

# *Young Australians*

Their health and wellbeing

2007

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2007

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Australian Institute of Health and Welfare  
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# Foreword

*Young Australians: their health and wellbeing 2007* is the third national statistical report on the health and wellbeing of Australia's young people aged 12–24 years produced by the Australian Institute of Health and Welfare (AIHW). The AIHW has played a leading role in the monitoring and reporting on young people's health and wellbeing since 1999, and the 2007 report builds on previous reports in the series by presenting a comprehensive picture of the health status of young Australians and the factors influencing their health.

Youth is a period of rapid emotional, physical and intellectual change, where young people progress from being dependent children to independent adults. Young people who are unable to make this transition smoothly can face significant difficulties in both the short and long term. All levels of governments are interested in positively influencing the environment of young people by providing support in areas such as health, education, welfare, work and safety. Prevention and early intervention are the key themes for current policies. Data which support a better understanding of the needs of young people and their families are therefore of critical importance.

This report brings together data from a wide variety of sources, including information on the health status of young Australians and the factors influencing their health such as health behaviours, environmental factors, family and community capacity, and socioeconomic factors. New topics in the 2007 edition include: burden of disease; parental health, disability and socioeconomic status; social support; assault and victimisation; environmental factors; and health system performance.

The key message from the report is that most young people in Australia are faring well but there are still significant areas of concern. In particular, Aboriginal and Torres Strait Islander young people and young people from lower socioeconomic backgrounds continue to be disadvantaged across a broad range of health and socioeconomic indicators. In addition, rising hospital separation rates for some chronic conditions and high rates of mental illness and some communicable diseases indicate the potential for further health gains to be made in these areas.

This report was produced by the Children, Youth and Families Unit at the AIHW, assisted by funding from the Australian Government Department of Health and Ageing. I thank members of the National Youth Information Advisory Group for their expert advice in the development of this report and the key national indicators of health and wellbeing for young Australians.

Penny Allbon  
Director

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# Executive summary

## Introduction

Youth is the period of time during which dependent children develop into independent adults. It is also a critical time for establishing and reinforcing good health and social behaviours. Young people who are unable to make a smooth transition to adulthood can face significant difficulties and barriers in both the short and long term.

*Young Australians: their health and wellbeing 2007* is the third in a series of national statistical reports on young people aged 12–24 years produced by the Australian Institute of Health and Welfare (AIHW). It brings together data from a wide variety of sources, including information on health status, health outcomes and factors influencing the health and wellbeing of young Australians, such as behaviour, environment, family, community and socioeconomic factors. In recognising that young people's health and wellbeing are influenced by a multitude of factors, the AIHW has broadened the list of indicators included in earlier reports to include burden of disease, social support, assault and victimisation, environmental factors, health system performance and indicators relating to the health, disability and socioeconomic status of parents of young people.

## Key findings

This report presents the latest available data on key national indicators of health, development and wellbeing of young Australians aged 12–24 years. This report found that while most young people in Australia are doing well, there are areas where further gains in health and wellbeing could be achieved, particularly among young Indigenous Australians, young people in regional and remote areas and young people suffering socioeconomic disadvantage.

The report also emphasises the need to work toward improved national data to support future monitoring of the health and wellbeing of young Australians. While there is a wealth of data to measure many aspects of their health and wellbeing, there are also a number of important data gaps. More recent and reliable information on key areas of concern (such as mental health) and for population groups at risk are required.

Key statistics addressing the indicators with available data are presented following the Executive Summary as a quick reference guide.

### Areas in which young Australians are faring well

- Life expectancy at birth has improved over the last 20 years: a gain of 5.6 years for males and 4 years for females. A boy born in 2002–2004 would be expected to live to 78.1 years, on average, while a girl would be expected to live to 83.0 years, on average.
- Death rates among young people aged 12–24 years halved between 1980 and 2004, largely due to decreases in deaths due to injury (including poisoning). Suicide and transport accident deaths declined by 40% and 35% respectively between 1995 and 2004 and deaths due to drug dependence disorder decreased from 142 deaths in 1997 to 3 deaths in 2004.
- Over 90% of young people rate their health as excellent, very good or good.
- Young people are less likely to have a 'severe disability' than people in other age groups (2% of young people).
- Asthma prevalence, although still higher than the general population, has declined from 16% to 13% between 2001 and 2004–05 for young people and hospital separation rates for asthma have more than halved between 1996–97 and 2004–05.

- Between 1993–97 and 1998–2002, the rate of melanoma incidence decreased by 23% (from 7.6 to 5.9 per 100,000 young people) for males and by 14% (from 9.1 to 7.8 per 100,000 young people) for females.
- The incidence of most vaccine-preventable communicable diseases is low. There has been a large decline in the notification rates for measles and rubella over the last decade and for meningococcal disease since 2003. The notification rates for meningococcal diseases, rubella and mumps were less than 3 per 100,000 each in 2005. Large declines have also been observed in notification rates for hepatitis A and B between 1995 and 2005 (a rate of 2.1 and 1.4 per 100,000 respectively in 2005). There has been an overall fall in the HIV notification rate since 1995, although a slight upward trend has been observed in recent years (a rate of 2.5 per 100,000 in 2005).
- Increasing proportions of young people are free from clinical tooth decay. Sixty per cent of those aged 12 years and 40% of those aged 15 years were decay free in 2001, an almost 1.7 fold increase since 1990.
- Young people aged 15–24 years accounted for 8% of the total disease and injury burden in 2003, with 71 disability-adjusted life years (DALYs) per 100,000 young people. This was half the rate for all Australians.
- Of young people living in families, most (80%) were living in couple-parent families in 2003. Young people in couple-parent families were more likely than young people from lone-parent families to have an ‘employed’ parent or one that had completed secondary school.
- The vast majority (90%) of young people were living in households that were not considered to be overcrowded in 2001.
- Most Year 7 students met the national benchmarks for reading, writing and numeracy (91%, 94% and 82%) in 2004.
- The apparent retention rate to Year 12 has increased substantially from 49% in 1986 to 75% in 2006 and the proportion of those aged 15–24 years with post-school qualifications rose from 23% to 26% between 1996 and 2006.
- The majority of young people (85% of those aged 15–19 years and 76% of those aged 20–24 years) were participating full time in education and/or work in 2006.

### **Significant areas of concern for young people**

- There were over 47,000 hospital separations for mental disorders in 2004–05. Over half of these were for psychoactive substance use, schizophrenia and depression. Mental disorders accounted for almost 50% of the total disease burden among young people in 2003.
- Injury (including poisoning) continues to be the leading cause of death for young people, accounting for two-thirds of all deaths of young people in 2004. Transport accidents accounted for 45% and intentional self-harm (suicide) accounted for 27% of all injury deaths. Injury was also the leading cause of hospital separation for males and the fourth highest for females in 2004–05. Transport accidents (largely motor vehicle accidents) were the most common external cause of injury for males and intentional self-harm was the most common cause for females.
- The hospitalisation rate for Crohn’s disease increased by 58% between 1996–97 and 2004–05, and the rate for diabetes increased by 16% between 2000–01 and 2004–05.
- Large increases in rates of notification for pertussis (whooping cough), chlamydia and gonococcal infection occurred between 1995 and 2005, although for chlamydia and gonococcal infection, this increase may in part be due to increased awareness and diagnosis.
- Overall, 25% of young people in 2004–05 were overweight or obese. Obesity rates increased from 3% to 5% between 2001 and 2004–05 and overweight (but not obese) rose from 17% to 22% for those aged 18–24 years. Coinciding with these increases, less than half of young people (46% of males and 30% of females) were meeting recommended physical activity guidelines in 2004–05.

- Less than half (47%) of those aged 12–18 years and only 8% of those aged 19–24 years were meeting the daily vegetable consumption guidelines in 2004–05.
- Only half of young people had their skin regularly checked for changes in freckles and moles in 2004–05. Melanoma remains the type of cancer with the highest incidence rate among young people.
- Almost one-third (31%) of young people drank alcohol in amounts that put them at risk or high risk of alcohol-related harm in the short term, and 11% at risk of long-term harm. Around 17% of young people were current smokers in 2004.
- Young mothers were more likely to smoke during pregnancy than mothers in other age groups (42% for those aged under 20 years and 30% for those aged 20–24 years compared with 17% for all ages in 2004).
- The unemployment rates for 15–19 and 20–24 year olds were 12.5% and 6.3% respectively in July 2006, compared with a national unemployment rate of 4.4%.
- Around 13% of young people were exposed to tobacco smoke inside their home in 2004–05.
- The proportion of young people on care and protection orders and in out-of-home care continued to increase. Over 9,000 12–17 year olds were on a care and protection order in 2006.
- Young adults (those aged 18–24 years) accounted for 20% of the total prison population in 2006, and there were over 9,000 12–17 year olds under juvenile justice supervision in 2003–04.
- One in three (34%) clients of agencies funded through the Supported Accommodation and Assistance Program (SAAP) (agencies providing assistance to homeless people) were aged 12–24 years in 2004–05. For males, accommodation problems were the main reason for seeking assistance, and interpersonal relationships was the main reason for females.

### **Population groups**

- Young Aboriginal and Torres Strait Islander people had higher rates of death, injury and some chronic diseases compared with other young Australians. During 2002–2004, the death rate for Indigenous young people was almost 4 times the rate for other young Australians, and the injury death rate was almost 5 times that of other young people. Indigenous young people had higher hospital separation rates for injury (1.7 times the rate for other young Australians), asthma (1.3 times) and diabetes (more than 3 times). Young Indigenous Australians were also more likely than other young Australians to experience health risk factors such as obesity, physical inactivity, smoking, imprisonment, and lower educational attainment.
- A small proportion (2.3%) of young people lived in Remote and Very Remote areas in 2005, however, these young people had substantially higher rates of death and hospital separation for specific health conditions and were more likely to engage in certain risky health behaviours than young people in Major Cities. For example, injury separation rates were 2.7 times as high as in Major Cities and death rates were 5 times as high. Consumption of recommended levels of fruit and vegetables declined with increasing remoteness, while the proportions of risky and high-risk drinking for short-term harm increased.
- The health and wellbeing status of young people varied significantly according to socioeconomic status. Young people from the most disadvantaged areas were less likely to rate their health as excellent or very good, were more likely to lack social support and be victims of assault, had lower Year 12 completion rates and had death rates almost twice as high as the least disadvantaged areas.

# Snapshot of health and wellbeing of young Australians

<b>Tier 1: Health status and outcomes</b>		<b>Proportion of young people</b>	<b>Page</b>
<b>Physical, mental and social wellbeing</b>	Self-rated health status as excellent, very good or good (15–24 years) (2004–05)	93%	12
<b>Disability and activity limitation</b>	Severe or profound core activity limitation (15–24 years) (2003)	2%	15
<b>Health conditions</b>	High or very high levels of psychological distress as measured by the Kessler 10 (K10) scale (18–24 years) (2004–05)	Males: 12% Females: 19%	24
	Burden of disease and injury (15–24 years) (2003)	71 DALYs per 1,000	19
	Mental health disorder prevalence rate (12–17 years) (1998)		
	Attention deficit/hyperactivity disorder (ADHD)	8%	
	Conduct disorders	3%	25
	Mental health disorder prevalence rate (18–24 years) (1997)		
	Substance use	16%	
	Affective	7%	
	Anxiety	11%	25
	Suicide rate (12–24 years) (2004)	8 per 100,000	28
	Injury and poisoning hospital separation rate (12–24 years) (2004–05)	2,395 per 100,000	30
	Assault hospital separation rate (12–24 years) (2004–05)	203 per 100,000	32
	Injury and poisoning death rate (12–24 years) (2004)	28 per 100,000	32
	Assault death rate (12–24 years) (2004)	0.7 per 100,000	35
	Transport accident death rate (12–24 years) (2004)	13 per 100,000	35
	Chronic disease prevalence (12–24 years) (2004–05)	63%	37
	Asthma 12–24 year olds (2004–05)	13%	38
	Diabetes 15–24 year olds (2004–05)	0.4%	41
	Cancer (incidence) 12–24 year olds (2002)	27 per 100,000	42
	Incidence of vaccine-preventable diseases (12–24 years) (2005)	Per 100,000	
	Pertussis	42	53
	Influenza	20	53
	Meningococcal diseases	2.8	53
	Rubella	0.3	53
	Mumps	<2	54
	Incidence of other notifiable preventable diseases (12–24 years) (2005)	Per 100,000	
	HIV	2.5	55
	Chlamydia	Males: 221 Females: 961	58
	Syphilis	8	59
	Gonococcal infection	93	59
	Hepatitis A	2.1	57
	Hepatitis B	1.4	57
	Hepatitis C	3.5	57
	Free from clinical tooth decay at 12 years and at 15 years (2001)	12 years: 60% 15 years: 40%	62
	Mean number of decayed, missing and filled teeth at 12 and 15 years (2001)	12 years: 0.95 15 years: 2.23	62
<b>Deaths</b>	Death rates all causes (12–24 years) (2004)	41 per 100,000	64

	<b>Tier 2: Factors influencing health and wellbeing</b>	<b>Proportion of young people</b>	<b>Page</b>
<b>Environmental factors</b>	Living in households where adults smoked inside (12–17 years) (2004–05)	12%	135
	Living in overcrowded housing (15–24 years) (2001)	10%	136
<b>Socioeconomic factors</b>	Parents did not complete secondary school (Year 10 or above) (12–24 years) (2004)	9%	133
	Apparent retention rates to Year 12 (2006)	75%	119
	With post-school qualifications (15–24 years) (2006)	26%	120
	Meeting national reading, writing and numeracy benchmarks in Year 7 (2006)	Reading: 91% Writing: 94% Numeracy: 82%	121
<b>Community capacity</b>	Living in families where no parent is employed (12–24 years) (2003)	14%	132
	Full-time participation rate (15–24 years) (2006)	15–19 years: 85% 20–24 years: 76%	123
	Unemployment (15–24 years) (July 2006)	15–19 years: 13% 20–24 years: 6%	124
	Long-term unemployed (15–24 years) (September 2005)	1%	124
	Underemployment rate (15–24 years) (2005)	15–19 years: 12% 20–24 years: 8%	125
	Financially dependent on their families (15–24 years)	No data available	126
	Receiving a regular allowance/ income from parents (15–24 years) (2004)	25%	126
	Mean income earned by young people (15–24 years) (2005)	15–19 years: \$234 20–24 years: \$570	127
	Receiving government income support (15–24 years) (2006)	19–20%	128
	Carry various types of debt (and overall debt) (12–24 years) (2003)	20% (NSW study)	129
	Living independently and receiving rent assistance (15–24 years)	162,695 young people	129
	Experienced hardship because of a shortage of money (15–24 years) (2004)		
	Could not pay electricity, gas or telephone bills on time	12% to 15%	
	Could not pay mortgage or rent on time	6%	
	Went without meals	5% to 6%	131
	Living in families with low family cohesion (12–17 years) (1998)	16%	95
	Health status of parents:	<i>Proportion of parents</i>	
	Parents (of 12–24 year olds) rating their health as fair or poor (2004)	17%	96
	Parents (of 15–24 year olds) with disability (2003)	16%	96
	Parents (of 12–24 year olds) scoring poorly on mental health scale (2004)	23%	98
	Caring for family members (e.g. parents, siblings and partners) (15–24 years) (2003)	7%	97
	Subject of child protection substantiations (12–16 years) (2005–06)	<i>Per 1,000</i> Males: 4.3	
	Subject of care and protection orders (12–17 years) (2006)	Females: 6.9	100
	Young people in out-of-home care (12–17 years) (2006)	Per 1,000 12–14 years: 6.0 15–17 years: 5.0	101
	Score well on a social support scale (15–24 years) (2004)	12–14 years: 5.8 15–17 years: 4.1	102

(continued)

<b>Tier 2: Factors influencing health and wellbeing (continued)</b>		<b>Proportion of young people</b>	<b>Page</b>
<b>Community capacity (continued)</b>	Volunteering rate (18–24 years) (2002)	28%	106
	Victim of physical and/or sexual assault (12–24 years) (2005)	9%	108
	Alcohol and other drug-related violence victimisation rate (14–24 years) (2004)	31%	109
	Witnessing family violence	No data available	
	Currently homeless (12–24 years) (2001)	1%	112
	In juvenile justice supervision (12–17 years) (2003–04)	549 per 100,000	115
<b>Person-related factors</b>	Rate of imprisonment (18–24 years) (2005)	251 per 100,000	116
	Overweight or obese (15–24 years) (2004–05)	25%	72
<b>Health behaviours</b>	Meeting recommended physical activity guidelines (2004–05)	Males: 46% Females: 30%	74
	Meeting daily fruit consumption guidelines (2004–05)	12–18 years: 26% 19–24 years: 43%	76
	Meeting daily vegetable consumption guidelines (2004–05)	12–18 years: 47% 19–24 years: 8%	77
	Year 8 and Year 10 students eating breakfast (2004) (NSW only)	Year 8 Males: 74% Females: 66% Year 10 Males: 67% Females: 59%	77
	Using sun protection (12–24 years) (2003–04)	No data available	79
	Skin regularly checked for changes in freckles and moles (12–24 years) (2004–05)	50%	80
<b>Substance use</b>	Mean age of substance use initiation (2004)	Mean age	
	Tobacco	14.4 years	
	Alcohol	14.7 years	
	Marijuana	15.7 years	
	Meth-amphetamine	18.0 years	
	Ecstasy	18.4 years	86
<b>Risk taking</b>	Current smokers (12–24 years) (2004)	17%	82
	Engaged in high risk (5 or more drinks) drinking at least once in the last week (12–17 years) (2002)	2% (12 year olds) to 22% (17 year olds)	83
	Drinking at risky or high-risk levels for (12–24 years) (2004–05)		
	short-term harm	31%	
	long-term harm	11%	84
	Using an illicit drug within the last 12 months (12–24 years) (2004)	23%	85
<b>Sexual behaviour</b>	Sexual intercourse in Year 10 and Year 12 students (2002)	Year 10: 26% Year 12: 47%	88
	Any contraception use to avoid pregnancy among those sexually active (Year 10 & Year 12 students) (2002)	90%	89
	Proportion of students in Years 10 and 12 who used a condom at their most recent sexual encounter (with someone they had just met) (2002)	Year 10: Males: 68% Females: 53% Year 12: Males: 75% Females: 80%	91
	Substance use during pregnancy: proportion of mothers smoking during pregnancy (2004)	> 20 years: 42% 20–24 years: 30%	92

<b>Tier 3: Health system performance</b>		<b>Proportion of young people</b>	<b>Page</b>
<b>Effective</b>	Hospital separation rate for ambulatory care sensitive conditions (2004–05)	Per 1,000 12–17 years: 9 18–24 years:12	160
	Percentage of injecting drug users who reported recent sharing of needles and syringes	No data available	
	Percentage of teenage smokers aged 12–17 years who personally purchased their most recent cigarette (2002)	22%	161
<b>Appropriate</b>	Participation rate for cervical screening among young women aged 20–24 years (2003–04)	48%	161
	Proportion of prescriptions for oral antibiotics ordered by general practitioners for the treatment of upper respiratory tract infections (URTI) for young people (12–24 year olds) (2003–04)	37%	163
<b>Efficient</b>	Proportion of young people with diabetes who have received an annual cycle of care within general practice	No data available	
	Caesarean sections as a proportion of all confinements of young women aged 15–24 years (1999)	15–19 years: 13% 20–24 years:16%	163
<b>Responsive</b>	Relative stay index (RSI) for those aged 12–24 years by medical, surgical and other DRGs (length of stay in hospital)	No data available	
<b>Accessible</b>	Percentage of patients aged 12–24 years who are treated within national benchmarks for waiting in public hospital emergency departments for each triage category	69%	164
	Median waiting time for access to elective surgery for those aged 12–24 years	No data available	
	Proportion of young people aged 15–24 years attending antenatal services during pregnancy	No data available	
<b>Safe</b>	Proportion of non-referred attendances at GPs that are bulk-billed under the Medicare program	No data available	
	Availability of general practitioner services	No data available	
	Proportion of hospital separations for young people aged 12–24 years where an adverse event was treated and/or occurred (2004–05)	2%	165

# Part 1:

## Background

### 1.1 Introduction

Youth is a period of rapid emotional, physical and intellectual transition, where young people progress from being dependent children to independent adults. This is often a period where young people face a range of life events and make decisions that can impact on their immediate and longer term health and wellbeing. Some of these include decisions on schooling and career paths, relationships with families and peers, sexual behaviours, employment, financial decisions and contact with drugs, alcohol or the justice system.

For young people in Australia, the transition to adulthood is made more complex by the social, economic, environmental and rapid technological changes in Australian society over recent decades. Compared with young people from previous generations, young people today have fewer siblings and are more commonly living in either single-parent or blended families, or families with both parents in the workforce. The pathways from education to work are more varied and complex than in the past and often extend over longer periods; coupled with decreased job security this means that young people often live in the parental home for longer.

Young people who are unable to make the transition to adulthood smoothly can face significant difficulties and barriers in both the short and long term. As such, positive protective factors introduced in childhood need to be reinforced throughout these critical years as young people go through various transition points in life and this is a role for families, communities and governments alike. All levels of governments are interested in positively influencing the environment of young people by providing support to them and their families in areas such as health, education, welfare, employment and safety. Prevention and early intervention are the key themes for current policies.

Timely, accurate and comprehensive information on factors that influence young people's health and wellbeing is required for the formulation of appropriate and effective policies and interventions to achieve long-term health and wellbeing outcomes for young people. Trend information can then be used to evaluate the effectiveness of policy-based interventions.

*Young Australians: their health and wellbeing 2007* is the third in a series of national statistical reports on young people aged 12–24 years produced by the Australian Institute of Health and Welfare (AIHW) in addressing this information need. The first report on Australia's young people was published in 1999 and the second in 2003 (AIHW 2003a; AIHW: Moon et al. 1999).

In recognising that young people's health and wellbeing are influenced by a multitude of factors, the AIHW has broadened its list of indicators in the reporting framework of this current report. New topics in this edition include: burden of disease; parental health, disability and socioeconomic status; social support; assault and victimisation; environmental factors; and health system performance. This new information enables us to build a more comprehensive picture of the wider social, economic and community contexts in which young people today are growing up and how these factors affect their health and wellbeing.

## Defining 'young people'

This report defines 'young people' as those aged 12–24 years and this is consistent with the previous AIHW publications on Australia's young people. However, this age range overlaps with the age group defined as children (aged 0–14 years) in previous AIHW reports on Australia's children (see AIHW 2005i; AIHW: Al-Yaman et al. 2002; AIHW: Moon et al. 1998). The overlap is deliberate and recognises the fact that transition from childhood to youth is a gradual process, beginning and ending at different ages for different individuals (AIHW: Moon et al. 1999). In recognising these differences, the report presents information by different age groups within the 12–24 year age range as permitted by the data or as considered to be appropriate for the indicator.

Defining young people as those aged between 15 and 24 years is a widely accepted statistical convention and is used by most studies on youth (see ABS 2005a; United Nations. Department of Economic and Social Affairs 2005). But, it is much harder to specify a set age group when a sociological definition of young people is employed. The period of transition from childhood to adulthood varies greatly between societies and even within the same society. This critical stage in the life-cycle may begin as early as age 10 (for street children, for example) and may in some cases continue into the mid to late 30s, suggesting that the process of achieving an independent, sustaining livelihood can take a relatively long time, depending on the society (United Nations. Department of Economic and Social Affairs 2005).

However, there are a number of ways to define young people, which can be dependent upon particular data collections or legal requirements. In most Australian jurisdictions, young people aged 15 years and over are permitted to work or leave school, while in some jurisdictions, the legal compulsory age of leaving school is higher than 15 years. As such, children under the age of 15 years are generally regarded as dependent on their parents for support, wellbeing and development. Eighteen is the legal age at which young people attain adulthood, are allowed to vote, usually finish senior school and undertake the transition to independent living and/or further studies. Consequently, a number of data collections use age 18 as the cut-off point between adolescence and adulthood (see Fraser & Fraser 2002; Pitman et al. 2003; Queensland Commission for Children and Young People 2004).

## The National Youth Information Framework

This report is based on a set of key national indicators developed by the AIHW in consultation with an advisory group comprising experts in the areas of child and youth health, as well as other stakeholders. The indicators for this report were based on a conceptual framework that was a modification of the National Health Performance Framework (NHPF) developed by the National Health Performance Committee. The NHPF is a nationally agreed framework endorsed by the Australian Health Ministers' Advisory Council (AHMAC). A detailed description of the process of developing indicators for young Australians is given in the bulletin *Young Australians: their health and wellbeing, key national indicators* (AIHW 2006h).

The National Youth Information Framework (see Box 1) used for developing indicators for the *Young Australians: their health and wellbeing 2007* report is aligned very closely with the NHPF, with minor modifications to better capture issues relevant to young people. The revised National Youth Information Framework also reflects improvements in the information available, and is designed to provide a comprehensive set of indicators across a range of dimensions that will help monitor the health and factors influencing the health and wellbeing of young Australians.

The National Youth Information Framework consists of three tiers: 'Health status and outcomes', 'Factors influencing health and wellbeing', and 'Health system performance' and a number of dimensions within each tier. For example, there are four dimensions within the 'Health status and outcomes' tier: health conditions, human function, life expectancy and wellbeing, and deaths. Socioeconomic, environmental, community, person-related factors and health behaviours are included in the tier 'Factors influencing health and wellbeing'. Since most areas covered under the person-related factors dimension have no national data, they have been incorporated into the health behaviours dimension in this report.

### Box 1: National Youth Information Framework

<b>Tier 1: Health status and outcomes</b> How healthy are young Australians? Is it the same for everyone? Where is the most opportunity for improvement?				
<b>Life expectancy and wellbeing</b>		<b>Human function</b>	<b>Health conditions</b>	<b>Deaths</b>
Broad measures of physical, mental and social wellbeing of individuals and other derived indicators such as disability adjusted life expectancy		Alterations to body structure or function (impairment), activities (activity limitation) and participation (restrictions in participation)	Prevalence of disease, disorder, injury or trauma or other health-related states	Age-specific and/or condition-specific mortality rates
<b>Tier 2: Factors influencing health and wellbeing</b> Are the factors determining young people's health changing for the better? Are they the same for everyone? Where and for whom are they changing?				
<b>Environmental factors</b>	<b>Socioeconomic factors</b>	<b>Community capacity</b>	<b>Health behaviours</b>	<b>Person-related factors</b>
Physical, chemical and biological factors such as air, water, food and soil quality resulting from chemical pollution and waste disposal	Socioeconomic factors such as education, employment, per capita expenditure on health and average weekly earnings	Characteristics of communities and families such as population density, age distribution, health literacy, housing, community support services and transport	Attitudes, beliefs, knowledge and behaviours, e.g. patterns of eating, physical activity, excess alcohol consumption and smoking	Genetic-related susceptibility to disease and other factors such as blood pressure, cholesterol levels and body weight
<b>Tier 3: Health system performance</b> How well is the health system performing in delivering quality health actions to improve the health of young Australians? Is it the same for everyone?				
<b>Effective</b>	<b>Appropriate</b>		<b>Efficient</b>	
Care, intervention or action achieves desired outcome	Care, intervention or action provided is relevant to the client's needs and based on established standards		Achieves desired results with most cost-effective use of resources	
<b>Responsive</b>	<b>Accessible</b>		<b>Safe</b>	
Service provides respect for persons and is client orientated, including respect for dignity, confidentiality, participation in choices, promptness, quality of amenities, access to social support networks and choice of provider	Ability of people to obtain health care at the right place and right time irrespective of income, physical location and cultural background		The avoidance or reduction to acceptable limits of actual or potential harm from health care management or the environment in which health care is delivered	
<b>Continuous</b>	<b>Capable</b>		<b>Sustainable</b>	
Ability to provide uninterrupted, coordinated care or service across programs, practitioners, organisations and levels over time	An individual's or service's capacity to provide a health service based on skills and knowledge		System's or organisation's capacity to provide infrastructure such as workforce, facilities and equipment, and to be innovative and respond to emerging needs (research, monitoring)	

Note: Based on the National Health Performance Framework (NHPC 2001).

## Report structure

There are six major parts to this report. Key statistics addressing the indicators are also presented under 'Snapshot of health and wellbeing of young Australians', following the Executive Summary.

The first part has provided an introduction to the report, the indicators and the reporting framework and gives a description of the population characteristics of young people in Australia. The remaining parts of the report are structured closely following the headings of the various tiers and dimensions of the National Youth Information Framework presented in Box 1.

Part 2 of the report examines health status and outcomes of young people, including information on overall health status, disability, mental health, injury, chronic disease, communicable diseases, oral health and mortality.

Part 3 of the report looks at a number of broader factors influencing young people's health. These include: health behaviours such as physical activity, body weight, nutrition, sun protection, substance use and sexual and reproductive health; community factors including family capacity, community support and legal and justice issues; socioeconomic factors such as education, employment and income; and environmental factors.

While the majority of young people are faring well, as evidenced by rapid declines in mortality over the last two decades, not all are doing so well. Information on the health and wellbeing of young Aboriginal and Torres Strait Islander people, young people from rural and regional Australia, and young people from different socioeconomic backgrounds have been included in the report where possible, in order to explore some important differences in the experiences of these groups of young people.

This report also includes a feature chapter on young Aboriginal and Torres Strait Islander people in Part 4, which brings together the information on young Indigenous Australians dispersed throughout the report and also further explores issues affecting the health and wellbeing of this population group.

Part 5 discusses aspects of health system performance in terms of its effectiveness, efficiency, appropriateness, responsiveness, accessibility, safety, capability, sustainability and continuity. This part of the report includes a limited number of indicators used to measure some of these components, on the basis of their relevance to young people, and the availability of data for this population group.

Part 6 of the report identifies areas where information is currently lacking and discusses new data developments that are relevant to young people.

## 1.2 Young people in Australia: an overview

### Demographic characteristics of young people in Australia

This section provides information about the demographic characteristics of young people in Australia aged 12–24 years, including the size, composition, regional distribution and cultural diversity (Indigenous and overseas-born) of this population. All of these characteristics relate to young people's health status and the factors influencing their health and wellbeing.

In June 2006, there were approximately 3.7 million young people (1.9 million males and 1.8 million females) in Australia, representing 18% of the total population.

**Table 1.1: Distribution of young people in Australia aged 12–24 years, by age and sex, June 2006**

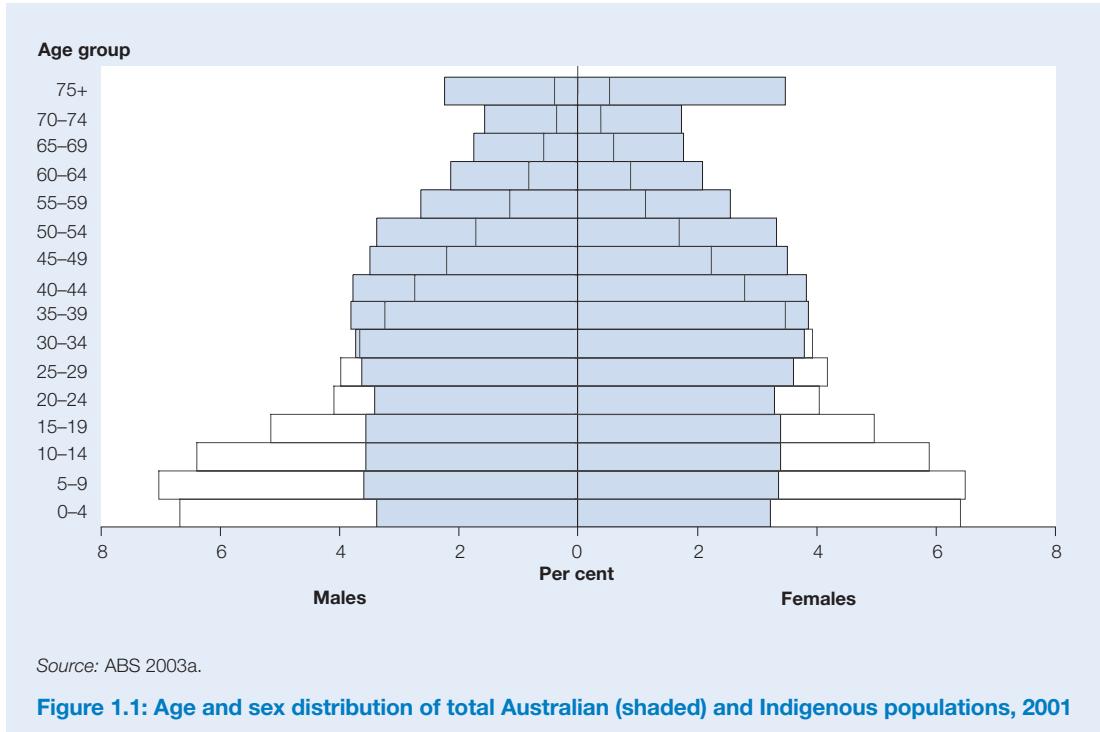
	Number	Per cent
<b>Age group</b>		
12–14 years	840,079	22.7
15–19 years	1,405,419	38.0
20–24 years	1,453,429	39.3
<b>Sex</b>		
Males	1,899,867	51.4
Females	1,801,066	48.7
<b>Total young people</b>	<b>3,698,927</b>	<b>100.0</b>

Source: ABS various years.

- Of all young people in Australia in 2006, 23% were aged between 12 and 14 years and 38% were aged 15–19 years. Combined, those aged 12–19 years comprised 61% of young people in Australia aged 12–24 years.
- There was a slightly higher proportion of males compared to females (51% compared to 49%).
- Of all Australians in 2006, 4.1% were aged 12–14 years, 6.8% were aged 15–19 years and 7.1% were aged 20–24 years.

### Age and sex distribution of all Australians and Indigenous Australians

In 2001, there were 116,698 Indigenous young people aged 12–24 years, making up 3.4% of all young people in Australia and less than 1% of all people in Australia.



Source: ABS 2003a.

**Figure 1.1: Age and sex distribution of total Australian (shaded) and Indigenous populations, 2001**

- Compared to the Australian population pyramid, the Indigenous population pyramid has a much broader base and a narrow apex. This reflects the high birth rate and high death rates among the Indigenous population, especially in the mid-adult and older age groups. A relatively small proportion survives to ages above 50 years. The median age (the mark at which half the population is older and half is younger) of the Australian population in 2001 was 35 years and for the Indigenous population it was 20 years.
- In contrast, the Australian population indicates low birth rates, low death rates at all ages and a high proportion of people surviving to older ages.
- Young people made up 26% of the total Indigenous population in 2001, while the proportion of all young people in Australia in the whole population was 18%.

**Table 1.2: Distribution of young people in Australia aged 15–24 years, by regional status, June 2005**

Region of residence	Number	Per cent
Major Cities	1,928,124	68.4
Inner Regional	552,620	19.6
Outer Regional	256,108	9.1
Remote	38,909	1.4
Very Remote	25,909	0.9
All regions <sup>(a)</sup>	2,801,670	99.4
<b>Total young people aged 15–24 years</b>	<b>2,819,834</b>	<b>100.0</b>

(a) Excludes migratory and 'Other Territories'.

Source: ABS various years.

- In 2005, 68% of young people lived in Major Cities, 20% in Inner Regional areas and 9% in Outer Regional areas. Those living in Remote and Very Remote areas accounted for just over 2% of all young people.

**Table 1.3: Overseas-born young people in Australia aged 15–24 years, June 2006**

<b>Overseas-born young people</b>	<b>Number</b>	<b>Per cent</b>
From mainly English-speaking countries	152,377	5.3
From mainly non-English speaking countries	288,320	10.1
<i>Total overseas-born young people</i>	<i>455,443</i>	<i>15.9</i>
<b>Total young people aged 15–24 years</b>	<b>2,858,848</b>	<b>100.0</b>

Source: ABS 2007a.

- Young people aged 15–24 years born overseas represented 16% of young Australians in this age group (2.2% of the total population) in 2006. This figure does not include young people born to overseas-born parents, but does include, for example, young people who are overseas students and long-term residents of Australia. Around two-thirds of overseas-born young people were from mainly non-English speaking countries. The most common countries of birth were China, Philippines, India, Viet Nam, Hong Kong, Malaysia and Indonesia. Of those born in English-speaking countries, more than three-quarters came from New Zealand or the United Kingdom (ABS 2007a).

**Table 1.4: Distribution of young Indigenous Australians aged 15–24 years, by region, 2001**

<b>Region</b>	<b>Number</b>	<b>Per cent</b>
Major Cities	25,923	30.9
Inner Regional	16,627	19.8
Outer Regional	18,737	22.3
Remote	7,408	8.8
Very Remote	15,294	18.2
<b>Australia</b>	<b>83,988</b>	<b>100.0</b>

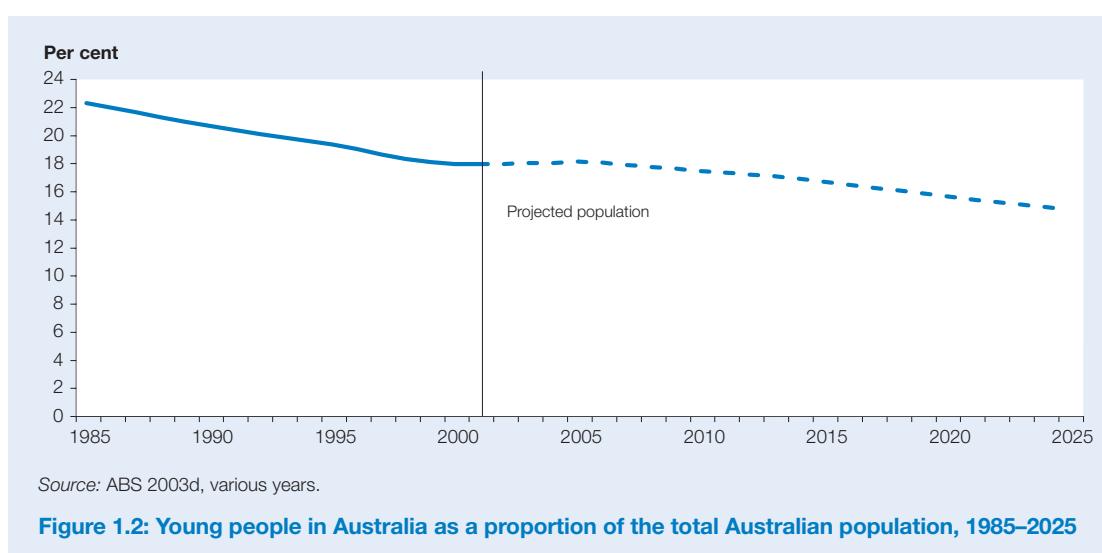
Source: ABS various years.

- Most young Indigenous people aged 15–24 years lived in Major Cities and Inner and Outer Regional areas. Indigenous young people accounted for over 50% of all young people in Australia living in Very Remote areas.

### Interstate movement

Young people are more likely than others to move interstate. In 2005–06, the largest single group to move interstate was those aged 20–24 years. For young people, the most popular destination was Queensland, where the net gain for the period was just over 4,900 young people aged 15–24 years (ABS 2007a).

### Past and future population trends



- The proportion of young people aged 12–24 years in the population declined in the 1990s, from 21% in 1990 to 18% of the Australian population in 1999. This is a reflection of the decrease in the fertility rate that occurred since the 1970s and increased life expectancy. The number of young people also declined over the same period, from 3,506,897 to 3,400,309 young people. Although the number of young people has increased since 2000 (from 3,417,272 in 2000 to 3,698,927 in 2006), the proportion of young people in the Australian population remained steady at approximately 18%.
- The proportion of young people in 2025 is projected to fall to about 15% of the total projected Australian population.

The projected decrease in the proportion of young people in the general population has implications for the growth of the economically active population compared to the dependent population, particularly at older ages.

### The families young people live in

A supportive and stable family environment in which young people grow up is important for their healthy development and social and emotional wellbeing. Families have the main responsibility for the care of young people until they become independent adults. Family is where young people gain their basic social skills including building and maintaining healthy relationships with friends, other family members and the wider community (Hemphill et al. 2004; Pitman et al. 2003).

With the changing social attitudes towards marriage and fertility choices, the composition of Australian families has changed over the last 3 decades. The result has been an increasing diversity of family types in which Australia's young people are raised (AIHW 2006a).

Despite this change, the majority of young people still live in couple families. The proportion of young people living in couple parent families remained fairly stable between 1992 and 2003 with 81% and 80% respectively living in such families. Over the same period, the proportion of young people living in lone-parent families was similarly stable (19%–20% respectively). The proportion of young people in lone-parent families living with their mother increased from 75% to 80% (ABS 2004d).

**Table 1.5: Number and proportion of young people in Australia by family structure, 2003**

Family structure	Number ('000)	Per cent
<b>Couple families</b>	<b>2,101.1</b>	<b>80.3</b>
Children aged 12–14 years	624.6	23.9
Dependent student aged 15–24 years	848.8	32.4
Non-dependent aged 15–24 years	627.7	24.0
<b>Lone-parent families</b>	<b>517.1</b>	<b>19.8</b>
<i>Lone mother</i>	414.0	15.9
Children aged 12–14 years	145.8	5.6
Dependent student aged 15–24 years	153.6	5.9
Non-dependent aged 15–24 years	114.6	4.4
<i>Lone father</i>	103.1	3.9
Children aged 12–14 years	31.1	1.2
Dependent student aged 15–24 years	34.7	1.3
Non-dependent aged 15–24 years	37.3	1.4
<b>Total young people in all family types</b>	<b>2,618.2</b>	<b>100.0</b>

Source: ABS 2004d.

At the 2001 Census, approximately 786,000 young people aged 15–24 years did not live with their parents (30%). Of these, 34% were married or in a de facto relationship, 5% were in lone-parent families, 27% lived in group households, 15% lived with related individuals (other than their parents), 8% were living with an unrelated family and 11% lived alone (ABS 2004a).

## Marriage, cohabitation and divorce

The marriage rate among young people in Australia has declined over time. The rising median age at which men and women first marry and the noticeable increase in cohabitation has contributed to fewer marriages among young people in recent years.

**Table 1.6: Median age at first marriage for selected years**

Sex	1970	1980	1985	1991	1996	2001	2005
Males	23.4	24.2	25.4	26.7	27.6	28.7	30.0
Females	21.1	21.9	23.2	24.5	25.7	26.9	28.0

Source: ABS 2006k.

- Between 1970 and 2005, the median age at first marriage for Australian males and females increased by almost 7 years.

According to the 2001 Census, approximately 4% of young people in Australia aged 15–24 years were in a registered marriage and a further 7% were in a de facto marriage. Among young Indigenous people, 5% were in a registered marriage and 9% were in a de facto marriage. The corresponding proportions among overseas-born young people in 2001 were 6% and 3% respectively (ABS 2004a).

**Table 1.7: Age-specific rate of first marriage for selected years (rate per 1,000 people)**

Sex and age	1976	1982	1987	1992	1997	2001	2005(a)
Males	≤19(b)	9.9	5.0	2.2	1.5	1.0	0.9
	20–24	122.6	85.0	58.6	43.3	29.1	23.1
Females	≤19(b)	49.0	28.1	13.5	8.0	5.1	4.2
	20–24	187.5	136.9	104.3	78.0	53.4	42.3

(a) Calculated using all marriages (including first marriages and remarriages).

(b) For the purpose of calculating rates for this row, only the population aged 5 to 19 years have been included in the denominator.

Source: ABS 2005d.

- In 1976, the rate of first marriage among young males under age 20 was about 10 per 1,000 males and in 2004 the rate was less than 1 per 1,000. Among females under age 20, the rate of marriage in 1976 was 49 per 1,000 females and in 2004 it was less than 5 per 1,000.
- Similarly, the marriage rate among those aged 20–24 years declined between 1976 and 2004, from 123 per 1,000 to 19 per 1,000 for males, and from 188 per 1,000 to 33 per 1,000 for females.

The proportion of young people aged 15–24 years in a de facto relationship increased from 5% in 1991 to 7% in 2001.

Few divorces occur at younger ages. The age-specific divorce rate among married young people fluctuated over time but increased between 1991 and 2001. For males, the rate increased from 10.6 per 1,000 married males aged 24 years and younger in 1991 to 13.6 per 1,000 in 2001. The respective corresponding rates for females aged 24 years and younger were 16.1 and 17.4 per 1,000 married females (ABS 2006f).

## Fertility

Over the last quarter of a century, the total fertility rate (TFR) in Australia has fallen below the replacement fertility level of 2.1 births per woman and in 2005 it was 1.8 births (ABS 2006d). The TFR is the number of babies a woman could expect to bear during her lifetime if she experienced the current age-specific fertility rate throughout her child-bearing age. The TFR appeared to have stabilised between 1998 and 2005 (AIHW 2005b), but there is some speculation that it may be rising (McDonald 2005).

Relatively few young people have children before they reach age 25. The median age of mothers at birth in 2005 was 30.7 years, a substantial increase from 25.4 years in 1971, which was the lowest median age at birth recorded (ABS 2006d). In 2005, the median age at first birth among Indigenous women was 24.5 years, which is similar to the median age for all women in the early 1970s (ABS 2006d).

**Table 1.8: Fertility rate among young people, selected years (rate per 1,000 females)**

Age (years)	1980	1985	1990	1995	2000	2005
15–19	27.6	22.8	22.1	20.4	17.7	16.0
20–24	107.0	95.8	79.4	67.1	59.2	52.9

Source: ABS 2006d.

- The age-specific fertility rates among 15–19 and 20–24 year old women have fallen over the last two decades, to 16 births per 1,000 and 53 births per 1,000 for women aged 15–19 years and 20–24 years respectively in 2005.

In the same year, the age-specific fertility rate among young Indigenous women was 69 and 122 births per 1,000 women aged 15–19 years and 20–24 years respectively (ABS 2006d). For those aged 15–19 years, this is a rate 4.3 times as high as that of non-Indigenous females, and for those aged 20–24 years it is 2.3 times as high as that of non-Indigenous females.

# Part 2:

## Health status and outcomes

The health status and outcomes of young people are discussed in terms of how young people perceived their own health, their levels of disability, various health conditions affecting them (mental health, injuries, chronic diseases, communicable diseases, oral health) and mortality.

The health of young Australians is continually improving as demonstrated by reductions in morbidity and mortality from communicable diseases, chronic diseases, suicide, motor vehicle accidents and other injury. Apart from children aged 0–4 years, young people aged 15–24 years reported the lowest prevalence of disability in 2003 (ABS 2004c).

Despite these improvements, significant gains in health remain to be made. Rising hospital separation rates have been observed for diabetes, Crohn's disease and cerebral palsy.

Notifications for some conditions (meningitis, chlamydia, hepatitis C) are still high among young people. The mental health status of young people is also an area of concern. All of these health conditions substantially affect young people's quality of life, long-term health and wellbeing and their successful participation in society, education and employment. These health conditions may disproportionately affect particular population groups. For example, life expectancy, which is determined by the mortality experience of a population, is not uniform across populations within Australia. Aboriginal and Torres Strait Islander people have a much lower life expectancy than the general Australian population. Indigenous Australians born in the period 1996–2001 are projected to live nearly 20 years less than the rest of the population (ABS 2005b).

It is important to understand the specific health problems affecting the population of young people as a whole, as well as specific groups such as Indigenous young people, and those from different socioeconomic groups and geographic regions.

The aim of this part of the report is to bring together all key indicators of health status and health outcomes for young people, using the most recent available data. It presents a comprehensive picture of how well young people are faring in terms of their health and highlights areas of concern. Data are presented in the areas of:

- physical, mental and social wellbeing
- disability and activity limitation
- health conditions (overall burden of disease and injury, mental health, injury and poisoning, chronic disease, communicable disease and oral health)
- deaths

## 2.1 Life expectancy and wellbeing

Life expectancy reflects the current levels of mortality experienced by a population and is often used as an objective summary measure of a population's health.

Over the last century, the mortality rate among young people declined by around 80%. There has been an improvement in life expectancy at birth over the last 20 years: a gain of 5.6 years for males and 4 years for females. Based on the latest age-specific mortality rates, a boy born in 2002–2004 would be expected to live to 78.1 years, on average, while a girl would be expected to live to 83.0 years, on average. If the age-specific mortality remained unchanged, a boy and a girl aged 15 years in 2004 would be expected to live to ages 78.7 and 83.5 years, respectively (ABS 2005b).

The life expectancy and wellbeing dimension in this report includes broad measures of physical, mental and social wellbeing of young Australians. These are often difficult to measure using more objective measures such as mortality, morbidity and disability or activity limitations as health is not just the presence or absence of disease or disability. Therefore, in order to capture the status of health more broadly—that is the state of social, mental and spiritual health and wellbeing—it is important to include a subjective assessment of health by young people. Self-assessed health is often a good indicator of actual health and wellbeing of a person. A number of studies have also shown that people's perception of their own health status to be a powerful, independent predictor of their future health and survival (Idler & Benyamin 1997; Miilunpalo et al. 1997).

### Physical, mental and social wellbeing

This indicator presents information from the ABS National Health Surveys (NHS) on 'self-assessed health status' which is the respondent's perception of their general health. The ABS surveys asked respondents to assess their own health against a five-point scale: excellent, very good, good, fair and poor.

INDICATOR:
Proportion of young people aged 15–24 years rating their health as 'excellent', 'very good' or 'good' (per cent)

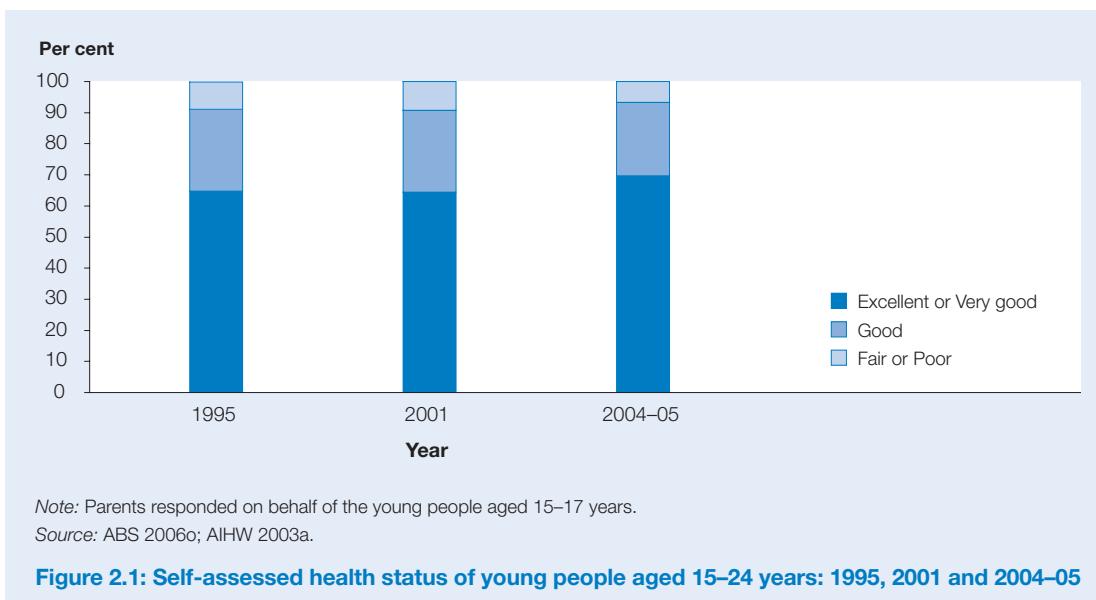
**Table 2.1: Self-assessed health status of young people aged 15–24 years, sex and age group, 2004–05 (per cent)**

Health status	15–17 years		18–24 years		15–24 years		
	Males	Females	Males	Females	Males	Females	Persons
Excellent or Very good	85.1	79.3	64.7	64.1	70.9	68.5	69.7
Good	11.3	15.7	28.0	27.9	22.9	24.4	23.6
Fair or Poor	3.6	5.0	7.3	8.0	6.2	7.1	6.7
<b>Total</b>	<b>100.0</b>						

Note: Parents responded for young people aged 15–17 years.

