

# Australian health trends 2001

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and  
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Australian Institute of Health and Welfare  
Canberra  
AIHW Cat. No. PHE 24

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ISBN 1 74024 132 0

The Australian Institute of Health and Welfare's World Wide Web site can be found at:  
<http://www.aihw.gov.au>

#### **Suggested citation**

de Looper M & Bhatia K 2001. Australian health trends 2001. AIHW Cat. No. PHE 24. Canberra: AIHW.

#### **Acknowledgments**

The authors gratefully acknowledge input from the staff of the Australian Institute of Health and Welfare, including Tim Armstrong, Stan Bennett, Ching Choi, Bree Cook, Mark Cooper-Stanbury, Bonnie Field, Gerard Fitzsimmons, Indra Gajanayake, Diane Gibson, John Goss, John Harding, Jenny Hargreaves, Gabrielle Hodgson, Tony Hynes, Paul Jelfs, Richard Madden, Ros Madden, Paul Magnus, Colin Mathers, Sushma Mathur, Lynelle Moon, Geoff Sims, Phil Trickett, Richard Webb and Xingyan Wen.

Staff of the Institute's collaborating units, including Joan Cunningham (National Centre for Aboriginal and Torres Strait Islander Statistics), James Harrison (National Injury Surveillance Unit), Paul Lancaster (National Perinatal Statistics Unit) and John Spencer (Dental Statistics and Research Unit), also provided much valuable help.

Thanks also are due to Amanda Nobbs and Andrew Smith for their assistance in the production of this report.

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Printed by National Capital Printing

# Contents

Foreword.....	vii
<b>1 Introduction.....</b>	<b>1</b>
<b>2 Some trends in the health of Australians in the twentieth century .....</b>	<b>5</b>
<b>3 The health of Australians .....</b>	<b>13</b>
Annual growth rate of the Australian population .....	14
Life expectancy at birth .....	15
Total death rate.....	16
Major causes of death .....	17
Potential years of life lost before age 75.....	18
Self-reported prevalence of disability .....	19
Self-reported prevalence of core activity restriction .....	20
Expected years of life with disability and core activity restriction.....	21
<b>4 The health of subpopulations.....</b>	<b>23</b>
<b>Indigenous population</b>	
Indigenous population size .....	24
Indigenous death rate for all causes .....	25
Indigenous infant mortality rate .....	26
Indigenous death rate for cardiovascular disease .....	27
<b>Overseas-born</b>	
Net overseas migration rate.....	28
Death rates among Australian-born and overseas-born persons.....	29
<b>Mothers and babies</b>	
Crude birth rate .....	30
Total fertility rate and median age of mother at confinement.....	31
Births to teenagers, and to women aged 35 and over .....	32
Infant mortality rate .....	33
Perinatal mortality .....	34
Low birthweight infants.....	35
Major birth defects rate.....	36
Sudden infant death syndrome rate .....	37
<b>Children and youth</b>	
Death rate for accidental drowning, children aged 1–4 years .....	38
Mean DMFT score and decay-free rate in 12-year-old children.....	39
<b>Aged persons</b>	
Population aged 65 and over, and 80 and over .....	40
Life expectancy at age 65.....	41
Death rate for degenerative diseases among persons aged 65 and over .....	42
Prevalence of edentulism .....	43
<b>5 National Health Priority Areas.....</b>	<b>45</b>
<b>Cardiovascular health</b>	
Death rate for coronary heart disease .....	46
Hospital separation rate for coronary heart disease .....	47
Procedures for coronary heart disease .....	48
Death rate for stroke .....	49

## Contents

	<b>Cancer control</b>	
	Incidence and death rates for all cancers .....	50
	Incidence and death rates for colorectal cancer .....	51
	Incidence and death rates for cancer of the trachea, bronchus and lung.....	52
	Incidence and death rates for melanoma.....	53
	Incidence and death rates for non-melanocytic skin cancers .....	54
	Incidence and death rates for breast cancer .....	55
	Incidence and death rates for cervical cancer .....	56
	Incidence and death rates for prostate cancer.....	57
	<b>Injury prevention and control</b>	
	Death rate for all causes of injury .....	58
	Death rate for road vehicle accidents .....	59
	Hospital separation rate for road vehicle accidents.....	60
	Death rate for accidental falls among persons aged 65 and over.....	61
	Death rate for accidents due to fire, burns and scalds among persons aged 55 and over .....	62
	Death rate from overdose of heroin, methadone or other opiates.....	63
	<b>Mental health</b>	
	Death rate for suicide and self-inflicted injury .....	64
	Death rate for homicide and injury purposely inflicted by other persons .....	65
	<b>Diabetes</b>	
	Death rate for diabetes.....	66
	<b>Asthma</b>	
	Death rate for asthma .....	67
<b>6</b>	<b>Health determinants and risk factors.....</b>	<b>69</b>
	Proportion of 1-year-olds fully immunised.....	70
	Incidence rates for pertussis, measles and meningococcal disease .....	71
	Newly diagnosed HIV infection .....	72
	Incidence and death rates for AIDS.....	73
	Notification rates for sexually transmitted diseases .....	74
	Rates of new and reactivated cases of tuberculosis.....	75
	Apparent consumption of fats.....	76
	Apparent consumption of fruit and vegetables.....	77
	Apparent consumption of sugars .....	78
	Proportion of 25–64-year-olds who are considered overweight .....	79
	Proportion of 25–64-year-olds with high total blood cholesterol.....	80
	Proportion of 25–64-year-olds who drink alcohol at hazardous or harmful levels .	81
	Proportion of 25–64-year-olds engaged in physical activity.....	82
	Proportion of persons aged 16 years and over who currently smoke.....	83
	Proportion of 25–64 year olds with high blood pressure .....	84
<b>7</b>	<b>Health service delivery, costs and performance.....</b>	<b>85</b>
	Total health expenditure as a proportion of GDP .....	86
	Health expenditure per person .....	87
	Medical services expenditure per person .....	88
	Acute care hospital expenditure per person .....	89
	Home and community care expenditure per person aged 65 years and over .....	90
	Employment in the health industry.....	91
	Numbers of health professionals .....	92
	Acute care hospital beds .....	93
	Residential aged care places and community aged care packages for persons aged 70 years and over .....	94

## Contents

<b>8</b>	<b>Health service utilisation and access.....</b>	<b>95</b>
	Acute care hospital separation rate .....	96
	Average length of stay in acute care hospitals.....	97
	Acute care hospital patient days .....	98
	Medical consultations per person.....	99
	Organ and tissue transplants, and donor rate .....	100
	Use of dental services by adults.....	101
	Proportion of the population with private health insurance.....	102
	<b>Abbreviations, acronyms and symbols .....</b>	<b>103</b>
	<b>References .....</b>	<b>104</b>



## Foreword

*Australian Health Trends 2001* provides trend information on various aspects of the health of Australians, building on an earlier edition published in 1995. Using time-series information for more than 80 indicators, it gives a comprehensive overview of health trends and offers an opportunity to draw future scenarios in health.

The report describes trends using a variety of health indicators, such as life expectancy, total death rate, potential years of life lost and expected years of healthy life lost due to disability. It also provides time-series information for other indicators, in particular those based on cause of death data and health of various population groups.

The population groups examined include Aboriginal and Torres Strait Islander peoples, persons born overseas, mothers and babies, children and youth, and older persons. Trend data for the National Health Priority Areas of cardiovascular health, cancer control, injury prevention and control, diabetes and asthma are examined. Time-series information on a wide range of factors that affect health trends—health determinants and risk factors; health service delivery, costs and performance; and health service utilisation and access—is also provided.

The report provides historical data in a simple format. No attempt is made to disaggregate the time-series and delineate the role of various factors contributing to the fluctuations.

Sound statistical information is needed for population health action and for priority setting in health services delivery. I believe that the information contained in *Australian Health Trends 2001* would be highly useful for planning improvements in the health of Australians.

Richard Madden  
Director





# 1 Introduction

## Introduction

Monitoring trends over time is central to health surveillance. Observations at different times provide useful insights into the evolution of disease patterns and the health of a population. Analysis of time trends can reveal changes in disease or injury incidence and prevalence and in their determinants.

Both long- and short-term trends need to be followed, in order to assess and project needs for social, economic and health service interventions. Long-term trends offer an opportunity to draw parallels between the various, sometimes disparate, aspects of health-related changes because of the persistence of some common underlying influences over long periods. Besides, it is important to interpret short-term changes in the context of long-term trends as the former may be no more than mere adjustments to or extensions of the latter processes (Gourieroux & Monfort 1997).

Health trend monitoring is, however, complex because concepts and measures of health vary depending on the frame of reference used by consumers, health professionals, health planners and others. Many different factors contribute to health status, several of which cannot be clearly identified or reliably measured. No clear framework within which this should occur has been developed, although the structure of this report is shaped by the conceptual framework of health described in *Australia's Health 1998* (AIHW 1998).

A monitoring and surveillance framework should cover two major aspects of health – ongoing coverage of priority health issues and a warning system for health problems that need to be attended to immediately. The ability to predict future problems and issues on the basis of established knowledge or generate suitable information using emerging technologies for immediate response are two major requirements of this type of framework. Timeliness of information is its cornerstone.

*Australian Health Trends 2001* documents the dominant trends in the health of Australians just before the start of the twenty-first century. Using sets of indicators, designed as summary measures, rates, ratios or even simple counts, information is provided along various dimensions of health. These dimensions include population structure, risk levels and health determinants, illness, disability, health service use and mortality. Information on health interventions including prevention, treatment, management, expenditure and labour force is also provided, although no link is made between interventions and health outcomes. A national perspective has been adopted, excluding State/Territory or regional analyses.

Time frames of up to 15 years have been used to document trends in the health of Australians in this report. The selection of short time frames for this report is not deliberate. It has often been necessitated by the lack of national, good-quality, long-term information on many aspects of health (Cumpston 1989; Davis & George 1997). Nevertheless, the information is presented in the hope that short-term trends reflect, and often result from, the continuing process of longer term changes in health determinants and outcomes. However, a broad overview of trends in the health of Australians last century has been included in the report to provide background information.

### Defining and measuring health

Health is conceptually difficult to define. For the individual, it is often thought of in positive terms such as a feeling of wellbeing, an ability to cope with the demands of life, physical and mental fitness, and freedom from disease and disability.

These aspects of health are best captured by the World Health Organization's 1947 definition of health as 'a state of complete physical, mental and social wellbeing, and not merely the absence of disease or injury'.

However, although ideal health is often perceived in positive terms, measurement of these positive aspects has proven difficult. Wellbeing, health and fitness are all subjective concepts that can be interpreted in various ways by different people. Further, since sick people come in contact with health care services more often than do healthy people, health is often measured in an indirect manner. Much of this measurement has focused on the negative aspects of health – illness, disease, disability and death.

Mortality data are routinely collected and readily available, and are therefore the most often used instrument for monitoring health. Causes of death are also widely used for international comparisons of health and disease.

The prevalence of disease in the population is another indirect measure of health. However, compared with mortality data, the collection and availability of morbidity data are incomplete and pose significant measurement and interpretation problems. In addition to routinely collected data such as notifications for communicable diseases and hospital morbidity collections, information on morbidity is also available from specific surveys of the population.

An important benefit from these surveys is that they allow for the measurement of positive health at the population level. Progress is being made in the development of multidimensional models of health which involve both positive and negative health concepts, such as:

- mental health (psychological wellbeing/psychological distress)
- wellbeing (energy/fatigue)
- general perception of overall health (excellent/good/fair/poor).

Population surveys are a direct source of this information, although social and cultural biases can influence the outcomes from these surveys.

Since health monitoring requires a multidimensional approach, the approach taken in this report is to generate a profile of national trends in the health of the Australian people using a wide range of indicators. No attempt is made to summarise trends as a whole, although summary statistics such as life expectancy and total death rate have been used as indices of health. Critical examination of trend information across a broad range of indicators in turn provides a base for making informed decisions regarding the health of the population.

### Structure of the report

The report has been standardised to provide discrete stand-alone information on a range of indicators. However, where possible, links between various indicators have been mentioned. Additionally, chapter 2 provides a broad overview of the health of Australians in the twentieth century.

Several measures have been used to describe health trends. These include:

- summary statistics (e.g. life expectancy, potential years of life lost)
- disease incidence and prevalence (e.g. rates, ratios)
- sociodemographic factors (e.g. population growth, fertility)
- health risk levels (e.g. smoking, physical inactivity)
- type of disease (e.g. cardiovascular disease, diabetes)
- type of intervention (e.g. prevention, treatment, hospitalisation)
- type of outcome (e.g. disability, death)
- infrastructure (e.g. health expenditure, health labour force)
- subpopulations (e.g. Indigenous people, mothers and babies)
- socioeconomic factors (e.g. private health insurance).

The sets of indicators included in the report have been grouped under the following chapters:

- The health of Australians
- The health of subpopulations
- National Health Priority Areas
- Health determinants and risk factors
- Health service delivery, costs and performance
- Health service utilisation and access.

These indicator classifications not only reflect the various dimensions of health that need to be monitored but also build in indicator hierarchies. While summary statistics reflect trends in high level outcomes, several process indicators reflect immediate outcomes of an intervention.

Each indicator appears on a separate page and consists of:

- a plot to show trends
- time series of 10 to 15 years of data in a tabular form
- interpretation of the trend in a dot-point format
- one or more references that contain detailed background information.

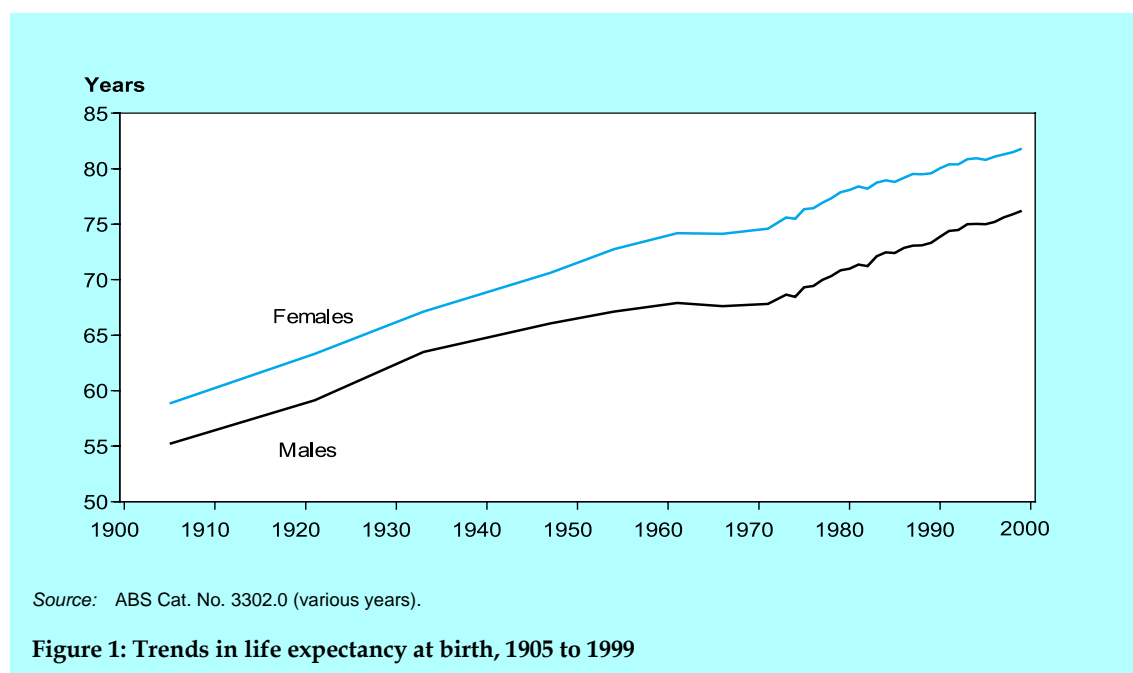
## **2 Some trends in the health of Australians in the twentieth century**

## Some trends in the health of Australians in the twentieth century

This chapter provides a broad overview of long-term trends in the health of Australians in the twentieth century. Data to monitor trends in the health of Australians are limited both in scope and depth. Most of the information available for long-term analysis pertains to mortality (d'Espaignet et al. 1991; Taylor et al. 1998) and some demographic variables (ABS 1995). Information on several additional variables is limited to the second half of this century. Although the available information does not allow a comprehensive picture of trends in the health of Australians, a brief overview of health trends in Australia follows.

### Life expectancy

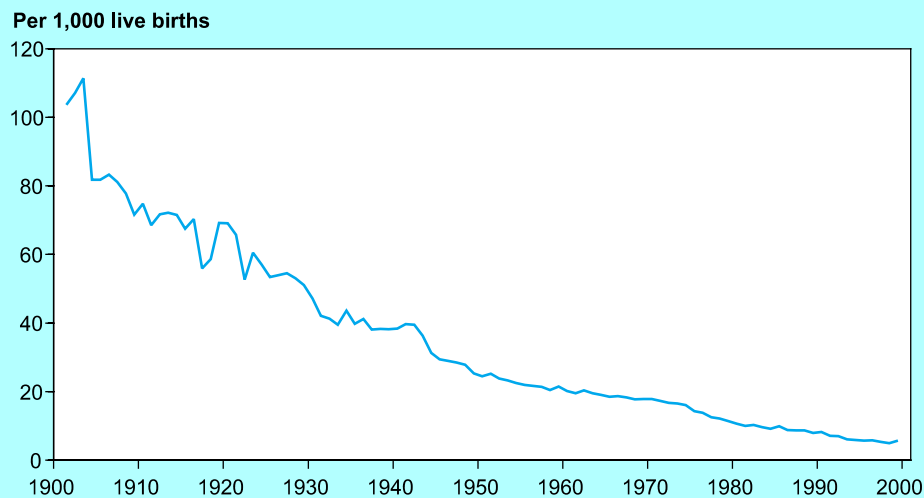
One of the most commonly cited and useful indicators of long-term trends in health is life expectancy. It is the average number of years of life remaining to a person at a specified age if current age-specific mortality experience does not change during the person's lifetime. At the beginning of the twentieth century, the life expectancy for Australian males was around 55 years and close to 59 years for Australian females (Figure 1). In the early 1920s, life expectancy at birth had risen to 59 years for males and 63 years for females. Although there was a plateauing in 1960s, due largely to the increasing burden of cardiovascular disease at this time, the trend has since continued. Towards the end of the century, an Australian male born in 1999 could expect to live 76.2 years, and a female could expect to live 81.8 years (Figure 1).



Much of the increase in life expectancy in the early part of the twentieth century was due to reductions in perinatal and infant mortality. The reduction has been dramatic, with the infant mortality rate declining from 110 deaths per 1,000 live births in the first years of the twentieth century to 5.7 deaths per 1,000 live births in 1999 (Figure 2). Another important contributing factor was the rapid decline in mortality due to infectious diseases. More recently, reductions in death rates in older ages, especially from diseases of the circulatory system, have led to significant improvements in life expectancy.

The differences in life expectancy between males and females persisted throughout the twentieth century. The gap expanded from about 4 years in the early 1900s to over 7 years in 1980, before falling to less than 6 years in 1999. This narrowing of differences in life expectancy notwithstanding, the death rate for males remains higher than for females from infancy to old age.

## Some trends in the health of Australians in the twentieth century



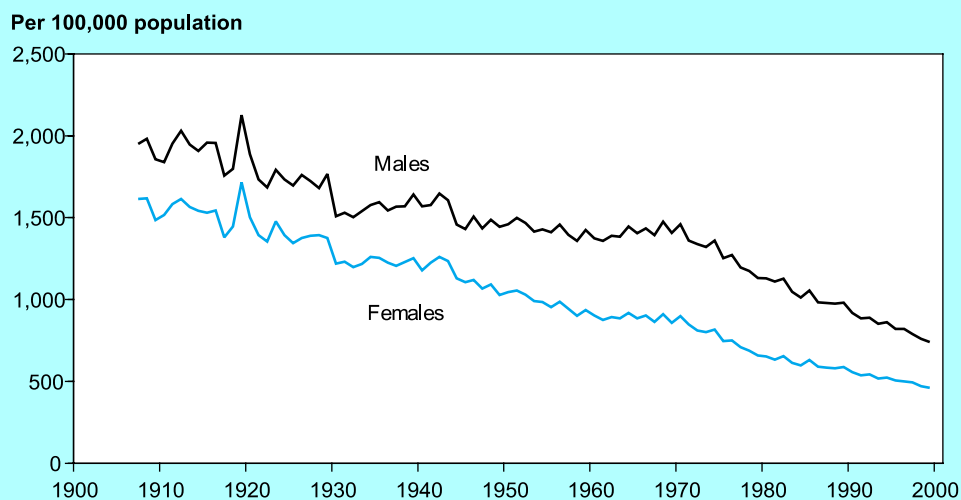
Source: ABS Cat. No. 3302.0 (various years).

**Figure 2: Trends in infant mortality, 1901 to 1999**

### Death rates

Reductions in death rates, as reflected in improved life expectancies, have occurred in several different phases. A large proportion of the decline in death rates occurred between 1910 and 1930, during the period dominated by improvements in the environment and public health activities. This was the period before the most significant medical innovations were introduced.

Less notable reductions in death rates were observed between the 1930s and 1960s (Figure 3). Increases in life expectancy slowed, and life expectancy decreased for some age groups (Mathers & Douglas 1998). Cardiovascular disease and lung cancer deaths began to assume greater importance, especially among males.

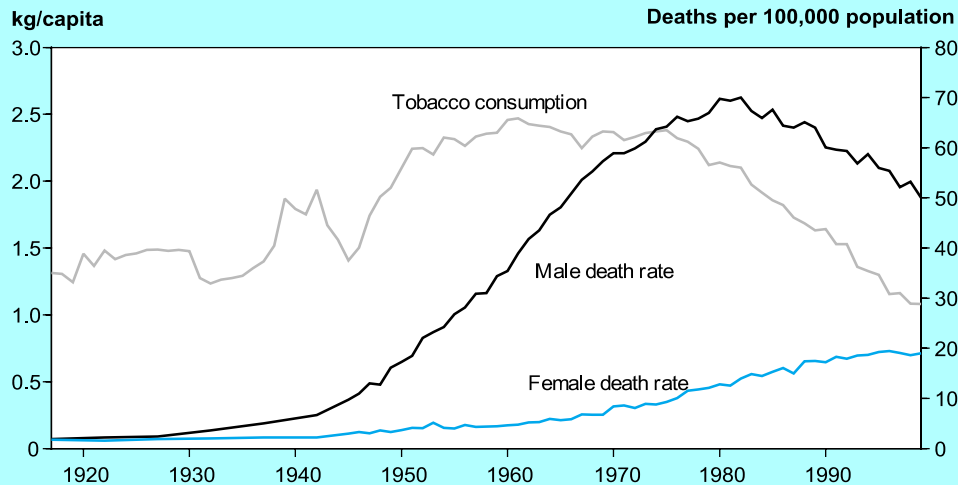


Source: AIHW National Mortality Database.

**Figure 3: Trends in age-standardised death rates, 1907 to 1999**

## Some trends in the health of Australians in the twentieth century

Death rates began to decline more rapidly in the 1970s, and this trend is continuing. This is largely due to falls in death rates for heart attacks, lung cancer and stroke. The decline has coincided with improvements in cardiovascular disease treatment, better control of hypertension, changes in diet and reductions in tobacco smoking (Figure 4).

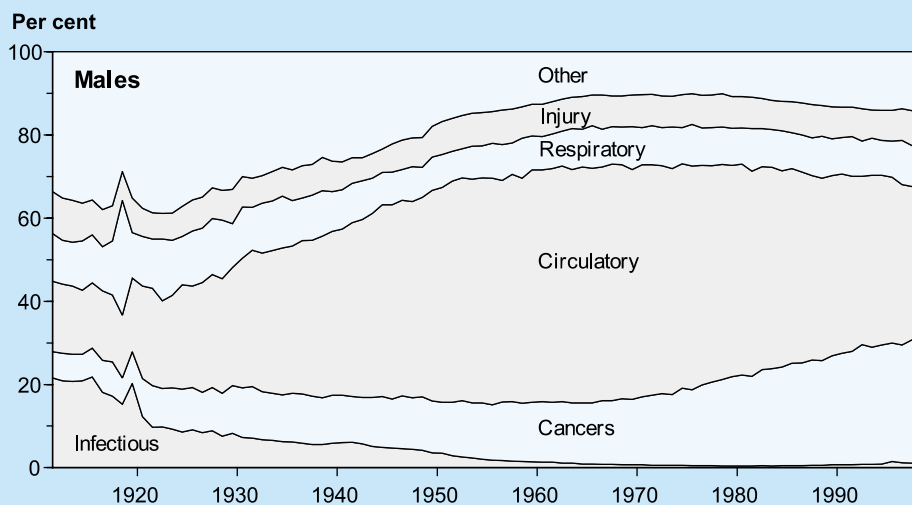


Sources: ABS Cat. No. 1301.0 (various years); AIHW National Mortality Database.

Figure 4: Trends in tobacco consumption and lung cancer death rates, 1917 to 1999

## Causes of death

The reductions in death rates described above have been accompanied by a shift in the main causes of death (Figures 5a, 5b). In the first quarter of the twentieth century, infectious diseases were responsible for more than one in five deaths. Deaths from these causes are now infrequent. Deaths from diseases of the circulatory system grew steadily until the 1950s, and then more slowly until the late 1960s. Male circulatory death rates peaked in 1968, with 57% of deaths in that year attributed to these diseases. In contrast,

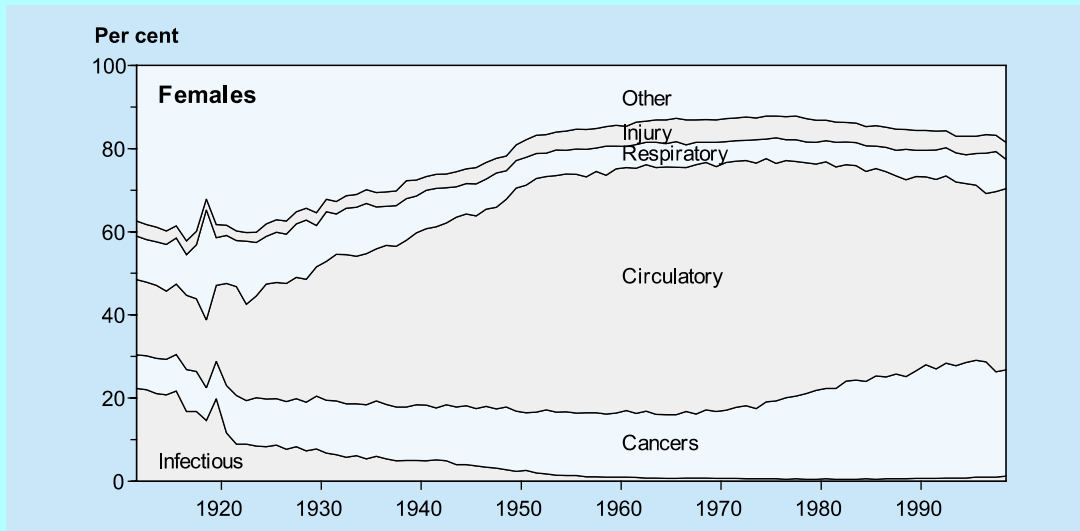


Source: AIHW National Mortality Database.

Figure 5a: Contribution of various causes of death, 1912 to 1999 – males



## Some trends in the health of Australians in the twentieth century

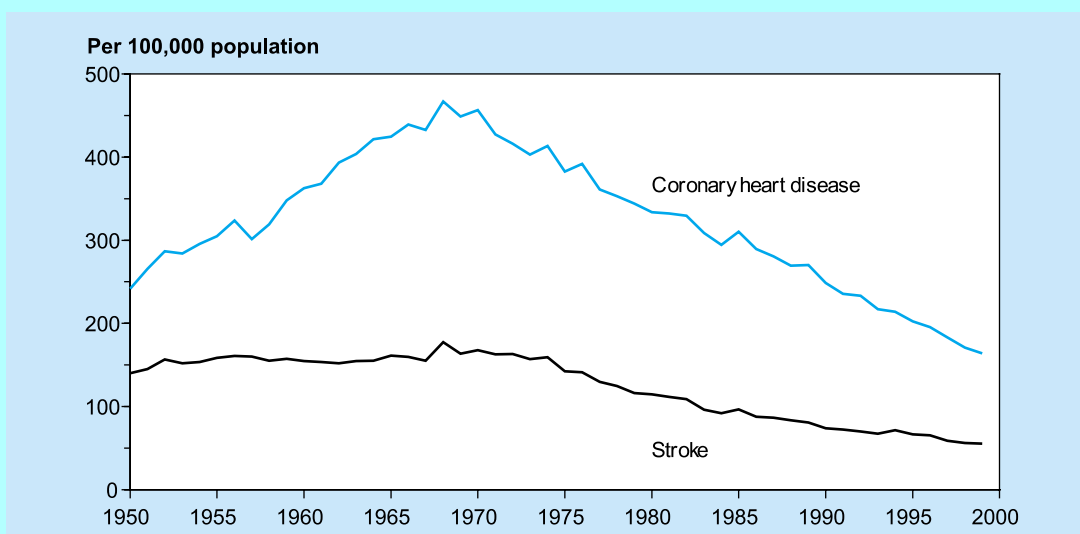


Source: AIHW National Mortality Database.

**Figure 5b: Contribution of various causes of death, 1912 to 1999 – females**

the female circulatory death rate began to decline early; albeit slowly after the mid-1950s. Rates of deaths from cancer among males and females remained similar until the mid-1940s. With the decline of the cardiovascular death rate, the proportion of deaths attributable to cancer has increased.

Although the changing pattern of causes of death is partly linked to the ageing of the population, there have been some interesting changes in the causes of death through the twentieth century. For example, there were large increases in the death rate for coronary heart disease, particularly among males, in the 1950s and 1960s. The turnaround in cardiovascular mortality in the last three decades is equally unparalleled, with more than 50% reduction in death rates from these causes among males during this period (Figure 6). A similar pattern has been observed among females.



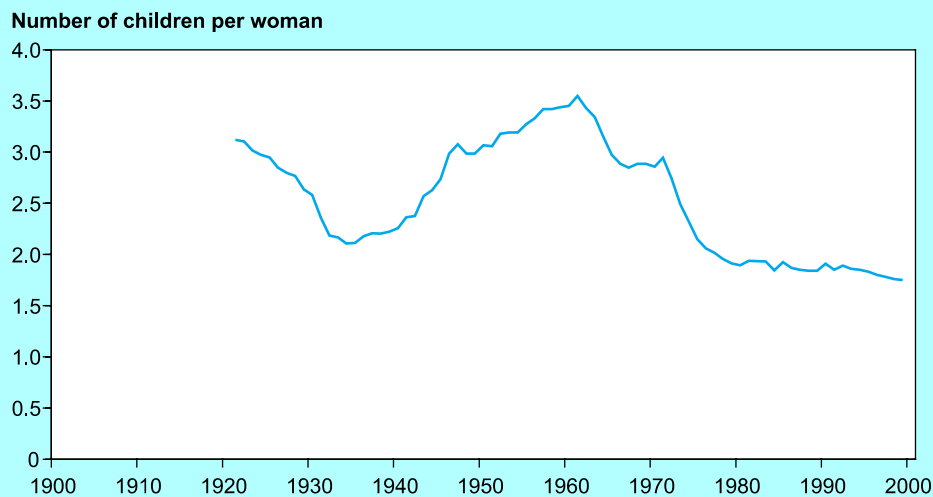
Source: AIHW National Mortality Database.

**Figure 6: Trends in male coronary heart disease and stroke death rates, 1950 to 1999**

## Some trends in the health of Australians in the twentieth century

### Total fertility rate

In Australia, fertility rates fluctuated considerably in the twentieth century. The level of child-bearing in a year is conventionally measured by the total fertility rate (TFR), which is the average number of children a woman would bear over her lifetime based on the rates of child-bearing experienced by women at each age in the reference year. The TFR declined sharply in the first quarter of the twentieth century, from 3.2 children per woman in 1910 to around 2.6 children in 1930. In the 1930s, the rate dropped below the level of long-term population replacement. This was followed by a period of sharp rise in rates for almost 30 years, with the TFR peaking in 1961 at 3.6 children. A precipitous reduction in rate occurred in the 1970s, followed by a period of consistent but slow decline. By 1999, the total fertility rate had fallen to 1.75 children per woman, below replacement level (Figure 7).



Source: ABS Cat. No. 3302.0 (various years).

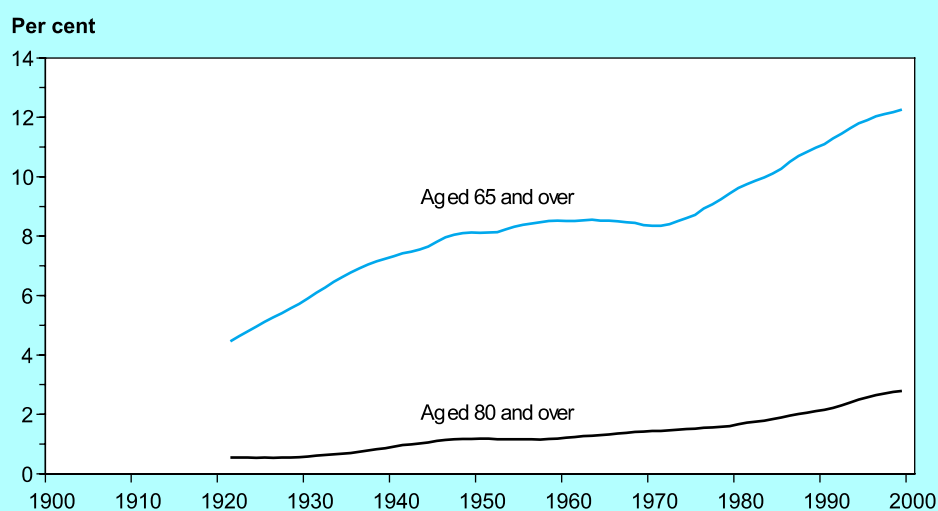
Figure 7: Trends in total fertility rate, 1921 to 1999

Interpretation of trends in fertility rate in the context of the health of a population is complex because several different factors have contributed to this change. In the early part of the twentieth century, higher proportions of women never married or had children. At one stage, this proportion was almost 15%. This was followed by a period when the proportion of those not getting married declined significantly. The major contributory factors to low TFR in the last quarter of the twentieth century included both the postponement of births to later in a woman's reproductive life and the increase in the proportion of women never having children.

### Proportion of older people in the population

Another important indicator of trends in the health of Australians during the twentieth century is the proportion of older people in the population. In the first quarter of the century, less than 5% of the population were aged 65 and over. The proportion of those aged 80 years and over was below 1%. These proportions increased consistently throughout the century, with more than 12% of the population aged 65 years and over in 1999. The proportion of those aged 80 and over also crossed the 2% level in the 1990s (Figure 8).

## Some trends in the health of Australians in the twentieth century



Source: AIHW Population Database.

**Figure 8: Proportion of persons aged 65 years and over, and 80 years and over, 1921 to 1999**

Although some of this increase in the proportion of older people has resulted from decreasing fertility rates over the last three decades, reductions in mortality have also contributed to this increase. Between 1950 and 1970, the period during which the TFR increased significantly, the proportion of older people in the population remained relatively stable. Fluctuations in age structure resulting from changing fertility patterns were partly offset by reductions in mortality in later years. However, over the last three decades, reductions in TFR accompanied by reductions in death rates from causes such as cardiovascular disease and lung cancer have led to increases in the proportion of older people in the population.

### Indigenous health

No description of trends in the health of Australians would be complete without a close look at the health of Indigenous Australians, who comprise approximately 2% of the Australian population. Although Indigenous health statistics are inadequate to determine trends over the whole century, it is clear that improvements in the health of Indigenous people have lagged considerably behind those of other Australians. For example, the death rate among Indigenous infants has declined considerably through the twentieth century, yet the rate remains two to three times that noted among non-Indigenous infants. Similarly, the overall death rates among Indigenous Australians remain unacceptably higher than those of non-Indigenous Australians. During 1997-99, there were more than twice as many deaths as expected among Indigenous males and females (ABS 2000a).

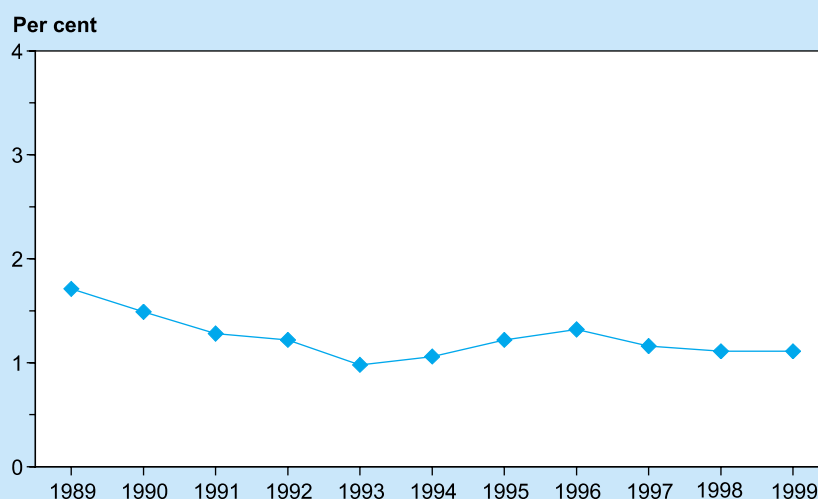
Inadequate housing, poor access to clean water and limited health infrastructure have delayed the health advantage to Indigenous people already gained by other Australians throughout the twentieth century. In addition, significant lifestyle changes have resulted in much higher prevalence of non-communicable diseases and conditions such as diabetes, heart disease and injuries. Consequently, towards the end of the twentieth century, Indigenous Australians have much higher death rates and unacceptably lower life expectancies as described later in this report.



