-standardised percentage.



- ▶ In 2007–08, 15% of adults consumed alcohol at levels that put them at risk of long-term harm: 16% of males and 13% of females.
- ▶ While rates of risky alcohol consumption increased slightly from 2001 to 2004–05, the most recent data show no significant change.
- ▶ Males aged 25–29 years (21%) and females aged 65–69 years (18%) had the highest rates of risky alcohol consumption.

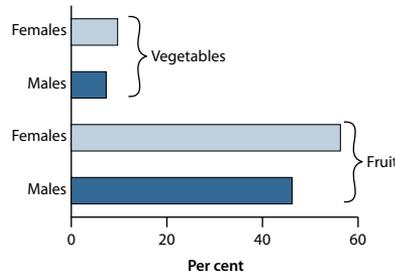
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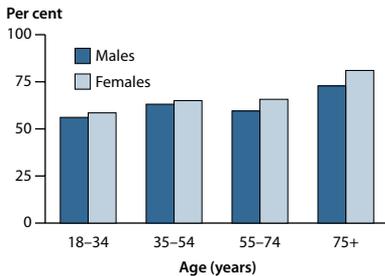
COAG

**Fruit and vegetable intake.** The percentage of people aged 12 years or over eating sufficient serves of fruit and vegetables each day to obtain a health benefit.

- ▶ About half of all people usually consume the recommended number (two or more) of serves of fruit daily.
- ▶ Fewer than 1 in 10 usually consume the recommended number (five or more) of serves of vegetables daily.
- ▶ More females than males usually eat the recommended number of serves of fruit or vegetables each day.

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102–104ABS  
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**Physical inactivity.** The percentage of adults who did not participate in sufficient regular physical activity to gain a health benefit. The recommended minimum level of activity is 150 minutes per week of walking or other moderate or vigorous activity, over at least five sessions.

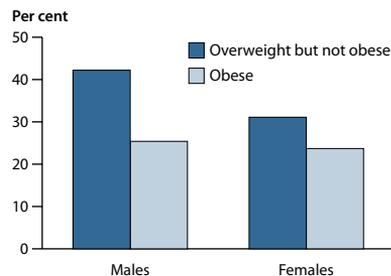


- ▶ In 2007–08, most adults (63%) did not do the recommended amount of physical activity.
- ▶ Physical inactivity increased with age—77% of people aged 75 years and over did not meet the guidelines, compared with 57% of people aged 18–34 years.
- ▶ Females were slightly more likely than males to be physically inactive.

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92–97ABS  
2009b

**Proportion of persons overweight or obese.** The percentage of adults who are overweight (with a body mass index (BMI) over 25 but less than 30) or obese (with a BMI of 30 or more).

- ▶ In 2007–08, the majority of adults (61%) were either overweight or obese.
- ▶ Compared with 1995 (56%), the percentage of adults who were overweight or obese increased by 5 percentage points.
- ▶ Males (42%) were more likely than females (31%) to be overweight but not obese; similar proportions (24–25%) of males and females were obese.
- ▶ People aged 65–74 years were the age group most likely to be overweight or obese.

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## Discussion

Health behaviours, as well as having a substantial impact on health status, are often considered to be indicators of the effectiveness of public health activities. However, this is a somewhat simplistic view because personal preferences, and socioeconomic and cultural factors, as well as an individual's knowledge about health, can affect the choices people make. In this area, the results of Australia's public health activities appear to be mixed. On the healthy side, our smoking rates are among the lowest in the world and they continue on a long-term downward trend. Awareness of the effects of passive smoking may have also contributed to changes in smoking behaviour, such as reducing children's exposure to smoking in the home. However, the levels of several other significant risk factors for chronic illness and early death (low fruit and vegetable intake, physical inactivity, overweight and obesity, and risky alcohol consumption) have failed to improve or have become worse.

The proportion of babies born with low birthweight—a recognised risk factor for long-term health problems—is influenced by the health sector as well as by other factors, including those that are social and cultural. While Australia ranks in the middle third of OECD countries on this measure, there is significant variation between our population groups. For example, babies born to Indigenous mothers are more than twice as likely to be of low birthweight as babies born to other mothers.

