

# 4 Population health

The health of a nation is defined in many ways—birth rates, death rates, life expectancies, incidence of disease and self-perceptions of health status. Regardless of how health is measured, good health is not equally shared by all people in Australia, and the health issues for various groups are different. This chapter, therefore, focuses on various population groups and their health, rather than on the general population as in other chapters.

The chapter highlights key health areas over important stages of the lifespan, by summarising the health of mothers and their babies, children and young people. The health of older Australians is explored in detail in Chapter 8.

As people of all ages may have special health needs and problems depending on their socioeconomic position, geographic location or cultural background, the chapter also examines population groups defined along these lines, along with specially serviced populations such as veterans and prisoners, and a new section on those whose health is complicated by disability.

While other chapters in *Australia's Health* highlight population-specific issues among discussions of diseases, health services and information collection, this chapter brings together the areas of relevance for each of these population groups. It contrasts the health status of different groups, thus highlighting what might be achieved if all groups had a similar level of health. This information is important for public health and social policy because the different groups may benefit from different approaches to preventive programs (for example, targeting specific risk factors, health awareness programs or screening programs), health-related communication (for example, language-specific communication materials) and service delivery (for example, mobile services).

## 4.1 Mothers and babies

Recent years have seen some notable trends in the area of reproduction. Numbers of births in Australia have been generally decreasing, as have fertility rates and perinatal deaths. In contrast, the proportion of multiple births has been increasing. This section provides information on these and other trends, as well as information on assisted reproductive technology (ART), pregnancy termination, birthweight, type of delivery and maternal mortality.

### Fertility

The total fertility rate refers to the number of babies a woman could expect to bear, on average, during her lifetime if she experienced current age-specific fertility rates throughout her child-bearing life. Since 1961, when each woman averaged 3.55 babies, the total fertility rate has declined to 1.75 births per woman in 2002 (ABS 2003b). This is notably below the replacement fertility level of 2.1 babies per woman—the number of

babies a woman would need to have during her lifetime to replace both herself and her partner. This trend for fertility to drop below replacement level is occurring in most developed, and some developing, countries.

Aided by effective and available methods of fertility control, Australian women are increasingly delaying childbearing for a number of social, economic and cultural reasons. In 2002, the highest fertility occurred in women aged 30–34 years, at a rate of 111.2 babies per 1,000 women, continuing the trend of the previous two years. This group experienced slightly higher fertility than the 25–29 year age group (104.2 babies per 1,000 women). The main decline in the fertility rate over the past 20 years has occurred among the 20–24 and 25–29 age groups. Meanwhile, fertility has continued to increase in women aged 40 and over (ABS 2003b), and ART has played a role in this.

## Live births

There were 250,988 live births registered in Australia in 2002 (ABS 2003b), and the annual number has steadily declined since 1992, although there were slight increases in 2000 and again in 2002. The crude birth rate, which is the number of live births per 1,000 population, was 12.8 in 2002. This compares with 15.8 in 1982 (ABS 2003b).

Australia's crude birth rate for 2001 lies between those of the United Kingdom (11 live births per 1,000 population) and the United States (15 per 1,000 population). New Zealand also had a crude birth rate of 15, while Japan's was lower, at 9 in 2001 (World Bank 2003).

## Age-specific birth rates

Age-specific birth rates express the number of live births to women in a particular age group per 1,000 women of the same age group in the population in a given year.

In 2002, the peak birth rate among all age groups was in those aged 30–34 (111.2 per 1,000 women) (ABS 2003b). This trend of delayed childbearing can be attributed to a number of factors including social, educational and economic influences, increased access to ART and longer reproductive life expectancy.

Among teenage mothers aged 15–19 years, the birth rate declined from 27.4 births per 1,000 women in 1982 to 17.1 in 2002. Even in the last few years, the decline has been large, down from 22.0 in 1992 to 17.7 in 2000. When compared with the 1982 rate, the 2002 rate represents an overall decline of 38% (ABS 2003b).

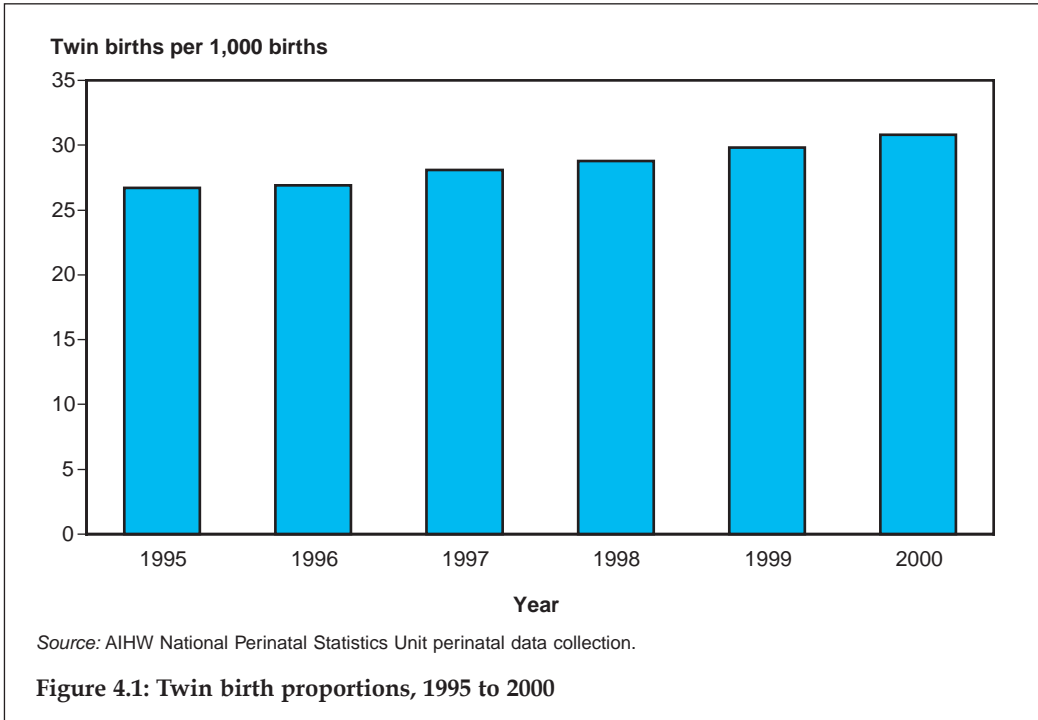
This trend is more pronounced among women in the 20–24 year age group. The birth rate decreased from 103.9 in 1982 to 75.0 in 1991 and 55.5 in 2002, representing an overall decline of 47% in birth rates over the period 1982–2002.

The lowest birth rate for women aged 35–39 years was in 1978, with 23.5 per 1,000 women giving birth, gradually increasing to a historical high of 52.2 in 2002, representing an increase of over 100%.

The birth rate for women aged 40–44 years showed a similar trend, with rates more than doubling over the period 1982–2002. In 2002, there were 9.7 births per 1,000 women compared with 4.5 per 1,000 women in 1982 (ABS 2003b).

## Multiple births

The increasing rate of multiple births in Australia continued in 2000. There were 7,933 twin, and 310 triplet and higher order multiple births in 2000, representing 3.1% and 0.1% of all births in Australia, respectively. The associated multiple birth rate in 2000 was 32.0 per 1,000 births, increasing 15.0% from 27.8 in 1995. The twin birth rate has steadily increased from 26.7 twins per 1,000 births in 1995 to 30.8 in 2000—a 15.3% increase (Figure 4.1).



Several factors have influenced the rising rate of multiple births, including the change in the maternal age distribution (more older mothers) and the increased use of fertility drugs and assisted conception to treat infertile couples.

## Birthweight

A key indicator of infant health is the proportion of babies with a birthweight of less than 2,500 grams. These low-birthweight babies have a greater risk of poor health and dying, require a longer period of hospitalisation after birth, and are more likely to develop significant disabilities.

In 2000, the average birthweight of all live-born and stillborn babies was 3,367 grams. The average birthweight of males (3,429 grams) was slightly higher than that of females (3,302 grams). There were 17,475 low-birthweight babies in 2000, representing 6.8% of all births, up from 6.3% in 1991. Low birthweight was more likely among female babies (7.3%) than male babies (6.3%). More male babies (48.4%) than females (37.7%) had a birthweight of 3,500 grams or over.

Singleton babies have higher birthweights than multiple-birth babies. In 2000, the average birthweight for singleton live births was 3,413 grams, while that for multiple live births was 2,383 grams.

## Type of delivery

Almost two-thirds (64.9%) of all confinements resulted in spontaneous vaginal deliveries in 2000; 23.3% involved caesarean section deliveries and 11.8% involved forceps, vacuum extraction and/or vaginal breech delivery. Obstetric intervention generally occurs if serious complications arise during pregnancy or labour. In 2000, there were marked differences among states and territories in the use of forceps and vacuum extraction (Table 4.1). Victoria recorded the highest percentage of forceps delivery (6.9%), and the Northern Territory the lowest (3.3%). The percentage of vacuum extraction varied, ranging from 3.4% of deliveries in the Northern Territory to 9.0% of deliveries in Western Australia.

**Table 4.1: Type of delivery, states and territories, 2000**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Aust
	<b>Number</b>								
Total confinements	86,462	61,573	48,514	24,818	17,578	5,808	4,684	3,629	253,066
	<b>Per cent</b>								
Spontaneous vaginal	67.1	63.2	65.3	60.8	61.7	68.0	65.7	71.9	64.9
Forceps	4.5	6.9	3.7	4.3	6.4	5.3	6.5	3.3	5.1
Vacuum extraction	6.2	5.9	4.8	9.0	6.3	4.2	5.7	3.4	6.1
Vaginal breech	0.8	0.6	0.5	0.6	0.5	0.4	0.4	0.5	0.6
Caesarean section	21.3	23.4	25.6	25.3	25.2	21.7	21.7	20.8	23.3
Other/unknown	—	—	—	—	—	0.5	—	0.1	—
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: AIHW National Perinatal Statistics Unit perinatal data collection.

The percentage of women having caesarean sections has increased significantly from 18.0% in 1991 (AIHW: Lancaster et al. 1994) to 23.3% in 2000. In Queensland, Western Australia and South Australia, a quarter of confinements resulted in caesarean section deliveries in 2000 (25.6%, 25.3% and 25.2% respectively). The Northern Territory reported the lowest rate—20.8% of deliveries in 2000.

## Assisted reproductive technology (ART) and the health of ART babies

Since 1979, ART has been used in Australia to help couples achieve pregnancy. The main ART procedures include in-vitro fertilisation (IVF), where eggs and sperm are combined in the laboratory for fertilisation outside the body and then replaced into the uterus; intra-cytoplasmic sperm injection (ICSI), where a single sperm is injected into an egg for fertilisation outside the body and then replaced into the uterus; and gamete intra-fallopian transfer (GIFT), where eggs and sperm are placed in the uterus for

fertilisation inside the body. Since 1992, the total number of ART treatment cycles has increased by 76.8%, showing the escalating demand for fertility services in Australia. In 2000, 4,801 babies were born following ART treatment, accounting for 1.9% of all Australian births (AIHW: Dean & Sullivan 2003).

The success of ART varies by treatment procedure and whether fresh or thawed embryos or gametes are used. In 2001, with the transfer of fresh embryos or gametes, a viable pregnancy (a pregnancy of at least 20 weeks gestation) was achieved in 20.8% of all IVF egg retrieval cycles, 25.9% of ICSI cycles and 19.7% of GIFT cycles. With the transfer of thawed embryos, a viable pregnancy was achieved in 15.5% of all IVF embryo transfer cycles and 14.7% of all ICSI cycles. When all ART techniques are combined, a viable pregnancy is achieved in 20% of embryo transfer cycles.

The average age of women giving birth after ART treatment was 33.6 years, 4.6 years older than the average age of all Australian mothers (29.0 years). Deliveries of ART babies tended to involve a higher incidence of caesarean section (46.7% of ART deliveries) and ART babies tended to have lower birthweights. Moreover, ART babies had a perinatal death rate of 20.7 deaths per 1,000 births, a rate 2.5 times that for all Australian births. These poorer outcomes are partly the result of the higher incidence of multiple pregnancies among ART mothers. For ART pregnancies in 2001, 20.8% were twin and 1% were triplet pregnancies. These proportions are markedly different from those in the general Australian population wherein only 1.6% of confinements were twin and 0.04% were triplet pregnancies (AIHW: Dean & Sullivan 2003).

## Termination of pregnancy

At the national level, information on terminations of pregnancy is incomplete. However, there are some state estimates and the national Medicare data set may be of use, although Medicare Benefits Schedule items relating to termination of pregnancy can also be claimed for other reasons.

In 2001, Medicare fee-for-service benefits (MBS items 16525 and 35643) were paid for 76,332 terminations of pregnancy; this figure excludes services to public patients in hospital and through other publicly funded programs. In 2002, this number had decreased slightly, to 75,282 terminations (HIC 2003b).