Source: AIHW analysis of the ABS 2004–05 National Health Survey confidentialised unit record file.

- In 2004–05, 70% of young Australians aged 15–24 years assessed themselves to be in either excellent or very good health, while a further 24% rated their health as good. Only 7% reported their health to be either fair or poor.
- More young males than females aged 15–17 years were in either excellent or very good health (85% of males compared with 80% of females). This pattern was consistent over time, as reported in the 1995, 2001 and 2004–05 National Health Surveys.
- There was a slight increase in the proportion of young people stating their health to be excellent or very good over time from 65% in 1995 to 70% in 2004–05. Similarly, the proportion of young people who assessed their health as fair or poor declined from 9% in 1995 to 7% in 2004–05.



### *Self-assessed health, long-term health conditions and education*

The ABS 2004–05 NHS also confirmed that the existence of a long-term condition—a condition that has lasted or is expected to last for 6 months or more— influenced the self-reported health status of young people. Young people aged 15–24 years with a long-term condition were nearly 3 times as likely to rate their health as fair or poor (8.5%) compared to those without a long-term condition (3%) (AIHW analysis of ABS 2004–05 NHS confidentialised unit record file).

According to the 2004–05 NHS, educational achievement was related to self-assessed health: 95% and 88% of young people who completed Year 12 and Years 10 and 11 respectively reported their health status to be excellent, very good or good. In contrast, only 76% of those who completed Years 9 or less reported their health to be excellent, very good or good.

### **Population groups**

#### **Aboriginal and Torres Strait Islander young people**

**Table 2.2: Self-assessed health status of Indigenous Australians and non-Indigenous Australians aged 15–24 years, 2004–05 (per cent)**

<b>Health status</b>	<b>2001</b>		<b>2004–05</b>	
	<b>Indigenous</b>	<b>Non-Indigenous</b>	<b>Indigenous</b>	<b>Non-Indigenous</b>
Excellent or Very Good	54.0	64.0	59.0	70.0
Good	33.0	26.0	32.0	24.0
Fair or Poor	13.0	9.0	9.0	7.0

Note: Parents responded for young people aged 15–17 years.

Source: ABS 2006l.

- In 2004–05, young Indigenous Australians aged 15–24 years were less likely to rate their health as excellent or very good, compared to young non-Indigenous Australians (59% compared to 70% respectively). Similarly, young Indigenous people were more likely than non-Indigenous young people to rate their health as fair or poor (9% compared to 7%).
- Between 2001 and 2004–05, the proportion of Indigenous young people rating their health as excellent or very good increased from 54% to 59%. Over the same period, the proportion stating that their health was fair or poor decreased from 13% to 9% (ABS 2006l).

### Socioeconomic status

The self-assessed health status of young people varied significantly by their socioeconomic status as measured by the Socio-economic Index for Areas (SEIFA). In 2004–05, young people from the most disadvantaged areas were less likely than those from the least disadvantaged areas to rate their health as excellent or very good (66% compared to 75%). The gap between the most and the least disadvantaged areas was greatest for young people who reported their health as fair or poor (2.5 times as high in the most disadvantaged areas) (ABS 2004–05 NHS, unpublished data).

### Regional status

Slightly more young people living in Major Cities and Inner Regional areas than in other areas rated their health as excellent or very good (around 70% in Major Cities and Inner Regional areas compared to 67% in Outer Regional and Remote areas).

A similar proportion of young males and females in Major Cities reported their health as excellent or very good (71% and 69% respectively), whereas in Inner Regional areas, the proportion was higher for males compared to females (76% compared to 67% respectively). A slightly higher proportion of females than males reported their health as excellent or very good in Outer Regional and Remote areas (68% compared to 65% respectively) (ABS 2004–05 NHS, unpublished data).

## 2.2 Human function

### Disability and activity limitation

Disability is a multidimensional concept that involves an interaction between health conditions, personal factors and the environment. Combinations of these different factors determine a person's ability to function and participate in society (AIHW 2004d). For some, disability can be a life-changing event or experience, while for others it may have only a small effect on their daily lives. Even people with 'severe' disabilities may be in good health—particularly in the sense that they do not require medical services—but may have long-term limitations on daily activities and their ability to participate.

Disability is increasingly recognised as affecting many people in society, to a varying degree and at different times in their lives. For adolescents and young people with a disability, full participation in society can be difficult, with limited educational and recreational/leisure opportunities (AIHW 2004a, 2004d, 2005b).

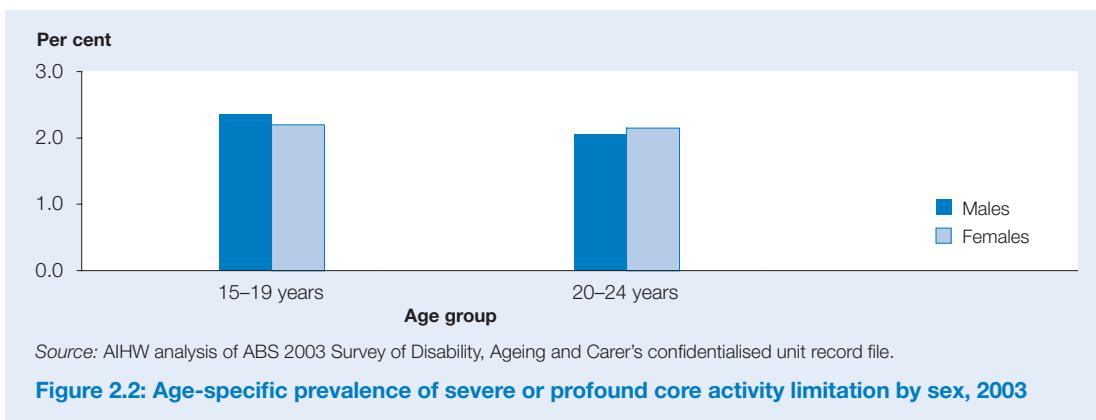
It is not only people with disabilities who may be disadvantaged; their families may also face a significant social and financial burden. Parents of young people with disabilities may find full-time employment difficult due to the intensive care needs of their child. This could potentially lead to financial stress as well as relationship strain. Financial pressure may also compound a family's ability to cope with a young person's disability through lack of resources to acquire essential services and aids that may help the person attain a better quality of life (AIHW 2004a).

The disability data presented in this report come from the ABS 2003 Survey of Disability, Ageing and Carers (SDAC)—the main data source on disability in the Australian population. This survey defines 'disability' as the presence of one or more of 17 limitations, restrictions or impairments that have lasted, or are likely to last, for at least six months and restrict everyday activities (for example, loss of sight, incomplete use of arms or fingers, difficulty learning or understanding, etc.) (ABS 2004c).

In 2003, there were approximately 249,300 young people aged 12–24 years (8.9%) with a disability in Australia, a figure similar to that reported for young people in 1998 (8.6%). The proportions of young males and females with a disability in 2003 were very similar (9.0% and 8.9% respectively).

### Core activity limitation

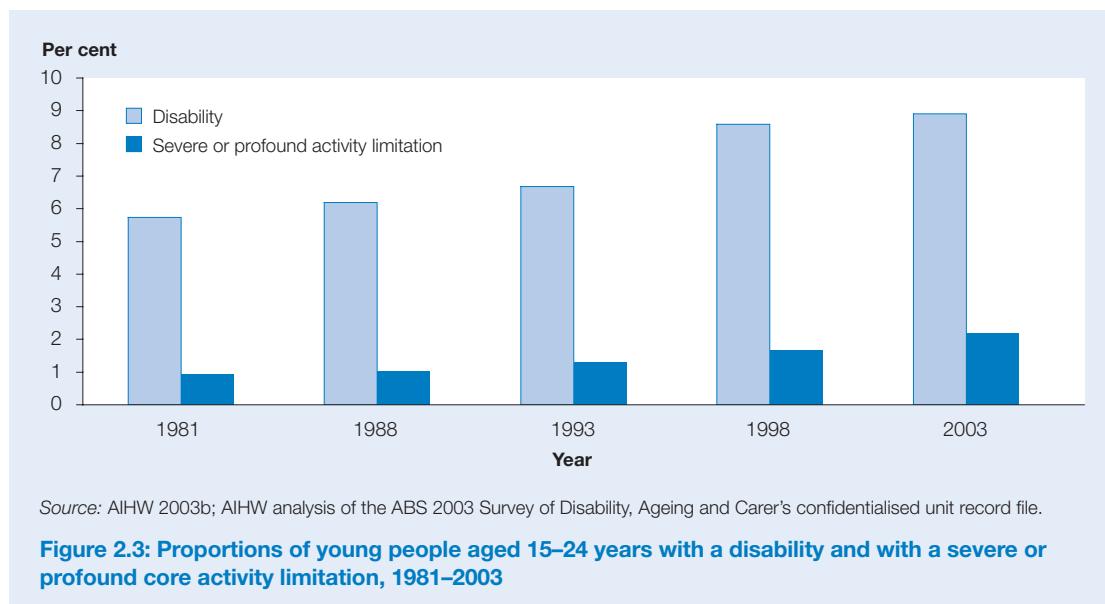
Core activity limitation includes limitations on the ability to perform tasks in relation to self-care, mobility and communication. There are four levels of core activity limitation: profound, severe, moderate and mild. Those with a profound limitation are not able to do, or always need help with, a core activity. Those with a severe limitation may sometimes need help with a core activity, may have difficulty understanding or being understood by others, or may use sign language more easily than spoken communication (ABS 2004c).



**INDICATOR:**  
Proportion of young people aged 15–24 years with severe or profound core activity limitation

- In 2003, approximately 24% or 1 in 4 young people with a disability had a severe or profound core activity limitation, indicating they sometimes or always needed assistance with activities of daily living. This proportion equates to approximately 2% (or 61,000) of all young Australians.
- The age and sex distribution of young people with a severe or profound core activity limitation was very similar. Among young males, 2.4% of those aged 15–19 years and 2.1% of those aged 20–24 years had a severe or profound core activity limitation. For females, this proportion was 2.2% among both age groups.
- The prevalence of severe or profound core activity limitation was lower among young people aged 15–24 years (2.2%) than for other age groups (8% for 5–14 year olds and the rate ranged from 2.3% for those aged 25–34 years to 34% for those aged 75+ years).

### Disability trends



- Between 1981 and 2003, the estimated proportion of young people with a disability increased from 5.7% to 8.9%. However, part of this increase may be due to changing definitions of disability and survey methods over time, in particular, between the two latest surveys (1998 and 2003) and previous surveys.
- The proportion of young people with severe or profound core activity limitations also increased over time. In 1981, 0.9% of young people reported a severe or profound core activity restriction but in 2003, this proportion had risen to 2.2%. Again, this increase may be due to changing definitions of disability and survey methods over time.

### Effect of disability on education and employment

According to the ABS 2003 SDAC, an estimated 14,000 (12%) young people aged 15–19 years with a disability stated that they needed at least one day a week off school or could not attend school because of their disability. Of those aged 15–19 years with a disability, 35% said they had difficulty at school, while 17% said that they had no educational restrictions at school.

Young people aged 20–24 years with a disability were less likely than those without a disability to have completed Year 12 (67% and 83% respectively) or to have studied beyond Year 12 (AIHW analysis of the ABS 2003 SDAC confidentialised unit record file).

**Table 2.3: Types of employment restrictions faced by young people aged 15–24 years with disability, 2003**

<b>Employment restrictions</b>	<b>15–19 years</b>		<b>20–24 years</b>		<b>15–24 years</b>	
	('000)	Per cent	('000)	Per cent	('000)	Per cent
Restricted in type of job	54.3	45.8	51.7	39.5	106.0	42.5
Restricted in number of hours	20.5	17.3	30.5	23.3	51.0	20.5
Difficulty changing jobs or getting a preferred job	42.6	36.0	39.7	30.3	82.3	33.0
Need for time off from work (at least one day per week)	12.0	10.1	16.4	12.5	28.4	11.4
Need for employer provided equipment and/or special arrangements	10.9	9.2	*8.3	6.3	19.1	7.7
Need for support person at work or is receiving assistance from a disability job placement program or agency	*2.4	2.1	*3.7	2.8	*6.2	2.5
Need for ongoing supervision or assistance	14.1	11.9	14.3	11.0	28.4	11.4
Permanently unable to work	*8.9	7.5	11.0	8.4	19.9	8.0
No employment restrictions	46.1	38.9	50.8	38.8	96.9	38.9
<b>Persons with disability<sup>(a)</sup></b>	<b>118.4</b>	<b>100.0</b>	<b>130.9</b>	<b>100.0</b>	<b>249.3</b>	<b>100.0</b>

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

(a) Question allowed multiple responses therefore percentages do not add up to 100.

Source: AIHW analysis of the ABS 2003 Survey of Disability, Ageing and Carer's confidentialised unit record file.

- In 2003, approximately 20,000 (8%) young people with a disability reported that they were permanently unable to work because of their disability.
- Around 43% said that they were restricted in the type of job they could do and 33% reported that they had difficulty changing jobs or getting their preferred job.
- Approximately 21% could only work a restricted number of hours, and 11% needed at least one day a week off work due to their disability.
- Nearly 40% of young people with a disability did not have any employment restrictions.

## Main disabling conditions

**Table 2.4: Main disabling condition of young people aged 15–24 years with a disability, 2003**

<b>Main disabling condition</b>	<b>Number ('000)</b>			<b>Per cent</b>			<b>INDICATOR:</b> Proportion of young people aged 15–24 years with specific disabling conditions
	<b>Males</b>	<b>Females</b>	<b>Persons</b>	<b>Males</b>	<b>Females</b>	<b>Persons</b>	
Intellectual and other mental disorder	33.2	15.8	49.0	26.1	12.9	19.7	
Psychiatric	21.9	22.8	44.7	17.2	18.7	17.9	
Other musculoskeletal disorder	17.3	16.4	33.7	13.6	13.5	13.5	
Respiratory diseases	*10.4	11.5	21.9	*8.2	9.4	8.8	
Neurological	*8.4	13.2	21.6	*6.6	10.9	8.7	
Vision	*6.1	*2.8	*8.9	*4.8	*2.3	*3.6	
Acquired brain injury	*5.5	**1.5	*6.9	*4.3	**1.2	*2.8	
Hearing	*3.7	*2.9	*6.6	*2.9	*2.4	*2.7	
Other circulatory	**1.3	*5.2	*6.6	**1.1	*4.3	*2.6	
Speech	*3.1	*2.7	*5.8	*2.5	*2.2	*2.3	
Other physical	*3.4	**0.8	*4.2	*2.7	**0.7	*1.7	
All other diseases and conditions	12.9	26.1	39.1	10.2	21.5	15.7	
<b>Total with a disability</b>	<b>127.4</b>	<b>121.8</b>	<b>249.2</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	

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

\*\* Estimate has a relative standard error greater than 50% and is considered too unreliable for general use.

Source: AIHW analysis of the ABS 2003 Survey of Disability, Ageing and Carer's confidentialised unit record file.

- Among young people with a disability, the main disabling condition reported was intellectual and other mental disorders which accounted for 20% of all disabling conditions. This is a decrease from the prevalence of these disorders among young people in 1998 (25%).
- A higher proportion of young males (26%) compared with females (13%) reported intellectual and other mental disorders as the main disabling condition in 2003. This category includes ADHD, autism and other learning disabilities.
- Psychiatric disorders (18%) were the second most common disabling condition reported by young people (17% of males and 19% of females).
- Other frequently reported conditions include other musculoskeletal disorders (14%), respiratory diseases and neurological condition (each 9%).

A number of other specific conditions including cerebral palsy, Crohn's disease, cystic fibrosis and epilepsy, that impose various restrictions on the lives of young people are discussed under *Chronic disease* in Part 2 of this report.

## 2.3 Health conditions

### Burden of disease and injury

A set of measures, called disability-adjusted life years (DALYs), has been developed to summarise the burden of disease and injury at a population level. This provides a different picture of the health of young Australians when compared to looking only at mortality and hospitalisation statistics. DALYs combines information on the impact of premature death as well as non-fatal health outcomes. Premature death is measured by the years of life lost (YLL) due to disease or injury and non-fatal health outcomes are measured by years of 'healthy' life lost (YLD) due to disease, disability or injury. To combine these two health measures into a summary health measure, the DALY uses time as a common 'currency'. It is a measure of the years of healthy life lost due to illness or injury —one DALY is one lost year of 'healthy' life.

YLL are calculated for each death as the average life expectancy of a person of the same age as the person who died. Thus, unlike most measures of potential years of life lost, YLLs do not exclude deaths above a specified age or years of life lost above that age. YLD are calculated for a given condition by estimating the number of new cases of that condition in a specified time. For each new case, the YLD is obtained by multiplying the average duration of the condition (to remission or death) by a severity weight that quantifies the equivalent loss of healthy years of life due to living with the condition. DALYs are calculated as the sum of YLL and YLD. Detailed information on burden of disease methodology and results is available in Begg et al. 2007.

This section provides information on the burden of disease and injury in Australia in 2003 for those aged 15–24 years.

**Table 2.5: Burden (YLL, YLD and DALYs) of major disease groups for 15–24 year olds, 2003**

Disease group	Fatal component		Non-fatal component		Total		INDICATOR: Burden of disease and injury among young people aged 15–24 years
	YLL	Per cent of total YLL	YLD	Per cent of total YLD	DALYs	Per cent of total DALYs	
Mental disorders	1,717	4.2	94,354	60.7	96,071	48.9	
Injuries	27,683	67.5	8,369	5.4	36,052	18.3	
Neurological and sense disorders	2,018	4.9	14,891	9.6	16,909	8.6	
Genitourinary diseases	143	0.3	9,353	6.0	9,497	4.8	
Chronic respiratory diseases	530	1.3	8,331	5.4	8,861	4.5	
Cancers	3,499	8.5	957	0.6	4,456	2.3	
Cardiovascular diseases	2,146	5.2	1,592	1.0	3,738	1.9	
Musculoskeletal conditions	119	0.3	2,808	1.8	2,928	1.5	
Digestive disorders	199	0.5	2,216	1.4	2,415	1.2	
Oral conditions	0	0.0	2,163	1.4	2,163	1.1	
Infectious and parasitic diseases	566	1.4	1,434	0.9	2,000	1.0	
Diabetes	150	0.4	1,334	0.9	1,484	0.8	
Congenital anomalies	923	2.2	230	0.1	1,153	0.6	
Other <sup>(a)</sup>	1,338	3.3	7,494	4.8	8,831	4.5	
<b>Total</b>	<b>41,032</b>	<b>100.0</b>	<b>155,525</b>	<b>100.0</b>	<b>196,557</b>	<b>100.0</b>	

(a) Includes acute respiratory diseases, maternal conditions, nutritional deficiencies, endocrine and metabolic disorders, other neoplasms, skin diseases and ill-defined conditions.

#### Notes

1. Disease groups in this table are ordered by DALYs.
2. Numbers may not add to totals due to rounding.

Source: Begg et al. 2007.

### Premature mortality—YLL

- Premature mortality was responsible for 41,032 YLL among young Australians aged 15–24 years in 2003. Injuries were the leading cause of premature mortality, accounting for two-thirds of the total YLL among young people. Within the injury category, road traffic accidents were responsible for 29% of the YLL while suicide and self-inflicted injuries accounted for 21%.
- After injury, cancer (9%) and cardiovascular disease (5%) were the highest contributors to YLL. These three disease groups accounted for over 80% of the total YLL among young people in 2003.

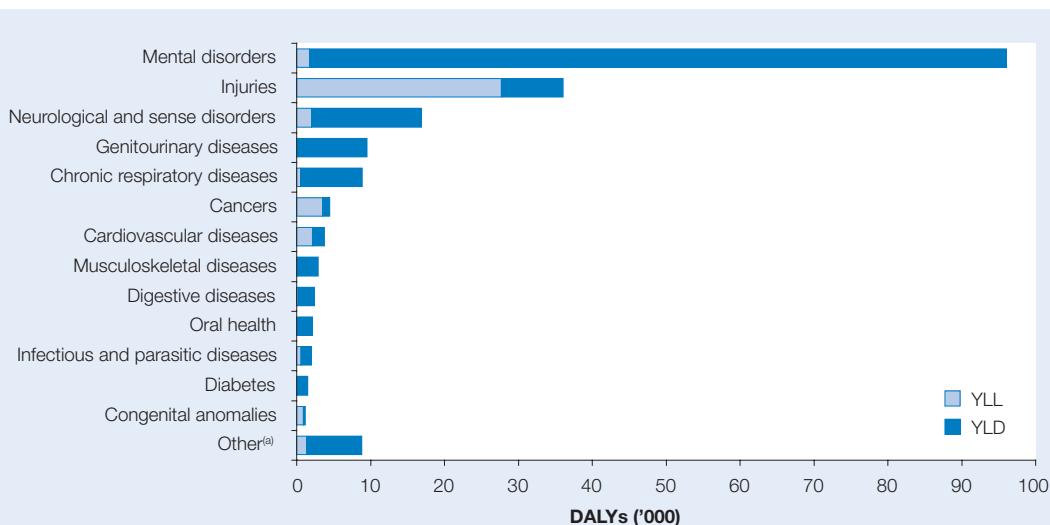
The YLL for young males was almost 3 times that for young females in 2003 (29,757 compared to 11,275 YLL). This large sex differential is primarily due to injuries, where males lost 21,717 years of life due to premature mortality compared to 5,966 for females.

### Non-fatal disease outcomes—YLD

- The non-fatal component of the disease burden, assessed using YLD, presents a substantially different picture than that provided by premature mortality statistics. There was a loss of just over 155,500 years of ‘healthy’ life due to disability consequent on disease among young Australians in 2003.
- Mental disorders were the leading contributor to YLD, accounting for 61% of the non-fatal burden of disease for young people. Neurological and sense disorders were responsible for a further 10% of the disability burden, which was dominated by migraine. Genitourinary diseases were responsible for 6% of YLD, which was due to infertility and other genitourinary diseases. Injuries and chronic respiratory diseases each accounted for a further 5% of YLD. The YLD for injury was largely due to road traffic accidents and falls, while for chronic respiratory diseases it was due to asthma.

In contrast to YLL, overall YLD was slightly higher for females compared to males. YLD for neurological diseases and sense disorders, genitourinary diseases and chronic respiratory diseases were all higher for females than for males. On the other hand, YLD for injuries and cardiovascular disease were higher among males compared to females.

### Total burden of disease and injury—DALYs



(a) Includes acute respiratory diseases, maternal conditions, nutritional deficiencies, endocrine and metabolic disorders, other neoplasms, skin diseases and ill-defined conditions.

Source: Begg et al. 2007.

**Figure 2.4: Burden (YLL, YLD and total DALYs) of major disease groups for 15–24 year olds, 2003**

- The total burden of disease and injury among young Australians was estimated to be 196,557 DALYs in 2003. The male and female burden (in total DALYs) was similar. Non-fatal outcomes were responsible for 71% of the male burden and 88% of the female burden.
- The burden for young Australians comprises 8% of the total burden of disease and injury for all ages and equates to a rate of 71 DALYs per 1,000 young people. This is about half the rate for persons of all ages (132 DALYs per 1,000 population).
- Mental disorders were the leading contributor to the overall burden (49%) among young Australians, followed by injuries (18%) and neurological and sense disorders (9%). Chronic respiratory disease, which includes asthma, accounted for 5% of the total disease and injury burden.
- It should be noted that these DALY estimates represent the overall burden of disease and injury remaining after preventive and treatment interventions have had their effect. As a result, oral health conditions (1%) and infectious and parasitic diseases (1%) are low in the burden of disease ranking due to highly successful preventive or treatment interventions.

### Leading specific causes of burden of disease

DALYs have so far been discussed at the broadest level of disease groupings. The rankings presented in Table 2.6 show the disease burden of the 10 leading specific diseases and injuries by sex for young Australians. The majority of the causes are non-fatal or low-fatality rate conditions and their significant contribution to the burden of disease is due to lost years of 'healthy' life.

Patterns of disease and injury burden among young Australians are distinct from other age groups. For example, the leading causes of burden of disease and injury for all ages are dominated by circulatory diseases (specifically ischaemic heart disease and stroke) and cancers (for example, lung and breast cancer), while for young people aged 12–24 years, mental disorders (for example, anxiety and depression and schizophrenia) and injury and poisoning (for example, road traffic accidents) are the leading causes. The exception to this is anxiety and depression, which ranks highly among young people and people of all ages as a cause of disease and injury burden.

**Table 2.6: Leading causes of burden of disease and injury (DALYs) for 15–24 year olds, by sex, 2003**

Rank	Males	DALYs ('000)	Per cent of DALYs	Females	DALYs ('000)	Per cent of DALYs
1	Anxiety and depression	17,868	17.4	Anxiety and depression	29,946	31.8
2	Road traffic accidents	10,380	10.1	Asthma	6,641	7.1
3	Schizophrenia	9,795	9.6	Migraine	6,217	6.6
4	Suicide and self-inflicted injuries	7,320	7.1	Other genitourinary diseases	5,676	6.0
5	Heroin or polydrug dependence and harmful use	5,657	5.5	Schizophrenia	3,754	4.0
6	Alcohol dependence and harmful use	4,848	4.7	Road traffic accidents	3,572	3.8
7	Migraine	3,539	3.5	Personality disorders	2,622	2.8
8	Cannabis dependence and harmful use	3,520	3.4	Bulimia nervosa	2,576	2.7
9	Personality disorders	3,130	3.1	Bipolar disorder	2,450	2.6
10	Bipolar disorder	2,672	2.6	Anorexia nervosa	2,063	2.2
<b>All causes</b>		<b>102,476</b>	<b>100.0</b>	<b>All causes</b>	<b>93,985</b>	<b>100.0</b>

Source: Begg et al. 2007.

- Anxiety and depression is the leading cause of burden of disease for young Australians, accounting for 17% of the male burden and 32% of the female burden. After anxiety and depression, the leading causes of disease and injury burden are markedly different for males and females. For young males, road traffic accidents (10%), schizophrenia (10%) and suicide and self-inflicted injuries (7%) followed anxiety and depression as the leading causes of disease and injury burden. For females, asthma was the second highest cause of disease burden (7%), followed by migraine (7%), and other genitourinary diseases (6%).

### Burden attributable to risk factors

The 2003 burden of disease and injury study looked at 14 selected risks to health. These risk factors combined explain 22% of the total burden of disease and injury among young people aged 15–24 years in Australia in 2003.

Individually, risk factors contributing the most to the burden of disease and injury among this age group were illicit drugs, alcohol, intimate partner violence, child sexual abuse and occupational exposures. From these risks, the predominant health outcomes were mental disorders and injuries, except for occupational exposures for which the main health outcome was chronic respiratory disease and asthma in particular.

**Table 2.7: Individual burden (DALYs) attributable to selected<sup>(a)</sup> risk factors for 15–24 year olds, by sex, 2003**

Risk factor	Males		Females		Persons	
	DALYs	Per cent of DALYs	DALYs	Per cent of DALYs	DALYs	Per cent of DALYs
Illicit drugs	11,892	11.6	4,246	4.5	16,137	8.2
Alcohol	11,649	11.4	1,518	1.6	13,166	6.7
Intimate partner violence	—	0.0	5,464	5.8	5,464	2.8
Child sexual abuse	738	0.7	4,267	4.5	5,005	2.5
Occupational exposures	2,853	2.8	1,387	1.5	4,240	2.2
<b>14 risk factors combined<sup>(b)</sup></b>	<b>27,564</b>	<b>26.9</b>	<b>15,712</b>	<b>16.7</b>	<b>43,276</b>	<b>22.0</b>

(a) The risk factors not included in this table (high body mass, tobacco, high blood pressure, physical inactivity, high blood cholesterol, low fruit and vegetable intake, urban air pollution, unsafe sex, osteoporosis) contributed less than 1% each to the total burden of disease and injury for 15–24 year olds.

(b) This is not the sum of the contribution of the 14 risk factors but their joint effect taking into account: the mediation of distal risk factors through proximal risk factors; that the hazard due to a risk factor may depend on the presence of other risk factors and; the correlation between exposure to risk factors. See Begg et al. 2007 for more information.

— Nil or rounded to zero.

Source: Begg et al. 2007.

- Illicit drugs accounted for the greatest amount of burden among young Australians in 2003 (8%), followed by alcohol (7%).
- Intimate partner violence accounted for the greatest burden among young females (6%), while for young males, illicit drugs (12%) and alcohol (11%) were the largest contributors to disease burden.
- Overall, the 14 risk factors combined were responsible for 27% of the male burden and 17% of the female burden.

### Mental health

Mental health is a state of wellbeing in which the individual realises his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her own community (WHO 2001a).

‘Mental illness’ is a general term that refers to a group of disorders that affect the way a person, thinks, feels and acts. Mental disorders are characterised by a clinically recognisable set of symptoms or behaviours that interfere with social, academic or occupational functioning (APA 1994; Sawyer et al. 2000). There are different types of mental disorders; each consists of a different combination of symptoms that may differ in severity.

A number of mental disorders are first manifested in childhood and adolescence, and many disorders that are diagnosed in adulthood have their origins in childhood. Common mental disorders found in children and young people include developmental disorders such as dyslexia

or autism; behavioural disorders such as attention deficit/hyperactivity disorders (ADHD) and conduct disorders; anxiety disorders; depression; and schizophrenia (U.S. Department of Health and Human Services 1999).

Mental disorders were the leading contributor to the burden of disease and injury (49%) among young Australians aged 15–24 years in 2003, with anxiety and depression being the leading specific cause for both males and females (see *Burden of disease and injury* in Part 2 of this report).

Experiencing a mental disorder is associated with lower educational attainment, joblessness and poorer physical health (DHAC 2004). According to the 1997 National Survey of Mental Health and Wellbeing (SMHWB), young people who had not completed secondary education had a higher prevalence of mental disorders (35%) than those who had post-school qualifications or who had completed secondary school (just under 25%). The survey results also indicated that unemployed young people and those not in the labour force were more likely to suffer from a mental disorder than other young people. It is not possible to determine causality from these data. While mental illness may lead to lower educational attainment or unemployment, it is also possible that these circumstances may contribute to the development of a mental disorder.

### *Determinants of mental health*

The causes of mental illness are not clear, but a range of risk and protective factors are thought to influence mental health. These factors can be individual (particular to the person), contextual (a product of the environment), or the result of the interaction between the person and the environment.

Risk factors that increase the likelihood that mental health problems will develop include: individual factors (such as prenatal brain damage, genetic factors), family or social factors (such as marital discord between parents and social isolation), school context (such as bullying, failure to achieve academically), life events and situations (such as physical, sexual and emotional abuse and neglect), and community and cultural factors (such as socioeconomic disadvantage) (DHAC 2000).

Protective factors reduce the likelihood of mental health problems and mitigate the potentially negative effects of risk factors. Protective factors include: individual factors (such as adequate nutrition, problem-solving skills), family or social factors (such as family harmony, social support), school context (such as a positive school environment), life events and situations (such as economic security, good physical health), and community and cultural factors (such as social networks, involvement in community groups) (DHAC 2000).

### **Psychological distress**

Psychological distress refers to an individual's overall level of psychological strain or pain, evidenced by psychological states such as depression, anxiety and anger. Psychological distress may be fairly transient, for example, experiencing high anxiety over an upcoming exam, or sadness because of the break-up of a relationship, but may also be a continuing problem, particularly among those experiencing mental health problems and clinical disorders.

#### **Psychological distress according to Kessler 10 scale**

*Psychological distress can be measured using the Kessler 10 (K10) distress scale which is a 10 item questionnaire asking about feelings such as nervousness, hopelessness, restlessness, depression and worthlessness. For each item, the respondents are asked how often they experienced these feelings in the past 4 weeks, with responses ranging from 'none of the time' to 'all of the time' (scoring 1 to 5). The maximum score is 50 (indicating severe distress) and the minimum score is 10 (no distress). Andrew & Slade (2001) showed a strong association between the K10 scale and current diagnoses of anxiety and affective disorders. They also showed a lesser, but significant, association with other mental disorder categories.*

The K10 scores for young people aged 18–24 years were obtained from the ABS 1997 SMHWB and the ABS 2001 and 2004–05 National Health Surveys (NHS).

INDICATOR:
Proportion of young people aged 18–24 years having high or very high levels of psychological distress as measured by the K10 scale (per cent)

**Table 2.8: Prevalence of psychological distress among young people aged 18–24 years by sex, 1997–2005 (per cent)**

Level of psychological distress <sup>(a)</sup>	1997		2001		2004–05	
	Males	Females	Males	Females	Males	Females
Low (10–15)	71.8	59.3	60.4	46.2	60.4	49.4
Moderate (16–21)	21.4	28.2	28.8	31.7	27.1	31.8
High or Very High (22–50)	6.8	12.5	10.8	22.1	12.4	18.7
<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>

(a) Based on the Kessler 10 scale of psychological distress.

Source: AIHW analysis of ABS 1997 National Survey of Mental Health and Wellbeing confidentialised unit record file; ABS 2002c, 2006m.

- In 2004–05, the proportions of young males and females aged 18–24 years reporting high or very high levels of distress were 12% and 19% respectively, an increase from 1997 when the corresponding proportions were 7% and 13% respectively.
- Across all three periods (1997, 2001 and 2004–05), young females were more likely than young males to experience moderate to very high levels of psychological distress. In 2004–05, 51% of young females, compared to 40% of young males, reported moderate to very high levels of psychological distress.

According to the ABS 2004–05 NHS, very high levels of psychological distress were slightly less common in young people aged 18–24 years (3.4%) compared with adults aged 25 years and over (3.9%). Very high levels of psychological distress were most prevalent among adults aged 45 to 54 years (4.8%) (ABS 2006).

Physical and mental health are interdependent—changes in the status of one are likely to affect the other (DHAC 2006b). The ABS 2004–05 NHS collected self-assessed health status, which is a proxy measure of physical health.

**Table 2.9: Self-assessed health status by level of psychological distress (measured by K10 scale), young people aged 18–24 years, 2004–05**

Self-assessed health status	Level of psychological distress			
	Low	Moderate	High	Very high
Excellent	32.6	16.5	13.0	9.3
Very good	41.4	40.8	34.1	23.3
Good	22.3	34.5	36.3	32.0
Fair	3.6	6.6	14.9	26.2
Poor	0.2	1.5	1.8	9.2

Source: AIHW analysis of the ABS 2004–05 National Health Survey confidentialised unit record file.

- In 2004–05, young people aged 18–24 years with moderate to very high levels of psychological distress were much less likely than those with low psychological distress to rate their health status as excellent.
- A larger proportion of young people with very high levels of psychological distress assessed their health as fair or poor (26% and 9% respectively) compared to those reporting low psychological distress (4% rated their health as fair and less than 1% as poor).

### ADHD and conduct disorder

Behavioural disorders such as ADHD and conduct disorder are typically diagnosed during childhood, but may persist into adulthood. If not treated early, these disorders can have profound implications for adult health outcomes such as poorer quality of life, physical health problems,

lowered academic and vocational attainment, substance use, suicidal behaviour, and family discord (Raphael 2000).

People with ADHD display developmentally inappropriate levels of inattention, hyperactivity and impulsivity, causing impairment in areas of life such as school performance, social skills, driving and work performance (Biederman & Faraone 2005). Conduct disorder is one of a number of related disorders that is characterised by persistent disruptive, antagonising or aggressive behaviour, sometimes involving criminal acts (Karnik et al. 2006). Similar to young people with ADHD, the behaviour of young people with conduct disorder is often considered inappropriate for their age (Karnik et al. 2006).

The prevalence of ADHD and conduct disorder among young people aged 12–17 years was examined in the 1998 Child and Adolescent Component of the SMHWB. This survey used the Diagnostic Interview Schedule for Children (Version IV) which uses the criteria described in the Diagnostic and Statistical Manual for Mental Disorders, 4th edition, (APA 1994) to identify these disorders.

In 1998, 8% of young people aged 12–17 years had ADHD and 3% had conduct disorder. Prevalence rates for ADHD and conduct disorder among young males (12% and 4% respectively) were 3 to 4 times the rates for young females (4% and 1% respectively). Around 16% of those young people with ADHD or conduct disorder had both disorders.

#### INDICATOR:

Prevalence rates for selected mental health disorders (namely, ADHD and conduct disorder) among young people aged 12–17 years

### Depression, anxiety and substance use disorders

Depression, anxiety and substance use disorders are the most common mental disorders, accounting for 75% of the burden generated by all mental disorders (Andrews & Wilkinson 2002). Onset of these disorders typically occurs during adolescence and early adulthood (Andrews & Wilkinson 2002). A high proportion of young people who experience a major depressive disorder also have another mental disorder—commonly an anxiety disorder, substance use disorder, or behavioural disorder (Bhatia & Bhatia 2007).

The ABS 1997 SMHWB collected information on a range of mental disorders, including depression, anxiety and substance use disorders, among adults aged 18 years or over. This survey used the Composite International Diagnostic Interview to diagnose mental disorders.

**Table 2.10: Prevalence of selected mental disorders among young people aged 18–24 years, 1997**

	Males		Females		Persons	
	Number ('000)	Per cent	Number ('000)	Per cent	Number ('000)	Per cent
<b>Total anxiety disorders</b>	<b>76.5</b>	<b>8.3</b>	<b>123.8</b>	<b>13.8</b>	<b>200.3</b>	<b>11.0</b>
Panic disorder	1.9	0.2	11.3	1.3	13.2	0.7
Agoraphobia	7.3	0.8	15.0	1.7	22.3	1.2
Social phobia	37.8	4.1	42.6	4.7	80.3	4.4
Generalised anxiety disorder	11.3	1.2	18.6	2.1	29.9	1.6
Obsessive-compulsive disorder	3.5	0.4	6.1	0.7	9.6	0.5
Post-traumatic stress disorder	30.9	3.4	61.0	6.8	91.9	5.1
<b>Total affective disorders</b>	<b>26.4</b>	<b>2.9</b>	<b>97.1</b>	<b>10.8</b>	<b>123.5</b>	<b>6.8</b>
Depression	24.6	2.7	91.6	10.2	116.2	6.4
Dysthymia	2.5	0.3	7.4	0.8	9.9	0.5
<b>Total substance use disorders</b>	<b>194.8</b>	<b>21.2</b>	<b>94.4</b>	<b>10.5</b>	<b>289.2</b>	<b>15.9</b>
Alcohol harmful use	40.4	4.4	35.6	4.0	76.0	4.2
Alcohol dependence	110.2	12.0	38.3	4.3	148.6	8.2
Drug use disorders	85.1	9.2	32.0	3.6	117.1	6.4
<b>Total selected mental disorders<sup>(a)</sup></b>	<b>249.4</b>	<b>27.1</b>	<b>232.2</b>	<b>25.9</b>	<b>481.6</b>	<b>26.5</b>
<b>Total persons ('000)</b>	<b>920.6</b>	<b>100.0</b>	<b>896.5</b>	<b>100.0</b>	<b>1,817.1</b>	<b>100.0</b>

#### INDICATOR:

Prevalence rate for mental disorders (affective and anxiety disorders) among young people aged 18–24 years

#### INDICATOR:

Prevalence rate for substance use disorders among young people aged 18–24 years

(a) Total selected mental disorders include anxiety, affective and substance use disorders only. Total is not cumulative as categories are not mutually exclusive.

- In 1997, just over one in four young people aged 18–24 years (an estimated 481,600 young people) experienced anxiety, affective or substance use disorders. Rates were similar for males and females—27% for males and 26% for females.
- Substance use disorders were the most prevalent disorder among young people, affecting about 1 in 5 males and 1 in 10 females. Alcohol dependence accounted for over half of the total substance use disorders, affecting 12% of males and 4% of females.
- One in ten 18–24 year olds experienced anxiety disorders, affecting 8% of males and 14% of females. Within the group of anxiety disorders, post-traumatic stress disorder was the most prevalent, affecting 3% of males and 7% of females.
- Depression and dysthymia (chronic mild depression) affected 3% of young males and 11% of young females in 1997.

### **Health service use for mental health disorders**

People with mental disorders may access a wide range of service types including specialist mental health services, general health services and services provided in residential and ambulatory care settings (AIHW 2005g). The ABS SMHWB found that, for all people with a mental disorder, the service most frequently used was general practitioners. The Child and Adolescent Component of the same survey found that the two services used most commonly by adolescents with a mental disorder were school counselling and family doctors. If mental disorders are poorly managed or a young person has hurt or threatened to hurt themselves or others, or if they are experiencing an acute phase of a moderate to severe psychiatric illness, hospitalisation may be required.

#### *Hospital separations*

In 2004–05, there were 47,372 hospital separations for mental and behavioural disorders (ICD-10-AM codes F00–F99) among those aged 12–24 years, accounting for 16% of all mental and behavioural disorder separations and 8% of all hospital separations for young people in that year. This was a rate of 1,302 separations per 100,000 young people (1,076 and 1,550 per 100,000 for young males and females respectively).

The separation rate for mental and behavioural disorders increased with age. Among those aged 12–14 years, the rate was 431 per 100,000, and for those aged 20–24 years it was 1,731 per 100,000—a fourfold difference. The separation rate among young people aged 15–19 years (1,407 per 100,000) was more than three times the rate among those aged 12–14 years.

Young females had higher separation rates for mental and behavioural disorders than young males. The difference was greatest for 15–19 year olds, where the female rate was almost twice the rate for males (1,824 compared to 1,010 per 100,000 young people).

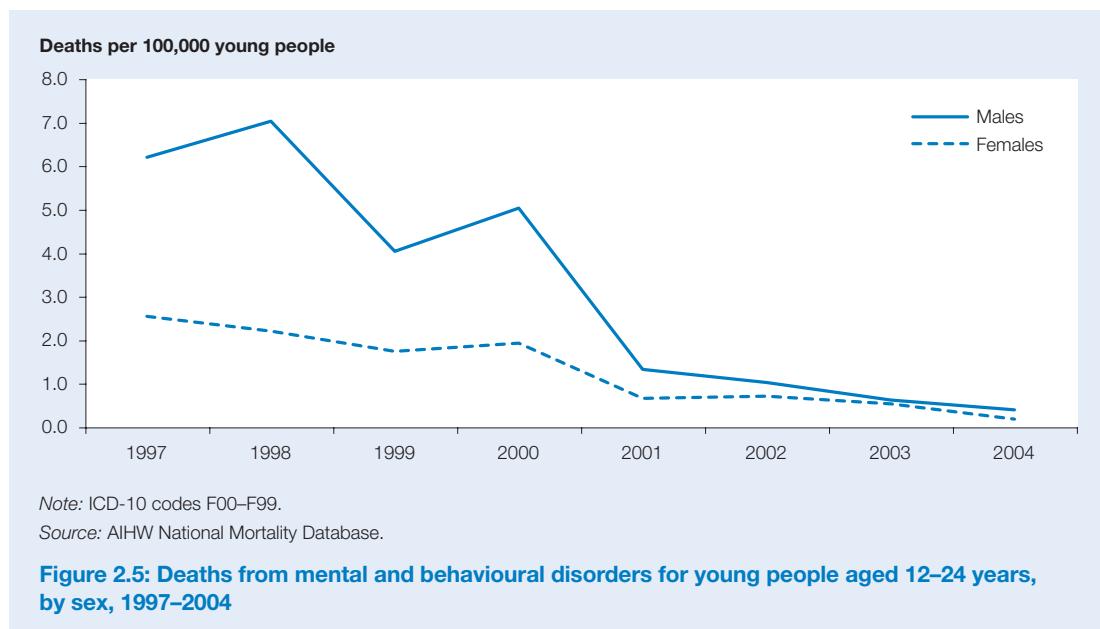
For young males, the leading cause of hospital separation due to mental and behavioural disorders was psychoactive substance use (24%), followed by schizophrenia (20%) and depression (13%). For young females, the leading causes were depression (19%), eating disorders (14%) and psychoactive substance use (12%). Approximately half of all hospital separations for psychoactive substance use among young males and females were due to use of alcohol (45% and 52% respectively).

#### *Community mental health services*

Young people were also in contact with community mental health services for the treatment of mental health-related disorders. In 2003–04, over a million contacts with community mental health services were made by young people aged 12–24 years and this accounts for 20% of total service contacts made in Australia in this period. Approximately 62% of service contacts by young people had a specific principal diagnosis mentioned. Of those specifying a principal diagnosis, 26% had a principal diagnosis of schizophrenia, 15% each had neurotic, stress-related and somatoform disorders and depressive disorders (National Community Mental Health Care Database (NCMHCD), unpublished data).

## Deaths related to mental and behavioural disorders

In 2004, most of the deaths attributed to a mental or behavioural disorder among young people aged 12–24 years were due to abuse of psychoactive substances such as heroin and other drugs (7 out of 10 deaths). The decline in the number of deaths from 2001 corresponds with a dramatic decline in the availability of heroin that occurred in Australia in early 2001, resulting in fewer fatal drug overdoses (Degenhardt et al. 2005).



- In 2004, a mental or behavioural disorder was responsible for 10 deaths among young people aged 12–24 years. The age-standardised rate for young males was 0.4 per 100,000 young people, a decline from 6.2 per 100,000 in 1997. The female death rate from mental and behavioural disorders also declined from 2.5 per 100,000 young people in 1997 to 0.2 per 100,000 in 2004.

## Suicide and self-harm

Experiencing a mental disorder is a risk factor for self-harm and suicide. Studies of people who self-harm have shown that more than 90% have at least one mental disorder—commonly depression (Skegg 2005). A history of mental illness, in particular depression, as well as the presence of more than one mental disorder are also strong predictors of suicide (Beautrais 2000; Rey & Dudley 2005; Schmidt et al. 2002). While not all young people who self-harm or contemplate suicide have a mental disorder, these behaviours do suggest psychological distress.

### *Self-harm*

The term ‘self-harm’ refers to a range of behaviours that, at the milder end of the spectrum, includes mild to moderate self-injury as a response to emotional pain and, at the more extreme end, includes attempted suicide (Skegg 2005). In many cases, self-harm is not intended to be fatal (Skegg 2005). Self-harm frequently involves cutting and poisoning (typically overdosing on medication), but may also involve behaviours such as self-battery and hanging (De Leo & Heller 2004; Skegg 2005).

The number of young people who commit suicide is relatively low compared with the number who self-harm. In a 2002 survey, 6% of Year 10 and Year 11 students in Queensland reported having deliberately self-harmed in the previous 12 months and 12% reported that they had deliberately self-harmed at some point in their lives (De Leo & Heller 2004).

Data on self-harm hospital separations among young people are available from the AIHW National Hospital Morbidity Database. However, it is likely that only a minority of young people who self-harm will seek medical treatment. Survey data suggest that only 10% of young people who self-harm will present for hospital treatment (De Leo & Heller 2004).

In 2004–05, there were 7,874 hospital separations for intentional self-harm among young people aged 12–24 years, a rate of 218 separations per 100,000 young people (ICD-10-AM codes X60–X84, Y87.0). Of these, 5,598 hospital separations (71%) were for females. The separation rate for intentional self-harm among young females was 2.5 times the rate for young males (318 separations per 100,000 young females and 122 per 100,000 young males).

Between 2000–01 and 2004–05, the separation rate for intentional self-harm decreased by 4% for young males aged 12–24 years but increased by 27% for young females.

The main cause of intentional self-harm hospital separations for both males and females was self-poisoning, accounting for 80% of self-harm separations (6,273 separations). Intentional self-harm by sharp object was the cause of 15% of the separations (1,169 separations) (see also *Injury and poisoning* in Part 2 of this report).

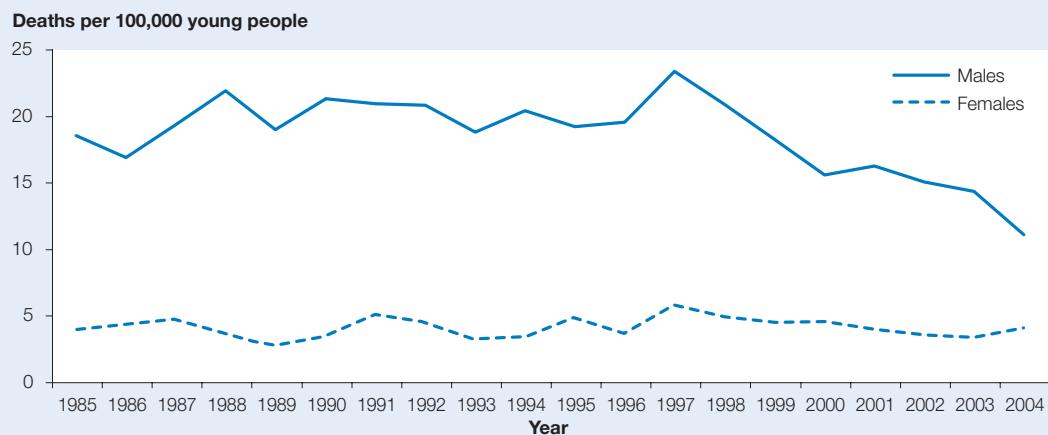
### *Suicide*

A range of interacting factors are associated with increased risk of suicide among young people. These include individual, family and social circumstances. Mental illness combined with harmful drug use, previous suicide attempts or intentional self-harm are also linked to suicide (Beautrais 2000; Goldney 1998). A Western Australian study found that young people who had attempted suicide were 30 times more likely to commit suicide than all young people (Silburn et al. 1990). A family history of suicide or suicidal behaviour is also associated with significant suicide risk. In addition, socioeconomic disadvantage, including low educational achievement, unemployment, imprisonment, experience of abuse in childhood and easy access to firearms, is an important contributor to the risk of suicide (Beautrais 2000).

#### INDICATOR:

Rate of suicide for  
young people aged  
12–24 years

In 2004, 272 young people aged 12–24 years committed suicide (a rate of 8 per 100,000 young people). This accounted for 14% of all suicide deaths in Australia and 19% of all deaths for this age group in 2004. Suicide causes the second highest number of deaths among young Australians (see also *Injury and poisoning* and *Deaths* in Part 2 of this report).



Note: ICD-10 codes X60–X84, Y87.0.

Source: AIHW National Mortality Database.

**Figure 2.6: Suicide death rates for young people aged 12–24 years, 1985–2004**

- In 2004, the rate of suicide among young males and females aged 12–24 years was 11 per 100,000 and 4 per 100,000 young people respectively.
- Between 1985 and 1997, the rate of suicide among young males fluctuated between 19 and 23 per 100,000 young people when the rate peaked. Since then, the death rate from suicide among young males has declined by over 50% from 23 per 100,000 young males in 1997 to 11 per 100,000 in 2004. Female suicide death rates have remained relatively stable over the last two decades.
- While male suicide rates were 4 to 7 times as high as female rates in the 1980s, more recently the gap between young males and females has narrowed with the declining male suicide rate since 1997. In 2004, the male suicide rate was 3 times as high as that of females.