Some determinants of health involve the health system interacting with other areas of government and wider social responsibility such as infrastructure, education and financial resources. While there is no simple measure of Australia's water quality, it is considered good by international standards. It is widely recognised that education and income influence people's health behaviours, access to health services and health outcomes. Education levels in Australia are rising; however, the proportion of Australians living on relatively low incomes has also risen. Of some concern is the fact that fewer than half of all adults have health literacy considered to be at the minimum level required to understand and use information relating to health issues arising in everyday life.

## 9.4 Health system performance

The health system may be viewed as a complex combination of services and interventions covering population health, primary care, acute care and continuing care. There is considerable overlap of services and functions between these service categories and increased focus on ensuring that transitions between these health services are well managed.

The indicators for the system performance domain attempt to cover these major service categories and provide some information about continuity of care. Some indicators relate to the desired outcomes of interventions in terms of health status or determinants of health (such as the survival rates of people diagnosed with cancer) and can be considered to reflect the quality of care given. Others are measures of the uptake of an intervention, such as immunisation rates and asthma action plans. Here, the assumption is that they are high-quality interventions, and the more people who receive them the better the health of the population in general.

The six dimensions that summarise 'Health system performance' are described below:

- *Effectiveness* focuses on whether there have been gains in health status or health determinants that suggest that interventions have been effective. It is assessed using six indicators that cover aspects of primary care, acute care, and continuing care.

- *Safety* is described with two indicators that measure aspects of safety in hospitals.
- *Responsiveness* is not singularly measured by any indicator in this set.
- *Continuity of care* is measured by three indicators that relate to the management of three common chronic diseases in the Australian population.
- *Accessibility* is assessed using seven indicators relating to primary care and other care, and also includes indicators about screening programs.
- *Efficiency and sustainability* of the health system relates to the system's capacity to provide care efficiently, now and into the future. The two indicators used relate to the efficiency of hospital services and the sustainability of the health workforce.

**Table 9.3: Health system performance—indicator values and trends**

Indicator	Measure	Year(s)	Value <sup>(a)</sup>	Trend	
<b>Effectiveness</b>					
Unsafe sharing of needles	Percentage of injecting drug users, participating in surveys carried out at needle and syringe programs, who report sharing needles and syringes in the last month	2008	16	~	
Immunisation rates for vaccines in the national schedule	Percentage of children aged 5 years who have been fully vaccinated, according to the National Immunisation Program Schedule	2008–09	82	..	
	Percentage of adults aged 65 years and over who have been vaccinated against influenza and pneumococcal disease	2006	59	..	
Selected potentially preventable hospitalisations	Admissions to hospitals that could have potentially been prevented through the provision of appropriate non-hospital health services, per 1,000 population	2002–03 to 2007–08	33.6	✗	
Survival following heart attack	Percentage of people aged 40–90 years who survive an acute coronary heart disease event (heart attack)	1997–2007	63	✓	
Survival of people diagnosed with cancer	Five-year relative survival percentages for people diagnosed with cancer	1982–86 to 1998–2004	61	✓	
Potentially avoidable deaths	Number of deaths of persons aged less than 75 years categorised as potentially avoidable, per 100,000 population:	• preventable deaths	1996–2006	97	✓
		• treatable deaths	1996–2006	62	✓
<b>Safety</b>					
Adverse events treated in hospitals	Number of adverse events treated in hospital per 100 hospitalisations	2002–03 to 2007–08	4.8	~	
Falls resulting in patient harm in hospitals	Number of hospitalisations for falls occurring in health care settings and resulting in patient harm, per 1,000 hospitalisations	2007–08	2.2	..	
<b>Continuity of care</b>					
Proportion of people with diabetes with a GP annual cycle of care	Percentage of people with diabetes who have received a Medicare Benefits Schedule annual cycle of care	2008–09	19.1	..	