Only South Australia and Western Australia collect population-based data on terminations. In 2001, South Australia reported 5,571 terminations at a rate of 17.6 per 1,000 women aged 15–44 years (Chan et al. 2002). Western Australia reported 8,368 terminations at a rate of 19.9 per 1,000 women aged 15–44 years.

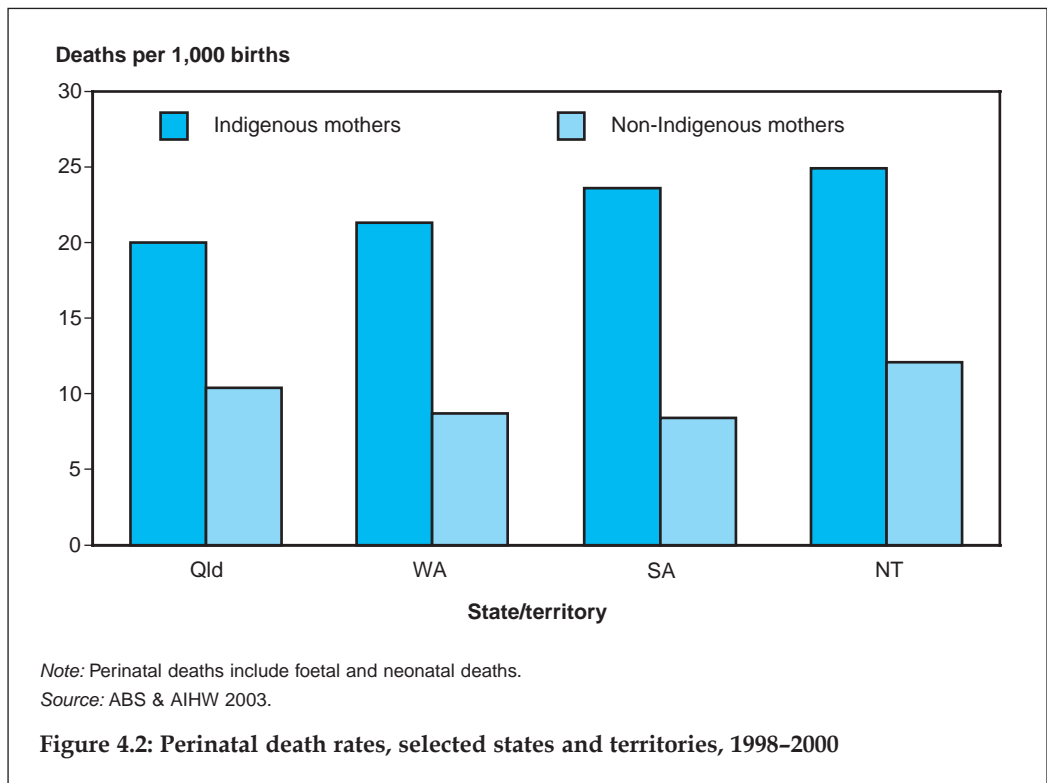
## Indigenous mothers and their babies

In 2000, there were 8,779 babies born to Indigenous mothers, representing 3.4% of all Australian births. Of these, 13.5% were classified as low birthweight, twice the percentage for mothers overall.

Of births to Indigenous mothers, 20.3% were delivered by caesarean section, a slightly lower percentage than for all mothers. However, among Indigenous mothers aged

less than 20 years, 16.6% gave birth by caesarean section delivery compared with 13.5% of all teenage mothers.

Perinatal mortality data reported here are produced from data provided by all states and territories for the three-year period 1998–2000 (ABS & AIHW 2003). During that period, babies of Indigenous mothers were twice as likely to die at birth and during the early postnatal phase as babies born to other Australian mothers (Figure 4.2) 20.1 deaths per 1,000 births compared with 9.6. Although it is difficult to assess trends due to uncertainties about how completely women are identified as Indigenous in the perinatal collections, the overall perinatal mortality rate for this period is similar to that for 1996–1998.



## Perinatal mortality

Perinatal deaths include stillbirths (foetal deaths) and deaths of infants within the first 28 days of life (neonatal deaths). In 2002, more than 40% of foetal deaths were not allocated a specific cause of death, since medical certifiers are often unwilling or unable to provide an accurate cause of death without the assistance of an autopsy (ABS 2003c). The main causes of foetal deaths are intra-uterine hypoxia (a respiratory condition) (15.0%); congenital malformations, deformations and chromosomal abnormalities, such as trisomy 21 (Down syndrome) (14.1%); and disorders related to length of gestation and foetal growth (9.8%) (ABS 2003c).

Overall, the perinatal death rate has declined markedly in the last decade, from 10.7 deaths per 1,000 births in 1992 to 8.0 in 2002 (ABS 2003c). Foetal deaths (4.9 per 1,000 births) accounted for 61.4% of perinatal deaths, and neonatal deaths (3.1 per 1,000 births) for 38.6%. The perinatal death rate for males (8.6 per 1,000 births) was higher than that for females (7.4 per 1,000 births).

Perinatal deaths were more likely to occur among babies born to younger mothers (less than 20 years) and older mothers (40 years and over). In 2002, the rate was 12.4 deaths per 1,000 births among women aged less than 20 years and 12.7 among women aged 40 years or over. In contrast, the rates among births to women aged 25–29 and 30–34 years were 7.3 and 6.5 deaths per 1,000 births respectively (ABS 2003c).

## Maternal mortality

Maternal deaths occur rarely in Australia (approximately 30 per year). They are classified into direct deaths (deaths from pregnancy complications), indirect deaths (deaths from pre-existing diseases worsened by pregnancy) and incidental deaths, where the pregnancy was unlikely to have contributed significantly to the death.

Between 1994 and 1996, there were 106 deaths, an increase from the previous three years when 84 deaths were reported. An additional 6 deaths during 1994–1996 were identified following the release of the *Report on Maternal Deaths in Australia, 1994–96* (AIHW & NHMRC 2001). The main causes of maternal death in 1994–1996 included pulmonary embolism, hypertension, amniotic fluid embolism, cardiovascular disease and injury. Of all maternal deaths, direct deaths accounted for 46% and indirect deaths for 20%.

To bring Australian reporting into line with international standards and facilitate international comparisons, the number of maternal deaths used to calculate the maternal mortality rate will no longer include incidental deaths. For 1994–1996, the number of direct and indirect deaths was 66, with an overall mortality rate of 9.1 deaths per 100,000 confinements. Table 4.2 shows maternal mortality deaths and rates for the 1991–1993 and 1994–1996 triennia.

**Table 4.2: Maternal mortality**

	Direct deaths	Indirect deaths	Incidental deaths	MMR <sup>(a)</sup> including incidental deaths	MMR <sup>(a)</sup> excluding incidental deaths
1991–1993	26	22	36	10.9	6.2
1994–1996	46	20	34	13.0	9.1

(a) Maternal mortality rate per 100,000 confinements.

Sources: NHMRC 1998; AIHW National Perinatal Statistics Unit maternal mortality database.

Incidental deaths accounted for 34% of total maternal deaths in 1994–1996. These deaths were due to factors unrelated to pregnancy such as motor vehicle accidents, suicides, homicides and unrelated cancers.

## 4.2 Children and young people

This section provides an overview of the health and wellbeing of Australia's children and young people. For more detailed information refer to the Australian Institute of Health and Welfare's reports *Australia's Children: Their Health and Wellbeing 2002* and *Australia's Young People: Their Health and Wellbeing 2003*. Children are defined as persons aged 0–14 years and young people as persons aged 12–24 years. The overlap in ages is intentional, and reflects the fact that the transition from childhood to adulthood is a gradual process and does not occur at the same age for all individuals.

### Children

In June 2003, about 4.0 million Australians (21% of the total population) were children aged 0–14 years. Of these, 2.0 million were boys and 1.9 million were girls. Of the children aged 0–14 years, 5.8% (about 230,000 children) were born in an overseas country. The Aboriginal and Torres Strait Islander child population in Australia in 2001 was about 179,000, comprising 4.5% of the total Australian child population (ABS 2003a).

Most Australian children enjoy good health, as indicated by increasing life expectancy at birth, and low and declining perinatal, infant and childhood deaths. Australian children grow up in a generally secure environment and have access to a quality education system, giving them a good start in life. However, there are children who are less fortunate than the majority. Children from families with lower socioeconomic status or an Indigenous background are exposed to a greater number of health risk factors, and have a higher risk of disease, injury and death than other Australian children.

### Health status

The health status of Australian children is generally good. However, some Australian children are affected by chronic health conditions such as Type 1 diabetes and asthma. The latest available national data on the incidence of Type 1 diabetes in children come from the National Diabetes Register (a register of people with diabetes who use insulin). In 2001, the incidence of Type 1 diabetes in children was estimated to be 20.6 new cases per 100,000 children (AIHW 2003d). This was an increase of 10% from 18.7 new cases per 100,000 children in 2000 (AIHW 2001). While there are no national data in Australia, Type 2 diabetes, which is usually seen only in adults, is increasingly being reported in children in the United Kingdom, United States and other countries (Ehtisham et al. 2001; Brosnan et al. 2001).

Recent surveys show that 14 to 16% of children have a diagnosis of asthma that remains a current problem (Australian Centre for Asthma Monitoring 2003). Asthma was the most prevalent health condition reported for children aged 0–4 years (8%) and 5–14 years (16%) in the 2001 National Health Survey. The proportion of boys aged 0–14 years with asthma was higher than for girls of the same age range (15% compared with 12%). There was an increase in the proportion of children with asthma in the 1980s and early 1990s, although it is not clear whether there has been any change since that time (Australian Centre for Asthma Monitoring 2003).

The prevalence of mental health and behavioural problems among children aged 4–12 years is also of concern, and is estimated to be around 14%. The prevalence of attention-deficit hyperactivity disorder (ADHD) and depressive and conduct disorders is consistently higher for boys aged 6–12 than for girls of the same age. About 1 in 5 boys (19.3%) were identified to have ADHD compared with a prevalence of 8.8% among girls. The prevalence of depressive disorder and conduct disorder among boys was 3.7% and 4.8% respectively. The corresponding prevalence for the same disorders in girls was 2.1% and 1.9% (Sawyer et al. 2000).

## **Risk and protective factors for children**

Children's health is influenced by a complex mix of risk and protective factors. Understanding the effect of these factors in children is particularly important because intervention early in life will usually have a better chance of success, and may even be essential for some factors.

Childhood risk and protective factors include physiological, familial, social and physical factors, as well as access to health and welfare services. Risk factors for poor health, particularly in the years before school, can include features related to the social and family environment such as parental mental illness, harsh parenting, abuse, neglect and family conflict; low socioeconomic status; and poor links with the community and social isolation. Biological and behavioural risk factors that influence health include low birthweight; lack of breastfeeding; the combination of physical inactivity and inappropriate nutrition leading to overweight and obesity; lack of protection from the sun; and not being fully vaccinated (Centre for Community Child Health 2000).

The health status of Australian children has generally improved over the last decade. For example, the proportion of children vaccinated against major preventable childhood diseases has increased, largely as a result of recent strategies and policies. Data from the Australian Childhood Immunisation Register indicate that the proportion of children aged 1 year who have been fully immunised increased from 74.9% in 1996 to 91.7% in 2003. The rate of full immunisation among children aged 2 years increased from 63.8% in 1996 to 89.3% in 2003 (HIC 2003a; AIHW 2002b).

According to the Australian Bureau of Statistics (ABS) 2001 National Health Survey, the majority of Australian children (91%) used some form of sun protection when in the sun. Sun protection has also been enforced at schools by a 'no-hat, no-play' policy.

Despite these successes, there are areas of concern, such as overweight and obesity among children (Magarey et al. 2001; Booth et al. 2001, 2003). Independent surveys conducted in three Australian states (New South Wales, Victoria and South Australia) indicate that in the period from 1985 to 1997, the prevalence of overweight among children increased by 60–70% and the prevalence of obesity trebled (Booth et al. 2003). There are health implications of obesity both in and beyond childhood. Overweight and obesity in children can lead to a number of conditions including high blood pressure, Type 2 diabetes, musculoskeletal discomfort, obstructive sleep apnoea, heat intolerance, asthma and shortness of breath (Eckersley 2001; Must et al. 1999). In addition, children's social and psychological wellbeing is affected by being overweight and obese (Strauss 2000).

## Hospitalisations

The total number of hospitalisations in 2001–02 for Australian children aged 0–14 years was 550,076, comprising 8.6% of all hospitalisations. More boys (58%) than girls were hospitalised and a quarter (25%) of child hospitalisations were of infants. The most common reason for hospitalisations for the age groups 0–4 and 5–9 was for a respiratory condition, and for 10–14-year-olds it was for injury and poisoning (Table 4.3).