# 3 The health of Australians

- Annual growth rate of the Australian population
- Life expectancy at birth
- Total death rate
- Major causes of death
- Potential years of life lost before age 75
- Self-reported prevalence of disability
- Self-reported prevalence of core activity restriction
- Expected years of life with disability and core activity restriction

## Annual growth rate of the Australian population



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Population size ('000)</b>											
Males	8,388	8,511	8,615	8,716	8,798	8,888	8,994	9,108	9,214	9,320	9,425
Females	8,427	8,554	8,669	8,779	8,869	8,967	9,078	9,203	9,310	9,410	9,512
Total	16,814	17,065	17,284	17,495	17,667	17,855	18,072	18,311	18,524	18,730	18,937
<b>Annual rate of increase (%)</b>		1.5	1.3	1.2	1.0	1.1	1.2	1.3	1.2	1.1	1.1

Note: Population estimates as at 30 June each year.

Source: ABS Cat. No. 3201.0 (various years).

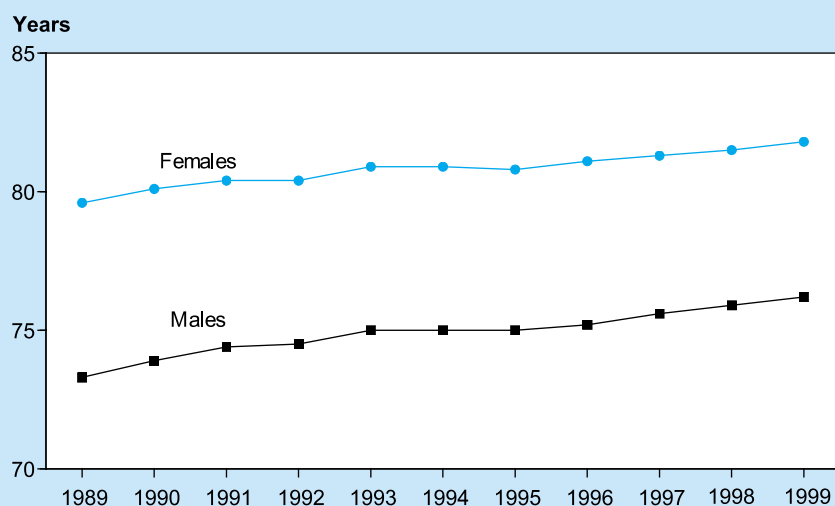
- The Australian population has grown steadily from 16.8 million people in 1989 to 18.9 million in 1999, with an average annual increase of 1.2%. Factors influencing population growth are the difference between fertility and death rates, and net overseas migration.
- The higher increases in the annual growth of the population observed in the mid to late 1980s were due primarily to increases in the number of immigrants. Natural increase—the excess of births over deaths—contributed more to population growth during the 1990s (see *Net overseas migration rate* on page 28).
- However, Australia's birth rate continues to decline; the 1999 rate was 10% lower than the rate 5 years before that (see *Crude birth rate* on page 30). The death rate also declined during this period, and was 12% lower than that 5 years previously (see *Total death rate* on page 16).
- One set of projections of the population by the Australian Bureau of Statistics indicates that the total population will reach 21.1 million by the year 2010, and 22.8 million by the year 2020. This is based on an average annual growth rate of 1.0%, similar to the trend noted in recent years. These projections assume a high rate of fertility and low overseas migration.

### For more information, see:

ABS. Population by age and sex. ABS Cat. No. 3201.0. Canberra: ABS.

ABS 2000b. Projections of the populations of Australia, States and Territories, 1999–2101. ABS Cat. No. 3222.0. Canberra: ABS.

## Life expectancy at birth



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Males	73.3	73.9	74.4	74.5	75.0	75.0	75.0	75.2	75.6	75.9	76.2
Females	79.6	80.1	80.4	80.4	80.9	80.9	80.8	81.1	81.3	81.5	81.8

Source: ABS Cat. No. 3302.0 (various years).

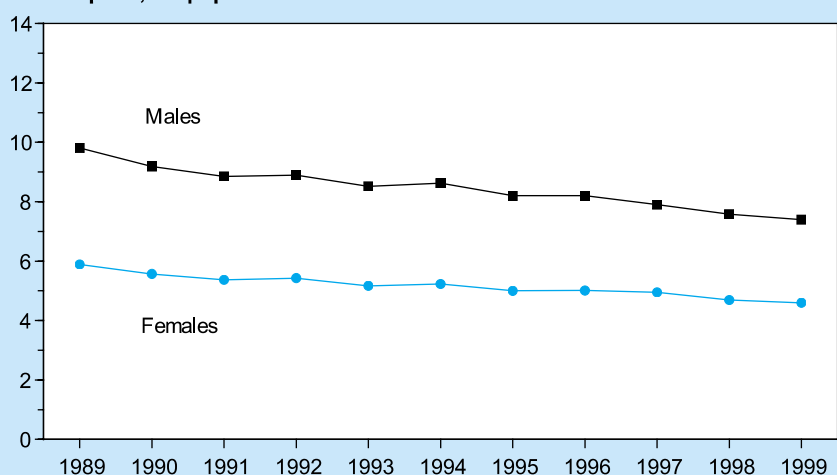
- Life expectancy at birth is the average number of years that newborns can expect to live if current mortality conditions persist for the rest of their lives.
- At the beginning of the twentieth century, male life expectancy in Australia at birth was 55.2 years, and female life expectancy was 58.8 years. It has continued to rise steadily since then.
- Between 1989 and 1999, life expectancy at birth increased for both males and females, from 73.3 to 76.2 years for males, a rise of 2.9 years, and from 79.6 to 81.8 years for females, a rise of 2.2 years.
- The sex differential in life expectancy appears to be decreasing. In 1999, the difference was 5.6 years compared with 6.3 years in 1989. The narrowing of this gap reflects the faster downward trend of the male death rate compared with the female death rate (see *Total death rate* on page 16).
- The calculation of life expectancy is strongly influenced by the proportion of deaths in the younger age groups. Rapid declines in infant mortality made a significant contribution to increasing life expectancy during the first 70 years of the twentieth century. Reductions in cardiovascular mortality among middle-aged and older Australians since the late 1960s have also contributed significantly to these increases.
- Despite these favourable trends, life expectancy at birth is much lower for Indigenous people—currently some 15–20 years shorter than the life expectancy for other Australians.

**For more information, see:**

ABS. Deaths, Australia. ABS Cat. No. 3302.0. Canberra: ABS.

### Total death rate

Deaths per 1,000 population



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Males	9.8	9.2	8.9	8.9	8.5	8.6	8.2	8.2	7.9	7.6	7.4
Females	5.9	5.6	5.4	5.4	5.2	5.2	5.0	5.0	4.9	4.7	4.6
<b>Total</b>	<b>7.6</b>	<b>7.1</b>	<b>6.9</b>	<b>7.0</b>	<b>6.7</b>	<b>6.7</b>	<b>6.4</b>	<b>6.4</b>	<b>6.3</b>	<b>6.0</b>	<b>5.9</b>

Note: The death rates were age-adjusted using the total Australian population as at 30 June 1991.

Source: Estimates based on data derived from AIHW National Mortality Database.

- The number of persons dying in any one year divided by the corresponding population provides a crude estimate of the death rate. This rate can be age-adjusted for comparisons of populations with different age distributions over time.
- In 1999, there were 128,102 deaths registered in Australia—a rate of 5.9 deaths per 1,000 population. Over the period 1989 to 1999, there has been a steady decline in the total death rate in Australia. During that time, the male age-adjusted death rate declined by 24% and the female rate by 22%.
- The continuing falls in death rates for cardiovascular diseases (mostly heart disease and stroke), most injuries and respiratory diseases have been the major contributors to this decline. Death rates for cancers as a group have not fallen substantially.
- Although much of the reduction in death rates in the early part of the twentieth century was among younger people, in recent decades death rates among older Australians have also declined substantially, largely due to reductions in cardiovascular disease mortality.
- Death rates for Aboriginal and Torres Strait Islander peoples have not declined significantly in recent years and remain more than double those for other Australians (see *Indigenous death rate for all causes* on page 25).

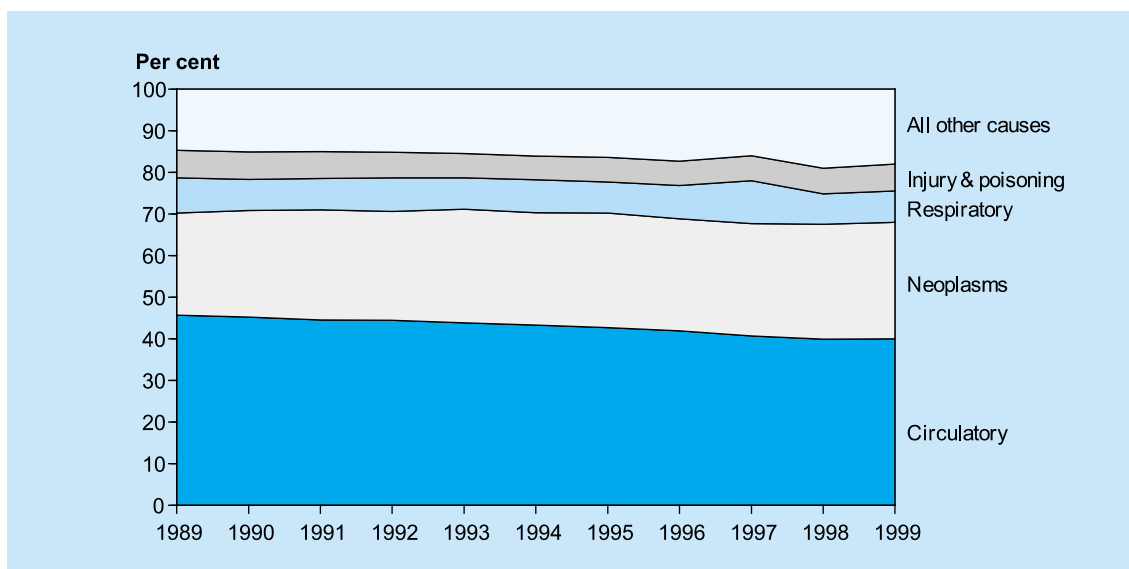
#### For more information, see:

AIHW 2000a. Australia's health 2000: the seventh biennial health report of the Australian Institute of Health and Welfare. Canberra: AIHW.

ABS. Deaths, Australia. ABS Cat. No. 3302.0. Canberra: ABS.



## Major causes of death



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Circulatory	45.7	45.2	44.5	44.4	43.8	43.3	42.7	41.9	40.7	39.9	40.0
Neoplasms	24.5	25.6	26.5	26.2	27.3	27.0	27.5	26.9	27.0	27.8	28.0
Respiratory	8.5	7.5	7.5	8.1	7.6	7.9	7.5	8.0	10.3	7.3	7.5
Injury & poisoning	6.6	6.6	6.5	6.1	5.8	5.7	5.9	5.9	6.0	6.2	6.5
All other causes	14.7	15.1	15.0	15.2	15.5	16.1	16.4	17.3	16.0	19.0	18.0
<b>Total deaths ('000)</b>	<b>124.2</b>	<b>120.0</b>	<b>119.1</b>	<b>123.7</b>	<b>121.6</b>	<b>126.7</b>	<b>125.1</b>	<b>128.7</b>	<b>129.4</b>	<b>127.2</b>	<b>128.1</b>

Note: Causes of death are classified to the following ICD-10 chapter codes: Neoplasms C00-D48, Circulatory I00-I99, Respiratory J00-J99, Injury & poisoning V01-Y98.

Source: Estimates based on data derived from AIHW National Mortality Database.

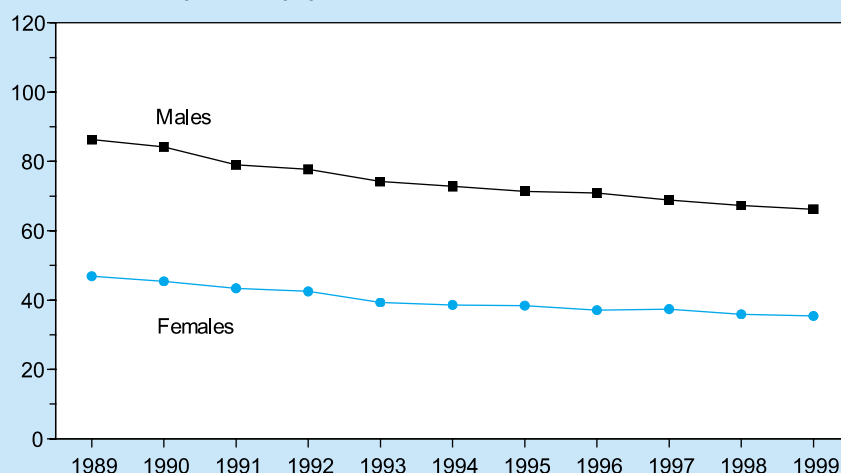
- The four major causes of death in Australia are diseases of the circulatory system such as heart attack or stroke; neoplasms (cancers) such as lung, colorectal, breast and prostate cancer; diseases of the respiratory system such as asthma, emphysema and bronchitis; and injury and poisoning including motor vehicle accidents, falls and suicide.
- Diseases of the circulatory system and neoplasms are responsible for approximately 68% of all deaths in Australia. Although the proportion of deaths due to diseases of the circulatory system has been declining, deaths from neoplasms have increased slightly.
- The proportion of deaths due to neoplasms and respiratory diseases increased slightly over the past decade. Deaths due to injury and poisoning have shown little change. The introduction of automatic cause of death coding by the ABS in 1997 has resulted in a rise in the number of deaths attributed to pneumonia.

**For more information, see:**

ABS. Causes of death, Australia. ABS Cat. No. 3303.0. Canberra: ABS.

## Potential years of life lost before age 75

Years of life lost per 1,000 population



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Males	86.3	84.2	79.0	77.7	74.2	72.8	71.4	70.9	68.9	67.3	66.2
Females	46.9	45.4	43.4	42.5	39.3	38.6	38.4	37.1	37.4	35.9	35.4
<b>Total</b>	<b>66.8</b>	<b>65.0</b>	<b>61.3</b>	<b>60.2</b>	<b>56.7</b>	<b>55.6</b>	<b>54.8</b>	<b>53.9</b>	<b>53.1</b>	<b>51.5</b>	<b>50.7</b>

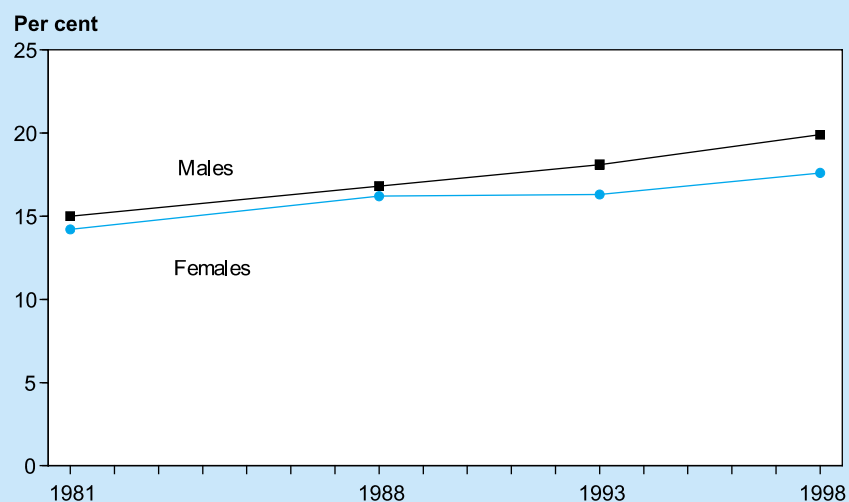
Source: Estimates based on data derived from AIHW National Mortality Database.

- Potential years of life lost (PYLL) is a measure of premature or untimely death. If dying before the age of 75 is considered premature, then a person dying at age 55 would have lost 20 years of potential life.
- The PYLL indicator focuses more on deaths among younger members of the population, since death at a young age contributes more to PYLL than death at an older age. This is in contrast to death rate, which takes into account the burden of disease among all age groups.
- Conditions such as birth defects, injuries and AIDS are significant contributors to PYLL. Chronic diseases causing death among the elderly, on the other hand, have less effect on these values, although more persons die of these diseases.
- Although PYLL values are declining steadily, males continue to have a higher rate, reflecting a higher proportion of male deaths in the younger age groups. The gap between males and females is, however, closing.
- Many factors have contributed to these steady declines. Advances in medical technologies, disease prevention and control strategies, and appropriate treatment have all prevented premature mortality, in particular infant deaths and injury deaths among young adults.

**For more information, see:**

Mathers C, Vos T & Stevenson C 1999. The burden of disease and injury in Australia. Canberra: AIHW.

## Self-reported prevalence of disability



	1981	1988	1993	1998
Males	15.0	16.8	18.1	19.9
Females	14.2	16.2	16.3	17.6
<b>Total</b>	<b>14.6</b>	<b>16.5</b>	<b>17.2</b>	<b>18.8</b>

*Notes*

1. The prevalence rates were age-adjusted using the estimated resident Australian population as at March 1998.
2. Only criteria common to the four surveys have been used.

Source: ABS 1999.

- Disabilities and core activity restrictions are long-term consequences of a health condition, impairment, disease or accident that can have a severe impact on the quality of life of the affected person.
- The 1998 ABS Survey of Disability, Ageing and Carers defines 'disability' as the presence of one or more of 17 'limitations, restrictions, or impairments' identified by survey respondents. According to this definition, more than 3.6 million people in Australia reported a disability in 1998.
- Disability is strongly related to age and sex. The rates are higher among males and increase rapidly after the age of 45. More than one out of two persons aged 65 years and over reported at least one disabling condition in 1998.
- Arthritis and musculoskeletal disorders are the most commonly reported disabling conditions. Many other chronic

diseases such as coronary heart disease, stroke and diabetes are also large contributors to disability.

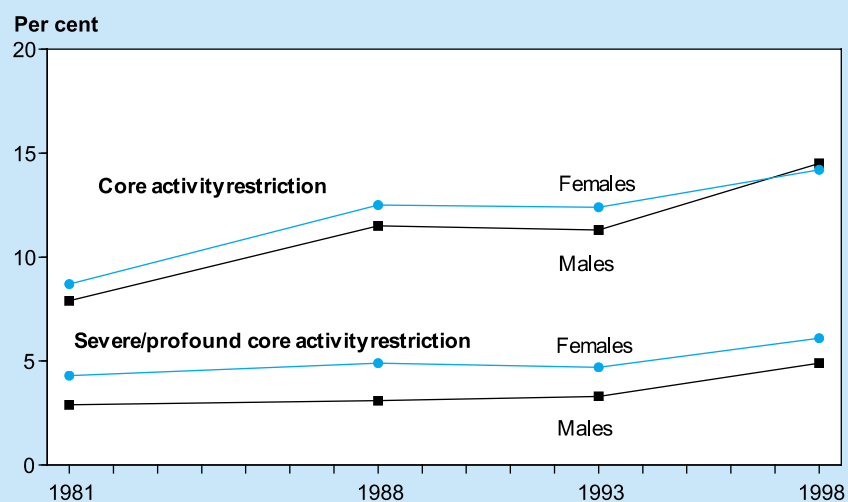
- The proportion of people with a disability appears to be rising. However, the majority of the apparent increase in disability rates is a result of increased identification of people with disabilities, rather than a substantial increase in the prevalence of people with disabilities.

**For more information, see:**

ABS 1999. Disability, ageing and carers: summary of findings. ABS Cat. No. 4430.0. Canberra: ABS.

Davis E, Beer J, Gligora C & Thorn A 2001. Accounting for change in disability and severe restriction, 1981-1998. ABS Working Paper 2001/1. Canberra: ABS.

## Self-reported prevalence of core activity restriction



	Core activity restriction				Severe/profound core activity restriction			
	1981	1988	1993	1998	1981	1988	1993	1998
Males	7.9	11.5	11.3	14.5	2.9	3.1	3.3	4.9
Females	8.7	12.5	12.4	14.2	4.3	4.9	4.7	6.1
<b>Total</b>	<b>8.2</b>	<b>12.0</b>	<b>11.9</b>	<b>14.4</b>	<b>3.6</b>	<b>4.0</b>	<b>4.0</b>	<b>5.5</b>

*Notes*

1. The prevalence rates were age-adjusted using the estimated resident Australian population as at March 1998.

2. Only criteria common to the four surveys have been used.

Source: ABS 1999.

- Core activity restriction is identified when a person, because of disability, needs assistance, has difficulty or uses aids with the core activities of self care, mobility or communication. Depending on the level of assistance needed or difficulty experienced, restriction in core activities can be mild, moderate, severe or profound.
- Almost 80% of persons with a disability, or over 2.8 million persons, were reported as restricted in their core activities in 1998. Almost one-third, more than 1.1 million, reported severe or profound restrictions. The prevalence of severe or profound core activity restriction was greater among females than males.
- The severity of core activity restriction increases with age. More than one in five (21%) of persons aged 65 years and over

reported severe or profound restriction in 1998. This is greater than the one in 25 (4.0%) prevalence among those aged less than 65 years.

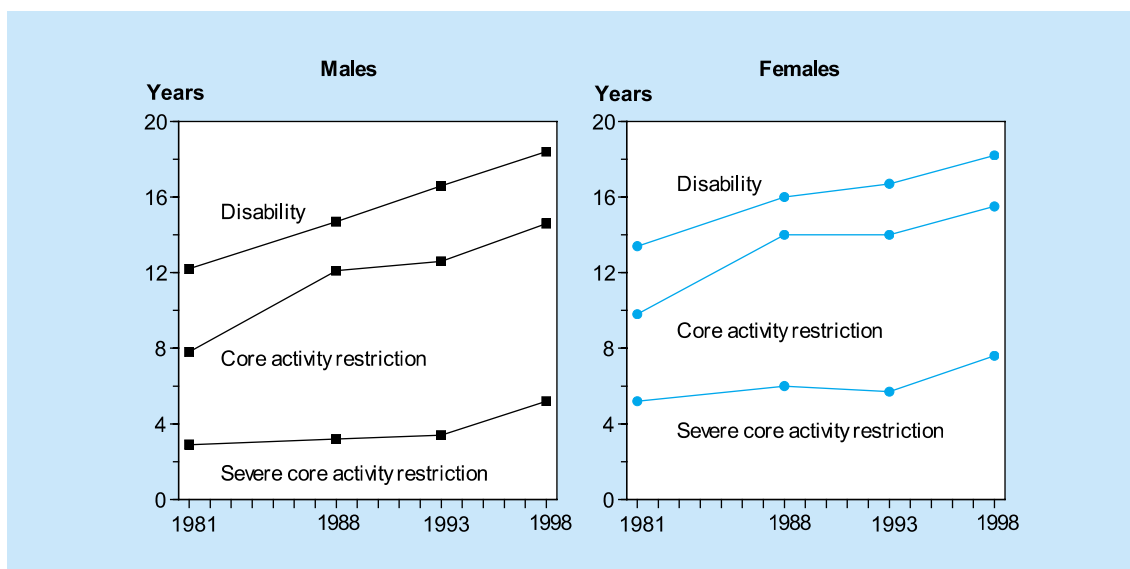
- The majority of the apparent rise in core activity restriction is as a result of increased identification of people with these restrictions, rather than an actual increase in the prevalence of people with core activity restriction.

**For more information, see:**

ABS 1999. Disability, ageing and carers: summary of findings. ABS Cat. No. 4430.0. Canberra: ABS.

Davis E, Beer J, Gligora C & Thorn A 2001. Accounting for change in disability and severe restriction, 1981-1998. ABS Working Paper 2001/1. Canberra: ABS.

## Expected years of life with disability and core activity restriction



	Males				Females			
	1981	1988	1993	1998	1981	1988	1993	1998
<b>Expected years of life:</b>								
With severe core activity restriction	2.9	3.2	3.4	5.2	5.2	6.0	5.7	7.6
With core activity restriction	7.8	12.1	12.6	14.6	9.8	14.0	14.0	15.5
With disability	12.2	14.7	16.6	18.4	13.4	16.0	16.7	18.2
Free of disability	59.2	58.4	58.4	57.5	65.0	63.4	64.2	63.3
<b>Total life expectancy</b>	<b>71.4</b>	<b>73.1</b>	<b>75.0</b>	<b>75.9</b>	<b>78.4</b>	<b>79.5</b>	<b>80.9</b>	<b>81.5</b>

*Notes*

1. The data were age-adjusted using the total Australian population as at 30 June 1991.
2. Only criteria common to the four surveys have been used.

*Sources:* Mathers 1991; Mathers 1996; ABS 1998 Survey of Disability, Ageing and Carers, unpublished data.

- A large proportion of the Australian population can now expect to live into their seventies and beyond. However, it is expected that some of those years will be spent with some form of disability restricting the performance of a normal range of activities.
- Based on 1998 mortality data, life expectancy is 75.9 years for Australian males and 81.5 years for Australian females. Only 57.5 (76%) and 63.3 (78%) of those years, respectively, are expected to be disability-free.
- The apparent increase over time of the number of years lived with disability is affected by a number of factors. These

include the increased identification of people with disabilities, and increasing overall life expectancy.

- Disability is not an inevitable consequence of ageing. For example, not only is the life expectancy of Australian females greater than that for Australian males, but also the proportion of years lived disability-free is higher.

**For more information, see:**

AIHW 1999a. Australia's welfare 1999: services and assistance. Canberra: AIHW.



# 4 The health of subpopulations

## Indigenous population

- Indigenous population size
- Indigenous death rate for all causes
- Indigenous infant mortality rate
- Indigenous death rate for cardiovascular disease

## Overseas-born

- Net overseas migration rate
- Death rates among Australian-born and overseas-born persons

## Mothers and babies

- Crude birth rate
- Total fertility rate and median age of mother at confinement
- Births to teenagers, and to women aged 35 and over
- Infant mortality rate
- Perinatal mortality
- Low birthweight infants
- Major birth defects rate
- Sudden infant death syndrome rate

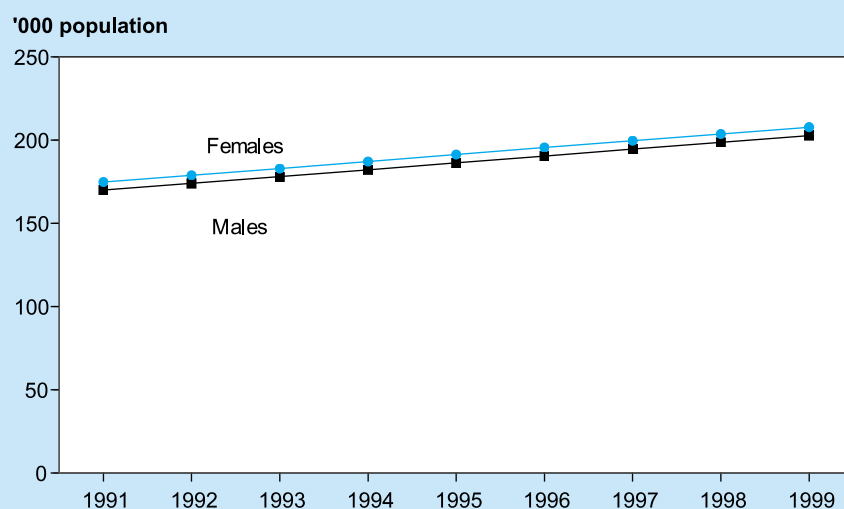
## Children and youth

- Death rate for accidental drowning, children aged 1–4 years
- Mean DMFT score and decay-free rate in 12-year-old children

## Aged persons

- Population aged 65 and over, and 80 and over
- Life expectancy at age 65
- Death rate for degenerative diseases among persons aged 65 and over
- Prevalence of edentulism

### Indigenous population size



	1991	1992	1993	1994	1995	1996	1997	1998	1999
Males	169,977	173,982	178,015	182,120	186,282	190,468	194,568	198,680	202,803
Females	174,803	178,843	182,931	187,093	191,325	195,581	199,646	203,724	207,812
<b>Total</b>	<b>344,780</b>	<b>352,825</b>	<b>360,946</b>	<b>369,213</b>	<b>377,607</b>	<b>386,049</b>	<b>394,214</b>	<b>402,404</b>	<b>410,615</b>

Note: Experimental population estimates, based on the 1996 Census. Data should be used carefully.

Source: AIHW Population Database, based on Indigenous population estimates compiled by ABS.

- According to estimates based on the 1996 Census and its projections, there were 410,615 persons of Indigenous origin in Australia in 1999, constituting 2.2% of the population.
- There have been substantial changes in the size and distribution of people reporting as Indigenous in the Census. Between the 1986 and 1996 censuses, the number of people counted as Indigenous increased by 55%. A large proportion of this increase is attributed to greater willingness on the part of Indigenous persons to identify as such.
- These unexpected changes make it difficult to analyse trends in Indigenous population numbers. However, experimental estimates of the size of the population have been derived to smooth out these variations. According to these estimates, between 1991 and 1999, the Indigenous population increased at an annual rate of 2.2%. This contrasts with the total Australian population, which grew by 1.1% annually.
- The Indigenous population is quite young in comparison with the rest of the Australian population. In 1999, 50% were under 20 years of age and only 3% were aged 65 years or over. In contrast, 28% of the Australian population as a whole were under 20 years of age and 12% were aged 65 years or over.
- The spatial distribution of the Indigenous population is also quite different from that of the rest of the population. Less than one-third of the Indigenous population live in capital cities with easy access to all mainstream health services. One in five Indigenous people reside in remote settings, away from centres with basic health facilities.

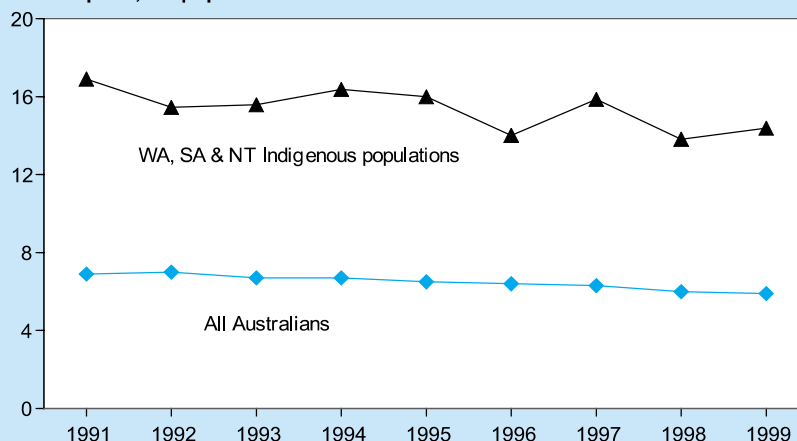
#### For more information, see:

ABS & AIHW 1999. The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples, 1999. ABS Cat. No. 4704.0. Canberra: ABS.



### Indigenous death rate for all causes

Deaths per 1,000 population



	1991	1992	1993	1994	1995	1996	1997	1998	1999
Males	18.5	17.9	17.4	18.0	19.0	17.3	19.0	16.7	16.3
Females	15.5	13.4	14.0	14.8	13.4	11.2	13.2	11.3	12.7
<b>Total Indigenous</b>	<b>16.9</b>	<b>15.5</b>	<b>15.6</b>	<b>16.4</b>	<b>16.0</b>	<b>14.0</b>	<b>15.9</b>	<b>13.8</b>	<b>14.4</b>
<i>All Australians</i>	6.9	7.0	6.7	6.7	6.5	6.4	6.3	6.0	5.9

**Notes**

1. Indigenous deaths data are for Western Australia, South Australia and the Northern Territory combined.
2. Data should be used carefully. Indigenous people may be underestimated in death registrations. Also, experimental population estimates, based on the 1996 Census, have been used for estimating the rates.
3. The death rates were age-adjusted using the total Australian population as at 30 June 1991.

Source: Both Indigenous and total Australian rates are based on data derived from the AIHW National Mortality Database.

- Indigenous death rates greatly exceed the corresponding Australian death rates at all ages, despite under-identification of Indigenous people in death registrations. The overall death rate for the Indigenous population is more than twice that for the total Australian population. The greatest differences occur in the middle age group of 25 to 54 years.
- These differences are also reflected in lower Indigenous life expectancies. In the period 1991–1996, Indigenous life expectancy was estimated to be between 15 and 20 years shorter than that for the total Australian population (see *Life expectancy at birth* on page 15).
- Diseases of the circulatory system, injury and poisoning, respiratory diseases, cancers and diabetes are the major causes

of Indigenous mortality. Deaths from digestive diseases, infectious diseases and genitourinary disorders, although less common, continue to occur at much higher rates than among other Australians.

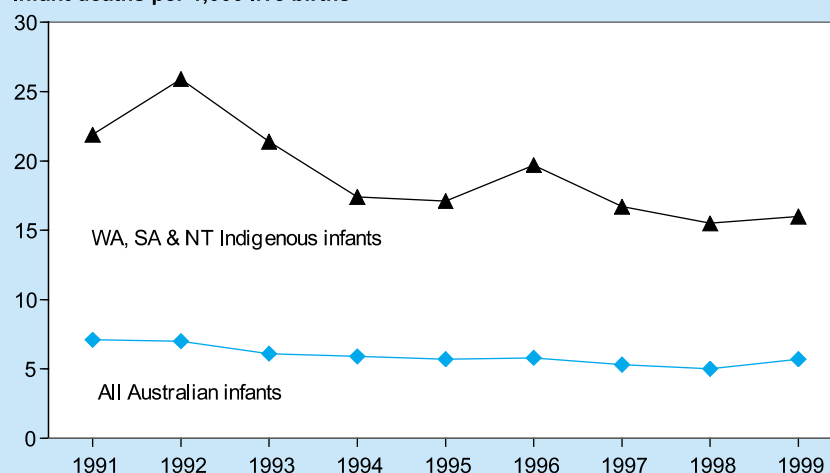
- Reported death rates for all causes among Indigenous peoples have declined by 2% per annum between 1991 and 1999, a decline similar to that in the total Australian population.

**For more information, see:**

ABS & AIHW 1999. The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples, 1999. ABS Cat. No. 4704.0. Canberra: ABS.

## Indigenous infant mortality rate

Infant deaths per 1,000 live births



	1991	1992	1993	1994	1995	1996	1997	1998	1999
Indigenous	21.9	25.9	21.4	17.4	17.1	19.7	16.7	15.5	16.0
All Australians	7.1	7.0	6.1	5.9	5.7	5.8	5.3	5.0	5.7

*Notes*

1. Indigenous deaths data are for Western Australia, South Australia and the Northern Territory combined.
2. Data should be used carefully. Indigenous people may be underestimated in death registrations. Also, experimental population estimates, based on the 1996 Census, have been used for estimating the rates.

Source: Both Indigenous and total Australian rates are based on data derived from the AIHW National Mortality Database.

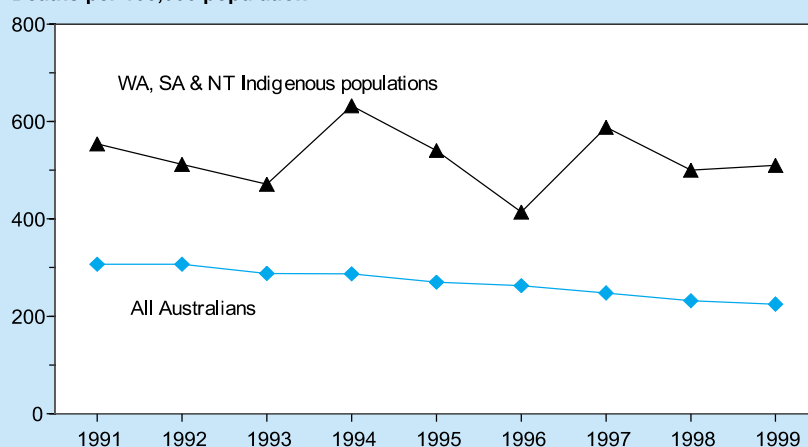
- Disparity between Indigenous and other Australian death rates begins early in life. Indigenous infant deaths in Western Australia, South Australia and the Northern Territory combined occur at more than three times the rate noted in Australia as a whole.
- In 1999, the Indigenous infant mortality rate in Western Australia, South Australia and the Northern Territory was 16.0 per 1,000 live births, compared with 5.1 per 1,000 live births for all infants in these three States and Territories, and 5.7 per 1,000 live births for all Australian infants.
- During the period 1995 to 1997, the leading causes of death among both Indigenous and other Australian infants were 'certain conditions originating in the perinatal period', such as disorders relating to short gestation, birth trauma and respiratory distress. However, the rate was 3 times higher for Indigenous boys and nearly 4 times higher for Indigenous girls.
- Between 1995 and 1997, sudden infant death syndrome (SIDS) was responsible for 19% of all Indigenous infant deaths. Congenital anomalies accounted for a further 20%. Although SIDS rates have fallen since the late 1980s in the total Australian population, the same is not true for the Indigenous population.