Indicator	Measure	Year(s)	Value <sup>(a)</sup>	Trend
Proportion of people with asthma who have a written asthma plan	Percentage of participants in the National Health Survey who reported having asthma, who said they had a written asthma plan.	2001 to 2007–08	19.8	..
Proportion of people with mental illness who have a GP care plan	Percentage of people with mental illness who have a GP mental health care plan	2008–09	16.7	..
<b>Accessibility</b>				
Bulk-billing for non-referred (GP) attendances	Percentage of non-referred (GP) attendances that were bulk-billed	2003–04 to 2008–09	78.3	✓
Potentially avoidable GP-type presentations to emergency departments	Attendances at public hospital emergency departments that could have potentially been avoided through the provision of appropriate non-hospital services in the community	2007–08	2 m	..
Waiting times for elective surgery	Median waiting time for elective surgery in public hospitals, in days	2002–03 to 2007–08	34	✗
Waiting times for emergency department care	Percentage of patients treated within national benchmarks for waiting times for each triage category in public hospital emergency departments	2003–04 to 2007–08	67	~
Cancer screening rates	Percentage of the target population participating in:			
	• BreastScreen program	1996–97 to 2007–2008	54.9	~
	• cervical screening	1996–97 to 2007–2008	61.2	~
	• National Bowel Cancer Screening Program	2008	35.9	..
Proportion of pregnancies with an antenatal visit in the first trimester	Proportion of pregnancies resulting in a birth, where an antenatal visit was reported in the first trimester		Not available	
Differential access to hospital procedures	Indigenous:non-Indigenous ratio of rates at which selected hospital procedures were performed, per 1,000 population:			
	• cataract extraction	2007–08	0.97	..
	• cystoscopy	2007–08	0.55	..
	• inguinal herniorrhaphy	2007–08	0.47	..
<b>Efficiency and sustainability</b>				
Net growth in health workforce	Percentage change from one time point to another in the full-time equivalent number of people employed as:			
	• medical practitioners	2005–2007	+ 10.0	..
	• nurses or midwives	2005–2007	+ 8.7	..
Cost per casemix-adjusted separation for acute care episodes	Average cost per casemix-adjusted separation for acute care public hospitals	2007–08	\$4,215	..

(a) Value at most recent point.

**KEY** ✓ favourable ✗ unfavourable ~ no change .. trend data unavailable/not clear

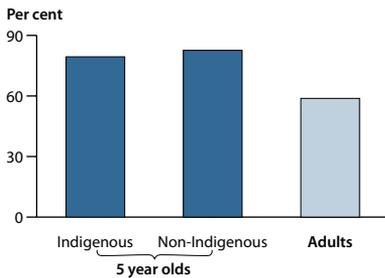
**Unsafe sharing of needles.** The percentage of injecting drug users participating in surveys carried out at needle and syringe programs, who report sharing needles and syringes in the last month.

- ▶ 16% of injecting drug users reported sharing needles.
- ▶ The proportion has remained constant over the last 5 years measured.
- ▶ Recent receptive sharing is normally with either a regular sex partner or close friend.

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2008

**Immunisation rates for vaccines in the national schedule.** Children: the percentage of 5 year olds who have been fully vaccinated according to the National Immunisation Program Schedule (that is, they have received immunisations for diphtheria, tetanus, pertussis, hepatitis B, poliomyelitis, *Haemophilus influenzae* type B, measles, mumps and rubella). Adults: people aged 65 years or over who have been vaccinated for influenza and pneumococcal disease. Presented as an age-standardised percentage.



- ▶ In 2008–09, 82% of 5 year olds were fully vaccinated.
- ▶ Indigenous children (79%) were less likely than non-Indigenous children (83%) to be fully vaccinated.
- ▶ In 2006, about 59% of adults aged 65 years and over reported they were vaccinated against pneumococcal disease and influenza.

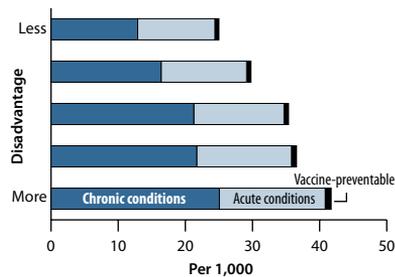
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**Potentially preventable hospitalisations.** Admissions to hospitals that could have potentially been prevented by providing appropriate non-hospital health services. Admissions that are potentially preventable include those that are for vaccine-preventable diseases (for example measles), acute conditions (for example ear, nose and throat infections) and chronic conditions (for example diabetes).

- ▶ In 2007–08, there were 33.6 potentially preventable admissions per 1,000 people.
- ▶ More than half were due to chronic conditions
- ▶ The overall rate increased from 30.5 per 1,000 people in 2002–03.
- ▶ Rates increase with increasing remoteness and socioeconomic disadvantage.