In 2004, hanging, strangulation and suffocation were the major methods of suicide among young people (149 deaths or 55%), followed by poisoning (48 deaths or 18%), jumping from a high place (26 deaths or 10%) and firearms (15 deaths or 6%). See also *Injury and poisoning* in Part 2 of this report.

### **Aboriginal and Torres Strait Islander young people**

National data on the prevalence of mental illness among young Indigenous Australians are not available.

The AIHW National Hospital Morbidity Database provides data on hospital separations due to mental and behavioural disorders among young Indigenous Australians for Queensland, Western Australia, South Australia and public hospitals in the Northern Territory. In 2004–05, the hospital separation rate for mental and behavioural disorders among Indigenous 12–24 year olds was 2,028 per 100,000 young people (1,989 for males and 2,070 for females) (ICD-10-AM codes F00–F99). This rate was 1.6 times that of other young Australians. Separation rates increased with age, from 394 per 100,000 young people for 12–14 year olds to 1,570 per 100,000 young people aged 15–19 years and 2,942 per 100,000 for 20–24 year olds.

Schizophrenia was the main mental and behavioural disorder associated with hospitalisation among young Indigenous males in 2004–05 (35%). This was followed by mental and behavioural disorders due to psychoactive substance use (32%) (13% due to alcohol use alone) and reaction to severe stress and adjustment disorder (9%). Among young Indigenous females, the main reasons for mental and behavioural disorder hospital separations were psychoactive substance use (25%) (9% due to alcohol use alone), reaction to severe stress and adjustment disorder (16%) and schizophrenia (15%). Use of alcohol was responsible for 42% and 35% of hospital separations for psychoactive substance use among young Indigenous males and females respectively.

Over 49,000 community mental health services contacts were made by young Indigenous people aged 15–24 years in 2003–04 and 58% of the contacts had a specific principal diagnosis. The most common principal diagnoses among young Indigenous people were schizophrenia, accounting for 32% of the service contacts, and depressive disorders (15%) (NCMHCD, unpublished data).

### **Injury and poisoning**

Injury has a major but largely preventable impact on the health of young Australians. It is the leading cause of death among young people, accounting for more deaths than all other causes of death combined, and can leave many with serious disability or long-term conditions. For these reasons, injury prevention and control was declared a National Health Priority Area (NHPA) in 1986, and is the subject of a national prevention plan (NPHP 2004).

Patterns of injury in young people are distinct from other age groups, showing the strong influence that stage of life has on susceptibility to certain types of injury. Injury patterns change during adolescence and early adulthood as young people assume more independent roles.

Greater responsibility for decision-making creates more opportunity for young people to engage in risky behaviours (NPHP 2004). For young people, particularly those aged 15–17 years, this independence occurs simultaneously with the development of new skills, such as driving, job skills and exposure to alcohol and other drugs, at a time when peer acceptance is important. Young people are more likely to experiment with or use illicit substances and alcohol, which can make them more prone to certain types of injuries, such as falls, transport accidents and assault.

Of particular concern is the over-representation of young adults in road traffic accidents that have been linked to risky driving behaviours such as speeding, driving when fatigued and driving under the influence of alcohol or other drugs (Smart et al. 2005). Work-related injuries are also an important issue among young people. These injuries may be due to the types of jobs young people are employed in, inexperience with the tasks required, or risk-taking (AIHW: Moller 1995).

Injury can affect a person's employment, educational and recreational opportunities, and can lead to permanent disability and disfigurement, which can then affect future health and wellbeing. Thus, there are far-reaching effects of injury on the social and emotional development of a young person, which can also affect family and friends if they are required to take on a care-giving role (NPHP 2004).

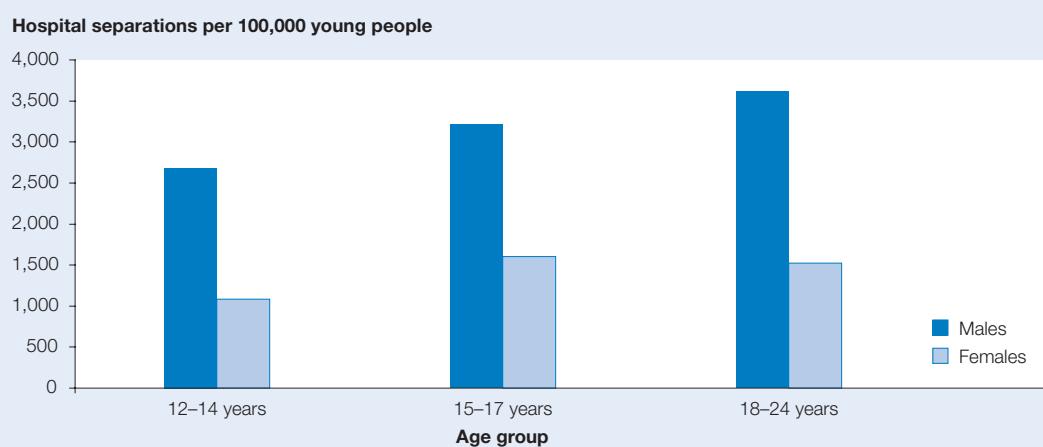
The ABS 2004–05 National Health Survey estimated that 835,310 injury events occurred among young people in the 4 weeks preceding the survey. The most frequently reported injury that resulted in a health action being taken was being cut with a knife, tool or other implement (34%), followed by hitting something or being hit by something (20%) and a low fall (20%). Males and females reported similar frequencies of each of these injury events.

Of those young people who reported an injury, 10% had days off work or study and 23% had to cut down on usual activities due to the injury event.

The information presented in this section is derived from the AIHW National Hospital Morbidity Database and the AIHW Mortality Database. See Appendix 1 for details on the methods used for analysis of injury and poisoning hospital separations and external causes of injury and poisoning hospital separations.

### Injury and poisoning hospital separations

**INDICATOR:**  
Injury and poisoning hospital separation rate for young people aged 12–24 years



Note: ICD-10-AM codes S00–T98.

Source: AIHW National Hospital Morbidity Database.

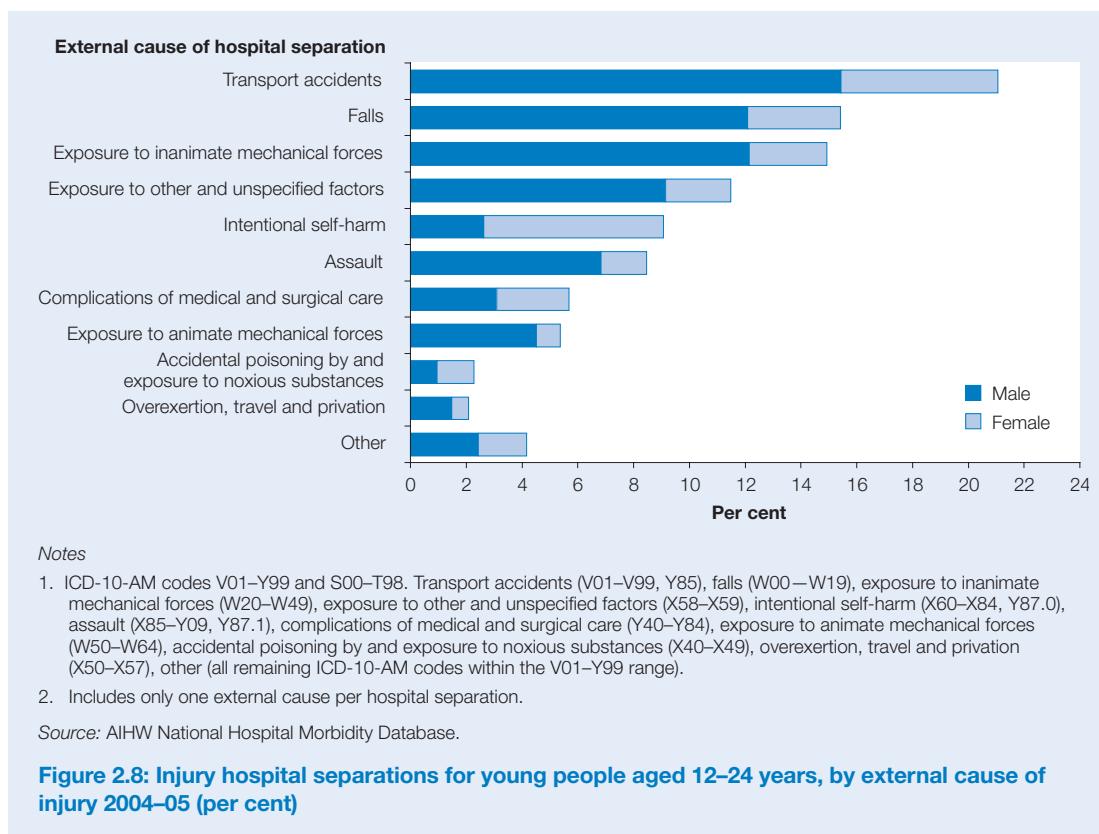
**Figure 2.7: Injury and poisoning hospital separation rate for young people aged 12–24 years, 2004–05**

- Injury and poisoning was the third leading cause of hospital separation for young people aged 12–24 years in 2004–05, with 86,943 separations—a rate of 2,397 separations per 100,000 young people and 15% of all hospital separations for young people.

- Injury and poisoning was the leading cause of hospital separation for young males, with 61,502 separations, and the fourth leading cause for females, with 25,441 separations. The male separation rate was 2.3 times as high as the rate for young females in 2004–05 (3,309 compared to 1,440 per 100,000 young people).
- Separation rates among young males increased with age. Males aged 18–24 were 1.3 times as likely to be hospitalised as those aged 12–14 years. Hospital separations among females were highest for those aged 15–17 years (1,604 per 100,000 young people).

Between 1996–97 and 2004–05, there was a 3% increase in injury and poisoning separations among young people.

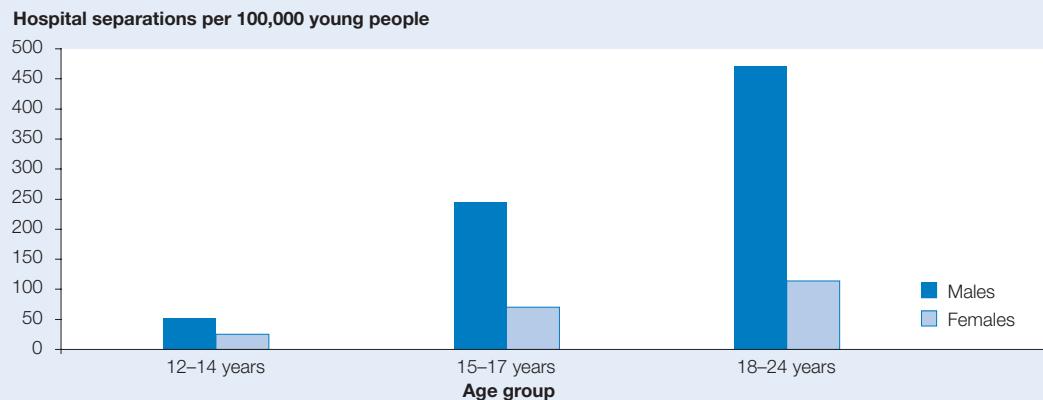
### Hospital separations for specific external causes of injury and poisoning



- In 2004–05, the most common external cause of injury leading to hospitalisation among young people was transport accidents, accounting for 18,377 or 21% of injury and poisoning separations (a rate of 507 per 100,000 young people). The majority of these separations were for young males (71%). Over half of transport accident separations were more specifically due to motor vehicle traffic accidents. For both transport and motor vehicle traffic accidents, the separation rates for young males were higher than for females (2.6 times for transport accidents and 2 times for motor vehicle traffic accidents). Nearly half of all separations for motor vehicle traffic accidents among young people involved the drivers of the motor vehicle and 25% were passengers.
- Falls and exposure to inanimate mechanical forces were the second and third highest external causes of injury respectively, each accounting for approximately 15% of injury separations among young people.
- Males made up a higher proportion of hospital separations for all external causes of injury of young people, except for intentional self-harm and accidental poisoning by, and exposure to, noxious substances. Females accounted for 71% of the 7,874 separations due to intentional self-harm in 2004–05. In the same year, of the 1,979 separations for accidental poisoning, by and exposure to, noxious substances, females accounted for 59%.

## Hospital separations for assault

**INDICATOR:**  
Hospital separation rate for assault among young people aged 12–24 years



Note: ICD-10-AM codes S00–T98 & X85–Y09, Y87.1.

Source: AIHW National Hospital Morbidity Database.

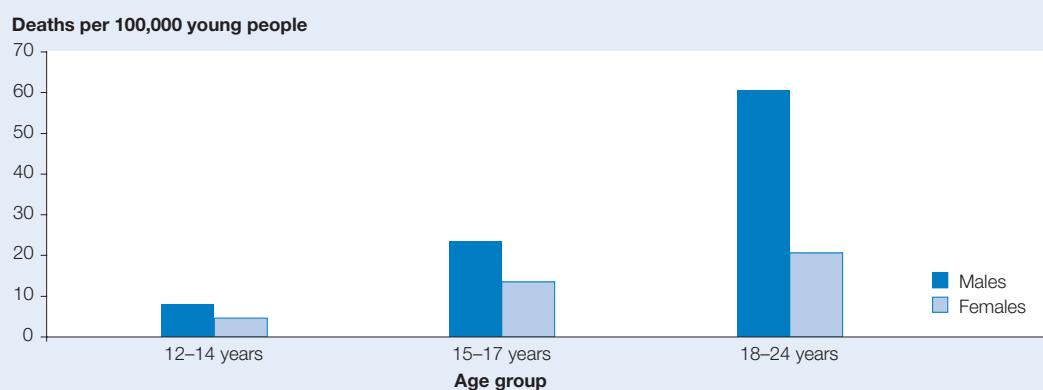
**Figure 2.9: Assault hospital separation rate for young people aged 12–24 years by sex, 2004–05**

- In 2004–05, there were 7,359 separations for an injury caused by assault among young people aged 12–24 years—a rate of 203 per 100,000 young people.
- The assault separation rates for young males were almost 4 times the rates for young females. The gap between male and female rates increased with age. For 12–14 year olds, the male rate was 2.1 times as high as the female rate. This ratio increased to 3.5 for the 15–17 year olds and to 4.1 for 18–24 year olds.
- Separation rates for assault increased with age for both young males and females but it was more marked in males. The male separation rate for 18–24 year olds was 9.1 times as high as for males aged 12–14 years, and twice as high as for males in the 15–17 year age group. For females, the separation rate for 18–24 year olds was 4.6 times as high as for 12–14 year olds and 1.6 times as high as for 15–17 year olds.

Overall, between 1996–97 and 2004–05, separation rates due to assault increased slightly among young people (7% increase). Rates peaked in 2000–01 for males and in 2001–02 for females, and have decreased slightly since then, by 6% for young males and by 7% for young females.

## Injury deaths

**INDICATOR:**  
Injury and poisoning death rate for young people aged 12–24 years



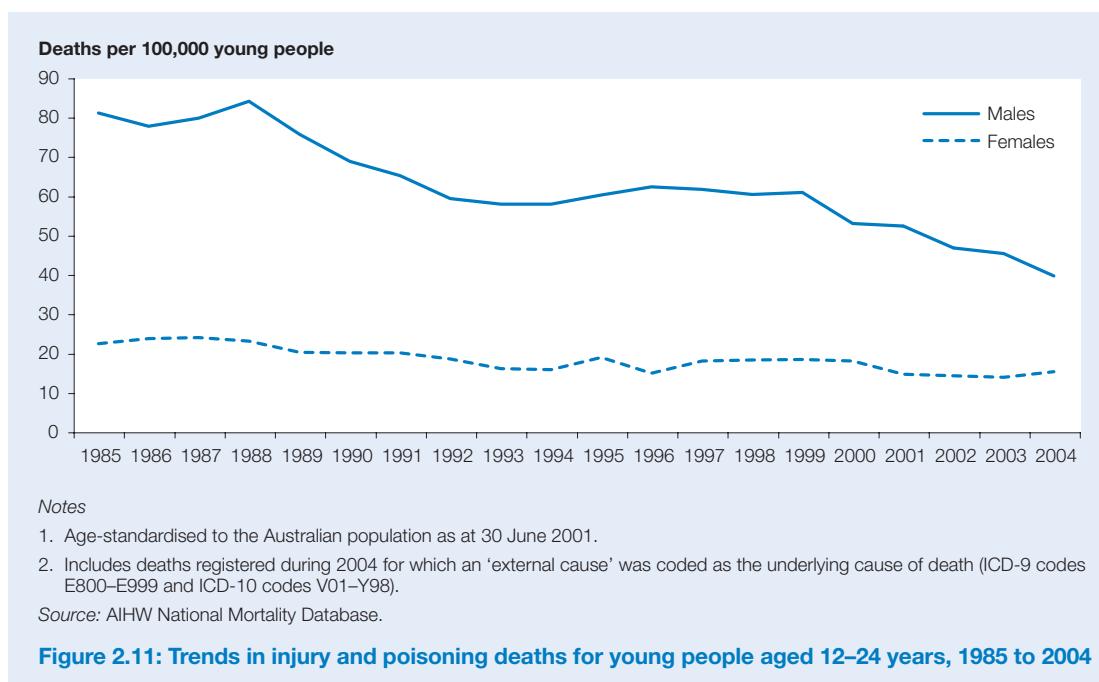
Notes

- Includes deaths registered during 2004 for which an external cause was coded as the underlying cause of death (ICD-10 codes V01–Y98).

Source: AIHW National Mortality Database.

**Figure 2.10: Injury and poisoning death rates, for young people aged 12–24 years, 2004**

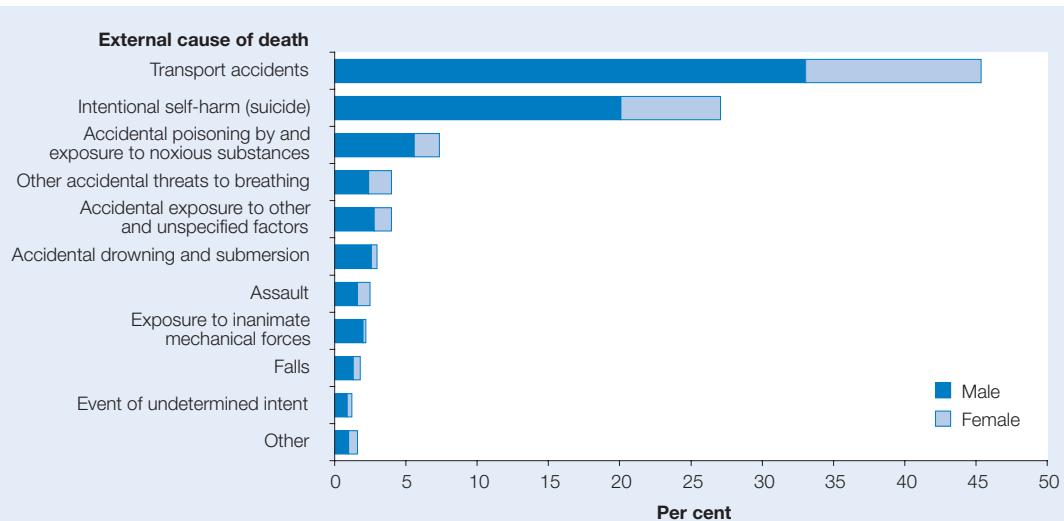
- In 2004, injury and poisoning was the leading cause of death among young people aged 12–24 years, with 1,005 deaths—a rate of 28 deaths per 100,000 young people (40 per 100,000 for young males and 15 per 100,000 for young females). This accounted for two-thirds of all deaths of young people aged 12–24 years (71% of all deaths among 18–24 year olds, 67% of all deaths among 15–17 year olds and 44% of all deaths among 12–14 year olds).
- The death rate due to injury and poisoning was higher for males than females at all ages. The largest difference was in the 18–24 year age group, where the male rate was 2.9 times the female rate (32 compared to 11 per 100,000 young people).
- The age pattern of mortality from injury and poisoning shows that the majority of these deaths occurred among those aged 18–24 years (80%), followed by those aged 15–17 years (15%) and 12–14 years (5%).



- Between 1985 and 2004, the death rate due to injury and poisoning decreased by 50% for young males (from 81 to 40 per 100,000 young people) and by 31% for young females (from 22 to 15 per 100,000 young people).
- Death rates for young males due to external causes of injury and poisoning have been consistently higher than for young females over the last two decades, although this gap has been narrowing in recent times—from 3.6 times in 1984 to 2.6 times in 2004.

Between 1985 and 2004, injury and poisoning death rates have been declining fastest for young people aged 12–14 years (a decline of 67% for males and 73% for females), followed by those aged 15–17 years, (61% for males and 50% for females). The lowest rate of reduction between the same two periods occurred in the 18–24 year age group (47% decline for males and 42% for females), although these are still substantial decreases.

## Deaths by specific external causes of injury



Note: ICD-10 codes V01–Y99 and S00–T98. Transport accidents (V01–V99, Y85), intentional self-harm [suicide] (X60–X84, Y87.0), accidental poisoning by and exposure to noxious substances (X40–X49), other accidental threats to breathing (W75–W84), exposure to other and unspecified factors (X58–X59), accidental drowning and submersion (W65–W74), assault (X85–Y09, Y87.1), exposure to inanimate mechanical forces (W20–W49), falls (W00–W19), event of undetermined intent (Y10–Y34), other (all remaining ICD-10 codes within the V01–Y99 range).

Source: AIHW National Mortality Database.

**Figure 2.12: Injury and poisoning deaths among young people aged 12–24 years, by external cause of injury, 2004 (per cent)**

- Transport accidents were responsible for 45% of the deaths of young people due to injury and poisoning in 2004.
- In 2004, intentional self-harm (suicide) accounted for 272 deaths of young people aged 12–24 years—a rate of 8 per 100,000 young people. This represented 27% of injury deaths of young people and 14% of all intentional self-harm deaths in Australia in that year. Deaths due to intentional self-harm decreased by 40% between 1995 and 2004. In 2004, almost 75% of intentional self-harm deaths among young people were for males, with the rate being 2.7 times that for young females.

### INDICATOR:

Accidental drowning death rate for young people aged 12–24 years

Accidental drowning was responsible for 30 deaths of young people in 2004—a rate of 1 per 100,000 young people. Most accidental drowning deaths occurred among those aged 18–24 years, and rates were substantially higher for males than for females (6 times as high in 2004).

### Transport accident and assault deaths

Transport accidents include any accident involving a device designed primarily for, or primarily being used at the time for, conveying persons or goods from one place to another. Motor vehicle traffic accidents are a subset of this category. Other groups under the transport accident category include accidents involving pedestrians and pedal cyclists, and railway and water transport.

Transport accidents are further divided into traffic accidents, non-traffic accidents, persons injured while boarding or alighting and not specified. Traffic accidents are those that occur on a public highway, while non-traffic accidents are those that occur entirely in a place other than a public highway.

**Table 2.11: Transport accidents and assault death rates for young people aged 12–24 years, 2004**

External cause	Age (years)	Number			Rate per 100,000 young people			INDICATORS:
		Males	Females	Persons	Males	Females	Persons	
Transport accidents	12–14	19	8	27	4.4	2.0	3.2	Transport accident death rate for young people aged 12–24 years
	15–17	60	28	88	14.4	7.0	10.8	
	18–24	252	88	340	25.2	9.3	17.5	
	<b>12–24</b>	<b>331</b>	<b>124</b>	<b>455</b>	<b>7.1</b>	<b>17.9</b>	<b>12.6</b>	
Assault	12–14	0	0	0	0.0	0.0	0.0	Assault death rate for young people aged 12–24 years
	15–17	2	1	3	0.5	0.3	0.4	
	18–24	13	8	21	1.3	0.8	1.1	
	<b>12–24</b>	<b>15</b>	<b>9</b>	<b>24</b>	<b>0.8</b>	<b>0.5</b>	<b>0.7</b>	

Note: ICD-10 codes: transport accidents (V01–V99) and assault (X85–Y09, Y87.1).

Source: AIHW National Mortality Database.

- There were 455 deaths of young people aged 12–24 years due to transport accidents in 2004 (a rate of 13 per 100,000 young people), 90% of which were a result of traffic accidents involving a motor vehicle. The transport accident death rate decreased by 35% between 1995 and 2004, from 20 to 13 deaths per 100,000 young people. The rate increased with age and was higher for males than for females. Over one-quarter of all deaths due to transport accidents were of young people in 2004.
- There were 24 deaths of young people due to assault in 2004, which represents 16% of all deaths due to assault in that year (a rate of 0.7 per 100,000 young people). Rates were higher for males than for females and increased with age.

## Population groups

The socioeconomic environment of young people, determined by factors such as education, income and employment status, influences opportunities for and knowledge about safety and injury prevention (NPHP 2004). Other factors such as gender, age and cultural background shape attitudes and knowledge which then influence lifestyle and behaviours. Therefore, some groups of young people are more at risk of injuries than others, in particular young males, people who are socioeconomically disadvantaged, people who live in remote and rural areas, and Indigenous Australians (DoHA 2001).

## Aboriginal and Torres Strait Islander young people

In 2004–05, among young Indigenous Australians aged 12–24 years, the age-standardised rate of hospital separation due to injury and poisoning was 4,066 per 100,000 young people (4,717 for males and 3,397 for females). This was 1.7 times that for other young Australians, which was 2,426 per 100,000 young people (data are for Queensland, Western Australia, South Australia and public hospitals in the Northern Territory only). The male rate was higher than the female rate for all age groups. The separation rate was lowest among those aged 12–14 years and increased with age.

There were 205 deaths of young Indigenous Australians due to injury and poisoning during the period 2002–2004—a rate of 137 per 100,000 young people. This was almost 4.5 times that for young non-Indigenous Australians, which was 31 per 100,000 young people (data are for Queensland, Western Australia, South Australia and the Northern Territory only). The male rate was higher than the female rate for all age groups. The death rate was lowest among those aged 12–14 years and increased with age.

### Regional status

Injury and poisoning hospital separation rates and death rates among young people aged 15–24 years are higher with increasing remoteness. In 2004–05, hospital separation rates in Very Remote areas were 2.7 times those in Major Cities (6,002 per 100,000 compared to 2,192 per 100,000 young people respectively). For deaths, the rate in Very Remote areas was more than 5 times that in Major Cities (145 per 100,000 compared to 28 per 100,000 young people respectively).

### Chronic disease

A chronic disease is an ongoing condition characterised by a diagnosis of a specific physical or mental condition, functional limitation, and service use or need beyond routine care (Sawyer & Aroni 2005; Westbrook et al. 1998). The focus of this section of the report is chronic non-communicable diseases as these diseases contribute most to morbidity, disability and mortality in Australia.

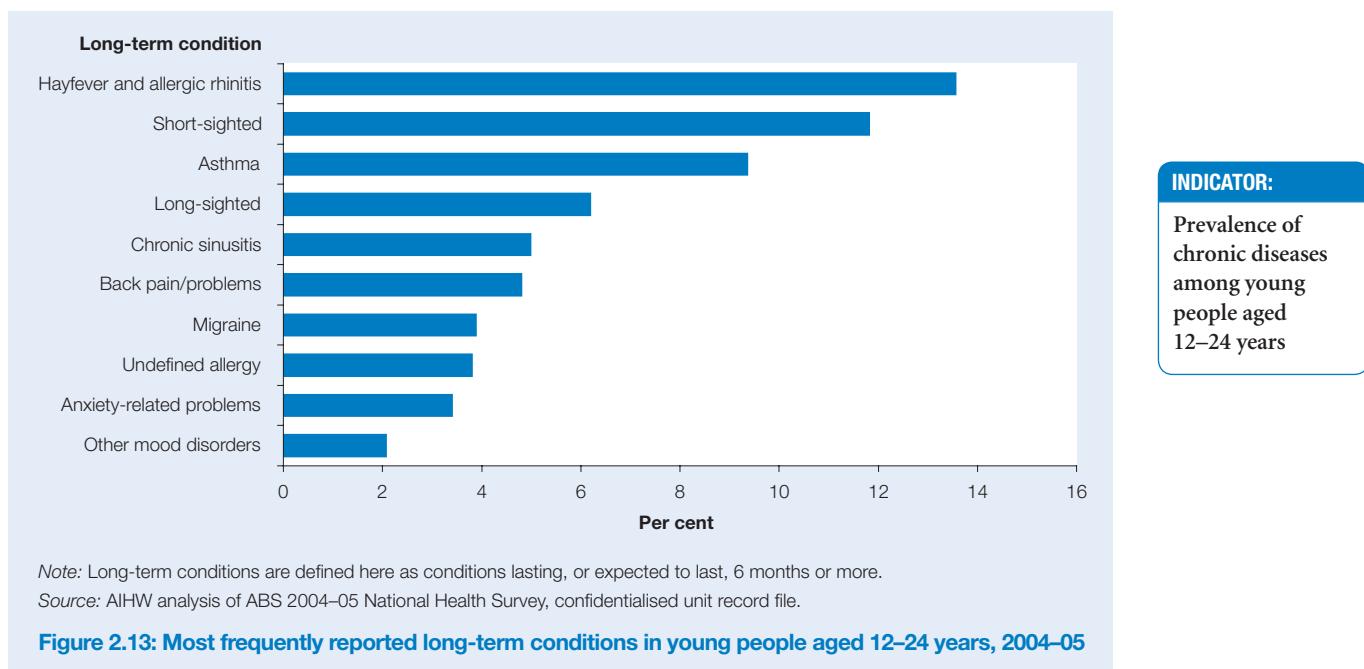
Chronic disease in young people is significant for several reasons. Adolescence and young adulthood are characterised by rapid growth and physiological changes, as well as important individuation and socialisation processes (Suris et al. 2004). The normal growth and development process can be affected either directly by a chronic disease, or indirectly through treatment. This can cause delays in muscle development and sexual maturation, result in short stature and have effects on physical appearance such as scarring. These effects occur at a time of emotional development when it is important to belong among peers. Body image issues at this stage of development can affect self-esteem and social adjustment (Yeo & Sawyer 2005). In addition, adolescence and young adulthood are periods of transition from dependence to independence during which new emotional and social roles are determined. For young people with chronic diseases, establishing autonomy and moving from childhood to adulthood can be difficult while they remain dependent on family for physical, emotional and financial support (Kyngäs et al. 2000).

Children and adolescents have the highest growth rates of chronic disease prevalence of all population cohorts (Perrin 2002) and it is estimated that over 90% of children born today with a chronic disease will survive beyond the age of 20 (Scal et al. 1999). Improved survival for people with chronic diseases is likely to have a cumulative effect on young people and their families in terms of social, psychological and economic pressures.

While there are many chronic diseases affecting young people, this section focuses primarily on the conditions considered NHPAs—asthma, diabetes and cancer—on the basis of their health impact, the potential to reduce their burden and community concern about them. Due to their substantial impacts on the health of young Australians, Crohn's disease, epilepsy, cystic fibrosis and cerebral palsy are also briefly discussed.

The information presented in this section is derived from the ABS National Health Surveys (NHS), the AIHW National Hospital Morbidity Database, the AIHW National Mortality Database, the AIHW National Cancer Statistics Clearing House (NCSCH) and the National Diabetes Register (NDR).

## Chronic disease prevalence



- In 2004–05, 63% of young Australians aged 12–24 years reported a long-term condition. Multiple long-term conditions were reported by 34% of young Australians.
- Young females were more likely than young males to report a long-term health condition (68% and 60% respectively).
- Hay fever and allergic rhinitis was the most frequent long-term condition reported by young people (14%), followed by short-sightedness (12%). The prevalence of short-sightedness (or myopia) was similar to that found by Ip et al. (2006) in their recent study of 12-year-old Australian school children (12%). The prevalence of short-sightedness has decreased since 2001, when the ABS NHS estimated the prevalence rate to be 15%.
- Asthma was the third most frequently reported long-term condition by young people, at 9%.

## Asthma

Asthma is one of the most common long-term conditions among young Australians. The disease is characterised by recurrent episodes of wheeze, chest tightness, cough and shortness of breath caused by narrowing of the airways and obstruction to airflow (GINA 2005). Asthma was made the sixth NHPA in 1999, which has resulted in activities and projects to improve asthma management and care and the monitoring of asthma in Australia. The National Asthma Strategy 2006–08 provides a framework for a collaborative approach towards improving asthma care in Australia (Australian Health Ministers' Conference 2006).

While the underlying causes of asthma are still not well understood, constitutional factors such as genetic traits, age and sex, as well as environmental factors such as diet and lifestyle, may increase the risk of developing asthma. A number of factors can trigger airway narrowing and symptoms in people with asthma, including physical activity, viral infections, irritants (such as smoking and other air pollutants), cold weather, specific allergies (house dust mites and mould pores) and certain food preservatives (AIHW 2006a; AIHW Australian Centre for Asthma Monitoring 2005).

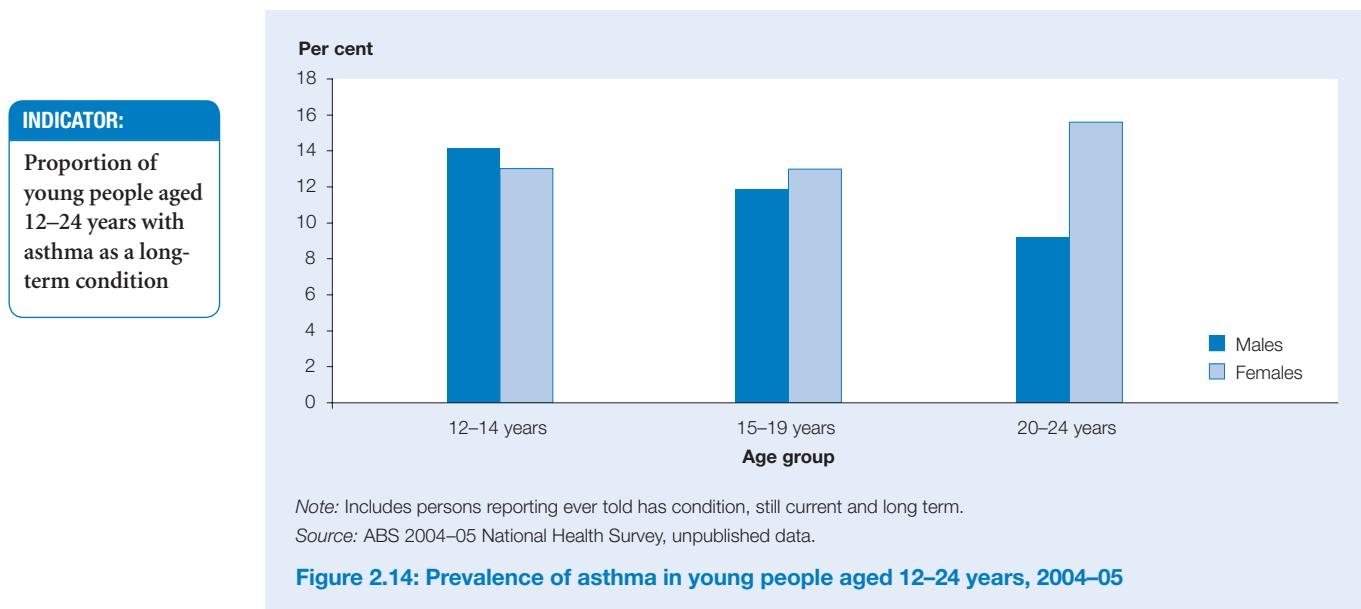
For the majority of people with asthma, the condition can be effectively controlled with the regular use of medications that prevent and reduce symptoms, as well as avoiding or controlling trigger factors. In some people with severe asthma, or those with poorly managed asthma, it can cause

poor quality of life, interfere with work, study or other activities, create a need for urgent medical care, and even cause premature death. Asthma can therefore place considerable restrictions on the physical, social and emotional lives of those with asthma and their families (GINA 2005).

It is difficult to quantify the prevalence of asthma in the population because the prevalence can be based on self-reported wheeze, diagnosis by a general practitioner based on symptoms, or a combination of symptoms and lung function tests (Woolcock et al. 2001). Despite difficulties in accurately estimating asthma prevalence, international comparative studies indicate that Australia has one of the highest prevalence rates in the world (AIHW Australian Centre for Asthma Monitoring 2005; Masoli et al. 2004). It is commonly believed that asthma prevalence in Australia is on the rise (Robertson et al. 1998; Woolcock et al. 2001). Asthma prevalence did indeed increase in the 1980s and early-to-mid 1990s, however, in recent years, there has been emerging evidence that this trend has plateaued in adults and may even have reversed in children (AIHW Australian Centre for Asthma Monitoring 2005).

Despite this, the burden of disease due to asthma is substantial. Asthma was estimated to account for 7,995 DALYs or 4% of the total disease burden in 2003 for young Australians aged 15–24 years. The majority of this burden was due to years of ‘healthy’ life lost due to poor health or disability (96%). The burden was substantially higher for females than for males (6,641 compared to 1,314 DALYs) and was the second highest cause of disease burden for females aged 15–24 years (Begg et al. 2007).

### Prevalence of asthma



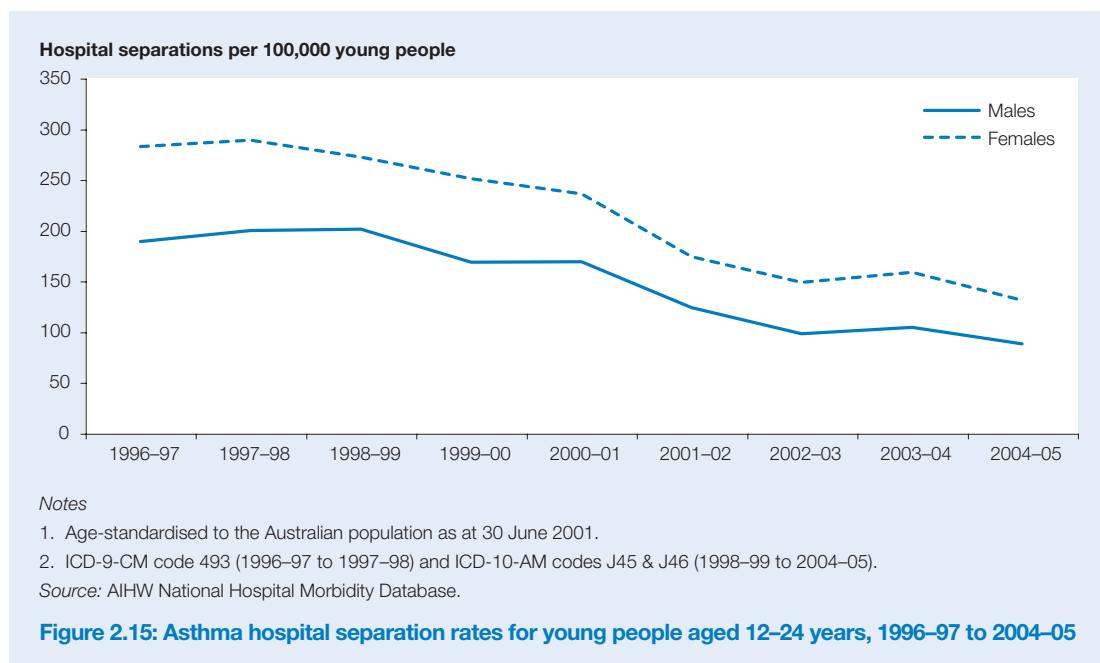
- Estimates based on the ABS 2004–05 NHS indicate that 435,200 young people had asthma as a current long-term condition—a prevalence rate of 13%. This is higher than the prevalence rate for the general population (10%). Those aged 12–24 years reported the highest prevalence compared to all other age groups.
- Asthma prevalence was slightly higher overall for young females (14%) than for young males (11%). The difference was largest in the 20–24 year age group where the prevalence rate for females was 1.7 times the rate for males. However, among those aged 12–14 years, the prevalence was similar for males and females (14% and 13% respectively).
- Prevalence rates were similar for each of the age groups—14% for those aged 12–14 years, and 12% each for those aged 15–19 years and 20–24 years.

The prevalence of asthma has declined since 2001 when the 2001 NHS estimated that 532,200 young people had asthma as a current long-term condition, a prevalence rate of 16%.

### Action taken for asthma

No action had been taken for asthma in the 2 weeks before the survey by 51% of young people diagnosed with asthma. The most common action taken was the use of pharmaceutical medications (48%). A doctor was consulted by 5% of young people who took action for asthma, and less than 2% were admitted to hospital or visited casualty, an outpatient clinic or a day clinic.

### Hospital separations due to asthma



- In 2004–05, there were 3,948 hospital separations for asthma among those aged 12–24 years, or 109 separations per 100,000 young people. This represents less than 1% of all hospital separations for those aged 12–24 years during this period.
- Between 1996–97 and 2004–05, females were overall more likely to be admitted to hospital for asthma than males (1.5 times as likely in 2004–05). However, when the age group is broken down, males aged 12–14 years had higher separation rates than females (135 compared to 124 hospital separations per 100,000 12–14 year olds in 2004–05).
- Between 1996–97 and 2004–05 there have been significant reductions in asthma hospital separation rates among young people, falling from 189 to 88 separations per 100,000 young people for males and from 283 to 131 separations per 100,000 for young females (a decline of 54%). This decline may have occurred due to reductions in the severity of asthma, the prevalence of asthma, or improved management of the condition. Changes in hospital admission criteria and administrative policies could also have affected asthma hospitalisation data (AIHW Australian Centre for Asthma Monitoring 2005).

### Deaths due to asthma

In 2004, there were 14 deaths due to asthma among young people, accounting for less than 1% of all deaths in this age range. Between 1995 and 2004, deaths from asthma almost halved among young people. Asthma is not a major cause of death in Australia, but death rates are moderately high by international standards (AIHW Australian Centre for Asthma Monitoring 2005).

This decrease in asthma death rates is most likely due to a reduction in the risk of dying among people who have asthma. Nationwide programs to improve asthma management, including the introduction of management guidelines, have been implemented since asthma was made a NHPA in 1999. Changes in treatment practices or environmental factors may also have had a role in reducing the severity of asthma and of asthma exacerbations (AIHW Australian Centre for Asthma Monitoring 2005).

### **Asthma among Aboriginal and Torres Strait Islander young people**

The estimated prevalence of asthma among young Indigenous people in 2004–05 was 16% (12% for males and 19% for females). This compares with 9% for all young Australians.

Among young Indigenous Australians, the age-standardised hospital separation rate due to asthma was 144 per 100,000 young people in 2004–05 (111 per 100,000 for young males and 178 per 100,000 for young females). This was one-third higher than the rate of other Australians, which was 107 per 100,000 young people (data are for Queensland, Western Australia, South Australia and public hospitals in the Northern Territory only). The age-standardised rate for young Indigenous females was 1.6 times the rate for young Indigenous males, however, when the age group is broken down, young Indigenous males aged 12–14 years had a rate 1.2 times that of Indigenous females of the same age. The rate was highest overall for Indigenous young people aged 12–14 years, followed by those aged 20–24 years.

### **Diabetes mellitus**

Diabetes is a chronic condition in which the body cannot properly use its main energy source, the sugar glucose. This is due to a relative or absolute deficiency in insulin, a hormone produced by the pancreas. Insulin helps glucose enter the body's cells from the bloodstream and then be processed by them. Diabetes is marked by an abnormal build-up of glucose in the blood and it can have serious short- and long-term effects (AIHW 2006a). However, people with diabetes can do much to control the disease and reduce their risk.

There are several types of diabetes, with the two main types being Type 1 and Type 2. Other types of diabetes include gestational diabetes, or diabetes caused by medications or health conditions (see AIHW: O'Brien et al. (2006) for a description of the different types of diabetes).

Type 1 diabetes (also called juvenile onset or insulin dependent diabetes) most often appears during childhood or adolescence and is marked by a complete lack of insulin, requiring insulin replacement for survival (AIHW 2006a). Type 2 diabetes is the most common form of diabetes and is marked by reduced or less effective insulin (AIHW 2006a). Type 2 diabetes is often linked to lifestyle factors, such as obesity and physical inactivity, and occurs most often among people older than 40 years; although with increasing levels of obesity and lack of physical activity, Type 2 diabetes is being increasingly diagnosed among young Australians (Taras & Potts-Datema 2005).

Australia has a relatively high incidence of Type 1 diabetes (IDF 2006), and there is evidence that it is increasing. Recent studies in New South Wales and Western Australia found that the incidence of Type 1 diabetes increased significantly by 2.8% to 3.1% per year between 1985 and 2002 (Haynes et al. 2004; Taplin et al. 2005). These results are consistent with overseas findings which also indicate a rising incidence of Type 1 diabetes (see Haynes et al. 2004; Taplin et al. 2005).

For young people aged 15–24 years, diabetes was estimated to account for less than 1% of the disease burden in 2003 (1,352 DALYs), which was mostly due to years of 'healthy' life lost due to poor health or disability (Begg et al. 2007).

## Prevalence and new cases of diabetes

Data on new cases of Type 1 diabetes for the 12–24 year age group are available from the National Diabetes Register (NDR).

In 2004, the NDR reported 648 new cases of Type 1 diabetes among those aged 12–24 years, of which 61% were males. This is a rate of 18 new cases per 100,000 young people. The rate of new cases was highest among those aged 12–14 years (30 per 100,000 young people) and decreased with age.

Diabetes prevalence data for young Australians are available from the ABS National Health Surveys.

Estimates based on this survey indicate that, in 2004–05, approximately 11,000 young people aged 15–24 years had diabetes (all types), a prevalence of 0.4%. Due to high relative standard error associated with this estimate (between 25% and 50%), it should be used with caution.

### INDICATOR:

Prevalence of diabetes among young people aged 12–24 years

## Hospital separations due to diabetes

**Table 2.12: Diabetes hospital separation rates for young people aged 12–24 years, 2000–01 to 2004–05 (per 100,000 young people)**

Sex	2000–01	2001–02	2002–03	2003–04	2004–05
Males	74.9	75.7	77.2	84.8	93.8
Females	142.3	147.8	145.8	151.2	157.3
<b>Persons</b>	<b>108.0</b>	<b>111.1</b>	<b>110.8</b>	<b>117.2</b>	<b>124.8</b>

### Notes

1. Age-standardised to the Australian population as at 30 June 2001.
2. ICD-10-AM codes E10–E14 & O24 (excluding O24.5).
3. Includes separations where diabetes was the principal diagnosis.
4. Diabetes separations were affected by coding changes that came into effect in July 1999 and July 2000. Therefore, rates for 2000–01 to 2004–05 only are shown, as they are not directly comparable with those prior to 1999. See AIHW: Phillips (2003) for more detail.

Source: AIHW National Hospital Morbidity Database.

- In 2004–05, there were 4,523 hospital separations of young people aged 12–24 years with diabetes as the principal diagnosis—a separation rate of 125 per 100,000 young people.
- The diabetes separation rate increased overall by 16% for young people between 2000–01 and 2004–05. The male rate increased by 25% from 75 to 94 separations per 100,000 young people, while the female rate increased by 11% from 142 to 157 separations per 100,000 young people.
- Separation rates were consistently higher for females than for males between 2000–01 and 2004–05, remaining between 1.7 and 2.0 times the male rate.

In 2004–05, Type 1 diabetes accounted for the majority (78%) of diabetes hospital separations of young people (3,524 separations), while Type 2 diabetes was responsible for 3% (147 separations). Gestational diabetes resulted in 522 separations of young females (12% of diabetes hospital separations for young people) (ICD-10-AM code O24.4). The remaining separations for diabetes were due to unspecified diabetes and diabetes in pregnancy (excluding gestational diabetes).

When all diabetes in pregnancy (ICD-10-AM codes O24, excluding O24.5) is excluded, the separation rate for diabetes among females was only slightly higher than for males, at 1.1 times the male rate.

## Deaths due to diabetes

Deaths from diabetes among those aged 12–24 years are uncommon. In 2004, there were 6 deaths of young people with an underlying cause listed as diabetes. All were aged between 15 and 24 years.

### Diabetes among Aboriginal and Torres Strait Islander young people

Among young Indigenous Australians aged 12–24 years, the age-standardised hospital separation rate for diabetes was 318 per 100,000 young people in 2004–05. This was 2.6 times that for other young Australians, which was 125 per 100,000 young people (data are for Queensland, Western Australia, South Australia and public hospitals in the Northern Territory only). The age-standardised rate for young Indigenous males was only slightly higher than the rate for other Australian males (1.1 times), whereas the Indigenous female rate was significantly higher at 3.4 times the rate for other Australian females (526 per 100,000 compared to 154 per 100,000 young people respectively). The difference is largely due to separations of young Indigenous females for diabetes mellitus in pregnancy—young Indigenous females had a rate 9 times that of other young Australian females (383 per 100,000 compared to 43 per 100,000 young females respectively).

### Cancer

Cancer is a common term used to describe a range of diseases in which cells become abnormal, grow in an uncontrolled way and form a mass called a neoplasm or a tumour. Tumours can be benign (not cancerous) or malignant (cancerous). Benign tumours do not spread to other parts of the body, although they may interfere with other areas of the body as they expand. A malignant tumour is characterised by its ability to spread to other parts of the body through a process known as metastasis. Cancers can develop from most cell types in the body and are usually classified according to their organ or tissue of origin and histological features.

The cancers that most commonly affect young people are different to those that affect adults. While the most common cancers among young people are melanoma, Hodgkin's disease and cancer of the testis, the leading cancers among adults are colorectal cancer, breast cancer and prostate cancer (AIHW & AACR 2004).

Cancer is a major cause of morbidity and death in Australia, but fortunately, cancer incidence among young people remains relatively uncommon compared to the general population. Despite this, cancer was the sixth overall leading cause of disease burden among those aged 15–24 years in Australia in 2003, accounting for an estimated 4,456 DALYs (2% of total DALYs). Cancer accounted for an estimated 9% of years of life lost due to premature mortality, and less than 1% of years of 'healthy' life lost due to poor health or disability (Begg et al. 2007).

### Cancer incidence

Information on cancer incidence and survival rates is derived from the AIHW National Cancer Statistics Clearing House (NCSCH). Complete incidence data on non-melanoma skin cancers (NMSC) are not routinely collected by state and territory cancer registries as they are not legally notifiable.