**For more information, see:**

ABS & AIHW 1999. The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples, 1999. ABS Cat. No. 4704.0. Canberra: ABS.

### Indigenous death rate for cardiovascular disease

Deaths per 100,000 population



	1991	1992	1993	1994	1995	1996	1997	1998	1999
Males	610	559	522	691	705	507	731	608	579
Females	503	469	428	577	400	335	467	409	447
<b>Indigenous</b>	<b>554</b>	<b>512</b>	<b>471</b>	<b>632</b>	<b>540</b>	<b>414</b>	<b>588</b>	<b>500</b>	<b>510</b>
<i>All Australians</i>	<i>307</i>	<i>307</i>	<i>288</i>	<i>287</i>	<i>270</i>	<i>263</i>	<i>248</i>	<i>232</i>	<i>225</i>

*Notes*

1. Indigenous data are for Western Australia, South Australia and the Northern Territory combined.
2. Data should be used carefully. Indigenous people may be underestimated in death registrations. Also, experimental population estimates, based on the 1996 Census, have been used for estimating the rates.
3. The death rates were age-adjusted using the total Australian population as at 30 June 1991.

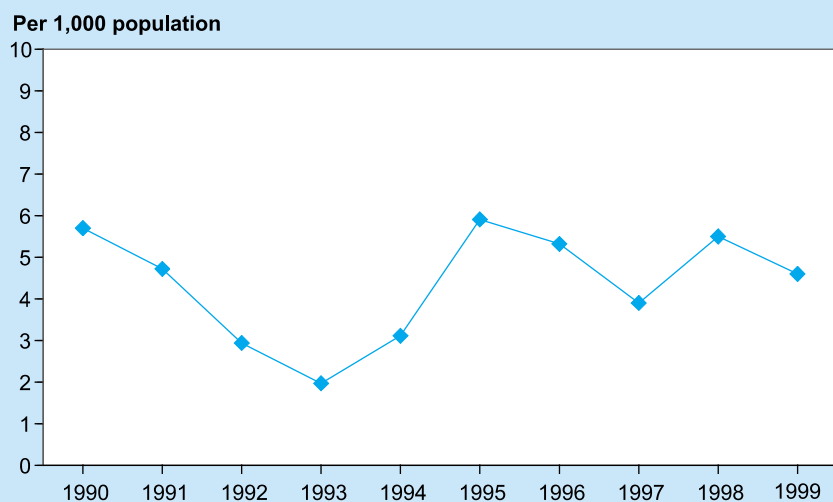
*Source:* Both Indigenous and total Australian rates are based on data derived from the AIHW National Mortality Database.

- Cardiovascular disease (CVD) is the leading cause of death among Indigenous people, and occurs at up to twice the rate among other Australians. However, CVD accounts for a lower proportion of Indigenous deaths due to the greater relative importance of other causes of death among Indigenous people.
- Coronary heart disease is the major CVD cause of death among Indigenous people, accounting for 62% of male CVD deaths and 49% of female CVD deaths in 1999. Stroke and rheumatic heart disease are two other major causes of CVD mortality.
- The major CVD risk factors for the Indigenous population are the same as those for the total population. However, the prevalence of these risk factors is often much higher among Indigenous people.
- Of considerable concern is the higher rate of smoking in the adult Indigenous population (about 50%), which is more than double the rate in the total Australian population. Also of concern is the high prevalence of overweight/obesity and diabetes, both of which are risk factors for increased CVD mortality.

**For more information, see:**

ABS & AIHW 1999. The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples, 1999. ABS Cat. No. 4704.0. Canberra: ABS.

### Net overseas migration rate



	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Net arrivals ('000)	234.1	237.2	220.5	197.9	221.9	253.9	261.3	260.2	268.4	289.0
Net departures ('000)	137.5	143.7	143.7	140.4	141.7	149.4	158.3	176.6	179.6	185.7
Category jumping ('000)	0.6	-11.9	-25.4	-22.7	-24.7	2.3	-5.6	-11.3	14.3	-15.9
<b>Net migration rate per 1,000 population</b>	<b>5.7</b>	<b>4.7</b>	<b>2.9</b>	<b>2.0</b>	<b>3.1</b>	<b>5.9</b>	<b>5.3</b>	<b>3.9</b>	<b>5.5</b>	<b>4.6</b>

Note: Net overseas migration rate = (Number of permanent and long-term arrivals – Number of permanent and long-term departures + category jumping) / Total population in the reference year × 1,000.

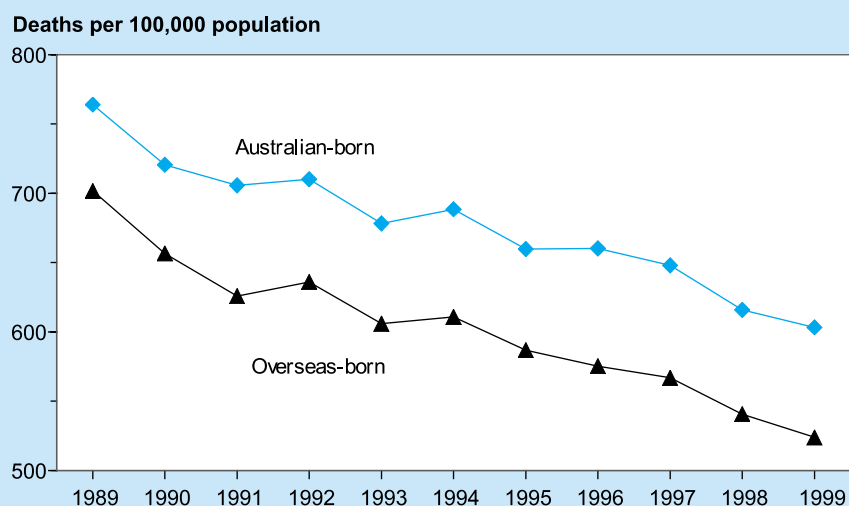
Source: ABS Cat. No. 3101.0 (various years).

- The net overseas migration rate is a measure of addition or loss to the resident population. It consists of the difference between permanent and long-term arrivals and permanent and long-term departures, plus category jumping.
- Category jumping measures the net effect of movers who make the first leg of their travel as an intended short-term move, but subsequently change their actual length of stay to permanent or long-term.
- In 1990, the number of persons migrating to Australia stood at 5.7 per 1,000 population. After 1990, the net migration rate fell steadily to a low of 2.0 per 1,000 population in 1993, but has recovered somewhat since then.
- At 30 June 1999, 23% of the estimated resident population of Australia were born overseas. More than half of these were born in Europe, and almost a quarter in Asia. Persons born in Oceania, the Middle East and Africa also form a significant proportion of the population.
- The immigrant population is invariably younger in age structure, with a lower dependency ratio. In 1999, over three-quarters of all permanent arrivals were between 15 and 64 years of age.

#### For more information, see:

ABS. Australian demographic statistics.  
ABS Cat. No. 3101.0. Canberra: ABS.

### Death rates among Australian-born and overseas-born persons



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Overseas-born	701	657	626	636	606	611	587	575	567	541	524
Australian-born	764	721	706	710	678	688	660	660	648	616	603
<b>Mortality ratio</b>	<b>0.92</b>	<b>0.91</b>	<b>0.89</b>	<b>0.90</b>	<b>0.89</b>	<b>0.89</b>	<b>0.89</b>	<b>0.87</b>	<b>0.88</b>	<b>0.88</b>	<b>0.87</b>

Note: The death rates were age-adjusted using the total Australian population as at 30 June 1991.

Source: Estimates based on data derived from AIHW National Mortality Database.

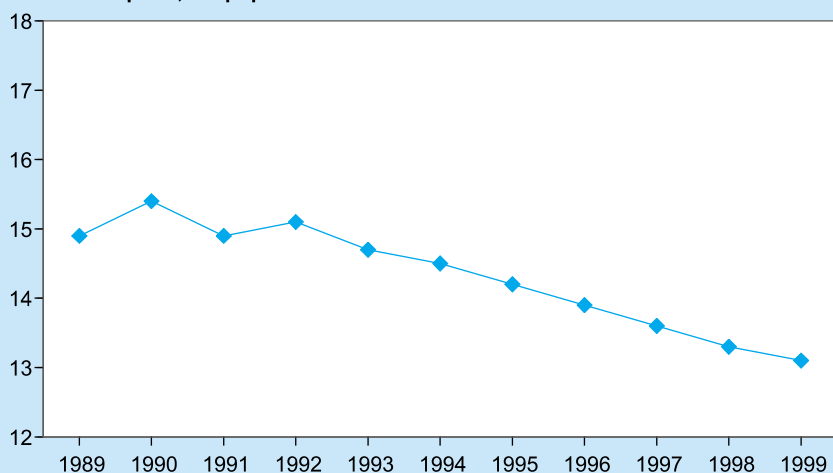
- The health status of the immigrant population provides a comparative perspective on variations in morbidity and mortality, and access to health services.
- On several measures, the health of immigrants is better than that of the Australian-born population. These include lower death rates, hospitalisation rates and prevalence of certain lifestyle-related risk factors.
- The death rate among overseas-born persons in 1999 was 524 per 100,000 population, compared with 603 per 100,000 population among persons born in Australia. This is 13% lower than the rate among Australian-born persons.
- Several factors contribute to the health advantage of overseas-born persons.
  - Perhaps the most important of these is the 'healthy migrant effect', whereby those in good health are more likely to meet eligibility criteria and be willing to migrate. Social, cultural, environmental, biological and genetic factors also contribute.
  - It has been observed that this advantage becomes smaller with increasing length of residence in Australia.

#### For more information, see:

AIHW 2000a. Australia's health 2000: the seventh biennial health report of the Australian Institute of Health and Welfare. Canberra: AIHW.

### Crude birth rate

Live births per 1,000 population



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Live births ('000)	250.9	262.6	257.2	264.2	260.2	258.1	256.2	253.8	251.8	249.6	248.9
Crude birth rate	14.9	15.4	14.9	15.1	14.7	14.5	14.2	13.9	13.6	13.3	13.1

Note: Births by year of registration.

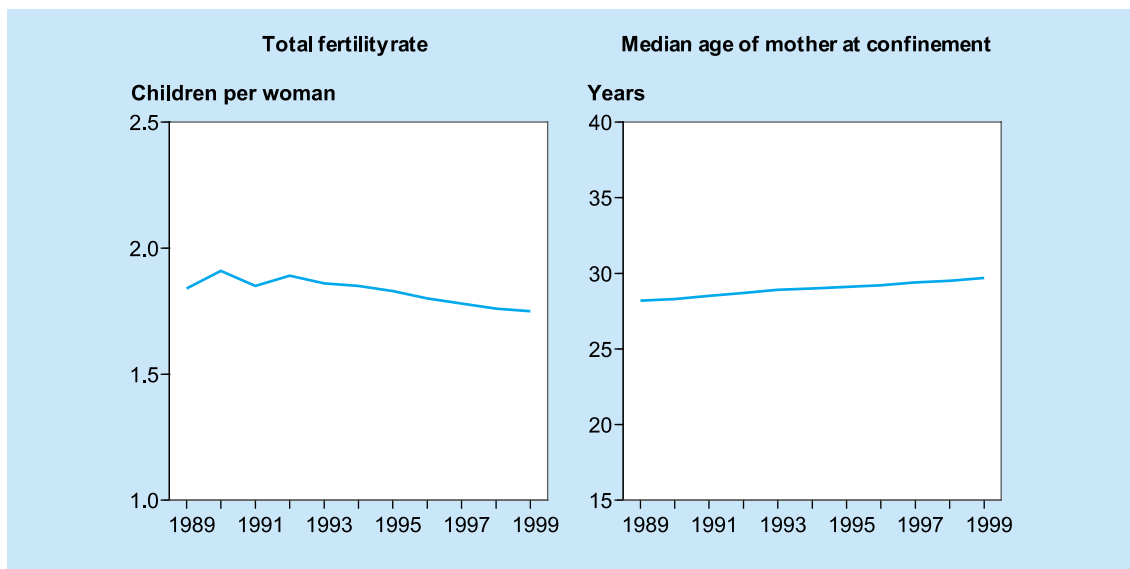
Source: ABS Cat. No. 3301.0 (various years).

- The crude birth rate is the number of annual live births as a proportion of the total population. In combination with the total fertility rate, it provides a useful insight into factors affecting growth and reproductive patterns of the population.
- There were almost 250,000 registered live births in Australia in 1999, a crude birth rate of 13.1 per 1,000 population. There has been a fall in both the number of births and the crude birth rate since 1992. These reflect a continuing decline in fertility (see *Total fertility rate and median age of mother at confinement* on page 31).
- There are marked regional differences in the crude birth rate in Australia. In 1999, the crude birth rate in the Northern Territory (18.5 per 1,000 population) was 40% higher than the national average. Victorian and South Australian rates (12.5 and 12.0 per 1,000 population respectively) were much lower in comparison.
- Births in Australia continue to be the main component of population growth, outnumbering deaths by approximately two to one.

#### For more information, see:

ABS. Births, Australia. ABS Cat. No. 3301.0. Canberra: ABS.

## Total fertility rate and median age of mother at confinement



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total fertility rate	1.84	1.91	1.85	1.89	1.86	1.85	1.83	1.80	1.78	1.76	1.75
Median age (years)	28.2	28.3	28.5	28.7	28.9	29.0	29.1	29.2	29.4	29.5	29.7

Source: ABS Cat. No. 3301.0 (various years).

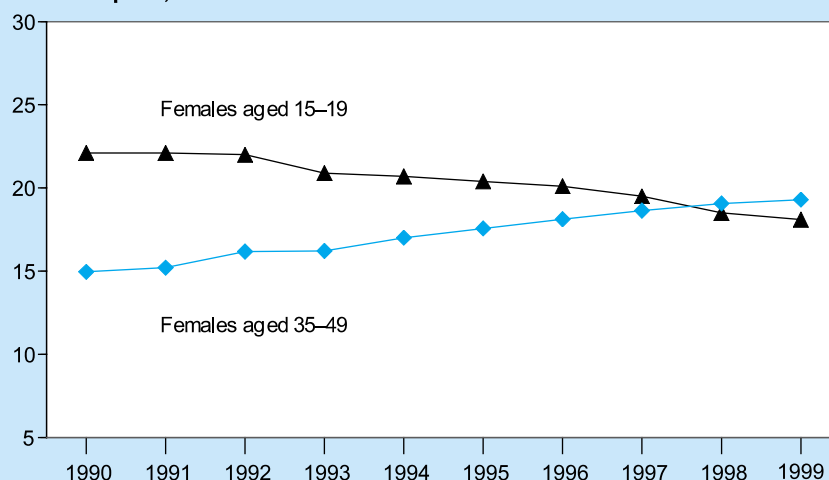
- The total fertility rate is a useful summary measure of fertility. It is the number of live births a woman would have if, throughout her reproductive years, she had children at the age-specific rates prevailing in the reference year. This rate is obtained by summing the age-specific fertility rates for one specific year. This sum yielded a total fertility rate of 1.75 children per woman in 1999. Another useful measure of trends in fertility is the median age of mothers in confinement. In 1999, the median age was 29.7 years.
- More women are having fewer children, and are delaying child-bearing until later in their reproductive lives. While the total fertility rate fell slightly between 1989 and 1999, the median age of women giving birth increased from 28.2 years to 29.7 years in the same period. The current total fertility rate is at its lowest point ever, although it has remained at around 1.8 to 1.9 since the mid-1970s.
- There are significant regional variations in the total fertility rate. Rates are lower in capital cities and higher in rural and remote areas. In 1999, the rate was highest in the Northern Territory (2.15) and lowest in Victoria (1.62). Indigenous mothers also have higher fertility rates than do other Australian mothers.
- The pattern of continuing low fertility and increase in the age of mothers at confinement in Australia has also been observed in most other developed countries since the early 1970s. The reasons behind this pattern are complex and include the availability of a wider range of options or choices for women, such as increased opportunities to participate more fully in higher education or the paid labour force, greater availability of contraceptives, more liberal divorce laws and easier access to abortion.

**For more information, see:**

ABS. Births, Australia. ABS Cat. No. 3301.0. Canberra: ABS.

## Births to teenagers, and to women aged 35 and over

Birth rate per 1,000 females



	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Births, age 15-19	15,107	14,717	14,154	13,175	12,853	12,631	12,509	12,309	11,849	11,693
Births, age 35-49	26,240	27,472	30,066	30,960	33,192	35,078	37,105	38,648	40,070	40,989
Birth rate, age 15-19	22.1	22.1	22.0	20.9	20.7	20.4	20.1	19.5	18.5	18.1
Birth rate, age 35-49	15.0	15.2	16.2	16.2	17.0	17.6	18.1	18.6	19.1	19.3

Note: Birth rate per 1,000 females.

Source: ABS Cat. No. 3301.0 (various years).

- Births to mothers at either extreme of the reproductive age group are more likely to result in adverse health outcomes.
- Births to teenagers have shown a decline since the early 1990s rate of 22.1 per 1,000 females aged 15-19 years, to be 18.1 per 1,000 females in 1999. The age-specific birth rate, however, understates teenage pregnancies as it does not include induced abortions of unwanted pregnancies.
- Births among teenagers are often unintended and unplanned. Children born to teenagers are at greater risk of low birthweight and perinatal mortality. Teenage mothers are more likely to come from socioeconomically disadvantaged groups.
- Conversely, the proportion of births to older mothers continues to increase, from 15.0 per 1,000 females aged 35-49 years in

1990 to 19.3 per 1,000 females in 1999. Females may choose to delay motherhood for career or other reasons. The availability of IVF and other pregnancy stimulating procedures has also contributed to the increased birth rate in this age group.

- Females who delay the birth of their first child face increased health risks both to themselves and their child. Increased rates of congenital malformations and chromosomal abnormalities are noted among children born to mothers later in their reproductive life.

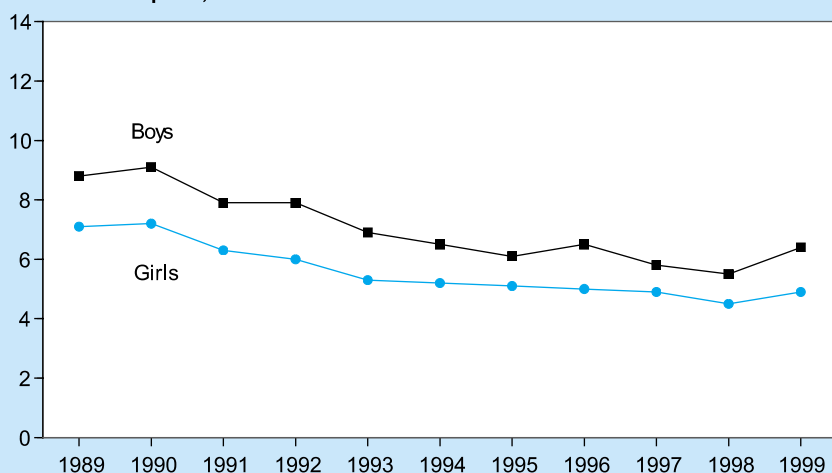
**For more information, see:**

Nassar N, Sullivan EA, Lancaster P & Day P 2000. Australia's mothers and babies 1998. Sydney: AIHW.



### Infant mortality rate

Infant deaths per 1,000 live births



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Boys	8.8	9.1	7.9	7.9	6.9	6.5	6.1	6.5	5.8	5.5	6.4
Girls	7.1	7.2	6.3	6.0	5.3	5.2	5.1	5.0	4.9	4.5	4.9
<b>Total</b>	<b>8.0</b>	<b>8.2</b>	<b>7.1</b>	<b>7.0</b>	<b>6.1</b>	<b>5.9</b>	<b>5.7</b>	<b>5.8</b>	<b>5.3</b>	<b>5.0</b>	<b>5.7</b>

Source: ABS Cat. No. 3302.0 (various years).

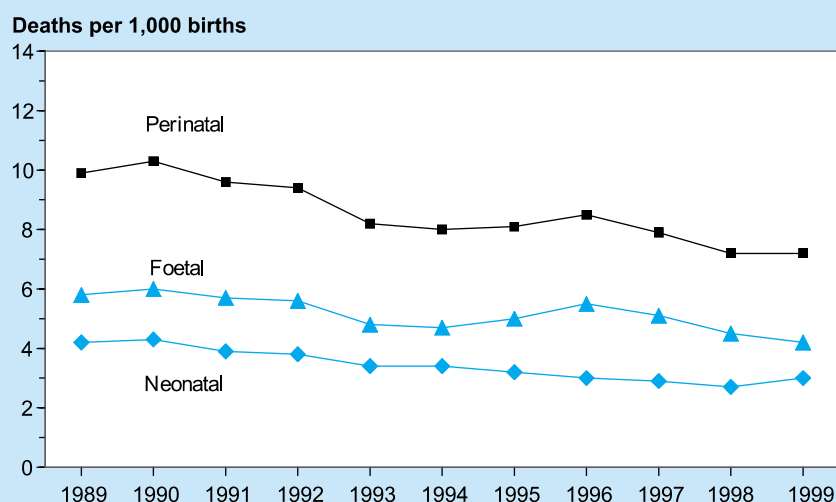
- Infant mortality is widely used as an indicator of the health status of children, or even of the population as a whole. The measure is considered to offer useful insights into the hygiene and health conditions prevailing in a community. Infant deaths include deaths up to 1 year of age. The rate is usually given as per 1,000 live births.
- In 1999, 1,408 infants died before they were 1 year old, 58% of whom were boys and 42% girls. This equates to a death rate of 5.7 per 1,000 live births—up slightly from the low rate of 5.0 recorded in 1998, and due in part to a rise in neonatal deaths (see *Perinatal mortality* on page 34).
- Risk factors for infant mortality include pre-term birth, very low birthweight and congenital malformations. The major causal factors for infant deaths are congenital anomalies, certain conditions originating in the perinatal period such as short gestation, birth trauma and respiratory distress, and sudden infant death syndrome (SIDS).
- The infant mortality rate has been declining in Australia over the past several decades. In the years since 1989, the rate has declined by almost 30%. The decline has been similar among both boys (27%) and girls (31%).
- Reductions in the number of deaths from SIDS have led to declines in the infant mortality rate since 1991 (see *Sudden infant death syndrome rate* on page 37). Improved care of pre-term and very low birthweight babies are other contributors to reductions in infant deaths.

#### For more information, see:

ABS. Deaths, Australia. ABS Cat. No. 3302.0. Canberra: ABS.

Nassar N, Sullivan EA, Lancaster P & Day P 2000. Australia's mothers and babies 1998. Sydney: AIHW.

### Perinatal mortality



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Foetal	5.8	6.0	5.7	5.6	4.8	4.7	5.0	5.5	5.1	4.5	4.2
Neonatal	4.2	4.3	3.9	3.8	3.4	3.4	3.2	3.0	2.9	2.7	3.0
<b>Perinatal</b>	<b>9.9</b>	<b>10.3</b>	<b>9.6</b>	<b>9.4</b>	<b>8.2</b>	<b>8.0</b>	<b>8.1</b>	<b>8.5</b>	<b>7.9</b>	<b>7.2</b>	<b>7.2</b>

Note: Perinatal and foetal deaths are given as per 1,000 total births, whereas neonatal deaths are given as per 1,000 live births.

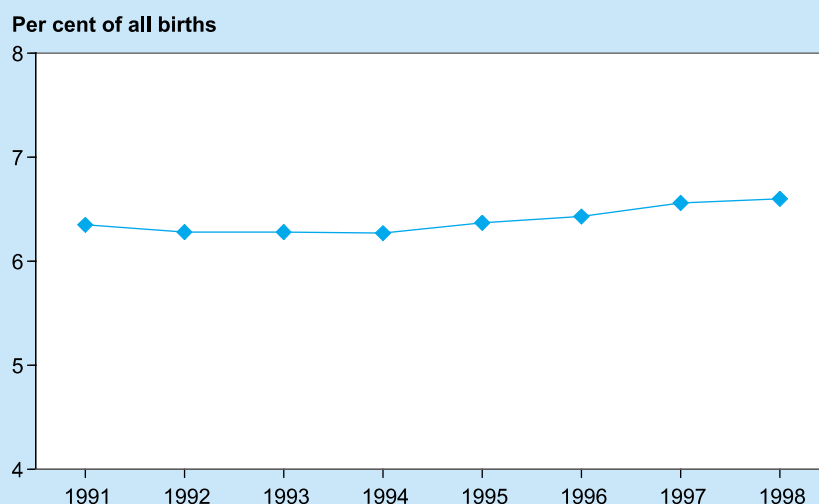
Source: ABS Cat. No. 3303.0 (various years).

- More than half of the deaths in the first year of life occur during the neonatal period—the first 4 weeks of life. In addition, a significant proportion of pregnancies result in stillbirths, also termed foetal deaths, and are classified as such if the babies weigh at least 500 g or have been 22 weeks in gestation.
- Collectively, the two types of deaths are referred to as perinatal deaths. Maternal and prenatal foetal conditions leading to slow foetal growth, foetal malnutrition and immaturity are the major contributing factors. Hypoxia, birth asphyxia and congenital anomalies are some of the major causes of perinatal deaths.
- There were 1,798 perinatal deaths in 1999, an overall perinatal death rate of 7.2 deaths per 1,000 total births. Of these, almost 60% were foetal deaths. Perinatal, foetal and neonatal death rates were all higher among boys than among girls.
- There has been a steady decline in the perinatal death rate over the last decade or so, from 9.9 deaths per 1,000 total births in 1989 to 7.2 in 1999. The decline was similar for both neonatal deaths (29%) and foetal deaths (28%).
- The perinatal death rate often reflects standards of obstetric and paediatric care, as well as the effectiveness of social measures and public health actions. These include the use of ultrasonography to detect problems such as anencephalus, and promoting the use of folate to prevent the occurrence of spina bifida.

#### For more information, see:

Nassar N, Sullivan EA, Lancaster P & Day P 2000. Australia's mothers and babies 1998. Sydney: AIHW.

### Low birthweight infants



	1991	1992	1993	1994	1995	1996	1997	1998
Number	16,272	16,489	16,374	16,387	16,571	16,525	16,800	16,854
Per cent of all births	6.3	6.3	6.3	6.3	6.4	6.4	6.6	6.6

Source: AIHW National Perinatal Statistics Unit Database.

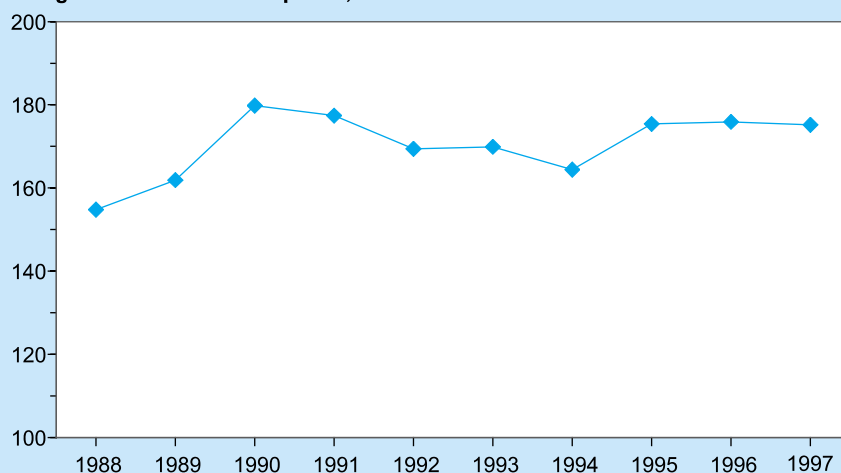
- Low birthweight is a useful indicator of the many possible adverse social and biological processes leading up to birth. It is also an important marker of increased morbidity and mortality in later life.
- Low birthweight infants are more likely to suffer from physical and neurological complications than are normal-weight infants. This disadvantage does not seem to abate as the children get older, and may lead to increased health problems at early school age.
- Infants are classified as low birthweight if they weigh less than 2,500 g at birth. Those weighing less than 1,500 g are referred to as very low birthweight, and those less than 1,000 g as extremely low birthweight.
- Almost 17,000 babies, or 6.6% of all births in Australia in 1998, were low birthweight, and about one-fifth of these were very low birthweight. Although more than half of these babies were born pre-term, i.e. born before 37 completed weeks of pregnancy, a sizeable proportion were full term. There was some increase in the proportion of extremely low birthweight babies between 1991 and 1998, but little change in the proportion of babies in other low birthweight categories.
- The risk factors for low birthweight include maternal age and parity, socioeconomic status, multiple births, cigarette smoking, alcohol consumption and the nutritional status of pregnant women. Low birthweight is observed more often in the babies of younger or older mothers, first-time mothers, single mothers and Indigenous mothers.

#### For more information, see:

Nassar N, Sullivan EA, Lancaster P & Day P 2000. Australia's mothers and babies 1998. Sydney: AIHW.

### Major birth defects rate

**Congenital malformations per 10,000 total births**



	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Anencephalus	3.6	3.3	2.8	2.1	1.8	2.5	1.7	1.4	1.6	1.4
Spina bifida	6.9	6.8	5.9	5.7	4.8	4.0	3.0	3.5	3.1	3.4
Ventricular septal defect	14.6	15.6	18.8	16.2	19.0	19.1	18.7	16.7	18.9	18.9
Down syndrome	12.3	13.0	13.1	13.1	12.2	14.0	12.2	13.9	12.2	13.0
<b>All types</b>	<b>154.8</b>	<b>161.9</b>	<b>179.8</b>	<b>177.4</b>	<b>169.4</b>	<b>169.9</b>	<b>164.4</b>	<b>175.4</b>	<b>175.9</b>	<b>175.2</b>

*Note:* Anencephalus is classified according to the ICD-9 codes 740.0–740.2, spina bifida 741.0–741.9, ventricular septal defect 745.4 and Down syndrome 758.0.

*Source:* AIHW National Perinatal Statistics Unit Database.

- Major birth defects, also known as congenital malformations, are a significant public health problem. They are a major reason for hospitalisation during infancy and childhood, lead frequently to disability and are sometimes fatal.
- Approximately 4,500 Australians, or 1.8% of all births each year, are born with birth defects. These defects accounted for almost one in five perinatal deaths and one in five infant deaths in 1996. The possibility of birth defects increases with maternal age. Mothers aged 40 years and over have a malformation rate twice that of mothers aged 20–24 years. Folate deficiency is also known to be associated with certain malformations.
- There is a declining trend in births of babies with neural tube defects such as

spina bifida and anencephalus. The rate of ventricular septal defect, on the other hand, increased until 1993 and has since stabilised. No change in rate has been observed for Down syndrome.

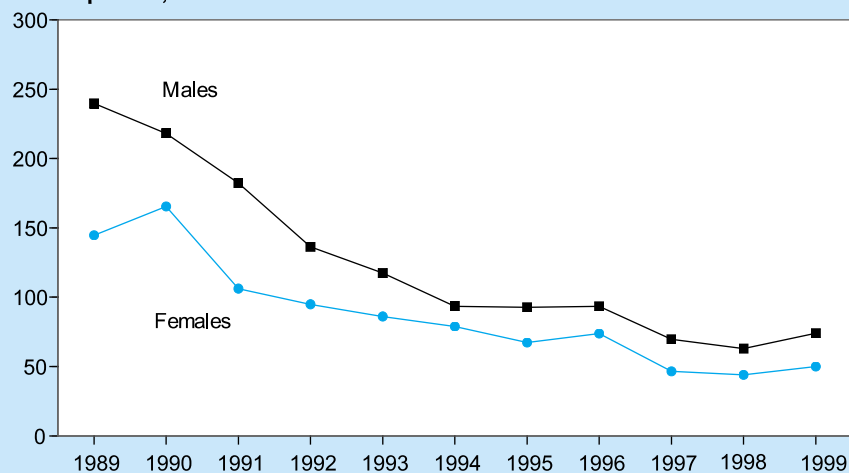
- Public health policies, improved screening technologies, pregnancy terminations and the establishment of new birth defects registers in some States and Territories have affected trends in birth defects.

#### For more information, see:

Hurst T, Shafir E, Day P & Lancaster P 1999. Congenital malformations Australia, 1995 and 1996. Sydney: AIHW National Perinatal Statistics Unit.

### Sudden infant death syndrome rate

Deaths per 100,000 live births



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Males	240	218	182	136	118	94	93	93	70	63	74
Females	145	166	106	95	86	79	67	74	46	44	50
<b>Total</b>	<b>193</b>	<b>193</b>	<b>145</b>	<b>116</b>	<b>102</b>	<b>86</b>	<b>80</b>	<b>84</b>	<b>58</b>	<b>54</b>	<b>62</b>

Note: Sudden infant death syndrome (SIDS) is classified according to the ICD-10 code: R95.

Source: Estimates based on data derived from AIHW National Mortality Database.

- Sudden infant death syndrome (SIDS), or cot death, is the sudden and unexpected death of an infant where the cause of death remains indeterminate, even following complete post mortem examination. SIDS has been the major cause of infant deaths in the postneonatal period in Australia over the last three decades. In 1999, there were 155 SIDS deaths recorded.
- In 1989, the SIDS rate was 240 male deaths and 145 female deaths per 100,000 live births. In 1999, the rate had fallen to 74 male and 50 female deaths per 100,000 live births, an annual decline of more than 10% for both sexes, although up slightly from the 1998 rate.
- Several different factors are considered to have led to these reductions in rates. The role played by the program 'Reducing the Risk of SIDS', introduced in July 1991, has been highlighted by many researchers.

Since the introduction of the program, the incidence of SIDS has dropped by almost two-thirds.

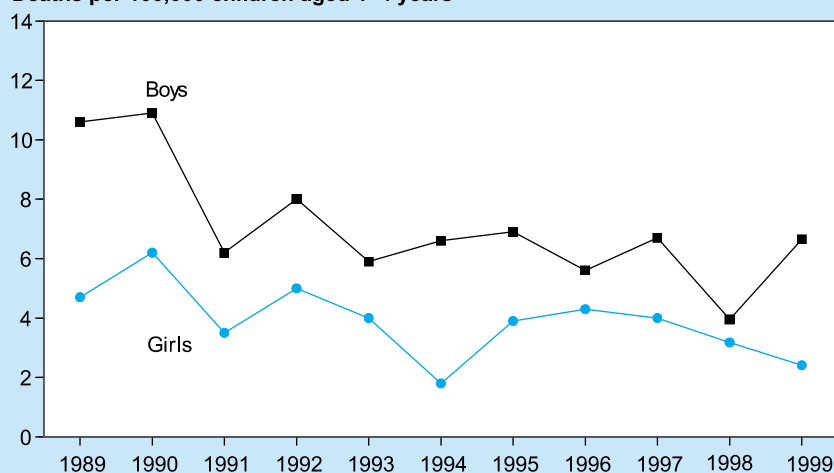
- The national campaign aims to reduce the risk of SIDS, and targets three factors known to contribute to it. It encourages parents and carers of newborn infants to:
  - place the baby on its back to sleep (unless there are medical reasons for placing babies to sleep on their side or stomach);
  - ensure that the baby's head remains uncovered during sleep;
  - keep the baby's environment smoke-free, before birth and after.

#### For more information, see:

Moon L, Rahman N & Bhatia K 1998. Australia's children: their health and wellbeing 1998. Canberra: AIHW.

## Death rate for accidental drowning, children aged 1–4 years

Deaths per 100,000 children aged 1–4 years



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Boys	10.6	10.9	6.2	8.0	5.9	6.6	6.9	5.6	6.7	4.0	6.7
Girls	4.7	6.2	3.5	5.0	4.0	1.8	3.9	4.3	4.0	3.2	2.4
<b>Total</b>	<b>7.7</b>	<b>8.6</b>	<b>4.8</b>	<b>6.5</b>	<b>5.0</b>	<b>4.2</b>	<b>5.5</b>	<b>5.0</b>	<b>5.4</b>	<b>3.6</b>	<b>4.6</b>

Note: Accidental drowning is classified according to the ICD-10 codes: W65–W74.

Source: Estimates based on data derived from AIHW National Mortality Database.

- Accidental drowning is the leading cause of death among children aged 1–4 years. In 1999, there were 47 drownings in this age group, with a rate of 4.6 per 100,000 children.
- Boys are at higher risk than girls. Over the 11-year period 1989–99, there were almost twice as many cases of drowning among boys (409 for boys and 214 for girls). Because of small numbers, the yearly rate ratio varies, but is consistently higher for boys.
- The death rate for accidental drowning among children aged 1–4 years has declined by 40% since 1989. Most of this decline was among boys, and occurred during the period 1989–93.
- Accidental drowning is a preventable cause of death. Of the 47 cases registered in 1999, 21 occurred in a swimming pool.