**Table 4.3: Number and percentage of most common causes of hospitalisations for children aged 0–14 years, Australia, 2001–02**

	Number			Percentage		
	0–4 years	5–9 years	10–14 years	0–4 years	5–9 years	10–14 years
Respiratory conditions	66,463	24,556	11,804	20.9	19.4	11.2
Injury and poisoning	22,985	21,490	23,352	7.2	17.0	22.1
Digestive conditions	20,158	16,582	15,148	6.3	13.1	14.3
Perinatal conditions	49,043	44	61	15.4	0.0	0.1
Infectious and parasitic diseases	30,328	7,932	4,143	9.5	6.3	3.9
Diseases of the ear and eye	21,639	12,969	3,877	6.8	10.3	3.7
Other conditions <sup>(a)</sup>	107,338	42,913	47,251	33.8	33.9	44.7
<b>Total</b>	<b>317,954</b>	<b>126,486</b>	<b>105,636</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

(a) Other conditions include 'contact with health services' (which includes circumcision and treatments such as dialysis and chemotherapy); symptoms, signs and abnormal findings; congenital malformations; diseases of the nervous, genitourinary, endocrine and circulatory systems; mental disorders; skin, musculoskeletal and blood diseases; pregnancy and childbirth-related complications; and cancer.

Source: AIHW National Hospital Morbidity Database.

## Mortality

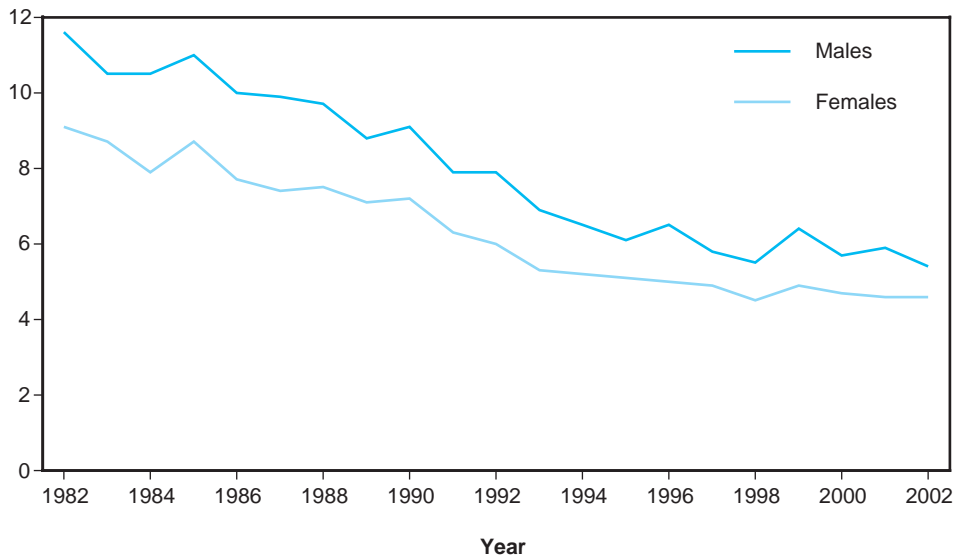
Mortality among Australian children is low and declining. Australia's infant mortality rate has almost halved over the past two decades, and there has also been a steady decline in mortality among children aged 1–14 years.

In 2002, 1,882 Australian children aged 0–14 years died, accounting for 1.4% of all deaths in that year, while children comprise 21% of the total population. Most of these child deaths occurred among infants – 67% of child deaths in 2002 were of children aged less than 1 year.

Infant mortality rates are higher among boys than girls for almost all leading causes of death. Between 1982 and 2002, the infant mortality rate for boys was, on average, 27% higher than that for girls (Figure 4.3). Major causes of infant deaths in Australia in 2002 were conditions originating in the perinatal period (52% of total infant deaths), congenital malformations (22%) and sudden infant death syndrome (SIDS) (9%).

A major contributor to the recent fall in post-neonatal mortality (aged over one month and under one year) has been the decline in deaths from SIDS. Although a relatively uncommon event, SIDS remains the single most important cause of post-neonatal infant death in Australia. However, following the 1991 introduction of the National SIDS Council of Australia's public education campaign on the sleeping position of infants, which advised that babies should be placed on their back or on their side in such a way that they cannot roll onto their stomach, the death rate from SIDS has decreased dramatically (Figure 4.4). In 2002, the SIDS death rate was 46 deaths per 100,000 live births, compared with 180 in 1982 – a fall of 74%, with most of the decline occurring during the early 1990s.

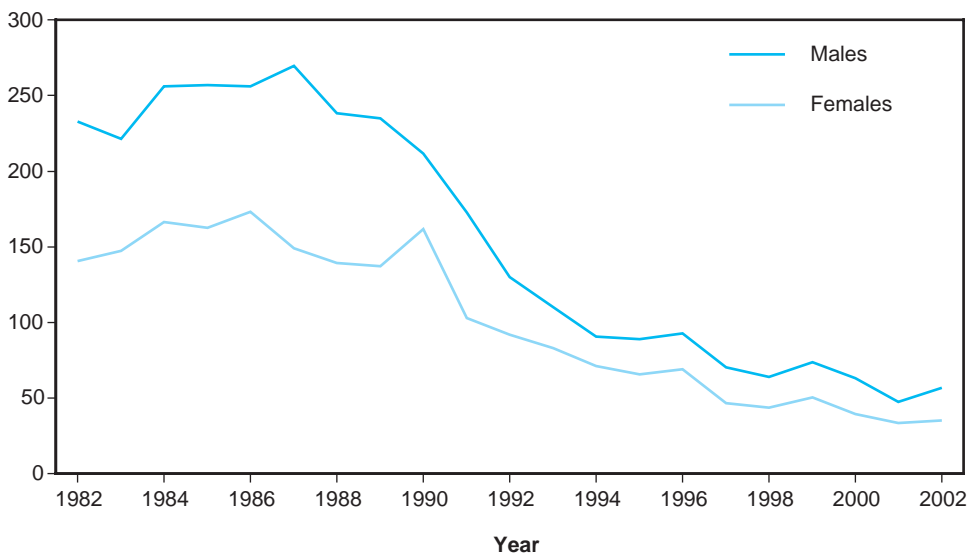
Deaths per 1,000 live births



Source: AIHW National Mortality Database.

Figure 4.3: Infant death rates, 1982 to 2002

Deaths per 100,000 live births

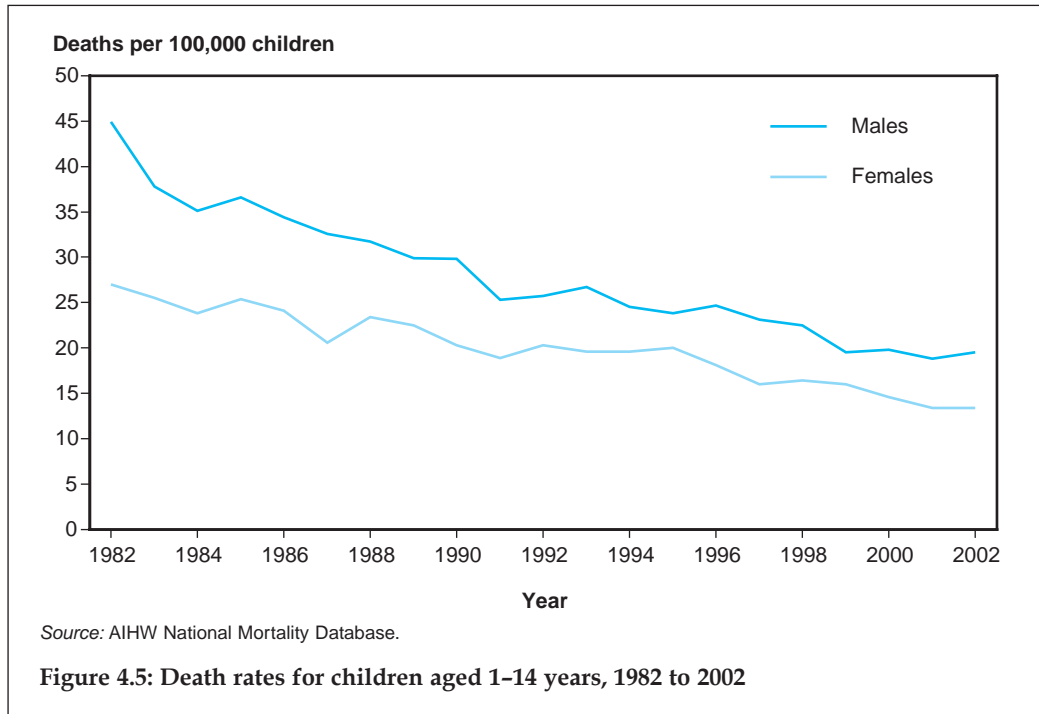


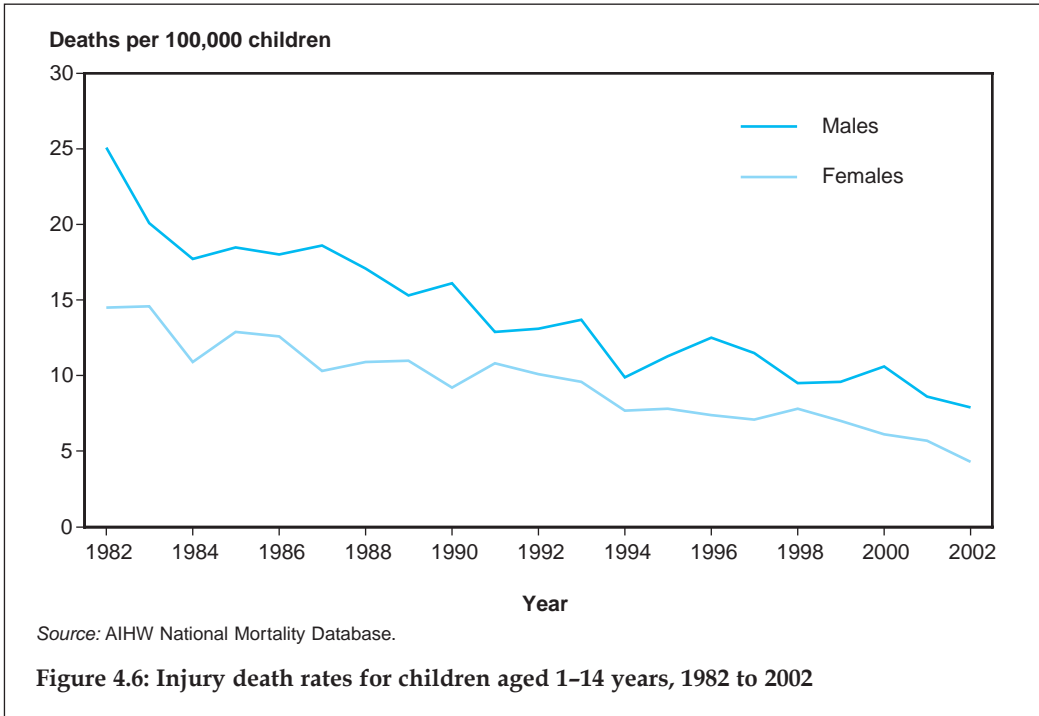
Source: AIHW National Mortality Database.

Figure 4.4: Death rates from SIDS for infants under 1 year, 1982 to 2002

Although Australia compares well internationally in its life expectancy and overall death rates, its infant mortality rates are not so favourable. In 2001, Australia's infant mortality rate of 5.2 deaths per 1,000 births ranked sixteenth among 30 OECD countries (OECD 2003). The lowest infant mortality was recorded in Iceland with a rate of 2.7 deaths per 1,000 live births. Infant mortality in Australia is influenced by high death rates among Indigenous infants. In 2001, the Indigenous infant mortality rate was 10.6 deaths per 1,000 live births, a rate that was 2.2 times that of the non-Indigenous infants.

In the last two decades there has also been a large decline in mortality among children aged 1–14 years. Between 1982 and 2002, the mortality rate declined by 51% for boys, from 39.6 to 19.5 deaths per 100,000 boys, and by 50% for girls, from 26.8 to 13.4 deaths per 100,000 girls (Figure 4.5). Injury remains the leading cause of death among children aged 1–14 years (229 deaths, or 6.1 deaths per 100,000 children in 2002). Death from injury was higher for boys (7.9 deaths per 100,000 children) than for girls (4.3 deaths per 100,000 children) (Figure 4.6). The main causes of injury among children were accidental drowning, pedestrian accidents, accidental suffocation and transport accidents. Child deaths due to motor vehicle accidents declined from 3.7 deaths per 100,000 children in 1991 to 2.0 deaths per 100,000 children in 2002. Similarly, the death rate for accidental drowning declined from 2.1 in 1991 to 1.4 deaths per 100,000 children in 2002. Other common causes of deaths in this age group are neoplasms including cancer (118 deaths in 2002, or 3.2 deaths per 100,000 children), diseases of the nervous system including cerebral palsy and epilepsy (61 deaths, or 1.6 deaths per 100,000), and congenital malformations (45 deaths, or 1.2 deaths per 100,000 children).