**Table 2.13: Cancer incidence in young people aged 12–24 years, 1993–2002**

INDICATOR:	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
New cases of cancer per 100,000 young people aged 12–24 years	871	929	967	988	979	902	909	903	952	943
Rate per 100,000 young people	24.4	26.0	27.2	28.2	28.2	26.3	26.7	26.4	27.5	26.9

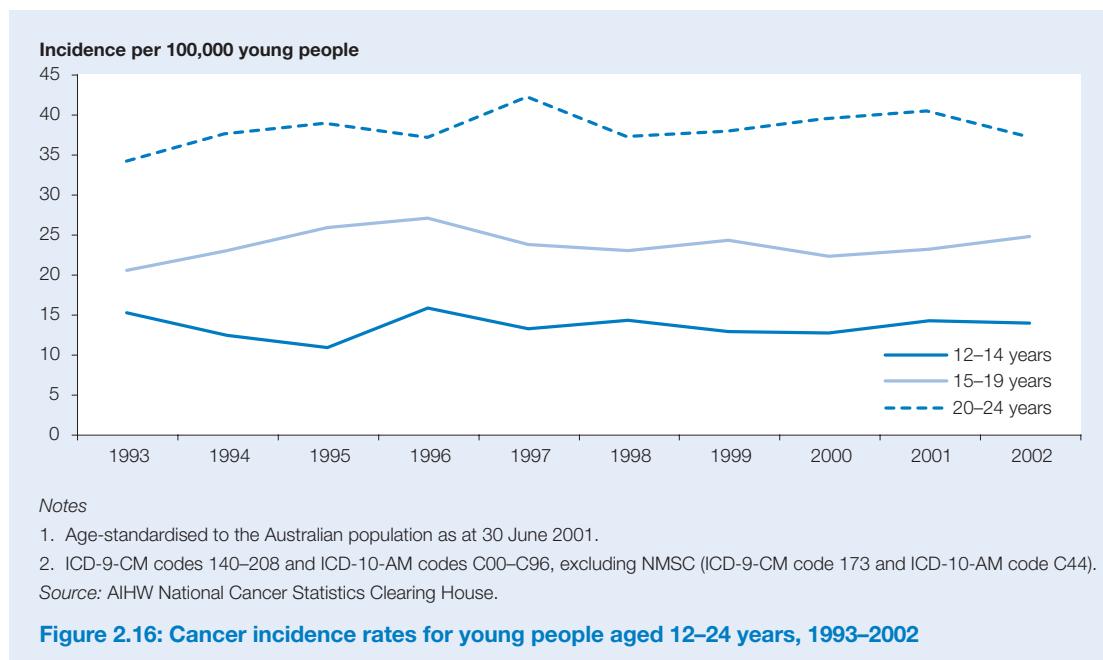
Notes

1. Age-standardised to the Australian population as at 30 June 2001.
2. ICD-9-CM codes 140–208 and ICD-10-AM codes C00–C96, excluding NMSC (ICD-9-CM code 173 and ICD-10-AM code C44).

Source: AIHW National Cancer Statistics Clearing House.

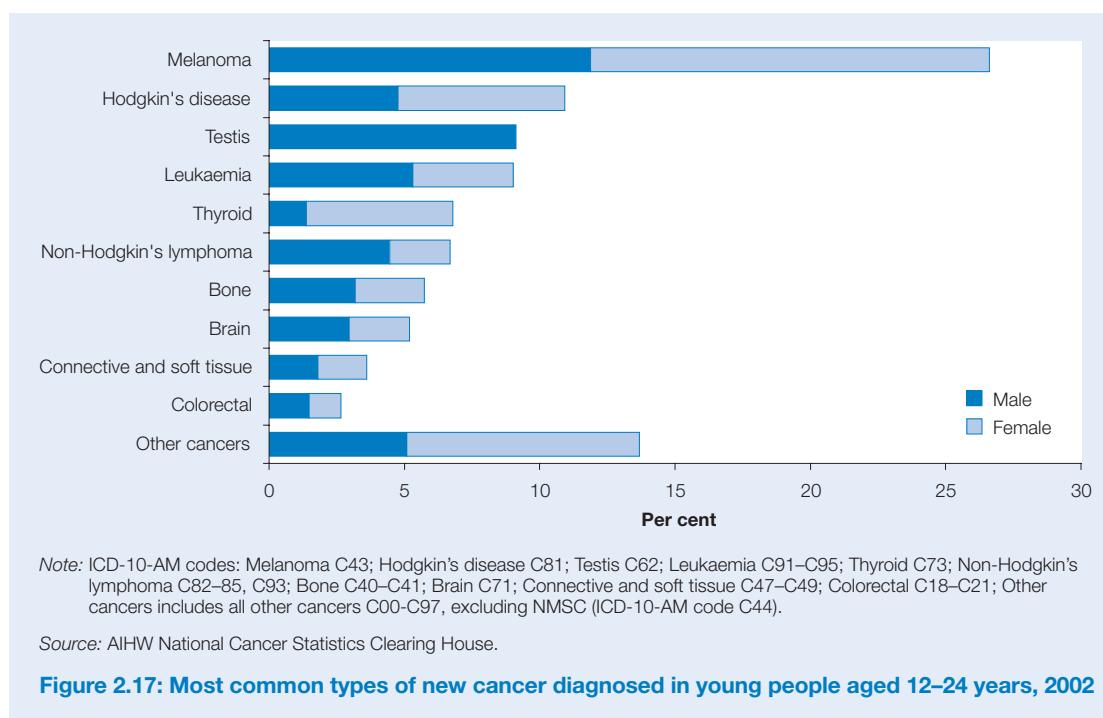
- In 2002, there were 943 new cancers diagnosed in young people—a rate of 27 per 100,000 young people. Just over half (51%) of new cancers were reported in males.
- Between 1993 and 2002, the annual incidence rate increased by 10% (24 to 27 per 100,000 young people), with the rates being slightly higher for males than for females over this period.

The cancer with the highest incidence rate throughout the period 1993–2002 was melanoma. However, between 1993–97 and 1998–2002, the rate of melanoma incidence decreased by 23% for males (from 7.6 to 5.9 per 100,000 young people) and by 14% for females aged 12–24 years (from 9.1 to 7.8 per 100,000 young people).



- Cancer incidence rates increased with age. In 2002, the rate for those aged 15–19 years was 1.8 times as high as the 12–14 year age group (25 compared to 14 per 100,000 young people). The rate for those aged 20–24 years (37 per 100,000 young people) was almost 3 times as high when compared to those aged 12–14 years.
- Overall, 52% of new cancers diagnosed among young people in 2002 were in those aged 20–24 years.

#### Most common cancers among young people



- Melanoma was the most common type of new cancer diagnosed among young people in 2002, with 251 diagnoses (30% of all new cancers). Hodgkin's disease accounted for 11% (103 diagnoses), while cancer of the testis and leukaemia both accounted for 9% of all new cancers diagnosed (86 and 85 respectively).
- Melanoma, Hodgkin's disease and cancer of the thyroid were more common among females compared to males, while more males were diagnosed with non-Hodgkin's lymphoma and leukaemia.

Incidence rates for melanoma, cancer of the testis and Hodgkin's disease for young people increased with age, while rates for leukaemia decreased.

### Hospital separations due to cancer

In 2004–05, there were 4,995 hospital separations among those aged 12–24 years with a principal diagnosis of cancer—a rate of 138 per 100,000 young people (ICD-10-AM codes C00–C96). This does not include separations for radiotherapy or chemotherapy. This represented less than 1% of the total number of hospital separations for young people. Of these separations, 54% were for males, and male separation rates for cancer were consistently higher than for females over the period from 1996–97 to 2004–05. For young males, the highest separation rate occurred among those aged 15–19 years, whereas for young females the rate was highest among those aged 12–14 years.

Between 1996–97 and 2004–05, there was no statistically significant change in the hospital separation rate for males or females.

### Deaths due to cancer

**Table 2.14: Cancer deaths in young people aged 12–24 years, 1995–2004**

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Number	155	145	156	153	160	138	144	143	131	144
Rate per 100,000 young people	4.4	4.2	4.5	4.5	4.7	4.0	4.2	4.1	3.7	4.0

*Notes*

1. Age-standardised to the Australian population as at 30 June 2001.

2. ICD-9-CM codes 140–208 and ICD-10-AM codes C00–C97.

Source: AIHW National Mortality Database.

- In 2004, there were 144 deaths from cancer among young people (4 deaths per 100,000 young people), accounting for 10% of all deaths in this age group.
- Between 1995 and 2004, there was an average annual percentage decrease of 1.6% in death rates due to cancer. In Australia and internationally, improvements in cancer outcomes for young people have been lagging behind advances achieved for children and older adults, resulting in lower reductions in mortality than in other age groups (Thomas et al. 2006).

Young males aged 12–24 years were 1.3 times as likely to die from cancer than young females, with the greatest difference occurring in the 20–24 year age group (2.6 times as high in males than females).

Death rates due to cancer increased with age, consistent with the risk of cancer increasing with age (AIHW & AACR 2004).

In 2004, the most common cancers causing death among young people were brain cancer (28 deaths), followed by unspecified cancer of bone and articular cartilage (20 deaths), and myeloid leukaemia and unspecified non-Hodgkin's lymphoma (both 12 deaths). These cancers have been consistently among the most common cancers causing death over the 10-year period from 1995 to 2004, and are consistent with the lower 5-year relative survival for these cancers compared with other cancers (see the next section for an explanation of relative survival).

## Cancer survival

Survival rates after a diagnosis of cancer can be used to assess the effectiveness of early cancer detection and treatment.

Relative survival is the ratio between the observed survival rate among a group of people with cancer and the expected survival rate among the same group had they not been diagnosed with cancer. For example, a relative survival of 100% indicates that the disease has made no difference to survival of the group over a given period. A survival rate less than 100% indicates that cancer did reduce survival compared to the population without cancer.

Five-year relative survival rates are presented in this report for those aged 10–24 years due to data availability. The most recent available data for five-year relative survival rates are for 1992–97.

**Table 2.15: Five-year relative survival rates for cancers affecting young people aged 10–24 years between 1982–86 and 1992–97 (per cent)**

<b>Cancer type</b>	<b>Males</b>		<b>Females</b>		<b>Persons</b>		<b>INDICATOR:</b> Five-year relative cancer survival rates for young people aged 10–24 years
	<b>1982–86</b>	<b>1992–97</b>	<b>1982–86</b>	<b>1992–97</b>	<b>1982–86</b>	<b>1992–97</b>	
Bone cancer	50.3	55.7	61.6	66.5	56.0	61.1	
Connective and soft tissue	64.2	67.9	69.1	76.0	66.7	72.0	
Malignant melanoma	87.3	96.9	96.5	97.6	91.9	97.3	
Cancer of the testis	88.9	94.4	—	—	88.9	94.4	
Brain	66.4	69.1	60.9	68.6	63.7	68.9	
Ovary	—	—	82.1	85.1	82.1	85.1	
Thyroid	(a)100.7	98.5	97.6	99.7	99.2	99.1	
Non-Hodgkin's lymphoma	64.9	69.9	66.4	71.8	65.7	70.9	
Hodgkin's disease	85.5	95.7	88.6	93.1	87.1	94.4	
Leukaemia	37.5	50.7	43.5	56.6	40.5	53.7	
<b>All cancers</b>	<b>71.6</b>	<b>81.2</b>	<b>81.5</b>	<b>85.0</b>	<b>76.6</b>	<b>83.1</b>	

(a) The estimated relative survival proportion is greater than 100. This means that survival for young people aged 10–24 years with a diagnosis of thyroid cancer in 1982–86 cannot be statistically distinguished from survival for young people in the general population.

— Nil or rounded to zero.

Note: ICD-9-CM codes: lip cancer (140) colorectal cancer (153, 154), bone cancer (170), connective and soft tissue (171), malignant melanoma (172), female breast cancer (174), cancer of the cervix (180), cancer of the ovary (183), cancer of the testis (186), kidney (189), brain (191), meninges and other central nervous system (192), thyroid (193), unknown primary (195–199, 165, 159), non-Hodgkin's disease (200, 202), Hodgkin's disease (201), leukaemia (204–208).

Source: AIHW National Cancer Statistics Clearing House.

- Five-year relative survival rates for all cancers in young people aged 10–24 years increased between 1982–86 and 1992–97, from 72% to 81% for males and from 82% to 85% for females.
- In 1992–97, five-year relative survival was highest among young people with thyroid cancer (99%), malignant melanoma (97%), cancer of the testis (94%) and Hodgkin's disease (94%).
- In 1992–97, five-year relative survival was lowest among young people with leukaemia (54%), bone cancer (61%) and brain cancer (69%).
- Between 1982–86 and 1992–97, the greatest improvements in survival were for young people with leukaemia, bone cancer, Hodgkin's disease and brain cancer.

Over the period 1982–86 and 1992–97, survival rates were highest (over 85%) for females aged 20–24 years. The improvement in survival rates was greatest for males aged 10–14 years and least for females aged 20–24 years. Relatively high improvements in survival rates were also experienced by males aged 20–24 years and females aged 10–14 years.

## Other chronic diseases affecting young people

### Crohn's disease

Crohn's disease is a chronic, relapsing inflammatory disorder of the gastrointestinal tract. The disease can occur at any age, however it is most common in adolescents and young adults (Selby 2003). When active, Crohn's disease results in inflammation of the full thickness of the bowel wall and can affect any part of the digestive tract. This results in symptoms of diarrhoea, fever, nausea, malaise and abdominal and joint pain. These symptoms are usually intermittent, with varying periods of remission.

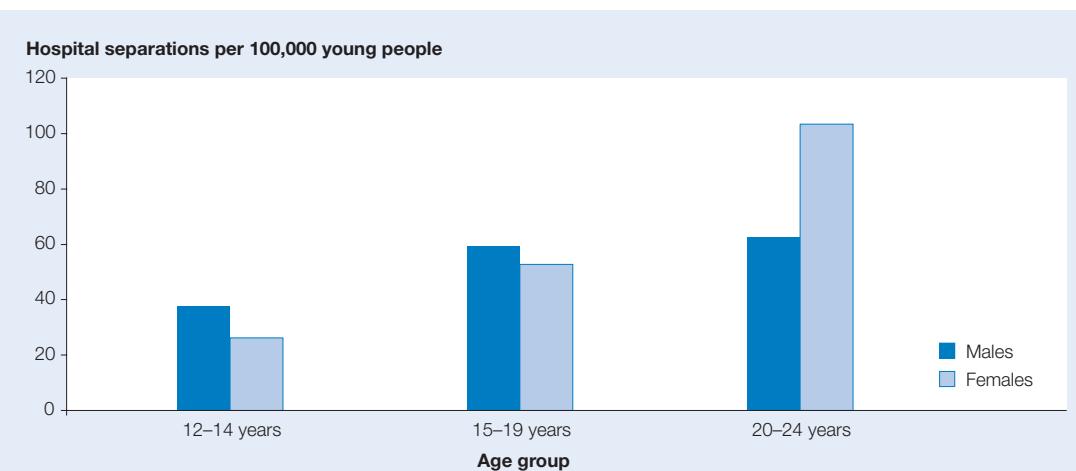
Even when the disease is inactive, persons with Crohn's disease suffer from a variety of nutritional deficiencies. Protein energy malnutrition is common as a result of fluid, electrolyte, iron, mineral and vitamin deficiencies (Jeejeebhoy 2002). Anaemia can also be a significant problem, due to malabsorption of vitamin B12, blood loss, or the effect of inflammation on bone marrow (Knutson et al. 2003).

The cause of Crohn's disease is largely unknown, but based on available evidence, a combination of genetic and environmental factors seems most likely. An association with diet has been recognised and infectious causes are also suspected (Knutson et al. 2003; Selby 2003). Smoking is associated with an increased risk of developing Crohn's disease and also of causing the disease to take a more aggressive course (Shields & Low-Bear 1996).

Crohn's disease results in considerable social cost due to work absences, requirements for expensive drugs or surgery and multidisciplinary care (Shanahan 2002). It is therefore an important cause of morbidity in Australia and the prevalence of Crohn's disease appears to be increasing. A study investigating Crohn's disease in Victorian children found a significant increase in the incidence of newly diagnosed Crohn's disease over the last three decades (Phavichitr et al. 2003). This is consistent with a worldwide increase in the incidence of this disease in both children and adults (Bach 2002; Jeejeebhoy 2002).

Limited data are available specifically for Crohn's disease. This section presents data on hospital separations and deaths.

### Hospital separations due to Crohn's disease



Note: ICD-10-AM code K50.

Source: AIHW National Hospital Morbidity Database.

**Figure 2.18: Crohn's disease hospital separation rates for young people aged 12–24 years, 2004–05**

- In 2004–05, there were 2,203 hospital separations for Crohn's disease among young people (60 per 100,000 young people) and of all separations for Crohn's disease, 21% were for young people. The overall separation rate was highest in the 20–24 year age group (83 per 100,000 young people). Hospital separations for this condition were highest among those aged 20–45 years.
- Young females were overall more likely to be hospitalised than males (1.2 times in 2004–05), although this differs by age. Among those aged 12–14 and 15–19 years, the male separation rates for Crohn's disease were 1.4 and 1.1 times that for females respectively, but in the 20–24 year age group, the female rate was substantially higher, at 1.7 times the male separation rate.

**Table 2.16: Crohn's disease hospital separations for young people aged 12–24 years, 1996–97 to 2004–05 (rate per 100,000 young people)**

Sex	1996–97	1997–98	1998–99	1999–00	2000–01	2001–02	2002–03	2003–04	2004–05
Males	34.0	29.2	28.8	30.6	36.8	39.4	50.1	55.7	55.5
Females	42.5	46.2	44.0	45.3	49.4	57.0	63.4	67.7	65.6
<b>Persons</b>	<b>38.2</b>	<b>37.6</b>	<b>36.3</b>	<b>37.8</b>	<b>43.0</b>	<b>48.1</b>	<b>56.6</b>	<b>61.6</b>	<b>60.4</b>

#### Notes

1. Age-standardised to the Australian population as at 30 June 2001.
2. ICD-9-CM code 555 (1996–97 to 1997–98) and ICD-10-AM code K50 (1998–99 to 2004–05).

Source: AIHW National Hospital Morbidity Database.

- Between 1996–97 and 2004–05, hospital separation rates for Crohn's disease increased by 58%, from 38 per 100,000 to 60 per 100,000 young people. The male separation rate increased by 63% over this period, while the female rate increased by 54%.
- The separation rate for Crohn's disease has been consistently higher for females than for males over this period, at between 1.2 and 1.6 times the male rate.

#### *Deaths due to Crohn's disease*

Deaths due to Crohn's disease are uncommon among young people and occur most frequently among those aged 65 and older. Between 1995 and 2004, Crohn's disease was responsible for two deaths of young people.

#### **Cerebral palsy**

Cerebral palsy describes a range of neurological impairments and is characterised by disabilities relating to movement and posture. 'Cerebral' refers to the brain and 'palsy' means weakness or lack of muscle control. Cerebral palsy distorts messages from the brain to cause increased or reduced muscle tension. It is a permanent condition that affects people in different ways—some people experience minor motor skill problems, while others may be totally physically dependent. The motor disorders of cerebral palsy are often accompanied by hearing, sight, speech or behaviour disorders, epilepsy, or an intellectual disability (Bax et al. 2005).

The causes of cerebral palsy are the subject of much debate (Australian and New Zealand Perinatal Societies: MacLennan 1995). Cerebral palsy results from brain injury that occurs before cerebral development is complete (Kriger 2006). However, since cerebral development is not complete until two years of age, it is usually not known whether the injury occurred in the antenatal, intrapartum or postnatal period. Around three-quarters of cases are acquired antenatally from largely unknown causes. A growing body of research has suggested that maternal infection during gestation is an important contributor to the development of cerebral palsy (Gibson et al. 2006). Studies have shown that hypoxia (a deficiency of oxygen reaching the tissues of the body) during birth accounts for only 6–10% of cases of cerebral palsy (Australian and New Zealand Perinatal Societies: MacLennan 1995; Kriger 2006). The remainder of cases are acquired postnatally, usually due to brain injury from bacterial meningitis, viral encephalitis, excess bilirubin in the blood (a product produced from the breakdown of red blood cells), motor vehicle collisions, falls, or child abuse (Kriger 2006).

Limited data are available for cerebral palsy. This section includes data on hospital separations and deaths among young people.

### *Hospital separations due to cerebral palsy*

**Table 2.17: Cerebral palsy hospital separations for young people aged 12–24 years, 1996–97 to 2004–05 (rate per 100,000 young people)**

Sex	1996–97	1997–98	1998–99	1999–00	2000–01	2001–02	2002–03	2003–04	2004–05
Males	4.7	4.3	4.0	5.5	6.2	8.9	10.7	10.0	13.7
Females	2.9	3.0	2.7	4.3	5.9	6.7	6.3	6.1	6.9
<b>Persons</b>	<b>3.8</b>	<b>3.7</b>	<b>3.4</b>	<b>4.9</b>	<b>6.1</b>	<b>7.8</b>	<b>8.5</b>	<b>8.1</b>	<b>10.4</b>

*Notes*

1. Age-standardised to the Australian population as at 30 June 2001.
  2. ICD-9-CM code 343 (1996–97 to 1997–98) and ICD-10-AM code G80 (1998–99 to 2004–05).
- Source: AIHW National Hospital Morbidity Database.

- In 2004–05, there were 371 hospital separations for cerebral palsy among young people—a rate of 10 per 100,000 young people (14 and 7 per 100,000 young people for males and females respectively). This is almost a threefold increase in the separation rate since 1996–97 and has resulted from a variation in admission practices.
- Between 1996–97 and 2004–05, separation rates for cerebral palsy have been consistently higher for young males than for young females. In 2004–05, the male separation rate was twice as high as for females.

Hospital separation rates for cerebral palsy were highest among those aged 12–14 years and decreased thereafter with age.

### *Deaths due to cerebral palsy*

**Table 2.18: Cerebral palsy deaths for young people aged 12–24 years, 1995–2004**

Deaths	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Number	30	27	18	17	15	19	16	22	22	21
Rate per 100,000 young people	0.9	0.8	0.5	0.5	0.4	0.6	0.5	0.6	0.6	0.6

*Notes*

1. Age-standardised to the Australian population as at 30 June 2001.
  2. ICD-9 code 343 (1995 to 1996) and ICD-10 code G80 (1997 to 2004).
- Source: AIHW National Mortality Database.

- In 2004, cerebral palsy was the underlying cause of 21 deaths of young people aged 12–24 years, a rate of 0.6 per 100,000 young people. Males accounted for 57% of these deaths.

Cerebral palsy may be a contributor to death rather than the underlying cause. Young people with cerebral palsy most commonly die of respiratory diseases—predominantly pneumonia (Hemming et al. 2006; Reddihough et al. 2001).

### **Cystic fibrosis**

Cystic fibrosis is the most common terminal hereditary disease in the Caucasian population, affecting 1 in every 2,500 births (Graetz et al. 2000). It is a recessive genetic disorder affecting the exocrine glands, which secrete body fluids such as sweat, mucus and enzymes. Cystic fibrosis therefore affects many organs in the body, but primarily the lungs, pancreas, liver and reproductive systems (Quittner et al. 2000). The most serious effects are on the lungs and pancreas. In persons with cystic fibrosis, the mucus in the lungs is thick, sticky and therefore difficult to shift. This causes a persistent cough and results in the clogging of tiny air passages, creating a breeding ground for bacteria. Chronic lung infections result in irreversible lung tissue scarring. The pancreas is also affected in cystic fibrosis, whereby the release of enzymes required for digesting food is prevented.

Major advances in the diagnosis and treatment of cystic fibrosis have prolonged life expectancy into adulthood. The median survival rate for cystic fibrosis is now about 32 years (Goldbeck & Schmitz 2001), but this improved life expectancy requires strict adherence to intensive and time-consuming treatment regimes (Quittner et al. 2000). There is currently no cure for cystic fibrosis and treatment aims to slow the progression of the condition through early screening and better management.

Management of cystic fibrosis can be a significant burden on the patient and family. Daily treatment regimes are time-consuming and include physiotherapy, high-calorie meals and routine medications (Burker et al. 2004). Additionally, chronic lung infections result in repeated hospitalisations, which can adversely affect study and employment (Burker et al. 2004; de Jong et al. 1997). These factors have a substantial impact on the quality of life of those with cystic fibrosis and their families.

Limited data are available for cystic fibrosis. This section presents data on hospital separations and deaths.

#### *Hospital separations due to cystic fibrosis*

**Table 2.19: Cystic fibrosis hospital separations for young people aged 12–24 years, 1996–97 to 2004–05 (rate per 100,000 young people)**

Sex	1996–97	1997–98	1998–99	1999–00	2000–01	2001–02	2002–03	2003–04	2004–05
Males	36.3	38.5	40.4	40.3	37.6	41.2	42.9	37.9	37.0
Females	43.2	45.6	50.3	47.2	47.2	49.9	51.3	42.3	44.3
<b>Persons</b>	<b>40.3</b>	<b>41.3</b>	<b>45.2</b>	<b>43.7</b>	<b>42.3</b>	<b>45.5</b>	<b>47.0</b>	<b>40.0</b>	<b>40.6</b>

*Notes*

1. Age-standardised to the Australian population as at 30 June 2001.
2. ICD-9-CM code 277 (1996–97 to 1997–98) and ICD-10-AM code E84 (1998–99 to 2004–05).

Source: AIHW National Hospital Morbidity Database.

- In 2004–05, there were 1,464 hospital separations for cystic fibrosis among young people—a rate of 41 per 100,000 young people. Hospital separation rates were highest among those aged 15–24 years (46 per 100,000 young people).
- Overall, young females were more likely to be hospitalised for cystic fibrosis than young males (1.2 times as high on average) over the period from 1996–97 to 2004–05. This difference was highest in the 12–14 year age group where the female separation rate was nearly twice as high as the male rate.
- The separation rate among young people did not change significantly between 1996–97 and 2004–05.

Young people with cystic fibrosis require longer than average hospitalisations. In 2004–05, the average length of stay in hospital for young people admitted with a principal diagnosis of cystic fibrosis was 11.7 days, compared to an average stay of 2.6 days for all separations of young people.

#### *Deaths due to cystic fibrosis*

**Table 2.20: Cystic fibrosis deaths for young people aged 12–24 years, 1995–2004**

Deaths	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Number	28	15	30	23	32	26	24	16	12	11
Rate per 100,000 young people	0.8	0.4	0.9	0.7	0.9	0.8	0.7	0.5	0.3	0.3

*Notes*

1. Age-standardised to the Australian population as at 30 June 2001.
2. ICD-9 code 277 (1995 to 1996) and ICD-10 code E84 (1997 to 2004).

Source: AIHW National Mortality Database.

- In 2004 there were 11 deaths due to cystic fibrosis among young people aged 12–24 years—a rate of 0.3 per 100,000 young people (less than 1% of all deaths for this age group in 2004).
- Death rates due to cystic fibrosis decreased by 62% during the 10-year period from 1995 to 2004.

## Epilepsy

Epilepsy is the most common neurological disorder of adolescence. Epilepsy is a condition where a person has recurring seizures that are not triggered by fever or a new injury to the brain. Seizures occur when there is a sudden increase in the activity of the brain, accompanied by altered consciousness and/or behaviour. The cause, type and frequency of seizures vary. The cause is often unknown, but in some people it can be caused by a previous head injury, infections of the brain, other illnesses, or problems during pregnancy or birth (Braunwald et al. 2001). Other risk factors known to contribute to epilepsy include family history, congenital malformation, cerebral palsy, mental retardation and central nervous system infection.

Seizures due to epilepsy can be generalised or partial. A general seizure occurs when abnormal electrochemical activity affects the whole brain at the same time, whereas a partial seizure arises from abnormal electrochemical activity affecting one part of the brain, but may spread to other parts. The particular part of the brain affected by abnormal electrochemical activity determines whether a person will experience an altered state of consciousness, altered body movements, altered sensations or altered behaviour.

Medication can provide seizure control for approximately 70 per cent of people with epilepsy. For some people, surgery is successful if medication fails. Avoiding known triggers can sometimes improve seizure control.

This section presents information on epilepsy prevalence, hospital separations and mortality among young Australians.

### *Prevalence of epilepsy*

Estimates based on the 2004–05 NHS indicate that 20,888 young people aged 12–24 years had epilepsy as a current long-term condition—a prevalence rate of 1%. This is slightly higher than the prevalence rate for the general population (ABS 2006m).

Males accounted for 54% of young people with epilepsy.

### *Hospital separations due to epilepsy*

**Table 2.21: Epilepsy hospital separations for young people aged 12–24 years, 1996–97 to 2004–05 (rate per 100,000 young people)**

Sex	1996–97	1997–98	1998–99	1999–00	2000–01	2001–02	2002–03	2003–04	2004–05
Males	90.8	84.3	87.5	83.1	81.8	80.1	75.4	81.3	78.0
Females	75.7	75.1	76.0	75.3	68.9	70.8	68.9	73.3	72.8
<b>Persons</b>	<b>83.3</b>	<b>79.7</b>	<b>81.8</b>	<b>79.2</b>	<b>75.4</b>	<b>75.5</b>	<b>72.2</b>	<b>77.4</b>	<b>75.5</b>

*Notes*

1. Age-standardised to the Australian population as at 30 June 2001.
  2. ICD-9-CM code 345 (1996–97 to 1997–98) and ICD-10-AM code G40 & G41 (1998–99 to 2004–05).
- Source: AIHW National Hospital Morbidity Database.

- In 2004–05, there were 2,741 hospital separations for epilepsy among young people—a rate of 76 per 100,000 young people. There has been a significant decrease in the separation rate for males by 14% since 1996–97, but no significant change was observed for females.
- Over the period between 1996–97 and 2004–05, young males were more likely than young females to be hospitalised for epilepsy. However, the age-specific separation rate for epilepsy showed that there was no difference between male and female hospitalisation at younger ages (12–19 years) and that among those aged 20–24 years, the male rate was, on average, 1.4 times as high as for females.

Epilepsy hospital separation rates increased with age. In 2004–05, the rate was 64 per 100,000 young people for those aged 12–14 years, 72 per 100,000 young people for those aged 15–19 years and 86 per 100,000 young people for those aged 20–24 years.

### *Deaths due to epilepsy*

**Table 2.22: Epilepsy deaths for young people aged 12–24 years, 1995–2004**

Deaths	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Number	26	29	28	16	32	26	26	26	31	26
Rate per 100,000 young people	0.7	0.8	0.8	0.5	0.9	0.8	0.8	0.7	0.9	0.7

#### Notes

1. Age-standardised to the Australian population as at 30 June 2001.
2. ICD-9 code 345 (1995 to 1996) and ICD-10 code G40 & G41 (1997 to 2004).

Source: AIHW National Mortality Database.

- In 2004, there were 26 deaths of young people due to epilepsy, a rate of 0.7 per 100,000 young people. The majority of these deaths were of young males (67%).
- Epilepsy caused the tenth highest number of deaths of young people in 2004, accounting for 2% of all deaths of young people in that year.
- Between 1995 and 2004, death rates due to epilepsy fluctuated from 0.5 per 100,000 to 0.9 per 100,000 young people.

## Communicable diseases

Communicable diseases are caused by specific infectious agents or their toxic products. The transmission of these diseases can be through contacts with humans, animals or vectors as well as water, food or environments that carry the organism. Some communicable diseases such as pertussis (whooping cough) and tuberculosis are caused by bacteria, while others such as measles, influenza and AIDS are caused by viruses.

Most communicable diseases are acute and are usually managed by a person's immune system or medical treatment, but some can become chronic. For example, hepatitis B and C can have long-term effects on the liver. Improvements in hygiene, better socioeconomic conditions, mass immunisation programs, and the availability of antibiotics, have dramatically reduced the impact of infectious diseases in Australia. Despite these reductions, communicable diseases remain a major threat to human health (AIHW 2006a).

In the past, communicable diseases have been a major contributor to premature death worldwide, but over the last century the incidence and mortality associated with communicable diseases have declined considerably. In the early twentieth century, communicable diseases accounted for around 20% of all deaths. In 2004, they accounted for approximately 4% of deaths in Australia.

Communicable diseases are, however, still a source of ill health and health care use in Australia (AIHW 2006a). Bettering the Evaluation and Care of Health (BEACH) survey data indicate that infections and immunisations make up around 7% of all general practitioner (GP) encounters (AIHW: Britt et al. 2005). A characteristic feature of communicable diseases-related GP visits is that many of them are new problems for the patient. While 38% of all GP visits are for new problems, the proportion of new problems exceeds 70% for communicable diseases (AIHW 2006a).

This section presents data for vaccine-preventable disease, sexually transmissible infections, HIV/AIDS and viral hepatitis. The incidence of communicable diseases in this section comes primarily from data on notifiable diseases compiled by the National Notifiable Diseases Surveillance System (NNDSS). Notification rates for HIV infection come from the National Centre in HIV Epidemiology and Clinical Research. Notifications data need to be interpreted with caution, because not all diseases are notifiable in each state and territory. Furthermore, owing to under-reporting, notifications are likely to underestimate the actual incidence (that is, the number of new cases each year) of disease. Despite these limitations, notifications data are the best available estimates of the incidence of various infectious diseases (ABS 1997; New South Wales. Department of Health. Population Health Division 2005).

### Vaccine-preventable diseases

Vaccine-preventable diseases included in the Australian Standard Vaccination Schedule (ASVS) for young people aged 12–24 years are included in this section—pertussis, rubella, measles, mumps, tetanus, polio, diphtheria, pneumococcal disease and meningococcal disease. Although it is included in the National Immunisation Program, hepatitis B is presented with other types of hepatitis later in this section under the heading ‘Viral hepatitis’.

In Australia, periodic epidemics of pertussis occur every 3–5 years (Yohannes et al. 2006). While immunisation against pertussis is highly effective for children, elimination of the disease is difficult. This is mainly because the level of protection from the childhood vaccine decreases in adolescents and adults and they become an important pertussis reservoir, facilitating transmission to children who have not yet completed the recommended dose of the vaccine (AIHW 2006a).

Measles notifications have declined in Australia following a two-dose vaccination schedule in 1994 (Gidding et al. 2001), the Measles Control Campaign of 1998 (Turnbull et al. 2001) and improved coverage as part of the routine childhood vaccination schedule. Mumps is not a major cause of morbidity or mortality but this can cause some long-term complications.

Rubella notifications have declined greatly since 1995 (AIHW 2006a). Rubella infection in pregnancy can cause fetal death or miscarriage, congenital deformities including deafness, blindness, cardiovascular abnormalities and mental retardation (AIHW 2006a).

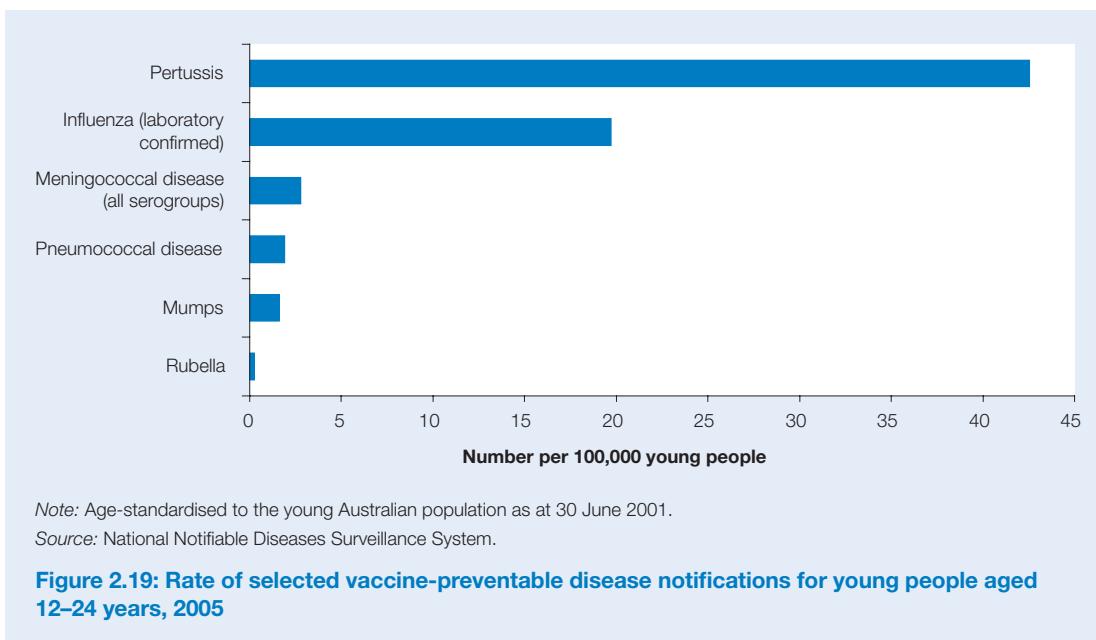
Meningococcal disease is caused by an infection with the bacterium *Neisseria meningitidis* (meningococcus). The disease most commonly affects children under 5 years of age and young adults aged 15–24 years (DoHA 2003). Transmission occurs from person to person by infected droplets and respiratory secretions spread by coughing, sneezing and kissing (Heyman 2004; Tully et al. 2006). Meningococcus can be divided into 13 distinct strains or ‘serogroups’. Most infections in Australia are caused by groups B and C; in 2004, 95% of the meningococcal disease notifications were due to serogroup B and C (Yohannes et al. 2006).

Currently, vaccines are available only for some of the strains and serotypes that cause meningococcal disease. A polysaccharide vaccine that is effective only in children over 2 years of age and adults, and only against groups A, C, Y and W135, has been available for some time. This vaccine is not recommended for routine use because it is not effective in children under 2 years of age, and because the protection is short-lived. In January 2003, the National Meningococcal C Vaccine Program commenced in Australia. This provided a new meningococcal C conjugate vaccine that is more effective than the previously used polysaccharide vaccine to all children and young people aged 1 to 19 years. This is now part of the routine childhood immunisation schedule, with one dose at 12 months of age (Cohen 2003).

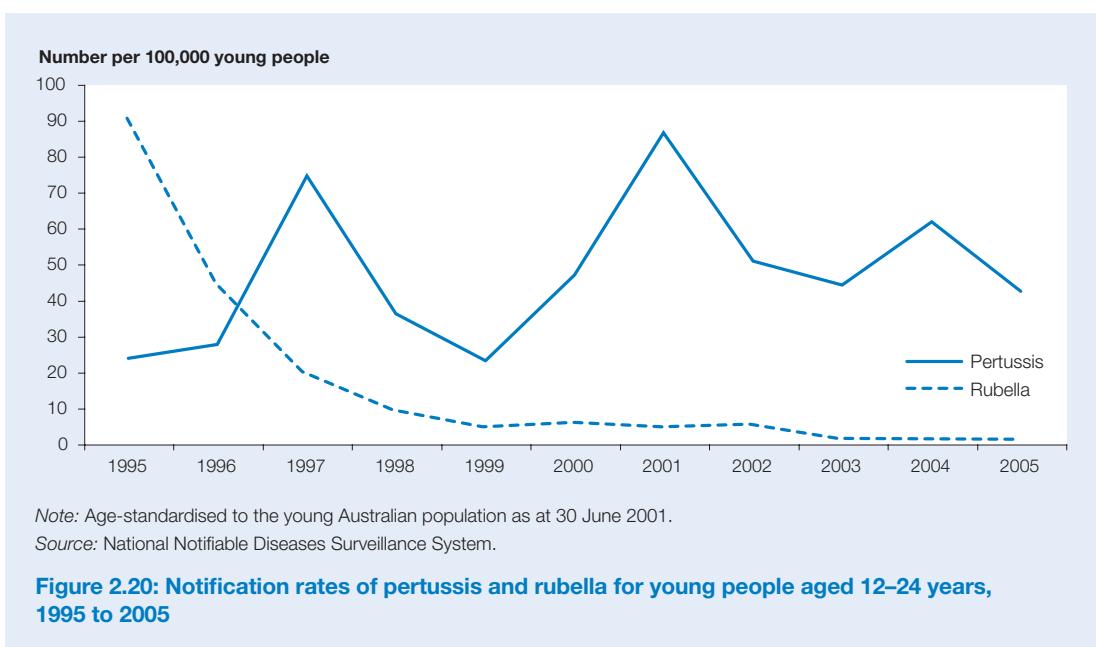
#### INDICATOR:

Incidence of vaccine preventable diseases among young people aged 12–24 years

In 2005, there were no cases of polio, tetanus or diphtheria notified for young people aged 12–24 years, and only 1 case each of measles and *Haemophilus influenza type b* disease were notified.



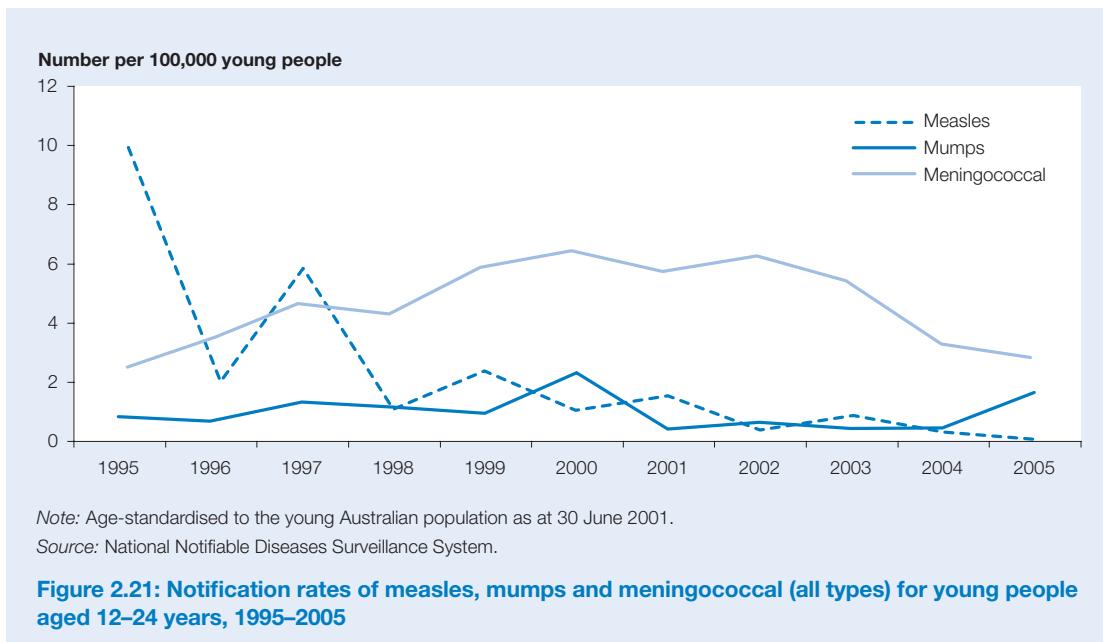
- Pertussis and influenza were the most frequently notified diseases among young Australians. In 2005, there were 1,616 notifications of pertussis and 305 notifications of laboratory-confirmed influenza recorded for young people (42 per 100,000 and 20 per 100,000 young people respectively). The rates of notifications were evenly distributed across all age groups: 12–14, 15–17 and 18–24 years.
- In 2005, there were 105 notifications (2.8 per 100,000 young people) of meningococcal disease for young people in Australia. Of these, only 9 notifications (a rate of 0.2 per 100,000) were for serogroup C.
- Among those aged 12–24 years, the incidence of meningococcal disease was highest among young adults aged 18–24 years (61% of notifications in 2005 were for those aged 18–24 years).



- Between 1995 and 2005, the number of pertussis notifications fluctuated, but there were clear increases in 1997 and 2001. In 2004, there was also an above average number of notifications for pertussis recorded for young Australians. This may have been the result of an outbreak of pertussis occurring in Western Australia in 2004 (Yohannes et al. 2006).

- Since 1995, the rate of rubella notifications declined dramatically from 90 per 100,000 to 0.3 per 100,000 young people in 2005.

The rate of rubella notifications was much higher among young males than females when only females received the vaccination. With the introduction of the Measles, Mumps, Rubella (MMR) vaccine in 1994 for adolescent males as well as females, there has been a substantial decrease in the notification rate, particularly for young males (80.5 per 100,000 to 0.3 per 100,000 young people in 2005). The rate for young females has also declined over this period, from 22.7 per 100,000 to 0.2 per 100,000 young people.



- There were 61 notifications of mumps (less than 2 per 100,000 young people) and 1 case of measles for young people in 2005.
- The rate of notifications for measles has decreased by almost 100% among young people between 1995 and 2005, from 10.2 per 100,000 to 0.03 per 100,000 young people.
- Notification rates for mumps fluctuated between 1995 and 2005, with a peak of 2.3 per 100,000 young people in 2000. Rates then declined until an increase in 2005 to a rate of 1.6 per 100,000 young people.
- Between 1995 and 2005, rates of meningococcal notifications for young people fluctuated, reaching a peak of 6.4 cases per 100,000 young people in 2000. Between 2002 and 2005, the rate of notifications has declined by 55%.

#### *Hospital separations and deaths due to vaccine-preventable diseases*

Very few hospital separations for vaccine-preventable diseases were recorded for young people aged 12–24 years in 2004–05. There were 24 separations (9 males and 15 females) for pertussis, 12 for mumps, 3 for measles and 1 for diphtheria in that period (ICD-10-AM codes A36, A37, B05, B26).

In 2004–05, there were 125 separations for meningococcal infection in young people aged 12–24 years, and over 50% of these separations were for those aged 15–17 years (ICD-10-AM code A39).

There were 23 deaths from meningococcal infection among all Australians in 2004 and 26% of these were for young people aged 12–24 years (4 deaths of young males and 2 of young females) (ICD-10 code A39).

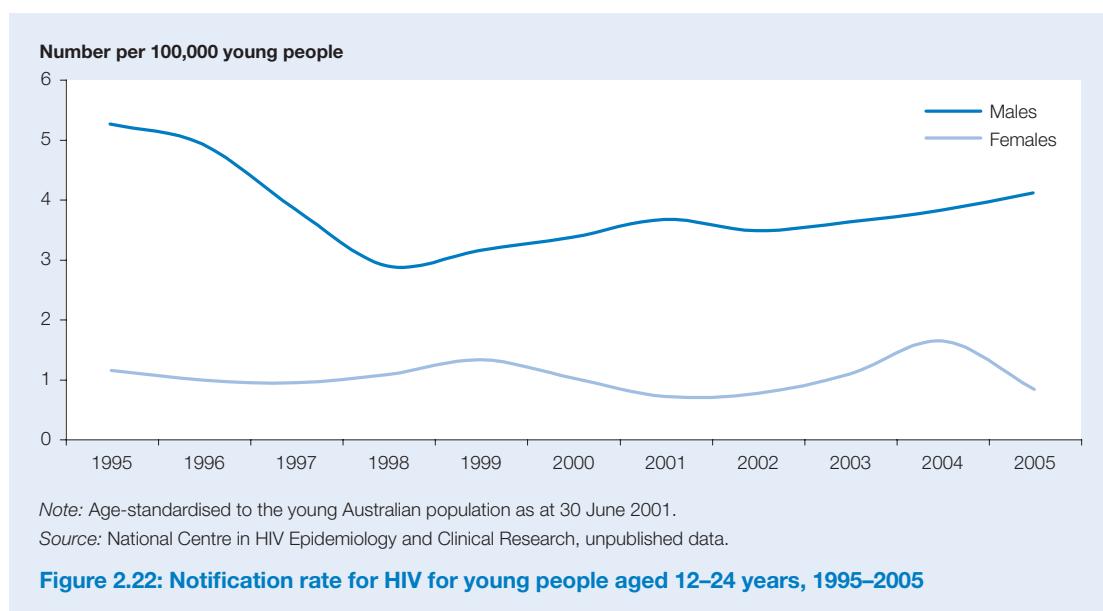
## HIV/AIDS

Acquired immune deficiency syndrome (AIDS) is caused by a retrovirus, the human immunodeficiency virus (HIV). HIV is a bloodborne disease usually transmitted via blood, blood products and bodily fluids, usually through blood contact or sexual contact.

Through the destruction of key cells of the immune system, HIV can reduce human immune function such that relatively minor infections become deadly. Often persons with HIV can be clinically healthy, especially with the latest treatments, and have not necessarily progressed to the symptomatic stage of AIDS. New diagnoses of HIV infection in Australia declined between 1995 and 2000, and then increased over the last few years.

The vast majority of new HIV diagnoses were among males with a history of homosexual contact; relatively small numbers were attributed to injecting drug use or heterosexual contact. HIV prevalence remained below 1% among those attending needle and syringe programs, people entering prison and individuals with a history of heterosexual only contact (National Centre in HIV Epidemiology and Clinical Research 2005).

Survival following the progression to AIDS is low. In cases diagnosed before 1996, average survival was 17 months, but this has increased to 45 months for cases diagnosed since 2001. The availability of antiretroviral treatment has contributed to improved survival. An estimated 53% of people with HIV/AIDS were receiving antiretroviral treatment in 2004. The number of AIDS deaths has declined considerably in the last decade (National Centre in HIV Epidemiology and Clinical Research 2005).



- In 2005, there were 93 HIV notifications for young people aged 12–24 years (78 for males and 15 for females), a rate of 2.5 per 100,000 young people. Of these notifications, 95% were among those aged 18–24 years.
- HIV incidence rates have been consistently higher for males than for females. In 2004, the notification rate for males was 4.1 per 100,000 young people while the rate for females was 0.8 per 100,000 young people.
- For young males, the notification rate increased by 43% since 1998, after a large decline between 1995 and 1998.
- For young females, the notification rate fluctuated between 1995 and 2005, reaching a peak of 1.6 per 100,000 young people in 2004.

In 2004, there were 2 deaths of young people from HIV/AIDS. These were both males aged 20–24 years.

### Viral hepatitis

Viral hepatitis (inflammation of the liver due to viral infection) is caused by a variety of viruses. There are five different types that affect humans: A, B, C, D and E. Types B, C and D are bloodborne (Clarke 2004). The usual ways in which bloodborne diseases are transmitted are through blood contact and sexual contact. Contaminated food or water is a major source of transmission for hepatitis A (AIHW 2006a; Yohannes et al. 2006).

Hepatitis B and C are known to cause chronic infection, which may lead to cirrhosis of the liver or liver cancer. The risk of chronic infection is greatest among those infected as infants, particularly if infected in the perinatal period. Vaccination against hepatitis B has been routine for newborns since 2000.

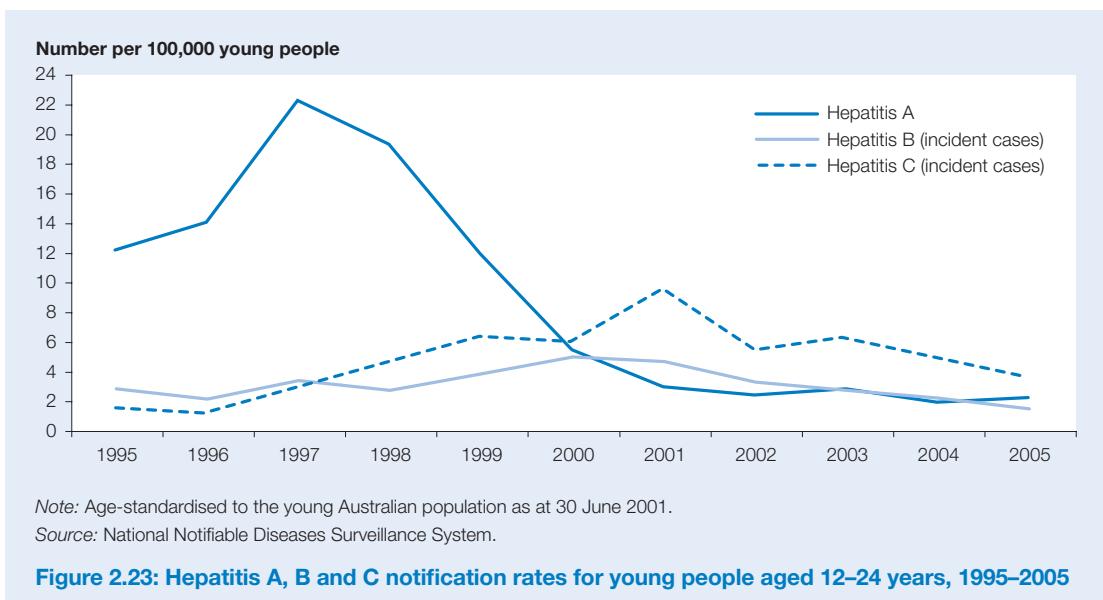
Hepatitis B virus (HBV) is spread through a number of means, including blood, semen or saliva, and may be transmitted from one person to another by unprotected sex with an infected person, sharing needles when injecting drugs, through needle-stick injuries or sharps exposures, or from an infected mother to her infant during birth. Persons at risk of HBV infection might also be at risk of infection with hepatitis C virus (HCV) and HIV/AIDS. HBV is, however, between 50 and 100 times more infectious than HIV because it is more concentrated in an infected person's blood (WHO 2000a).