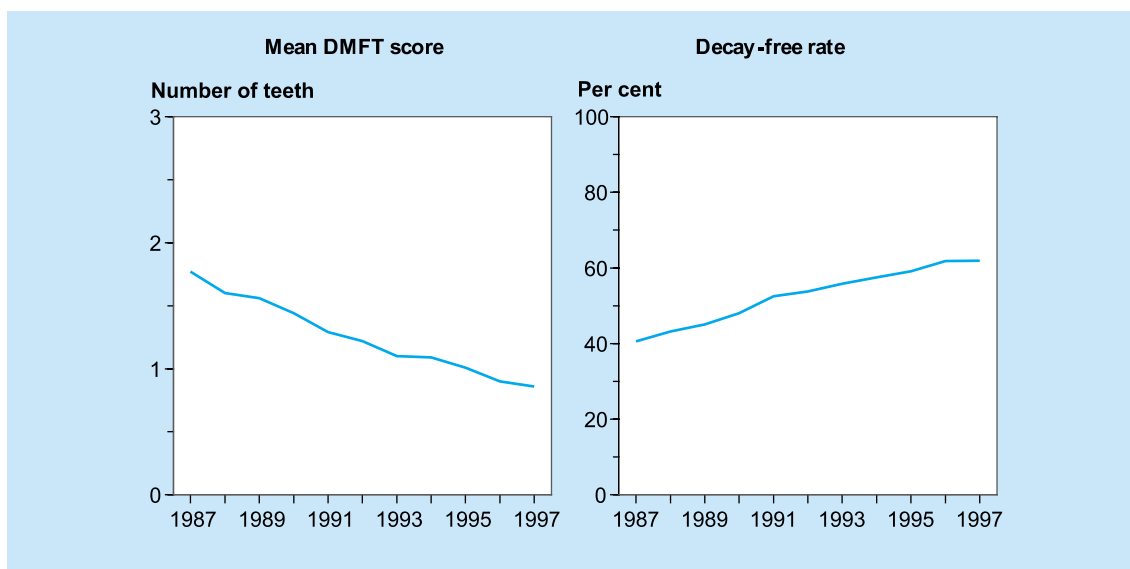
Lack of adequate supervision and inadequate fencing of domestic swimming pools are two major contributing factors.

- There has been an increase in the incidence of reported cases of near-drowning. Most young children surviving a near-drowning are unaffected by the experience. However, it can cause severe disability in some cases.

### For more information, see:

Moon L, Rahman N & Bhatia K 1998. Australia's children: their health and wellbeing 1998. Canberra: AIHW.  
 Harrison JE & Cripps RA (eds) 1994. Injury in Australia – an epidemiological review. Canberra: AGPS.

## Mean DMFT score and decay-free rate in 12-year-old children



	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Mean DMFT score	1.8	1.6	1.6	1.4	1.3	1.2	1.1	1.1	1.0	0.9	0.9
Decay-free rate (%)	40.6	43.2	45.1	48.0	52.5	53.8	55.8	57.5	59.1	61.8	61.9

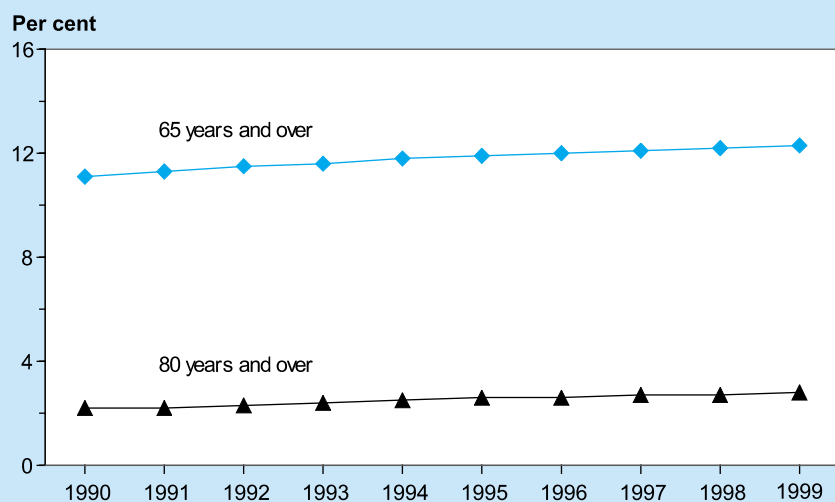
Source: AIHW Dental Statistics and Research Unit Database.

- Oral health is usually assessed by a person's dental caries (decay) experience. The decayed, missing and filled teeth (DMFT) score is the sum of the number of teeth that have been affected by decay, including teeth that are either missing or filled due to decay. Another useful indicator is the decay-free rate—the proportion of persons with no evidence of tooth decay.
- In 1997, the average DMFT score for 12-year-old children was 0.9. Over 60% of 12-year-old children have had no tooth decay experience.
- The rapid decline in mean DMFT score for 12-year-olds reflects the dramatic improvements in the dental health of Australian children since the 1970s. By 1997, children aged 12 years experienced an average of less than one decayed tooth compared with two in 1986 and three in 1982.
- There has been a corresponding increase in the proportion of children with no tooth decay experience. In 1997, 62% of 12-year-olds had no experience of tooth decay compared with 37% in 1985 and 22% in 1982.
- This improvement in oral health of children is largely attributable to better preventive and treatment strategies within community dental practices and school dental services, and to the increasing use of fluoridation in various forms.

**For more information, see:**

Davies MJ & Spencer AJ 1997. The Child Dental Health Survey, Australia 1995. Adelaide: AIHW DSRU, University of Adelaide.  
 AIHW DSRU 1998. Australia's oral health and dental services. Adelaide: AIHW DSRU, University of Adelaide.

### Population aged 65 and over, and 80 and over



	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Total aged population ('000)</b>										
65 years and over	1,893	1,951	2,004	2,056	2,106	2,151	2,203	2,244	2,282	2,314
80 years and over	367	384	403	424	446	466	484	501	514	528
<b>Proportion of the total population (%)</b>										
65 years and over	11.1	11.3	11.5	11.6	11.8	11.9	12.0	12.1	12.2	12.3
80 years and over	2.2	2.2	2.3	2.4	2.5	2.6	2.6	2.7	2.7	2.8

Source: ABS Cat. No. 3101.0 (various years).

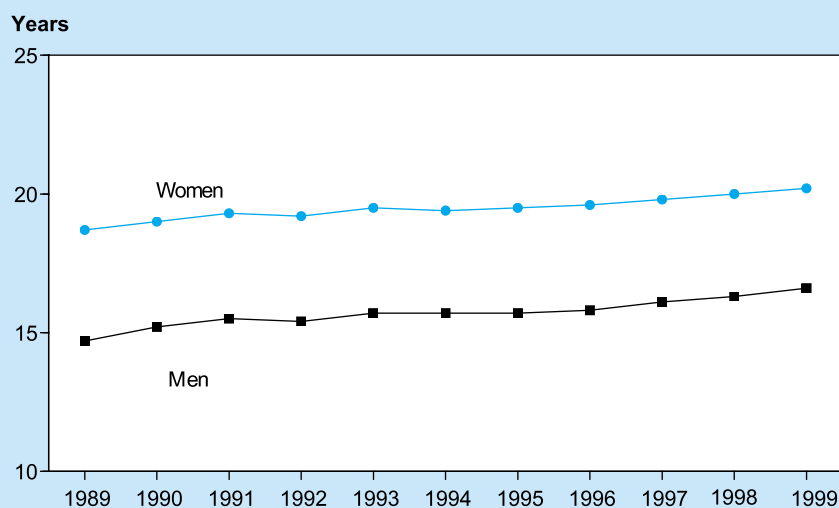
- Australia's population is ageing. In 1999, more than 2.3 million Australians, or 12.3% of the population, were aged 65 years and over.
- The growth rate of the older population is two to three times that of the rest of the population. The period from 1990 to 1999 saw the number of persons aged 65 years and over increase at an annual rate of 2.3%, from 11.1% of the population to 12.3%. Among those aged 80 years and over, the growth rate was 4.1% annually.
- The number of people aged 65 years and over is projected to exceed three million by the year 2011.
- More females than males survive to older age. In 1999, the sex ratio among those aged 65 years and over was 78 males to every 100 females. For those aged 80 years and over, the ratio was 54 males to 100 females.
- Age, particularly advanced age, is a significant predictor of poor health and disability. Chronic diseases and conditions such as arthritis, heart disease, cancer and dementia are highly prevalent in the older population.
- Poor health and disability also entail dependency. In 1998, 11% of the population aged 65 to 74 lived with a severe or profound core activity restriction. The proportion was 35% among those aged 75 and over.

#### For more information, see:

ABS. Australian demographic statistics.  
ABS Cat. No. 3101.0. Canberra: ABS.



## Life expectancy at age 65



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Men	14.7	15.2	15.5	15.4	15.7	15.7	15.7	15.8	16.1	16.3	16.6
Women	18.7	19.0	19.3	19.2	19.5	19.4	19.5	19.6	19.8	20.0	20.2

Source: ABS Cat. No. 3302.0 (various years).

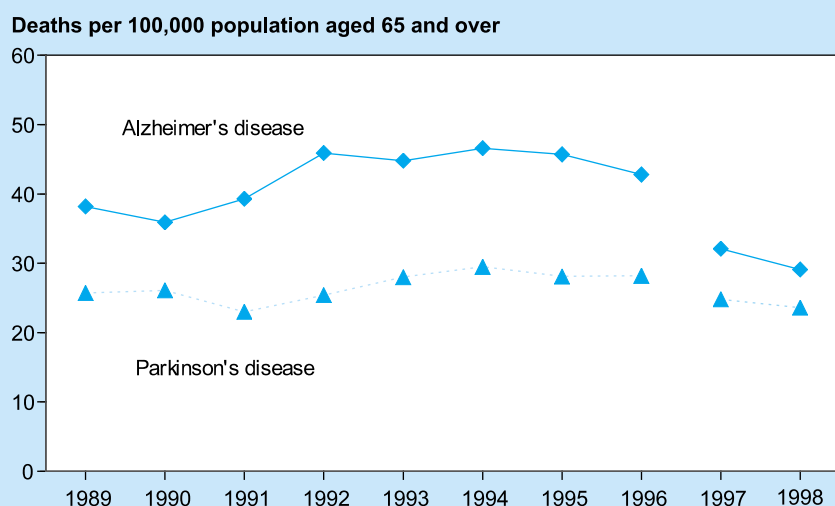
- Gains in life expectancy since the 1960s have been high among the middle-aged and older populations, accompanying dramatic falls in death rates, especially from diseases of the circulatory system.
- Between 1989 and 1999, life expectancy at age 65 years followed similar trends to life expectancy at birth (see *Life expectancy at birth* on page 15). In 1989, a 65-year-old man could have expected to live a further 14.7 years, and in 1999 a further 16.6 years. In 1989, a 65-year-old woman could have expected to live a further 18.7 years and in 1999 a further 20.2 years.
- The difference in life expectancy between the two sexes at age 65 declined slightly between 1989 and 1999 from 4.0 to 3.6 years.
- Life expectancy at age 65 for the Indigenous population is significantly lower than for the non-Indigenous population.
- Only 68% of Aboriginal and Torres Strait Islander males can expect to live beyond their 65th birthday compared with a figure of 84% for all Australian males. Among Aboriginal and Torres Strait Islander females, 80% can expect to live beyond age 65, compared with 91% of all Australian females.

**For more information, see:**

ABS. Deaths, Australia. ABS Cat No. 3302.0. Canberra: ABS.

AIHW 2000a. Australia's health 2000: the seventh biennial health report of the Australian Institute of Health and Welfare. Canberra: AIHW.

### Death rate for degenerative diseases among persons aged 65 and over



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Alzheimer's disease	38.2	35.9	39.3	45.9	44.8	46.6	45.7	42.8	32.1	29.1
Parkinson's disease	25.7	26.1	23.0	25.4	28.0	29.5	28.1	28.2	24.8	23.6

*Notes*

1. Alzheimer's disease is classified according to the ICD-10 code G30, and Parkinson's disease to G20.
2. The introduction of automated coding of deaths in 1997 has led to a break in the series.

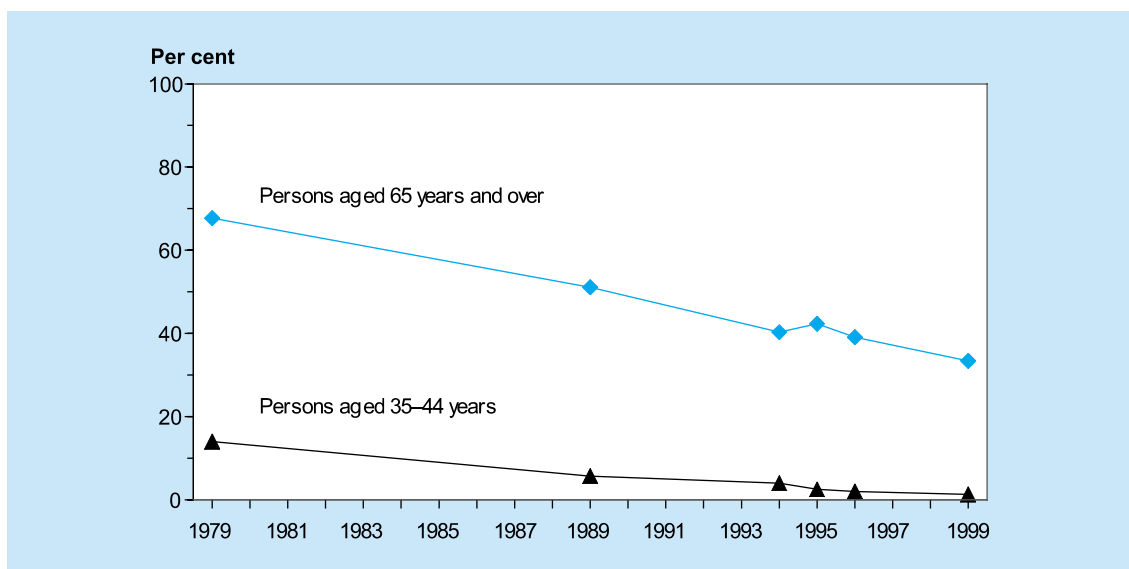
Source: Estimates based on data derived from AIHW National Mortality Database.

- Although coronary heart disease and cancer are the two leading causes of death among older persons, degenerative diseases such as dementia, Alzheimer's disease and Parkinson's disease are also responsible for significant mortality.
- In addition, these disorders are a leading contributor to the burden of disease among persons aged 65 and over. In 1996, senile dementias (including Alzheimer's disease), ranked third for this age group, accounting for 7.2% of their total disease burden.
- The main symptoms of dementia and Alzheimer's disease are progressive loss of memory and other cognitive functions. Parkinson's disease is a progressive, incurable neurological disease involving loss of motor skills and impacting on cognition, behaviour and mood.
- Deaths due to these diseases, especially dementia, increased steadily to 1996, possibly due to increased awareness and willingness to record these on death certificates. However, the introduction of automated coding of deaths in 1997 has meant that a large number of deaths previously coded to these causes have subsequently been coded to pneumonia.

**For more information, see:**

AIHW 2000a. Australia's health 2000: the seventh biennial health report of the Australian Institute of Health and Welfare. Canberra: AIHW.  
 Mathers C, Vos T & Stevenson C 1999. The burden of disease and injury in Australia. Canberra: AIHW.

### Prevalence of edentulism



	1979	1989	1994	1995	1996	1999
Persons aged 35-44 years	14.0	5.7	4.0	2.5	2.0	1.3
Persons aged 65 years and over	67.7	51.1	40.3	42.3	39.1	33.4

Source: AIHW Dental Statistics and Research Unit Database.

- The loss of all natural teeth, or edentulism, is the end point of dental disease. Edentulism represents the final failure of preventive and restorative care.
- For the individual, the loss of all natural teeth is usually associated with chewing difficulties, higher levels of discomfort during eating, personal embarrassment and social isolation. The major causes of tooth loss are decay and periodontal (gum) disease.
- Only a minority of adults are edentulous, but the proportion is high among those aged 65 years and over. In 1999, 33% of persons in this age group were without any natural teeth. In comparison, the rate was 1.3% among those aged 35-44 years.
- The dramatic decline in the prevalence of edentulism from 1979 to 1999 is a significant public health achievement. During this period the prevalence of

edentulism declined by over 50% in persons aged 65 years and over, and by over 90% in the 35-44 year age group.

- The rates of edentulism reflect past patterns of dental care, cultural and social variation in treatment preference, professional norms of practice and access to services. An increased emphasis on restoration rather than extraction, and changing attitudes about oral hygiene, diet and fluoridation have all contributed to the decline in edentulism.

#### For more information, see:

Brennan DS, Carter KD, Stewart JF & Spencer AJ 1997. Commonwealth dental health program evaluation report 1994-1996. Adelaide: AIHW DSRU, University of Adelaide.



# 5 National Health Priority Areas

## Cardiovascular health

- Death rate for coronary heart disease
- Hospital separation rate for coronary heart disease
- Procedures for coronary heart disease
- Death rate for stroke

## Cancer control

- Incidence and death rates for all cancers
- Incidence and death rates for colorectal cancer
- Incidence and death rates for cancer of the trachea, bronchus and lung
- Incidence and death rates for melanoma
- Incidence and death rates for non-melanocytic skin cancers
- Incidence and death rates for breast cancer
- Incidence and death rates for cervical cancer
- Incidence and death rates for prostate cancer

## Injury prevention and control

- Death rate for all causes of injury
- Death rate for road vehicle accidents
- Hospital separation rate for road vehicle accidents
- Death rate for accidental falls among persons aged 65 and over
- Death rate for accidents due to fire, burns and scalds among persons aged 55 and over
- Death rate from overdose of heroin, methadone or other opiates

## Mental health

- Death rate for suicide and self-inflicted injury
- Death rate for homicide and injury purposely inflicted by other persons

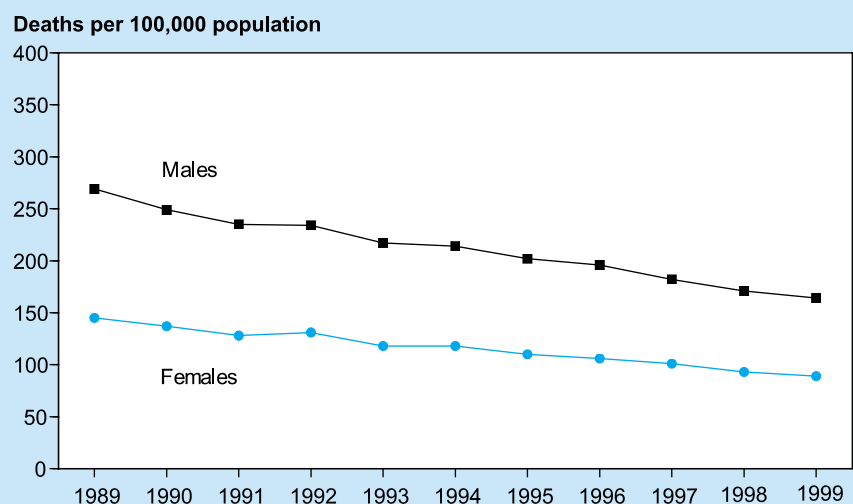
## Diabetes

- Death rate for diabetes

## Asthma

- Death rate for asthma

### Death rate for coronary heart disease



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Males	269	249	235	234	217	214	202	196	183	171	164
Females	145	137	128	131	118	118	110	106	101	93	89
<b>Total</b>	<b>199</b>	<b>186</b>	<b>175</b>	<b>177</b>	<b>160</b>	<b>161</b>	<b>151</b>	<b>145</b>	<b>138</b>	<b>128</b>	<b>123</b>

**Notes**

1. Coronary heart disease is classified according to the ICD-10 codes: I20–I25.
2. The death rates were age-adjusted using the total Australian population as at 30 June 1991.

Source: Estimates based on data derived from AIHW National Mortality Database.

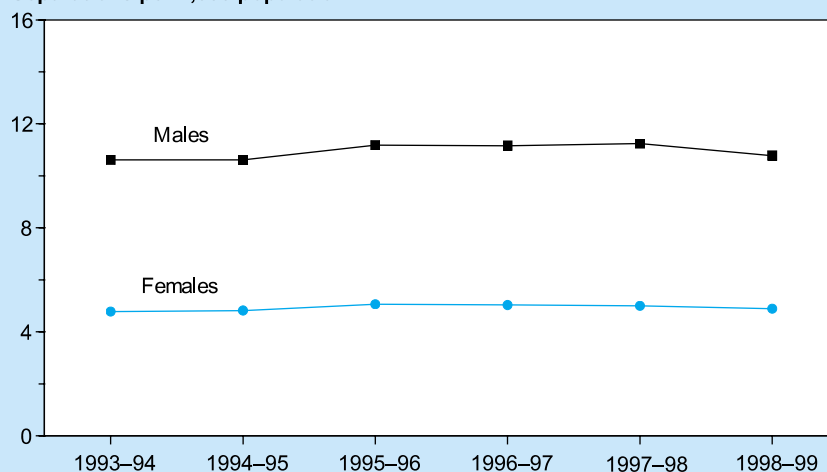
- Coronary heart disease (CHD), or ischaemic heart disease, is the largest single cause of death in Australia. In 1999, coronary heart disease accounted for 27,609 deaths in Australia, representing 22% of all deaths in that year. Males have considerably higher CHD death rates than females.
- Mortality from CHD has more than halved among both males and females since the late 1960s. Between 1989 and 1999, the annual decline in CHD mortality was 4.8% for both males and females. Despite the similar rate of decline, the death rate among males continues to be nearly twice that among females.
- Major modifiable risk factors for CHD include tobacco smoking, raised blood cholesterol, raised blood pressure, overweight, physical inactivity and diabetes mellitus.
- Reductions in smoking and blood pressure levels and improvements in treatment and care are considered to have contributed to the decline in mortality from CHD.

**For more information, see:**

ABS. Deaths, Australia. ABS Cat. No. 3302.0. Canberra: ABS.  
 Mathur S & Gajanayake I 1998. Surveillance of cardiovascular mortality in Australia 1985–1996. Canberra: AIHW.

## Hospital separation rate for coronary heart disease

Separations per 1,000 population



	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99
Males	10.6	10.6	11.2	11.2	11.2	10.8
Females	4.8	4.8	5.1	5.0	5.0	4.9
<b>Total</b>	<b>7.6</b>	<b>7.8</b>	<b>8.0</b>	<b>8.0</b>	<b>8.0</b>	<b>7.7</b>

*Notes*

1. Coronary heart disease is classified according to the ICD-9-CM codes 410-414 for 1993-94 to 1997-98 and to the ICD-10-AM codes I20-I25 for 1998-99.

2. The rates were age-adjusted using the total Australian population as at 30 June 1991.

Source: Estimates based on data derived from AIHW National Hospital Morbidity Database.

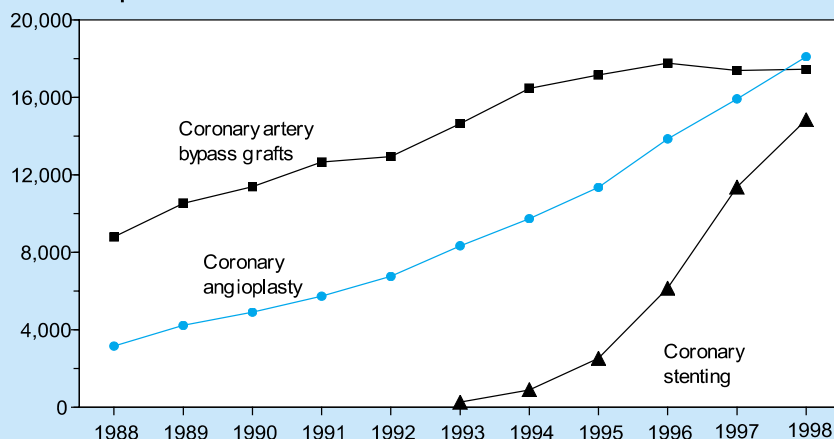
- Several different indicators are used for monitoring the extent of coronary heart disease (CHD) medical care. The hospital separation rate (i.e. the rate at which persons are discharged from hospital) indicates the extent of hospital-based care.
- In 1998-99, CHD accounted for 158,146 separations from all public acute and private hospitals. The average length of stay in hospital was 5.6 days, and 17% of all CHD separations were same-day. Length of stay and same-day proportion were slightly higher in public hospitals than private hospitals.
- Over the period 1993-94 to 1998-99, the separation rate for CHD increased slightly from 7.6 to 7.7 per 1,000 population. Males are more than twice as likely to be hospitalised for CHD than females.
- Increased hospitalisation may partly reflect changes in the treatment of heart disease, because complex interventions such as coronary artery bypass surgery and angioplasty are increasingly being used on a wider range of patients.
- Nonetheless, advances in the treatment and management of CHD have substantially contributed to major reductions in CHD mortality over the past few decades.

**For more information, see:**

AIHW 2000b. Australian hospital statistics 1998-99. Canberra: AIHW.  
 Waters A-M, Armstrong T & Senes-Ferrari S 1998. Medical care of cardiovascular disease in Australia. Canberra: AIHW.

## Procedures for coronary heart disease

Number of procedures



	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Coronary artery bypass grafts	8,786	10,531	11,381	12,649	12,935	14,638	16,465	17,150	17,759	17,377	17,448
Coronary angioplasty	3,153	4,219	4,904	5,726	6,748	8,334	9,732	11,348	13,853	15,918	18,094
Coronary stenting	-	-	-	-	-	255	896	2,517	6,146	11,361	14,838

**Notes**

1. Coronary artery bypass grafts (CABG) refers to ICD-9-CM code 36.1; percutaneous transluminal coronary angioplasty (PTCA) refers to ICD-9-CM codes 36.01, 36.02, 36.05, 36.06 and 36.07. Insertion of coronary artery stents are coded to ICD-9-CM codes 36.06 (single coronary vessel) and 36.07 (multiple coronary vessels).

Sources: AIHW/NHF National Cardiac Surgery and Coronary Angioplasty Registers; AIHW National Hospital Morbidity Database.

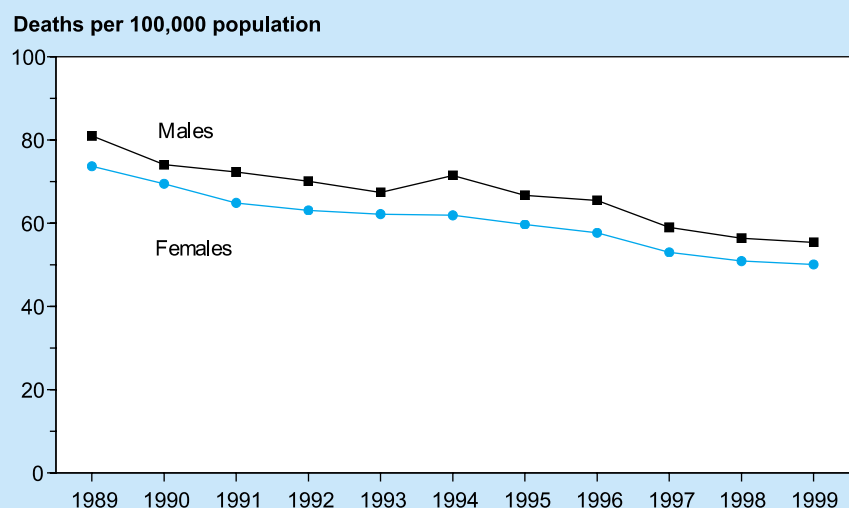
- There are numerous medical procedures available to treat coronary heart disease, including coronary artery bypass grafting (CABG), coronary angioplasty and coronary stenting.
- CABG entails using blood vessel grafts to bypass blockages in the coronary arteries and restore adequate blood supply to the heart muscle. Graft material usually comes from a vein in the patient's leg or a chest artery. In 1998 there were 17,448 CABG operations.
- Coronary angioplasty is also used to restore adequate blood flow to blocked coronary arteries. It involves inserting a catheter with a balloon into a major artery via the skin, and threading it into the coronary arteries to the area of the vessel blockage. The balloon is then inflated to create a wider passage for blood flow. During 1998 there were 18,094 coronary angioplasty procedures.
- Coronary stenting involves expanding metal mesh tubes within an artery to hold the artery open. It has been found to be successful in avoiding reblockage of arteries. Stents were inserted in 14,838 coronary angioplasty procedures in 1998; 82% of all coronary angioplasty procedures.

**For more information, see:**

AIHW 2001b. Heart, stroke and vascular diseases – Australian facts 2001. Canberra: AIHW, National Heart Foundation of Australia, National Stroke Foundation of Australia.



## Death rate for stroke



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Males	81.0	74.1	72.3	70.1	67.4	71.5	66.7	65.5	59.0	56.4	55.4
Females	73.7	69.5	64.9	63.1	62.2	61.9	59.7	57.7	53.0	50.9	50.1
<b>Total</b>	<b>77.6</b>	<b>72.5</b>	<b>68.8</b>	<b>66.8</b>	<b>65.2</b>	<b>66.5</b>	<b>63.3</b>	<b>61.5</b>	<b>56.2</b>	<b>53.7</b>	<b>52.9</b>

*Notes*

1. Stroke is classified according to the ICD-10 codes: I60–I69.
2. The death rates were age-adjusted using the total Australian population as at 30 June 1991.

*Source:* Estimates based on data derived from AIHW National Mortality Database.

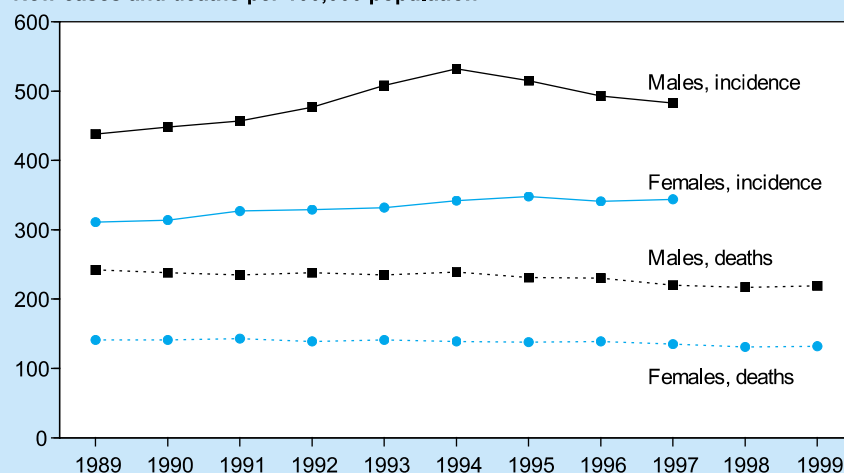
- Stroke, or cerebrovascular disease, is the second largest specific cause of death in Australia after coronary heart disease. In 1999, stroke killed 12,266 persons, at a rate of 53 per 100,000 persons. Most of the deaths occurred among people aged 75 and over.
- Death rates for stroke have declined over the past four decades by almost two-thirds among both males and females. Between 1989 and 1999, death rates for stroke continued to decline by 3.7% per year for both males and females.
- High blood pressure is the major risk factor for stroke. Other risk factors include tobacco smoking, heavy alcohol consumption, raised blood cholesterol and trygliceride levels, diabetes mellitus and history of heart disease. Physical inactivity, oral contraceptive use and being overweight may also contribute to stroke risk.
- Non-fatal stroke is the leading cause of long-term disability in adults. A stroke often damages parts of the brain responsible for speech and mobility.
- Over the past two decades, advances in medical technology have improved our understanding of stroke and have also led to improved treatment. However, the best method for reducing the burden of stroke in the population remains reduction in modifiable risk factors, particularly high blood pressure.

**For more information, see:**

AIHW 2001b. Heart, stroke and vascular diseases – Australian facts 2001. Canberra: AIHW, NHFA, NSFA.  
 Mathur S & Gajanayake I 1998. Surveillance of cardiovascular mortality in Australia 1985–1996. Canberra: AIHW.

## Incidence and death rates for all cancers

New cases and deaths per 100,000 population



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Incidence rate</b>											
Males	438	448	457	477	508	532	515	493	483		
Females	311	314	327	329	332	342	348	341	344		
<b>Total</b>	<b>361</b>	<b>368</b>	<b>379</b>	<b>389</b>	<b>405</b>	<b>422</b>	<b>418</b>	<b>405</b>	<b>403</b>		
<b>Death rate</b>											
Males	242	238	235	238	235	239	231	230	220	217	219
Females	141	141	143	139	141	139	138	139	135	131	132
<b>Total</b>	<b>182</b>	<b>181</b>	<b>181</b>	<b>181</b>	<b>180</b>	<b>181</b>	<b>177</b>	<b>177</b>	<b>171</b>	<b>168</b>	<b>169</b>

**Notes**

1. Cancers are classified according to the ICD-10 codes: C00–D48. The incidence rates do not include non-melanocytic skin cancers, ICD-10 code: C44.

2. The incidence and death rates were age-adjusted using the total Australian population as at 30 June 1991.

Sources: AIHW National Cancer Statistics Clearing House Database and State and Territory cancer registries.

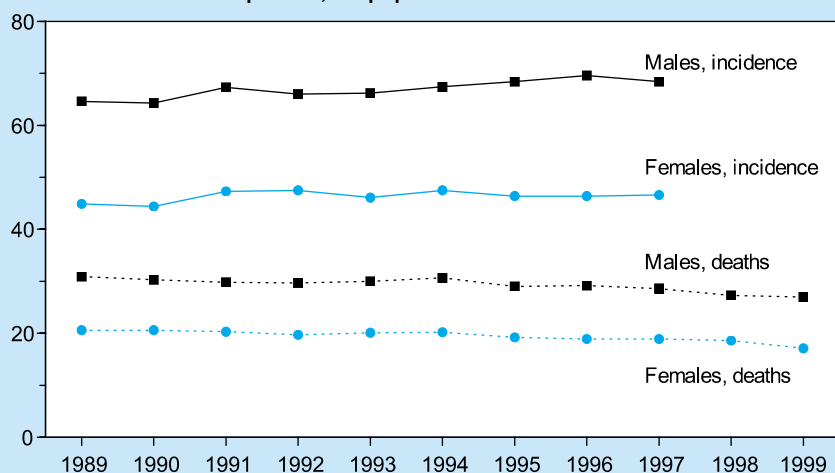
- Cancer describes a range of diseases in which abnormal cells multiply and spread out of control. Cancers are the second most important group of causes of death in Australia after cardiovascular disease, accounting for 28% of all deaths in Australia in 1999.
- The incidence rates for cancer among males increased to 1994, largely due to improved methods of detection for prostate cancer (see *Incidence and death rates for prostate cancer* on page 57). The rate for females is also increasing slowly, again due to increases in breast cancer detection.
- Cancer incidence also increases with age. At current rates, one in three males and one in four females will be directly affected by cancer in their first 75 years.
- The major types of cancers among males, both in terms of incidence and mortality, are lung, colorectal and prostate cancers. Among females, the major types are breast, colorectal and lung cancers.
- Death rates for all cancers combined have declined slowly since 1989. However, this does not reflect trends in death rates for specific forms of cancer, which show individual trends.

**For more information, see:**

AIHW & AACR 2000. *Cancer in Australia 1997*. Canberra: AIHW.

### Incidence and death rates for colorectal cancer

New cases and deaths per 100,000 population



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Incidence rate</b>											
Males	64.6	64.3	67.3	66.0	66.2	67.4	68.4	69.6	68.4		
Females	44.9	44.4	47.3	47.5	46.1	47.5	46.4	46.4	46.6		
<b>Total</b>	<b>53.6</b>	<b>53.1</b>	<b>56.3</b>	<b>55.6</b>	<b>55.2</b>	<b>56.4</b>	<b>56.5</b>	<b>57.0</b>	<b>56.6</b>		
<b>Death rate</b>											
Males	30.9	30.3	29.8	29.7	30.0	30.7	29.0	29.2	28.6	27.3	27.0
Females	20.6	20.6	20.3	19.7	20.1	20.2	19.2	18.9	18.9	18.6	17.1
<b>Total</b>	<b>24.9</b>	<b>24.8</b>	<b>24.5</b>	<b>24.0</b>	<b>24.4</b>	<b>24.9</b>	<b>23.5</b>	<b>23.5</b>	<b>23.2</b>	<b>22.5</b>	<b>21.6</b>

**Notes**

1. Colorectal cancer is classified according to the ICD-10 codes: C18–C21.

2. The incidence and death rates were age-adjusted using the total Australian population as at 30 June 1991.

Sources: AIHW National Cancer Statistics Clearing House Database and State and Territory cancer registries.

- Cancer of the colon and rectum, also known as colorectal or bowel cancer, is newly detected in over 6,000 males and 5,000 females each year. Excluding non-melanocytic skin cancer, colorectal cancer is the second most common cancer in both males and females, after prostate and breast cancer respectively.
- At current rates, 1 in 17 males and 1 in 26 females will be affected by colorectal cancer before the age of 75. The incidence rate for colorectal cancer increased slightly for both sexes between 1989 and 1997.
- In 1999, a total of 4,576 persons died of colorectal cancer, representing 12.8% of

all cancer deaths and 3.6% of total deaths. Between 1989 and 1999, the death rate fell by 1.4% per year.