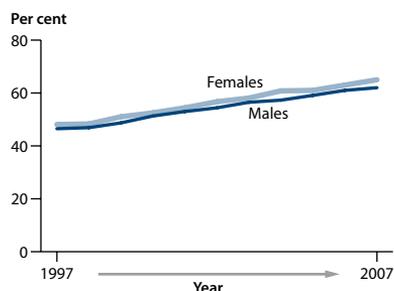


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2009b

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**Survival following heart attack.** People aged 40–90 years who survive an acute coronary heart disease event (heart attack). Presented as an age-standardised percentage.



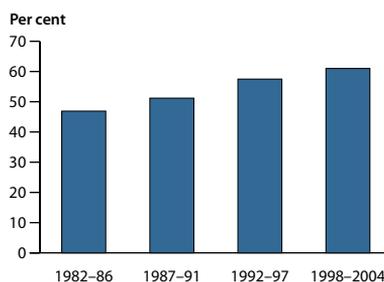
- ▶ Survival rates are similar for males and females.
- ▶ In 2007, over 3 in 5 (63%) of people who had a heart attack survived, compared with less than half (47%) in 1997.
- ▶ Part of this trend may be due to an increase in the diagnosis of milder forms of acute coronary events, as diagnostic techniques have become increasingly sensitive over time.

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**Survival of people diagnosed with cancer.** The percentage of people diagnosed with cancer who survive for 5 years after diagnosis, compared with similar people in the general population.

- ▶ The 5-year relative survival rate for all cancers diagnosed between 1998 and 2004 was 61%.
- ▶ Relative survival rates have increased since the early 1980s for both males and females.
- ▶ Rates were higher for females (64%) than males (58%).
- ▶ Relative survival rates were lower than average for people living in relatively disadvantaged areas, and people living in regional and remote areas.

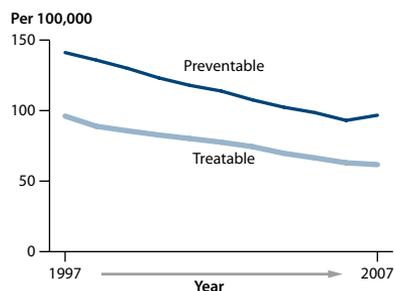


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**Potentially avoidable deaths.** The number of deaths each year of people aged under 75 years that are potentially avoidable within the present health system. Divided into preventable deaths (those cases amenable to primary prevention and screening) and treatable deaths (those amenable to therapeutic interventions). Presented as a number per 100,000 population.



- ▶ In 2007, there were 161.5 potentially avoidable deaths per 100,000 people: 60% were classified as preventable and 40% as treatable.
- ▶ Equates to more than 31,000 potentially avoidable deaths.
- ▶ Preventable death rates fell by 40% between 1997 and 2007 (from 141 to 97 deaths per 100,000).
- ▶ Treatable death rates fell by 34% between 1997 and 2006 (from 94 to 62 deaths per 100,000).

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**Adverse events treated in hospitals.** The number of hospital separations involving an adverse event. Presented as a number per 100 hospitalisations.

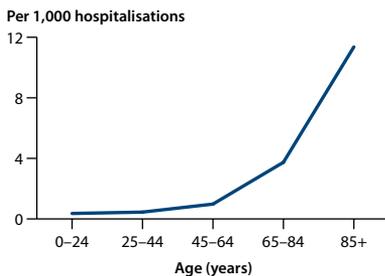
- ▶ 4.8 adverse events per 100 hospitalisations in 2007–08.
- ▶ The rate has not changed markedly since 2002–03.
- ▶ Adverse events as defined in hospital data collections include infections, falls resulting in injuries, and medication and medical device problems. They are only a subset of adverse events identifiable using hospital data.
- ▶ Not all adverse events are necessarily preventable. Surgical procedures causing abnormal reactions and complications are the most common non-preventable events.

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**Falls resulting in patient harm in hospitals.** The number of hospitalisations in which a patient was treated for a fall that occurred in a hospital. Presented as a number per 1,000 hospitalisations.