HCV is a major contributor to chronic liver disease, and has become an important disease in recent years due to its chronic nature. HCV is transmitted mainly through injecting drugs (reuse of unsterilised needles, syringes or through needle sharing). The risk of contracting hepatitis C from a needle-stick or sharps injury from the blood of a person with hepatitis C antibody has been estimated at 0–7% (average 1.8%), compared with 0.3% for HIV infection and 30% for hepatitis B (Victoria. Department of Human Services 2005). HCV has been found in bodily fluids other than blood, but the viral load is thought to be too low for transmission to occur. Infection can be transmitted through blood transfusions and sexual transmission. Mother-to-baby transmission of HCV may also occur, but is less frequent. Ear and body piercing, circumcision, and tattooing can also be modes of transmission, if inadequately sterilised equipment is used. Blood/tissue recipients are also at risk of HCV infection (Yohannes et al. 2006).

No vaccine is currently available to prevent hepatitis C. Efforts to reduce the risk of infections include strategies aimed at reducing HCV transmission through blood transfusions, unsafe injection practices and high-risk behaviours (for example, injecting drug use).

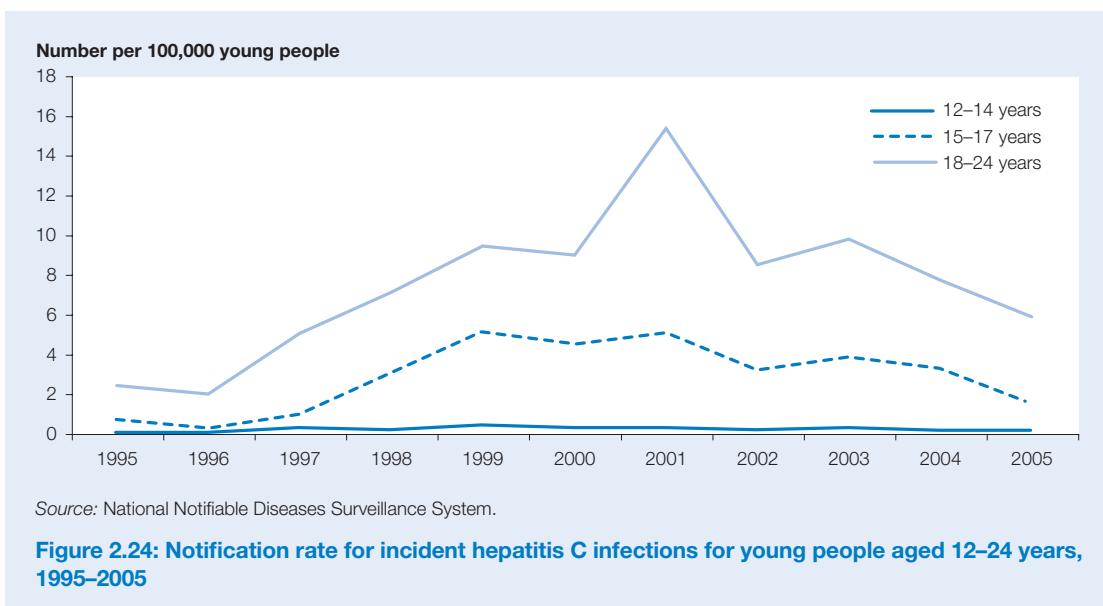
Hepatitis A is an infection of the liver caused by the hepatitis A virus (HAV). The virus is commonly spread from person to person or from contaminated food or water. Illicit drug use is an important risk factor for hepatitis A and may account for a higher notification rate among adolescents and young people. Hepatitis A is also more common among homosexual men and Indigenous young people. In Australia, hepatitis A vaccine is recommended for selected at-risk groups and for people in certain occupations (NHMRC 2003a).

The data for hepatitis B and C notifications presented here are for incident cases only, which require evidence of seroconversion (the development of antibodies to an antigen as a result of infection or vaccination). Therefore, the actual notification rates for hepatitis B and C may be higher than those reported here, due to the exclusion of unspecified hepatitis B and C notifications where laboratory testing of blood for confirmation of seroconversion was not performed.



**Figure 2.23: Hepatitis A, B and C notification rates for young people aged 12–24 years, 1995–2005**

- In 2005, there were 81 hepatitis A notifications for young people in Australia—a rate of 2.1 per 100,000 young people. Since 1997, the rate of hepatitis A notifications has declined dramatically, possibly due to the introduction of the hepatitis A vaccination program to high-risk population groups (Hanna et al. 2004).
- The number of incident (newly acquired) hepatitis B notifications almost halved between 1995 and 2005, from 100 notifications to 55 (from 2.9 per 100,000 in 1995 to 1.4 per 100,000 young people in 2005). Of these notifications, 91% were for young people aged 18–24 years.
- There were 133 incident hepatitis C notifications for young people in 2005. The rate of notification of incident hepatitis C has increased since 1996 from 1.1 per 100,000 young people, reaching a peak of 9.4 per 100,000 in 2001 and then declining again to 3.5 per 100,000 in 2005.



**Figure 2.24: Notification rate for incident hepatitis C infections for young people aged 12–24 years, 1995–2005**

- In 2005, most notifications of hepatitis C among young people were for those aged 18–24 years (88%).
- Hepatitis notifications for young people aged 15–17 years and 18–24 years increased between 1995 and 2001, with a marked peak for those aged 18–24 years. Since then, there has been a decline in the rate of notifications for hepatitis C for both age groups.

Between 1995 and 2005, hepatitis C notifications were generally higher for young males than for young females, although this gap has narrowed and even reversed in recent years. In 2005, the age-standardised young female notification rate was slightly higher than that for young males (3.7 and 3.4 per 100,000 young people respectively).

Age-specific notification rates indicate that among young people aged 15–17 years the rate is higher for females (0.7 and 2.7 per 100,000 for males and female respectively), while among those aged 18–24 years, the rate is higher for males (6.1 and 5.7 per 100,000 for males and females respectively).

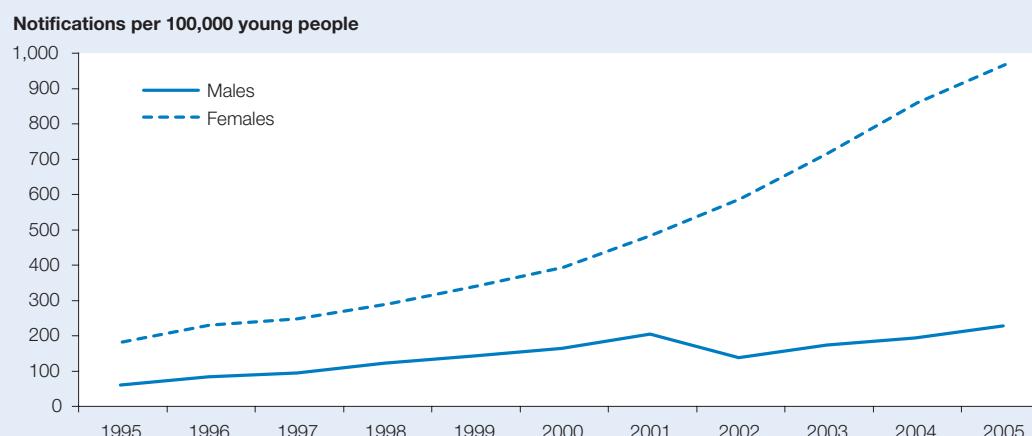
### Sexually transmissible infections

Sexually transmissible infections (STIs) in Australia still remain a major public health concern, contributing to significant long-term morbidity (Bowden et al. 2002; DoHA 2005). Data on STIs collected by the NNDSS include chlamydia, donovanosis, gonococcal infection, and syphilis. In 2005, there were 51,546 STI notifications in Australia. Of these, 25,571 or 50% were for young people aged 12–24 years—a rate of 673 per 100,000 young people. Chlamydia infection was the most commonly reported STI for all people as well as among young people aged 12–24 years (NNDSS 2007).

Chlamydia can potentially affect young people's reproductive health. In women, it can cause cervicitis, upper genital tract infection, tubal infertility, ectopic pregnancy complications and chronic pelvic pain. If left untreated, chlamydia can cause infertility in women. In men, it can cause urethritis and, occasionally if untreated, acute inflammation of the testis and epididymis (Bowden et al. 2002; DoHA 2005).

Syphilis can cause serious health problems in its own right, but the genital sores caused by syphilis in adults make it easier to acquire and transmit HIV infection through unprotected sex with those infected with HIV (Jin et al. 2005).

**INDICATOR:**  
Incidence of notifiable sexually transmissible infections among young people aged 12–24 years



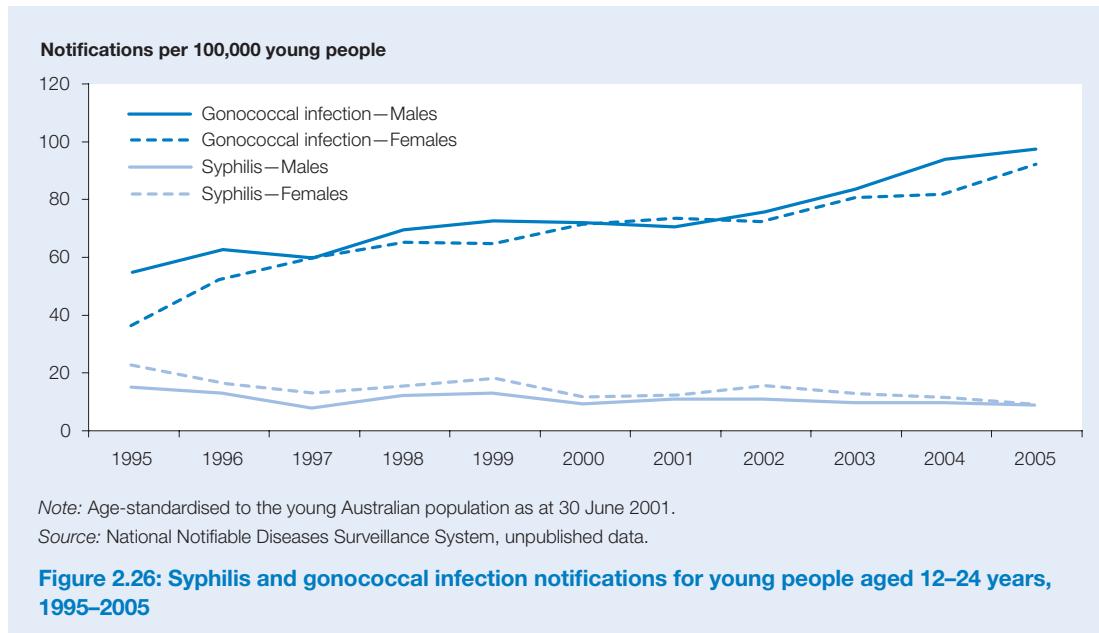
Note: Age-standardised to the young Australian population as at 30 June 2001.

Source: National Notifiable Diseases Surveillance System.

**Figure 2.25: Chlamydia notifications for young people aged 12–24 years, 1995–2005**

- Chlamydia is the most common STI among young people (21,692 notifications in 2005, a rate of 572 per 100,000 young people), in particular, among young women. In 2005, the rate of chlamydia notification was more than 4 times as high in females than males (961 per 100,000 for females compared with 221 per 100,000 young people for males). Over 50% of all chlamydia notifications were for young people in 2005 (21,692 notifications out of 41,305 for the total population).

- The rates of chlamydia notifications for young women have been steadily increasing over time, particularly between 2001 and 2005, when the rate almost doubled . This may be related to increased awareness and diagnosis, although it is possible that young people are increasingly engaging in unprotected sex and frequently changing their sexual partners (AIHW 2003a).



- In 2005, there were 2,212 notifications of syphilis in Australia (NNDSS 2007) and 14% (315 notifications) of these were for young people aged 12–24 years. Syphilis notifications among young people are low and are decreasing. The rate of notifications of syphilis among young people in 1995 was 18 per 100,000, and by 2005, this declined to 8 per 100,000 young people. For both males and females the rate remains very similar.
- There were 3,564 notifications of gonococcal infection among young Australians in 2005—a rate of 93 per 100,000 young people. While gonococcal infection among young people contributed to 14% of all STIs notified in that age group, it accounted for 43% of the total gonococcal infection notifications in Australia in 2005. Notifications of gonococcal infection among young men and women were evenly distributed.
- Notification rates for gonococcal infection have been increasing steadily, with a twofold increase for young people between 1995 and 2005.

#### *Hospital separations for sexually transmitted infections*

Very few young people are hospitalised for STIs. In 2004–05, there were 134 hospital separations of young people for chlamydia infection, and 84 and 8 separations respectively for gonococcal infection and syphilis (ICD-10-AM codes A51–A56).

## Aboriginal and Torres Strait Islander young people

**Table 2.23: Notification rate for communicable diseases among young Indigenous people aged 12–24 years, 2002–2005 (per 100,000 Indigenous young people)**

Communicable disease	2002	2003	2004	2005
Hepatitis A	6.6	7.2	5.4	7.4
Hepatitis B (incidents <sup>(a)</sup> )	4.1	7.2	6.1	4.4
Hepatitis C (incidents <sup>(a)</sup> )	14.1	22.3	16.1	13.3
Influenza (laboratory confirmed)	1.7	8.0	2.3	8.1
Meningococcal (all types excluding C)	3.3	0.8	1.5	0.7
Meningococcal type C	2.5	3.2	0.0	0.0
Mumps	0.0	0.0	0.0	0.0
Pertussis	31.4	30.2	27.6	29.6
Pneumococcal	6.6	11.1	13.0	13.3

(a) Newly acquired infections.

Source: National Notifiable Diseases Surveillance System.

- Of the vaccine-preventable diseases notified for Indigenous young people, the most common was pertussis (40 notifications) with a notification rate of 30 per 100,000 young Indigenous persons in 2005. By comparison, the rate for all young people was 43 per 100,000 young people. Over the last 4 years, the rate of notification for pertussis remained fairly constant among young Indigenous people.
- In 2005, there were 18 cases (a rate of 13 per 100,000) of incident hepatitis C reported for young Indigenous people accounting for 14% of total incidents of hepatitis C reported for young people.

## Sexually transmitted infections (STIs)

**Table 2.24: Notification rate of sexually transmitted infections for young Indigenous people aged 12–24 years, 2002–2005**

Sexually transmitted infection	2002	2003	2004	2005
<b>Chlamydia</b>				
Number	2,210	2,708	2,879	2,791
Number per 100,000 young people	1,827.5	2,154.0	2,208.3	2,066.7
<b>Gonococcal infection</b>				
Number	1,530	1,853	2,029	2,294
Number per 100,000 young people	1,265.2	1,473.9	1,556.3	1,698.6
<b>Syphilis</b>				
Number	347	290	227	177
Number per 100,000 young people	286.9	230.7	174.1	131.1

Source: National Notifiable Diseases Surveillance System.

- Chlamydia and gonococcal infection were the most commonly notified STIs among young Indigenous Australians. In 2005, there were 2,791 chlamydia notifications among young Indigenous people—a rate of 2,067 per 100,000 young Indigenous people—and accounting for 13% of all chlamydia notifications for young people in that year. Gonococcal infection notifications among young Indigenous people accounted for 64% of all gonococcal infection notifications for young people in 2005 (2,294 notifications among young Indigenous people—a rate of 1,699 per 100,000 young Indigenous people).
- There were 177 notifications of syphilis among young Indigenous people, accounting for 56% of the total number notified for young people in 2005. The rate of syphilis notifications has decreased between 2002 and 2005, from 187 to 131 per 100,000 Indigenous young people.

- Between 2002 and 2005, the rates of chlamydia and gonorrhoea notifications among young Indigenous people increased (by 13% and 34% respectively), and the notification rate for syphilis decreased (by 54%). This trend is similar to that occurring for all young Australians, however the chlamydia notification rate among Indigenous young people increased by a much smaller proportion (13% increase for Indigenous compared with a 53% increase for all young people), and the syphilis notification rate decreased by a greater proportion (54% decrease for Indigenous compared with a 34% decrease for all young people).

## Oral health

Oral health affects people both physically and psychologically and can have a significant impact on their quality of life. Oral diseases and, in particular, the resulting missing, damaged or discoloured teeth, affect the people's ability to enjoy life, their appearance, speech, ability to chew and taste food, and social life. The pain associated with dental caries (tooth decay) can interfere with children and young people's daily activities including school work, employment, sleeping and eating (AIHW 2000; Kwan et al. 2005; Peterson et al. 2005; Sheiham 2005).

### Risk factors and prevention

Risk factors for oral diseases are diet and hygiene, smoking, alcohol, stress and risky behaviours causing injuries. A number of these risk factors are also responsible for many chronic diseases. Recent research indicates a relationship between periodontal (gum) disease and stroke, heart disease, and pre-term low-birthweight babies (Reibel 2005; Sheiham 2005). Poor mouth care also contributes to oral cancer. In addition, poor oral health affects the digestive process: physical and chemical activities in the mouth can lead to intestinal failure, irritable bowel syndrome and other problems (U.S. Department of Health and Human Services 2000).

Early preventive strategies (such as water fluoridation) and improved dental hygiene practices (such as regular brushing and flossing, better diet, and improved disease management) help maintain healthy gums and teeth. Good dental health practices established early in childhood contribute to better dental outcomes in adulthood. The level of accessibility and affordability of dental health services is also an important determinant of good dental health.

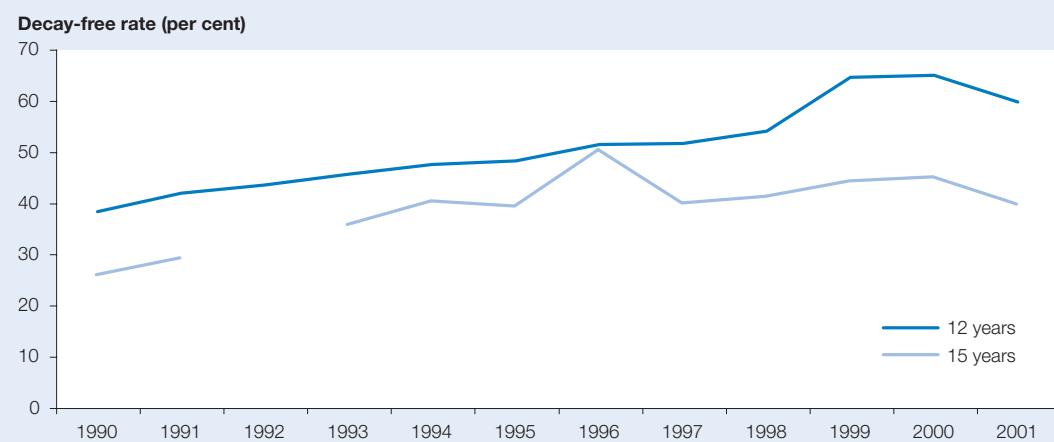
### Oral health of young people

The dental health of young Australians has been improving over time as indicated by the declining proportion of young people with dental decay and the low mean number of decayed teeth. These improvements are due partly to access to fluoridated drinking water and toothpaste with fluoride, and partly due to the availability of a School Dental Scheme, which provides clinical preventative services and ongoing monitoring of child dental health. However, in recent years, there has been a slight increase in the tooth decay experience among children. This increase may be related to changes in dietary patterns, including less drinking of fluoridated mains water and increased sugar consumption.

Dental decay experience is an important measure of dental health, and is expressed as a DMFT score (the number of teeth currently decayed, teeth extracted due to decay and teeth with fillings) (AIHW 2000). The 'DMFT' score describes decay experience in permanent teeth. Another commonly used statistic is the percentage of individuals who are decay free, that is, when DMFT equals 0.

This section provides an overview of oral health among young Australians, looking at caries, using data from the AIHW Dental Statistics Research Unit (DSRU) and the AIHW National Hospital Morbidity database.

**INDICATOR:**  
Proportion of young people decay free at 12 years and 15 years



Note: Data not available for those aged 15 years in 1992.  
Source: AIHW Dental Statistics and Research Unit, various years.

**Figure 2.27: Proportion of young people aged 12 and 15 years who had no caries in their permanent teeth, 1990 to 2001**

- In 2001, 60% of 12 year olds and 40% of 15 year olds were free from clinical tooth decay experience (DMFT=0).
- Both the 12 year olds and 15 year olds experienced an increase in decay-free teeth between 1990 and 2001 (1.7fold increase). However, in 2001, the proportion of young people free from tooth decay at ages 12 and 15 years showed a decline since the previous year.

Dental caries are the second most costly diet-related disease in Australia, with an economic impact comparable with that of diabetes and heart disease (AHMAC 2001). Approximately \$3.7 billion was spent on dental services in 2001–02—representing 5.2% of the total health expenditure (AIHW 2003c).

**INDICATOR:**  
Mean number of decayed, missing or filled teeth (DMFT) at 12 and 15 years



Note: Data not available for those aged 15 years in 1992.  
Source: AIHW Dental Statistics and Research Unit, various years.

**Figure 2.28: Mean caries experience (DMFT score) of young people aged 12 and 15 years, 1999 to 2001**

- In 2001, the mean number of teeth with caries (DMFT) experienced by 12 year olds was 0.95 and for 15 year olds it was 2.23.
- Between 1990 and 1999, the mean DMFT score declined for both 12 and 15 year olds, but since then has increased.

## Dental hospital separations

In 2004–05, there were over 50,824 dental health-related hospital separations among young people aged 12–24 years in Australia—a rate of 1,403 separations per 100,000 young people (1,057 and 1,765 per 100,000 young males and females respectively). The vast majority (82%) of the dental health-related separations were for embedded and impacted teeth. Dentofacial anomalies, including anomalies of tooth position, accounted for 7% and dental decay for 6% of dental separations.

## Dental consultation

Regular dental visits are important for maintaining healthy teeth. According to the 2002 National Dental Telephone Interview Survey, 75% of young people aged 12–17 years had visited a dentist in the 12 months before the survey, while only 53% of those aged 18–24 years had done so. The time since last dental visit for 14% of young people aged 18–24 years had been 2–5 years before the survey, and for 11% it had been 5 years or more. In the same survey, 81% of young people aged 12–17 years reported that they usually visited the dentist at least once a year but only 58% of young people aged 18–24 years reported annual dental visits. These dental visits by both groups were mainly for a check-up rather than for a specific problem—81% and 63% of the visits by those aged 12–17 and 18–24 years respectively were for check-ups (Carter & Stewart 2003).

## Access to fluoridated water

Water fluoridation is an effective public health measure to prevent dental decay. It reduces dental disease, loss of teeth, time away from work or school, and anaesthesia-related risks associated with dental treatment (DPERU 1997). Fluoridation of public water is favoured by public health experts because it is the most equitable way to achieve community-wide exposure to the caries prevention effects of fluoride.

**Table 2.25: Proportion of young people with access to fluoridated water by state/territory of residence**

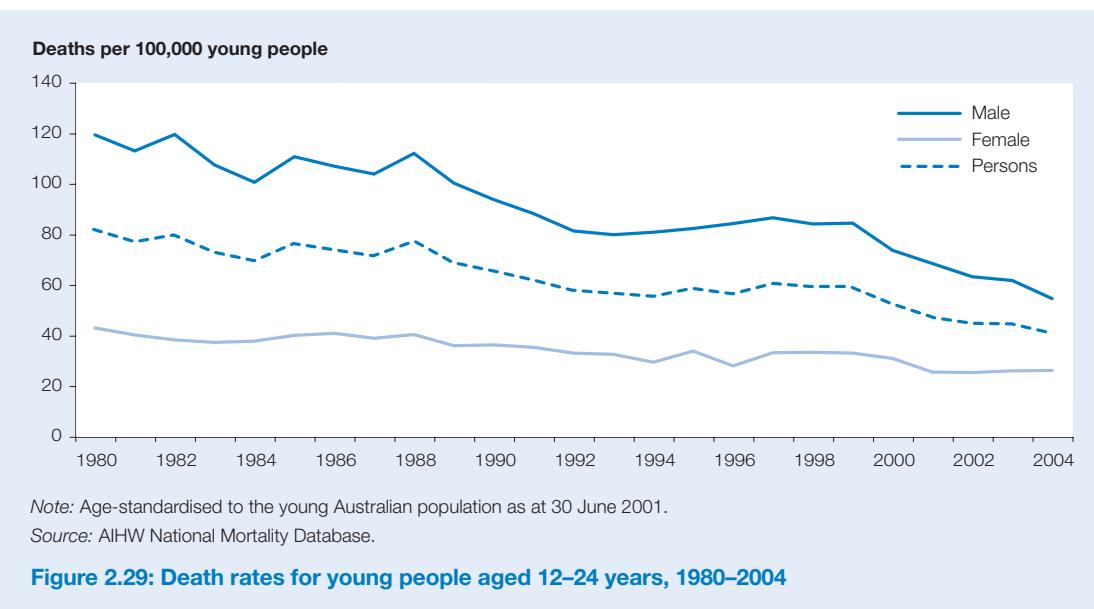
State/territory	Per cent
New South Wales	89.8
Victoria	75.3
Queensland	4.7
Western Australia	90.1
South Australia	82.6
Tasmania	94.7
Australian Capital Territory	100.0
Northern Territory	84.2

Source: AIHW Dental Statistics and Research Unit, unpublished data.

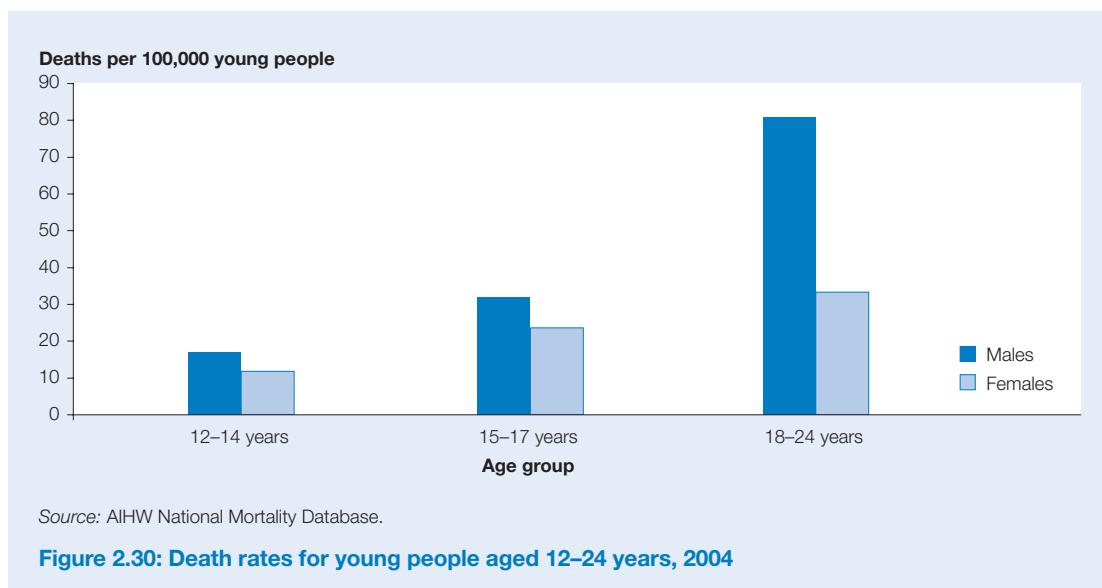
Most young people live in areas with access to fluoridated water, but there are some parts of Australia without fluoride in the public water supply. This is the case in most parts of Queensland and some rural areas of Victoria.

## 2.4 Deaths

Death rates and causes of death are key indicators of the health of a population, and are important in the planning of public health care. They not only reflect circumstances around the time of death, but also provide some insight into changes in social and environmental conditions, medical interventions, lifestyles and trends in underlying risk factors. This section describes the patterns of mortality among young Australians, examining causes of death, age and sex patterns, differences among certain groups of the population, and recent and long-term trends.



- In 2004, there were 1,470 deaths among young Australians aged 12–24 years—a rate of 41 deaths per 100,000 young people. Males accounted for 69% of all deaths among those aged 12–24 years (1,012 deaths).
- Deaths among 12–24 year olds represented 1.1% of all deaths in 2004, a decrease since 1980, when 12–24 year olds accounted for 2.5% of all deaths.
- Between 1980 and 2004, death rates have halved among those aged 12–24 years (from 82 per 100,000 to 41 per 100,000 young people respectively), representing an average annual decrease of 2.5%.



- Male death rates have been consistently higher than those for females over the last 25 years, however, the ratio of male to female death rates has been falling over this period from 2.8 in 1980 to 2.1 in 2004. In accordance with this, the decrease in the death rate was greater for males than for females between 1980 and 2004 (54% compared with 39%).
- The age pattern of mortality among young people shows that many more deaths occur during early adulthood (18–24 years) than in the younger ages (12–17 years). Three-quarters of all deaths of young people in 2004 occurred among those aged 18–24 years, despite this age group making up just over 50% of the 12–24 year old population. Of the remaining deaths, 15% occurred among 15–17 year olds and 8% among 12–14 year olds.
- Male death rates were higher than female death rates in each age group. This difference was largest among those aged 18–24 years, where the male death rate was almost 2.5 times that of females.

Between 1980 and 2004, death rates declined faster (59% decline) among 15–17 year olds than among those aged 12–14 years (54%) and 18–24 years (48%). This pattern was observed for males, however, among females the greatest fall occurred among 12–14 year olds (51% compared with around 37–38% among 15–17 and 18–24 year olds).

## Major causes

Patterns of mortality among young Australians are distinct from other age groups. For example, the leading causes of death for all ages are circulatory diseases (ischaemic heart disease and cerebrovascular disease), while for young people aged 12–24 years, injury and poisoning are the leading causes of death (specifically land transport accidents and intentional self-harm (suicide)) (AIHW 2005h). It is therefore important to understand the major causes contributing to the deaths of young Australians in order to plan targeted public health interventions for this age group.

**Table 2.26: Leading causes of death<sup>(a)</sup> in young people aged 12–24 years, 2004**

<b>Cause of death</b>	<b>Male</b>		<b>Female</b>		<b>Persons</b>	
	<b>Number</b>	<b>Per cent</b>	<b>Number</b>	<b>Per cent</b>	<b>Number</b>	<b>Per cent</b>
Land transport accidents	322	31.8	120	26.2	442	30.1
Intentional self-harm (suicide)	202	20.0	70	15.3	272	18.5
Accidental poisoning	56	5.5	18	3.9	74	5.0
Symptoms, signs and ill-defined conditions	41	4.1	15	3.3	56	3.8
Malignant neoplasms of lymphoid, haematopoietic and related tissue	24	2.4	16	3.5	40	2.7
Accidental threats to breathing	24	2.4	16	3.5	40	2.7
Accidental drowning and submersion	26	2.6	4	0.9	30	2.0
Congenital malformations, deformations and chromosomal abnormalities	11	1.1	18	3.9	29	2.0
Malignant neoplasm of brain	14	1.4	14	3.1	28	1.9
Epilepsy and status epilepticus	16	1.6	10	2.2	26	1.8
Other	276	27.3	157	34.3	433	29.5
<b>All deaths</b>	<b>1,012</b>	<b>100.0</b>	<b>458</b>	<b>100.0</b>	<b>1,470</b>	<b>100.0</b>

(a) Leading causes of death were determined using the classifications developed by Becker et al. 2006.

Note: ICD-10 codes: land transport accidents (V01–V89), intentional self-harm/suicide (X60–X84), accidental poisoning (X40–X49), symptoms, signs and ill-defined conditions (R00–R99), malignant neoplasms of lymphoid, haematopoietic and related tissue (C81–C96), accidental threats to breathing (W75–W84), accidental drowning and submersion (W65–W74), congenital malformations, deformations and chromosomal abnormalities (Q00–Q99), malignant neoplasm of brain (C71), epilepsy and status epilepticus (G40,G41).

Source: AIHW National Mortality Database.

- In 2004, the leading cause of death for young Australians was land transport accidents (442 deaths or 30% of all deaths in this age group). This was followed by intentional self-harm (suicide), with 272 deaths (19%), and accidental poisoning, with 74 deaths (5%). These three causes accounted for over 50% of all deaths among 12–24 year olds and are all types of injury and poisoning (see also *Injury and poisoning* in Part 2 of this report).
- Cancers also featured among the leading causes of death for young Australians. Malignant neoplasms of lymphoid, haematopoietic and related tissue were responsible for 40 deaths in 2004 (3% of all deaths), while malignant neoplasms of the brain accounted for 28 deaths (2% of all deaths).

## Population groups

**Table 2.27: Death rates<sup>(a)</sup> for young people by Indigenous status, regional status and socioeconomic status (per 100,000)**

Population group	Male		Female		Person	
	Number	Rate	Number	Rate	Number	Rate
<b>Indigenous status, <sup>(b)</sup> 12–24 years, 2002–2004</b>						
Indigenous	183	244.8	90	124.2	273	184.5
Non-Indigenous	1,250	61.9	510	26.8	1,760	44.8
<b>Regional status, 15–24 years, 2002–2004</b>						
Major Cities	1,687	58.1	682	24.4	2,369	41.5
Inner Regional	708	88.5	267	34.8	975	62.5
Outer Regional	407	105.8	142	40.7	549	75.1
Remote	70	110.2	37	69.6	107	91.6
Very Remote	124	284.9	36	97.9	159	198.5
<b>Socioeconomic status, 15–24 years, 2000–2002</b>						
Quintile 1 (most disadvantaged)	752	89.7	324	40.6	1,076	65.8
Quintile 2	637	81.9	229	31.1	866	57.3
Quintile 3	600	74.2	231	30.4	831	53.0
Quintile 4	569	66.4	206	25.0	775	46.1
Quintile 5 (least disadvantaged)	415	48.7	166	20.0	581	34.9

(a) Age-standardised to the Australian population as at 30 June 2001. Rates are per 100,000 young people.

(b) For data quality reasons, data are for Queensland, Western Australia, South Australia and the Northern Territory only. The data presented here are not necessarily representative of the jurisdictions excluded.

Source: AIHW National Mortality Database.

## Aboriginal and Torres Strait Islander young people

- In 2002–2004, there were 273 deaths among Aboriginal and Torres Strait Islander people aged 12–24 years in Queensland, Western Australia, South Australia and the Northern Territory, a rate of 158 per 100,000 young people.
- The death rate among young Indigenous Australians was just over 4 times that of young non-Indigenous Australians. For young Indigenous females, the rate was 4.6 times that of non-Indigenous females, while young Indigenous males were 4.0 times as likely to die as non-Indigenous males.
- The death rate for Indigenous males was almost twice that of Indigenous females (209 compared to 107 per 100,000 young Indigenous people).

See Part 4 of this report for further information on Indigenous mortality.

## Regional status

- Death rates for young Australians increase substantially with remoteness, with the rate for Very Remote areas almost 5 times that for Major Cities in 2002–2004 (199 per 100,000 compared to 42 per 100,000 young people aged 15–24 years). The gap in death rates between those living in Major Cities and Very Remote areas has widened among those aged 15–24 years since 1997–99, when the rate in Very Remote areas was 2.7 times that for Major Cities (166 per 100,000 compared to 61 per 100,000 young people). The increasing difference in the rates is due to a decline in the death rate in Major Cities and an increase in Very Remote areas.
- The difference in death rates between those living in Very Remote areas and Major Cities was greater for 15–19 year olds than for 20–24 year olds (death rates in Very Remote areas 5 times as high for 15–19 year olds compared with 4 times as high for 20–24 year olds).

A number of factors contribute to higher death rates outside of Major Cities, including limited access to health services, occupational hazards, lower socioeconomic status and hazards associated with driving outside of major cities (ABS & AIHW 2001; AIHW 2003e). Rates of smoking, physical activity, risky alcohol consumption and poorer nutrition are also higher outside of Major Cities. This could adversely affect health in those areas (AIHW 2003e).

The higher death rates in Very Remote areas is also related to the proportionally large number of Indigenous young people in these areas (young Indigenous Australians account for more than 50% of all young people in Very Remote areas), who generally have much poorer health status (ABS & AIHW 2001; AIHW 2003e).

## Socioeconomic status

- In 2000–2002, young people aged 15–24 years in the most disadvantaged areas of Australia had death rates almost twice as high as those from the least disadvantaged areas (66 per 100,000 compared to 35 per 100,000 young people aged 15–24 years).



# Part 3:

## Factors influencing health

Part 2 of this report looked at current health status and outcomes of young Australians and, where possible, long-term health trends and the differences in population groups. Part 3 presents information on factors that contribute to young people's health and wellbeing.

As mentioned in Part 2, young Australians are generally healthy. However, there are some key areas of concern, including mental health, chronic diseases such as asthma and diabetes, abuse, neglect and injuries. To a large extent, these are the result of a combination of factors, such as human biology, living environment, and socioeconomic factors, modified by health interventions and other measures. These factors can either raise or lower the level of health in a population or individual and can help explain some of the health differentials that exist in populations. They also provide information required for forming policies and strategies on preventing disease, illness and injury.

Childhood and adolescence are periods of rapid development, and are influential ages for health, health behaviour and overall wellbeing. During this period, it is important to reduce the factors that adversely affect the health of young people and to promote factors that enhance health gains. Current research indicates that much of the disease burden results from a complex interplay of environmental, social, economic and cultural factors in childhood and adolescence, and that their effect is continued well into adult life (AIHW 2005i; CIHI 2005; Eckersley et al. 2006).

Health behaviours of young people, including levels of physical activity, eating habits, substance use (tobacco, alcohol and drugs) and sexual practices are, also important determinants of their current and future health status. Adolescence in particular is an important stage of life, when young people are establishing an identity, autonomy, intimacy and becoming comfortable with their own sexuality. Young people can be heavily influenced by their peers, and social pressures may play a part in their decision to experiment with smoking, alcohol and other drugs, as well as sexual activities. The consequences of young people's behaviour can affect their education, employment, as well as their overall health and wellbeing.

Environmental conditions can influence health both positively and negatively. For example, clean air, food and water and safe human-made environments are beneficial to health and wellbeing, while inadequate housing and exposure to unsafe water and environmental smoking can negatively affect health (AIHW 2006a).

A number of research articles have shown the effect of socioeconomic status on health (for example, Eckersley et al. 2001; Eckersley et al. 2006; Glover et al. 2004; Turrell & Mathers 2001). Current research suggests that as socioeconomic disadvantage increases, there is a parallel increase in mortality, from both avoidable and other causes, and morbidity, as well as changes in behaviours and risk factors that affect health outcomes, such as the level of smoking, exercise and type of diet.

Families and communities make an important contribution to young people's health. Family functioning is an important predictor of academic and behavioural outcomes (Sawyer et al. 2000; Zubrick et al. 1995). Coercive parenting styles, poorer family cohesion and family conflict are associated with increased risks of disruptive behaviour and depressive illness. Children and young people living in low-income families or with parents who have a disability or mental illness can experience poor family functioning. Poor family functioning is associated with increased risks of insecure attachment and worse health outcomes (Wise 2003).

This part of the report provides data on a number of indicators in the following areas that influence the health and wellbeing of young people:

- health behaviours (physical activity, food habits and eating behaviour, sun protection, substance use, sexual behaviour and reproductive health).
- environmental factors (passive smoking, household overcrowding)
- socioeconomic factors (education, employment and income)
- family and community factors (parental education, employment, income, health status, family cohesion, abuse and neglect, homelessness, violence, juvenile justice and imprisonment, volunteering).

## 3.1 Health behaviours

Young people's health behaviour is an important determinant of both their current and future health status. Health behaviours are modifiable actions taken by young people that affect their health either positively (for example physical activity) or negatively (smoking). Health-related behaviours can impact on health in the short term and/or long term. Youth is a critical time for the development of health behaviours, as the patterns that develop when people are young often continue into adulthood (Dimitrakaki & Tountas 2006; WHO 2004).

Health behaviours that accounted for the greatest burden of disease and injury in Australia in 2003 included tobacco smoking, physical inactivity, alcohol consumption, use of illicit drugs, lack of fruit and vegetables and unsafe sex (AIHW 2006a). Most of this burden is from the long-term effects of these health behaviours, which will affect young people later in life, apart from illicit drugs and alcohol, which are the risk factors accounting for the greatest amount of burden among young people aged 15–24 years (Begg et al. 2007). This section reports on major health-related behaviours, including overweight, physical activity, nutrition, sun protective behaviour, substance use, and sexual and reproductive health behaviour affecting young people today.

Lack of physical activity and poor food habits are frequently cited as being prime contributors to rising obesity levels in society. Sun protection is also an important health behaviour, having a strong link to later skin cancer occurrence.

Illicit and licit drug use can cause both short- and long-term health problems. Those who initiate drug use early are more likely to continue into future illicit and problematic drug use (Loxley et al. 2004). Tobacco smoking is usually established during adolescence, is often a precursor to other drug use and is the leading cause of premature death and illness in the developed world (Tyas & Pederson 1998; WHO 2004). Alcohol use is common in most cultures and is an accepted part of adulthood. However, if misused, it is related to injuries and long-term health problems (WHO 2004). Indicators relating to alcohol and tobacco use among young people are presented, along with the prevalence of the use of a range of other legal and illegal substances that can also cause harmful effects to young people, including marijuana, ecstasy, amphetamines and petrol.

As young people enter into adolescence and experience the changes associated with puberty, sexual health behaviours become an important part of their lives. With the commencement of sexual activities, teen pregnancies and sexually transmitted infections become primary health concerns.

### Weight

Overweight and obesity in young people are linked to a range of immediate and long-term health problems. In the short term, overweight and obesity impacts on young people's psychological wellbeing, and increases the risk of developing cardiovascular conditions, asthma and Type 2 diabetes (Alberti et al. 2004; Reilly 2005; Wardle & Cooke 2005). Long-term health consequences include adult obesity, increased rates of coronary heart disease, diabetes, certain cancers, gall bladder disease, osteoarthritis, and endocrine disorders (Lobstein et al. 2004; Reilly 2005). Obesity in adolescence is also associated with social isolation, and lower educational and income attainment throughout life (Christoffel & Ariza 1998; Schwimmer et al. 2003).

Overweight and obesity are measured using the body mass index (BMI), which is the ratio of weight in kilograms to the square of height in metres ( $\text{kg}/\text{m}^2$ ). The most recent national data on the prevalence of overweight and obesity in Australian young people based on measured weight and height were from the ABS 1995 National Nutrition Survey (NNS). According to the NNS, 20% of young people aged 12–24 years were overweight and a further 8% were obese.

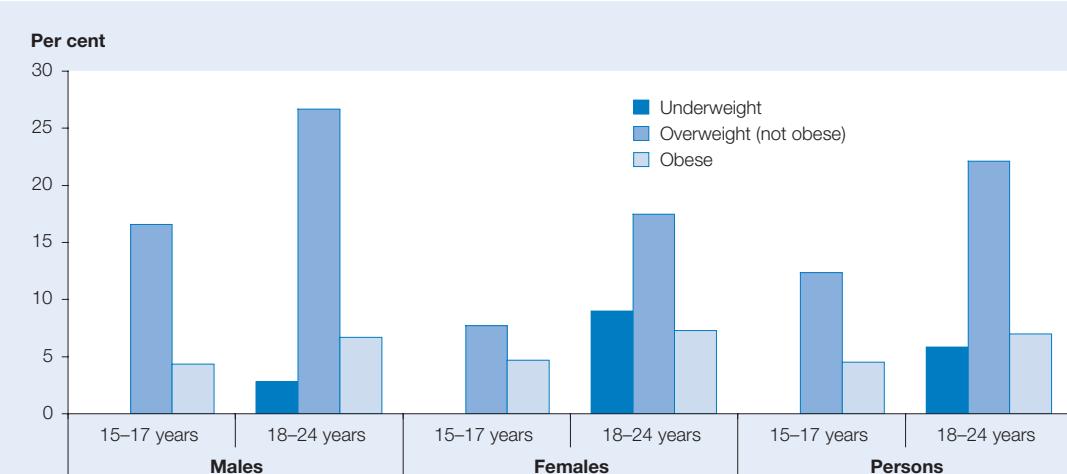
More recently, the NSW Schools Physical Activity and Nutrition Survey (SPANS) 2004 found that 18% of boys in Year 8 were overweight and a further 8% were obese. Of boys in Year 10, 20% were overweight and a further 7% were obese. Of girls in Year 8, 19% were overweight and a further 5% were obese. Significantly fewer girls than boys in Year 10 were overweight or obese, with 15% overweight and a further 4% obese (Booth et al. 2006).

Recent BMI data based on self-reported (rather than measured) height and weight are available from the ABS 2004–05 National Health Survey. Data from this survey were used to categorise young people into the following groups: underweight, acceptable weight, overweight but not obese, and obese. Age- and sex-appropriate BMI cut-offs as proposed by Cole et al. (2000) were used for 15–17 year olds. Note that there is no underweight category for young people less than 18 years of age. For young people aged 18 years and above, BMI cut-offs according to the International Classification of adult underweight, overweight and obesity were used (WHO 2000b).

#### INDICATOR:

The proportion of young people who are overweight or obese

According to the ABS 2004–05 NHS, 25% of young people aged 15–24 years were overweight or obese. This compares with a prevalence rate of 49% for the total population aged 15 years or over (ABS 2006m). An estimated 1 in 4 males (24%) and 1 in 7 females (15%) aged 15–24 years were overweight but not obese. A further 6% of males and 7% of females in the same age group were considered obese.



#### Notes

1. There is no agreed BMI score for underweight for 15–17 year olds.
  2. For ages 15–17 years, age appropriate BMI cut-offs for overweight and obese proposed by Cole et al. (2000) were used.
- Source: ABS 2004–05 National Health Survey, unpublished data.

**Figure 3.1: Proportion of young people aged 15–24 years who are underweight, overweight or obese, 2004–05**

- In 2004–05, young people aged 18–24 years were more likely than those aged 15–17 years to be overweight but not obese (22% compared with 12%). The proportion of obese 18–24 year olds was also slightly higher than the proportion of obese 15–17 year olds (7.0% compared with 4.5%).
- Nearly 6% of young people aged 18–24 years were classified as underweight. Of these, three-quarters (76%) were females.

#### Prevalence trends

The proportion of overweight (excluding obese) young people aged 15–17 years was similar between 2001 and 2004–05 (12.6% and 12.4% respectively), while the prevalence of obesity increased slightly from 3.3% to 4.5%.

Among 18–24 year olds, the prevalence of overweight (excluding obese) increased from 17% in 1995 to 22% in 2004–05, and the prevalence of obesity increased from 5% to 7%. Over the same period, the proportion of 18–24 year olds who were underweight declined from 8% to 6%.

These results are consistent with studies that have shown that the prevalence of overweight and obesity has risen markedly in recent years (Booth et al. 2006).

### Aboriginal and Torres Strait Islander young people

BMI data (based on self-reported height and weight) for Indigenous 15–24 year olds are available from the ABS 2004–05 National Aboriginal and Torres Strait Islander Health Survey (NATSIHS).

**Table 3.1: Indigenous Australians aged 15–24 years by BMI category, 2004–05 (per cent)**

	Males		Females		Persons
	15–17 years	18–24 years	15–17 years	18–24 years	15–24 years
Underweight	n.a.	4.3	n.a.	7.8	(a) 6.1
Overweight (not obese)	12.2	26.6	13.9	15.5	17.8
Obese	7.5	15.2	6.4	14.7	11.9

(a) Underweight is for 18–24 year olds only.

n.a. Not available.

#### Notes

- There is no agreed BMI score for underweight for 15–17 year olds.
- For 15–17 year olds, age appropriate BMI cut-offs for overweight and obese proposed by Cole et al. (2000) were used.

Source: AIHW analysis of ABS 2004–05 National Aboriginal and Torres Strait Islander Health Survey confidentialised unit record file.

- According to the ABS 2004–05 NATSIHS, 18% of young Indigenous people aged 15–24 years were overweight but not obese (21% of males, 15% of females) and 12% were obese (12% of both males and females).
- Among Indigenous young people, overweight and obesity prevalence was higher among 18–24 year olds compared with 15–17 year olds. Obesity prevalence for 18–24 year olds was approximately twice that for 15–17 year olds (15% compared with 8% for males and 15% compared with 6% for females).
- Overweight and obesity rates were generally similar for males and females up until age 18; however, a much greater proportion of males aged 18–24 years were estimated to be overweight but not obese (27%) than females (16%).
- Approximately 6% of 18–24 year olds were estimated to be underweight, two-thirds of which were females.

Overweight and obesity prevalence estimates from the ABS 2004–05 NATSIHS can be compared with prevalence estimates for all 15–24 year olds from the ABS 2004–05 NHS. While the prevalence of overweight (but not obese) was slightly lower among young Indigenous males compared with all young males (21% compared with 24%), the prevalence of obesity was twice as high (12% compared with 6%). The prevalence of obesity was also higher among young Indigenous females compared with all young females (12% compared with 7%). There was no difference in the overweight (but not obese) prevalence rates for Indigenous females and all young females (both 15%).

### Physical activity

Physical activity is important in maintaining good health. Regular physical activity reduces cardiovascular risk in its own right and also improves levels of cardiovascular risk factors such as overweight, high blood pressure, low levels of HDL (the ‘good’ cholesterol) and Type 2 diabetes. In the long-term, it helps protect against some forms of cancer, and strengthens the musculoskeletal system, helping to reduce the likelihood of osteoporosis (low bone-mineral density) and the risk of

falls and fractures (AIHW 2006a). Taking part in physical activity also improves mental wellbeing (in both the short term and longer term) by reducing feelings of stress, anxiety and depression (Dunn et al. 2001).

The National Physical Activity Guidelines for Australians (AIHW 2003; DHAC 1999; DoHA 2004a, 2004b) sets out the amount of physical activity that should be taken by children, adolescents and adults if they are to gain health benefits. Those who participate in lower-than-recommended levels of physical activity have an increased risk of mortality and morbidity from a range of diseases and conditions.

The National Physical Activity Guidelines recommend at least 60 minutes of moderate to vigorous physical activity every day for young people aged under 18 years, and at least 30 minutes of moderate-intensity physical activity on most, preferably all, days of the week for adults aged 18 years and over. Examples of moderate-intensity activity are brisk walking, swimming, doubles tennis and medium-paced cycling. More vigorous physical activity includes jogging and active sports like football and basketball (AIHW 2003d).

Self-reported physical activity data are available for young people aged 15–24 years from ABS National Health Surveys. Box 3.1 describes how activity levels are defined in ABS National Health Surveys.