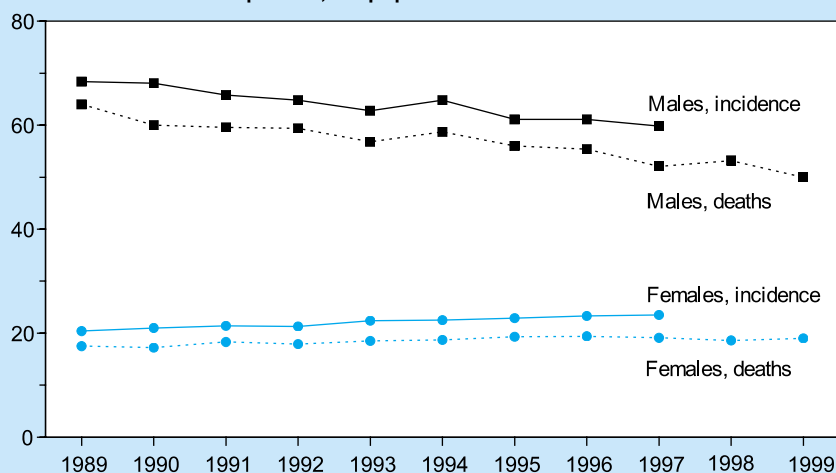
- Approximately 85% of cases occur in persons aged over 55 years. The risk of colorectal cancer is increased by a family history of the disease, a diet high in fat and low in vegetables, and physical inactivity.

**For more information, see:**

AIHW & AACR 2000. Cancer in Australia 1997. Canberra: AIHW.

## Incidence and death rates for cancer of the trachea, bronchus and lung

New cases and deaths per 100,000 population



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Incidence rate</b>											
Males	68.4	68.1	65.8	64.8	62.8	64.8	61.1	61.1	59.8		
Females	20.4	21.0	21.4	21.3	22.4	22.5	22.9	23.3	23.5		
<b>Total</b>	<b>41.5</b>	<b>41.8</b>	<b>41.1</b>	<b>40.7</b>	<b>40.4</b>	<b>41.3</b>	<b>39.9</b>	<b>40.2</b>	<b>39.6</b>		
<b>Death rate</b>											
Males	64.0	60.0	59.6	59.4	56.8	58.7	56.0	55.4	52.1	53.2	50.0
Females	17.5	17.2	18.3	17.9	18.5	18.7	19.3	19.4	19.1	18.6	19.0
<b>Total</b>	<b>37.7</b>	<b>35.9</b>	<b>36.4</b>	<b>36.2</b>	<b>35.3</b>	<b>36.3</b>	<b>35.4</b>	<b>35.3</b>	<b>33.6</b>	<b>33.9</b>	<b>32.7</b>

*Notes*

1. Cancer of the trachea, bronchus and lung is classified according to the ICD-10 codes: C33–C34.
2. The incidence and death rates were age-adjusted using the total Australian population as at 30 June 1991.

Sources: AIHW National Cancer Statistics Clearing House Database and State and Territory cancer registries.

- Cancer of the trachea, bronchus and lung, commonly referred to as lung cancer, is the most common cause of cancer deaths in Australia. In 1999, over 6,800 persons died from lung cancer, a death rate of 32.7 per 100,000 population.
- At current rates, 1 in 20 males and 1 in 46 females will be affected by lung cancer before the age of 75. In 1997, males were 2.5 times more likely than females to develop lung cancer, compared with 3.4 times in 1989.
- Although males have much higher lung cancer incidence and mortality rates than females, recent trends show decreasing

rates for males and increasing rates for females. Trends in lung cancer mortality largely reflect trends in incidence, because of a poor survival rate for this disease.

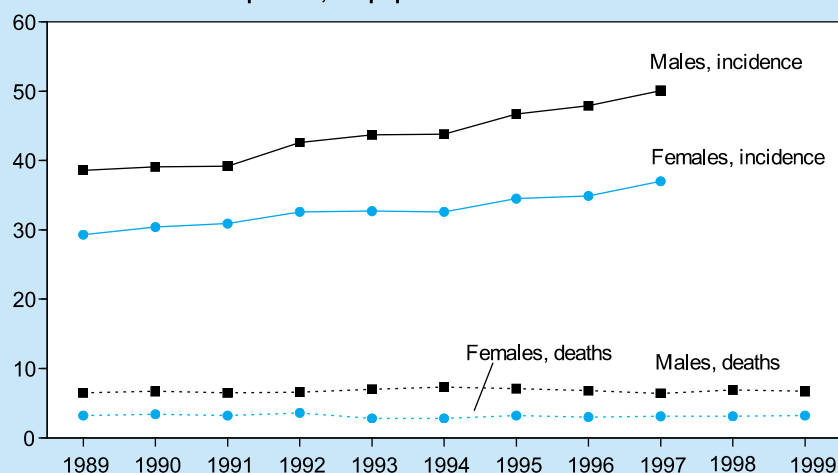
- Cigarette smoking is the single most important cause of lung cancer. A particular concern in this regard is the increasing level of smoking among young women, especially teenagers.

**For more information, see:**

AIHW & AACR 2000. Cancer in Australia 1997. Canberra: AIHW.

## Incidence and death rates for melanoma

New cases and deaths per 100,000 population



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Incidence rate</b>											
Males	38.6	39.1	39.2	42.6	43.7	43.8	46.7	47.9	50.1		
Females	29.3	30.4	30.9	32.6	32.7	32.6	34.5	34.9	37.0		
<b>Total</b>	<b>33.3</b>	<b>34.1</b>	<b>34.4</b>	<b>36.9</b>	<b>37.4</b>	<b>37.5</b>	<b>39.8</b>	<b>40.5</b>	<b>42.9</b>		
<b>Death rate</b>											
Males	6.5	6.7	6.5	6.6	7.0	7.3	7.1	6.8	6.4	6.9	6.7
Females	3.2	3.4	3.2	3.6	2.8	2.8	3.2	3.0	3.1	3.1	3.2
<b>Total</b>	<b>4.7</b>	<b>4.9</b>	<b>4.7</b>	<b>4.9</b>	<b>4.7</b>	<b>4.8</b>	<b>4.9</b>	<b>4.7</b>	<b>4.6</b>	<b>4.8</b>	<b>4.7</b>

*Notes*

1. Melanoma is classified according to the ICD-10 code: C43.

2. The incidence and death rates were age-adjusted using the total Australian population as at 30 June 1991.

Sources: AIHW National Cancer Statistics Clearing House Database and State and Territory cancer registries.

- Besides non-melanocytic skin cancer, melanoma is the fourth most common cause of cancer in males and the third most common cancer in females. Both the incidence rate and death rate are higher among males than females.
- Death rates for males and females have remained stable between 1989 and 1999, with 5-year relative survival at approximately 93%.
- The incidence rate of melanoma increased between 1989 and 1997—on average 3.3% per year for males and 3.0% for females. Incidence of melanoma among older age groups is increasing,

and is the result of excessive sun exposure that occurred many decades ago in childhood and early adulthood.

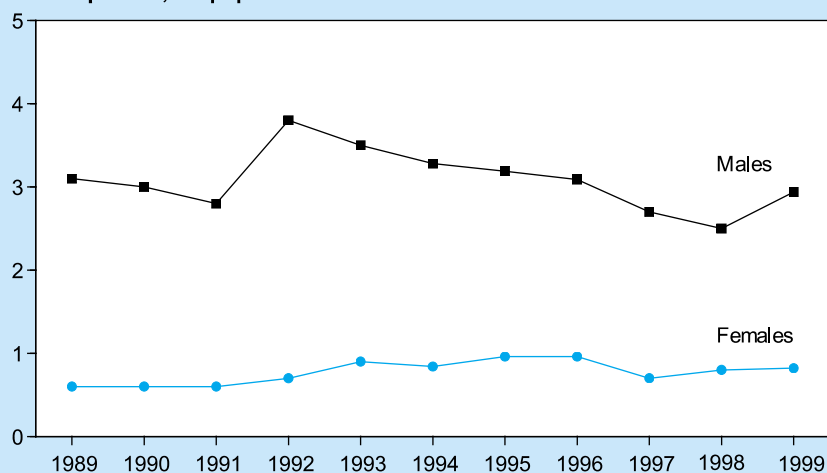
- Sun exposure is the main risk factor for melanoma. The incidence of melanoma is higher in people with fair, sun-sensitive skin and those with many pigmented naevi or moles on their skin.

**For more information, see:**

AIHW & AACR 2000. Cancer in Australia 1997. Canberra: AIHW.

# Incidence and death rates for non-melanocytic skin cancers

Deaths per 100,000 population



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Death rate</b>											
Males	3.1	3.0	2.8	3.8	3.5	3.3	3.2	3.1	2.7	2.5	2.9
Females	0.6	0.6	0.6	0.7	0.9	0.8	1.0	1.0	0.7	0.8	0.8
<b>Total</b>	<b>1.6</b>	<b>1.7</b>	<b>1.5</b>	<b>2.0</b>	<b>2.1</b>	<b>1.9</b>	<b>1.9</b>	<b>1.8</b>	<b>1.6</b>	<b>1.6</b>	<b>1.7</b>

**Notes**

1. Non-melanocytic skin cancer is classified according to the ICD-10 code: C44.
2. The incidence and death rates were age-adjusted using the total Australian population as at 30 June 1991.

Sources: AIHW National Cancer Statistics Clearing House Database; Anti-Cancer Council of Victoria, unpublished data.

- Non-melanocytic skin cancers (NMSC) are the most commonly occurring cancers in Australia. In males, NMSCs are about 30 times more common than lung cancer; in females, about 10 times more common than breast cancer.
- In 1990, the incidence rate for NMSC was 1,261 cases per 100,000 population. By 1995, the rate had risen slightly to 1,454 cases per 100,000 population. NMSC is more common in males; the 1995 rate was 1,831 cases per 100,000 population for males, and 1,096 for females.
- Provided NMSCs are treated early, they can usually be cured. Removal is normally simple and is often done in a doctor's surgery.
- Despite this, 266 males and 115 females died of NMSC in 1999. Almost 95% of

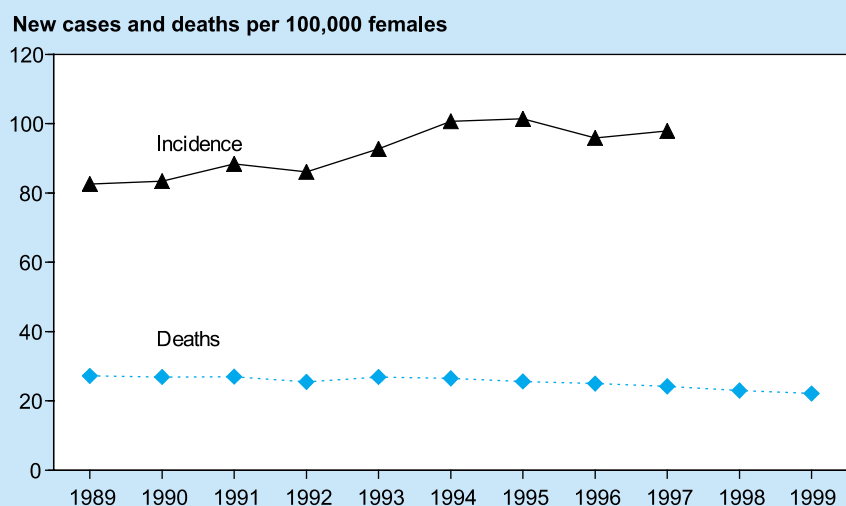
these persons were aged 55 years and over. The death rates for NMSC over the past decade have been relatively stable.

- Sun exposure is the main risk factor for NMSCs. Fair-skinned people who tan poorly are at highest risk. As with melanoma, sun exposure early in life may contribute strongly to the development of these cancers.
- Cancer registries do not routinely collect information on the incidence of NMSC as they do for melanoma.

**For more information, see:**

AIHW & AACR 2000. Cancer in Australia 1997. Canberra: AIHW.

## Incidence and death rates for breast cancer



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Incidence rate	82.6	83.4	88.4	86.1	92.7	100.7	101.4	95.9	97.9		
Death rate	27.2	26.9	27.0	25.5	26.9	26.5	25.6	25.0	24.2	23.0	22.1

*Notes*

- Breast cancer is classified according to the ICD-10 code: C50.
- The incidence and death rates were age-adjusted using the total Australian population as at 30 June 1991.

Sources: AIHW National Cancer Statistics Clearing House Database and State and Territory cancer registries.

- Breast cancer is the second most common cancer in females (excluding NMSC) and is the most common cause of female cancer-related deaths.
- In 1997, there were 10,096 newly diagnosed cases of breast cancer among Australian females. The incidence rate for breast cancer rose by 2.1% per year between 1989 and 1997, from 82.6 to 97.9 per 100,000 female population. This trend is partly attributable to increased awareness and improved detection of breast cancer, especially since the introduction of the BreastScreen Australia Program in 1991.
- There was no apparent change in the death rate for breast cancer between 1989 and 1993. Since then, the rate has fallen slightly.
- In 1999, breast cancer accounted for a total of 2,505 deaths in Australia, or 16% of all female cancer deaths. The risk of

breast cancer is higher in women with a family history of the disease, those who have never borne children, those whose first full-term pregnancy was later in their reproductive life, those with a history of benign breast disease, and those who have had high exposure to ionising radiation.

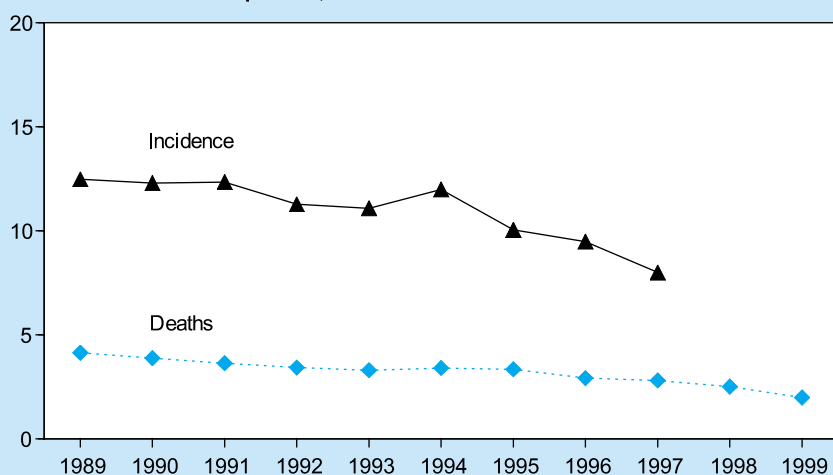
- Early detection and treatment of breast cancer is known to improve survival, with 79% of women diagnosed with breast cancer in 1990 still alive in 1995. Since 1984, breast cancer relative survival proportions have increased with each successive year of diagnosis.

**For more information, see:**

AIHW 2000c. BreastScreen Australia achievement report 1997-1998. Canberra: AIHW.

## Incidence and death rates for cervical cancer

New cases and deaths per 100,000 females



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Incidence rate	12.5	12.3	12.3	11.3	11.1	12.0	10.0	9.5	8.0		
Death rate	4.1	3.9	3.6	3.4	3.3	3.4	3.3	2.9	2.8	2.5	2.0

*Notes*

1. Cervical cancer is classified according to the ICD-10 code: C53.
2. The incidence and death rates were age-adjusted using the total Australian population as at 30 June 1991.

*Sources:* AIHW National Cancer Statistics Clearing House Database and State and Territory cancer registries.

- Cervical cancer is the eleventh most common cancer (excluding NMSC) in women. Almost 800 new cases occur annually. In 1999, 220 women died from cervical cancer.
- The incidence of cervical cancer has shown a downward trend since the 1960s. The decline coincides with the introduction of the Papanicolaou (Pap) smear test, which is known to be effective in identifying pre-cancerous abnormalities. Between 1989 and 1997, the incidence of cervical cancer declined by 24%.
- The death rate for cervical cancer has also decreased for more than two decades. Between 1989 and 1999 alone, the death rate declined by over 50%. Early detection of both pre-cancerous and cancerous lesions and better management have contributed to this consistent decline.
- Women living in remote regions have higher death rates for cervical cancer, due partly to lower rates of cervical screening and early detection.
- The National Cervical Screening Program, introduced in 1991, encourages and supports higher participation rates in cervical cancer screening, development of comprehensive reminder systems and improved quality assurance measures in screening for the prevention of cervical cancer.

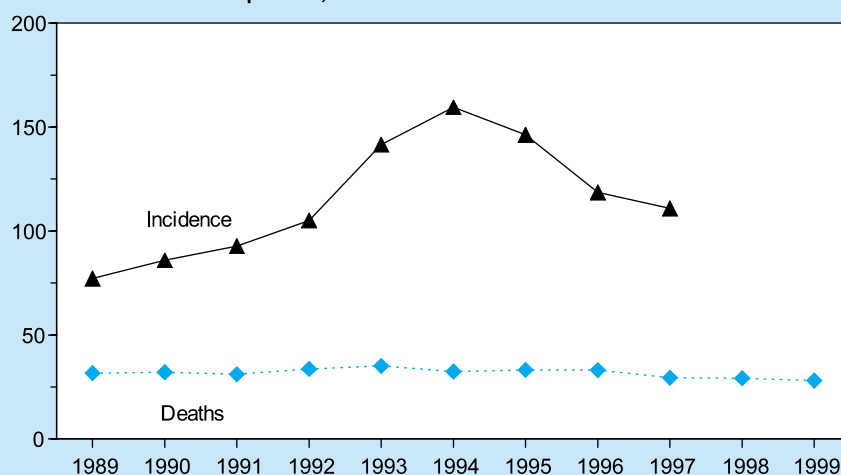
**For more information, see:**

Jelfs P 1995. Cervical cancer in Australia. Canberra: AIHW.  
 AIHW 2000d. Cervical screening in Australia 1997-1998. Canberra: AIHW.



### Incidence and death rates for prostate cancer

New cases and deaths per 100,000 males



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Incidence rate	77.2	85.9	92.7	105.1	141.6	159.5	146.3	118.6	110.9		
Death rate	31.7	32.1	31.1	33.7	35.1	32.4	33.2	33.1	29.4	29.2	28.1

*Notes*

1. Prostate cancer is classified according to the ICD-10 code: C61.
2. The incidence and death rates were age-adjusted using the total Australian population as at 30 June 1991.

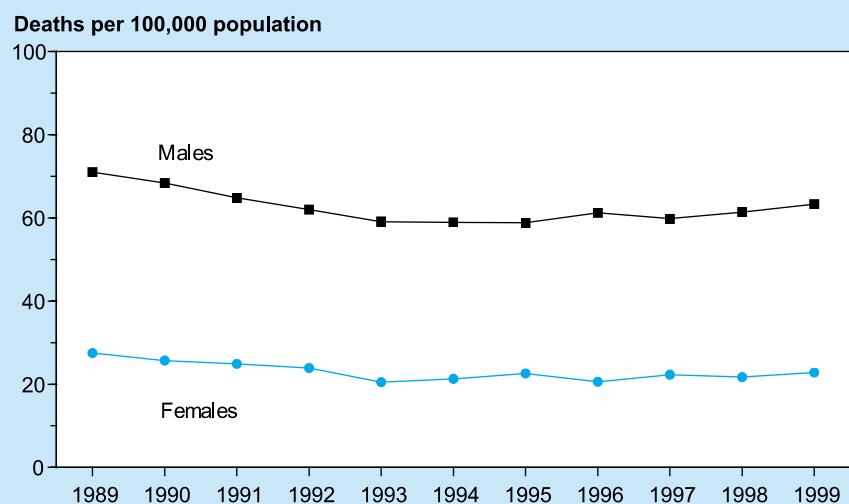
*Sources:* AIHW National Cancer Statistics Clearing House Database and State and Territory cancer registries.

- Prostate cancer is one of the most common forms of cancer among males in Australia, exceeded only by NMSC. A total of 9,725 new cases of prostate cancer were detected among Australian males in 1997.
- Age is a major risk factor for prostate cancer; in 1997, almost 90% of cases occurred in males aged 60 years or more.
- In 1997, prostate cancer accounted for 23% of all new cancers detected among males. The lifetime risk of developing prostate cancer is 1 in 11 and of dying from it before age 75 is 1 in 73.
- There was a sharp increase in the incidence of prostate cancer in the early 1990s, attributed largely to improved screening and increased detection rates, especially following the introduction of the prostate-specific antigen (PSA) test.
- The downturn after 1994 reflects a return towards an underlying rate which removes the effect of previously undetected cases, as well as a reduction in the number of PSA tests conducted.
- Death rates for prostate cancer have remained relatively stable, declining slightly from the 1993 rate of 35.1 deaths per 100,000 males to be 28.1 deaths per 100,000 males in 1999.

**For more information, see:**

AIHW & AACR 2000. *Cancer in Australia 1997*. Canberra: AIHW.  
 DHFS & AIHW 1998a. *National Health Priority Areas report: cancer control 1997*. Canberra: DHFS & AIHW.

### Death rate for all causes of injury



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Males	71.0	68.4	64.8	62.0	59.1	58.9	58.8	61.2	59.8	61.4	63.3
Females	27.5	25.7	24.9	23.9	20.5	21.3	22.6	20.6	22.3	21.7	22.8
<b>Total</b>	<b>48.9</b>	<b>46.7</b>	<b>44.6</b>	<b>42.6</b>	<b>39.4</b>	<b>39.7</b>	<b>40.4</b>	<b>40.5</b>	<b>40.8</b>	<b>41.3</b>	<b>42.7</b>

*Notes*

1. Injuries are classified according to the ICD-10 codes: V01–Y98.
2. The death rates were age-adjusted using the total Australian population as at 30 June 1991.

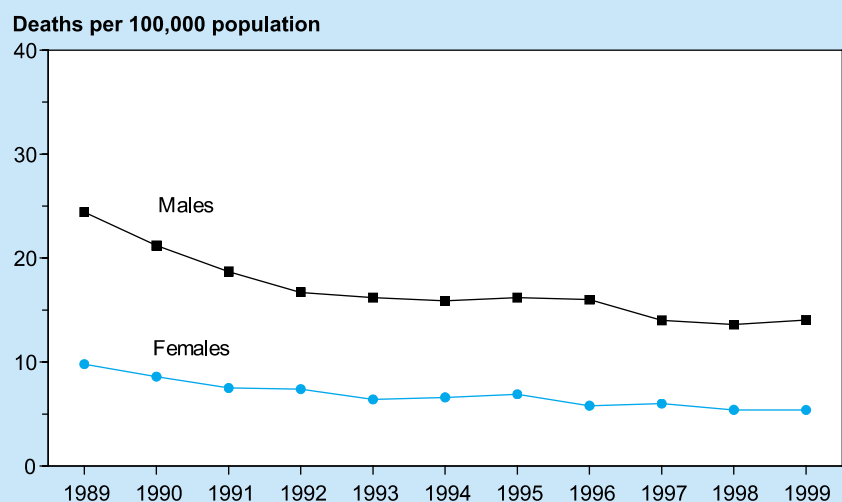
*Source:* Estimates based on data derived from AIHW National Mortality Database.

- Injury is a leading cause of morbidity, disability and mortality in Australia. Approximately 15% of people with a disability in Australia attribute their disabling condition to an injury or accident. In 1999, injury accounted for 8,361 deaths or 6.5% of all deaths.
- Injury death rates vary with age, sex and location. It is the leading cause of death among males aged between 20 and 29 years, and accounts for about half of all deaths in males aged between 1 and 39 years.
- Death rates among males are consistently two to three times higher than among females. Death rates are also much higher in rural and remote areas of Australia, and among Indigenous population groups.
- Although the death rate for injury fell over the decade from 1989 to 1999, much of the decline occurred between 1989 and 1993, declining from 48.9 deaths per 100,000 population to 39.4 deaths per 100,000 population—a fall of 5.3% per year on average. Rates have shown a slight increase since 1993.
- Road deaths, falls, homicide and suicide are responsible for the greater proportion of injury deaths. The predominance of the type of injury varies significantly with age.

**For more information, see:**

DHFS & AIHW 1998b. National Health Priority Areas report: injury prevention and control 1997. Canberra: DHFS & AIHW.

### Death rate for road vehicle accidents



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Males	24.4	21.2	18.7	16.7	16.2	15.9	16.2	16.0	14.0	13.6	14.0
Females	9.8	8.6	7.5	7.4	6.4	6.6	6.9	5.8	6.0	5.4	5.4
<b>Total</b>	<b>17.0</b>	<b>14.8</b>	<b>13.0</b>	<b>12.0</b>	<b>11.2</b>	<b>11.2</b>	<b>11.5</b>	<b>10.8</b>	<b>9.9</b>	<b>9.4</b>	<b>9.7</b>

*Notes*

1. Road vehicle accidents are classified according to the ICD-10 codes: V01–V87.
2. The death rates were age-adjusted using the total Australian population as at 30 June 1991.

*Source:* Estimates based on data derived from AIHW National Mortality Database.

- For most of the twentieth century, road deaths accounted for a large proportion of injury deaths in Australia. Fatality rates rose steeply during the 1950s and 1960s, peaking in 1970. Since then, rates have declined considerably, notwithstanding an increase in road travel per person.
- Between 1989 and 1999, the road accident death rate fell from 17.0 deaths per 100,000 population to 9.7 deaths, a decline of 5.5% per year on average. Much of the decline occurred between 1989 and 1992.
- Death rates are particularly high among 15–24-year-old males, at almost three times the rate for the total population. Road vehicle accidents are the leading cause of death among males in this age group.
- Road accidents are a much greater cause of death in rural and remote areas than in metropolitan areas, at almost three times the rate for capital cities.
- The decline in death rates can be attributed to a range of interventions designed to improve road safety. These include better road design, lower speed limits, compulsory use of seat belts and helmets, and more stringent controls on driving while under the influence of alcohol.

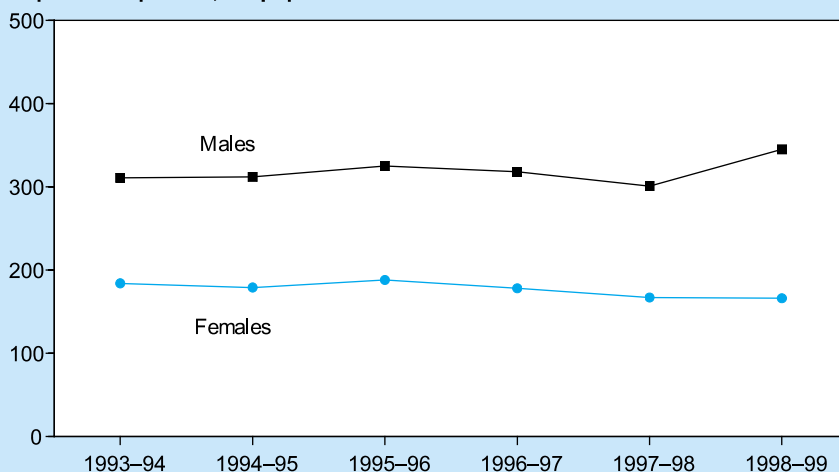
**For more information, see:**

FORS 1999. Road fatalities Australia, 1998 statistical summary. Canberra: FORS.

Bordeaux S & O'Connor P 1996. Road injury in Australia, 1992. Adelaide: AIHW National Injury Surveillance Unit.

## Hospital separation rate for road vehicle accidents

Separations per 100,000 population



	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99
Males	311	312	325	318	301	345
Females	184	179	188	178	167	166
<b>Total</b>	<b>248</b>	<b>248</b>	<b>257</b>	<b>248</b>	<b>234</b>	<b>256</b>

**Notes**

- Road vehicle accidents are classified according to the ICD-9-CM codes E810-E819, E826-E829 for 1993-94 to 1997-98. In 1998-99, road vehicle accidents were classified according to the ICD-10-AM external cause codes V01-V89, where the principal diagnosis was an injury or poisoning (S800-T98, Z04.1-Z04.5).
- The rates were age-adjusted using the total Australian population as at 30 June 1991.

Source: Estimates based on data derived from AIHW National Hospital Morbidity Database.

- The road toll, usually described in terms of deaths, often hides the real impact of road vehicle accidents. In Australia, for every death in a road vehicle accident, there are approximately 25 episodes of hospitalisation, with accompanying physical and psychological distress and health system costs.
- In 1998-99, there were over 47,000 hospitalisations due to road vehicle-related injuries, at a rate of 256 per 100,000 population.
- The male rate of hospitalisation was more than double the female rate. Young males aged 15-24 were most at risk, with over 9,000 cases yearly, accounting for 20% of all road vehicle injury hospitalisations.
- Between 1993-94 and 1998-99, road vehicle-related hospitalisations increased

by about 3%, although most of the increase occurred between 1997-98 and 1998-99. This was in contrast to the death rate for road vehicle accidents, which fell by 16% between 1993 and 1998 (see *Death rate for road vehicle accidents* on page 59).

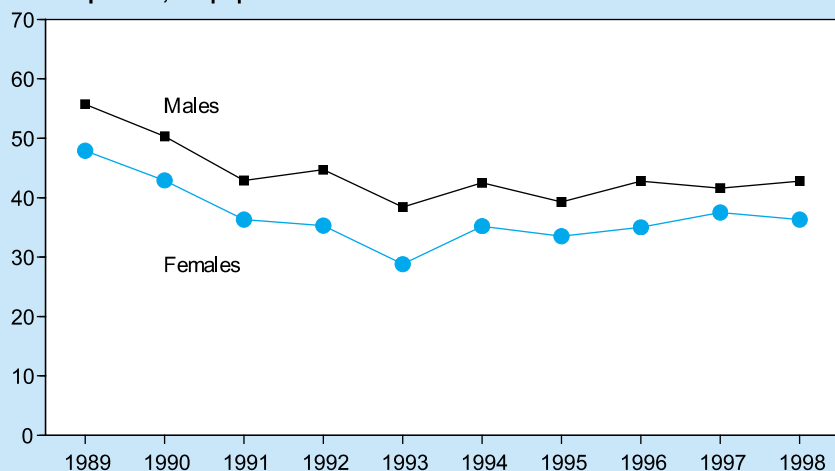
- Rates of hospitalisation for road vehicle accidents are much higher in rural and remote areas than in metropolitan areas. Factors such as the number of vehicle kilometres travelled, road quality, and fatigue contribute to these higher rates.

**For more information, see:**

DHFS & AIHW 1998b. National Health Priority Areas report: injury prevention and control 1997. Canberra: DHFS & AIHW.

### Death rate for accidental falls among persons aged 65 and over

Deaths per 100,000 population



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Males	55.7	50.3	42.9	44.7	38.4	42.5	39.3	42.8	41.6	42.8
Females	47.9	42.9	36.3	35.3	28.8	35.2	33.5	35.0	37.5	36.3
<b>Total</b>	<b>51.1</b>	<b>45.4</b>	<b>38.9</b>	<b>39.1</b>	<b>32.3</b>	<b>38.2</b>	<b>35.7</b>	<b>38.2</b>	<b>39.2</b>	<b>38.9</b>

*Notes*

1. Accidental falls are classified according to the ICD-10 codes: W00–W19.
2. The death rates were age-adjusted using the total Australian population as at 30 June 1991.

*Source:* Estimates based on data derived from AIHW National Mortality Database.

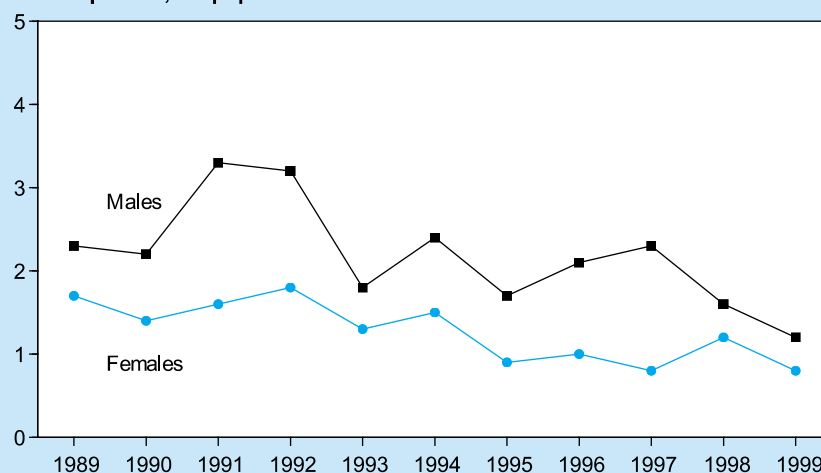
- In the over 65 years age group, a large proportion of deaths due to external causes result from falls, mainly because of complications which develop after the fall. The proportion rises with age, from about 15% of deaths due to external causes among people aged 65–69 years, to about 75% among those aged 85 years and over.
- Approximately one-third of older people have falls each year. Although most of these falls do not result in injuries that require hospital care, nonetheless falls accounted for 3.8% of all hospital separations in persons aged 65 and over in 1995–96. The proportion was higher among females (5.5%) than males (2.1%), with post-menopausal osteoporosis being a major risk factor.
- Fractures are the most common serious injury resulting from falls, with hip fractures the most significant in terms of mortality and serious impairment. More females than males die as a result of a fall. In 1998 alone, 617 female and 397 male deaths among those aged 65 years and over were related to the after-effects of falls.
- The death rates for falls at ages 65 and over declined overall during the period from 1989 to 1993. However, from 1993 to 1998 the rates increased slightly.

**For more information, see:**

DHFS & AIHW 1998b. National Health Priority Areas report: injury prevention and control 1997. Canberra: DHFS & AIHW.

### Death rate for accidents due to fire, burns and scalds among persons aged 55 and over

Deaths per 100,000 population



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Males	2.3	2.2	3.3	3.2	1.8	2.4	1.7	2.1	2.3	1.6	1.2
Females	1.7	1.4	1.6	1.8	1.3	1.5	0.9	1.0	0.8	1.2	0.8
<b>Total</b>	<b>1.9</b>	<b>1.8</b>	<b>2.3</b>	<b>2.4</b>	<b>1.5</b>	<b>1.8</b>	<b>1.3</b>	<b>1.5</b>	<b>1.4</b>	<b>1.4</b>	<b>0.9</b>

*Notes*

1. Accidents due to fire, burns and scalds are classified according to the ICD-10 codes: X00-X19.
2. The death rates were age-adjusted using the total Australian population as at 30 June 1991.

*Source:* Estimates based on data derived from AIHW National Mortality Database.

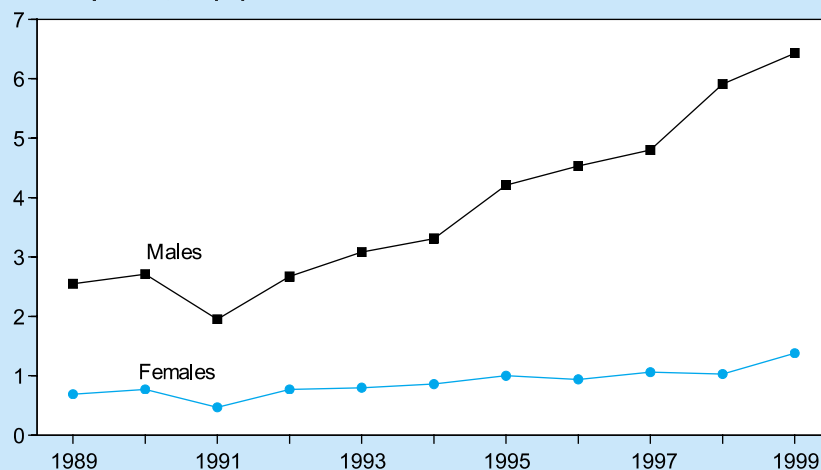
- Fire, burns and scalds account for a relatively small proportion of injury deaths. However, the economic and long-term physical and social effects of serious burn and scald injuries highlight the need for regular monitoring and more extensive preventive action.
- Older people and young children are particularly at risk of serious injury and death due to fire, burns and scalds. Overall, about 1.2% of external causes of death are attributed to these causes. This proportion is one-fifth as much again (1.4%) among people aged 55 and over.
- Males have a higher death rate for these causes than do females. Rates are particularly high among males living in remote areas.
- Death rates for fire, burns and scalds have declined since the early 1990s among both males and females aged 55 and over.
- The rate among males fell from 3.3 deaths per 100,000 population in 1991 to 1.2 in 1999, a decline of 10% per year. In the same period, the rate among females fell from 1.6 per 100,000 population to 0.8, an average decline of 4% per year. However, some of this decline may be due to a redistribution of deaths to other causes occurring after the introduction of ICD-10.

**For more information, see:**

DHFS & AIHW 1998b. National Health Priority Areas report: injury prevention and control 1997. Canberra: DHFS & AIHW.

### Death rate from overdose of heroin, methadone or other opiates

Deaths per 100,000 population



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Males	2.6	2.7	2.0	2.7	3.1	3.3	4.2	4.5	4.8	5.9	6.4
Females	0.7	0.8	0.5	0.8	0.8	0.7	1.0	0.9	1.1	1.0	1.4
<b>Total</b>	<b>1.6</b>	<b>1.8</b>	<b>1.2</b>	<b>1.7</b>	<b>2.0</b>	<b>2.1</b>	<b>2.6</b>	<b>2.7</b>	<b>2.9</b>	<b>3.5</b>	<b>3.9</b>

*Notes*

1. Deaths from heroin, methadone and other opiates overdose are classified according to ICD-10 codes: F11, X42.
2. The death rates were age-adjusted using the total Australian population as at 30 June 1991.

*Source:* Estimates based on data derived from AIHW National Mortality Database.