## Health differentials

The health of children may be influenced by a number of factors associated with socioeconomic status, such as household income and place of residence. Children from lower socioeconomic backgrounds tend to have poorer health status than those from higher socioeconomic backgrounds (Stanley 2003; Rutter 2003). Indigenous children are at a higher risk of disease, injury and mortality than other Australian children. In 2002, for example, Indigenous mortality among children aged 0-14 years was still 2.7 times that of non-Indigenous children. Children living in remote areas tend to have higher death rates, probably reflecting the larger proportion of Indigenous people in those areas. People living in remote areas are disadvantaged with regard to educational and employment opportunities, income, access to goods and services, and in some areas to clean water and fresh food (AIHW 2003e).

## Young people

In June 2003 there were 3.6 million young people aged 12-24 years in Australia, about 18% of the total population. This proportion has been decreasing over the last few decades and in 2003 was the lowest ever observed. The decrease reflects the decline in fertility that began in the 1970s.

There were about 116,700 Indigenous Australians aged 12-24 years in 2001, representing around 3% of the total number of young people in Australia. These Indigenous young people make up a significant proportion (25%) of the Aboriginal and Torres Strait Islander population.

Approximately 16% of all young people resident in Australia were born overseas. Nearly 70% of Australia's young people aged 15–24 years lived in major cities in 2003, another 19% lived in inner regional areas and around 12% lived in outer regional and remote areas of Australia.

## Health status

Young people in Australia generally enjoy a level of health that is good and has improved in recent times, as indicated by levels of mortality, morbidity and disability. Further, most young people in Australia rate their own health favourably. In 2001, approximately 65% of young Australians rated their health as either 'excellent' or 'very good' while a further 26% rated their health as 'good'. Similar proportions of young people aged 15–24 years in 1995 perceived their health status to be 'excellent', 'very good' or 'good'. Only 9% reported their health to be either 'fair' or 'poor' in both surveys.

The proportion of young people with disability is low compared with older people. In 1998, approximately 232,000 young persons (9%) aged 15–24 years had a disability—10% of males and 8% of females. Of those with a disability, 22% had a severe or profound core activity restriction.

While the health status of young Australians is generally good, there are areas where health gains need to be made. In the 2001 National Health Survey, 66% of males aged 15–24 years and 76% of females reported having a long-term health condition—a condition that has lasted, or is expected to last, for six months or more. The most prevalent conditions they reported were hay fever and allergic rhinitis, short-sightedness, asthma, and back pain and neck problems.

Mental health problems, including drug dependence disorders, are the major burden of disease for this age group. Of people aged 13–17 years, 13.4% of males and 12.8% of females were diagnosed with a mental health problem (Sawyer et al. 2000). In 1997, the prevalence of a mental disorder among those aged 18–24 years was 27% (ABS 1998). Alcohol abuse and motor vehicle accidents also add to the burden of disease for young people.

## Risk and protective factors for young people

Youth is a period of rapid emotional, physical and intellectual change. As young people progress from childhood to adolescence and young adulthood, a number of risk factors affect their health and wellbeing. Motor vehicle accidents, suicide, mental health and behavioural problems, pregnancy and substance misuse pose risks to many young people. In addition, a number of the risk and protective factors that exist for children are also faced by young people, including obesity, physical activity and sun protection.

Physical activity is an important factor in reducing the risk of chronic disease. According to the 2001 Household Income and Labour Dynamics in Australia survey, a sizeable proportion of young Australians participate in physical activity. Of the young people aged 15–24 years, 48% of males and 31% of females undertook exercise more than three times a week. This was higher among those aged 15–17 years than those aged 18–24 years (46% compared with 36%). Approximately 60% of young

people undertook exercise three or fewer times per week (52% of males, 69% of females). The survey shows that young people aged 18–24 years exercised less than those aged 15–17 years.

Based on self-reported height and weight, 8% of males and 11% of females aged 15–17 years were classified as overweight or obese in 2001. Of those aged 18–24 years, 16% of males and 25% of females were classified as overweight or obese. In an assessment of their own weight, 28% of males and 9% of females whose self-reported height and weight placed them in the overweight category thought their weight was acceptable. In addition, 13% of females and 1% of males whose height and weight placed them in the underweight category reported their weight was acceptable.

In 2001, 85% of young people aged 12–17 years had taken some form of sun protection measure in the previous month—a slight increase from the 1995 figure of 83%. Of those aged 12–14 years, 88% used any form of sun protection measure in 2001. Over 50% of young people aged 12–24 years reported that they regularly checked their skin for changes in freckles and moles or had it checked by a doctor. This proportion increased from 53% in 1995 to 57% in 2001.

Tobacco use is a risk factor associated with respiratory problems and immediate loss of physical fitness and, in the longer term, a number of adult cancers as well as cardiovascular and respiratory diseases. Data from the 2001 National Drug Strategy Household Survey showed that, among those aged 14–17 years, 82% had never smoked, 15% were recent smokers and 3% were ex-smokers. Among 18–24-year-olds, 34% of males and 30% of females were recent smokers. The ABS 2001 National Health Survey reported that 36% of males and 27% of females aged 18–24 years were current smokers.

Alcohol use by young people can also be detrimental to their health and community. Consequences of youth alcohol use may include unwanted and unsafe sex, violence, crime, road and traffic accidents, self-harm and death (NDARC 2003; Lynskey 2001). In 2001, 31% of males and 25% of females aged 14–19 years drank alcohol at least weekly. These proportions rose to 55% and 39% for males and females aged 20–29 years. In the 12 months before the 2001 National Drug Strategy Household Survey, 7% of persons aged 14–17 years drank alcohol in a way considered risky or a high risk to health in the long term (AIHW 2002a).

Young people experience a greater risk of developing harmful drug use and experiencing drug-related harm. Data from the 2001 National Drug Strategy Household Survey indicated that 28% of young people aged 14–17 years had used an illicit drug at least once in their lives. In 2001, 21% of young people aged 14–17 years indicated that they had used cannabis in the last 12 months, 4% used amphetamines, 4% pain-killers for non-medical use, 3% ecstasy, 0.5% injecting drugs and 6% other illicit drugs.

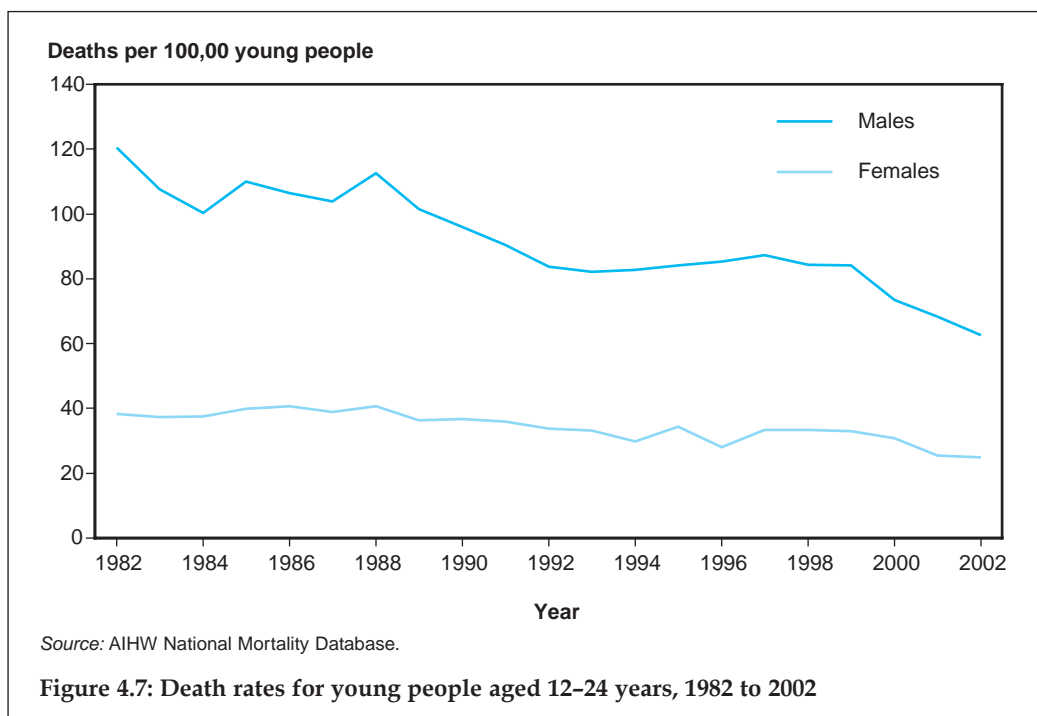
### **Hospitalisations**

In 2001–02, there were 546,124 hospitalisations for young Australians aged 12–24 years, accounting for 8.5% of the total hospitalisations in that period. The single most common reason for hospitalisation for both male and female young persons was for impacted teeth. Hospital admissions were higher for young females aged 12–24 (60% in 2001–02)

than for young males (40%) of the same age. This was due to hospitalisations for pregnancy and childbirth which accounted for 32% of the hospitalisations of females aged 12–24 years. For males, the main cause of hospitalisation was injury, which contributed 27% of their total hospitalisations.

### Mortality

There were 1,564 deaths of young people aged 12–24 years in 2002 in Australia, representing 1% of deaths among all ages in that year. Of these, nearly 75% of the deaths were of young males. The death rate for young males declined by 48% from 120.4 deaths per 100,000 in 1982 to 62.8 deaths per 100,000 in 2002. For females aged 12–24 years the death rate declined by 35% from 38.4 per 100,000 to 25.0 per 100,000 (Figure 4.7).

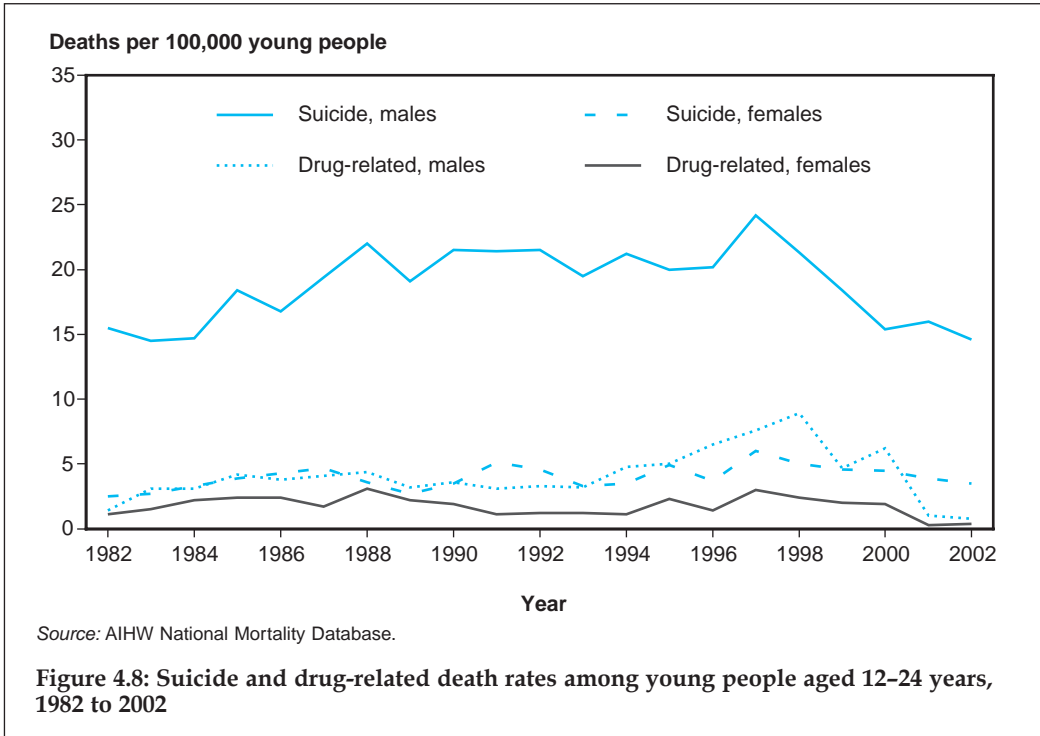


In 2002, the mortality rate for young people was highest among males aged 18–24 years at 91 deaths per 100,000, largely as a result of the high rate of suicide. Males aged 15–17 years followed at 45 deaths per 100,000. Between 1982 and 2002, mortality among young people declined continuously, with the greatest falls occurring in the 12–14-year age group for males and the 15–17-year age group for females.

In 2002, over 70% of the total deaths of young people was due to injury and poisoning, including transport accidents and suicide. Deaths from transport accidents as a specific cause were responsible for 36% of all deaths of young people (517 deaths, 394 males and 123 females). Deaths from suicide as a specific cause were responsible for 21% of all deaths (324 deaths, 264 males and 60 females). Deaths from cancer followed at 9% of all deaths of young people, and diseases of the nervous system a further 5%. For young

people aged 15–17 years, the most frequent causes of death were suicide and motor vehicle accidents as passengers, drivers or pedestrians. The major causes of death for those aged 18–24 years were suicide, car driver and passenger accidents, and accidental poisoning by drugs.