### **Box 3.1: How exercise levels are defined in National Health Surveys**

*Exercise levels reported in ABS National Health Surveys are based on frequency, intensity (i.e. walking, moderate exercise and vigorous exercise) and duration of exercise (for recreation, sport or fitness) in the two weeks prior to the interview. From these components, an exercise score was derived using factors to represent the intensity of the exercise. Scores were grouped into the following four categories:*

Sedentary Less than 100 mins (includes no exercise/ sitting in one place for extended periods of time)

Low 100 mins to less than 1600 mins

Moderate 1,600–3,200 mins, or more than 3,200 mins but less than 2 hours of vigorous exercise

High More than 3,200 mins and 2 hours or more vigorous exercise

Source: ABS 2006m.

**Table 3.2: Level of physical activity based on self-reported activity type and duration by age and sex, 2004–05 (per cent)**

<b>Exercise level</b>	<b>15–17 years</b>		<b>18–19 years</b>		<b>20–24 years</b>		<b>15–24 years</b>	
	<b>Males</b>	<b>Females</b>	<b>Males</b>	<b>Females</b>	<b>Males</b>	<b>Females</b>	<b>Males</b>	<b>Females</b>
Moderate to high	54.3	34.1	47.3	28.1	41.1	28.9	46.3	30.3
Low	26.7	36.1	25.1	37.4	35.0	39.6	30.6	38.1
Sedentary	18.9	29.8	27.5	34.5	24.0	31.5	23.1	31.6

Source: AIHW analysis of ABS 2004–05 National Health Survey confidentialised unit record file.

- In 2004–05, only 46% of males and 30% of females aged 15–24 years participated in levels of physical activity recommended in the national guidelines to obtain a health benefit. More young females (32%) than young males (23%) were sedentary (undertook no or very low levels of physical activity) or undertook low levels of physical activity (38% of females compared with 31% of males).
- Overall, young males were more likely than young females to undertake moderate to high levels of physical activity. However, even among males, the proportion undertaking physical activity at recommended levels declined at older ages.

#### **INDICATOR:**

The proportion of young people who are meeting recommended physical activity guidelines

- Only young males aged 15–17 years exceeded 50% participation in moderate to high levels of physical activity.

The NSW Schools Physical Activity and Nutrition Survey (SPANS) 2004 provides self-reported physical activity data for students in Years 6, 8 and 10 (with a mean age of 11.3, 13.3 and 15.3 years respectively).

**Table 3.3: Proportion of boys and girls in Years 6, 8 and 10 participating in recommended daily levels of physical activity by school term, NSW, 2004 (per cent)**

<b>School Year</b>	<b>Summer term</b>		<b>Winter term</b>	
	<b>Boys</b>	<b>Girls</b>	<b>Boys</b>	<b>Girls</b>
Year 6	88.8	80.0	83.8	72.4
Year 8	87.3	76.8	79.9	66.2
Year 10	77.9	59.8	76.7	54.5

Source: Booth et al. 2006.

- Self-reported data from the NSW SPANS 2004 indicate that, in summer, almost 90% of boys and 80% of girls in Years 6 and 8 and around 80% of boys and 60% of girls in Year 10 met the recommended level of at least one hour of moderate-to-vigorous-intensity physical activity per day.
- Participation in the required level of physical activity by students was somewhat lower during winter. Around 80% of boys in all Years, 70% of girls in Years 6 and 8 and 55% of girls in Year 10 met the recommended levels in winter.
- Consistent with results from the 2004–05 National Health Survey, physical activity rates participation rates decrease with age, particularly for girls.

The same survey also found that between 1985 and 2004, there has been a significant increase in the participation of physical activity at recommended levels by boys and girls in Years 8 and 10. The increase for boys in Year 8 was just over 15% and around 20% for boys in Year 10. The increase for Year 8 girls was just under 25%, and for Year 10 girls, it was about 20%. In all cases these increases were highly statistically significant (Booth et al. 2006).

In addition to increasing their physical activity, it is important for young people to reduce the time they spend in sedentary activities. Even when recommended levels of moderate to vigorous physical activity are met, sitting or being sedentary for long periods of time can lead to health problems. Research shows that television viewing time is positively associated with obesity, even among physically active people (Cameron et al. 2003). In fact, the link between television viewing time and obesity may be stronger than the link between physical activity and obesity (Cameron et al. 2003). This is consistent with research that suggests reducing sedentary behaviour in obese children is as effective for weight management as increased activity (Batch & Baur 2005).

A large proportion of young people spend time in sedentary activities such as prolonged periods of small-screen recreation (for example, computer games, Internet, TV). The National Physical Activity Guidelines advise that children and young people should not spend more than 2 hours a day using electronic media for entertainment, particularly during daylight hours (ABS 2004b). However, according to the 2004 NSW SPANS findings, 61% of boys and 45% of girls in Year 6, 76% of boys and 66% of girls in Year 8 and 78% of boys and 67% of girls in Year 10 engaged in more than 2 hours of small-screen recreation activities (Booth et al. 2006).

Similar findings come from the 2003 Survey of Children's Participation in Cultural and Leisure Activities (ABS 2004b). This survey found that 62% of boys and 59% of girls aged 12–14 years watched greater than 20 hours of television in the two weeks prior to the survey. In addition, 19% of boys and 5% of girls aged 12–14 years played with electronic or computer games for more than 20 hours in the two weeks prior to the survey.

## Nutrition

Adequate consumption of fruit and vegetables is a protective factor against many diseases including coronary heart disease, hypertension, stroke, Type 2 diabetes and many forms of cancer (NPHP 2001). Good eating habits are important during adolescence as this is a period of rapid growth in weight and height. During this period of growth, boys gain an average of 20 centimetres in height and 20 kilograms in weight and girls around 16 centimetres and 16 kilograms. Adolescence is an important period for calcium absorption and the optimum period for gaining bone density, in particular for girls. For young people who are still growing, sufficient nutritious food is needed to support growth and normal development (NHMRC 2003c).

Adolescents and young people can make choices about the types of food they eat and social trends can influence their food preferences and intakes. Children and adolescents buy and consume foods from a wide variety of sources outside the home, including school canteens. There are many foods and beverages available in ready-to-eat or convenience form and relatively cheaply. Such conveniences are a great attraction for many young people and families with busy lifestyles. This can lead to decreased consumption of fresh fruit and vegetables and an increased consumption of packaged meals, processed snack foods and soft drinks.

The National Health and Medical Research Council (NHMRC) has developed a set of dietary guidelines for children and adolescents, and adults to maintain optimal health and reduce the risk of chronic disease (NHMRC 2003b). The guidelines recommend daily consumption of a wide variety of nutritious foods in the right amounts to meet the body's nutrient needs. For young people aged 12–18 years, the guidelines recommend 3 serves each of vegetables and fruit per day (NHMRC 2003b). For people aged 19 years and over, the NHMRC recommends 2 servings of fruit and 5 servings of vegetables per day.

### Daily fruit consumption

**INDICATOR:**

The proportion of young people who are meeting daily fruit consumption guidelines

**Table 3.4: Usual daily consumption of fruit among young people aged 12–24 years, 2004–05 (per cent)**

Number of daily serves of fruit	12–18 years	19–24 years
1 or less serves	43.1	45.7
2 serves	24.7	23.6
3 serves	16.6	12.5
4 serves	4.7	3.6
5 serves	2.4	2.0
6 or more serves	2.0	1.7
Don't eat fruit	6.7	11.0
<b>Total</b>	<b>100.0</b>	<b>100.0</b>

Source: AIHW analysis of ABS 2004–05 National Health Survey confidentialised unit record file.

- In 2004–05, 26% of young people aged 12–18 years met the daily fruit consumption guidelines of 3 or more serves of fruit per day.
- Two-thirds (68%) of young people aged 12–18 years reported that they consumed less than 3 serves of fruit each day and 7% said they did not eat fruit.
- Of 19–24 year olds, 43% met the daily fruit consumption guidelines of 2 or more serves of fruit daily, while 46% ate less than 2 serves of fruit each day, and 11% did not eat any fruit.

## Daily vegetable consumption

**Table 3.5: Usual daily consumption of vegetables among young people aged 12–24 years, 2004–05 (per cent)**

Number of daily serves of vegetables	12–18 years	19–24 years
1 or less serves	27.6	28.5
2 serves	24.7	25.4
3 serves	18.9	23.1
4 serves	18.6	12.8
5 serves	4.0	6.2
6 or more serves	5.7	2.2
Don't eat vegetables	0.5	1.9
<b>Total</b>	<b>100.0</b>	<b>100.0</b>

### INDICATOR:

The proportion of young people who are meeting daily vegetable consumption guidelines

Source: AIHW analysis of ABS 2004–05 National Health Survey confidentialised unit record file.

- The recommended daily consumption of vegetables for those aged 12–18 years is 3 serves and 47% met this guideline in 2004–05. Approximately one-quarter of young people in this age group ate 2 serves of vegetables, 28% ate one or less serves and less than 1% said that they didn't eat any vegetables.
- Only 8% of young adults aged 19–24 years ate the recommended number of serves (5 or more serves) of vegetables each day. The majority ate 3 or less serves of vegetables a day (77%), and 2% said they did not eat any vegetables.

## Other food behaviours

An observed link between skipping meals and the development of overweight in young people suggests that a consistent meal pattern, including regular consumption of breakfast, lunch and dinner, is important for healthy weight maintenance (Booth et al. 2006). Skipping meals may also make it difficult for young people to meet daily fruit and vegetable consumption guidelines.

Breakfast is a particularly important meal, providing many benefits beyond physical health. Regular consumption of breakfast improves cognitive function at school, attentiveness, social interaction and helps to maintain a healthy body weight (Booth et al. 2006).

Results from the 2004 NSW SPANS indicate that boys were more likely to eat breakfast than girls, and Year 8 students were more likely to eat breakfast than Year 10 students—breakfast was regularly consumed by 74% of boys and 66% of girls in Year 8, and 67% of boys and 59% of girls in Year 10 (Booth et al. 2006).

### INDICATOR:

The proportion of young people in Year 8 and Year 10 eating breakfast

## Population groups

### Aboriginal and Torres Strait Islander young people

In 2004–05, less than one-quarter (22%) of young Indigenous people aged 12–18 years reported eating the recommended number of serves of fruit each day. Around 27% reported having 2 serves of fruit a day and 42% reported eating 1 serve or less. While these proportions were similar for all 12–18 year olds, Indigenous young people were slightly more likely to not eat any fruit (10% compared with 7%). Approximately 35% of Indigenous 19–24 year olds consumed the daily recommended number of serves or more of fruit, compared with 43% of all 19–24 year olds. A further 50% consumed 1 serve or less and 15% did not eat any fruit.

While only 7% of Indigenous 19–24 year olds ate the recommended number of serves of vegetables (similar to 8% for all 19–24 year olds), approximately 60% of Indigenous 12–18 year olds consumed the recommended daily serves of vegetables (compared with 47% for all 12–18 year olds). Around 50% of Indigenous 19–24 year olds had 2 serves of vegetables or less each day and a further 39% had 3 to 4 serves.

### Regional status

Limited availability and high costs of fresh produce in remote locations is a barrier to the consumption of healthy foods (Northern Territory Department of Health and Community Services 2003).

**Table 3.6: Usual daily consumption of fruit among young people aged 12–24 years by remoteness, 2004–05 (per cent)**

Number of serves fruit	Major Cities	Inner Regional	Other areas <sup>(a)</sup>
		12–18 years	19–24 years
1 or less	39.3	39.5	48.0
2	28.1	26.7	23.3
3+	26.7	26.5	22.5
Don't eat fruit	6.0	7.3	6.2

Number of serves fruit	Major Cities	Inner Regional	Other areas <sup>(a)</sup>
		12–18 years	19–24 years
1 or less	44.7	43.6	56.3
2+	47.0	35.5	28.9
Don't eat fruit	8.3	20.8	14.8

(a) 'Other areas' includes Outer Regional, Remote and Very Remote areas.

Source: AIHW analysis of ABS 2004–05 National Health Survey confidentialised unit record file.

- In 2004–05, young people living in Major Cities were more likely than those in other areas to consume the recommended daily serves of fruit—27% and 47% of young people aged 12–18 years and 19–24 years in Major Cities compared with 23% and 29% respectively in 'Other areas' (Outer Regional, Remote and Very Remote areas).
- Young people living in Inner Regional areas were 3 times as likely as young people living in Major Cities not to eat fruit.

**Table 3.7: Usual daily consumption of vegetables among young people aged 12–24 years by remoteness, 2004–05 (per cent)**

Number of serves of vegetable	Major Cities	Inner Regional	Other areas <sup>(a)</sup>
		12–18 years	19–24 years
1 or less	27.7	16.6	18.2
2	24.0	15.7	16.1
3+	47.3	67.1	64.1
Don't eat vegetables	1.0	0.6	1.6

Number of serves of vegetable	Major Cities	Inner Regional	Other areas <sup>(a)</sup>
		12–18 years	19–24 years
1 or less	30.1	25.4	21.7
2	27.5	20.6	17.6
5+	7.2	10.7	13.8
Don't eat vegetables	1.9	1.5	2.1

(a) 'Other areas' includes Outer Regional, Remote and Very Remote areas.

Source: AIHW analysis of ABS 2004–05 National Health Survey confidentialised unit record file.

- In 2004–05, young people aged 12–18 years in Major Cities were less likely than those in Inner Regional and 'Other areas' to consume vegetables at recommended daily levels (47% compared with 67% and 64% respectively). This pattern was reversed for fruit consumption (see Table 3.6).
- Among young people aged 19–24 years, the consumption of recommended levels of vegetables was low in all areas, but increases with remoteness (7% in Major Cities, 11% in Inner Regional and 14% in Other Areas).

## Sun protection

Australia has the highest rate of skin cancer in the world; skin cancers account for 80% of all new cancers diagnosed in Australia each year (AIHW & AACR 2004). Non-melanoma skin cancer (NMSC) is the most frequently occurring cancer in Australia (over 374,000 new cases each year), but it is the least life-threatening (Cancer Council Australia 2004a). Melanoma is the most serious type of skin cancer.

The strongest determinant of melanoma risk is ultraviolet (UV) radiation from sun exposure during childhood and adolescence (Armstrong 2004; Cancer Council Victoria 2006; Harrison et al. 2005). The risk of melanoma is also strongly affected by a person's sensitivity to sunlight: those with fair skin, who burn easily or tan poorly have the greatest risk of melanoma resulting from sun exposure (Cancer Council Australia 2004b). These factors not only increase the likelihood of developing melanoma later in life, but may also place young people at immediate risk. While the risk of melanoma increases with age, melanoma remains the most common cancer diagnosed among young people aged 12–24 years. Despite this, the incidence rate of melanoma among young Australians has been declining (see 'Cancer' in the *Chronic diseases* section of Part 2 of this report).

The declining incidence of melanoma among young people may be due to public education campaigns raising awareness of skin cancer prevention and the need for sun protection (Cancer Council Australia 2004a), as well as the adoption of policy, guidelines and legislation relating to skin cancer protection measures, such as shade provision and 'no hat, no play' policies in schools.

## Sunburn

The level of sun exposure needed to develop skin cancer is not known, but it is likely that both episodic and cumulative exposures are important, particularly if they cause sunburn (Cancer Council Australia 2004b). The 2003–04 National Sun Survey of Australians found that 25% of teenagers aged 12–17 years, and 22% of young adults aged 18–24 years, were sunburnt on a typical weekend (Bowles et al. 2005; Dobbins et al. 2005). The most common body parts sunburnt were head and face, arms and hands, and shoulders. Sunburn occurred most frequently during water activities (32% of 12–17 year olds, and 25% of 18–24 year olds were participating in water activities at the time they were sunburnt), followed by passive (16% of and 19%) and active (15% and 16%) recreational activities (Bowles et al. 2005; Dobbins et al. 2005).

## Sun protection behaviours

Adolescents tend to adopt sun protection behaviours less frequently than adults and it is more difficult to achieve behaviour change in this group. Despite a high level of knowledge about the dangers of sun exposure, adolescents typically engage in relatively few sun protection behaviours (Cancer Council Australia 2004b).

People can help protect their skin from the sun by wearing a hat, sunglasses, sunscreen and protective clothing, thereby reducing their sun exposure and the likelihood of sunburn.

**Table 3.8: Sun protection behaviours adopted by young people aged 12–24 years when outdoors during peak UV periods by age, 2003–04 (per cent)**

Type of sun protection behaviour	Age group		INDICATOR: Proportion of young people using sun protection
	12–17 years	18–24 years	
Wore headwear	38	37	
Wore wide-brimmed hat	5	10	
Used 15+ sunscreen	37	36	
Wore 3/4 or long-sleeved top	11	11	
Wore 3/4 or long leg cover	37	37	
Stayed primarily in shade	19	26	
Wore sunglasses	22	52	

Note: Multiple responses were permitted therefore the total responses exceed 100%.

Source: Bowles et al. 2005; Dobbins et al. 2005.

- The most commonly reported sun protection behaviours for 12–17 year olds were wearing headwear (38%), using 15+ sunscreen (37%) and wearing 3/4 or long leg cover (37%). For 18–24 year olds, behaviours were similar except wearing sunglasses was the most common (52%).

### Skin checks

In addition to using sun protection, regular skin checks are important as they can help to detect skin cancers at an early and more easily treatable stage. The ABS 2004–05 National Health Survey (NHS) collected information about the proportion of young people whose skin is regularly checked by themselves, or anyone else, for changes in freckles and moles.

**INDICATOR:**

Proportion of young people aged 18–24 years whose skin is regularly checked for changes in freckles or moles

**Table 3.9: Proportion of young people whose skin is regularly checked for changes in freckles or moles, by age group and sex, 2004–05**

<b>Sex</b>	<b>Age group</b>			<b>Total</b>
	<b>12–14 years</b>	<b>15–19 years</b>	<b>20–24 years</b>	
Males	54.6	48.4	40.8	46.7
Females	58.1	50.2	55.4	54.0
<b>Total</b>	<b>56.4</b>	<b>49.3</b>	<b>47.9</b>	<b>50.3</b>

Source: ABS 2004–05 National Health Survey, unpublished data.

- According to the 2004–05 NHS, approximately 50% of young people had their skin regularly checked for changes in freckles or moles. A higher proportion of young females (54%) than young males (47%) aged 12–24 years regularly had their skin checked for freckles or moles.
- With increasing age, there was a general decrease in the proportion of young people who regularly had their skin checked for changes (from 56% among 12–14 year olds to 48% among 20–24 year olds). Young females at all age groups were more likely than young males to have their skin regularly checked for changes in freckles and moles.

### Regional status

Less than half of young people in Major Cities (47%) reported that they had their skin regularly checked for changes in freckles or moles, while 60% of young people in Inner Regional areas and 54% of young people in Outer Regional and Remote areas had their skin regularly checked (ABS 2004–05 NHS, unpublished data).

### Socioeconomic status

The proportion of young people who had their skin regularly checked for changes in freckles or moles was similar between the lowest (most disadvantaged) and the highest (least disadvantaged) socioeconomic quintiles (48% and 50% respectively) (ABS 2004–05 NHS, unpublished data).

### Substance use

Youth is a stage in life when many people begin to experiment with substances that can, particularly if misused, cause immediate and long-term health problems. In the short term, drug use in young people may result in hospitalisations due to acute intoxication and related injuries, dependence, withdrawal symptoms, psychotic disorders and amnesia. In the long term, harmful drug use can lead to depression, infection with bloodborne diseases, and liver, heart and brain damage (Bruner & Fishman 1998). Alcohol and tobacco use, in particular, have been linked to a

range of cancers and serious long-term health problems (NHMRC 2001; U.S. Department of Health and Human Services 2004). Drug abuse has also been associated with family and relationship conflict, and legal and financial problems (Spooner & Hetherington 2005).

Many factors can put young people at risk of problematic drug use. Some of these occur before they reach adolescence, such as maternal drug use during pregnancy, early behavioural and emotional problems and early exposure to drugs (NHMRC 2001; Spooner & Hetherington 2005). Other factors include peer antisocial behaviour, poor parental control and supervision, poor family bonding, and drug use among family members (Spooner & Hetherington 2005). Individual factors such as poor connection with family, school and community, academic failure, low self-esteem, and leaving school early have also been associated with risky levels of substance use (Guo et al. 2002; Kostelecky 2005; Kosterman et al. 2000; Loxley et al. 2004; Spooner & Hetherington 2005; Sydow et al. 2002).

The information presented in this section is primarily drawn from the 2004 National Drug Strategy Household Survey, the ABS 2004–05 National Health Survey, the AIHW National Hospital Morbidity Database and the AIHW National Mortality Database.

### Hospital separations for substance use

In 2004–05, there were over 8,021 hospital separations for mental and behavioural disorders due to psychoactive substance use among young people aged 12–24 years, representing 1.4% of all separations for this age group, and accounting for 16% of all separations for substance use (ICD-10-AM codes F10–F19).

Almost half of the hospital separations related to substance use were due to alcohol use among young people (48%), a further 15% were due to cannabis use, 12% to the use of ‘multiple drugs and other psychoactive substances’ and 12% to ‘other stimulants, including caffeine’. More young females than young males were hospitalised for alcohol use while more young males than females were hospitalised due to cannabis use.

One-quarter (25%) of substance use separations among young people aged 12–24 years were for drug dependence. Alcohol, opioids and cannabis were the major substances used by those hospitalised for drug dependence.

**INDICATOR:**

Hospital separation rate for substance use disorders for young people aged 12–24 years

**INDICATOR:**

Hospital separation rate for drug dependence disorder in young people aged 12–24 years

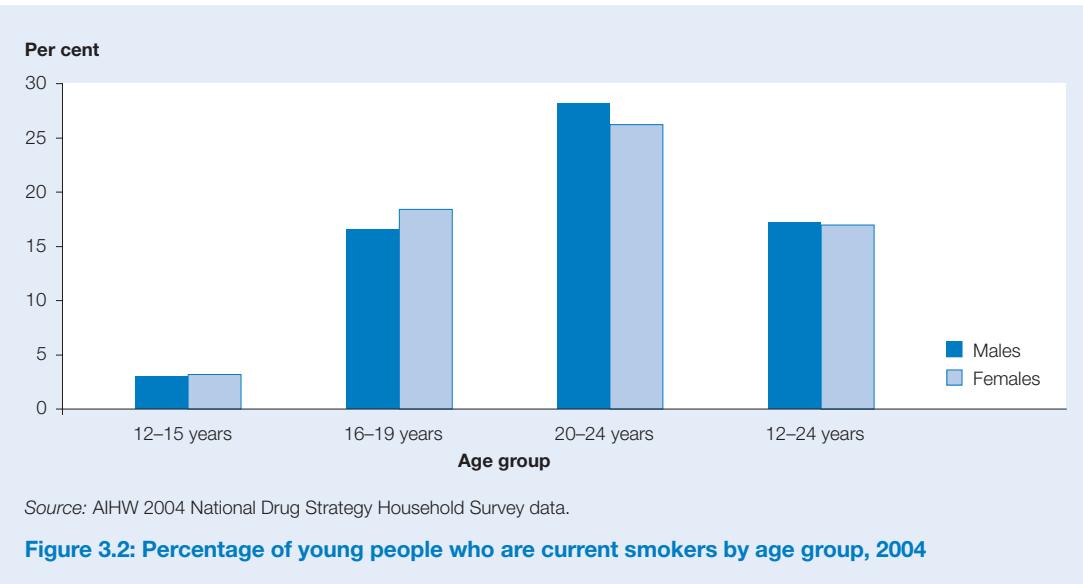
### Tobacco smoking

In Australia, smoking is the single most preventable cause of premature death and chronic disease, responsible for 19,000 deaths every year (DoH 2004). Smoking is known to cause damage to nearly every organ in the body and is causally linked to a range of cancers including lung, laryngeal, oral, bladder and kidney cancers. Smoking is also linked to cardiovascular disease, respiratory illnesses and diseases, pregnancy complications such as premature birth and low birth weight, periodontitis, and peptic ulcers (U.S. Department of Health and Human Services 2004).

Most adult tobacco users begin smoking during adolescence. Those people who begin smoking early are more likely to continue smoking (Tys & Pederson 1998), thus tobacco use among young people is a key predictor of adult smoking. The first drug used by young people is often tobacco (U.S. Department of Health and Human Services 1994), so understanding why young people begin smoking is also important for trying to reduce both tobacco smoking and other drug use. In addition to the increased risk of disease in later life, young smokers experience immediate adverse health effects such as decreased physical fitness, a higher susceptibility to respiratory illnesses, and slower lung growth (U.S. Department of Health and Human Services 1994).

## Current smokers

The 2004 National Drug Strategy Household Survey collected information on the smoking status of young people aged 12–24 years. Current smokers were defined as people who reported that they smoke daily, weekly or less often than weekly.



- In 2004, 17% of 12–24 year olds were current smokers (17% for both males and females), compared with a rate of 21% for all Australians aged 14 years and over (AIHW 2005a).
- The proportion of current smokers was very similar for males and females in each age group, although the proportion for females was slightly higher than that for males (18% compared with 17%) among 16–19 year olds, and the proportion for males was slightly higher than that for females among 20–24 year olds (28% compared with 26%).
- The proportion of young people who were current smokers increased with age from 3% for 12–15 year olds to 17% for 16–19 year olds and 27% for 20–24 year olds.

## Daily smokers

INDICATOR:
Proportion of young people aged 12–24 years who are daily smokers

Daily smoking is thought to be a precursor to nicotine addiction, with very few young adults becoming addicted before smoking daily (Hu et al. 2006).

In 2004, 2% of young people aged 12–15 years, 14% of young people aged 16–19 years, and 21% of young people aged 20–24 years were daily smokers. There was little difference between the proportions for males and females.

## Ex-smokers

INDICATOR:
Proportion of young people who successfully quit smoking in the last 12 months

In the 2004 National Drug Strategy Household Survey, a small proportion (6%) of young people reported that they had quit smoking in the last 12 months. This proportion increased with age—0.9% of young people aged 12–15 years, 5.0% of young people aged 16–19 years and 10.1% of young people aged 20–24 years reported that they had previously been a smoker but had successfully quit in the last 12 months. The very small number of 12–15 year olds who had quit smoking reflects the small number of smokers in this age group.

## Alcohol

Excessive alcohol consumption is a major risk factor for morbidity and mortality. In the short term, high doses of alcohol severely impair brain function and can result in coma or death from direct intoxication (NHMRC 2001). The immediate effects of excessive alcohol consumption include a lowering of inhibitions and impairment of motor, sensory and thought processes. When these effects are combined with the typical risk taking behaviours associated with adolescence, the risk of serious injury and death is high. Young people are the group at greatest risk of alcohol-related harm such as motor vehicle accidents, physical and sexual assault, falls, drowning and suicide (NHMRC 2001).

In the long term, excessive alcohol consumption can impair liver function, resulting in alcoholic hepatitis and cirrhosis of the liver, and have toxic effects on the cardiovascular system, resulting in high blood pressure and stroke (NHMRC 2001). Alcohol consumption is also a major factor in the development of certain forms of cancer, including cancers of the oral cavity, cancer of the oesophagus, cancer of the liver, cancer of the larynx, and female breast cancer (AIHW & AACR 2004). Other long-term health problems related to excessive alcohol consumption include sexual dysfunction, gastric ulcers, metabolic conditions such as gout, nutritional conditions such as folate deficiency, and nervous system disorders such as alcohol-related brain damage (NHMRC 2001).

### Risky and high-risk drinking

Alcohol consumption is measured in standard drinks—one standard drink is any drink containing 10 g (equivalent to 12.5 ml) of alcohol. Consumption levels associated with harm are presented in Table 3.10. These levels relate to consumption among people aged 18 years and over. Young people under 18 years of age are more vulnerable to the risks of alcohol consumption than adults—they are physically smaller, they lack experience with drinking and its effects, and do not have a built-up tolerance to alcohol (NHMRC 2001).

NHMRC guidelines recommend that young people under the age of 18 years should not drink beyond the levels set for low-risk drinking by adults—for males, no more than 4 standard drinks per day on average, and never more than 6 standard drinks on any one day and for females, no more than 2 standard drinks per day on average, and never more than 4 standard drinks on any one day (NHMRC 2001).

**Table 3.10: Alcohol consumption associated with harm among people aged 18 years and over**

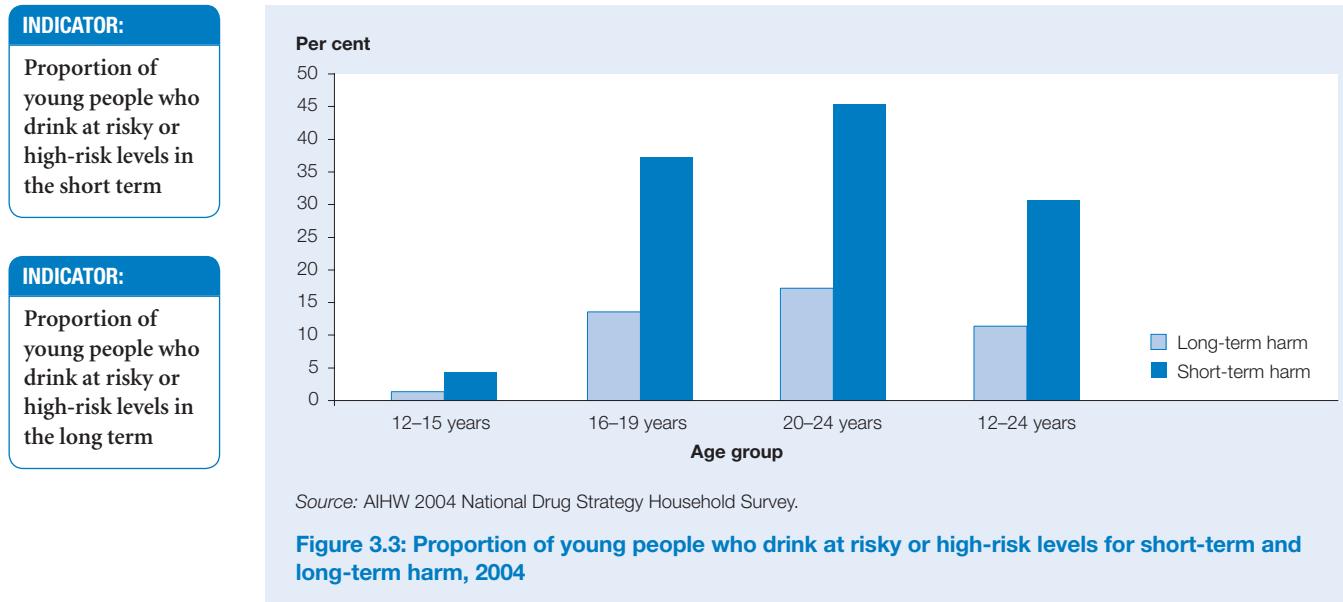
Alcohol consumption associated with harm	Short-term harm		Long-term harm	
	Risky	High-risk	Risky	High-risk
Males	7 to 10 standard drinks on any one day	11 or more standard drinks on any one day	29 to 42 standard drinks per week	43 or more standard drinks per week
Females	5 to 6 standard drinks on any one day	7 or more standard drinks on any one day	15 to 28 standard drinks per week	29 or more standard drinks per week

Source: AIHW 2006g.

Data on alcohol consumption among young people under 18 years of age are available from the 2002 Australian Secondary Students' Alcohol and Drug (ASSAD) survey (White & Hayman 2004a). The proportion of students who drank at a risky level (7 or more drinks for males, 5 or more drinks for females) on at least one day in the 7 days prior to the survey ranged from 2% among 12-year olds to 22% among 17-year olds. These proportions were very similar for males and females.

#### INDICATOR:

Proportion of young people under 18 years of age who have engaged in high-risk drinking at least once in the last week



- According to the 2004 National Drug Strategy Household Survey, 31% of 12–24 year olds drank, once or more a month, at levels that put them at risk or high risk of alcohol-related harm in the short term, and 11% drank at levels that put them at risk or high risk of alcohol-related harm in the long term.
- An estimated 37% of 16–19 year olds and 45% of 20–24 year olds drank at risky or high risk levels for short-term harm. These rates are almost twice the rate for all Australians (21%; see AIHW 2005a). A much smaller proportion (4%) of young people aged 12–15 years were drinking at risky or high-risk levels for short-term harm.
- Relatively high proportions of young people were also drinking at risky or high-risk levels for long-term harm: 14% of young people aged 16–19 years and 17% of young people aged 20–24 years. This compares with 10% of all Australians. Less than 2% of young people aged 12–15 years drank at levels that were risky or high-risk for long-term harm.

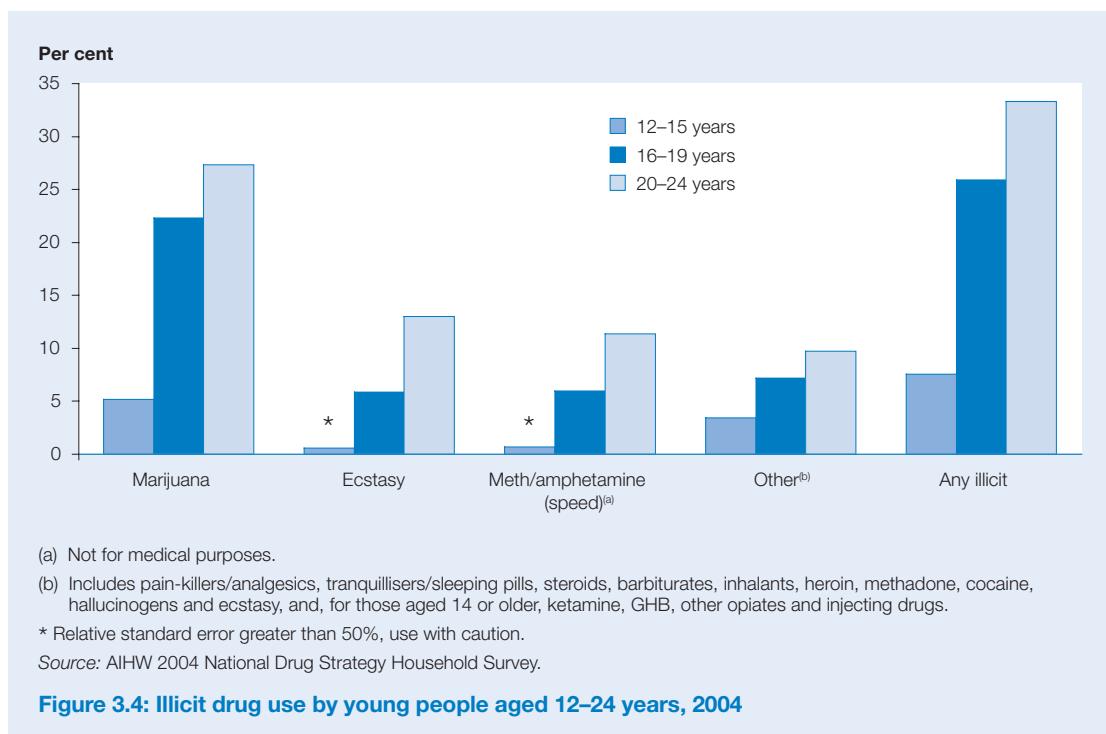
### Other substance use

Other substances that can have harmful effects include both illicit drugs and licit drugs used inappropriately. These include pharmaceuticals when used for non medical purposes (for example, pain-killers), inhalants (for example, petrol sniffing), and illicit drugs such as cannabis, amphetamines, and heroin. Many of these drugs are associated with psychological and other health problems which are often exacerbated when multiple drugs are used in combination. In addition, there are risks associated with the ways in which these drugs are taken. For example, injection carries a risk of overdose as well as transmission of bloodborne diseases such as hepatitis C and HIV (Loxley et al. 2004). Similarly, long-term cannabis smoking may lead to chronic bronchitis and pre-cancerous changes (Midford et al. 2000).

Specific health problems associated with drug use vary according to the drug used, the dose and the duration of use. The most obvious effects on users are psychological and behavioural problems such as delusions and hallucinations, memory problems, suicidal ideation, and aggressive and erratic behaviour. Other problems include sleep disorders, weight loss, high blood pressure, respiratory problems and brain damage (Abetz 2005; Loxley et al. 2004; Vasica & Tennant 2002). As with alcohol use, the effects of intoxication combined with risk-taking behaviours can lead to serious injury or death. Intoxication is also linked with criminal behaviour that may lead to detention or imprisonment—59% of young people in juvenile justice detention in NSW reported that they had been under the influence of alcohol, drugs or both at the time of offending (Allerton & Champion 2003).

## Illicit drug use

Results from the 2004 National Drug Strategy Household Survey indicate that 23% of young people aged 12–24 years had used an illicit drug in the 12 months prior to the survey, compared with a rate of 15% for all people aged 12 years and over.



**Figure 3.4: Illicit drug use by young people aged 12–24 years, 2004**

- In 2004, rates of illicit drug use among young people increased with age from 8% for 12–15 year olds to 26% for 16–19 year olds and 33% for 20–24 year olds.
- Marijuana was the illicit drug most commonly used by young people—5% of 12–15 year olds, 22% of 16–19 year olds and 27% of 20–24 year olds reported using it in the 12 months prior to the survey.
- While a negligible proportion of 12–15 year olds had used meth/amphetamine or ecstasy in the last 12 months, meth/amphetamine had been used by 6% of 16–19 year olds and 11% of 20–24 year olds, and ecstasy had been used by 6% of 16–19 year olds and 13% of 20–24 year olds.

## Deaths due to substance use

A small number of young people die each year as a result of drug dependence disorders.

Dependence disorders are among the most common substance use disorders. They are characterised by specific behavioural, cognitive and physiological symptoms that develop after repeated use of a substance. Symptoms include having difficulty controlling the substance use, giving a higher priority to drug use than to other activities, repeated drug use despite harmful outcomes, increased tolerance and sometimes physical withdrawal symptoms due to the drug (NCCH 2002).

The number of young people dying as a result of dependence disorders has been steadily declining in recent years—the number of deaths among young people aged 12–24 years has dropped from 142 deaths in 1997 to 3 deaths in 2004 (a rate of 0.1 per 100,000).

In 2004, there were 18 deaths among young people aged 12–24 years from accidental poisoning by narcotics and hallucinogens (a rate of 0.5 per 100,000). Since 1997, the number of young people dying each year from accidental poisoning by narcotics and hallucinogens has fluctuated but remained low (generally below 50 deaths).

**INDICATOR:**  
Drug dependence disorder death rate for young people

**INDICATOR:**  
Death rate for young people from accidental poisoning by narcotics and hallucinogens

## Age of initiation

Drug use at an early age can interfere with normal cognitive and social development, and can be an indicator of behavioural problems which have their origins in childhood (Hanna et al. 2001). Early onset of drug use is associated with a number of problematic behaviours, including engaging in risky sexual behaviour, criminal activity, and poor educational achievement (AIHW 2005a; Degenhardt et al. 2000; Loxley et al. 2004). These relationships remain even after taking into account confounding factors such as parental drug use and socioeconomic status (see Degenhardt et al. 2000).

Information about the age of initiation for tobacco, alcohol and illicit drug use are available from the 2004 National Drug Strategy Household Survey (NDSHS). While it is illegal for people under the age of 18 years to be sold tobacco and alcohol, many young people find ways of obtaining them. Young people who had ever smoked a full cigarette, consumed a full serve of alcohol or used illicit drugs were asked at what age this first occurred.

INDICATOR:
Mean age of substance use initiation (tobacco, alcohol and illicit drugs)

**Table 3.11: Mean age (in years) of initiation for tobacco, alcohol and illicit drugs, by age and sex, 12–24 year olds, 2004**

Drug type	Males	Females	Persons
<b>Licit drugs</b>			
Tobacco	14.7	14.4	14.5
Alcohol	14.6	14.8	14.7
<b>Illicit drugs</b>			
Marijuana	15.7	15.6	15.7
Meth/amphetamine	18.1	17.8	18.0
Ecstasy	18.6	18.1	18.4
Other <sup>(a)</sup>	15.4	15.4	15.4

(a) Includes pain-killers/analgesics, tranquillisers/sleeping pills, steroids, barbiturates, inhalants, heroin, methadone cocaine, hallucinogens or, for those aged 14 years or older, ketamine, GHB and injected drugs.

Source: AIHW 2004 National Drug Strategy Household Survey.

- In 2004, the mean age of initiation for first use of tobacco and alcohol among 12–24 year olds was 14.5 years and 14.7 years respectively.
- The mean age of initiation for first use of illicit drugs was higher: 15.7 years for marijuana, 18.0 years for meth/amphetamine, and 18.4 years for ecstasy. This pattern was consistent across all 3 age groups.
- There was little difference in the mean ages of initiation for licit or illicit drugs between males and females.

## Substance use among specific population groups

### Aboriginal and Torres Strait Islander young people

Based on results from the ABS 2004–05 National Aboriginal and Torres Strait Islander Health Survey (NATSIHS), just over one-third (35%) of Indigenous young people aged 18–24 years had never smoked, compared with 58% of non-Indigenous young people. Half (50%) of Indigenous young people aged 18–24 years were daily smokers, compared with one-quarter (26%) of non-Indigenous young people.

The 2004–05 NATSIHS found that 9% of Indigenous young people aged 18–24 years never consumed alcohol, compared with 8% of non-Indigenous young people. Sixteen per cent of Indigenous young people aged 18–24 years consumed alcohol at risky or high-risk levels, compared with 14% of non-Indigenous young people.

## Regional status

According to the 2004 National Drug Strategy Household Survey, the proportions of risky and high-risk drinking for short-term harm among 12–24 year olds increased with remoteness, from 30% in Major Cities to 37% in Remote and Very Remote areas. The rates for long-term harm increased from 11% in Major Cities to 15% in Remote and Very Remote areas.

Illicit drug use in Outer Regional areas (17%) was lower than in Major Cities, Inner Regional, Remote and Very Remote areas (all 24%).

## Sexual and reproductive health

Sexual development is a normal part of adolescence. Though most adolescents go through these changes without significant problems, all adolescents need support and care during this transition to adulthood and some may need special help. Young people can be put at risk if they do not have the information, skills, support or access to health services to deal with problems they may encounter as they pass through adolescence.

Sexual and reproductive behaviour during adolescence can have far-reaching consequences in later life. A supportive social environment is critical to healthy adolescent development. Important family and community factors that can prevent adolescents from engaging in unsafe or unwanted sexual behaviour include a strong relationship with parents, a connection to school, and open communication with sexual partners (WHO 2005).

The sexual and reproductive activities of young people are also of interest because they are related to the prevalence of sexually transmitted infections (STIs) and pregnancy in young women. Annual notification rates of HIV, chlamydia and gonorrhoea have all increased between 2000 and 2004, posing an increasing health problem for young Australians (National Centre in HIV Epidemiology and Clinical Research 2005). In 2005, half of STI notifications were for young people aged 12–24 years. These data are presented under *Communicable diseases* in Part 2 of this report.

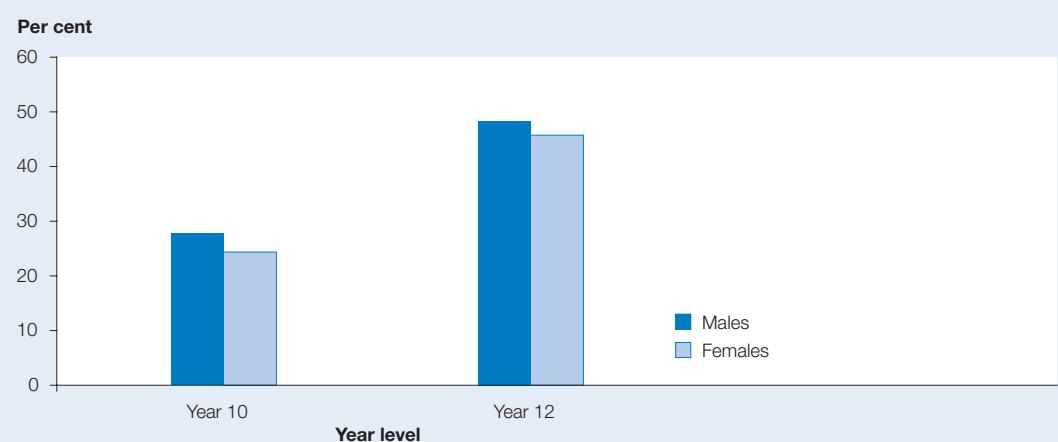
Teenage pregnancy is a concern due to high associations with a range of poor health and socioeconomic outcomes. Teenage pregnancies are at increased risk of pre-term delivery, small-for-gestational-age babies, and neonatal deaths. Teenage mothers often find it difficult to complete their education, are separated from the child's father, often have less financial resources than older mothers, and the health of their children is often worse (Klein & Committee on Adolescence 2005; van der Klis et al. 2002). Children of adolescent parents have increased risk of developmental delay, behavioural problems, substance abuse, early sexual activity and becoming teenage parents themselves. Information on young people's fertility is provided in Part 1 of this report.

## Sexual experience

The 3rd National Survey of Secondary Students and Sexual Health, 2002 interviewed 2,388 students in Years 10 and 12 from across Australia. For the first time, this survey included government, Catholic and independent schools in the study while the two previous studies only included government schools (Smith et al. 2003). Most data presented in this section come from these surveys and for any comparisons between surveys, only government school student responses were used.

The survey found that a large proportion of students had experienced some form of sexual activity (deep kissing, genital touching/ being touched, giving/receiving oral sex), with Year 12 students being more likely to have experienced each type of sexual activity. In the survey, 77% of Year 10 students and 86% of Year 12 students reported experiencing deep kissing, and 61% of Year 10 students and 75% of Year 12 students reported that they have touched others or been touched on the genitals.

**INDICATOR:**  
Proportion of young people in year 10 and year 12 who have had sexual intercourse (per cent)



Source: Smith et al. 2003.

**Figure 3.5: Proportion of students in Year 10 and Year 12 who have ever had sexual intercourse, 2002**

- In 2002, 26% of Year 10 students and 47% of Year 12 students reported that they had had sexual intercourse. Both in Years 10 and 12, slightly more males than females reported having had sexual intercourse.

Between 1992 and 2002, the proportion of young people in Years 10 and 12 (in government schools) who had had sexual intercourse increased from 35% to 42% (an increase from 23% to 32% among Year 10 students and an increase from 48% to 55% among Year 12 students).

### Number of sexual partners

The National Survey of Secondary Students and Sexual Health also looked at how many sexual partners Year 10 and Year 12 students had during one year.

**Table 3.12: Reported number of sexual partners in the previous year for sexually active students, 2002 (per cent)**

<b>Frequency</b>	<b>Year 10</b>		<b>Year 12</b>		<b>Total</b>	
	<b>Males</b>	<b>Females</b>	<b>Males</b>	<b>Females</b>	<b>Males</b>	<b>Females</b>
No sex in the past year	9.7	2.9	9.0	4.3	9.3	3.7
1 person	42.0	56.6	56.0	65.0	49.9	61.5
2 people	15.6	18.0	19.4	17.1	17.8	17.4
3 or more people	32.7	22.5	15.6	13.6	23.0	17.3
<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>

Source: Smith et al. 2003.

- In 2002, half of sexually active male students in Years 10 and 12 had reported having sexual intercourse with one sexual partner in the previous year, as did 62% of female students.
- Year 10 students were more likely than Year 12 students to report having had multiple partners in the last year.
- Around 38% of young people in Years 10 and 12 had more than one sexual partner in the previous year. A higher proportion of males in Years 10 and 12 reported having more than one sexual partner during the previous year (41%) compared with females (35%).

The proportions of sexually active young people who had had one sexual partner in the previous year increased slightly from 53% to 56% between 1992 and 2002. This was the case for both males and females. Also, the proportion of young people who had had three or more sexual partners in the previous year declined over time. In 1992, 26% young males reporting having had three or more sexual partners, compared with 20% in 2002. There was little change in the proportion of young females who had had three or more sexual partners (19% in 1992 compared with 18% in 2002) (Smith et al. 2003).

### Sexual attraction

The majority of students (93%) surveyed in the 2002 National Survey of Secondary Students and Sexual Health reported that they were sexually attracted to the opposite sex only. Less than 1% reported exclusive attraction to same sex, and 5% reported attraction to both sexes. These groups are at risk of marginalisation and isolation. In addition, young gay men may be at increased risk of contracting a sexually transmitted infection like HIV/AIDS.

**Table 3.13: The proportion of Year 10 and Year 12 students by sexual attraction, 2002**

<b>Sexual attraction</b>	<b>Males</b>		<b>Females</b>	
	<b>Year 10</b>	<b>Year 12</b>	<b>Year 10</b>	<b>Year 12</b>
Attracted only to people of the opposite sex	94.7	96.4	91.0	91.4
Attracted to people of both sexes	2.4	2.2	6.9	5.7
Attracted only to people of same sex	1.2	0.7	0.1	0.6
Not sure	1.7	0.6	2.0	2.3
<b>Total per cent</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: Smith et al. 2003.

#### INDICATOR:

Proportion of young people in Year 10 and 12 who are attracted to the same sex, both sexes or unsure of their sexual attraction

- The majority of Year 10 and Year 12 students reported attraction only to the opposite sex—95% of males and 91% of females in Year 10 and 96% of males and 91% of females in Year 12.
- Attraction to people of the same sex only was very low for young males and females in Years 10 and 12. Young females were more likely to report being attracted to people of both sexes than young males (6–7% compared with 2%).

Between 1997 and 2002, the proportions of young people who reported that they were attracted to the opposite sex remained stable (92% to 93%) and those attracted to people of the same sex decreased (3.1% to 0.7%). Between the two surveys, the proportion reporting that they were attracted to both sexes increased from 3% to 5%.

### Contraceptive use

Given that one-quarter of Year 10 and almost half of Year 12 students have had sexual intercourse, and that 38% of young people have had multiple sexual partners, an important associated health behaviour is contraception use to avoid unwanted or unplanned pregnancies, and condom use to avoid sexually transmitted infections.

The Australian Study of Health and Relationships found that a high proportion of young people at risk of unplanned pregnancy used some form of contraception (90% of 16–19 and 94% of 20–29 year olds) (Richters et al. 2003). The main forms of contraception used by young people aged 16–19 and 20–29 were the contraceptive pill and condoms. Approximately 5% were using withdrawal as a method of contraception.

#### INDICATOR:

Proportion of sexually active young people aged 16–24 who are currently using any form of contraception to avoid pregnancy (per cent)

**Table 3.14: Type of contraception used at the last sexual encounter, 2002 (per cent)**

Type of contraception	Sex	Year 10	Year 12	Total
Condom	Males	75.1	68.7	71.4
	Females	69.2	51.1	58.6
Contraceptive pill	Males	22.3	37.1	30.7
	Females	27.6	51.7	41.7
IUD	Males	0.7	0.9	0.8
	Females	0.0	0.1	0.0
Diaphragm	Males	1.3	0.8	1.0
	Females	0.0	0.0	0.0
Morning after pill	Males	7.0	3.0	4.7
	Females	1.8	4.5	3.4
Withdrawal	Males	8.4	10.0	9.3
	Females	8.6	17.5	13.8
Rhythm method	Males	0.7	0.8	0.8
	Females	0.0	2.9	1.7
Other	Males	2.3	1.7	1.9
	Females	2.1	1.5	1.7
No contraception used	Males	13.2	5.5	8.8
	Females	11.6	8.6	9.9

Note: Persons may have reported more than one type of contraceptive practice and therefore components may not add to totals.

Source: Richters et al. 2003.