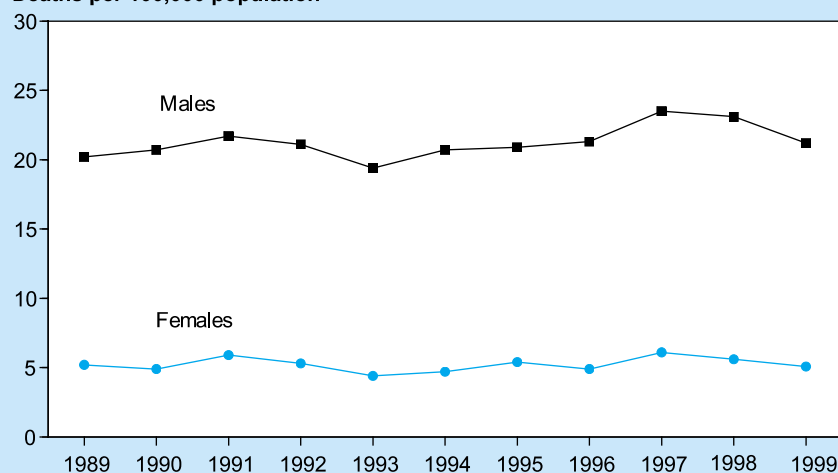
- The illicit use of opiates and related narcotics such as heroin, methadone and morphine is a high-profile public health problem. Besides deaths, there are numerous other economic, social and health costs associated with illicit drug use.
- Opiate use is identified as a major social problem by large sections of the population, although relatively few persons have actually tried or regularly use these drugs.
- The 1998 National Drug Strategy Household Survey determined that some 2% of the adult population had used heroin at least once in the past.
- Deaths constitute an important indicator of the impact of illicit drug use. It is estimated that, in 1999 alone, there were almost 600 male and over 100 female opiate-related deaths, at a rate of 3.9 deaths per 100,000 persons.
- Deaths from heroin, methadone and other opiates have trebled since 1991 among both males and females, with male deaths outnumbering female deaths at a rate of almost five to one.
- Determining exact numbers of deaths due to opiate overdose is problematic, since the use of heroin may be combined with other drugs such as alcohol or other central nervous system depressants.

**For more information, see:**

Hall WD, Degenhardt LJ & Lynskey MT 1999. Opioid overdose mortality in Australia, 1964-1997: birth-cohort trends. *Medical Journal of Australia* 171: 34-37.

### Death rate for suicide and self-inflicted injury

Deaths per 100,000 population



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Males	20.2	20.7	21.7	21.1	19.4	20.7	20.9	21.3	23.5	23.1	21.2
Females	5.2	4.9	5.9	5.3	4.4	4.7	5.4	4.9	6.1	5.6	5.1
<b>Total</b>	<b>12.5</b>	<b>12.7</b>	<b>13.7</b>	<b>13.1</b>	<b>11.7</b>	<b>12.6</b>	<b>13.0</b>	<b>13.0</b>	<b>14.6</b>	<b>14.3</b>	<b>13.0</b>

*Notes*

1. Suicide and self-inflicted injury is classified according to the ICD-10 codes: X60–X84.
2. The death rates were age-adjusted using the total Australian population as at 30 June 1991.

*Source:* Estimates based on data derived from AIHW National Mortality Database.

- Suicide and attempted suicide are commonly used as proxy indicators of the extent of mental illness in a population, since mental disorder, and specifically depression, are major risk factors for suicide. These are often expressions of breakdown in social integration and cohesion.
- Suicide is an important cause of death in Australia, in particular among young people. In 1999, there were 2,002 male and 490 female deaths in Australia, at a rate of 13.0 per 100,000 population. The rate of suicide increased between 1993 and 1997, and has since declined slightly.
- Suicide rates are three to four times higher among males than females across all age groups. Males aged 20–44 years and 70 years and over are at highest risk.

Rates are higher among males living in rural and remote areas, among Indigenous males and among females born overseas. Rates for males born overseas were notably lower than for Australian-born males.

- More people attempt than complete suicide. Admissions to hospital because of intentional self-injury are about 10 times as common as deaths due to suicide. This is particularly the case among young females.

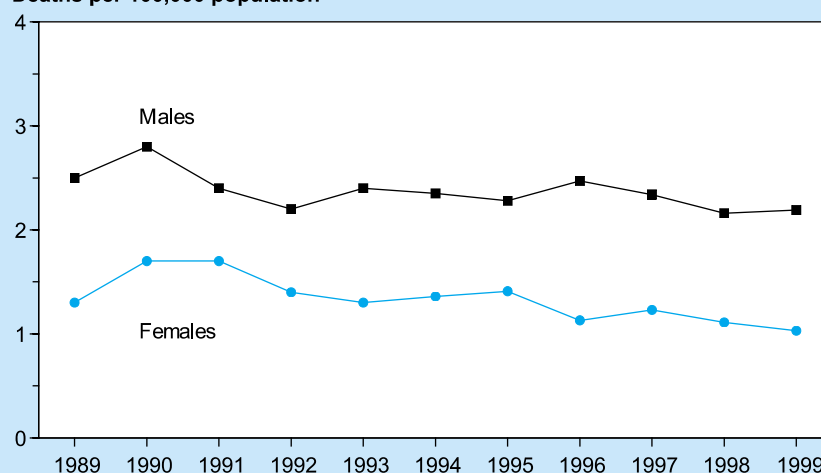
**For more information, see:**

DHAC & AIHW 1999. National Health Priority Areas report: mental health 1998. Canberra: DHAC & AIHW.



### Death rate for homicide and injury purposely inflicted by other persons

Deaths per 100,000 population



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Males	2.5	2.8	2.4	2.2	2.4	2.4	2.3	2.5	2.3	2.2	2.2
Females	1.3	1.7	1.7	1.4	1.3	1.4	1.4	1.1	1.2	1.1	1.0
<b>Total</b>	<b>1.9</b>	<b>2.3</b>	<b>2.0</b>	<b>1.8</b>	<b>1.9</b>	<b>1.9</b>	<b>1.9</b>	<b>1.8</b>	<b>1.8</b>	<b>1.7</b>	<b>1.6</b>

*Notes*

1. Homicide is classified according to the ICD-10 codes: X85–Y09.
2. The death rates were age-adjusted using the total Australian population as at 30 June 1991.

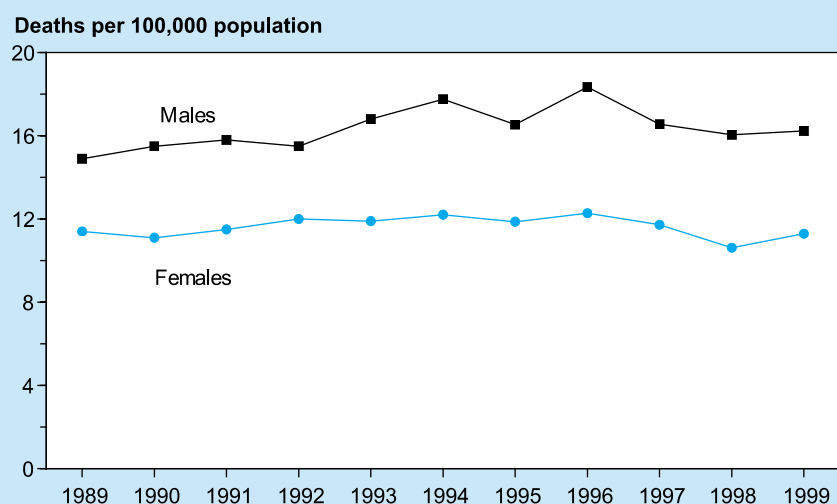
*Source:* Estimates based on data derived from AIHW National Mortality Database.

- Fatal outcomes of intentional injuries, or homicides, constitute a proxy indicator of the nature and extent of interpersonal violence in the population. The homicide rate also reflects, in part, the degree of access to firearms and other lethal weapons.
- In 1999, 204 males and 96 females died as a result of interpersonal violence, at rates of 2.2 and 1.0 deaths per 100,000 population respectively. Homicide accounted for 3.6% of all injury-related deaths in 1999.
- Between 1990 and 1999, the death rate for homicide declined slightly from 2.3 to 1.6 deaths per 100,000 population. Cause-specific analysis, however, shows increased rates of homicide due to stabbing and firearms since the mid-1980s.
- The homicide rates are highest in early and middle adult years and lowest in mid-childhood and among the elderly. Babies and toddlers are at greater risk from death due to abuse and violence than older children.
- Homicides are not distributed evenly in the population, and have a much greater rate of occurrence among males, the young and Indigenous people, particularly those living in rural and remote areas.

**For more information, see:**

DHFS & AIHW 1998b. National Health Priority Areas report: injury prevention and control 1997. Canberra: DHFS & AIHW.

### Death rate for diabetes



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Males	14.9	15.5	15.8	15.5	16.8	17.8	16.5	18.3	16.6	16.1	16.2
Females	11.4	11.1	11.5	12.0	11.9	12.2	11.9	12.3	11.7	10.6	11.3
<b>Total</b>	<b>12.9</b>	<b>13.0</b>	<b>13.2</b>	<b>13.5</b>	<b>14.0</b>	<b>14.5</b>	<b>13.9</b>	<b>14.9</b>	<b>13.8</b>	<b>13.0</b>	<b>13.5</b>

*Notes*

1. Diabetes, as an underlying cause of death, is classified according to the ICD-10 codes: E10–E14.
2. The death rates were age-adjusted using the total Australian population as at 30 June 1991.

*Source:* Estimates based on data derived from AIHW National Mortality Database.

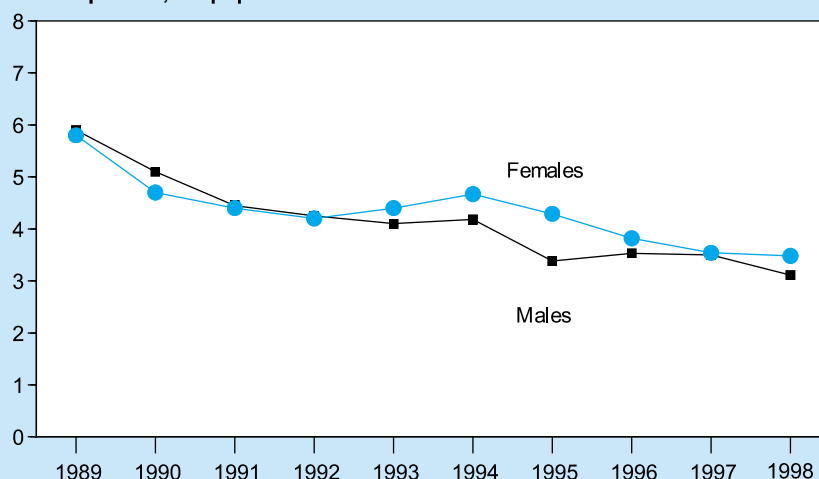
- Diabetes is both an important cause of death and a contributing factor to several other causes of death in Australia. Persons with diabetes are at an increased risk of end-stage renal disease and several other leading causes of morbidity and mortality such as heart, stroke and vascular diseases. Its poor management also increases the risk of several life-threatening infections.
- In 1999, diabetes was cited as the underlying cause of 2,947 deaths, accounting for 2.3% of all deaths. It was the seventh leading cause of death that year, with an age-standardised death rate of 13.5 per 100,000 persons.
- Mortality from diabetes has been relatively stable over the past decade, with the male rate higher than the female rate. However, the impact of diabetes mortality is consistently underestimated, because it is often reported as an associated rather than an underlying cause of death.
- The prevalence of Type 2, or non-insulin-dependent diabetes mellitus (NIDDM), is rising in Australia. It is one of the most common chronic diseases among people aged 40 years and over, and currently affects about 4% of the Australian population.
- Type 2 diabetes has a strong genetic component. Other risk factors include obesity, physical inactivity and diet. Several of the risk factors are potentially modifiable, with sufficient scope for early prevention of the disease and its complications.

**For more information, see:**

Mathur S, Gajanayake I & Hodgson G 2000. Diabetes as a cause of death, Australia 1997 and 1998. Canberra: AIHW.

## Death rate for asthma

Deaths per 100,000 population



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Males	5.9	5.1	4.4	4.2	4.1	4.2	3.4	3.5	3.5	3.1
Females	5.8	4.7	4.4	4.2	4.4	4.7	4.3	3.8	3.5	3.5
<b>Total</b>	<b>5.8</b>	<b>4.9</b>	<b>4.3</b>	<b>4.3</b>	<b>4.3</b>	<b>4.4</b>	<b>3.9</b>	<b>3.7</b>	<b>3.5</b>	<b>3.3</b>

*Notes*

1. Asthma is classified according to the ICD-10 codes: J45, J46.
2. The death rates were age-adjusted using the total Australian population as at 30 June 1991.

*Source:* Estimates based on data derived from AIHW National Mortality Database.

- Asthma is a major public health problem, both in terms of quality of life and economics. The prevalence of asthma is difficult to ascertain, but it is generally accepted that about 1 in 5 children and 1 in 10 adults have asthma. One in 11 Australians reported having asthma as a long-term condition during the 1995 ABS National Health Survey.
- In 1995, asthma was also the most common cause for hospitalisation among those of school age or younger. Although more children suffer from the disease than adults, deaths from asthma generally increase with age in both males and females.
- Asthma was responsible for 685 deaths in 1998. Death rates for asthma peaked in 1989, and have generally fallen since then, at an average rate of 6% per year to 1998. No major difference is noted in death rates for asthma between males and females.
- The rates have shown similar declines between 1989 and 1998. Recent downward trends in asthma-related deaths reflect timely recognition and improvements in management of asthma episodes.
- It has been estimated that up to 60% of all asthma deaths may be associated with avoidable factors such as exposure to cigarette smoke and to cat and house dust allergens.

**For more information, see:**

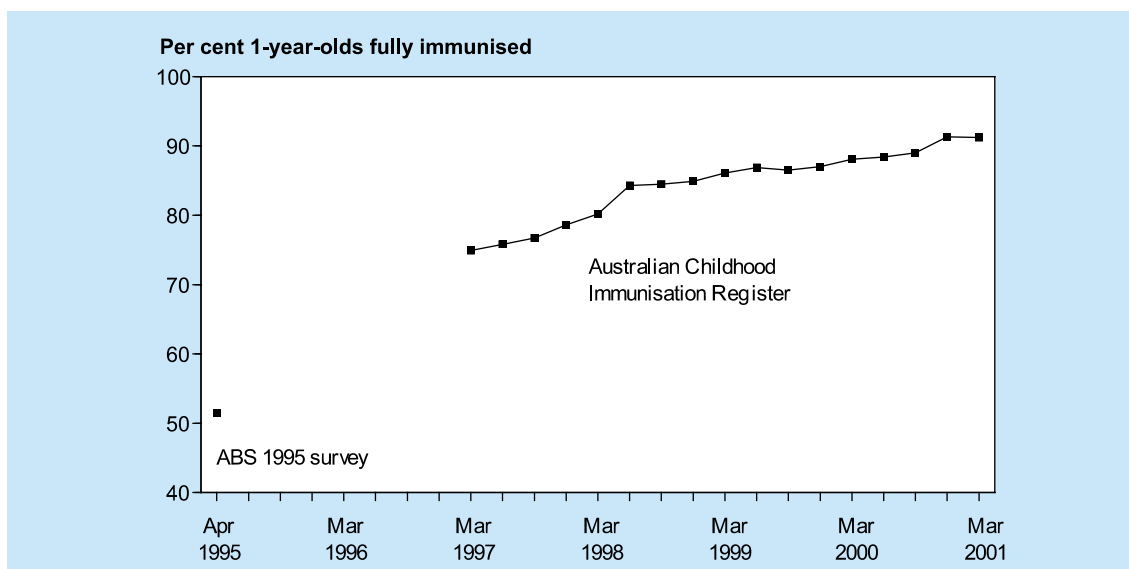
Strong K, de Looper M & Magnus P 1998. Asthma mortality in Australia, 1980–1996. Australian Health Review 21: 255–63.



# 6 Health determinants and risk factors

- Proportion of 1-year-olds fully immunised
- Incidence rates for pertussis, measles and meningococcal disease
- Newly diagnosed HIV infection
- Incidence and death rates for AIDS
- Notification rates for sexually transmitted diseases
- Rates of new and reactivated cases of tuberculosis
- Apparent consumption of fats
- Apparent consumption of fruit and vegetables
- Apparent consumption of sugars
- Proportion of 25–64-year-olds who are considered overweight
- Proportion of 25–64-year-olds with high total blood cholesterol
- Proportion of 25–64-year-olds who drink alcohol at hazardous or harmful levels
- Proportion of 25–64-year-olds engaged in physical activity
- Proportion of persons aged 16 years and over who currently smoke
- Proportion of 25–64-year-olds with high blood pressure

## Proportion of 1-year-olds fully immunised



	Diphtheria, tetanus and pertussis	Poliomyelitis	Haemophilus influenzae type b (Hib)	All
ABS, April 1995	86.2	86.3	62.3	51.4
ACIR, March 1997	77.4	77.2	77.2	74.9
ACIR, March 2001	91.5	91.4	94.6	91.2

*Note:* ABS April 1995 value for diphtheria, tetanus and pertussis is for pertussis only. Immunisation coverage for diphtheria and tetanus is 88.5%. The proportion fully immunised (51.4%) includes Hib, which was added to vaccination schedule in April 1993. The proportion fully immunised excluding Hib is 70.8%.

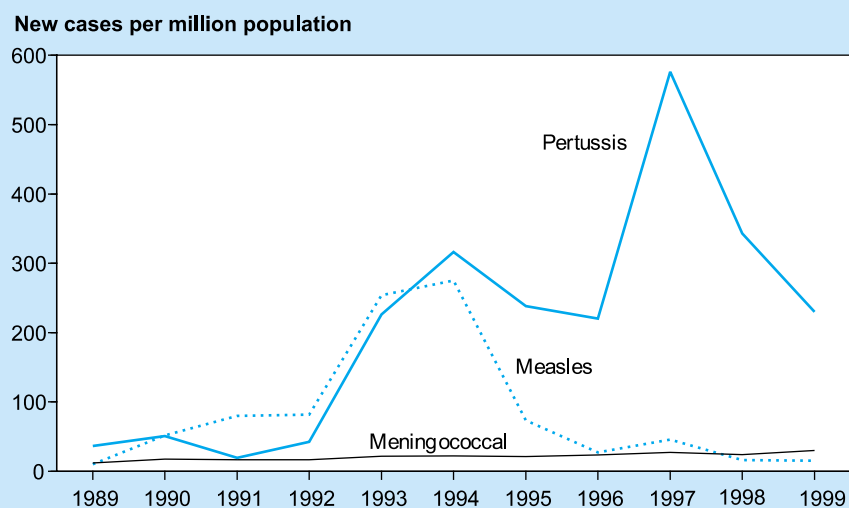
*Sources:* ABS 1996; Communicable Diseases Network—Australia 2001 (and previous issues).

- Immunisation is an effective public health intervention which protects children against a number of harmful diseases that can cause serious complications or death.
- Failure to immunise may result from parental fear of adverse reactions, ignorance about disease risks or insufficient emphasis being placed on the need to immunise by health professionals.
- Levels of immunisation identified in a 1995 ABS national survey raised concerns. This, combined with a number of outbreaks of preventable childhood diseases, highlighted the need to redouble immunisation efforts.
- Following the endorsement of initiatives designed to increase immunisation coverage rates in Australia, an Australian Childhood Immunisation Register (ACIR) was established. The Register commenced operation on 1 January 1996.
- At the end of the first quarter of 2001, 91% of 1-year-old children had fully completed their immunisation schedule. The equivalent figure in 1997 was 74.9%. Although part of this rise is most likely due to improvements in reporting, there are also real improvements in immunisation coverage.

**For more information, see:**

Lister S, McIntyre PB, Burgess MA & O'Brien ED 1999. Immunisation coverage in Australian children: a systematic review 1990–1998. *Communicable Diseases Intelligence* 23: 145–170.

## Incidence rates for pertussis, measles and meningococcal disease



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Pertussis	37	51	20	42	226	316	238	220	576	343	230
Measles	10	52	80	82	254	275	73	27	46	16	15
Meningococcal	12	17	17	17	21	22	21	23	27	24	30

Source: Communicable Diseases Network–Australia New Zealand–NNDSS, personal communication.

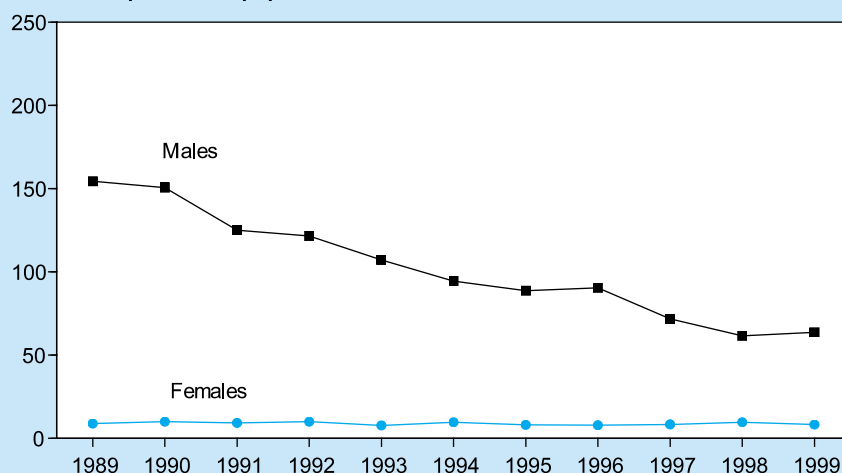
- Vaccination against pertussis (or whooping cough) and measles is part of the Standard Childhood Vaccination Schedule (see *Proportion of 1-year-olds fully immunised* on page 70).
- Despite the availability of vaccines, there have been outbreaks of both measles and pertussis in the last 5 years. In each case, the highest notification rates were among children aged 1 year or less.
- Notifications of measles have remained low since the outbreak years of 1993 and 1994. There has been a large increase in pertussis notifications since 1992, with over 4,000 notifications each year.
- After a downturn in 1995 and 1996, the pertussis epidemic resurged in 1997. Pertussis was responsible for about one death each year from 1987 until 1997 when there were 6 deaths. There were no recorded deaths in 1998 or 1999.
- Some meningococcal disease can be prevented through vaccination, but routine vaccination is not recommended because of the relatively low risk of contracting the disease. Besides, many cases occur in children too young to be adequately protected by vaccination.
- Although not occurring in high numbers, notifications of meningococcal infection have consistently increased since 1989. Meningococcal disease has been responsible for an average of 28 deaths each year since 1989. In 1999 there were 41 deaths.

**For more information, see:**

Communicable Diseases Network Australia New Zealand 1999. Australia's notifiable disease status, 1998. *Communicable Diseases Intelligence* 23:277–305.

## Newly diagnosed HIV infection

New cases per million population



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Males	154	151	125	122	107	95	89	90	72	62	64
Females	9	10	9	10	8	10	8	8	8	10	8
<b>Total</b>	<b>81</b>	<b>80</b>	<b>67</b>	<b>66</b>	<b>58</b>	<b>52</b>	<b>48</b>	<b>49</b>	<b>40</b>	<b>35</b>	<b>36</b>

Note: Adjusted for multiple reporting.

Source: NCHECR 2000.

- Human immunodeficiency virus (HIV) is a retrovirus that causes acquired immune deficiency syndrome (AIDS). HIV infection first emerged as a deadly epidemic in the early 1980s, and has since become a global pandemic.
- It is estimated that at the end of 2000, there were 12,500 people living with HIV infection in Australia. The rate of newly diagnosed HIV infection had decreased to less than half the level of 1989. However, it should be noted that the high reported rates in the early and mid-1980s were probably not true measures of incidence, and are more likely to reflect the initial detection of the existing pool of cases.
- HIV is not easily spread by casual contact. It can only be acquired if a HIV-positive person's body fluids (such as blood or semen) have direct contact with the body fluids of another person.
- New cases of HIV infection continue to emerge, largely resulting from sexual contact between men. Reuse of needles for injecting illicit drugs is also a mode of HIV transmission, although this accounts for less than 5% of new cases.
- Increasing community awareness of HIV has led to changes in sexual behaviour and to preventive programs aimed at reducing the risk associated with needle sharing. In turn, these changes have contributed to reduction in the spread of HIV.

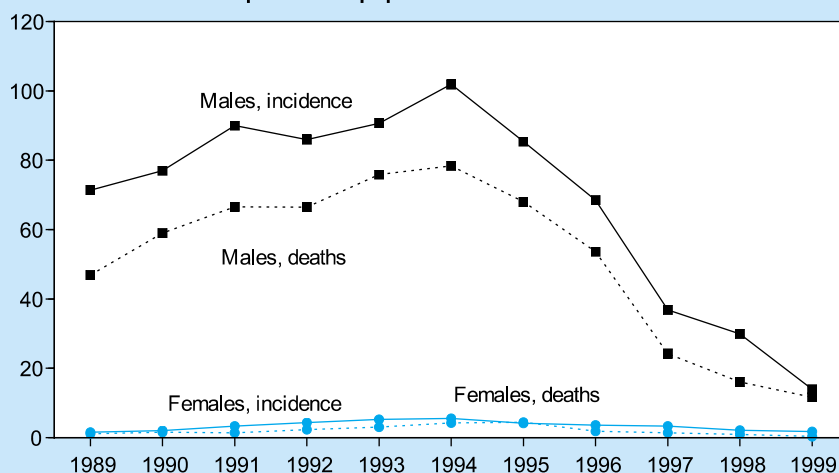
**For more information, see:**

NCHECR 2000. HIV/AIDS, hepatitis C and sexually transmissible infections in Australia. Annual surveillance report 2000. Sydney: NCHECR.



## Incidence and death rates for AIDS

New cases and deaths per million population



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Incidence rate</b>											
Males	71	77	90	86	91	102	85	69	37	30	14
Females	2	2	3	4	5	6	4	4	3	2	2
<b>Total</b>	<b>36</b>	<b>39</b>	<b>47</b>	<b>45</b>	<b>48</b>	<b>54</b>	<b>45</b>	<b>36</b>	<b>20</b>	<b>16</b>	<b>8</b>
<b>Death rate</b>											
Males	47	59	67	67	76	78	68	54	24	16	12
Females	1	2	1	2	3	4	4	2	1	1	-
<b>Total</b>	<b>24</b>	<b>30</b>	<b>34</b>	<b>34</b>	<b>39</b>	<b>41</b>	<b>36</b>	<b>28</b>	<b>13</b>	<b>8</b>	<b>6</b>

Note: Adjusted for reporting delay.

Source: NCHECR 2000.

- Trends in AIDS incidence and death rates largely reflect trends in HIV infection (see *Newly diagnosed HIV infection* on page 72). However, time lags between HIV infection, AIDS diagnosis and AIDS-related death show variations.
- A peak in AIDS incidence in Australia was reached in 1994, following sustained declines in HIV infection for several years. In 1999, the incidence rate was about 15% of the rate 5 years earlier.
- The death rate for AIDS also peaked in 1994, with the rate in 1999 falling to less than 15% of the 1994 rate.
- Although the rate of HIV infection appears to be falling, continuing

surveillance of the spread of HIV must remain an important public health activity.

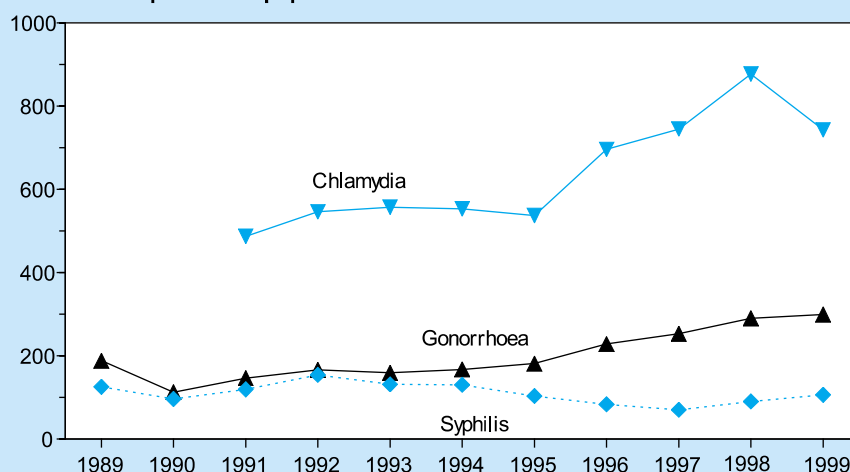
- Safe-sex and safe-injecting campaigns, blood supply regulation, infection-control guidelines and the introduction of new treatments have all contributed to the control of mortality from AIDS in this country.

**For more information, see:**

NCHECR 2000. HIV/AIDS, hepatitis C and sexually transmissible infections in Australia. Annual surveillance report 2000. Sydney: NCHECR.

## Notification rates for sexually transmitted diseases

Notifications per million population



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Chlamydia	n.a.	n.a.	487	546	558	553	537	696	745	877	743
Gonorrhoea	188	112	146	166	159	167	181	228	253	290	299
Syphilis	125	96	119	154	131	130	103	83	70	90	106

*Notes*

1. 'n.a.' indicates data not available.

2. Notifiability and case definitions have varied over time and between States/Territories.

Source: Communicable Diseases Network–Australia New Zealand–NNDSS, personal communication.

- Surveillance of sexually transmitted diseases (STDs) provides useful information regarding changes in community knowledge, attitudes and safe sexual practices. The surveillance is particularly important in the case of adolescents and young adults.
- Chlamydial infections are being detected and notified at ever-increasing rates, with the rate in 1999 (743 per million population) being one of the highest reported for a notifiable disease. The disease is more prevalent among females, and if not treated can lead to pelvic inflammatory disease. High notification rates occur in northern Australia.
- Data indicate approximately 5,600 notifications of gonococcal infection in 1999 alone. The notification rate of 299 per million population was higher than that noted in previous years, but

remains far below the peak rate of 844 per million population in 1982.

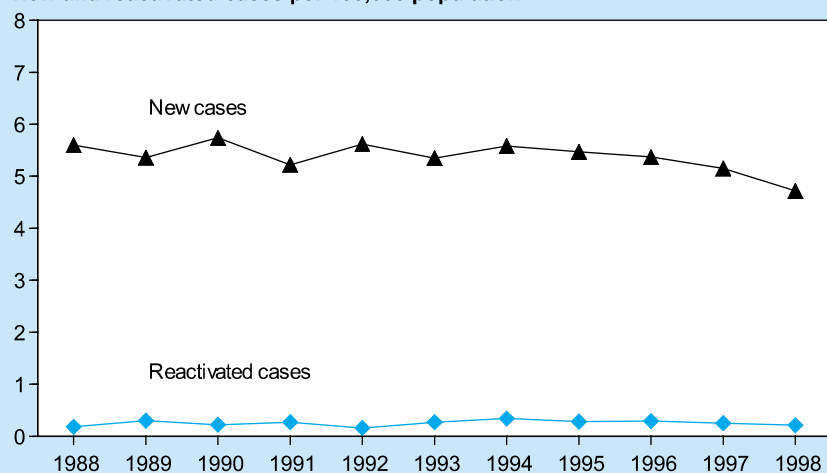
- There were 2,010 notified cases of syphilis in 1999. This equates to 106 new cases per million population in 1999; higher than the 1997 rate of 70 cases which was the lowest observed rate for almost three decades. Again, notification rates in northern Australia are high.
- There is concern that the transmission of STDs may be rising, accompanied by a reported increase in antibiotic resistance. This highlights the need for ongoing surveillance and management strategies.

**For more information, see:**

Communicable Diseases Network Australia New Zealand 1999. Australia's notifiable disease status, 1998. *Communicable Diseases Intelligence* 23: 277–305.

## Rates of new and reactivated cases of tuberculosis

New and reactivated cases per 100,000 population



	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
New cases	5.6	5.4	5.7	5.2	5.6	5.4	5.6	5.5	5.4	5.2	4.7
Reactivated cases	0.2	0.3	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.2
<b>Total</b>	<b>5.8</b>	<b>5.7</b>	<b>6.0</b>	<b>5.5</b>	<b>5.8</b>	<b>5.6</b>	<b>5.9</b>	<b>5.8</b>	<b>5.7</b>	<b>5.4</b>	<b>4.9</b>

Source: National TB Advisory Committee 2001.

- Tuberculosis (TB) has recently reemerged in several developed countries. The disease more commonly affects those in lower socioeconomic groups, and for this reason is often used as a marker for social inequality.
- The notification rate for tuberculosis in Australia is among the lowest in the world. In 1998, there were 4.9 notifications per 100,000 population. A number of cases of reactivated infection were also reported.
- A reactivated case is a case of active TB, diagnosed again, after being considered to be inactive or quiescent following previous full treatment. In 1998, under 5% of all notified cases of TB were reactivated cases.
- Between 1988 and 1998, the reported numbers of both new and reactivated cases of TB remained stable. Rates have fallen slightly since 1994.
- Tuberculosis is caused by *Mycobacterium tuberculosis* and is transmitted from

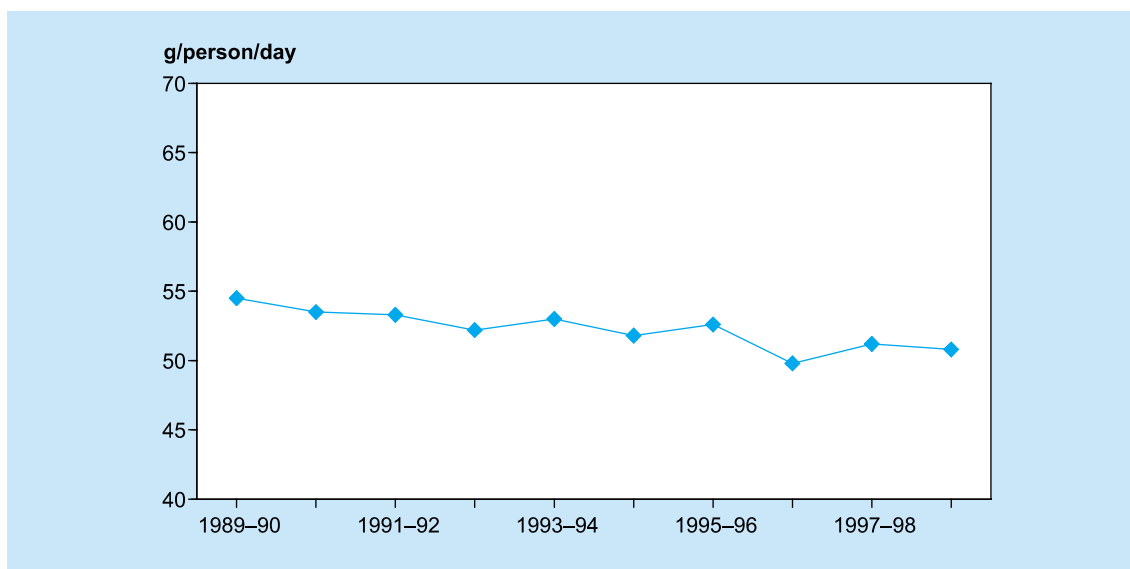
person to person via the respiratory route. Persons considered to be at higher risk of TB include some groups born overseas, members of Indigenous communities, the homeless and people infected with HIV. Regionally, the rate is higher in the Northern Territory.

- Of increasing public health concern are the changing characteristics of people contracting TB. In the early 1970s, TB was more common in Australian-born elderly males, whereas in the 1990s persons contracting TB were more likely to be younger and born overseas. Some patients may also be infected with drug-resistant strains of TB.

### For more information, see:

National TB Advisory Committee 2001. Tuberculosis notifications in Australia, 1998. Communicable Diseases Intelligence 25: 1-8.

## Apparent consumption of fats



	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99
<b>Fats</b> g/person/day	54.5	53.5	53.3	52.2	53.0	51.8	52.6	49.8	51.2	50.8

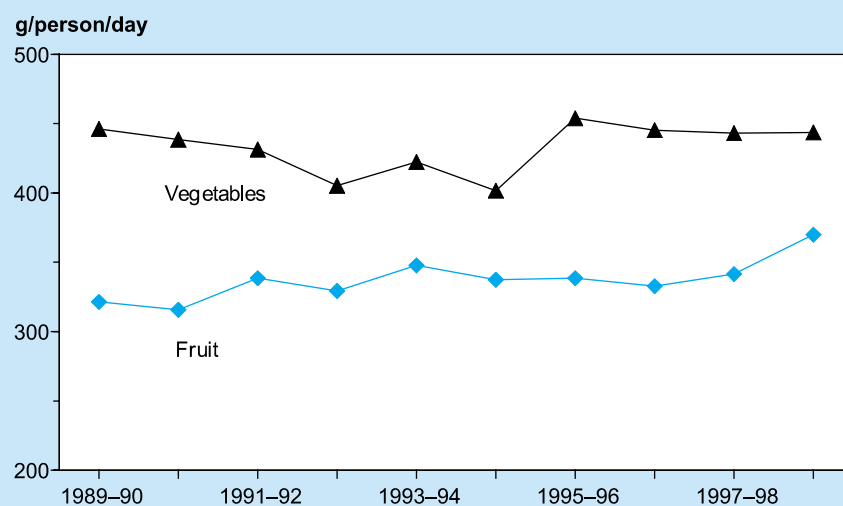
Source: ABS Cat. No. 4306.0 (various years).