Drug-related death rates fluctuated between 1982 and 2002, with a noticeable peak in deaths in 1998, and lower rates in 2001 and 2002. Over this period, rates ranged from 1 to 9 deaths per 100,000 males, and for females from 1 to 3 deaths per 100,000 (Figure 4.8).



### 4.3 Overseas-born people

Australia is an ethnically diverse nation. The 2001 ABS estimated resident population shows that about 23% of Australian residents were born overseas and more than half of these were born in a non-English-speaking country.

Health requirements for immigration ensure that migrants generally enjoy good health, if not better health, than the Australian-born population. This is known as the ‘healthy migrant effect’. Immigrants often have lower death rates and hospitalisation rates, as well as lower rates of disability and prevalence of certain lifestyle-related risk factors (AIHW: Singh & de Looper 2002). However, as length of residence in Australia increases, the relative advantage that migrants have over Australian-born people tends to decrease (Young 1992). This ‘equalising’ effect may become more evident in the next decade as many of the young migrants of the 1950s and 1960s are now reaching ages at which they are at greater risk of a range of chronic conditions.

Some migrant groups continue to face special problems in dealing with the Australian health care system. Development of culturally appropriate models of preventive health care is one of the most effective ways to overcome access and equity concerns about the health of overseas-born people (DHFS & AIHW 1998).

For purposes of health comparison, immigrants may be grouped into four broad regional groups—the United Kingdom and Ireland, Other Europe, Asia and Other (Box 4.1). It is recognised that these groups are broad and ethnically diverse, and that comparisons at this level provide only general trends. For meaningful comparisons, the analysis that follows has used age-standardisation to adjust for different age structures in the groups.

#### **Box 4.1: Country of birth categories**

*Other countries are classified according to the Standard Australian Classification of Countries and are grouped here into four birthplace groups:*

*United Kingdom and Ireland: Over one-quarter of all Australians born overseas were born in these countries.*

*Other Europe: Continental Europe including Western Europe, Northern Europe, and Southern and Eastern Europe.*

*Asia: South-East, North-East and Southern and Central Asia.*

*Other: North Africa and the Middle East, Sub-Saharan Africa, the Americas, New Zealand and the Pacific Region. New Zealand is the largest source, constituting over one-third of this group.*

## **Mortality and morbidity**

Mortality (death) differences are measured here by expressing the age-standardised mortality rate of those born overseas as a ratio of the rate of those born in Australia—a statistic known as a standardised mortality rate ratio. Table 4.4 shows these mortality rate ratios for the period 1999–2001 for the four overseas-born groups according to the range of major disease categories and injury, and for all causes combined. The all-cause ratios are below 1 for both males and females in all four overseas birthplace categories. Mortality rates among migrants from the United Kingdom and Ireland are closest to the rates for Australian-born people. In comparison, migrants from Asia have much lower standardised mortality ratios, with mortality rates 35% lower among males and 20% lower among females than their Australian-born counterparts. Interpretation of these variations needs to bear in mind the average length of time each group has been in Australia, as mentioned above.

Mortality by cause of death shows significant variation between overseas-born population groups. Table 4.4 shows that all migrant groups have lower levels of cardiovascular mortality compared with the Australian-born population. Analysis of data from the ABS National Health Survey for 2001 indicates that Australian-born persons have a higher prevalence of overweight and obesity than their overseas-born

counterparts, this being an important risk factor for the development of a number of health problems including cardiovascular disease (AIHW: O'Brien & Webbie 2003). However, despite having lower levels of mortality, migrants from the United Kingdom and Ireland, and Other Europe are more likely to report cardiovascular disease as a long-term condition than are Australian-born persons (ABS 2002b). Also, although they tend to report lower body weight than their Australian-born counterparts, persons born in Southern and Eastern Europe, North Africa and the Middle East report lower levels of physical activity as well. Persons born in Asia also report lower levels of exercise (ABS 2002b).

**Table 4.4: Standardised mortality ratios<sup>(a)</sup> by birthplace, persons aged 15 years and over, 1999–2001**

Selected causes of death	Males					Females				
	Deaths	UK & Ireland	Other Europe	Asia	Other	Deaths	UK & Ireland	Other Europe	Asia	Other
Infectious	2,596	*0.84	1.04	*1.42	*1.28	2,328	1.01	*1.20	*1.53	*1.11
Cancers	61,954	1.00	*0.91	*0.63	*0.80	47,773	*1.06	*0.90	*0.74	*0.90
Colorectal	7,653	*0.83	*0.87	*0.48	*0.68	6,380	*0.80	*0.81	*0.59	*0.64
Lung	13,884	*1.23	*1.10	*0.66	*0.91	6,835	*1.48	*0.69	*0.82	*0.82
Melanoma	2,721	*0.42	*0.28	*0.11	*0.59	1,450	*0.55	*0.40	*0.10	*0.57
Prostate	7,873	*0.85	*0.62	*0.39	*0.63	..	..	..	..	..
Breast	..	..	..	..	..	7,601	*1.13	*0.91	*0.63	1.04
Cervix	..	..	..	..	..	749	1.06	0.90	*1.48	*1.73
Diabetes	4,718	*0.85	*1.26	1.17	*1.18	4,313	*0.83	*1.56	*1.43	*1.37
Circulatory	72,182	*0.91	*0.90	*0.65	*0.91	78,134	*0.92	*0.87	*0.66	*0.96
Ischaemic	42,823	*0.93	*0.89	*0.61	*0.90	37,541	*0.94	*0.89	*0.60	0.95
Stroke	14,659	*0.86	*0.91	*0.82	0.94	22,053	*0.90	*0.82	*0.75	0.95
Respiratory	16,944	0.98	*0.70	*0.57	*0.82	14,202	*1.09	*1.20	*0.54	*0.80
Digestive	6,210	0.97	*0.88	*0.57	*0.85	6,241	1.05	*0.80	*0.65	*0.72
External	16,831	*0.92	*0.88	*0.56	*0.92	7,504	0.95	1.03	*0.74	0.96
Transport	4,395	*0.78	0.90	*0.65	0.97	1,635	0.98	1.03	0.97	0.90
Suicide	5,797	0.95	*0.84	*0.35	*0.85	1,512	*0.81	1.25	*0.69	1.06
Assault	588	0.97	0.92	1.15	1.14	318	0.91	1.29	1.21	0.86
<b>All causes<sup>(b)</sup></b>	<b>200,879</b>	<b>*0.94</b>	<b>*0.89</b>	<b>*0.65</b>	<b>*0.87</b>	<b>184,058</b>	<b>*0.98</b>	<b>*0.87</b>	<b>*0.69</b>	<b>*0.92</b>

\* Statistically significantly different from 1.00 at the 5% level.

.. Not applicable.

(a) The standardised mortality ratio is a measure of death from a specific condition in the overseas-born population relative to the Australian-born population. If the ratio were 1.00 this means the overseas-born would have the same mortality rate as the Australian-born. Ratios greater than 1.00 indicate a relatively greater mortality in the overseas-born population, and those below 1.00 indicate a relatively lower mortality rate.

(b) Includes 'other' causes of death.

Note: Age-standardised to the Australian population at 30 June 2001.

Source: AIHW National Mortality Database.

Deaths from cancers also show variation across birthplace groups. Death rates from lung cancer for both males and females born in the United Kingdom and Ireland, and for males born in Other Europe, were higher than for their Australian-born counterparts. Females born in the United Kingdom and Ireland had higher death rates for breast cancer. Cervical cancer mortality rates among women born in Asia and Other countries were higher than among Australian-born women generally. However, Australian-born males had higher mortality rates for prostate cancer than all other birthplace groups. Immigrants from all other regions have much lower mortality rates for melanoma compared with Australian-born persons, which may reflect variations in skin colour and exposure to sun early in life. Smoking, diet, alcohol consumption and use of health care services such as screening programs all play a role in these differences related to cancer risk (Wheeler & Selby 1993).

Mortality rates for diabetes are higher for those born in Other Europe, Asia and Other countries relative to the Australian-born population. Proportionally more overseas-born people than Australian-born also report having diabetes; approximately 35% of people of all ages who reported having diabetes in 2001 were born overseas, whereas they comprise 23% of the population (AIHW: Holdenson et al. 2003). In particular, diabetes incidence, hospitalisation and mortality are more common among people born in the South Pacific Islands, Southern Europe, the Middle East and North Africa, and Southern Asia.

Table 4.5 presents hospitalisation statistics for a range of diagnoses, as an indication of the relative morbidity of overseas-born and Australian-born residents. Hospitalisation rates for 2001–02 for overseas-born people generally reflect the corresponding mortality patterns, and indicate lower morbidity for both males and females compared with Australian-born people.

Asian-born migrants had the lowest hospitalisation rates, although persons born in this region exhibited higher hospitalisation rates for a number of specific diagnoses. Hospitalisation for cancer of the cervix among females born in Asia and Other countries is higher than for Australian-born females. Women born in these regions also report lower rates of regular Pap smear testing (ABS 2002b). Hospitalisation rates for tuberculosis and cataract removal are also higher.

Hospitalisation for gastritis and duodenitis among persons born in Other Europe, Asia and Other countries, as well as for calculus of the kidney and ureter among persons born in Other Europe and Other countries was higher than for Australian-born persons—these diseases may reflect specific dietary patterns. On the other hand, persons born overseas were less likely to be hospitalised for a number of mental disorders, such as schizophrenia, depressive episodes and sleep disorders.

Another notable difference was for skin cancer, where the hospitalisation rate for the overseas-born population was less than half that of the Australian-born. In particular, Asian-born males and females had less than one-tenth of the skin cancer hospitalisation rate of their Australian-born counterparts.

**Table 4.5: Standardised hospitalisation ratios<sup>(a)</sup> by birthplace, persons aged 15 years and over, 2001–02**

Principal diagnosis	Males					Females				
	Seps	UK & Ireland	Other Europe	Asia	Other	Seps	UK & Ireland	Other Europe	Asia	Other
Tuberculosis	447	0.82	1.15	*18.10	*3.89	504	0.68	1.37	*19.65	*5.68
Colorectal cancer	13,936	*0.73	*0.84	*0.49	*0.82	11,062	*0.67	*0.78	*0.62	*0.74
Lung cancer	11,213	1.03	1.05	*0.76	*0.89	6,096	1.04	*0.55	*0.59	0.89
Skin cancer	45,369	*0.44	*0.21	*0.09	*0.39	31,615	*0.46	*0.25	*0.06	*0.41
Breast cancer	..	..	..	..	..	21,036	0.98	*0.75	*0.62	*0.90
Cervical cancer	..	..	..	..	..	1,798	*0.72	*0.61	*1.26	*1.39
Prostate cancer	15,109	*0.71	*0.63	*0.48	*0.74	..	..	..	..	..
Diabetes mellitus	27,799	*0.74	*1.06	0.95	0.99	23,233	*0.78	*1.07	*1.25	*1.08
Schizophrenia	17,992	*0.47	*0.69	*0.46	*0.75	9,731	*0.40	*0.88	*0.54	*0.53
Depressive episode	17,570	*0.76	*0.56	*0.22	*0.57	28,080	*0.82	*0.54	*0.25	*0.52
Sleep disorders	21,280	*0.57	*0.62	*0.58	*0.66	6,827	*0.62	*0.65	*0.42	*0.68
Cataract	51,650	*0.75	*0.80	*1.19	0.96	77,366	*0.78	*0.80	*1.36	0.99
Angina pectoris	54,053	*0.79	*0.84	*0.62	1.04	32,970	*0.84	*0.88	*0.68	*1.07
Acute myocardial infarction	26,211	*0.78	*0.91	*0.72	1.03	14,120	*0.86	0.96	*0.66	0.96
Pneumonia	22,877	*0.74	*0.85	*0.51	*0.84	20,086	*0.76	*0.76	*0.63	*0.93
Asthma	5,242	*0.60	*0.49	*0.56	1.10	11,278	*0.75	*0.46	*0.51	1.00
Gastritis & duodenitis	20,947	*0.76	*1.41	*1.39	*1.10	26,352	*0.81	*1.53	*1.42	*1.28
Inguinal hernia	34,989	*0.91	0.98	*0.50	1.03	2,918	*0.74	*1.18	*0.31	0.93
Calculus of kidney & ureter	18,156	*0.83	*1.28	*0.82	*1.30	7,116	*0.83	*1.67	0.99	*1.28
Single spontaneous delivery	..	..	..	..	..	33,379	*0.65	*0.73	*0.67	*1.21
Care involving dialysis	366,622	*0.58	*1.33	*1.43	*1.40	267,577	*0.51	*0.98	*1.32	*1.35
Chemotherapy session for neoplasm	107,541	*0.84	*0.95	*0.54	*0.69	120,387	*0.93	*0.80	*0.57	*0.82
<b>All diagnoses<sup>(b)</sup></b>	<b>2,654,402</b>	<b>*0.76</b>	<b>*0.85</b>	<b>*0.66</b>	<b>*0.88</b>	<b>3,193,560</b>	<b>*0.81</b>	<b>*0.83</b>	<b>*0.70</b>	<b>*0.93</b>

\* Statistically significantly different from 1.00 at the 5% level.