- ▶ 2.2 per 1,000 hospitalisations in 2007–08.
- ▶ In total, there were 17,300 hospitalisations where a fall occurring in a hospital was treated.
- ▶ The rate ranges from 0.4 per 1,000 hospitalisations for children and young people to 11.3 per 1,000 hospitalisations for patients aged 85 years and over.
- ▶ Falls that occurred in a health-care setting other than a hospital (such as a clinic) may be included.

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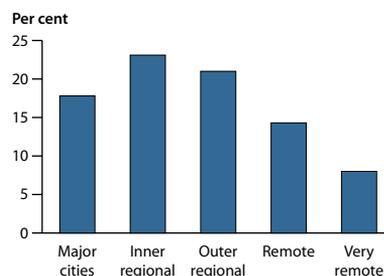
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2009d

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**Proportion of people with diabetes who have a GP annual cycle of care.** The percentage of people with diabetes who received a Medicare Benefits Schedule annual cycle of care.

- ▶ Almost 1 in 5 (19.1%) in 2008–09.
- ▶ Only 8% for those living in very remote areas.
- ▶ It is not known if or how uptake differs between people with Type 1 and Type 2 diabetes.



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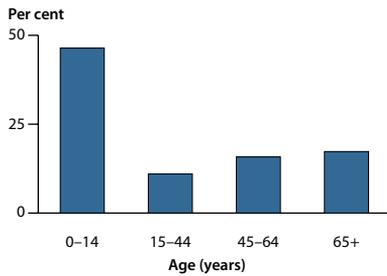
COAG

**Proportion of people with asthma who have a written asthma plan.** The proportion of participants in the National Health Survey who reported having asthma, who said they had a written asthma plan. Presented as an age-standardised percentage.

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- ▶ In 2007–08, 20% of people who reported asthma as a long-term condition also reported having a written asthma action plan.
- ▶ Children with asthma were much more likely than those of other ages to have a written asthma plan (46%).

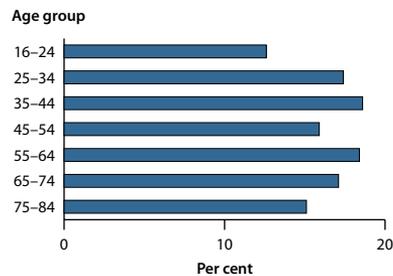
**Proportion of people with mental illness who have a GP care plan.** The number of people aged 16–84 years with a GP mental health care plan, as a percentage of the estimated number of people aged 16–84 years with mental illness.

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- ▶ In 2008–09, the number of people with a GP mental health care plan accounted for around 1 in 6 (16.7%) people with mental illness.
- ▶ Uptake was lowest among young people aged 16–24 years (12.6%).
- ▶ People living in the most disadvantaged fifth of Australian areas were less likely to have a plan (13.9%) than people living in other areas (16.4–17.0%).

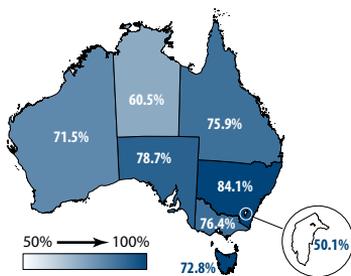


**Bulk-billing for non-referred (GP) attendances.** The percentage of non-referred (GP) attendances that were bulk-billed.

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care  
2009



- ▶ 78% of attendances bulk-billed in 2008–09.
- ▶ Lowest national rate observed in 2003–04 (68%); increases have been seen each year since.
- ▶ Varies across states and territories, from 50% in ACT to 84% in NSW.

**Potentially avoidable GP-type presentations to emergency departments.** The number of presentations to the emergency department where the presentation was allocated a triage category of semi-urgent or non-urgent and the person did not arrive by ambulance, police or correctional vehicle, was not admitted to the hospital, or referred to another hospital, and did not die.

- ▶ Over 2 million GP-type presentations in emergency departments (2007–08).
- ▶ These accounted for more than 40% of recorded emergency department visits.
- ▶ This figure is based on Peer Group A and B hospitals only, so does not include GP-type presentations to smaller hospital emergency departments.

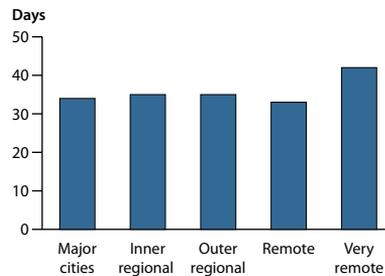
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**Waiting times for elective surgery.** The median waiting times for elective surgery in public hospitals.