- In developed countries, diet-related diseases, such as coronary heart disease, stroke, hypertension, some cancers and diabetes, are due more to over-consumption of fats and other sources of energy than to any nutritional deficiency.
- Information for monitoring trends over time for the dietary intake of fats and energy is not available at the population level. Apparent consumption data, derived from food supply information, are used as surrogate indicators. Apparent consumption information does not take into account export, retail and household wastages or uses of food for purposes other than household consumption, and is therefore an overestimate of real consumption levels.
- Apparent consumption of fats has fallen from 54.5 g/person/day in 1989-90 to 50.8 g/person/day in 1998-99, an average fall of 0.8% per year. Major food sources of fats include cooking oils, table margarine, butter, cooking fats and cooking margarine.
- Analysis of apparent consumption data indicates that fats contribute about one-third of energy intake (33.4% in 1993-94). The contribution of fats to total supply of energy has also not altered significantly in the last decade.
- Data from the 1995 ABS National Nutrition Survey indicate a 32.5% contribution of fats to energy intake, for persons aged 19 years and over, of which 12.7% is from saturated fats. The balance of energy comes from carbohydrates (46%), protein (17%), and alcohol (4%).

**For more information, see:**

ABS. Apparent consumption of foodstuffs and nutrients, Australia. ABS Cat. No. 4306.0. Canberra: ABS.  
Lester IH 1994. Australia's food and nutrition. Canberra: AGPS.

## Apparent consumption of fruit and vegetables



	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99
<b>Fruit</b> g/person/day	321	316	339	329	348	337	339	333	342	370
<b>Vegetables</b> g/person/day	446	439	431	405	422	402	454	445	443	444

Note: The data given are for fresh fruit and vegetables plus the fresh equivalent weight of produce used in processing, such as canning and juice. The data include allowances for non-commercial production, such as fruit and vegetables grown at home.

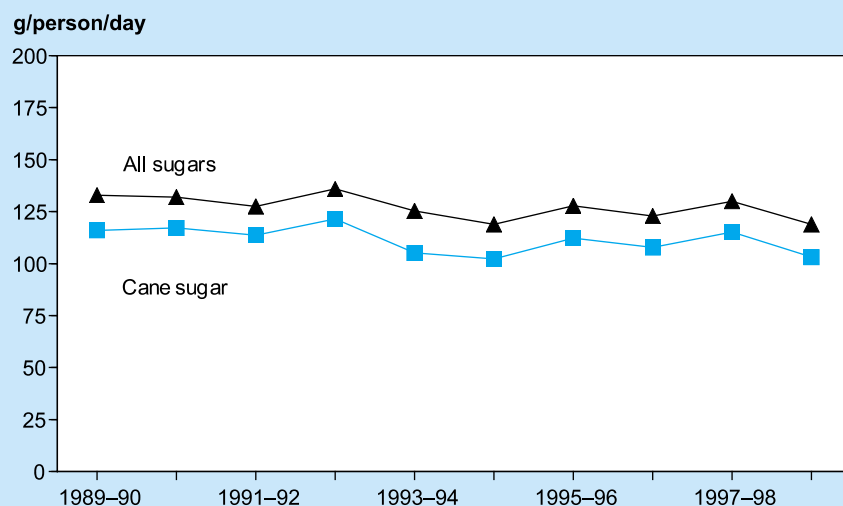
Source: ABS Cat. No. 4306.0 (various years).

- Fruit and vegetables provide dietary fibre and a large range of essential nutrients such as vitamin C, folic acid, beta carotene and potassium. The National Health and Medical Research Council (NHMRC) recommends that individuals increase their intake of fruit and vegetables.
- Information to monitor trends over time for fruit and vegetable consumption is not available at the population level. Apparent consumption data, derived from food supply data, are used as surrogate indicators. However, apparent consumption data, by definition, overestimate actual food intakes.
- Apparent consumption of vegetables decreased somewhat between 1989-90 and 1994-95, but has since increased and has remained relatively stable. In 1998-99, the fresh and fresh equivalent per capita consumption of vegetables was 444 g per person per day.
- Apparent consumption of fruit has increased steadily over the last decade, to be 370 g per person per day in 1998-99. This represents a 15% increase over the 1989-90 figure of 321 g per person per day.
- The 1995 ABS National Nutrition Survey found that, on average, persons aged 19 years and over consumed 144 g of fruit products and dishes per day, and 259 g of vegetable products and dishes per day.

**For more information, see:**

ABS. Apparent consumption of foodstuffs and nutrients, Australia. ABS Cat. No. 4306.0. Canberra: ABS.

## Apparent consumption of sugars



	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99
<b>All sugars</b> g/person/day	132.9	132.0	127.5	135.9	125.3	118.9	127.8	122.9	130.0	118.9
<b>Cane sugar</b> g/person/day	116.0	117.1	113.7	121.5	105.2	102.2	112.3	107.8	115.2	103.1

*Note:* 'All sugars' includes cane sugar, honey, glucose and syrups, but excludes sugars in fruit and milk. 'Cane sugar' comprises packed refined sugar and sugar used in manufactured foods.

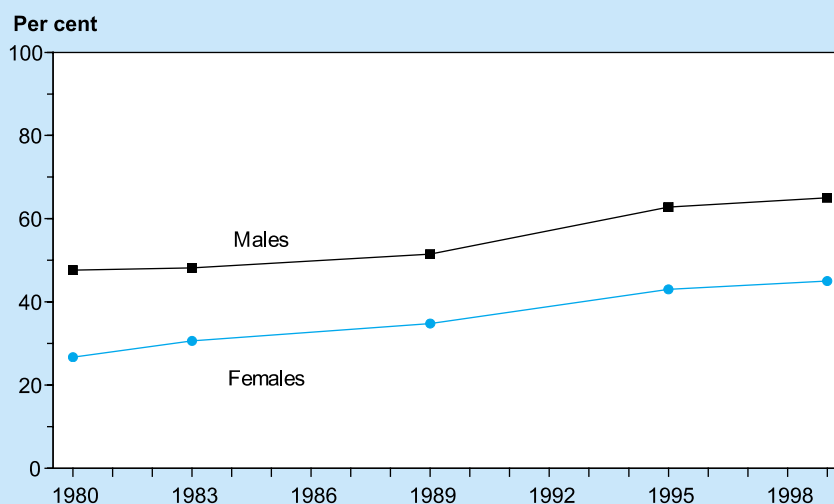
*Source:* ABS Cat. No. 4306.0 (various years).

- Sugars are important sources of energy for the human body. Overconsumption of foods high in sugar content, however, can contribute to overweight and tooth decay.
- Sugars are consumed in several ways, including as refined cane sugar, as an ingredient in manufactured foods and as honey, glucose or syrup.
- Time series information for monitoring trends over time in the dietary intake of sugars is not available at the population level. Apparent consumption data are used as surrogate indicators.
- Apparent sugar consumption is measured in terms of disposals of sugar by refineries and the sugar content of disposals of sugar products by manufacturers.
- For the period 1987-88 to 1996-97, the consumption of sugars remained relatively constant, fluctuating between 119 and 136 g per person per day.
- In the past 50 years, the consumption of sugars has remained relatively stable, but with a marked shift from home use of refined cane sugar to sugars consumed in manufactured food. In 1996-97, only 23% of total sugar was consumed in refined form.

**For more information, see:**

ABS. Apparent consumption of foodstuffs and nutrients, Australia. ABS Cat. No. 4306.0. Canberra: ABS.

## Proportion of 25–64-year-olds who are considered overweight



NHF Risk Factor Prevalence Study

	1980	1983	1989	1995 ABS National Nutrition Survey	1999–00 AusDiab Study
Males	47.6	48.2	51.5	62.8	65.0
Females	26.7	30.6	34.8	43.0	45.0

**Notes**

1. Persons were classified overweight if they had a body mass index (BMI)  $\geq 25$ ; BMI is calculated as weight/height<sup>2</sup>.
2. Includes only persons living in capital cities or urban areas.
3. The proportions were age-adjusted using the total Australian population as at 30 June 1991.

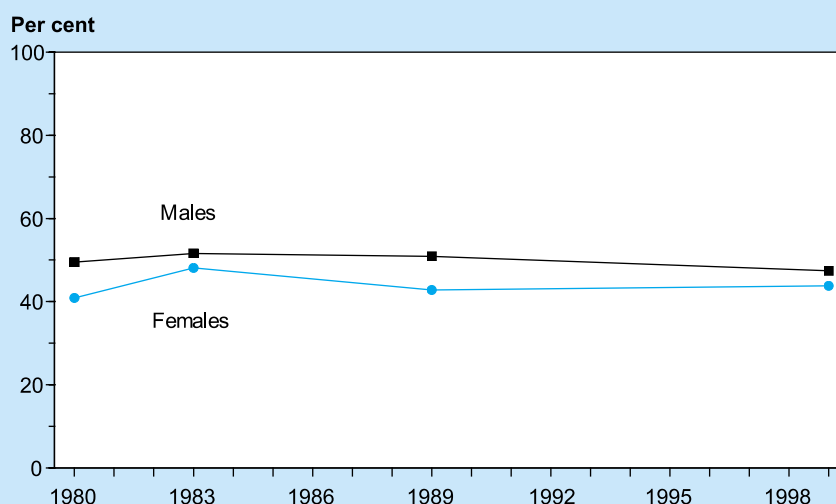
**Sources:** AIHW analysis of the 1980, 1983, 1989 NHF Risk Factor Prevalence Study surveys; 1995 ABS National Nutrition Survey; 1999–00 Australian Diabetes, Obesity and Lifestyle Study (AusDiab).

- Overweight is a condition characterised by excess body fat, and is the result of an imbalance between energy intake and expenditure over long periods of time.
- Overweight and obese people are at increased risk of many diseases and conditions, particularly heart, stroke and vascular disease. They also have a higher risk of developing respiratory and musculoskeletal problems.
- To adjust for height, weight is commonly expressed as an index, the body mass index or BMI, defined as weight/height<sup>2</sup>. Persons with a BMI greater than or equal to 25 are considered overweight, and those with a BMI greater than 30 are considered obese.
- The proportion of adults at increased risk of illness and health-related conditions through being overweight increased throughout the 1980s and 1990s. In 1999–00, two in three adult males and almost one in two adult females were found to be overweight.
- Overweight is more prevalent among older age groups, among females living in remote areas, and among females in lower socioeconomic groups.

**For more information, see:**

AIHW 2001b. Heart, stroke and vascular diseases – Australian facts 2001. Canberra: AIHW, National Heart Foundation of Australia, National Stroke Foundation of Australia.

## Proportion of 25–64-year-olds with high total blood cholesterol



NHF Risk Factor Prevalence Study

	1980	1983	1989	1999–00 AusDiab Study
Males	49.5	51.6	50.9	47.4
Females	40.9	48.1	42.8	43.8

*Notes*

1. High blood cholesterol was defined as a total blood cholesterol of 5.5 mmol/L or greater.
2. Includes only persons living in capital cities.
3. The proportions were age-adjusted using the total Australian population as at 30 June 1991.

Sources: AIHW analysis of the 1980, 1983, 1989 NHF Risk Factor Prevalence Study surveys; 1999–00 Australian Diabetes, Obesity and Lifestyle Study (AusDiab).

- High total blood cholesterol, and in particular raised low-density lipoprotein (LDL), is a major risk factor for coronary heart disease and other health problems, either alone or in combination with other known risk factors.
- In adults, a total blood cholesterol level above 5.5 mmol/L is considered to indicate an increased risk of coronary heart disease (CHD), whereas a level above 6.5 mmol/L indicates a high risk of CHD.
- Many Australians have high blood cholesterol, with 47% of males and 44% of females aged 25–64 years having levels of 5.5 mmol/L or more in 1999–00.
- Although there was no clear change in the proportion of men with high blood cholesterol during the 1980s, there appears to have been a decline from 1989

(51%) to 1999–00 (47%). There has been no change for women over the same period.

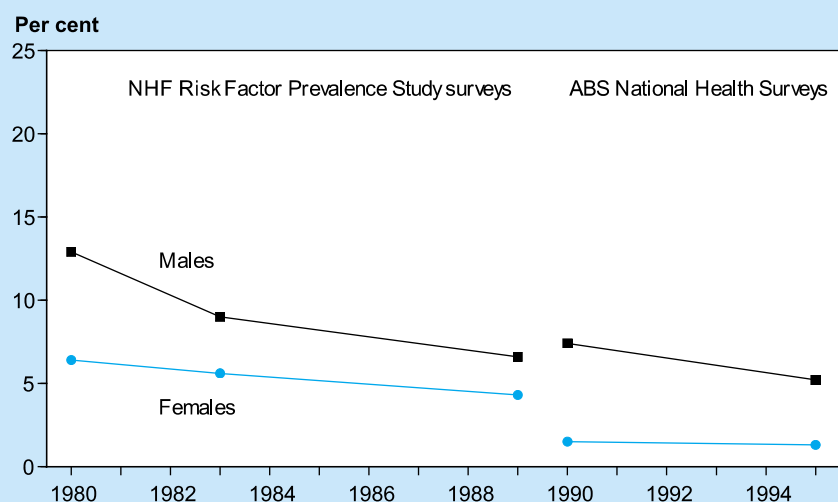
- A much smaller proportion of the population appears to be aware of their own level of blood cholesterol. For example, high blood cholesterol was reported by only 5% of 25–64-year-old respondents to the 1989–90 ABS National Health Survey, and by 8% of 25–64-year-old respondents to the 1995 survey.

**For more information, see:**

AIHW 2001b. Heart, stroke and vascular diseases – Australian facts 2001. Canberra: AIHW, National Heart Foundation of Australia, National Stroke Foundation of Australia.



## Proportion of 25–64-year-olds who drink alcohol at hazardous or harmful levels



	NHF Risk Factor Prevalence Study			ABS National Health Surveys	
	1980	1983	1989	1989–90	1995
Males	12.9	9.0	6.6	7.4	5.2
Females	6.4	5.6	4.3	1.5	1.3

**Notes**

1. For the NHF Risk Factor Prevalence Study surveys, hazardous or harmful drinking of alcohol was defined as consuming more than four standard drinks per day for males, and more than two standard drinks per day for females. For the ABS National Health Surveys, hazardous or harmful drinking was defined as consuming more than 75 ml of absolute alcohol per day for males, and more than 50 ml per day for females.

2. The proportions were age-adjusted using the total Australian population as at 30 June 1991.

Sources: AIHW analysis of NHF Risk Factor Prevalence Study survey data and ABS National Health Surveys.

- Alcohol is a drug that has serious consequences when misused. Hazardous levels of alcohol consumption have been linked with an increased risk of heart disease, stroke, high blood pressure, brain and liver damage and some cancers. Drinking alcohol at harmful levels results in lost productivity, with alcohol-related crime and social problems placing further burden on the community.
- Alcohol intoxication is also a leading cause of road traffic accidents. In 1996, 29% of fatally injured drivers and motor cycle riders had blood alcohol concentrations of 0.05 g/100 ml or more, with 21% having a concentration of 0.15 g/100 ml or more.
- There is some evidence, however, that light to moderate consumption of alcohol

is associated with a reduction in the risk of heart disease.

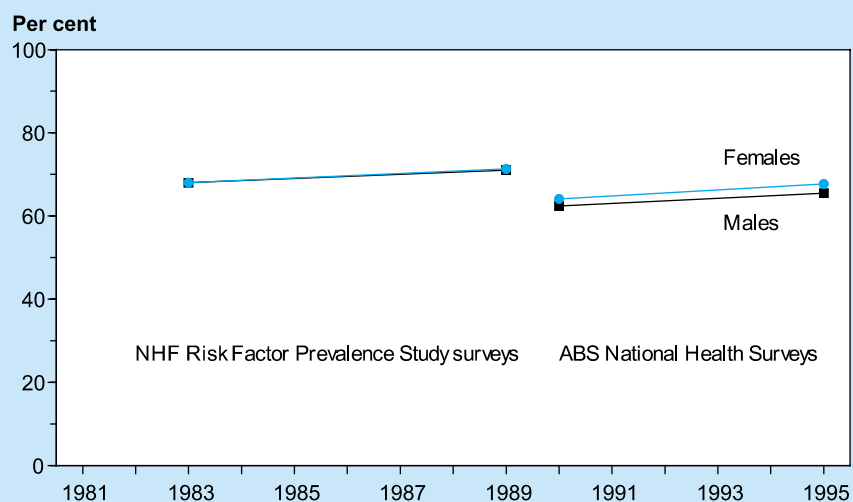
- There has been a decline in the proportion of males and females drinking alcohol at high risk levels. Despite these improvements, there were still an estimated 420,000 adults in Australia who drank alcohol at high risk levels in 1995.

**For more information, see:**

AIHW 2000a. Australia’s health 2000: the seventh biennial health report of the Australian Institute of Health and Welfare. Canberra: AIHW.

Waters A-M & Bennett S 1995. Risk factors for cardiovascular diseases – a summary of Australian data. Canberra: AIHW.

## Proportion of 25–64-year-olds engaged in physical activity



	NHF Risk Factor Prevalence Study		ABS National Health Surveys	
	1983	1989	1989–90	1995
Males	68.0	71.0	62.4	65.4
Females	68.0	71.3	64.1	67.7

**Notes**

- Physical activity includes walking or any exercise for sport or recreation.
- The exercise rates were age-adjusted using the total Australian population as at 30 June 1991.
- Data from the NHF Risk Factor Prevalence Study surveys and ABS National Health Surveys are not directly comparable, because survey questions differ.

Sources: AIHW analysis of NHF Risk Factor Prevalence Study survey data and ABS National Health Surveys.

- Physical activity is important in preventing and managing a variety of medical conditions such as coronary heart disease, hypertension, diabetes, osteoporosis, overweight and some mental health problems.
- It is recommended that a person carry out moderate-intensity physical activity for 30 minutes on each day of the week to obtain a health benefit.
- About one-third of Australians are at increased risk due to their sedentary lifestyle. Physical inactivity is more prevalent among older persons, those belonging to lower socioeconomic groups and persons from non-English-speaking backgrounds.
- Between 1989–90 and 1995, the proportion of adults engaging in any physical activity did not change

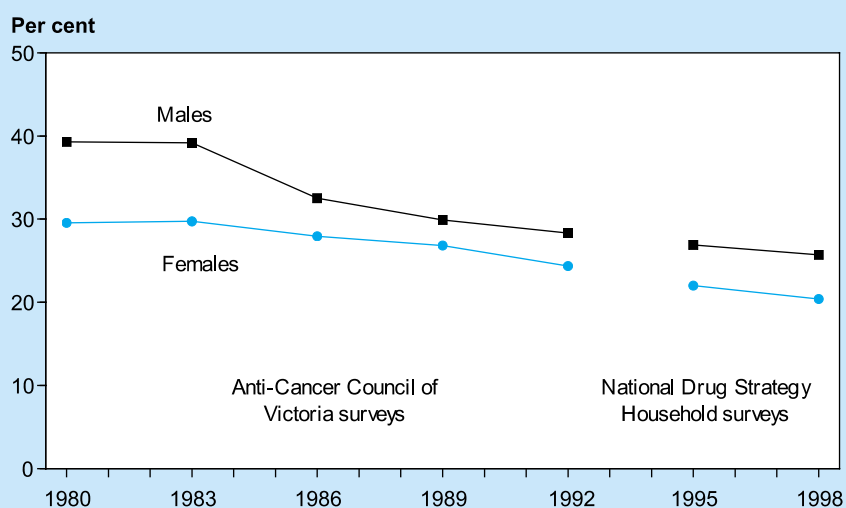
substantially, although there is evidence of a slight increase in the rate among people aged 35–54 years.

- Data from the 1999 National Physical Activity Survey indicate that 60% of males and 54% of females exercise at a 'sufficient' level, i.e. they obtain some of the health benefits attributed to physical activity.

**For more information, see:**

Armstrong T, Bauman A & Davies J 2000. Physical activity patterns of Australian adults. Canberra: AIHW.  
 AIHW 2001b. Heart, stroke and vascular diseases – Australian facts 2001. Canberra: AIHW, NHFA, NSFA.

## Proportion of persons aged 16 years and over who currently smoke



	Anti-Cancer Council of Victoria surveys					National Drug Strategy Household surveys	
	1980	1983	1986	1989	1992	1995	1998
Males	39.3	39.2	32.5	29.9	28.3	26.9	25.7
Females	29.6	29.7	27.9	26.8	24.4	22.0	20.4

Note: The percentage proportions were age-adjusted using the total Australian population as at 30 June 1991.

Sources: Hill et al.1998; AIHW analysis of National Drug Strategy Household Survey data.

- Tobacco smoking is a known risk factor for several diseases including heart disease, stroke, lung cancer and chronic lung disease. Smoking during pregnancy has also been linked to low-birthweight babies.
- Smoking is the most notable preventable cause of premature death in Australia. Reductions in tobacco smoking are likely to contribute to further falls in the number of persons dying from cardiovascular and other diseases.
- More than a quarter of adult Australians smoke. The prevalence is higher among males than females, and among younger Australians. People on lower incomes, people with lower levels of education, Indigenous people and unemployed people also report higher rates of smoking.
- The proportion of Australian adults who smoke is declining. Between 1980 and 1998, the proportion of males who smoked

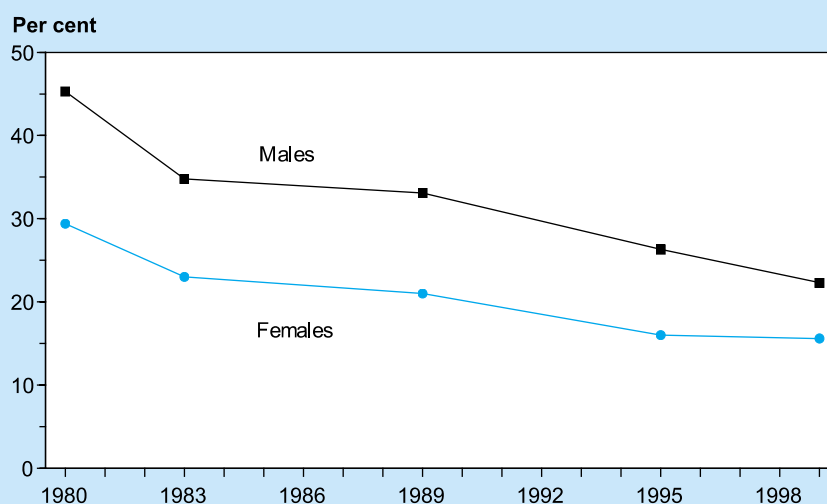
fell from 39% to 26%, with a corresponding fall from 30% to 20% among females.

- The message to quit smoking has been picked up unevenly by various segments of the population. In particular, young females are still taking up smoking and have shown less inclination to quit, resulting in little or no decline in the female smoking rate between 1992 and 1998.

### For more information, see:

Hill DJ, White VM & Scollo MM 1998. Smoking behaviours of Australian adults in 1995: trends and concerns. *Medical Journal of Australia* 168:209-13.  
 Adhikari P & Summerill A 2000. 1998 National Drug Strategy Household Survey: Detailed findings. Canberra: AIHW.

## Proportion of 25–64-year-olds with high blood pressure



NHF Risk Factor Prevalence Study

	1980	1983	1989	1995 ABS National Nutrition Survey	1999–00 AusDiab Study
Males	45.3	34.8	33.1	26.3	22.3
Females	29.4	23.0	21.0	16.0	15.6

*Notes*

1. Persons were classified as having high blood pressure if they had a systolic blood pressure  $\geq 140$  mmHg and/or diastolic blood pressure  $\geq 90$  mmHg and/or receiving medication for blood pressure.
2. Includes only persons living in capital cities or urban areas.
3. The proportions were age-adjusted using the total Australian population as at 30 June 1991.

Sources: AIHW analysis of the 1980, 1983, 1989 NHF Risk Factor Prevalence Study surveys; 1995 ABS National Nutrition Survey; 1999–00 Australian Diabetes, Obesity and Lifestyle Study (AusDiab).

- High blood pressure, or hypertension, is a risk factor for heart, stroke and vascular disease. The risk of both stroke and coronary heart disease increases as the level of blood pressure increases.
- About one in four males and one in six females aged 25–64 years have high blood pressure. High blood pressure is more common in males than in females, in people with lower education and income levels, and in males not in the workforce.
- The prevalence of hypertension has declined markedly in both males and females in recent decades. The proportion of men aged 25–64 years with high blood pressure has fallen steadily from 45% in 1980 to 22% in 1999–00. The proportion for women has fallen from 29% in 1980 to

16% in 1995, and has shown little change since. These declines are thought to have significantly contributed to reductions in cardiovascular mortality.

- Hypertension can be treated and controlled. Levels can be lowered by reducing weight, alcohol and salt intake. Physical activity also helps, either independently or by controlling weight.

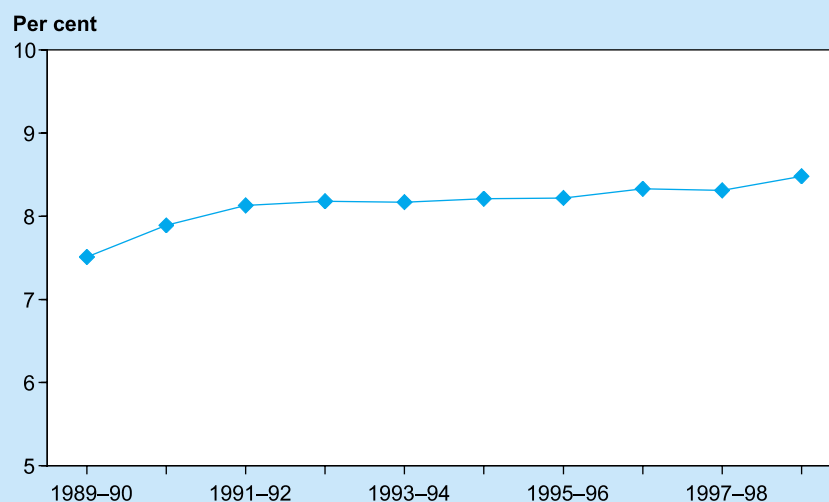
**For more information, see:**

AIHW 2001b. Heart, stroke and vascular diseases – Australian facts 2001. Canberra: AIHW, National Heart Foundation of Australia, National Stroke Foundation of Australia.

# 7 Health service delivery, costs and performance

- Total health expenditure as a proportion of GDP
- Health expenditure per person
- Medical services expenditure per person
- Acute care hospital expenditure per person
- Home and community care expenditure per person aged 65 years and over
- Employment in the health industry
- Numbers of health professionals
- Acute care hospital beds
- Residential aged care places and community aged care packages for persons aged 70 years and over

## Total health expenditure as a proportion of GDP



	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99
Total health exp. (\$m)	28,800	31,270	33,087	34,993	36,787	38,967	41,783	44,482	47,030	50,346
Total GDP (\$m)	383,494	396,236	406,890	427,772	450,050	474,646	508,246	533,709	565,963	593,412
<b>Health exp. as % of GDP</b>	<b>7.5</b>	<b>7.9</b>	<b>8.1</b>	<b>8.2</b>	<b>8.2</b>	<b>8.2</b>	<b>8.2</b>	<b>8.3</b>	<b>8.3</b>	<b>8.5</b>

Note: Total health expenditure for 1998-99 is based on preliminary AIHW and ABS estimates. All amounts are given in current prices.

Source: AIHW Health and Welfare Expenditure Database.

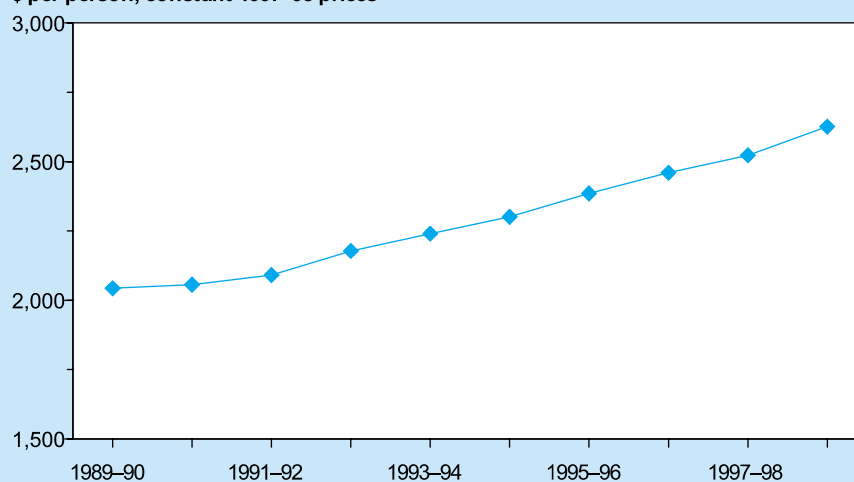
- The proportion of resources allocated to health care in relation to the productive capacity of the economy is an indicator of the affordability of a nation's health system. The indicator is expressed as a ratio of total health expenditure to gross domestic product (GDP), which is a measure of income accruing from production within the domestic economy.
- Australia spent over \$50 billion on health services in 1998-99, which is approximately 8.5% of GDP. Commonwealth, State and local governments funded 70% of this expenditure.
- For the period 1989-90 to 1998-99, the growth in real health services expenditure averaged 4.1% per year, outstripping the average annual rate of growth for GDP, which was 3.1%. Consequently, health expenditure as a proportion of GDP rose from 7.5% in 1989-90 to 8.5% in 1998-99.
- Health services expenditure of different countries is best compared in terms of the percentage of GDP. In 1997 total health expenditure in the United States represented 13.9% of GDP and in Japan 7.2%, compared with 8.4% for the same period in Australia. Australian spending on health services as a proportion of GDP ranks towards the middle among developed countries.

### For more information, see:

AIHW 2000e. Australia's health services expenditure to 1998-99. Health Expenditure Bulletin No. 16. Canberra: AIHW.

## Health expenditure per person

\$ per person, constant 1997–98 prices



	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99
Health exp. per pers. (\$)	2,043	2,056	2,091	2,178	2,240	2,301	2,385	2,460	2,523	2,626
Ann. growth rate (%)		0.6	1.7	4.1	2.9	2.7	3.7	3.2	2.6	4.1

*Notes*

1. Constant price health services expenditure is expressed in chain volume measures, referenced to the year 1997–98.
2. Health expenditure per person for 1998–99 is based on preliminary AIHW and ABS estimates.

Source: AIHW Health and Welfare Expenditure Database.

- For short-term comparisons of health expenditure, examining health expenditure per person is a useful indicator, because it removes the influence of changes in the total population.
- During 1998–99, per person expenditure on health services averaged \$2,626 (in constant 1997–98 prices). This was an increase of 4.1% over the 1997–98 estimate of \$2,523.
- Between 1989–90 and 1998–99, the amount spent on health per person increased substantially in real terms by over 28%. The annual growth rate during this time was 2.8%. Much of the increase in health expenditure per person was due to the growth in the provision of health services.
- Between 1989–90 and 1997–98, expenditure on medical services grew at a faster rate (4.9% per year in real terms), compared with expenditure on acute care

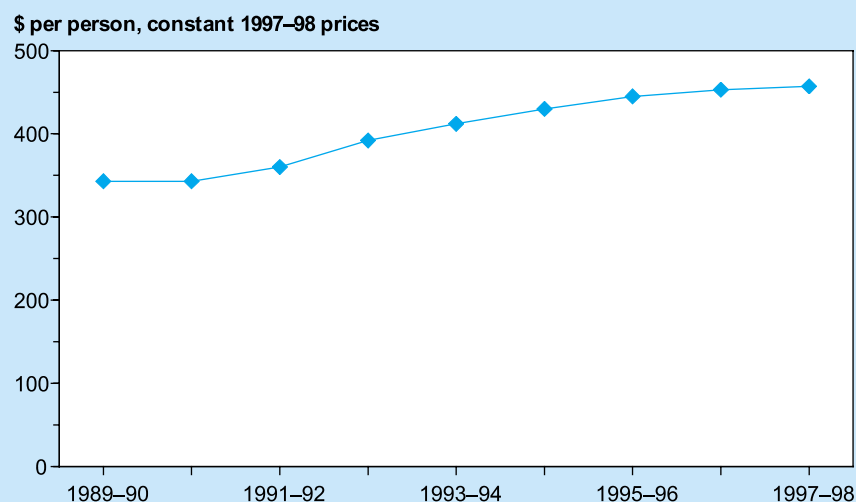
public hospitals (2.8% per year in real terms). The proportion of recurrent expenditure on acute care public hospitals fell from 30.6% in 1989–90 to 29.2% in 1997–98, whereas the proportion spent on medical services increased from 18.4% to 19.3%.

- The United States, Canada France and Germany have consistently had levels of per person health expenditure above that for Australia. In contrast, Japan, New Zealand and the United Kingdom spent less on health per person.

**For more information, see:**

AIHW 2000e. Australia's health services expenditure to 1998–99. Health Expenditure Bulletin No. 16. Canberra: AIHW.

## Medical services expenditure per person



	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
Medical services expenditure per person (\$)	343	343	360	392	412	430	445	453	457
Annual growth rate (%)		-0.1	5.0	9.0	5.0	4.5	3.5	1.6	0.9

Note: Constant price medical services expenditure is expressed in chain volume measures, referenced to the year 1997-98.

Source: AIHW Health and Welfare Expenditure Database.

- For planning and budgetary purposes, information on trends in the composition of health services expenditure is of particular interest. Two large components of health services expenditure are medical services and acute hospital care.
- Medical services refers to services provided by doctors for patients. These include GP and specialist attendances, as well as pathology, radiology and optometry services. Also included are services provided to private patients in public and private hospitals.
- Expenditures not included in this category are the costs of salaried medical practitioners and visiting medical officers at recognised public hospitals.
- In 1997-98, medical services expenditure accounted for 19% of recurrent health

services expenditure. The growth in medical services expenditure has contributed substantially to the overall growth in health services expenditure per person.

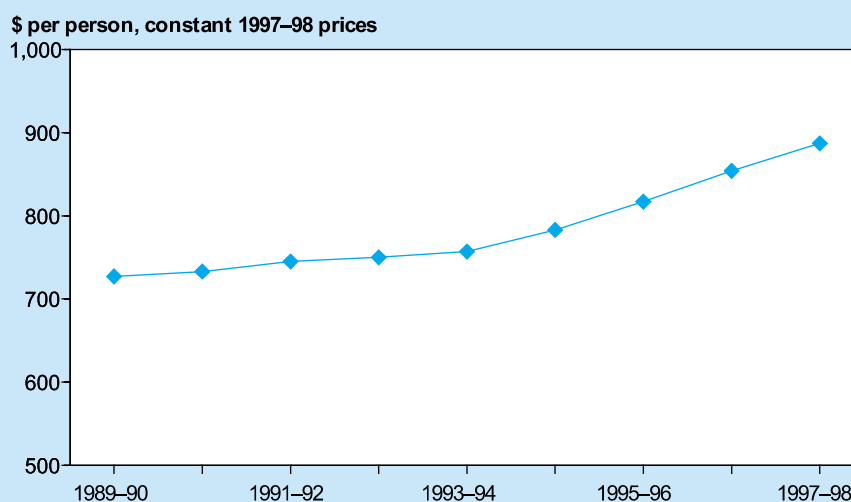
- Between 1989-90 and 1997-98, medical services expenditure per person in constant 1997-98 prices rose from \$343 to \$457 – an increase of 3.7% per year. Over the same period, recurrent health expenditure per person rose by 4.0% per year.

### For more information, see:

AIHW 2000e. Australia's health services expenditure to 1998-99. Health Expenditure Bulletin No. 16. Canberra: AIHW.



## Acute care hospital expenditure per person



	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98
Acute care hospital expenditure (\$m)	12,305	12,577	12,957	13,191	13,444	14,056	14,861	15,731	16,510
Expenditure per person (\$)	727	733	745	750	757	783	817	854	887
Annual growth rate (%)		0.8	1.7	0.7	0.9	3.4	4.3	4.5	3.9

Note: Constant price acute hospital expenditure is expressed in chain volume measures, referenced to the year 1997–98.

Source: AIHW Health and Welfare Expenditure Database.

- Acute hospital care refers to most services provided in non-psychiatric hospitals. These include public, private and repatriation hospitals that provide medical, surgical, diagnostic or obstetric services for inpatient treatment, and accident and emergency and other outpatient services. They also include free-standing day hospital facilities.
- In 1997–98, acute care hospitals accounted for 38% of recurrent health expenditure. That year, some 5.5 million admissions to acute care hospitals were recorded, and almost 50 million outpatient and accident and emergency services were provided.
- Between 1989–90 and 1997–98, acute care hospital expenditure in constant 1997–98

prices rose by 22% from \$727 per person to \$887 per person. However, the proportion of recurrent health expenditure spent on acute care hospitals decreased over the last two decades from 41% in 1975–76, to 40% in 1986–87, to 38% in 1997–98.