.. Not applicable.

Seps Hospital separations.

(a) The standardised hospitalisation ratio is a relative measure of hospital use between the overseas-born and Australian-born populations. If the ratio were 1.00 this means the overseas-born would have the same hospitalisation rate as the Australian-born. Ratios greater than 1.00 indicate a relatively greater level of hospitalisation in the overseas-born population, and those below 1.00 indicate a relatively lower hospitalisation rate.

(b) Includes other causes of hospitalisation.

Note: Age-standardised to the Australian population at 30 June 2001.

Source: AIHW National Hospital Morbidity Database.

## 4.4 Aboriginal and Torres Strait Islander peoples

Aboriginal and Torres Strait Islander people suffer a much greater burden of ill health than other Australians. Indigenous people are more likely to experience disability and reduced quality of life due to ill health, and die at younger ages (ABS & AIHW 2003). The Indigenous population is disadvantaged across a range of socioeconomic factors that have an impact on health.

In 2001, Aboriginal and Torres Strait Islander people reported lower incomes than other Australians, higher rates of unemployment, poorer education outcomes and lower rates of home ownership (ABS 2003e). However, socioeconomic status alone does not explain all the variations in health status that exist between Indigenous and non-Indigenous Australians. Higher levels of health risk behaviours (such as smoking and alcohol misuse) and other risk factors (such as poor housing and exposure to violence) among the Indigenous population are also important determinants of their health. Research also suggests that a range of other factors may contribute and partially explain adverse Indigenous health outcomes: the social environment, including the immediate local or neighbourhood environment; social connections with friends, family and the community; and the extent of control and perceptions of mastery in the workplace and wider society (Trudgen 2000).

### Data quality

There is clear evidence from different sources to indicate that Indigenous Australians have generally poorer health than other Australians. However, it is not possible to report whether Indigenous health is improving or not. This is partly due to incomplete identification of Indigenous people in the Census and administrative records, and partly to the statistical and practical challenges of surveying a small population that has a relatively high 'remote area' component. A greater effort to identify Indigenous Australians in a range of surveys and administrative data sets is a key strategy that will provide better quality information about their health in the future (ATSIHWIU 1997).

The coverage of Indigenous people in birth and death registration is improving, but deaths registrations data are not yet of a high enough quality in all states and territories to provide national estimates. Data from Queensland, Western Australia, South Australia and the Northern Territory, where registrations are of reasonable quality, are used to provide indicative information.

Information from hospitals and general practitioners (GPs) may provide a broad indication of the burden of chronic conditions and acute illnesses in Indigenous people compared with the non-Indigenous population. At present, there is no national data source that records conditions treated by primary health care providers such as Aboriginal health workers or nurses. Other sources of data that can be used to identify Indigenous people include the Aboriginal Medical Services, Health Insurance Commission Medicare data, disease registers and national household surveys with supplementary Aboriginal and Torres Strait Islander samples. Such data sources provide better information on specific diseases, risk factors and living conditions. Indigenous identification and the quality of Indigenous data have been improving through efforts at all levels.

## The Indigenous population

The Indigenous population in 2001 was estimated to be 458,520, comprising 2.4% of the total Australian population. Approximately 10% of Indigenous people were of Torres Strait Islander origin. More than half of all Indigenous people live in New South Wales and Queensland. New South Wales has the greatest number of Indigenous people (134,888) and the Northern Territory has the highest proportion, approximately 29% of all residents. The majority of Indigenous people live in major cities and inner and outer regional areas, but 27% live in remote or very remote areas, compared with 2% of the non-Indigenous population.

The Indigenous population is considerably younger than the non-Indigenous population. In 2001, the median age for Indigenous people was 20.5 years, compared with a median age of 36 years for the non-Indigenous population. Fertility is higher for the Aboriginal and Torres Strait Islander population, and Indigenous women give birth at younger ages than non-Indigenous women. In 1998–2000, 79% of Indigenous mothers had babies before the age of 30 compared with 52% for non-Indigenous mothers.

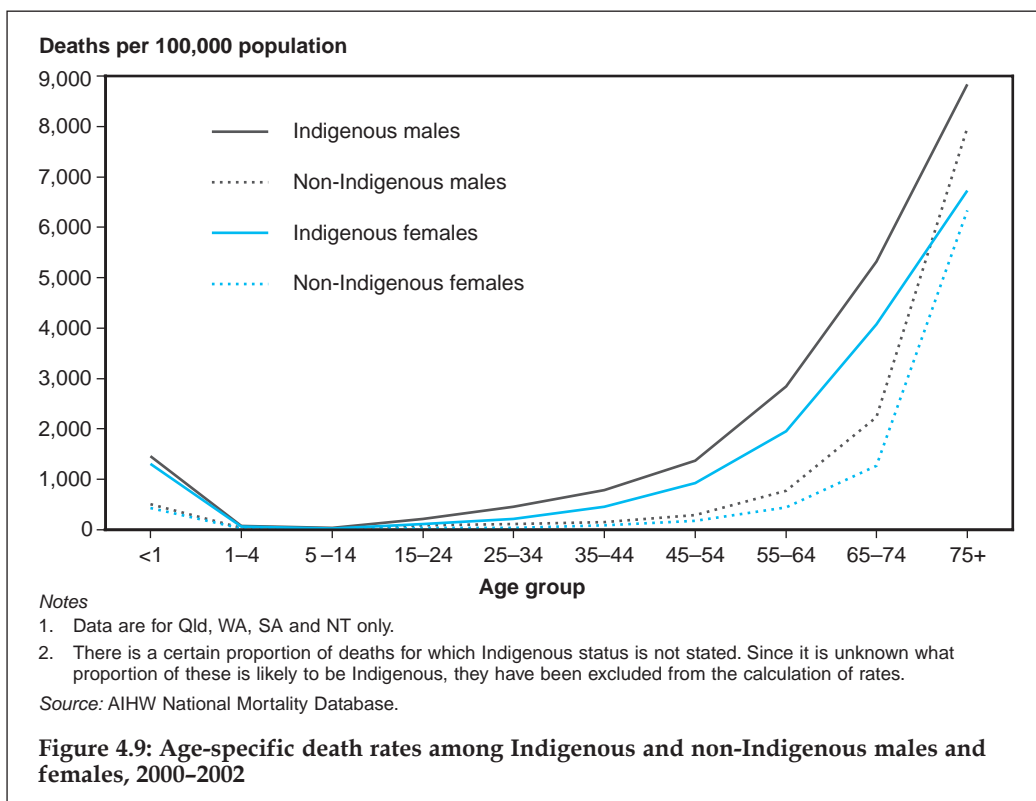
The estimated life expectancy at birth for Aboriginal and Torres Strait Islander people is much lower than for other Australians. For the period 1999–2001, the life expectancy at birth was estimated to be 56 years for Indigenous males and 63 years for Indigenous females—similar to life expectancy for the Australian male population in 1901–1910, and the Australian female population in 1920–1922 (ABS 2000). In contrast, the life expectancy at birth for all Australians in 1999–01 was 77 years for males and 82 years for females.

## Measures of health status

### Mortality

In the four jurisdictions where mortality data are of adequate coverage—Queensland, Western Australia, South Australia and the Northern Territory—the 2000–2002 age-standardised mortality ratio for Indigenous deaths compared with non-Indigenous deaths was 2.9 for males and 2.6 for females (Table 4.6). Age-specific death rates for Aboriginal and Torres Strait Islander people were higher than the non-Indigenous rates in every age group (Figure 4.9). The largest relative differences in age-specific death rates occurred for ages 35–44 years, where Indigenous rates were more than five times as high as the non-Indigenous rates. There were also substantial differences between the 25–34, 45–54 and 55–64-year age groups, where the Indigenous age-specific death rates were three to four times as high as the non-Indigenous rates.

Indigenous people had death rates in excess of the non-Indigenous population for almost all causes of deaths. In 2000–2001, deaths from diseases of the circulatory system, injury and poisoning (mainly accidents, self-harm and assault), neoplasms (cancers), respiratory diseases and endocrine or metabolic diseases (mainly diabetes) accounted for the greatest numbers of deaths among Indigenous people (Table 4.6). These were also the leading causes of death among the non-Indigenous population, accounting for about 86% of all deaths.



**Table 4.6: Deaths from selected causes, Indigenous Australians, 2000–2002**

Cause of death <sup>(a)</sup>	Males		Females	
	Number <sup>(b)</sup>	SMR <sup>(c)</sup>	Number <sup>(b)</sup>	SMR <sup>(c)</sup>
Diseases of the circulatory (cardiovascular) system	664	3.0	510	2.2
Injury and poisoning	524	3.0	230	2.9
Neoplasms (including cancers)	356	1.3	314	1.6
Respiratory system diseases	228	3.9	170	3.6
Endocrine, nutritional and metabolic diseases	193	7.3	250	10.1
Digestive system diseases	118	4.6	90	3.4
Mental and behavioural disorders	79	3.6	37	1.0
Infectious and parasitic diseases	64	5.3	53	5.4
Nervous system diseases	67	2.7	44	1.6
Genitourinary system diseases	48	4.6	90	7.5
Symptoms, signs and abnormal findings	76	6.0	47	4.8
<b>All causes</b>	<b>2,557</b>	<b>2.9</b>	<b>1,978</b>	<b>2.6</b>

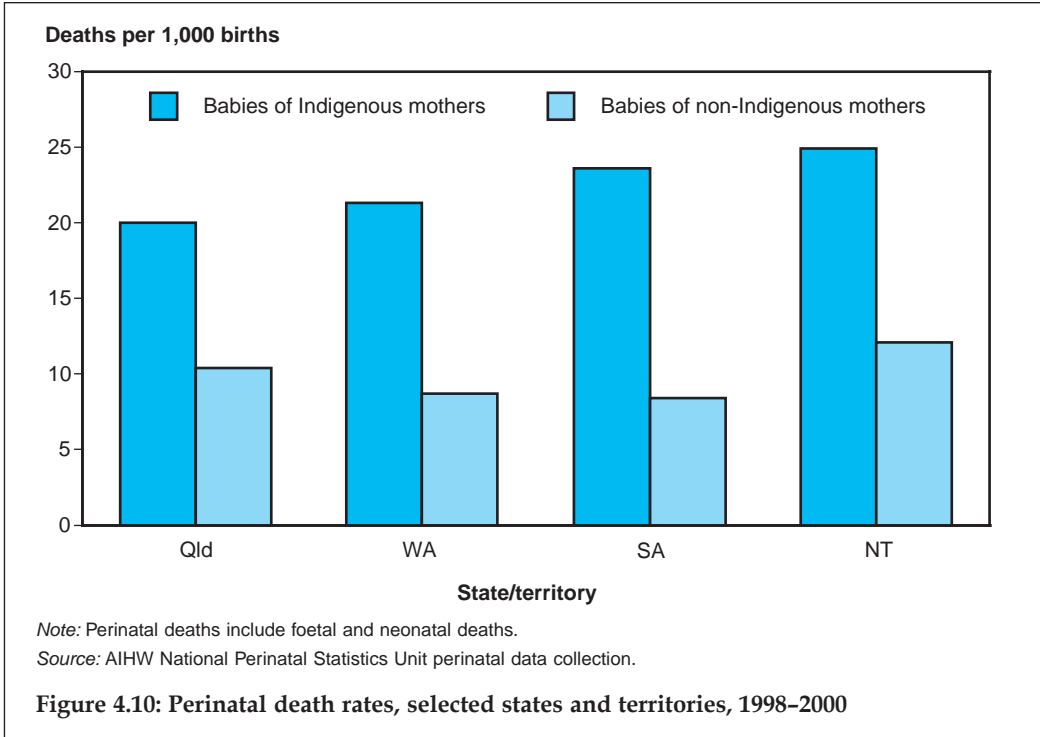
(a) ICD-10 codes used are I00–I99, V01–Y98, C00–D48, J00–J99, E00–E90, K00–K93, F00–F99, A00–B99, G00–G99, N00–N99, R00–R99.

(b) Data are for Indigenous deaths for usual residents of Queensland, South Australia, Western Australia and Northern Territory combined, based on year of registration.

(c) SMR is the standardised mortality rate. It is the observed deaths divided by expected deaths, with the latter based on total Australian age, sex and cause-specific rates.

Source: AIHW National Mortality Database.