- ▶ Median waiting time across all procedures is 34 days.
- ▶ Waiting times vary considerably between procedures. The longest median waiting time is for total knee replacements (156 days); the shortest is for coronary artery bypass grafts (14 days).
- ▶ Waiting time is longest for people living in very remote areas; shortest for people living in the least disadvantaged fifth of Australian areas.

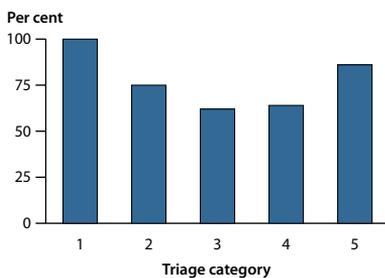


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**Waiting time for emergency department care.** The percentage of patients who are treated within national benchmarks for waiting times for each triage category in Peer Group A and B public hospital emergency departments.



- ▶ 67% of all patients treated on time (2007–08).
- ▶ No change since 2003–04.
- ▶ 100% for triage category 1 (resuscitation).
- ▶ Lowest for triage category 3 (urgent).
- ▶ Overall median waiting time is 26 minutes.

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359–374

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COAG

**Cancer screening rates (breast, cervical, bowel).** The percentages of the target populations who have participated in one of the three national cancer screening programs.

- ▶ 54.9 % of females aged 50–69 years participated in BreastScreen programs (2007–2008).
- ▶ 61.2% of females aged 20–69 years participated in the National Cervical Screening Program (2007–2008).
- ▶ 35.9% of invited 50, 55 and 60 year olds participated in National Bowel Screening Program (NBSP) (2008).
- ▶ Cervical and breast screening rates have remained relatively stable; the NBSP is a new program.

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334–339

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COAG

**Proportion of pregnancies with an antenatal visit in the first trimester.** Pregnant females who have a live birth who had at least one antenatal visit in the first 13 weeks of pregnancy. Presented as a percentage of all females who had a live birth.

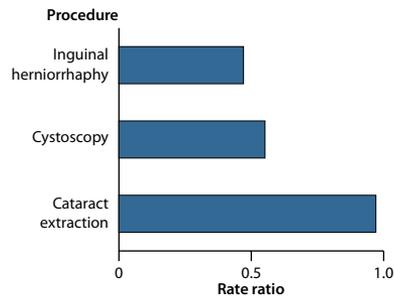
- ▶ Data are not available nationally and not comparable across jurisdictions.
- ▶ For the three jurisdictions where data are available, Indigenous females were less likely to have a visit than non-Indigenous females.
- ▶ Where recorded, over 50% of females had at least one visit in the first trimester.

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2010

COAG

**Differential access to hospital procedures.** The number of hospitalisations involving selected procedures per 1,000 population, for Indigenous people compared with non-Indigenous people. Presented as a ratio of age-standardised rates (Indigenous:non-Indigenous).

- ▶ In 2007–08, Indigenous people were about 50% as likely to have an inguinal herniorrhaphy (repair of the inguinal hernia) than non-Indigenous people.
- ▶ Indigenous people were 55% as likely to have a cystoscopy (bladder examination).
- ▶ Indigenous people were almost as likely to have cataract extractions as non-Indigenous people.

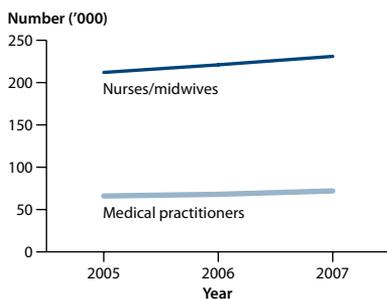


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COAG

**Net growth in health workforce.** The change over time in the full-time equivalent number of people employed in selected health workforce professions, presented as a percentage of the initial workforce size.



- ▶ There were around 72,400 medical practitioners and 230,800 nurses and midwives in 2007.
- ▶ The medical workforce grew by 2.7% from 2005 to 2006, and 7.2% from 2006 to 2007—overall, by 10.0% from 2005 to 2007.
- ▶ The number of medical practitioners has been growing each year since 2003.
- ▶ The nursing and midwifery workforce grew by 8.7% between 2005 and 2007.
- ▶ Net growth in both professions exceeded the population growth rate.