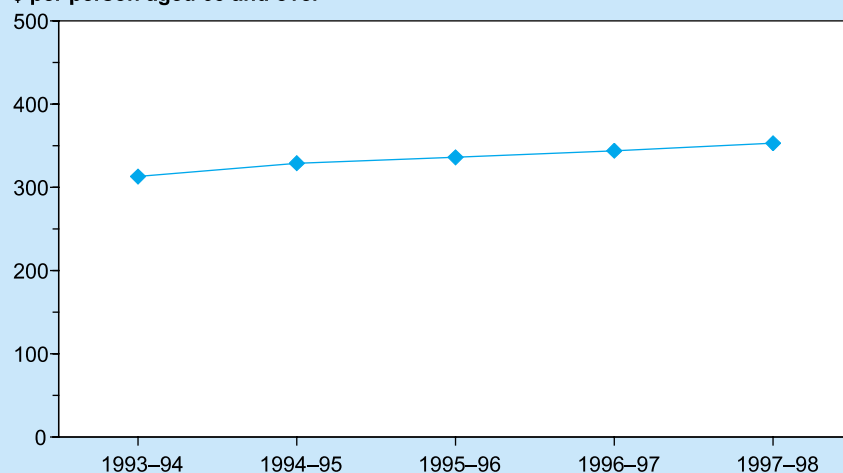
### For more information, see:

AIHW 2000e. Australia's health services expenditure to 1998–99. Health Expenditure Bulletin No. 16. Canberra: AIHW.

AIHW 1999b. Australian hospital statistics 1997–98. Canberra: AIHW.

## Home and community care expenditure per person aged 65 years and over

\$ per person aged 65 and over



	1993-94	1994-95	1995-96	1996-97	1997-98
HACC recurrent expenditure (\$m)	650	699	730	765	799
Expenditure per person aged 65+ (\$)	313	329	336	344	353
Annual growth rate (%)		7.4	4.5	4.7	4.4

Note: Home and community care recurrent expenditure is deflated to constant 1996-97 prices using the government final consumption expenditure deflator.

Source: AIHW 1999a.

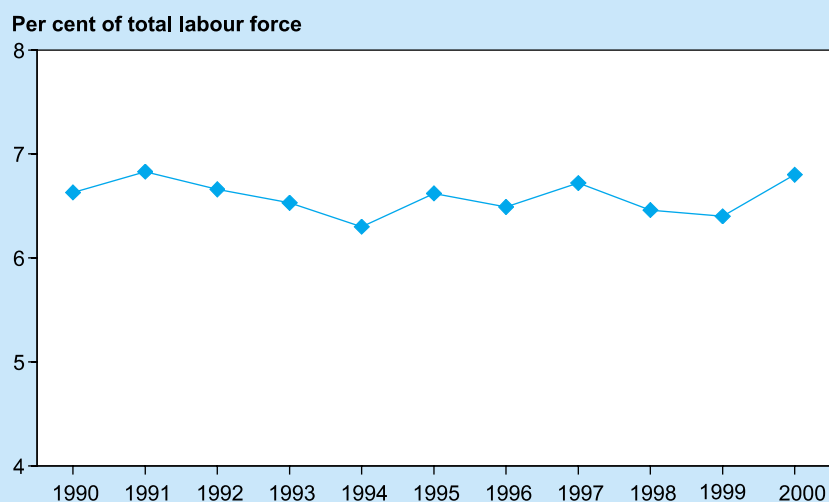
- The Home and Community Care (HACC) program was established in 1984 to provide an integrated range of services to assist frail older people, people with a disability, and their carers within the community. The services include home help, home nursing, meals and transport. Over 80% of the program's clients are aged 65 years and over.
- The indicator, HACC recurrent expenditure per person aged 65 years and over, monitors the shift in government policy away from institutionalised care to community-based care (see *Residential aged care places and community aged care packages for persons aged 70 and over* on page 94).
- In 1993-94, Commonwealth, State and Territory Governments combined spent \$313 (at constant 1996-97 prices) per person aged 65 years and over. This amount increased to \$353 in 1997-98, representing an annual growth rate of 3.1%.
- Although HACC expenditure has grown consistently over time in real terms, the extent to which it improves the quality of life of clients or reduces the need for institutionalisation has not been determined.

### For more information, see:

AIHW 1999a. Australia's welfare 1999: services and assistance. Canberra: AIHW.

AIHW 1999c. Australia's welfare services expenditure 1992-93 to 1997-98. Welfare Expenditure Bulletin No. 5. Canberra: AIHW.

## Employment in the health industry



	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Employed in the health industry ('000)	557.9	578.5	571.8	557.8	547.2	591.9	590.2	610.2	598.7	600.4	656.9
Civilian labour force ('000)	8,413	8,475	8,586	8,537	8,684	8,940	9,091	9,080	9,262	9,384	9,650
<b>Labour force employed in health industry (%)</b>	<b>6.6</b>	<b>6.8</b>	<b>6.7</b>	<b>6.5</b>	<b>6.3</b>	<b>6.6</b>	<b>6.5</b>	<b>6.7</b>	<b>6.5</b>	<b>6.4</b>	<b>6.8</b>

*Notes*

1. Civilian labour force includes unemployed people looking for work.
2. Estimates are as at August of each year.

Source: ABS Cat. No. 6203.0 (various years).

- The number of health personnel and their distribution and supply reflect changing needs and demands for the provision of health services.
- Since 1985, persons employed in the health industry have constituted between 6% and 7% of the total civilian workforce in Australia. In August 2000, 6.8% of the Australian workforce were employed in the health industry.
- Persons employed in the health industry include health professionals (e.g. doctors and nurses), other professionals (e.g. epidemiologists, accountants and information technology specialists), and general support staff (e.g. clerks and domestic service workers) (see also *Numbers of health professionals* on page 92).
- Between 1986 and 1996, largely as a result of a move to deinstitutionalise persons

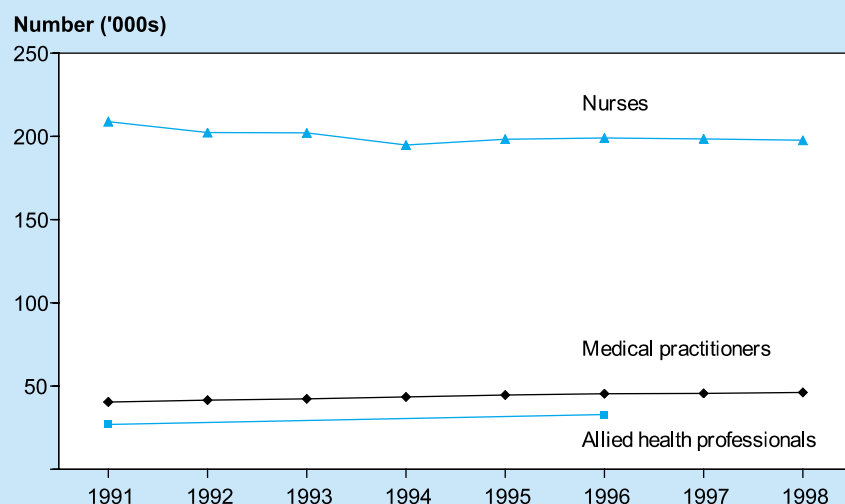
suffering mental illnesses, psychiatric hospital employment declined from 18,730 to 8,424. Employment in other hospitals declined from 231,570 to 222,423—a fall in total hospital employment of almost 8%. However, employment in other health industry settings increased by 52% from 201,570 to 306,366.

**For more information, see:**

ABS. Labour force, Australia. ABS Cat. No. 6203.0. Canberra: ABS.

AIHW 2000a. Australia's health 2000: the seventh biennial health report of the Australian Institute of Health and Welfare. Canberra: AIHW.

## Numbers of health professionals



	1991	1992	1993	1994	1995	1996	1997	1998
Medical practitioners	40,348	41,461	42,300	43,404	44,583	45,298	45,532	46,078
General practitioners	18,270	18,527	18,918	19,353	19,938	20,441	20,508	20,851
Specialists	14,195	14,706	15,240	15,283	15,604	15,746	15,955	16,490
Dentists		7,493	7,618	7,667	7,761			
Pharmacists		12,525	13,248	13,331	13,427	13,834	14,150	14,508
Nurses	209,000	202,400	202,200	194,800	198,400	199,100	198,600	197,700
Allied health professionals	26,840					32,825		

Note: Pharmacist data for 1997 and 1998 are preliminary.

Source: AIHW Health and Welfare Labour Force Database.

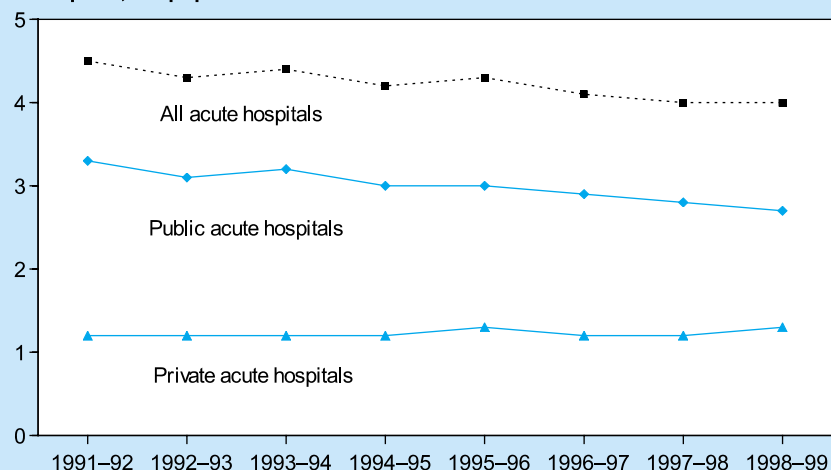
- Appropriate numbers of professionals, both across Australia and within geographic regions, is an important health labourforce issue.
- Growth in demand for the services of health professionals is faster than population growth. Reasons include advances in technology and new drugs which extend boundaries of treatment, increased education of consumers about available treatments, improved access to services, ageing of the population, and rising incomes which increase expectations of access to a full range of health care.
- However, there has been a continuing decline in full-time equivalent nurse employment. This means that, on average, patient numbers per nurse have been increasing. In public hospitals between 1995-96 and 1997-98, patient separations per full-time equivalent nurse increased by 8%.
- Except for nurses, there is a much lower provision of health professionals in rural and remote areas. In 1998 only 16% of the general medical practitioner workforce were located in rural and remote areas, despite 29% of the population living in rural and remote areas.

**For more information, see:**

AIHW 2000a. Australia's health 2000: the seventh biennial health report of the Australian Institute of Health and Welfare. Canberra: AIHW.

## Acute care hospital beds

Beds per 1,000 population



	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99
Public acute	3.3	3.1	3.2	3.0	3.0	2.9	2.8	2.7
Private acute	1.2	1.2	1.2	1.2	1.3	1.2	1.2	1.3
<b>All acute</b>	<b>4.5</b>	<b>4.3</b>	<b>4.4</b>	<b>4.2</b>	<b>4.3</b>	<b>4.1</b>	<b>4.0</b>	<b>4.0</b>

Source: Estimates based on data derived from AIHW National Hospital Morbidity Database.

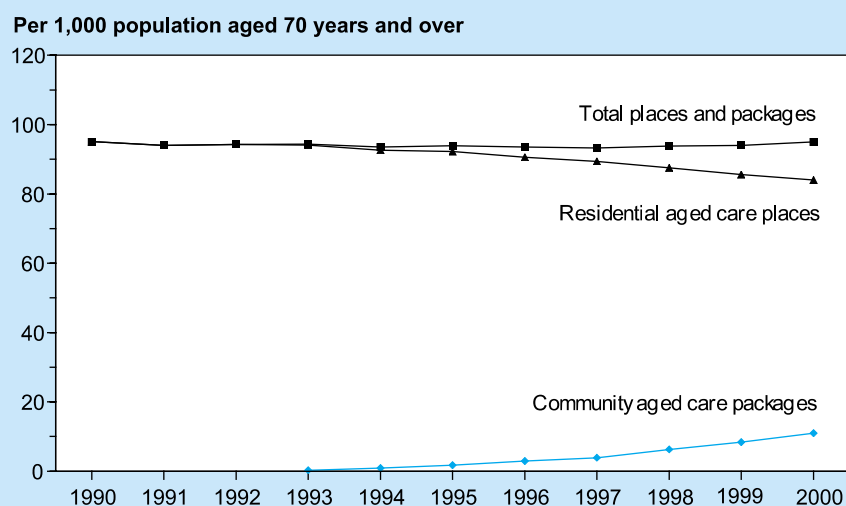
- The number of acute care hospital beds available per 1,000 population provides a measure of the capacity of institutional health care facilities. The indicator does not monitor total capacity, as hospital services comprise a mix of admitted patient, non-admitted patient and outreach services.
- Acute care hospitals are establishments that provide at least minimal medical, surgical and/or obstetrical services for admitted patient treatment and care, round-the-clock comprehensive qualified nursing services and other necessary professional services.
- The number of beds available in acute care hospitals has declined from 5.2 beds per 1,000 population in 1987-88 to 4.5 beds per 1,000 population in 1991-92 and 4.0 beds in 1998-99.
- The change in available beds was not evenly distributed between the public and private sectors, with the number of private acute beds increasing by 14% and the number of public acute beds decreasing by 11% between 1991-92 and 1998-99.
- The decline in available beds began in the late 1980s, coincident with rapid reductions in average length of stay in hospitals. However, this decline has not resulted in fewer people being treated in hospital (see *Acute care hospital separation rate* on page 96).

**For more information, see:**

AIHW 2000a. Australia's health 2000: the seventh biennial health report of the Australian Institute of Health and Welfare. Canberra: AIHW.

AIHW 2000b. Australian hospital statistics 1998-1999. Canberra: AIHW.

## Residential aged care places and community aged care packages for persons aged 70 and over



	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Residential aged care places	95	94	94	94	93	92	91	89	88	86	84
Community aged care packages	n.a.	n.a.	n.a.	–	1	2	3	4	6	8	11
<b>Total</b>	<b>95</b>	<b>94</b>	<b>94</b>	<b>94</b>	<b>94</b>	<b>94</b>	<b>94</b>	<b>93</b>	<b>94</b>	<b>94</b>	<b>95</b>

Source: AIHW 2001a.

- Until 1998, residential aged care facilities comprised nursing homes, which provide long-term nursing care to chronically ill, frail or disabled persons, and hostels, which provide accommodation for people who are unable to live wholly independently but do not require nursing care.
- In October 1997, a major restructuring of residential aged care amalgamated nursing homes and hostels into one single system of residential care, with a single instrument classifying residents according to their care needs. Community aged care packages, which provide personal care services for people living at home, were also expanded.
- In 2000, there were 84 residential aged care places per 1,000 population aged 70 years and over. There were a further 11 community aged care packages per 1,000 population aged 70 years and over. In that same year, 7% of persons aged 70 years and over lived in residential aged care facilities; this rose to 39% of persons aged 90 years and over.
- During the 1960s and 1970s, strong emphasis was placed on providing accommodation for older people in nursing homes. Although this style of accommodation is necessary for a proportion of older persons, most prefer to remain in their own homes. As a result, current government programs aim to expand coordinated forms of home-based care and respite services, enabling older people to stay as long as possible in the community.

**For more information, see:**

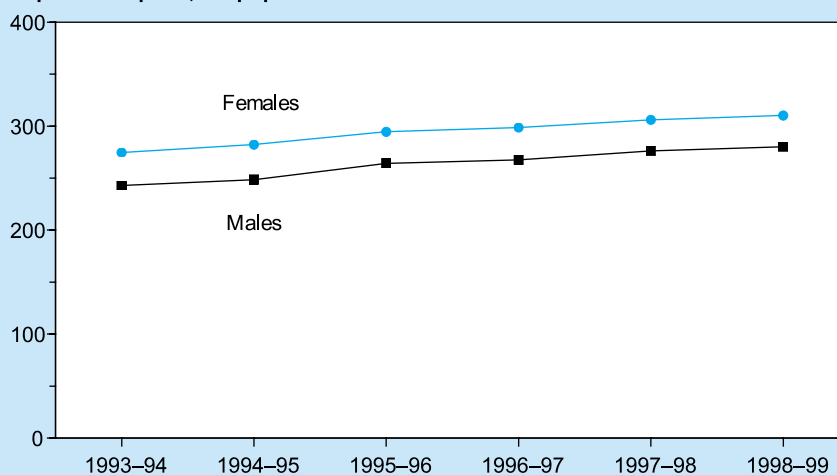
AIHW 2001a. Residential aged care facilities in Australia 1999–00: a statistical overview. Canberra: AIHW.

# 8 Health service utilisation and access

- Acute care hospital separation rate
- Average length of stay in acute care hospitals
- Acute care hospital patient days
- Medical consultations per person
- Organ and tissue transplants, and donor rate
- Use of dental services by adults
- Proportion of the population with private health insurance

## Acute care hospital separation rate

Separations per 1,000 population



	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99
Males	243	249	264	268	276	280
Females	275	282	295	299	306	310
<b>Total</b>	<b>257</b>	<b>268</b>	<b>278</b>	<b>282</b>	<b>289</b>	<b>294</b>

Note: The rates were age-adjusted using the total Australian population as at 30 June 1991.

Source: Estimates based on data derived from AIHW National Hospital Morbidity Database.

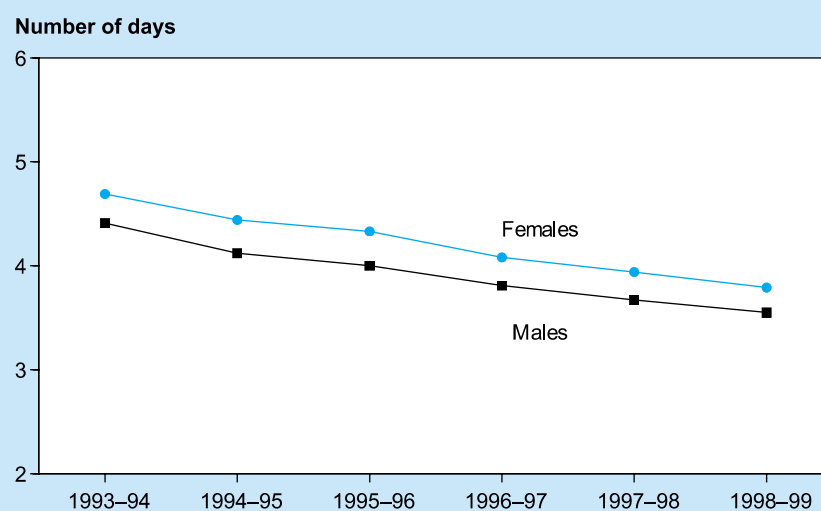
- The acute care hospital separation (or discharge) rate constitutes an indicator of the number of episodes of acute hospital care per person, and includes same-day episodes when the patient is admitted.
- In 1998-99, over 5.7 million separations were reported from public acute and private hospitals, with a separation rate of 294 per 1,000 persons.
- The number of acute care hospital separations has grown from 257 per 1,000 population in 1993-94 to 294 in 1998-99, representing an annual growth rate of 2.7%.
- Part of the increase may be attributable to changes in the age structure of the population. Increasing numbers may also reflect improved national reporting of separations. More significantly, a shorter average length of stay in hospitals has led to an increased number of separations (see *Average length of stay in acute care hospitals* on page 97).
- Hospital separation rates for females were greater than for males throughout the reported period. This difference is due in part to a higher rate of hospital admissions for reproductive health care.
- Trends in hospital separations are influenced not only by levels of serious illness in the population but also by access to hospitals, need for repeated admission, current medical attitudes towards treating an illness or injury in hospital as well as changes in the definition of a hospital separation.

**For more information, see:**

AIHW 2000b. Australian hospital statistics 1998-99. Canberra: AIHW.



## Average length of stay in acute care hospitals



	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99
Males	4.4	4.1	4.0	3.8	3.7	3.6
Females	4.7	4.4	4.3	4.1	3.9	3.8
<b>Total</b>	<b>4.6</b>	<b>4.3</b>	<b>4.2</b>	<b>4.0</b>	<b>3.8</b>	<b>3.7</b>

Note: Same-day hospital separations (or discharges) and a single overnight stay are deemed to be a length of stay of 1 day.

Source: Estimates based on data derived from AIHW National Hospital Morbidity Database.

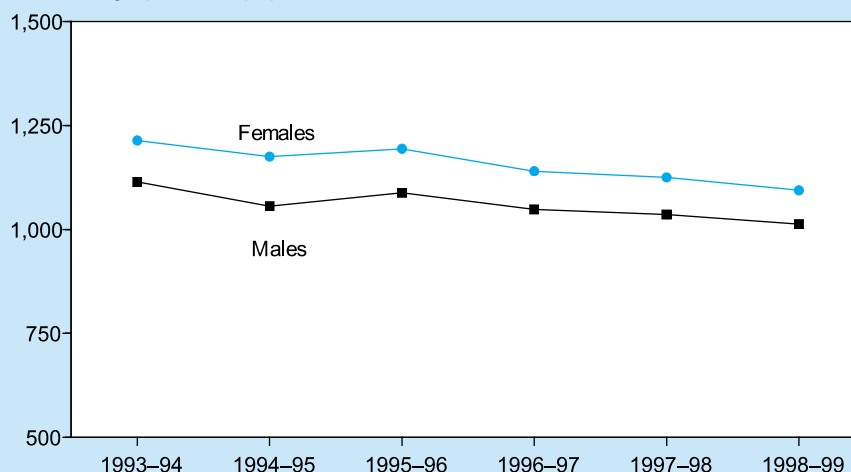
- The average time spent in acute care hospitals as an admitted patient is a useful indicator of the changing nature of hospital service delivery, including advances in technology that have allowed increased day-only surgery.
- The average length of stay in acute care hospitals in 1998-99 was 3.7 days. However, if same-day separations were excluded, the average stay was 6.2 days. Average length of stay has fallen from 4.6 days in 1993-94 to 3.7 days in 1998-99, representing an overall reduction of 19%, or an annual fall of 4.2%.
- The average length of stay profile is similar for males and females, both in terms of the average length of stay for any one year and for the rate of decline over the period shown.
- The decline in average length of stay is due to several factors. These include the better use of anaesthetics, less invasive surgical techniques and the expansion of early discharge programs enabling patients to return to their home to receive follow-up care.
- These advances have led to an increasing proportion of same-day patients, from 37% in 1993-94 to 48% in 1998-99. This rapid increase in the proportion of same-day separations has, in turn, led to rapid decreases in the overall average length of stay. Little change in average length of stay is noted if same-day separations are excluded.

**For more information, see:**

AIHW 2000b. Australian hospital statistics 1998-99. Canberra: AIHW.

## Acute care hospital patient days

Patient days per 1,000 population



	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99
Males	1,114	1,056	1,088	1,048	1,036	1,013
Females	1,214	1,175	1,194	1,140	1,125	1,094
<b>Total</b>	<b>1,158</b>	<b>1,134</b>	<b>1,137</b>	<b>1,089</b>	<b>1,076</b>	<b>1,049</b>

Note: The rates were age-adjusted using the total Australian population as at 30 June 1991.

Source: Estimates based on data derived from AIHW National Hospital Morbidity Database.

- A 'patient day' means the occupancy of a hospital bed, or chair in the case of some same-day patients, by an admitted patient for all or part of a day. The indicator provides insight into the impact of acute illnesses on health services, taking into consideration both the separation rate and the average length of stay in acute care hospitals.
- The number of acute care patient days declined steadily throughout the late 1980s. However, since the early 1990s, patient days have remained relatively stable. In 1998-99, there were 1,049 patient days in acute care hospitals per 1,000 population.
- Contrasting trends in hospital separation rates and average length of hospital stays have led to little change in the overall trend for this indicator. Decreases in the average length of stay have been offset by increases in the number of same-day separations.

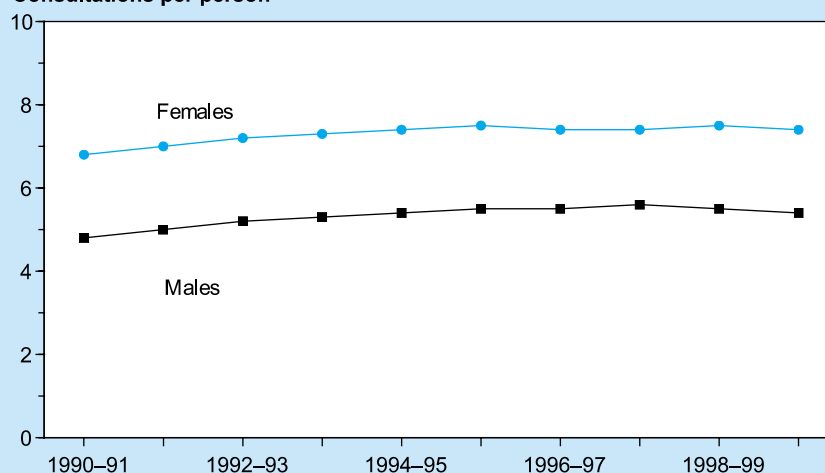
### For more information, see:

AIHW 2000a. Australia's health 2000: the seventh biennial health report of the Australian Institute of Health and Welfare. Canberra: AIHW.

AIHW 2000b. Australian hospital statistics 1998-99. Canberra: AIHW.

## Medical consultations per person

Consultations per person



	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00
Males	4.8	5.0	5.2	5.3	5.4	5.5	5.5	5.6	5.5	5.4
Females	6.8	7.0	7.2	7.3	7.4	7.5	7.4	7.4	7.5	7.4
<b>Total</b>	<b>5.8</b>	<b>6.0</b>	<b>6.2</b>	<b>6.3</b>	<b>6.4</b>	<b>6.5</b>	<b>6.5</b>	<b>6.5</b>	<b>6.4</b>	<b>6.3</b>

*Notes*

1. Includes general practice and specialist consultations, excludes services such as pathology, radiology, optometry and obstetrics.
2. The consultation rates were age-adjusted using the total Australian population as at 30 June 1991.

Source: AIHW, derived from data provided by the Health Insurance Commission.

- Consultations by doctors (general practitioners and specialists) are a major component of Australia's health service system.
- In 1990-91, GP and specialist consultations constituted 68% of all medical services, and pathology another 18%. In 1999-00, visits to GPs and specialists represented about 57% of all medical services. Pathology services represented another 28%, with the remaining services being provided in other fields such as obstetrics, anaesthesia, radiology and surgery.
- The average number of GP and specialist consultations increased from 5.8 consultations per person in 1990-91 to 6.3 in 1999-00, an increase of 0.8% per year.
- Even excluding pregnancy-related consultations, more females than males consult GPs and specialists. In 1999-00,

there were 148 female consultations for every 100 male consultations.

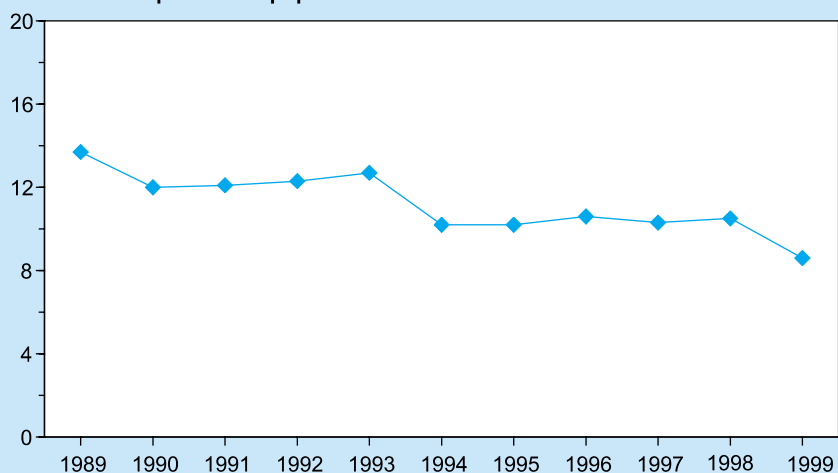
- The increase in consultation rates may, in part, be due to increased numbers of doctors, as there was a 21% increase in the number of primary care practitioners between 1986-87 and 1998-99. Increased promotion and awareness of steps which people can take to maintain their own health and that of their families, such as immunisation, Pap smears, blood pressure measurements and general health checkups, may have also contributed to the increased consultation rates.

**For more information, see:**

AIHW 2000a. Australia's health 2000: the seventh biennial health report of the Australian Institute of Health and Welfare. Canberra: AIHW.

## Organ and tissue transplants, and donor rate

Donation rate per million population



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Number of registered transplants</b>											
Kidney	491	443	469	476	457	440	441	475	502	517	453
Heart/heart-lung	98	110	117	113	115	103	108	94	93	73	68
Lung	–	5	18	31	58	64	62	65	82	83	67
Liver	100	80	116	138	127	138	145	142	152	154	124
Pancreas	7	9	8	10	11	15	13	12	16	18	17
Corneas	615	867	1,141	1,318	1,046	898	845	851	894	897	782
Bone marrow	225	247	368	478	529	632	681	820	905	1,003	958
<b>Donation rate (per million pop.)</b>	<b>13.7</b>	<b>12.0</b>	<b>12.1</b>	<b>12.3</b>	<b>12.7</b>	<b>10.4</b>	<b>10.2</b>	<b>10.6</b>	<b>10.3</b>	<b>10.5</b>	<b>8.6</b>

Note: Registration of corneal grafts is voluntary.

Sources: ANZOD 2000; ACCORD 1998; Nivison-Smith, Hawkins & Ma 2000; Australian Corneal Graft Registry unpublished.

- Australia has one of the highest transplant success rates in the world, with over 25,000 Australians receiving organ or tissue transplants since 1965. Transplanted organs include kidneys, heart, heart-lung, liver, lungs and pancreas. Tissue transplants include corneas, skin, bone, heart valves and bone marrow.
- At January 1999, over 1,700 Australians were awaiting an organ transplant, and over 600 a corneal or bone-marrow transplant. The waiting time for a kidney transplant is approximately 1–3 years, a heart 6–12 months and a pancreas 12–18

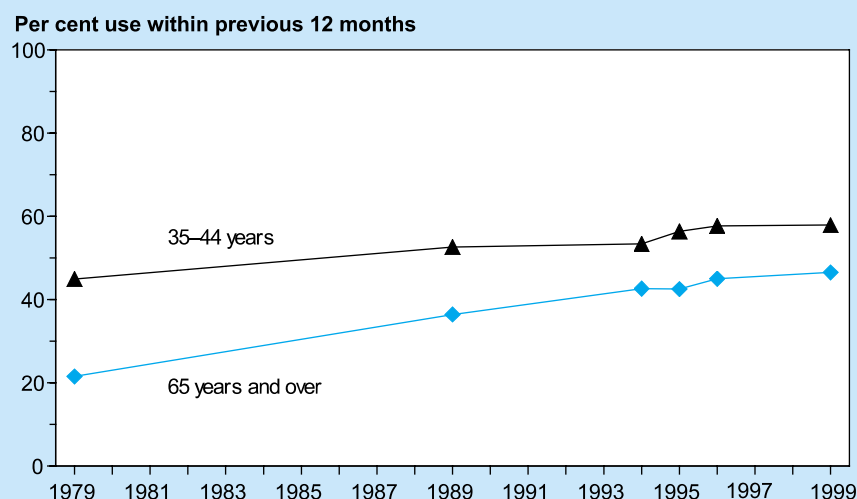
months. Current statistics indicate that up to 15% of patients awaiting transplants may die before one becomes available.

- In 1999, a total of 164 Australians became organ donors, a rate of 8.6 per million population, down from rates in the early 1990s. This rate is also lower than the rate in a number of other developed countries.

**For more information, see:**

ANZOD 2000. ANZOD Registry Report 2000. Adelaide: South Australia. ed. K. Herbert, GR Russ.

## Use of dental services by adults



	1979	1989	1994	1995	1996	1999
Persons aged 35–44 years	44.9	52.6	53.4	56.4	57.7	57.9
Persons aged 65 years and over	21.5	36.4	42.6	42.5	45.0	46.5

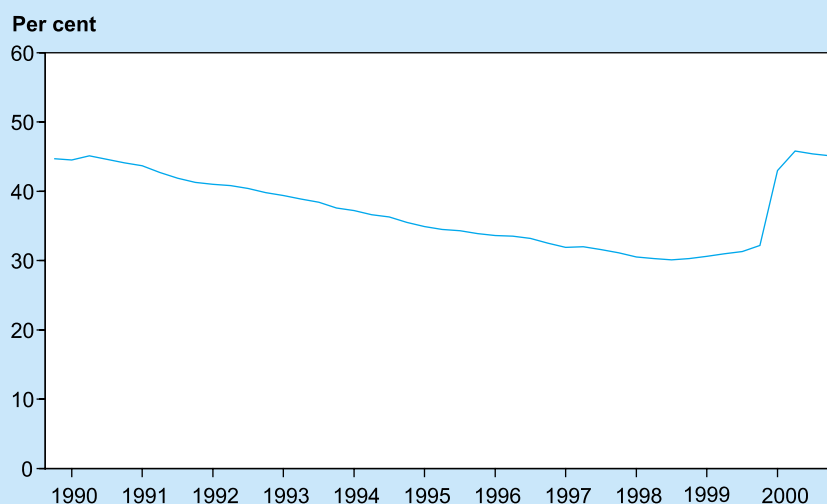
Source: AIHW Dental Statistics and Research Unit Database.

- Dental consultations constitute a useful indicator of preventive practices and treatment strategies. Trends in rates of dental visits among adults reflect improvements in the oral health of Australians.
- There has been an increase in the per capita use of services by adults since the late 1970s. In the period 1979 to 1999, the proportion of persons aged 65 years and over consulting a dentist in the previous 12 months more than doubled. Similarly, in the age group 35–44, the proportion of those visiting a dentist increased by almost 30% between 1979 and 1997.
- This rise in rates can be attributed to an increased awareness of the need for preventive care within the community and to decline in edentulism (the loss of all natural teeth) within the adult community (see *Prevalence of edentulism* on page 43). Both of these changes are associated with an increase in the frequency of visits to a dentist, and an increase in the proportion of visits that are for checkups rather than dental problems.
- Despite a total increase in dental attendance in adults aged 65 years and over during the past two decades, fewer dental visits occur in older males and females with lower socioeconomic status. Among younger age groups, socio-economic differences are not as apparent.

**For more information, see:**

Brennan DS, Carter KD, Stewart JF & Spencer AJ 1997. Commonwealth dental health program evaluation report 1994–1996. Adelaide: AIHW DSRU, University of Adelaide.

## Proportion of the population with private health insurance



	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Per cent	44.5	43.7	41.0	39.4	37.2	34.9	33.6	31.9	30.5	30.6	43.0

Note: 'Private health insurance' refers to at least basic hospital insurance coverage as at 30 June in each year.

Source: Private Health Insurance Administration Council 2000.

- Every Australian resident is guaranteed adequate health care at minimal or no cost at the point of service through a comprehensive health insurance scheme funded by compulsory levies—the Medicare scheme—but a proportion of the population supplements that guaranteed level of health care by purchasing private health insurance.
- The factors that motivate people to purchase private health insurance are various, and include the option of receiving treatment in a private hospital or as a private patient in a public hospital, perceived ability to avoid waiting lists for non-urgent services, and perceived ability to choose their own physician. However, the main determinants of demand for private health insurance are age, state of health and material wellbeing.
- The introduction of Medicare in February 1984 caused a rapid decline in private health insurance coverage, from about 68% in 1982 to 50% in 1984 (when Medicare was introduced) and 39% in 1993. The trend continued, with the proportion falling to less than 31% in 1999.
- However, recent government moves have seen the rate of decline halt, with indications that greater proportions of the population are now purchasing private health insurance.

### For more information, see:

AIHW 2000a. Australia's health 2000: the seventh biennial health report of the Australian Institute of Health and Welfare. Canberra: AIHW.

Private Health Insurance Administration Council 2000. Annual report 1999–2000. Canberra: AGPS.

## Abbreviations, acronyms and symbols

AACR	Australian Association of Cancer Registries		
ABMTRR	Australasian Bone Marrow Transplant Recipient Registry		
ABS	Australian Bureau of Statistics		
ACCORD	Australian Coordination Committee on Organ Registries and Donation		
ACIR	Australian Childhood Immunisation Register		
AGPS	Australian Government Publishing Service		
AIDS	Acquired immune deficiency syndrome		
AIHW	Australian Institute of Health and Welfare		
AIHW DSRU	Australian Institute of Health and Welfare Dental Statistics and Research Unit		
ANZOD	Australia and New Zealand Organ Donation Registry		
AusDiab	Australian Diabetes, Obesity and Lifestyle Study		
BMI	Body mass index		
CHD	Coronary heart disease		
DHFS	Commonwealth Department of Health and Family Services		
DMFT	Decayed, missing or filled permanent teeth		
FORS	Federal Office of Road Safety		
GDP	Gross domestic product		
GP	General practitioner		
HACC	Home and Community Care		
Hib	Haemophilus influenzae type b		
HIV	Human immunodeficiency virus		
ICD-9	International Classification of Diseases, 9th Revision		
ICD-9-CM	International Classification of Diseases, 9th Revision, Clinical Modification		
ICD-10	International Classification of Diseases, 10th Revision		
IVF	In-vitro fertilisation		
NCHECR	National Centre in HIV Epidemiology and Clinical Research		
NHF	National Heart Foundation		
NHMRC	National Health and Medical Research Council		
NMSC	Non-melanocytic skin cancer		
NNDS	National Notifiable Diseases Surveillance System		
NSFA	National Stroke Foundation of Australia		
PSA	Prostate-specific antigen		
PYLL	Potential years of life lost		
SIDS	Sudden infant death syndrome		
STD	Sexually transmitted disease		
TB	Tuberculosis		
\$	dollar	m	million
-	zero	MJ	megajoule
%	per cent	ml	millilitre
≥	greater than or equal to	mmHg	millimetres of mercury
≤	less than or equal to	mmol/L	millimoles per litre
'000	thousand	n.a.	not available
g	gram	n.n.	not notifiable

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