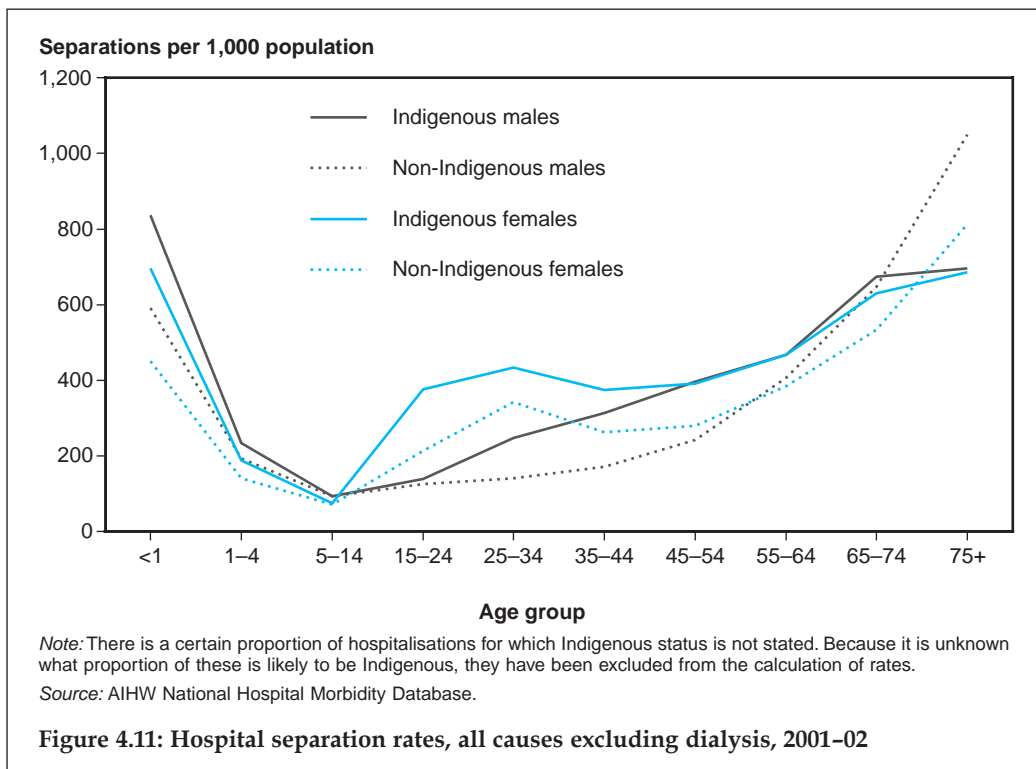
Between 1998 and 2000, babies born to Indigenous mothers were twice as likely to die at birth or during the early postnatal period as babies born to non-Indigenous mothers (Figure 4.10) (ABS & AIHW 2003). While it is difficult to assess trends because of uncertainties about the extent to which women are identified as Indigenous in the perinatal data collections, the Indigenous infant mortality rate for this period is unchanged from that for 1996–1998.



## Common diseases and problems

In 2001–02, Indigenous people in every age group were more likely than other Australians to be hospitalised for most diseases and conditions, indicating a higher occurrence of acute illness (Figure 4.11). Apart from hospitalisation for dialysis, which is the most common treatment in hospital for Indigenous people, the main reasons for Indigenous males to be hospitalised were injuries and poisoning (18% of all hospital stays), respiratory disease (14%), digestive diseases (9%), and mental and behavioural disorders (8%). For Indigenous females—excluding hospitalisations for pregnancy and childbirth—the most common reasons for hospitalisation were injury and poisoning (13%), respiratory diseases (13%) and digestive system diseases (10%).

Over the five-year period 1998–2003, 1.1% of GP encounters were identified as involving Indigenous patients, suggesting under-identification (AIHW: Britt et al. 2003). The six individual problems most frequently managed by GPs for Indigenous patients were diabetes, high blood pressure, upper respiratory tract infection, asthma, acute bronchitis and depression.



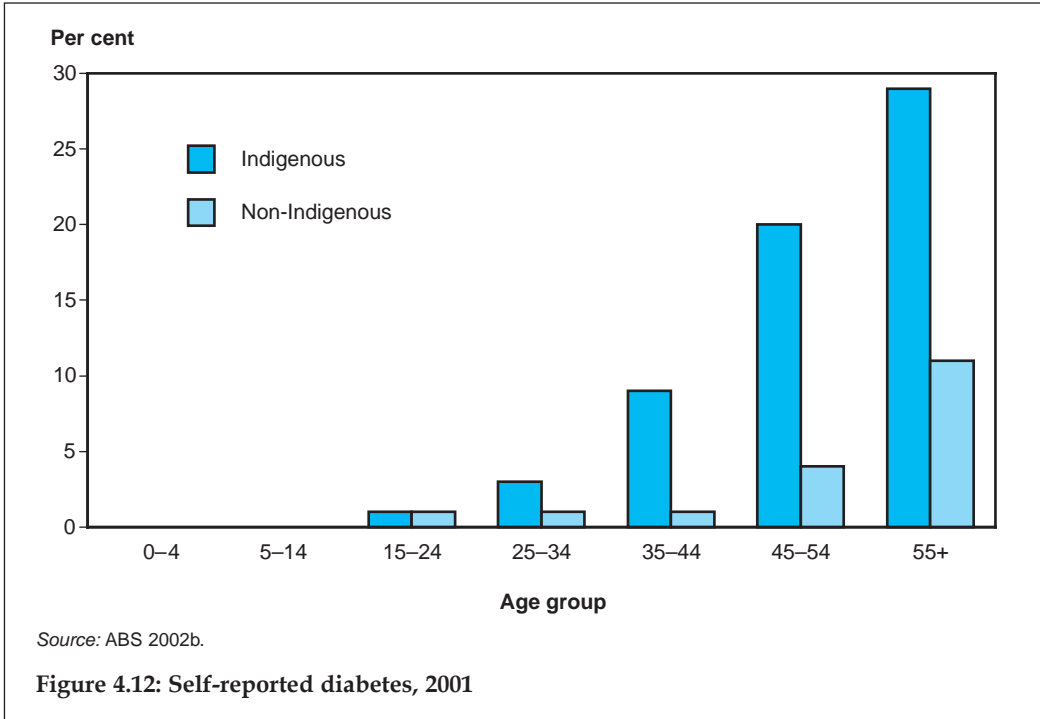
Kidney disease is significantly more prevalent among Indigenous people than among non-Indigenous people. In 2001, 6.2% of the persons registered with the Australian and New Zealand Dialysis Transplant Registry identified as Indigenous and 66% of these were aged less than 55 years. Of the 1,883 new cases starting treatment for end-stage renal disease in 2001, 9% were Indigenous. Indigenous patients were younger than non-Indigenous patients and more Indigenous females than males began treatment (ABS & AIHW 2003).

‘Care involving dialysis’, haemodialysis for kidney disease, was the most common procedure for Indigenous people in Australian hospitals in 2001-02. The rate for haemodialysis procedures among Indigenous males and females was 8 and 15 times as high as for non-Indigenous males and females respectively. In 2000-2002, the death rate from chronic kidney disease for Indigenous Australians was seven times as high as the rate for non-Indigenous Australians.

Diabetes is also a significant health problem for Aboriginal and Torres Strait Islander people. Type 1 diabetes (early onset and insulin-dependent) is relatively rare in the Indigenous population, but there is a very high prevalence of Type 2 diabetes (usually later onset).

Indigenous people who have Type 2 diabetes often develop the disease earlier than other Australians and often die at younger ages. In 2001, the age-standardised prevalence of self-reported diabetes among Indigenous people was 11%, compared to 3% among the

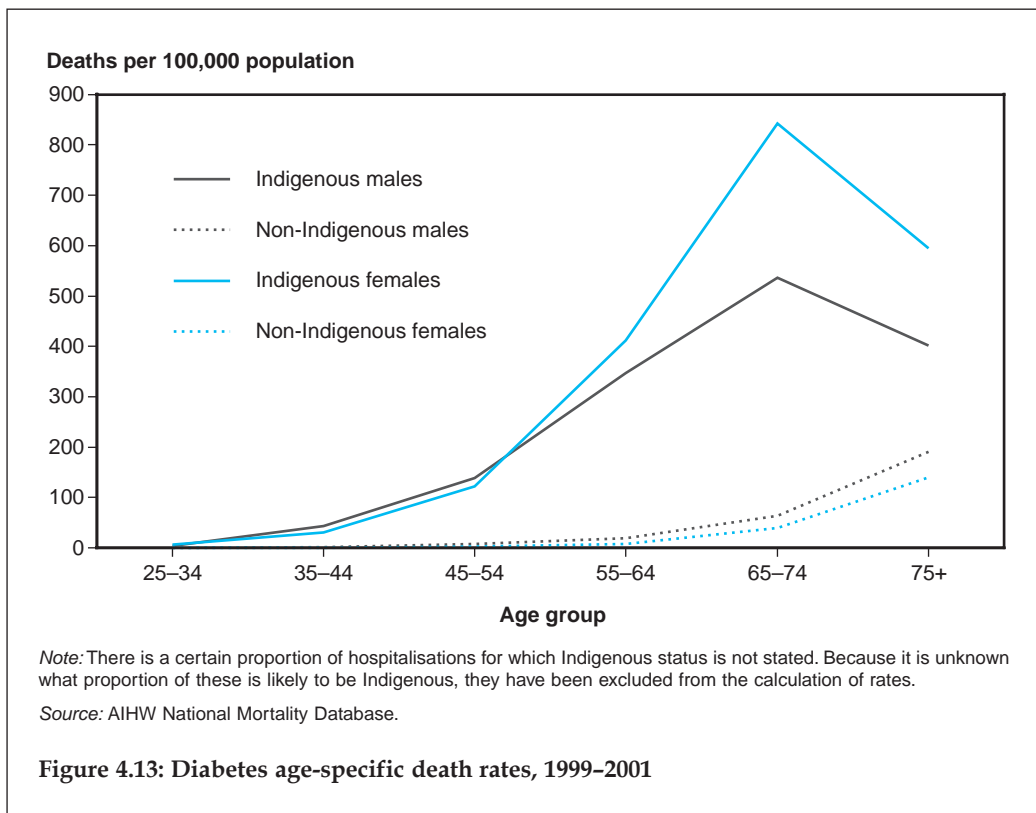
non-Indigenous population (Figure 4.12). In 2001–02, the hospitalisation rate for Type 2 diabetes among Indigenous people aged between 25 and 54 years was 15–18 times the rate for non-Indigenous people.



The death rate associated with diabetes provides an indication of the burden of the disease in the Indigenous population. Diabetes has an earlier onset in the Indigenous population. Age-specific death rates for 2000–2002 show that, from age 25 years onwards, the death rate for diabetes in the Indigenous population was dramatically higher than in the non-Indigenous population (Figure 4.13). The death rate for Indigenous people aged 35–44 and 45–54 years was 27–35 times that of the non-Indigenous population. The earlier onset of Type 2 diabetes among Indigenous people has serious implications for diabetic complications (O’Dea 1992). Largely through lack of knowledge, Indigenous people are less likely to adopt the lifestyle changes required for optimal self-management of the disease (McCulloch et al. 2003; King 2001).

**Mental health**

At present, there are no national data about the incidence or prevalence of mental disorders among Aboriginal and Torres Strait Islander people. Data on hospitalisation and mortality due to serious mental disorders and illnesses are currently the main sources. It has been proposed that the forthcoming 2004–05 National Aboriginal and Torres Strait Islander Health Survey include a module to assess various aspects of the social and emotional wellbeing of Aboriginal and Torres Strait Islander people.



In 2001-02, Aboriginal and Torres Strait Islander people were hospitalised for conditions classified as ‘mental and behavioural disorders’ at a higher rate than the general population. The rate of hospitalisation for Indigenous people diagnosed with mental disorders due to psychoactive substance use was four to five times the rate for the non-Indigenous population (ABS & AIHW 2003). The death rate associated with mental disorders among Indigenous males was over three times the rate for non-Indigenous males, but for females the rate was the same as for non-Indigenous females (Table 4.6). The majority of these deaths in the Indigenous population (74%) were attributed to mental disorders due to psychoactive substance use.

Death rates from suicide for Indigenous males and females are over twice the rate for non-Indigenous males and almost twice the rate for non-Indigenous females. The age-specific death rate from suicide for Indigenous males was highest in the 25-34-year age group at 83 deaths per 100,000, compared with 24 deaths per 100,000 for males in the same age group in the general population. For Indigenous males in the 15-24-year age group, deaths by suicide occurred at a rate of 54 deaths per 100,000, compared with 15 deaths per 100,000 for non-Indigenous males in the same age group. For Indigenous females, the rate was highest in the 15-24-year age group at 20 per 100,000, compared with 3 per 100,000 for non-Indigenous females.