- Results from the Australian Study of Health and Relationships indicate that in 2002, around 1 in 10 sexually active young people in Years 10 and 12 did not use any contraception at the last sexual encounter (9% for males and 10% for females). Both male and female students in Year 10 were more likely than their counterparts in Year 12 to report not using any contraception (12–13% compared with 6–9%).
- The most common form of contraception reported by students was condoms (71% for males and 59% for females), although a considerable proportion of students reported contraceptive pills (31% for males and 42% for females).
- The third most common method of contraception reported by students was withdrawal—a method mainly used by Year 12 students.

### Condom use

In addition to the risk of unwanted pregnancies, sexually active young people may be at risk of sexually transmitted infections (STIs). Condom use is the most effective method of protection against STIs among sexually active people.

The National Survey of Secondary Students and Sexual Health found that in the year before the survey, 66% of Year 10 students and 42% of Year 12 students always used a condom. In contrast 6% of Year 10 students and 11% of Year 12 students never used a condom (Smith et al. 2003). Young men in both Years were slightly more likely to use a condom than young women.

A particular concern about the sexually active students in the National Survey of Secondary Students and Sexual Health was that over half of the students who used contraceptive pills as a form of contraception did so without using a condom to protect against STIs. Year 12 students were more likely than Year 10 students to use the contraceptive pill without also using a condom (Smith et al. 2003).

The National Survey of Secondary Students and Sexual Health asked young sexually active students in Years 10 and 12 whether a condom was used at their most recent sexual encounter, and the nature of the relationship to the sexual partner (Smith et al. 2003).

**INDICATOR:**

Proportion of young people in Years 10 and 12 who used a condom at their most recent sexual encounter

**Table 3.15: Percentage of students reporting condom use at most recent sexual encounter by relationship between sexual partners, 2002**

	<b>Males</b>		<b>Females</b>	
	<b>Year 10</b>	<b>Year 12</b>	<b>Year 10</b>	<b>Year 12</b>
Someone you had just met	68.2	75.2	52.6	80.2
Someone you have known for while	74.8	85.5	76.3	58.2
Your current girlfriend/boyfriend	84.3	72.6	64.6	48.1

Source: National Survey of Secondary Students and Sexual Health, unpublished data.

- According to the 2002 National Survey of Secondary Students and Sexual Health, 68% and 53% Year 10 males and females respectively reported using a condom at their last sexual encounter with someone they had just met. Over three-quarters of Year 12 students (75% and 80% males and females respectively) said they used a condom at their recent sexual encounter with someone they had just met.
- The majority of male students in Years 10 and 12 reported using a condom at their most recent sexual encounter with their current girlfriend (84% and 73% respectively). In contrast, the proportion of female students who reported condom use at their most recent sexual encounter with their boyfriend was somewhat lower (65% and 48% for female students in Years 10 and 12 respectively).
- Over three-quarters of male students in Years 10 and 12 and female students in Year 10 reported using a condom at their most recent sexual encounter with someone they had known for a while; however a somewhat lower proportion of female Year 12 students did so (59%).

### Cervical cancer

Cervical cancer is one of the most preventable and curable of all cancers. Infection with human papilloma virus (HPV) is believed to be necessary, though not sufficient, for development of cervical cancer (NHMRC 2005). Infection with high-risk HPV is almost always sexually transmitted, and the most common age at first infection is between 15 and 25 years (NHMRC 2005). The infection may progress to a lesion that may eventually progress to cancer.

Pre-cancerous changes or lesions can be detected through a Pap smear, and if they are promptly treated, cervical cancer can be prevented. The decline in cervical cancer incidence and mortality over the past two decades has been largely attributed to the implementation of organised Pap smear testing as part of the National Cervical Screening Program (Farnsworth & Mitchell 2003).

The Australian recommendation is for all women who have been sexually active at any stage in their lives to have a Pap smear every two years until they reach the age of 70 years. In 2003–2004, less than 50% of young women aged 20–24 years participated in the National Cervical Screening Program. This was well below the participation rate of women in the Program's target age group (61%).

Further information on cervical screening among young women is available under *Cervical screening* in Part 5 of this report.

### Smoking during pregnancy

Maternal smoking is associated with poorer perinatal outcomes and is a risk factor for pregnancy complications (AIHW: Laws et al. 2006b). Smoking during pregnancy has been shown to be strongly associated with poor perinatal outcomes such as low birthweight, pre-term birth, birth anomalies and perinatal death (NHMRC 1997; Walsh et al. 2001).

Prenatal exposure to smoking has also been associated with problems for children later in childhood. Cornelius et al. (2000) found that maternal smoking during pregnancy was significantly associated with an increased incidence of tobacco experimentation among children. The same study showed that smoking during pregnancy also predicted childhood anxiety/depression and

externalising behaviours. Many other studies have also found a link between maternal smoking and childhood mental health and behavioural problems (see Brennan 2005; Thapar et al. 2003). However, causal connections between maternal smoking and psychosocial problems are difficult to establish since smoking mothers may differ from non-smoking mothers in other ways (such as socioeconomic status and parenting style), which may better account for the subsequent development of problem behaviours among their children.

INDICATOR:
Smoking during pregnancy

**Table 3.16: Mother's tobacco smoking status during pregnancy by maternal age, 2004**

Smoking status	Less than 20 <sup>(a)</sup>	20–24	25–29	30–34	35–39	Not stated	Total
<b>Number</b>							
Smoked	2,612	5,955	5,927	5,116	2,962	—	22,572
Did not smoke	3,584	13,915	30,878	40,338	23,011	17	111,743
Not stated	87	123	118	139	82	—	549
<b>Total</b>	<b>6,283</b>	<b>19,993</b>	<b>36,923</b>	<b>45,593</b>	<b>26,055</b>	<b>17</b>	<b>134,864</b>
<b>Per cent</b>							
Smoked	41.6	29.8	16.1	11.2	11.4	—	16.7
Did not smoke	57.0	69.6	83.6	88.5	88.3	100.0	82.9
Not stated	1.4	0.6	0.3	0.3	0.3	—	0.4
<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>

(a) Includes 63 mothers aged less than 15 years.

— Nil or rounded to zero.

**Notes**

- Includes data for NSW, WA, SA, ACT and NT. Data not available for Vic, Qld and Tas.
- For SA, 'Smoked' includes women who quit before the first antenatal visit.
- For NT, smoking status was recorded at the first antenatal visit.
- Mother's tobacco smoking status during pregnancy is self-reported.

Source: National Perinatal Data Collection, AIHW National Perinatal Statistics Unit.

- Teenage mothers accounted for 12% of all mothers who reported smoking during pregnancy while mothers aged 20–24 years accounted for 26% of such mothers.
- Teenage mothers were more likely to report smoking during pregnancy than other mothers (42% compared with 17% for all women). This is consistent with previous research findings that showed teenage mothers had a higher smoking rate than adult mothers (see AIHW: Laws et al. 2006b).
- The smoking during pregnancy rate was also high for women aged 20–24 years (30%)—almost double the rate for all women (17%).

**Aboriginal and Torres Strait Islander young people**

Information on contraceptive use among young Indigenous women aged 18–24 years is available from the ABS 2004–05 National Aboriginal and Torres Strait Islander Household Survey (NATSIHS).

**Table 3.17: Form of contraception used by young Indigenous women aged 18–24 years, 2004–05**

Form of contraception	Number	Per cent
Condoms	10,847	24.9
Contraceptive pill	6,802	15.6
Implant	2,591	5.9
Contraceptive injection	2,563	5.9
Primarily non-contraception	6,199	14.2
Other forms of contraception	1,472	3.4
Not known/not stated	4,467	10.2
Not applicable, not known if using contraception, not stated, form not answered	8,693	19.9
<b>Total</b>	<b>43,634</b>	<b>100.0</b>

Source: ABS 2004–05 National Aboriginal and Torres Strait Islander Health Survey, unpublished data.

- Condoms followed by the pill were the main methods of contraception reported by young Indigenous women aged 18–24 years in 2004–05 (25% and 16% respectively). Implants and injections were reported by 6% each.
- An estimated 14% of young Indigenous women reported primarily not using any contraception.

## 3.2 Community and family capacity

Families play an important part in the lives of most young people—providing them with physical, emotional and economic support. Many young people, particularly those in the younger age groups, live with their parents, siblings and possibly other family members. This close proximity means that parents and other family members may directly or indirectly influence the health and health-related behaviours of young people.

Research suggests that being part of a cohesive family unit is a protective factor for children and young people, helping them to better cope with any stressors or adversity they may encounter. Sometimes the responsibilities that often come with being a member of a family can also be a source of stress for young people. In families where one or both parents have health problems, young people may take on greater responsibilities, possibly the role of carer, which may impact upon their own health and wellbeing.

The wider community, including friendship groups, schools, sports and cultural groups, also provide opportunities for young people's physical, social and emotional development.

Societies today are highly mobile. Families may move away from both their extended family and close friends for various reasons, thus distancing themselves from an established trusting and supportive social environment. Social isolation contributes to a sense of disempowerment and alienation. Often it is the poorer families that are likely to be highly mobile because of difficulties with housing. This can increase the adversity already experienced by children in such families (Vimpani 2001).

Families living in neighbourhoods characterised by greater community investment, trust and organisational affiliations tend to function better (Korbin & Coulton 1995). Children and adolescents living in families that have strong social supports are less likely to suffer neglect and maltreatment, even when the family experiences poverty and unemployment (AIC: Weatherburn & Lind 1998). Safe neighbourhoods are associated with better psychological wellbeing and educational achievement of adolescents (Meyers & Miller 2004).

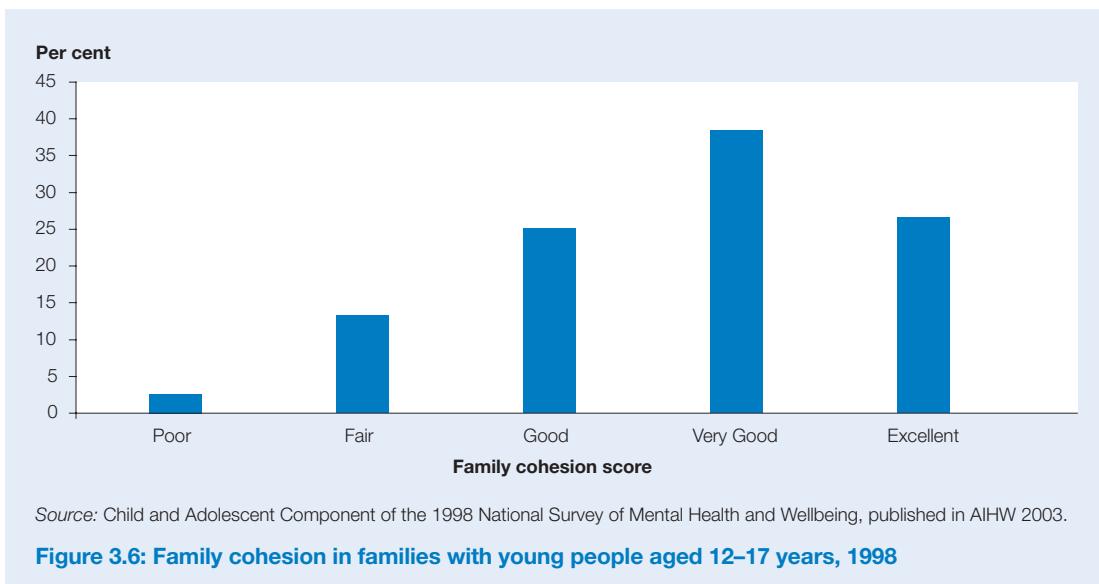
This section covers a wide variety of indicators related to community and family capacity, including: family cohesion, parental health and disability, child protection, parents' socioeconomic status, social support, community and civic participation, assault and victimisation, homelessness, and legal and justice issues.

### Family cohesion

The concept of family cohesion relates to the closeness or emotional bond that exists between family members and is typically measured in terms of interpersonal tensions. A low level of family cohesion is thought to be a risk factor during adolescent development. In particular, low family cohesion has been associated with mental health problems, suicide and substance abuse among young people (Sawyer et al. 2000; Toumbourou & Gregg 2001).

The 1998 Child and Adolescent Component of the National Survey of Mental Health and Well-being examined the relationship between the level of family cohesion, and the mental health of children aged 4–17 years (Sawyer et al. 2000). The survey measured family cohesion by asking parents with a child aged 4–17 years about their family's ability to 'get on with one another'.

Families with difficulty getting on with one another were characterised as follows—'They do not always agree and they may get angry'. The ability of families to get on was rated on a five-point scale, from 'poor' to 'excellent'.



- In 1998, 16% of young people aged 12–17 years reported that their family's ability to 'get along' was poor (3%) or fair (13%).
- Almost two-thirds (65%) of those aged 12–17 years rated their family's ability to get on as very good (38%) or excellent (27%).

Family cohesion (as reported by adolescents) by emotional and behavioural problems (as reported by parents) is shown in Table 3.18. The clinical cut-off reflects the level of emotional and behavioural problems typically experienced by young people with mental health problems and disorders.

**Table 3.18: Family cohesion, by emotional and behavioural problems of young people aged 12–17 years, 1998 (per cent)**

Family cohesion	Below the clinical cut-off	Above the clinical cut-off
Poor	1.8	8.7
Fair	11.0	26.9
Good	24.6	30.9
Very Good	40.2	26.9
Excellent	22.4	6.7

Source: Child and Adolescent Component of the 1998 National Survey of Mental Health and Wellbeing, published in AIHW 2003a.

- In 1998, a higher proportion of young people aged 12–17 years with emotional and behavioural problems lived in less cohesive families—36% of young people with emotional and behavioural problems lived in families with poor or fair family cohesion, compared with only 13% of those without emotional and behavioural problems.

The relationship between family cohesion and young people's emotional and behavioural problems may act in two ways: the poor degree of family cohesion may affect mental health of the young person, but also young people with emotional and behavioural problems are likely to affect family cohesion.

## Parental health and disability

Having a parent with a chronic illness or disability may impact on the health and wellbeing of a young person in a number of ways. Parents with a disability or chronic health condition may pay less attention to the needs of the young person or may be unable to provide the young person with sufficient physical, emotional, or economic support. In addition, young people may be required to take on greater responsibilities or, in some cases, care for the parent. While taking on a caring role may have many positive effects on a young person's development, such as increased maturity or compassion, it is also likely to be both physically and emotionally draining.

**INDICATOR:**  
Proportion of young people aged 12–17 years living in families where cohesion is low

### Parents with poor health

**INDICATOR:**

Proportion of parents rating their health as fair or poor

Even relatively mild health conditions which do not greatly impact on a parent's functioning, may lead to some adverse outcomes for young people. For example, children of mothers with asthma have higher school absences and are more often late than other students (Cassino et al. 1997). In general, the health of parents in Australia is good. The majority (83%) of parents living with young people aged 12–24 years and responding to the Household, Income and Labour Dynamics in Australia (HILDA) Survey in 2004 reported their health as good, excellent or very good. Around 1 in 6 parents (17%) reported their health as fair or poor.

### Parents with a disability

Where a health condition leads to disability, the impact on the young person may be considerable as they may be required to take on caring responsibilities. Young people living in lone-parent families where the parent has a chronic illness or disability may have greater caring responsibilities and less support than young people in couple families due to the lack of a fall-back carer.

Estimates of the number of parents with a disability based on the ABS 2003 Survey of Disability, Ageing and Carers by family type (lone or couple) are presented in Table 3.19. For ABS survey purposes, a person has a disability if he or she has at least one of 17 limitations, restrictions or impairments, which has lasted or is likely to last for at least 6 months (for a detailed definition, see Technical Appendix, AIHW 2005b).

**Table 3.19: Parents with a disability and their co-resident children aged 15–24 years, by family type, 2003**

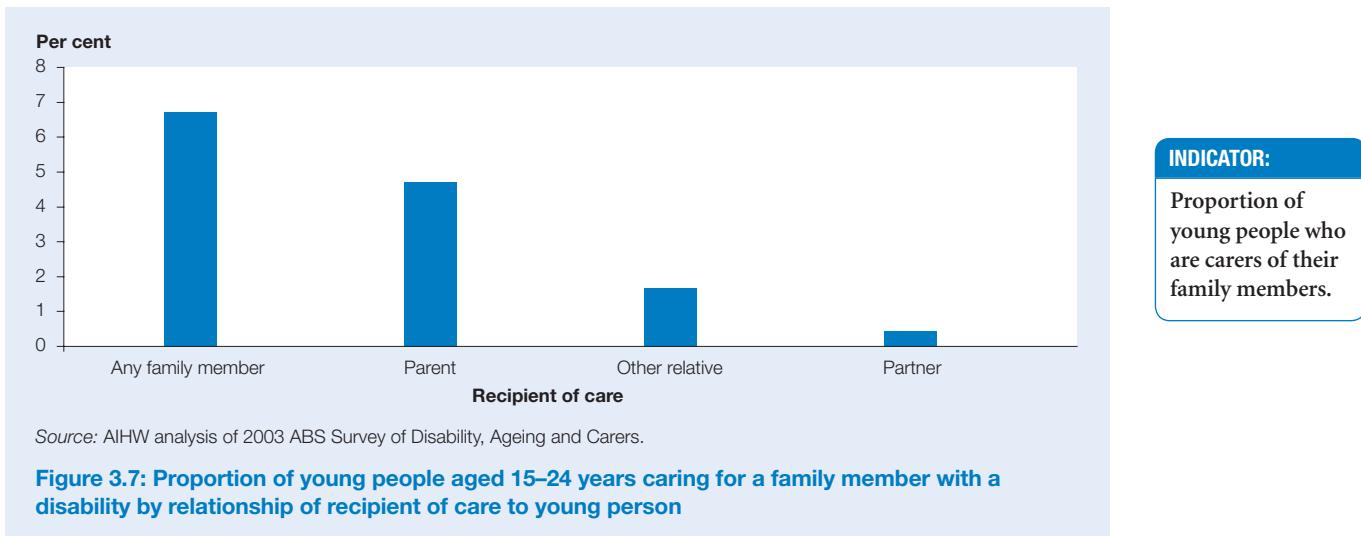
<b>Family type</b>	<b>Parent has a profound or severe core activity limitation</b>		<b>Parent has a disability</b>	
	<b>Number</b>	<b>Per cent</b>	<b>Number</b>	<b>Per cent</b>
<b>Parents with a disability and co-resident children aged 15–24 years</b>				
Couple family	65,800	3.6	271,200	15.0
Lone parent	12,100	4.2	71,300	24.5
Total parents	77,900	3.7	342,500	16.3
<b>Young people aged 15–24 years living with a parent with a disability</b>				
Couple family	146,900	10.1	371,800	25.7
Lone parent	21,600	5.2	97,100	23.5
Total young people	168,400	9.0	468,900	25.2

Source: AIHW analysis of ABS 2003 Survey of Disability, Ageing and Carers confidentialised unit record file.

- In 2003, 16.3% of parents with co-resident children aged 15–24 years had a disability (an estimated 342,500 parents). Of these parents, almost one-quarter (77,900 or 3.7% of all parents) had a severe or profound core activity limitation (meaning they sometimes or always need assistance with activities of daily living—self-care, mobility and communication).
- Lone parents had a higher rate of disability than parents in couple families (24.5% compared with 15.0%).
- Around one-quarter (25.2%) of young people aged 15–24 years who were living with their parents in 2003 had a parent with a disability, including 9.0% living with a parent with a profound or severe core activity limitation.

### Young carers

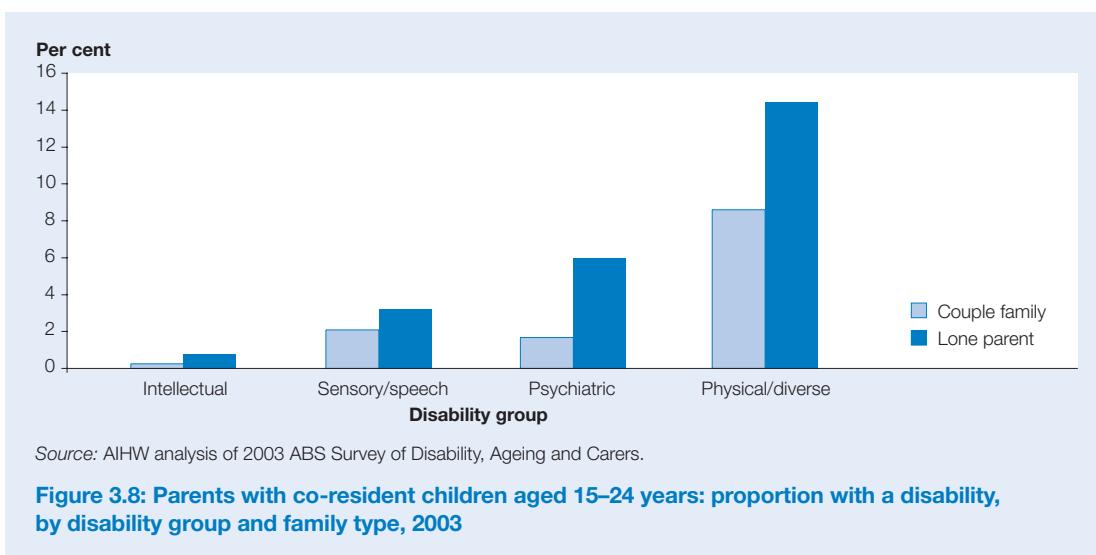
Whether caring for a parent or other family members, young people who become carers may experience a restricted social life, lower educational achievement and increased stress (Mukherjee et al. 2002). In many cases, the demands of a caring role mean young people have less time available for study and socialising than other young people. Young carers' mental health may also be affected through social isolation and the stress of extra responsibilities (Gays 2000).



- In 2003, 6.7% of young people aged 15–24 years were caring for a family member with a disability. The most common recipient of care was a parent—4.7% of young people were caring for one or both of their parents. An estimated 1.6% were caring for other relatives and less than 1% were caring for a spouse/partner.

The adverse outcomes experienced by young people may vary according to the specific type of disability or health condition that the parent has. For example, young people caring for a parent with a physical disability report a variety of physical ailments resulting from the caring role, including muscle strain, fatigue and exhaustion (Gays 2000). Young people living with a parent with mental illness may experience greater social isolation as a result of the stigma attached to mental illness, as well as the stress of coping with the parent's condition.

Figure 3.8 presents disability prevalence rates among parents for four disability groups: intellectual/learning, psychiatric, sensory/speech, and physical/diverse. Intellectual/learning disability is associated with impairment of intellectual functions, with limitations in a range of daily activities and with restriction in participation in various life areas. Psychiatric disability is associated with clinically recognisable symptoms and behaviour patterns frequently associated with distress that may impair personal functioning in normal social activity. Sensory/speech disability is associated with impairment of the eye, ear and related structures, and of speech structures and functions. Activity limitations may occur in various areas, for instance communication and mobility. Physical/diverse disability is associated with the presence of an impairment, which may have diverse effects within and among individuals, including effects on physical activities such as mobility.



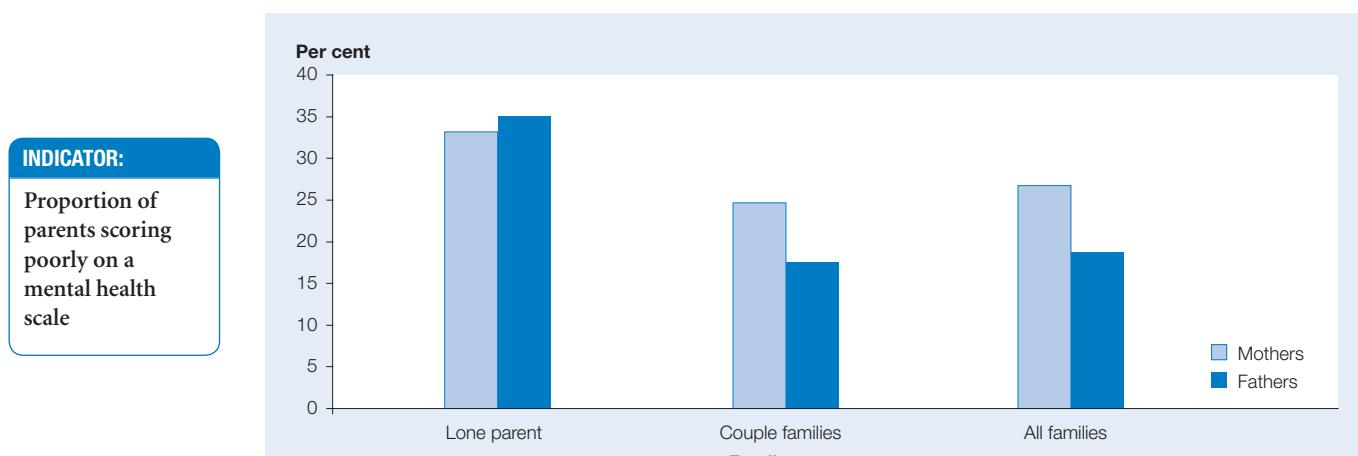
- In 2003, physical/diverse conditions were the most prevalent disability group among parents of co-resident children aged 15–24 years (9.4%), followed by psychiatric (2.3), sensory/speech (2.2%), and intellectual (less than 1%).
- While lone parents had higher prevalence rates than parents in couple families for all disability groups, this difference was particularly pronounced for psychiatric disabilities (6.0% compared with 1.7%).

### Parents with mental health problems

Children and young people living with a parent with mental health problems are thought to be at an increased risk of both physical and mental health problems (Fudge & Mason 2004). Farrell et al. (1999) reported higher rates of emotional and behavioural problems among children who live with a parent with mental illness. An estimated 25–50% of children whose parents suffer from a mental illness experience a psychological disorder during childhood, adolescence or adulthood, compared with 10–20% in the general population. Similarly, 10–14% of children with a parent with mental illness will be diagnosed with a psychiatric illness at some point in their lives, compared with 1–2% of the general population.

A number of factors related to parental mental illness are thought to compound a young person's risk of physical and mental health problems. These factors may work in combination, and include genetic inheritance, poverty, homelessness and extra caring responsibilities (Fudge & Mason 2004). In addition, a minority of young people living with a parent with a severe mental illness may need extra care and protection during periods when their parent's condition is difficult to manage (Fudge & Mason 2004).

It is difficult to measure the number of young people living with a parent with mental illness as the parental role of people accessing mental health services is not always recorded and definitions of mental illness vary in survey data. One measure of mental health is available from the Short Form 36 (SF-36)—a multipurpose, 36 item survey that measures 8 domains of subjective health. Scale scores for each of the 8 health domains can be summarised to produce a single measure of mental health: the Mental Component Summary (MCS) score. An analysis of population averages suggests an MCS score of less than 41 is indicative of poor mental health.



**Figure 3.9: Parents with co-resident children aged 12–24 years: proportion with a Mental Component Summary score of less than 41 by family type and sex, 2004**

- Around one-quarter (23%) of parents with co-resident children aged 12–24 years responding to the HILDA survey had MCS scores of less than 41 (indicating poor mental health). A slightly higher proportion of mothers scored poorly (27%) compared with fathers (19%).

- Around 1 in 3 lone parents scored poorly compared with around 1 in 5 parents in couple-parent families.

## Population groups

Some groups within the population have much higher rates of chronic illness and disability than others, especially Aboriginal and Torres Strait Islander people and those from low socioeconomic backgrounds. Parents in these population groups could be expected to experience similar higher rates of chronic illness and disability compared with other parents. Results for parents responding to the HILDA survey suggest that this may be the case, although the results for Indigenous parents are based on a small sample and should therefore be interpreted with caution.

### Aboriginal and Torres Strait Islander young people

Indigenous parents with co-resident children aged 12–24 years and responding to the HILDA survey were more likely than non-Indigenous parents to report their health as fair or poor (30% compared with 17%) and less likely to report their health as good or excellent (20% compared with 45%). However, these results are based on a very small Indigenous sample and should therefore be interpreted with caution.

### Socioeconomic status

Of parents living with young people aged 12–24 years and responding to the HILDA survey, those living in the most disadvantaged areas (lowest socioeconomic quintile) were more likely to report their health as fair or poor (22%) than those living in the least disadvantaged areas (highest quintile) (11%).

Almost one-third (30%) of parents in the most disadvantaged areas had an MCS score of less than 41 (indicating poor mental health). In contrast, only around one-fifth (18%) of parents in the least disadvantaged areas had an MCS score of less than 41.

## Child protection

Abuse and neglect can have both short-term and long-term adverse consequences for young people. In the short term, young people are at immediate risk of physical injuries and emotional trauma. Abuse and neglect may also interrupt a young person's learning and development process, resulting in lower social competence and poor school performance. In the long term, young people who have experienced abuse are at increased risk of depression and suicidal and self-injurious behaviours (Shonkoff & Phillips 2000). The short- and long-term consequences of abuse may be related to the type, severity, and duration of abuse, and the context in which it occurs.

Child abuse and neglect is associated with a number of risk factors, including poor parental mental health, substance misuse, economic stress and social disadvantage, and family disruption. These factors may also compound the negative effects of abuse. Other factors may help to minimise the negative effects of abuse. For example, the effects of abuse have been found to be less harmful if a child receives emotional support from another important adult (Shonkoff & Phillips 2000).

Young people who are being abused or neglected, or whose parents cannot provide adequate care and protection, may come to the attention of child protection authorities. The AIHW compiles national data on child protection notifications, investigations and substantiations, children on care and protection orders, and children in out-of-home care. It is important to note that these data include only cases of abuse and neglect that have come to the attention of child protection authorities, and therefore represent only a proportion of all cases of abuse and neglect.

In Australia, child protection is the responsibility of state and territory governments and each state and territory has its own legislation, policies and practices in relation to child protection. Variations between jurisdictions in recorded cases of abuse or neglect reflect the different policies, practices

and data systems in place in each jurisdiction, rather than a true variation in the levels of abuse and neglect (see Bromfield & Higgins 2005).

The trends presented in this section need to be interpreted with caution. Increases over time may be due to more children requiring a child protection response, but are more likely to be a result of:

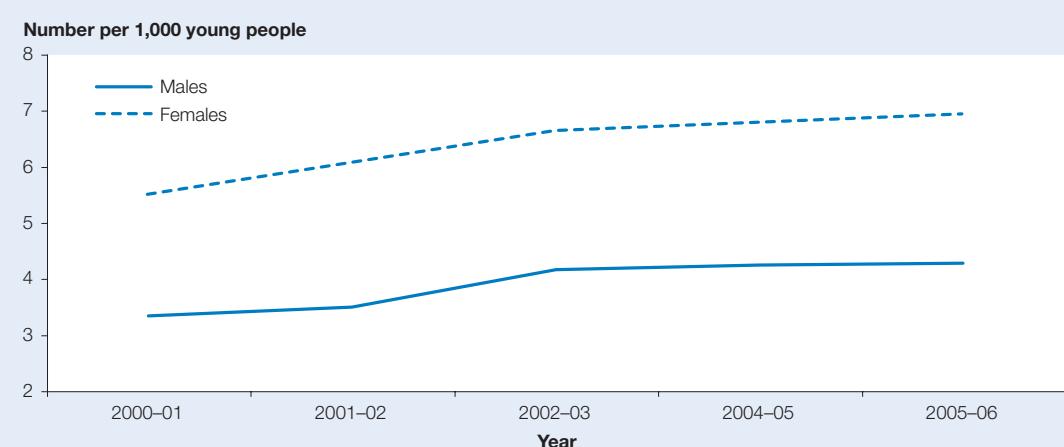
- increased community awareness due to media and departmental campaigns about child abuse and neglect and the role of community service departments in this area
- changes to policies, practices and data reporting methods.

### Child protection substantiations

All states and territories have some level of legislation requiring the compulsory reporting of suspected abuse or neglect. Reports are assessed by state and territory departments in the community services sector to determine whether further investigation or other action is required. An investigation of suspected abuse or harm is classified as 'substantiated' if there is reasonable cause to believe that a young person has been, is being or is likely to be abused or neglected or otherwise harmed (AIHW 2006c).

Due to the small numbers involved, young people aged 17 years are not included in the following indicator.

**INDICATOR:**  
Rate of young  
people aged 12–16  
years who are  
the subject of a  
child protection  
substantiation



Note: Data for 2003–04 have been excluded from the time series since New South Wales provided limited data due to the introduction of a new client information system.

Source: AIHW Child Protection Data Collection.

**Figure 3.10: Rate of young people aged 12–16 years who were the subject of a child protection substantiation 2000–01 to 2005–06**

- The rate of young males aged 12–16 years who were the subject of a child protection substantiation increased from 3.3 per 1,000 young males in 2000–01 to 4.3 per 1,000 young males in 2005–06. The corresponding rate for young females increased from 5.5 per 1,000 young females to 6.9 per 1,000 young females.
- Between 2000–01 and 2005–06, the rates for young females who were the subject of child protection substantiations were consistently higher than the rates for young males.

### Care and protection orders

In cases where there are serious concerns about a young person's safety and wellbeing, child protection authorities may apply to the relevant court to place the young person on a care and protection order. Recourse to court is generally a last resort and is used in situations where supervision and counselling are resisted by the family, where other avenues for resolution of the situation have been exhausted, or where removal of a child into out-of-home care requires legal authorisation. These orders include guardianship and custody orders as well as supervision orders.

Young people may be placed on a care and protection order for reasons other than abuse and neglect—for example, in situations where the parents are deceased, ill or otherwise unable to care for the young person, or where there is an irreversible breakdown in the child–parent relationship (AIHW 2006c)

**Table 3.20: Young people aged 12–17 years on care and protection orders at 30 June 1998 to 30 June 2006**

Age (years)		1998	1999	2000	2001	2002	2003	2004	2005	2006	INDICATOR:
12–14	Number	3,370	3,378	3,469	3,638	3,847	4,213	n.a.	4,734	5,080	Rate of young people aged 12–17 years who are the subject of care and protection orders
	Rate (per 1,000)	4.3	4.3	4.3	4.5	4.8	5.1	—	5.7	6.0	
15–17	Number	3,167	3,013	3,688	3,446	3,458	3,570	n.a.	3,781	4,196	
	Rate (per 1,000)	4.1	3.8	4.6	4.3	4.3	4.4	—	4.6	5.0	

n.a. Not available.

— Nil or rounded to zero.

Note: Data for 2004 have been excluded from the time series since New South Wales provided limited data due to the introduction of a new client information system.

Source: AIHW Child Protection Data Collection.

- In 2006, there were 9,276 young people aged 12–17 years on care and protection orders (5.5 per 1,000 young people), an increase of almost one-third since 1998 (4.2 per 1,000 young people). The majority (55%) of these were aged 12–14 years.
- The rate of young people aged 12–14 years on care and protection orders increased from 4.3 to 6.0 per 1,000 young people between 1998 and 2006. The corresponding rate for 15–17 year olds increased from 4.1 to 5.0 per 1,000 young people.

The increase in the number of children on care and protection orders is attributed to a greater awareness of child abuse and neglect, but also to the cumulative effect of the growing number of children who enter the child protection system at a young age and remain on orders until they reach 18 years of age. Also, jurisdictional analyses indicate that children are being admitted to care and protection orders for increasingly complex factors related to parental substance abuse, mental health and family violence.

**Table 3.21: Living arrangements of children on care and protection orders, at 30 June 2006 (per cent)**

Living arrangements	12–14 years	15–17 years
Home-based care		
Relatives/kin	34.9	24.8
Foster care	40.8	35.7
Parents	11.2	9.9
Other home-based care	1.5	1.8
<i>Total home-based care</i>	88.3	72.3
Facility-based care	8.8	13.6
Independent living	1.4	10.2
Other	1.5	4.0
<b>Total</b>	<b>100.0</b>	<b>100.0</b>

Source: AIHW Child Protection Data Collection.

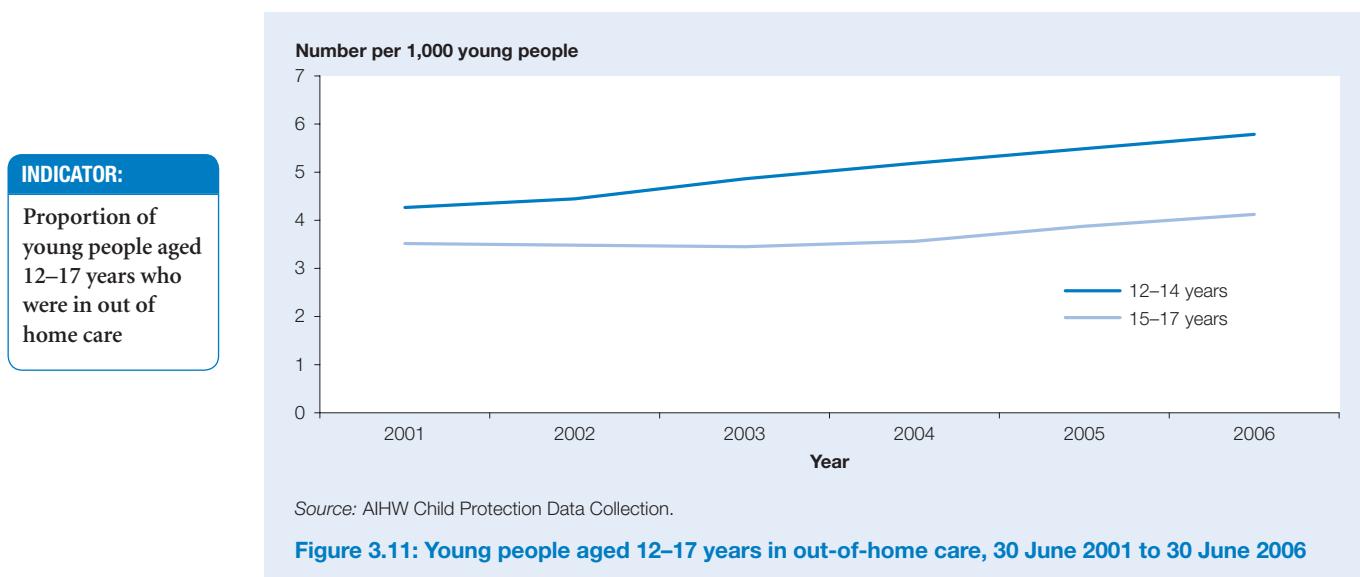
- The vast majority of young people aged 12–14 years and 15–17 years on care and protection orders were living in home-based care (88% and 72% respectively). Home-based care includes living with parents or other relatives and foster care.
- Young people aged 15–17 years were more likely than 12–14 year olds to be living in facility-based care (14% compared with 9%). One in ten young people aged 15–17 years were also living independently in 2006.

### Out-of-home care

Out-of-home care provides alternative accommodation for young people who are unable to live with their parents. In the majority of cases young people in out-of-home care are also on a care and protection order of some kind.

Placing young people in out-of-home care is usually a last resort as the current emphasis in policy and practice is to keep families together wherever possible. If it is necessary to place young people in out-of-home care, then placement with other relatives or kin is preferred. In cases where it is not possible to place young people with relatives or kin, they may be placed in foster care or residential care. At 30 June 2006, 36% of 12–17 year olds in out-of-home care were living with relatives or kin, 49% were in foster care and 11% were in residential care. The remainder (4%) were living independently, in family groups, or had other living arrangements. Most young people placed in out-of-home care are eventually reunited with their families (AIHW 2006c).

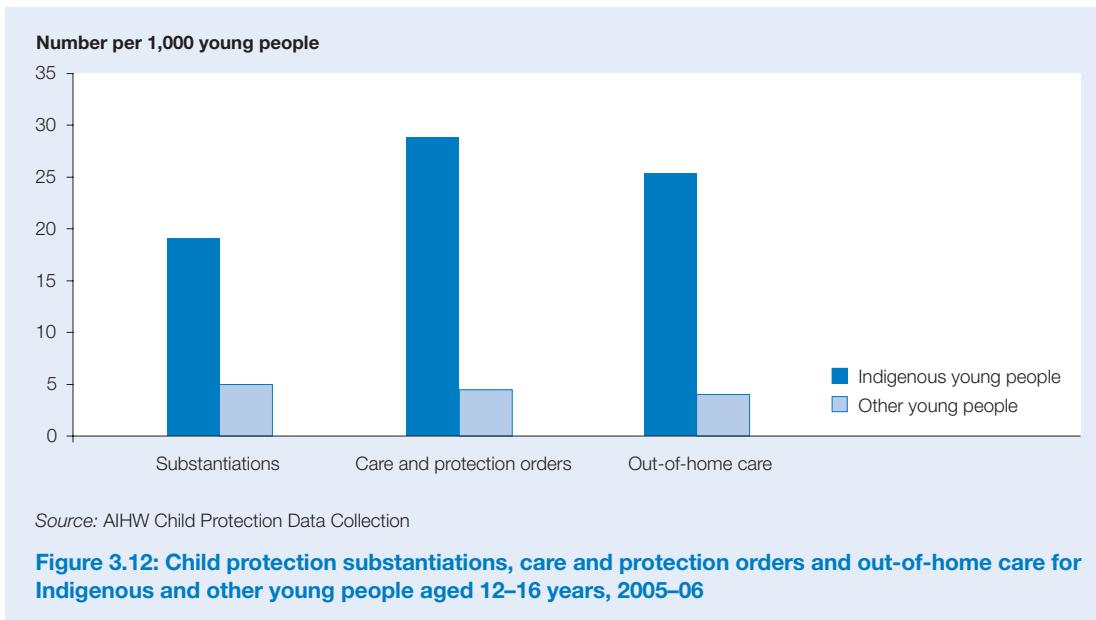
Young people in out-of-home care represent a particularly disadvantaged group. Most young people in out-of-home care have experienced child abuse or neglect, as well as the breakdown of their families.



- In 2006, 8,332 young people aged 12–17 years were in out-of-home care (5.0 per 1,000 young people).
- The rate of young people aged 12–14 years in out-of-home care increased from 4.3 to 5.8 per 1,000 young people between 2001 and 2006. The corresponding rate for 15–17 year olds increased from 3.5 to 4.1 per 1,000 young people.
- Between 2001 and 2006, the rate of young people in out-of-home care was higher for 12–14 year olds than for those aged 15–17 years. This may be because young people aged 15–17 years are legally able to live independently whereas those aged 12–14 years are required to be placed in the care of an adult.

### Aboriginal and Torres Strait Islander young people

Indigenous young Australians are heavily over-represented in the child protection system. The likely reasons for this over-representation include the intergenerational effects of the ‘stolen generation’ such as separation from family and culture, the poor socioeconomic status of Indigenous families, family violence and cultural differences in child rearing practices (AIFS 2005; AIHW: Al-Yaman et al. 2006; Cunneen & Libesman 2000; Memmott et al. 2001).



- During 2005–06, 1,170 Indigenous young people aged 12–16 years were the subject of a substantiated child protection report—a rate of 19 per 1,000 young people (15 and 24 per 1,000 for males and females respectively). The corresponding rate for other Australians was 5 per 1,000 young people.
- Indigenous young people were 6 times as likely as other young Australians to be on care and protection orders and to be placed in out-of-home care. In 2005–06, the rate of Indigenous young people on care and protection orders was 29 per 1,000 young people, compared with 5 per 1,000 for other Australians. Similarly, 25 per 1,000 Indigenous young people were in out-of-home care, compared with 4 per 1,000 for other young Australians.

The Aboriginal Child Placement Principle outlines the preferential order for the placement of Aboriginal and Torres Strait Islander children when they are placed outside their immediate family (Lock 1997:50):

- with the child's extended family;
- within the child's Indigenous community; then
- with other Indigenous people.

All jurisdictions have adopted the Aboriginal Child Placement Principle either in legislation or policy. The impact of the Principle is reflected in the relatively high proportion (76%) of Indigenous children who were placed either with Indigenous caregivers or with relatives at 30 June 2006.

## Social support

Social support is an important part of wellbeing, and can also have positive health effects. Research suggests that people without social support have higher rates of morbidity and mortality than people with social networks. There are several ways in which social support may have positive effects on health. People within a social network may play a role in health promotion and positively influence the health related behaviours of others. In addition, a broad social network may increase a person's resources and knowledge, allowing them to gain access to quality health services. Social support may also have positive psychological or emotional effects, helping people to better cope with stress and illness.

Studies looking specifically at the link between social support and adolescent health have found a relationship between a young person's level of social support and a number of health risk factors, including physical inactivity, depression, and tobacco smoking (Beets et al. 2006; Vilhjalmsson 1994). Similarly, studies have found that young people with high levels of social support report better self-assessed health than those with low support (Geckova et al. 2003; Vilhjalmsson 1994).

### *Measuring social support*

There is no single universally accepted definition of social support, and no single method to measure social support. Some measures of social support look at the frequency of contact with family and friends or the ability to find help in a time of crisis, while other measures look at people's perceptions of the quality of their relationships with others and their feelings of loneliness.

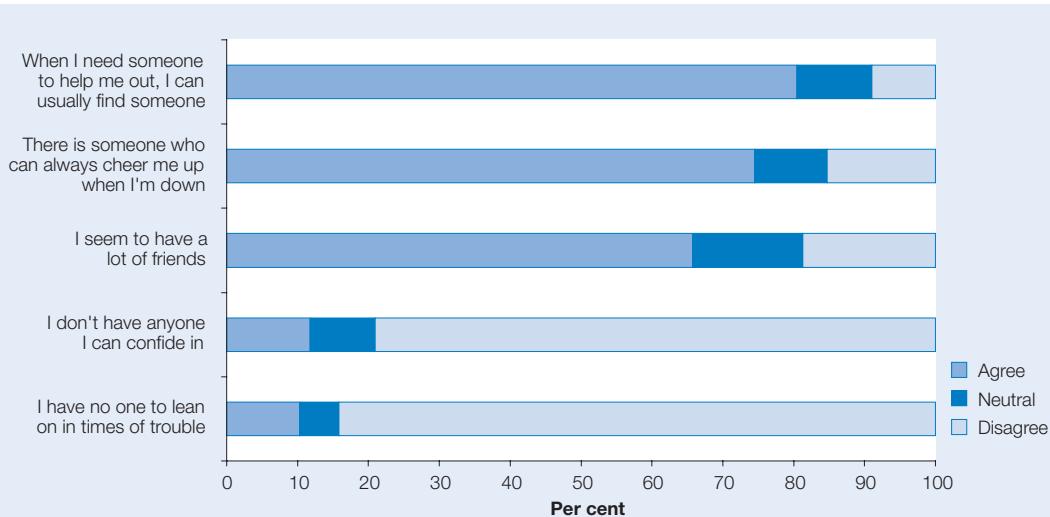
The 2004 HILDA survey used 10 subjective statements to measure social support—5 statements suggesting a low level of social support and 5 statements suggesting a high level of social support. Respondents rated the statements on a 7-point scale ranging from strongly disagree to strongly agree. Young people's responses to these statements are presented in this section.

While responses differed between statements, the majority of young people agreed with statements suggesting high social support (66% to 94% of young people gave a rating of 5 or higher) and disagreed with statements suggesting low social support (51% to 84% gave a rating of 3 or lower).

**INDICATOR:**  
Proportion of  
young people  
aged 15–24 years  
who score well  
on a social  
support scale

Combining responses for all 10 statements, around 91% of young people aged 15–24 years had social support in 2004 (90% of males and 93% of females).

Lack of social support was associated with a number of health risk behaviours. Around 30% of young people who lacked social support were daily smokers compared with 17% of other young people. Similarly, around 30% of young people who lacked social support did not participate in physical activity or participated less than once per week, compared with 20% of other young people.



Source: AIHW analysis of HILDA Survey data, Wave 4, (release 4.1).

**Figure 3.13: Young people aged 15–24 years, ratings on social support scales, 2004**

- Of the statements suggesting a high level of social support, the statement 'I seem to have a lot of friends' had the lowest proportion of young people agreeing with it (66%). Around 1 in 10 young people agreed with the statements 'I don't have anyone I can confide in' and 'I have no one to lean on in times of trouble'.

## Population groups

Outside their immediate and/or extended families, young people are likely to find support among their peers at school, university or in the workplace. For young people who are unemployed, geographically isolated or highly mobile, establishing social networks may be more difficult. It could be expected that young people living in remote parts of Australia, or in communities with high youth unemployment, will experience greater social isolation than other young people.

### Aboriginal and Torres Strait Islander young people

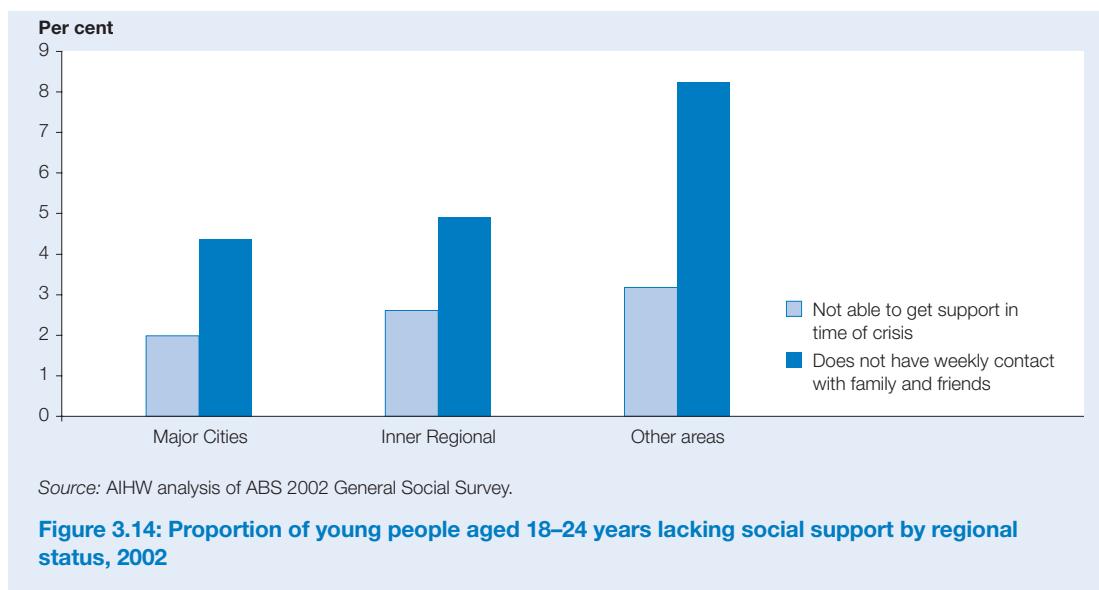
Based on results from the 2004 HILDA survey, there was no statistically significant difference between the proportions of Indigenous and non-Indigenous young people who lacked social support (11% and 8% respectively).

Based on results from the ABS 2002 National Aboriginal and Torres Strait Islander Social Survey, around 91% of Indigenous young people aged 15–24 years were able to get support in a time of crisis from someone outside their household (91% for both males and females) (ABS 2004f).

### Regional status

Among young people aged 15–24 years responding to the HILDA survey in 2004, there was no statistically significant difference between the proportions of young people living in major cities who lacked social support (7%) and young people living in regional or remote areas (11%).

Social support was measured in the ABS 2002 General Social Survey through items such as the availability of support in a time of crisis and frequency of contact with family and friends. Results from the survey indicate that young people aged 18–24 years living in ‘Other areas’ (Outer Regional, Remote and Very Remote areas) were less likely to have weekly contact with families and friends than young people in Major Cities.