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COAG

### Cost per casemix-adjusted separation for acute and non-acute care episodes.

The average cost per separation for acute and non-acute care in public hospitals, adjusted for different hospital casemixes.

- ▶ Average cost per separation in 2007–08 was \$4,215.
- ▶ Average cost was slightly higher in principal referral and specialist women's and children's hospitals (\$4,215) than in large hospitals (\$4,125) or medium hospitals (\$4,129).

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## Discussion

Assessing the performance of the health system is very complex, and involves judgments about the interrelated dimensions of effectiveness, safety, continuity of care, accessibility, and efficiency and sustainability. Existing data sources best cover the effectiveness dimension where there are favourable trends in survival following coronary events and cancer and in potentially avoidable deaths. In contrast, there are unfavourable trends in the number of potentially preventable hospitalisations and in elective surgery waiting times. There are no changes over time in the level of other indicators for which data are available.

For over half the indicators in this domain there are no data to assess trends. For example, data covering the accessibility dimension are limited to specific programs and health service areas, therefore cannot be used for comparisons over time.

Data are also limited for making international comparisons about health system performance, generally because such comparisons need to account for differing health policies, structures and governance. With this in mind, Australia is ranked the fifth lowest among OECD countries for the proportions of females in the target age groups who have been screened for breast or cervical cancer (OECD 2009).

Australia's ability to provide health services depends on the health system's efficiency and sustainability. While there are many aspects to these dimensions, this section has focused

on two: the health workforce and the cost of delivering hospital care. When compared with other OECD countries, Australia's workforce levels of medical practitioners and nurses are not high, ranking 20th out of 30 for rates of practising physicians (per 1,000 population) and 14th for practising nurses; however, both workforces have recently increased beyond population growth. The only indicator of cost is limited to hospital care.

## 9.5 Conclusion

The health status of Australians is generally high by international standards. Mortality is reducing and levels of certain illnesses and diseases have decreased. Survival rates for those diagnosed with life-threatening diseases are also improving. As shown here and in Chapter 2, Australia's levels of health generally compare favourably with those of other OECD countries. Our life expectancy is one of the highest in the world, and overall mortality from cancer remains ranked in the best 10 (OECD 2009). But Australia's infant mortality rate compares less well, with a high death rate for Indigenous babies.

Determinants of health show a more mixed picture, with smoking-related indicators having improved but rates of overweight and obesity increasing. For the performance domain, the 20 indicators also present an overall picture that is mixed. This is in large part due to difficulties in establishing trends using available data and the inclusion here of a number of recently developed indicators.

One clear pattern within all three domains, however, is the discrepancies between population groups, raising the question of whether Australia's health system performs equally well for all people. Those living in areas outside capital cities do not enjoy the same levels of good health as their city counterparts, have higher rates of several risk factors and may have problems accessing some health services. Similarly, there are strong inequalities between the health status and determinants of Indigenous and non-Indigenous Australians, and between low and high socioeconomic groups.

Finally, the questions remain as to whether it is possible to measure the performance of a complex health system in a fair and accurate way, and if so, can a suite of indicators do this.

By its nature, a relatively small group of indicators such as this set has to be highly selective, running the risk of being unbalanced or missing some important aspects of health and health care. Also, the topics and accuracy of the indicators are limited by the current availability of data—not only data to determine which topics can be covered but also ancillary data to support the more complex analyses that may be necessary for discerning reliable trends. Even with a pared-down set of indicators such as this set, it can be seen that many of the basic data are still lacking.

A simple count of the favourable or indeterminate results among the performance indicators presented here may suggest that the performance of the health system and whether we can assess it are open questions. On the one hand, the trends presented here for the effectiveness dimension strongly suggest that the health system is making major and continuing advances in treating illness and preventing deaths from some of our most major diseases. On the other hand, dimensions such as safety, continuity, accessibility and sustainability are of great importance to patients, health service providers and governments. Improved data in these areas will help to provide a more complete picture of the performance of Australia's health system in the future.

More light will be shed on this issue as more data are accumulated, and indicators and indicator sets are refined. Meanwhile, the indicators presented here can help in monitoring the gains and in highlighting areas where improvements can be achieved.

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