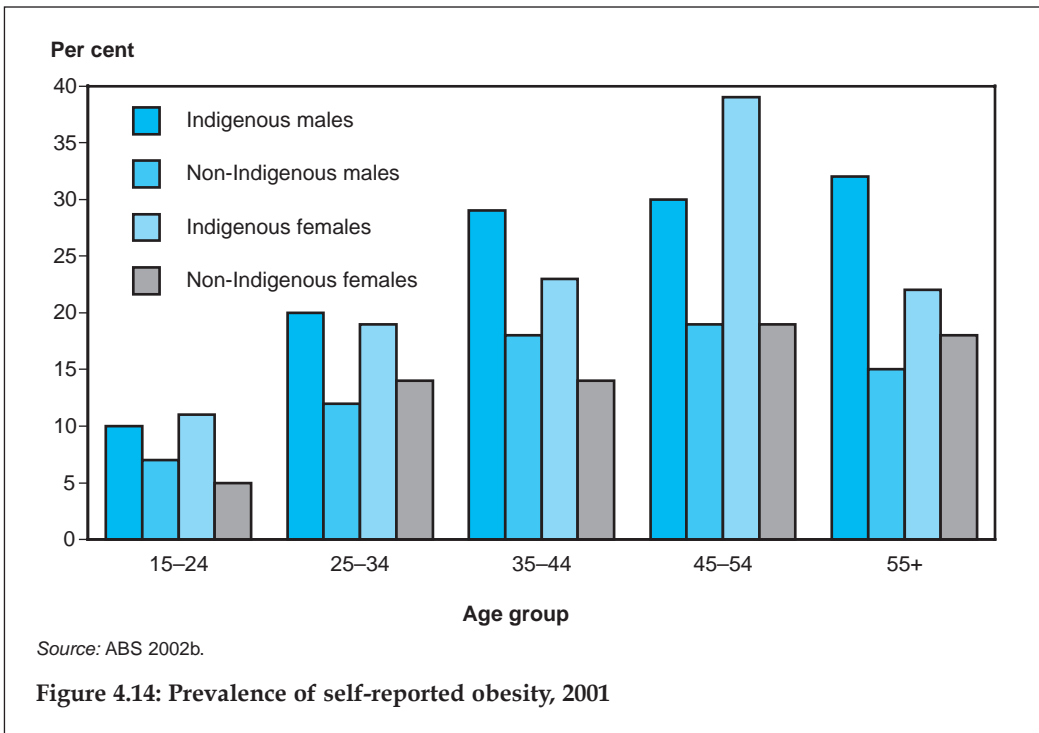
## Health risk factors

### Low birthweight

In the period 1998–2000, babies of Indigenous mothers were nearly twice as likely as babies of non-Indigenous mothers to be of low birthweight (that is, to be less than 2,500 grams at birth). Low birthweight may be a result of premature birth, foetal growth retardation or a combination of the two (Alberman 1994). Factors influencing a baby’s birthweight include socioeconomic disadvantage, the size and age of the mother, the number of babies previously born, the mother’s nutritional status, smoking and other risk behaviours, illness during pregnancy and the duration of pregnancy. Low birthweight babies are more prone to ill health during childhood, and may be more vulnerable to some illnesses, such as kidney disease, in adulthood (Alberman 1994; Barker & Clark 1997).

### Obesity

There is a greater level of obesity among Aboriginal and Torres Strait Islander adults than in the non-Indigenous population. Self-reported results from the 2001 National Health Survey indicate that Indigenous males and females in each age group were more likely to be obese than non-Indigenous Australians of the same age group (Figure 4.14). The high level of obesity puts the Indigenous population at greater risk of kidney disease, Type 2 diabetes, cardiovascular diseases and other chronic conditions. The type and quantity of food consumed and the level of physical activity influence body weight.



## Poor nutrition

Many Aboriginal and Torres Strait Islander people do not have the opportunity for a healthy diet, which is essential for good health. In particular, Indigenous people who live in remote areas do not have the same opportunities as people living in metropolitan and regional centres to obtain affordable, healthy food. Even in areas where healthy food is available, factors such as competing priorities for limited family incomes, restricted access to traditional foods, lack of knowledge of the nutritional value of certain foods and lack of culturally appropriate information on healthy food can lead to inadequate nutrition (Public Health Services, Queensland Health 2001).

The diet of many Aboriginal and Torres Strait Islander people has changed from a fibre-rich, high-protein, low saturated fat 'traditional' diet to one which is high in refined carbohydrates and saturated fats. The most recent results (ABS 2001 National Health Survey) indicate that less than half of Indigenous adults living in non-remote areas have a medium to high level of fruit intake (42% of Indigenous adults have two or more serves of fruit per day, compared with 52% of non-Indigenous adults).

## Smoking, alcohol and other drug use

Data from the 2001 National Drug Strategy Household Survey show that there is a high prevalence of smoking among Aboriginal and Torres Strait Islander people. The daily smoking rate for Indigenous people aged 14 years and over was over twice that for non-Indigenous adults (45% compared with 19%), placing them at an increased risk for the diseases and conditions described above.

Several surveys have shown that Indigenous people are less likely than non-Indigenous people to drink alcohol, but that those who do drink are more likely to consume it at hazardous levels (ABS & AIHW 2003). The hazardous use of alcohol is related to conditions such as alcohol-dependence syndrome, alcoholic liver disease, high blood pressure, stroke and some cancers (Anderson 1996). Alcohol is frequently a contributing factor in injuries, accidents, assault and self-harm (Unwin et al. 1994), and may contribute to social problems such as family breakdown, domestic violence, and financial and legal problems (Davis 1998).

The most recent national data on alcohol consumption among Indigenous people come from the 2001 National Health Survey. The survey found that in the week before the survey, over 29% of adult Indigenous drinkers were in the risky or high-risk category for alcohol consumption, compared with 17% of non-Indigenous drinkers. Indigenous female drinkers were less likely to be in the high-risk category than Indigenous males, but were still more likely than non-Indigenous women drinkers to be consuming alcohol at hazardous levels (ABS & AIHW 2003).

Indigenous people are also at risk of ill health through the use of illicit substances such as marijuana, heroin, amphetamines and inhalants (for example petrol, glue or aerosols). The most recent source of national data on the use of illicit drugs among Indigenous people is the 2001 National Drug Strategy Household Survey. Approximately 57% of Indigenous respondents in urban areas aged 14 years and older

reported having tried at least one illicit drug, and 32% were currently using an illicit drug. This compares with 37% of the general urban population who had ever used an illicit drug, and 17% who currently used an illicit drug.

There are no reliable national data on petrol sniffing, but case studies indicate that the practice continues to be a major problem in some Indigenous communities. Petrol sniffing causes confusion, aggression, lack of coordination, hallucinations, respiratory problems and chronic disability, including mental impairment (d'Abbs & MacLean 2000).

## Housing and living conditions

Adequate housing is a major factor affecting health. Many Indigenous people live in housing conditions which are unacceptable by general Australian standards because they do not satisfy the basic requirements of shelter, safe drinking water and adequate sewerage provisions.

Overcrowded living conditions increase the risk of the spread of infectious diseases such as meningococcal disease, rheumatic fever, tuberculosis and respiratory infections. Indigenous people experience overcrowded living conditions more commonly than other Australians. Results from the 2001 Census showed that 15% of Indigenous households were living in dwellings that required at least one additional bedroom, compared with 4% of other households (ABS & AIHW 2003).

Results from the 1999 Australian Housing Survey indicated that people in Indigenous households in urban areas and major regional centres were almost three times as likely as people in non-Indigenous households to report their homes to be in need of repair (19% compared with 7%). A higher proportion of non-Indigenous households reported no need for repairs (44% compared with 34%). The 2001 Community Housing and Infrastructure Needs Survey (ABS 2002a) identified 21,287 permanent dwellings managed by Indigenous housing organisations. The majority of these dwellings (70%) were located in remote or very remote areas. Of these, 2,914 (19%) required major repairs and 1,461 (10%) required replacement (Table 4.7).

**Table 4.7: Condition of permanent Indigenous dwellings, by area, 2001**

	Minor or no repairs		Major repairs		Replacement		Total	
	Number	%	Number	%	Number	%	Number	%
Major cities	678	82.9	107	13.1	33	4.0	818	100
Inner regional	1,417	77.5	370	20.2	41	2.2	1,828	100
Outer regional	2,761	75.7	633	17.3	255	7.0	3,649	100
Remote	1,720	64.7	702	26.4	236	8.9	2,658	100
Very remote	8,414	68.2	2,212	17.9	1,225	9.9	12,334	100
<b>Australia</b>	<b>14,990</b>	<b>70.4</b>	<b>4,024</b>	<b>18.9</b>	<b>1,790</b>	<b>8.4</b>	<b>21,287</b>	<b>100</b>

### Notes

1. All permanent dwellings managed by Indigenous community housing organisations.

2. The total includes dwelling condition not stated.

Source: ABS 2002a.

Inadequate and poorly maintained infrastructure affects many Indigenous communities, particularly those in remote and rural areas of Australia. It is recognised that improving basic environmental health conditions, such as access to clean water and adequate sanitation, are critical for better health among the Aboriginal and Torres Strait Islander people living in these communities.

Water is a basic necessity, and ready access to safe drinking water is an essential public health requirement. Regular water testing and treatment are necessary to ensure that water is free from hazardous micro-organisms.

While most Indigenous people live in cities and towns with a common water supply and sewerage systems that also serve the non-Indigenous population, approximately one-quarter of the Indigenous population (108,085) live in discrete Indigenous communities. Of these 89,861 live in communities not connected to a town supply (ABS 2002a).

**Table 4.8: Water testing, communities not connected to a town water supply, 2001**

	Indigenous communities with a population size of:			Total	
	50–99	100–199	200 or more	Community total	Reported usual population
<b>Drinking water sent away for testing</b>					
Failed testing	14	14	28	56	17,028
Did not fail testing	20	19	71	110	52,144
Total with drinking water sent away for testing <sup>(a)</sup>	34	34	101	169	70,542
<b>Drinking water not sent away for testing</b>					
	25	9	9	43	6,245
<b>All communities<sup>(b)</sup></b>	<b>59</b>	<b>43</b>	<b>111</b>	<b>213</b>	<b>78,087</b>

(a) Includes 'whether drinking water failed testing' not stated.

(b) Includes 'whether drinking water sent away for testing' not stated.

*Notes*

1. In the 12 months before the survey.
2. Communities with a population of 50 or more.

Source: ABS & AIHW 2003.

The 2001 Community Housing and Infrastructure Needs Survey collected information on water treatment and testing from 213 (78,087 people) of the 216 Indigenous communities with a usual population of 50 or more which were not connected to a town water supply. One-fifth (43 communities, 6,245 people) had drinking water that had not been tested in the 12 months before the 2001 survey. Fifty-six communities (26%) with a population of 17,028 had drinking water that had failed testing at least once in the 12-month period.

Most discrete Indigenous communities had waste water and sewerage systems, but a high proportion reported problems with these systems, and a large number of communities reported unsafe ponding. Ponding occurs when large pools of stagnant water collect and remain for more than a week. It is commonly caused by overflow from

blocked drains and sewage overflows and leakage. It is a major health risk associated with the increased risk of vectorborne diseases (diseases spread by insects such as mosquitoes). In 2001, 137 communities (or 42% of communities with a usual population of 50 or more) reported ponding—for 46% of these communities ponding occurred more than five times in that year. Flooding also creates health-related problems. Flooding occurred in 31% of discrete Indigenous communities, affecting 3% of all permanent dwellings in communities of this size (ABS & AIHW 2003).

## 4.5 Socioeconomically disadvantaged people

Adverse social and economic circumstances can affect health throughout life. People who are poorer, or socially disadvantaged in other ways, live shorter lives and suffer more illness than those who are well off. This effect is not limited just to the extreme poor—a gradient in health is apparent across all levels of society. Even those at the middle levels of society exhibit poorer health than do the wealthy (Wilkinson & Marmot 2003).

Socioeconomic disadvantage can have many forms, including low income, poor education, unemployment, limited access to health services, living in poor housing and working in an unrewarding or menial job. Alone or in combination, and over time, these stressful economic and social circumstances have an effect on health and wellbeing.

Most forms of socioeconomic disadvantage can be measured and linked to adverse health outcomes, although their relative contribution and their interaction continue to be debated and researched (Turrell & Mathers 2000). Composite measures of socioeconomic status, often based on area of residence, have also been devised. The most commonly used measure by area of residence is the Socio-Economic Indexes for Areas, or SEIFA, derived by the ABS from population census data (ABS 2003d).

### Risk factors

The relationship between socioeconomic disadvantage as a risk factor for ill health and its interaction with other health risk factors has already been discussed in Chapter 3. Results from the 2001 National Health Survey continue to show that persons from lower socioeconomic groups are more likely to smoke, exercise less, be obese, and have few or no usual daily serves of fruit (ABS 2002b; AIHW: O'Brien & Webbie 2003). These are variously risk factors for a number of major health conditions such as lung cancer, and cardiovascular and respiratory diseases (Table 4.9).

### Major illnesses and health service use

Among the long-term health conditions covered in the 2001 National Health Survey, those reported more often by disadvantaged people included diabetes, diseases of the circulatory system, arthritis and diseases of the ear. The survey also found that the socioeconomically disadvantaged report greater use of doctors and hospital outpatient/casualty services, but are less likely to use preventive health services, such as breast cancer screening and Pap smear testing (Table 4.9).