### Socioeconomic status

Based on results from the HILDA survey, 11% of young people aged 15–24 years living in the most disadvantaged areas (lowest socioeconomic quintile) lacked social support compared with 5% of young people living in the least disadvantaged areas (highest socioeconomic quintile) in 2004.

## Community and civic participation

Young people's health and wellbeing has been shown to be associated with a sense of connectedness to family, school and the community (AIHW 2003a). Community and civic participation refers to those activities which demonstrate people's connectedness to their community, and includes activities such as being a member of a community organisation, enrolling to vote, signing a petition and volunteering.

Both the community and young people themselves benefit from youth participation in community and civic life. Community benefits include increased social trust, stronger social ties, and a greater capacity for collective action. The benefits for individuals have largely been examined with reference to adults (for example, Baum et al. 2000), where patterns of participation have been linked to overall physical and mental health. Young people who participate in community activities can also contribute to their own development through learning new skills, building confidence, and establishing diverse social networks.

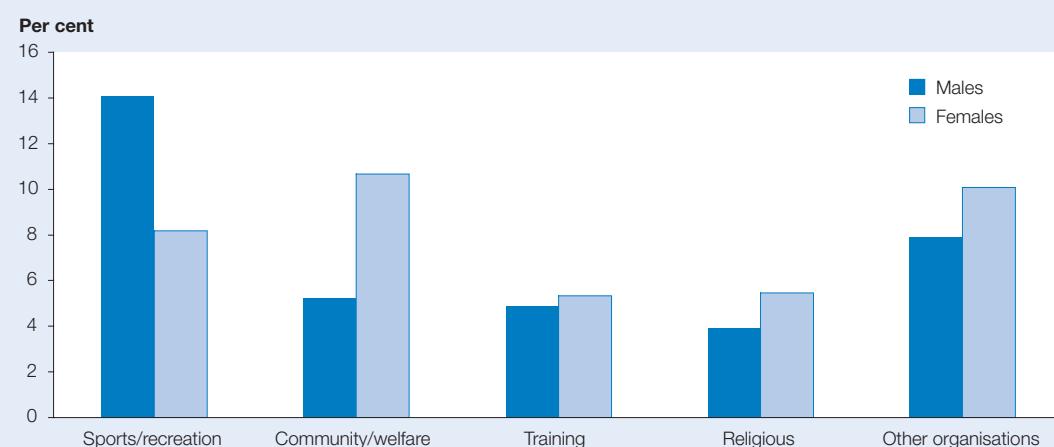
### Participation in community activities: volunteering

Participation in social and community life is an important aspect of life for most people, and provides social and psychological benefits which are important for wellbeing. Volunteering is one form of community participation, which not only provides young people with social contact and learning opportunities, but also provides a valuable contribution to many community and welfare organisations.

#### INDICATOR:

Volunteering rate  
for young people  
aged 18–24 years

In 2002, over one-quarter (28%) of young people aged 18–24 years were involved in unpaid voluntary work, according to the ABS 2002 General Social Survey. Proportions were similar for young males (27%) and young females (29%).



Source: AIHW analysis of 2002 ABS General Social Survey.

**Figure 3.15: Proportion of young people aged 18–24 years engaged in unpaid volunteer work, by type of organisation, 2002**

- Females were twice as likely as males to be engaged in unpaid volunteer work with community/welfare organisations (10.7% and 5.2% respectively). In contrast, males were more likely than females to be engaged in unpaid volunteer work with sports/recreation organisations (14.1% and 8.2% respectively).

Young people were less likely to be involved in voluntary work than people in other age groups. The age group with the highest involvement was 35–44 years—42% of people in this age group were volunteers. The only age group with a lower volunteering rate was 75 years and over—24% of people in this age group were volunteers.

Young people who volunteer in cultural and leisure activities may experience particular benefits. Cultural and leisure activities are often social activities that bring people with similar interests together in a relaxed and friendly environment. Many leisure activities offer young people an opportunity to rest and unwind or get outdoors, be active, and have fun—all of which is likely to help relieve stress and improve health.

Based on results from the ABS 2004 Survey of Work in Selected Culture and Leisure Activities, 21% of young people aged 15–24 years were involved in culture or leisure activities as a volunteer—25% of young females and 17% of young males. When considering unpaid involvement only, young people had a higher rate of involvement than any other age group (15%).

**INDICATOR:**

Proportion of young people aged 15–24 involved in cultural or leisure activities as a volunteer

### **Participation in civic activities: voting**

Civic engagement is an extension of community engagement, and refers to participation in more civically oriented organisations or events. It includes involvement in both formal and informal political processes, such as attending protest meetings, signing petitions, or making a regular commitment to a non-profit organisation's activities.

One of the most fundamental civic activities in Australia is enrolling to vote. At age 17, all Australians are entitled to register on the electoral roll and voting is compulsory for those aged 18 years and above.

**INDICATOR:**

Proportion of 17 and 18 year olds who have registered to vote

### **Aboriginal and Torres Strait Islander young people**

Results from the ABS 2002 National Aboriginal and Torres Strait Islander Social Survey indicate that one-quarter of Indigenous young people aged 15–24 years undertook voluntary work in the 12 months prior to the survey (ABS 2004f). Proportions were similar for young Indigenous males (26%) and young females (24%).

## **Assault and victimisation**

Obtaining an accurate count of the number of Australians who are the victims of violence is difficult as many victims are reluctant to report the crime. It is estimated that while 94% of motor vehicle thefts are reported to police, only 37% of assaults are reported (AIC: Johnson 2005). Research suggests that young victims aged under 25 years are less likely to report a violent crime than older victims (AIC: Johnson 2005). Young people, in particular, may feel intimidated and reluctant to report personal crimes if the perpetrator is known to them, or is in a position of power (perhaps because they are older or an authority figure). Despite their reluctance to report violent crime, young people have higher rates of all types of personal crime and rates decline with age (AIC: Johnson 2005).

### *Data sources and limitations*

There are numerous sources of crime data, both administrative and survey, and victimisation rates vary considerably across these data sources (ABS 2004e). Victimization rates based on administrative data tend to be significantly lower than those based on survey data as many people do not report crimes to the police.

Even within a particular type of data source (that is, administrative or survey), rates will vary. For example, survey data will vary according to the survey methodology and people's willingness to disclose their experiences in the survey context. Similarly, administrative sources vary according to the recording practices of police in different jurisdictions. In 2005, recording practices for assault

and sexual assault differed so widely across jurisdictions that they cannot be compared. As a result, there are no recent national recorded crime statistics for these offences (ABS 2006e).

Data reported in this section include victimisation rates from three ABS surveys—the 2005 Crime and Safety Survey, the 2005 Personal Safety Survey, and the 2002 General Social Survey. Age groups vary across surveys, as does the detail of information collected. In all surveys, respondents were asked about personal crimes they had experienced in the last 12 months. The AIHW 2004 National Drug Strategy Household Survey provides additional information about young people who are victims of alcohol- and drug-related violence. Together, these sources provide a broad picture of physical and sexual assault among young people in Australia.

### Physical and sexual assault

A large body of international research suggests that physical and sexual violence has multi-faceted short- and long-term negative effects on development (Paolucci et al. 2001). In addition to physical injuries, a history of abuse has been associated with depression, anxiety disorders, and substance abuse (Molnar et al. 2001). Data also show that young victims of violent crime are more likely than other young people to become victims of violent crime in adulthood (AIC (Australian Institute of Criminology): Johnson 2005).

#### INDICATOR:

Rate of young people aged 12–24 years who have been the victim of physical and/or sexual assault

**Table 3.22: Victims of assault aged 15–24 years, by age group and sex, 2005**

Age group	Males		Females		Persons		Victimisation prevalence rate (%)
	'000	Per cent of all male victims	'000	Per cent of all female victims	'000	Per cent of all victims	
15–19	68.1	16.5	65.4	18.3	133.5	17.3	9.9
20–24	66.9	16.2	45.3	12.7	112.2	14.6	7.9
<b>15–24</b>	<b>135.0</b>	<b>32.7</b>	<b>110.7</b>	<b>21.0</b>	<b>245.7</b>	<b>21.9</b>	<b>8.9</b>

Source: ABS 2006e.

- In 2005, there were 245,700 young people aged 15–24 years who were victims of assault (a victimisation prevalence rate of 8.9%).
- The victimisation prevalence rate for assault in 2005 was slightly higher for 15–19 year olds (9.9%) than for 20–24 year olds (7.9%).
- One-third (32.7%) of all male victims of assault and one-fifth (21.0%) of all female victims of assault were aged 15–24 years.

**Table 3.23: Victims of violence 18–24 years, by type of violence and sex, 2005**

Type of violence	Males		Female		Persons	
	Per cent of all male victims	Per cent of young males	Per cent of all female victims	Per cent of young females	Per cent of all victims	Per cent of young people
Physical assault	42.7	21.1	27.2	7.0	37.5	14.2
Physical threat	35.4	14.2	30.2	5.2	33.9	9.8
Sexual assault	*32.6	*1.4	28.2	3.0	29.5	2.2

Note: Estimates marked with \* have a relative standard error (RSE) of between 25% and 50% and should be interpreted with caution.

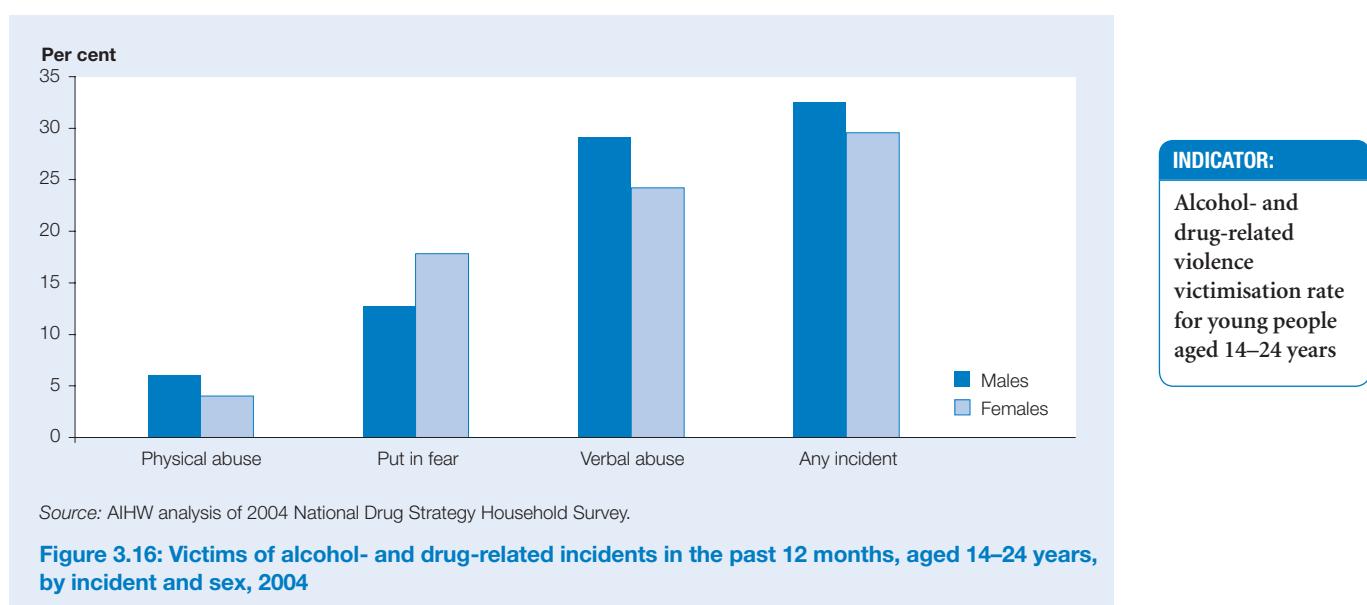
Source: ABS 2006n.

- In 2005, 14% of 18–24 year olds were the victims of physical assault, 10% of physical threats and 2% of sexual assault.
- Males had much higher rates of physical assault (21.1%) and physical threat (14.2%) than females (7.0% and 5.2% respectively).
- More than one-third of all victims of physical assault (37.5%) and physical threat (33.9%) were young people aged 18–24 years.

## Alcohol- and drug-related violence

There is a strong link between alcohol and other drug consumption and violence. Young people are more likely to be involved in alcohol and other drug-related violence than other Australians, particularly young males. Violence can include physical and verbal abuse, as well as being put in fear by another person, all of which can impact on a person's health and wellbeing.

Data on alcohol and drug related violence is from the 2004 National Drug Strategy Household Survey—a comprehensive survey focused on licit and illicit drug use among Australians.



- In the 12 months prior to the survey, 31% of young people aged 14–24 years were the victim of drug-related violence (including alcohol-related violence). Verbal abuse was the most common form of drug-related violence experienced by young people (27%), followed by being 'put in fear' (15%), and physical abuse (5%).
- Males were slightly more likely to report being the victim of alcohol and drug-related violence than females (33% compared with 30%).
- While females were more likely than males to report being 'put in fear', males were more likely than females to report being the victim of drug-related verbal abuse or drug-related physical abuse.

**Table 3.24: Victims of alcohol- and drug-related incidents in the past 12 months, aged 14–24 years, by influence and incident, by sex, 2004 (per cent)**

Influence and incident	Males	Females	Persons
<b>Alcohol</b>			
Verbal Abuse	27.5	22.5	25.0
Physical Abuse	5.4	3.5	4.4
Put in Fear	10.6	15.4	13.0
<b>Any incident</b>	<b>30.4</b>	<b>27.4</b>	<b>28.9</b>
<b>Illicit drugs</b>			
Verbal Abuse	10.8	8.8	9.8
Physical Abuse	1.8	1.4	1.6
Put in Fear	6.0	8.5	7.3
<b>Any incident</b>	<b>13.3</b>	<b>12.5</b>	<b>12.9</b>

Source: AIHW analysis of 2004 National Drug Strategy Household Survey.

- In 2004, 29% of young people aged 14–24 years were the victims of alcohol-related violence and 13% were the victims of illicit drug-related violence.
- One-quarter of 14–24 year olds had been verbally abused by a person under the influence of alcohol.

### Hospital separations due to assault

In more serious cases of assault, the victim may require medical treatment or may be hospitalised.

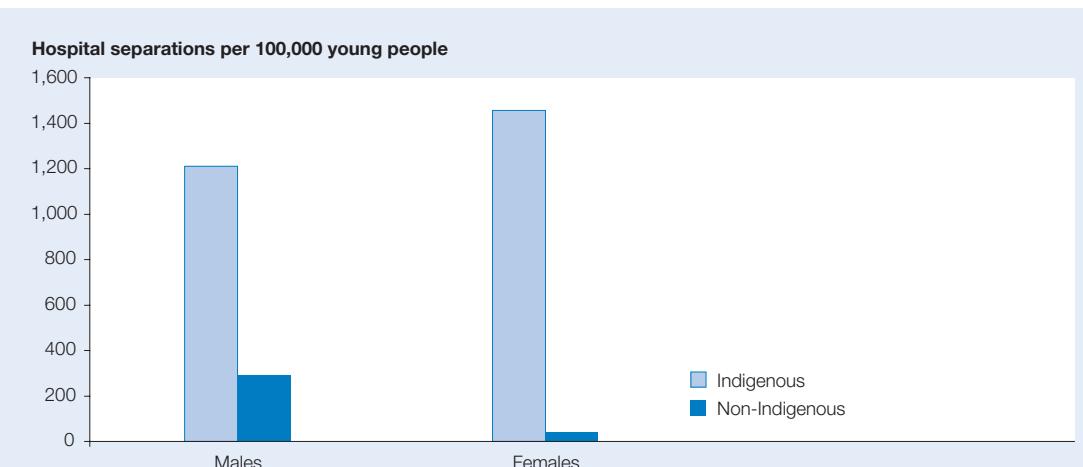
In 2004–05, there were 7,359 hospital separations among young people aged 12–24 years for an injury caused by assault, a rate of 203 per 100,000 young people (ICD-10-AM codes S00–T98 & X85–Y09, Y87.1).

The young person's relationship to the person identified as the perpetrator of the assault differed for young males and young females. Among the separations for young males, 16% were due to assaults perpetrated by one or multiple strangers, compared with 8% for young females. In contrast, 33% of the separations for young females were due to assaults perpetrated by a spouse or domestic partner, compared with less than 1% for young males.

Further information on hospital separations for injuries caused by assault is available under *Injury and poisoning* in Part 2 of this report.

### Population groups

#### Aboriginal and Torres Strait Islander young people



#### Notes

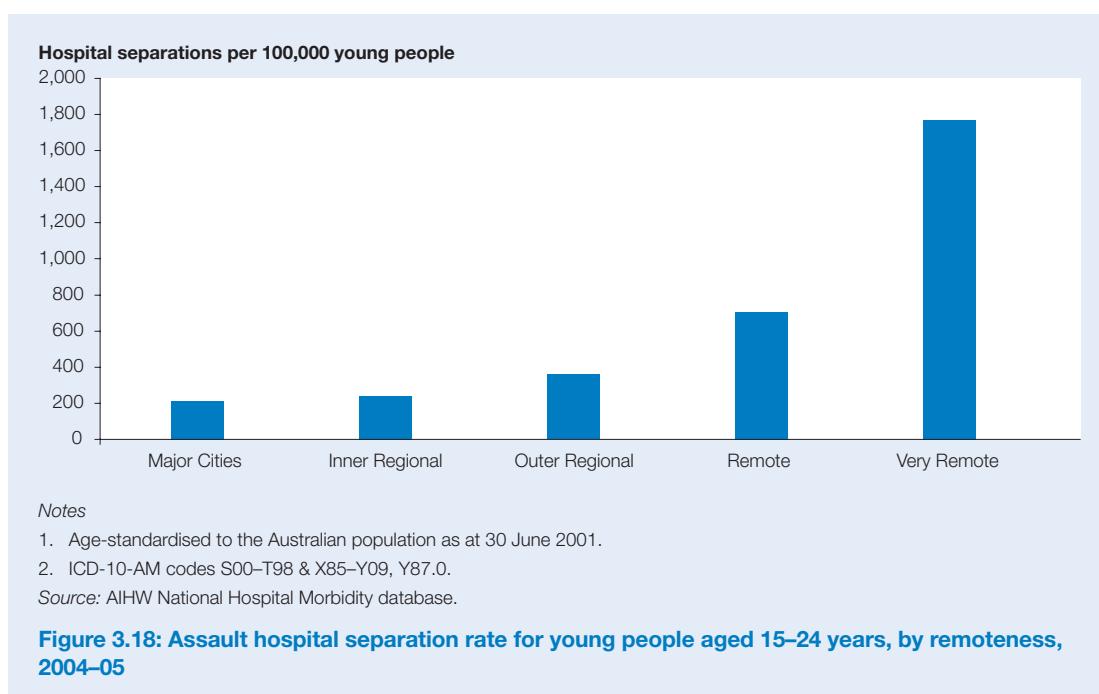
1. Age-standardised to the Australian population as at 30 June 2001.
2. ICD-10-AM codes S00–T98 & X85–Y09, Y87.1.
3. For data quality reasons, this figure includes data for Queensland, Western Australia, South Australia and the Northern Territory (public hospitals) only. The data presented here are not necessarily representative of the jurisdictions excluded.

Source: AIHW National Hospital Morbidity database.

**Figure 3.17: Assault hospital separation rate for young people aged 12–24 years, by sex and Indigenous status, 2004–05 (per 100,000)**

- In 2004–05, age-standardised hospital separation rates for injuries due to assault were significantly higher among Indigenous young people aged 12–24 years compared with other young Australians (Qld, WA, SA and public hospitals in NT only). The rates for Indigenous young people were 1,248 per 100,000 for males and 1,502 per 100,000 for females, compared with 298 per 100,000 for other Australian males and 46 per 100,000 for other young Australian females.

## Regional status



- In 2004–05, age-standardised hospital separation rates for injuries due to assault were lowest among young people aged 15–24 years living in Major Cities (210 per 100,000) and Inner Regional areas (240 per 100,000) and highest among young people living in Remote (706 per 100,000) or Very Remote areas (1,771 per 100,000).

Results from the ABS 2002 General Social Survey indicate that young people aged 18–24 years living in Inner Regional areas were more likely to report being the victim of physical or threatened violence (20%) than young people living in Major Cities (16%) or other areas (10%).

## Socioeconomic status

Results from the ABS 2002 General Social Survey showed a steady increase in the proportion of young people aged 18–24 years reporting that they had been the victim of physical or threatened assault with increasing socioeconomic disadvantage. The most disadvantaged young people (lowest socioeconomic quintile) were more likely to be the victim of physical or threatened violence (20%) than the least disadvantaged young people (highest socioeconomic quintile) (12%).

A similar pattern was observed in the 2004–05 hospital separation rates for injuries due to assault by relative disadvantage. Young people aged 15–24 years living in the most disadvantaged areas were twice as likely to be hospitalised (3.4%) as young people living in the least disadvantaged areas (1.6%).

## Homelessness

It is well documented that children and young people who are homeless, whether as part of a family unit or on their own, experience negative social and health consequences (AIHW 2006d). A number of specific health conditions have been associated with homelessness, including gastroenteritis and a range of respiratory conditions, such as bronchitis and asthma (Kermode et al. 1998). Mental illnesses, such as depression and schizophrenia, are also relatively common among homeless people (Kermode et al. 1998).

The social and physical conditions in which many homeless people live contribute to, or exacerbate, their poor health (Kermode et al. 1998). Young people who become homeless are at an increased risk of exposure to a number of social and environmental factors that could damage their health. These include physical and sexual assault, poor diet, and inadequate shelter. Young homeless people are also more likely than other young people to engage in health risk behaviours such as tobacco use, drug and alcohol abuse, and unsafe sex (Sibthorpe et al. 1993).

#### *Estimating the homeless population*

Obtaining an accurate count of the homeless population is difficult as people often move in and out of homelessness and may never be counted. There are two major data sources providing information on the number of homeless people in Australia—the ABS Census of Population and Housing, and statistics collected from homeless refuges funded under the Supported Accommodation Assistance Program (SAAP).

The ABS uses a cultural definition of homelessness to identify the homeless population in the Census (ABS 2003b; for a discussion of alternative definitions of homelessness see AIHW 2005b). Homelessness is defined in reference to culturally acceptable minimum standards of housing. In Australia, this is considered to be a small rental flat with a bedroom, living room, kitchen, bathroom and an element of security of tenure. People without such accommodation are considered homeless.

People living on the streets or in makeshift accommodation, people living temporarily with others, and people living in boarding houses were counted, where possible, among the homeless in the 2001 Census. Census data provides a point-in-time measure of the homeless population—the number of people homeless on a particular night.

SAAP is the major government response to homelessness, providing recurrent funding to agencies offering a variety of support services to homeless people. The definition of homelessness used to determine eligibility for SAAP services is broader than the cultural definition and includes people at imminent risk of homelessness. SAAP data provides an estimate of the number of people who were homeless at some point over a 12-month (or other) period of time and who sought assistance.

**INDICATOR:**

Proportion of young people aged 12–24 who are currently homeless

The ABS combines information from the Census with SAAP statistics to produce an estimate of the number of people that are homeless on Census night (ABS 2003b). Using these combined sources, the ABS estimates that on Census night, 2001, 99,900 people were homeless, including 36,173 young people aged 12–24 years (36% of the homeless population and 1% of the population aged 12–24 years).

#### **SAAP clients**

SAAP data provide important information about service utilisation among young homeless people, and are the most recent available data on youth homelessness. Young people may access SAAP services in one of two ways—they may themselves become a SAAP client, or they may accompany a parent or guardian who is a SAAP client.

**Table 3.25: SAAP clients by age and sex, 2004–05**

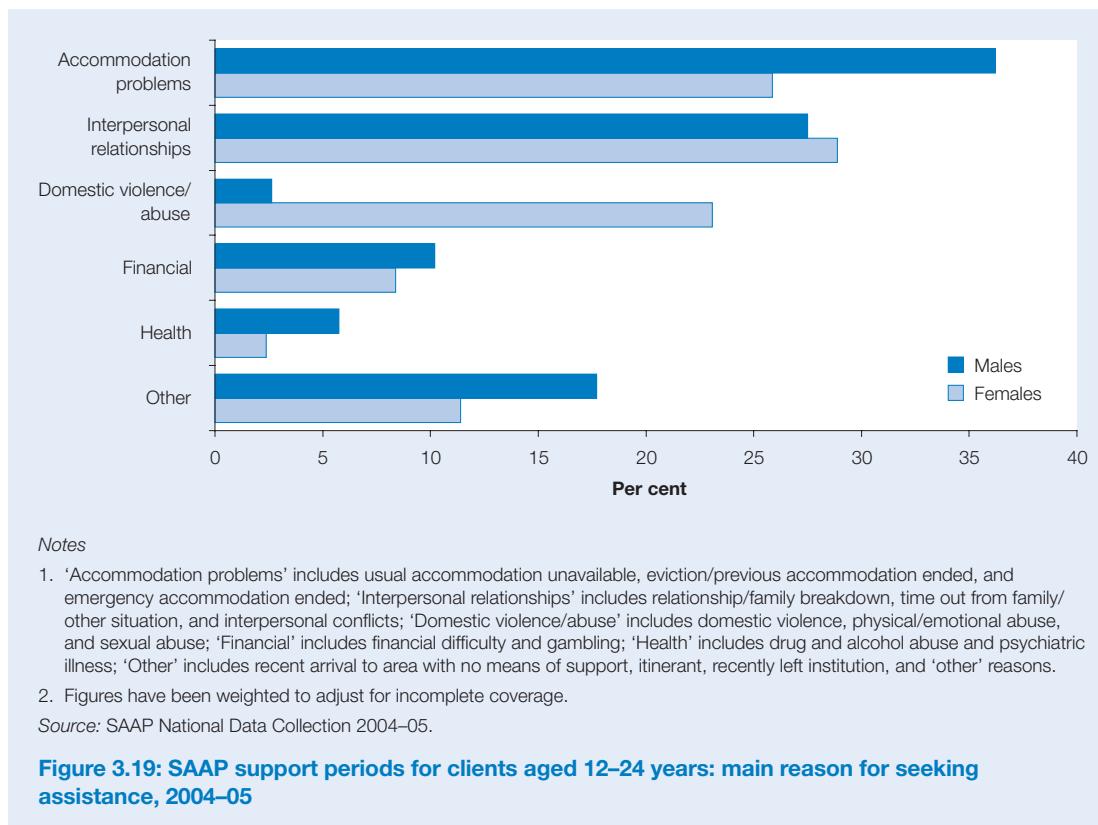
<b>Age</b>	<b>Males</b>		<b>Females</b>		<b>Persons</b>	
	<b>Number</b>	<b>Percent</b>	<b>Number</b>	<b>Percent</b>	<b>Number</b>	<b>Percent</b>
12–14 years	500	1.2	800	1.3	1,400	1.4
15–17 years	3,600	8.9	6,000	10.1	9,500	9.5
18–19 years	3,000	7.4	4,800	8.1	7,800	7.8
20–24 years	5,600	13.9	9,800	16.5	15,400	15.4
Ages 12–24 years	12,700	31.5	21,400	36.0	34,100	34.2
<b>All ages</b>	<b>40,400</b>	<b>100.0</b>	<b>59,400</b>	<b>100.0</b>	<b>99,800</b>	<b>100.0</b>

Note: Figures have been weighted to adjust for incomplete coverage.

Source: SAAP National Data Collection 2004–05.

- In 2004–05, 34,100 young people aged 12–24 years accessed SAAP services (less than 1% of 12–24 year olds). A further 7,500 children aged 13–17 years accompanied a parent or guardian who was receiving SAAP support.
- During 2004–05, 1 in 3 (34%) clients of SAAP funded agencies were aged 12–24 years.
- The majority of young SAAP clients were female (63%; or 21,400 out of 34,100).

#### *Reasons for seeking SAAP assistance*

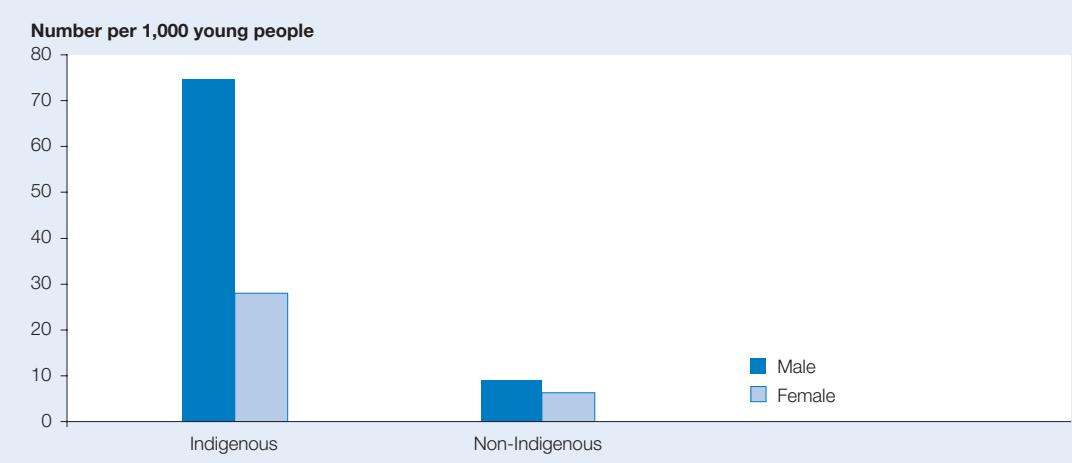


- In 2004–05, among young male SAAP clients, the most common main reason for seeking assistance was accommodation problems (36% of support periods for young males). In the same year, the most common main reason for seeking assistance among young females was interpersonal relationships (29% of support periods for young females). Domestic violence/abuse was also a common main reason for seeking assistance among females (23%).

#### **Aboriginal and Torres Strait Islander young people**

The rate of homelessness among Indigenous Australians is considerably higher than among other Australians. While 2.4% of the Australian population identify as Indigenous, 9% of the homeless population at the 2001 Census were Indigenous (ABS 2003b).

Indigenous people were also over-represented among SAAP clients during 2004–05, making up 16% of all SAAP clients for that period (AIHW 2006e). Indigenous young people were also over-represented among SAAP clients. While 3.4% of the young people aged 12–24 years identify as Indigenous, 19% of young SAAP clients aged 12–24 years were Indigenous.

**Notes**

1. Figures have been weighted to adjust for incomplete coverage.
  2. Age-standardised to the Australian population as at 30 June 2001.
- Source: SAAP data collection 2004–05.

**Figure 3.20: SAAP clients aged 12–24 years, age-standardised rates by sex and Indigenous status, 2004–05**

- Among young people aged 12–24 years, the age-standardised rate for seeking SAAP assistance for Indigenous females (74 per 1,000) was 8 times the rate for non-Indigenous females (9 per 1,000), and the rate for Indigenous males (27 per 1,000) was 4 times the rate for non-Indigenous males (6 per 1,000).

## Legal and justice issues

Young people who come into contact with the criminal justice system represent a particularly disadvantaged population, characterised by high levels of socioeconomic stress, physical abuse and childhood neglect. In fact, childhood neglect is considered to be one of the strongest predictors of later youth offending. There are a number of family and community factors leading to neglect, including economic hardship, housing inadequacy, poor social support networks, and poor family functioning.

Young offenders often have significant physical and mental health needs, and many have engaged in health-risk behaviours from an early age (Allerton & Champion 2003; Bickel & Campbell 2002). A recent study looking at the health needs of young people in juvenile justice custody in NSW found high prevalence rates for a number of conditions, particularly sexually transmissible and bloodborne infections such as hepatitis B and hepatitis C (Allerton & Champion 2003). Injuries were also common (sometimes the result of assaults perpetrated by fellow detainees), as were symptoms of psychological disorders, substance use problems, suicide, and self-harm.

Depending on their age, young people accused of committing crimes are dealt with within either the juvenile justice system or the adult justice system. Young people aged up to 17 years are generally considered ‘juveniles’ and those aged 18 years or over are considered ‘adults’, although this varies somewhat between states and territories. This section looks at the proportion of young people aged 12–17 years in juvenile justice supervision and the rate of imprisonment among young people aged 18–24 years.

## Juvenile justice

Although every state and territory has its own juvenile justice legislation, the legislation is similar across Australia. For example, key principles of juvenile justice in all jurisdictions include: diversion of young people from court where appropriate; incarceration as a last resort; victim's rights; the acceptance of responsibility by the offender for his or her behaviour; and community safety (AIHW 2005b:117–121).

National data on young people under juvenile justice supervision, either pre-sentence or sentenced, are available from the Juvenile Justice National Minimum Data Set (JJ NMDS). These data are collected by the AIHW from the departments in each state and territory with responsibility for juvenile justice (AIHW 2006f).

Juvenile justice supervision may be either community-based or detention-based. The vast majority of supervision is, however, community-based. During 2003–04, only a small proportion (9%) of periods of supervision involved detention (AIHW 2006f).

**Table 3.26: Young people under juvenile justice supervision aged 12–17 years, by age and sex, 2003–04 (per 100,000 young people)**

<b>Age group</b>	<b>Male</b>		<b>Female</b>		<b>Persons</b>	
	<b>Number</b>	<b>Per 100,000</b>	<b>Number</b>	<b>Per 100,000</b>	<b>Number</b>	<b>Per 100,000</b>
12–13 years	667	233.9	173	63.8	840	151.0
14–15 years	2,626	938.4	667	250.0	3,293	602.4
16–17 years	4,026	1,448.5	867	331.2	4,902	903.7
<b>Total 12–17 years</b>	<b>7,319</b>	<b>868.2</b>	<b>1,749</b>	<b>213.8</b>	<b>9,035</b>	<b>549.1</b>

### INDICATOR:

Proportion of young people aged 12–17 years in juvenile justice supervision

Source: 2003–04 Juvenile Justice National Minimum Dataset.

- During 2003–04, 9,035 young people aged 12–17 years were under juvenile justice supervision (a rate of 549 per 100,000 young people).
- The supervision rate for males was higher than that for females (868 compared with 214 per 100,000 young people).
- Supervision rates increased with age—the rate for 16–17 year olds was 1.5 times the rate for 14–15 year olds (904 compared with 602 per 100,000 young people).

## Young people in prison

The health status of prisoners is generally poor. Inmate surveys have shown that high proportions of prisoners have communicable diseases such as hepatitis B and hepatitis C, and that prisoners are more likely to engage in health-risk behaviours such as smoking (Butler et al. 2004; Butler et al. 1999; D'Souza et al. 2005; Young et al. 2005).

Following release, the health status of prisoners remains poor and participation in health-risk behaviours is high. Studies have consistently found that recently released prisoners have a higher risk of death than the general population. A recent study in Western Australia found the most common causes of death were related to drug and alcohol abuse, suicide or motor vehicle accidents (Stewart et al. 2004).

Young people are over-represented in the prison population. In 2006, young people aged 18–24 years comprised 20% of the total prison population (ABS 2006o), yet only 10% of the total Australian population were aged 18–24 years in the same year.

**Table 3.27: Rate of imprisonment among young people aged 18–24 years, by age and sex, 30 June 2006 (per 100,000 young people)**

<b>INDICATOR:</b>							
<b>Rate of imprisonment among young people aged 18–24 years</b>	<b>Age</b>	<b>Males</b>		<b>Females</b>		<b>Persons</b>	
	<b>Number</b>	<b>Rate</b>	<b>Number</b>	<b>Rate</b>	<b>Number</b>	<b>Rate</b>	
	18 years	247	172.9	16	11.8	263	94.4
	19 years	488	336.4	31	22.6	519	183.8
	20–24 years	4,008	537.5	268	37.9	4,276	294.4
	<b>18–24 years</b>	<b>4,743</b>	<b>458.9</b>	<b>315</b>	<b>32.1</b>	<b>5,058</b>	<b>251.2</b>

Source: ABS 2006o.

- In 2006, there were approximately 5,058 18–24 year olds in prison, a rate of 251 per 100,000 young people.
- Young males were far more likely to be imprisoned than young females. Of young people imprisoned in 2006, 94% were males.
- Among people aged 18–24 years, imprisonment rates increased with age from 94 per 100,000 for 18 year olds to 294 per 100,000 for 20–24 year olds.

### Aboriginal and Torres Strait Islander young people

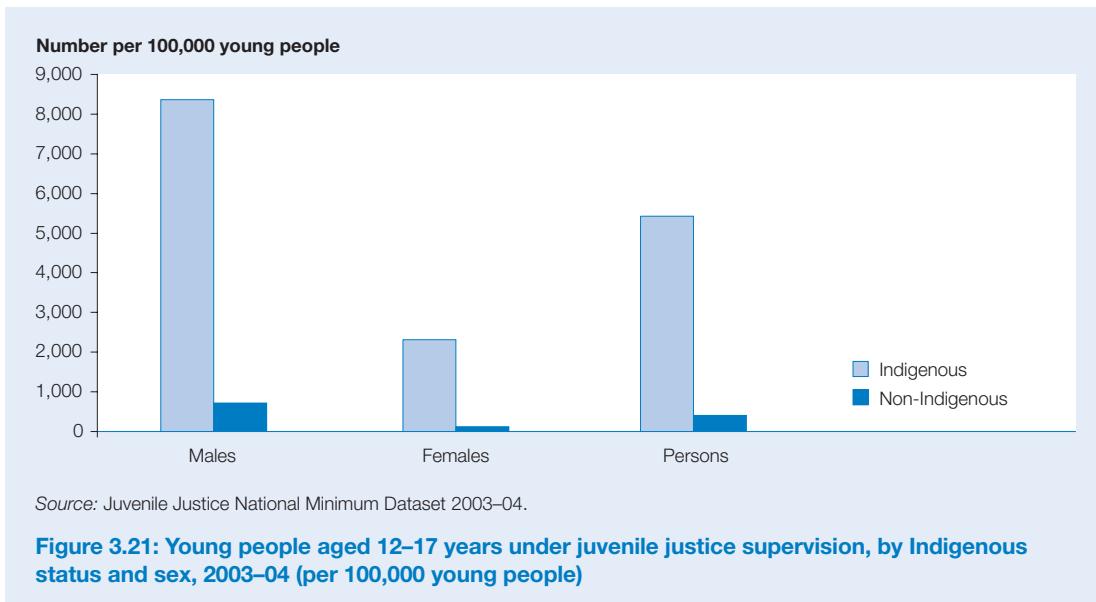
Indigenous people are over-represented in Australian prisons. In 2006, Indigenous people made up 24% of the prison population, and 1.8% of the total adult population (ABS 2006o). The age-standardised rate of imprisonment for Indigenous adults aged 18 years or more was 1,668 per 100,000, making Indigenous adults 13 times more likely to be in prison than other Australians (ABS 2006o). Similar to the adult population, Indigenous young people aged 12–24 years also experience high rates of imprisonment and juvenile justice supervision.

**Table 3.28: Rate of imprisonment among young people aged 18–24 years, by age, sex and Indigenous status, 30 June 2006 (per 100,000 young people)**

<b>Age</b>	<b>Males</b>		<b>Females</b>		<b>Persons</b>	
	<b>Number</b>	<b>Rate</b>	<b>Number</b>	<b>Rate</b>	<b>Number</b>	<b>Rate</b>
<b>Indigenous</b>						
18 years	112	2,040.8	9	169.3	121	1,120.1
19 years	192	3,568.1	15	296.4	207	1,982.6
20–24 years	1,182	5,113.6	117	511.5	1,299	2,824.6
<b>18–24 years</b>	<b>1,486</b>	<b>4,372.6</b>	<b>141</b>	<b>424.1</b>	<b>1,627</b>	<b>2,420.0</b>
<b>Non-Indigenous</b>						
18 years	126	91.7	4	3.1	130	48.5
19 years	283	202.6	13	9.8	296	108.8
20–24 years	2,780	384.8	144	21.1	2,924	207.9
<b>18–24 years</b>	<b>3,189</b>	<b>319.0</b>	<b>161</b>	<b>17.0</b>	<b>3,350</b>	<b>172.1</b>

Source: ABS 2006o.

- Among young people aged 18–24 years, the Indigenous imprisonment rate (2,420 per 100,000) was 14 times the non-Indigenous rate (172 per 100,000) in 2006.
- Indigenous young people accounted for almost one-third of the prison population aged 18–24 years, despite accounting for only an estimated 3.3% of the total Australian population aged 18–24 years.



- The rate of Indigenous 12–17 year olds in juvenile justice supervision was 13 times the non-Indigenous rate (5,430 per 100,000 compared with 409 per 100,000). This pattern was observed for both sexes.

### 3.3 Socioeconomic factors

Both Australian and overseas studies have demonstrated that people who are socially and economically disadvantaged have higher rates of morbidity and mortality (AIHW 2006a). This effect is not just limited to the extremely disadvantaged—health inequalities are apparent across all levels of society. For example, mortality rates have been found to fall in a continuous gradient from least to most disadvantaged, with those in the middle levels of society experiencing higher mortality than those in the wealthiest levels (Turrell & Mathers 2001).

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 unsafe, unrewarding, or menial job. Alone or in combination, and over time, these stressful economic and social circumstances have an effect on health and wellbeing.

This section covers indicators relating to young peoples socioeconomic circumstances, focusing on three broad areas: education, employment and income. While these three factors are discussed separately, they are closely related: education is often a key determinant of employment, and employment is a major determinant of income. People experiencing socioeconomic disadvantage tend to be disadvantaged in each of these areas, compounding the negative effects on their health.

When looking at the social and economic circumstances of young people, it is important to also consider the socioeconomic status of their parents, since many young people share the same level of advantage or disadvantage as their parents (at least until they become independent). For this reason, indicators relating to the socioeconomic circumstances of parents in the areas of education and employment are also presented.

#### **Education**

International and Australian research supports a link between less education and poorer health status (see Turrell et al. 2006). In Australia, individuals with higher levels of education report fewer illnesses and have better mental health than those with lower levels of education (Turrell et al. 2006). Turrell et al. (2006) examined data from the 1989–90, 1995 and 2001 ABS National Health Surveys and found that people with lower educational attainment (no post-school qualification or a diploma/vocational qualification) rated their own health more poorly, and reported a number of illnesses more often than those with a bachelor degree or higher.

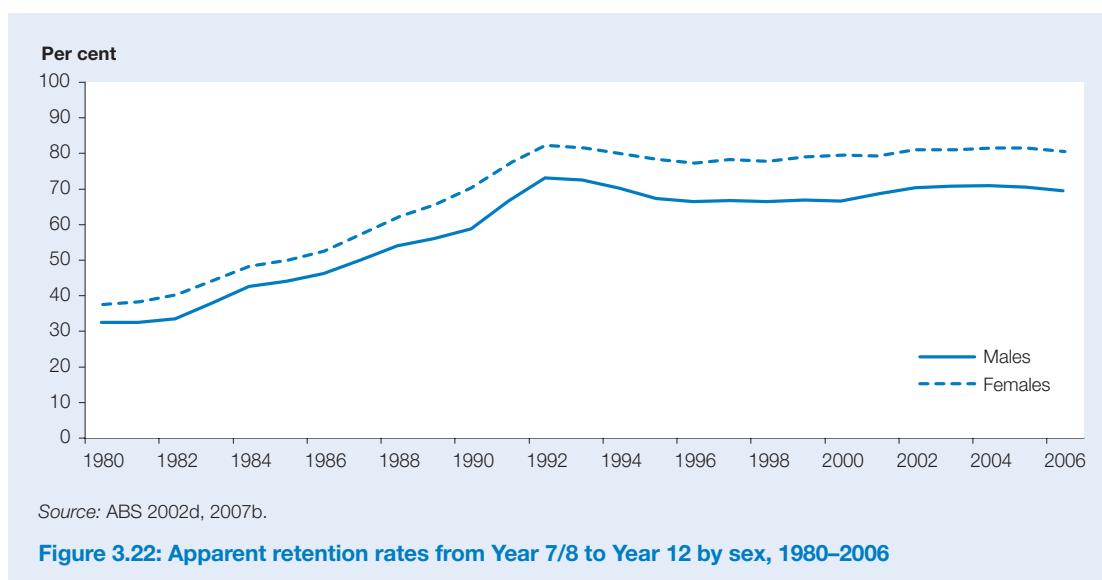
There are a number of ways, both direct and indirect, that education may impact upon health. Education may directly impact upon health by providing young people with greater knowledge and understanding about health, particularly an awareness of health risk and protective factors. For example, smoking, insufficient physical activity and obesity are less common among people with more education (Ball & Mishra 2006; Hill et al. 1998; Turrell et al. 2006). Education may also indirectly affect health through its association with typically safe, secure and generally better paid and more rewarding employment. This, in turn, positively influences health-related factors such as stress level, injury risk, diet and ability to acquire quality medical care.

In general, Australians are highly educated. In 2004, Australia was above the OECD average in terms of mean years of formal education and proportion of the population with a tertiary qualification (OECD 2006). Literacy and numeracy levels are also generally high among young people in Australia. In a recent international study of reading, mathematical and scientific literacy among 15 year olds, Australian students had a mean score significantly higher than the mean score for all OECD students (Thomson et al. 2004). However, this study also found a large variation in the performance of students within Australia, suggesting the education system may not be meeting the needs of all students equally.

## Apparent retention rate and Year 12 completion

As the number of low-skilled jobs in the employment market decreases, the importance of educational qualifications increases. Students who fail to complete Year 12 have fewer employment opportunities and are more likely to experience extended periods of unemployment than Year 12 graduates (Lamb et al. 2000). In May 2005, 20% of school leavers who had completed Year 12 were not fully engaged in either study or work compared with 40% of Year 11 completers and nearly 50% of Year 10 or below completers (Dusseldorf Skills Forum & Monash University–ACER 2006).

One measure of Year 12 attainment among young people is the apparent retention rate to Year 12, defined as the percentage of students who remain in secondary education from the start of secondary school to Year 12. To calculate the apparent retention rate in 2006, the total number of full-time students in Year 12 in 2006 is divided by the number of full-time students in the base year—Year 7 in NSW, Vic, Tas and the ACT in 2001 and Year 8 in Qld, SA, WA and the NT in 2002 (since those years represent the commencement of the secondary school system in the respective state or territory). This is then converted to a percentage.



**Figure 3.22: Apparent retention rates from Year 7/8 to Year 12 by sex, 1980–2006**

- In 2006, the apparent retention rate to Year 12 was 75% (69% for males and 81% for females).
- Since 1981, the national retention to Year 12 has increased substantially from 35% in 1980 to 75% in 2006.
- Throughout the period, retention rates were consistently higher for females than for males. In 2006, the rate for females was 12 percentage points higher than the rate for males.

While most young people complete Year 12 at the end of their schooling before entering further study or the employment market, other young people may decide to complete Year 12 at a later stage. The calculation of the apparent retention rate does not include such students. It also does not take into account students repeating a year of education, migration and other changes to the school population.

An alternative measure of educational achievement is the Year 12 completion rate, which is the number of students who obtain a Year 12 certificate as a proportion of the estimated potential Year 12 population. In 2004, the Year 12 completion rate was 68%. Year 12 completion rates remained fairly constant between 1998 and 2004, varying between 68% and 69% (MCEETYA 2006).

Year 12 attainment can also be measured by the proportion of young people aged 20–24 years who have completed Year 12. In 2005, 75% of 20–24 year olds had completed Year 12—an increase from 65% in 1996 (ABS 2006c).

**INDICATOR:**  
Proportion of young people aged 20–24 who have completed Year 12

### Study leading to a qualification

Qualifications are an important indicator of an individual's capacity to compete in demanding labour markets. While tertiary qualifications are often used as a proxy for income and employment prospects, obtaining a qualification at any level is likely to improve young people's employment opportunities and their ability to compete for higher paid positions.

**INDICATOR:**

Proportion of young people aged 15–24 years undertaking study leading to qualifications

Based on results from the ABS 2006 Survey of Education and Work, around 77% of young people aged 15–19 years and 36% of young people aged 20–24 years were enrolled in a course leading to a qualification (including Year 12 or below) (ABS 2006g). Overall, the rate of young people aged 15–24 years undertaking study leading to a qualification has increased from 51% in 1996 to 57% in 2006 (ABS 2006g).

**Table 3.29: People aged 15–24 years undertaking study leading to a qualification: level of current study by sex and age group, 2006 (per cent)**

<b>Level of current study</b>	<b>Males</b>		<b>Females</b>	
	<b>15–19 years</b>	<b>20–24 years</b>	<b>15–19 years</b>	<b>20–24 years</b>
Bachelor degree	14.2	51.2	18.8	63.7
Advanced diploma/diploma	2.8	9.1	4.4	10.4
Certificate	15.5	31.7	8.0	14.5
Year 12 or below	66.8	*0.5	67.8	*1.0
Other/level not determined	*0.7	7.6	*1.0	10.4
<i>Total per cent</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>
<b>Total number</b>	<b>531,600</b>	<b>253,900</b>	<b>518,200</b>	<b>254,500</b>

Note: Estimates marked with \* have a relative standard error (RSE) of between 25% and 50% and should be interpreted with caution.

Source: ABS 2006g.

- In 2006, young people aged 15–19 years undertaking a course of study leading to a qualification were most likely to be studying for their Year 12 or below (67% for males and 68% for females).
- Most young people aged 20–24 years who were enrolled in a course leading to a qualification were studying towards a bachelor degree (51% of males and 64% of females).
- For both age groups, a higher proportion of females were studying towards a bachelor degree than males. Males, on the other hand, were more likely to be studying towards a certificate than females.

### Post-school qualifications

**INDICATOR:**

Proportion of young people aged 15–24 years undertaking or with post school qualifications

'Post-school' qualifications are sometimes referred to as 'non-school qualifications'. The ABS 2006 Survey of Education and Work defined non-school qualifications as educational attainments other than those of pre-primary, primary or secondary education. Non-school qualifications included postgraduate Degree level, Master Degree level, Graduate diploma and Graduate certificate level, Bachelor Degree level, Advanced Diploma and Diploma level, and Certificates I, II, III, and IV levels.

Results from the survey indicate that around 12% of 15–19 year olds and 18% of 20–24 year olds were currently enrolled in a course leading to a non-school qualification, and 8% of 15–19 years olds and 44% of 20–24 year olds had non-school qualifications in 2006 (ABS 2006g). The proportion of young people aged 15–24 years with non-school qualifications has increased from 23% in 1996 to 26% in 2006.

### Literacy and numeracy levels

In addition to being enrolled in education, it is important that young people are actively learning while they are there. Proficiency in literacy and numeracy is regarded as essential for day-to-day living, for further educational opportunities and for employment prospects. Conversely, poor literacy and numeracy skills are a predictor of early school leaving (Parliament of Australia. House of Representatives Standing Committee on Education and Training 2002).

The Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA) has established national benchmarks for reading, writing and numeracy for Years 3, 5 and 7 students. A benchmark is a nationally agreed minimum standard of performance below which a student will have difficulty progressing satisfactorily at school. The performance of students across Australia is measured against these benchmarks.

In 2004, the vast majority of students in Year 7 (aged approximately 12–14 years) met the national reading, writing and numeracy benchmarks (91%, 94%, and 82% respectively).

There was a statistically significant difference in the proportion of males and females meeting the reading benchmark (89% and 93% respectively) and the writing benchmark (91% and 96% respectively). There was no significant difference between the proportions of males and females meeting the numeracy benchmark (both 82%).

#### INDICATOR:

Percentage of young people in Year 7 meeting national literacy and numeracy benchmarks

### Population groups

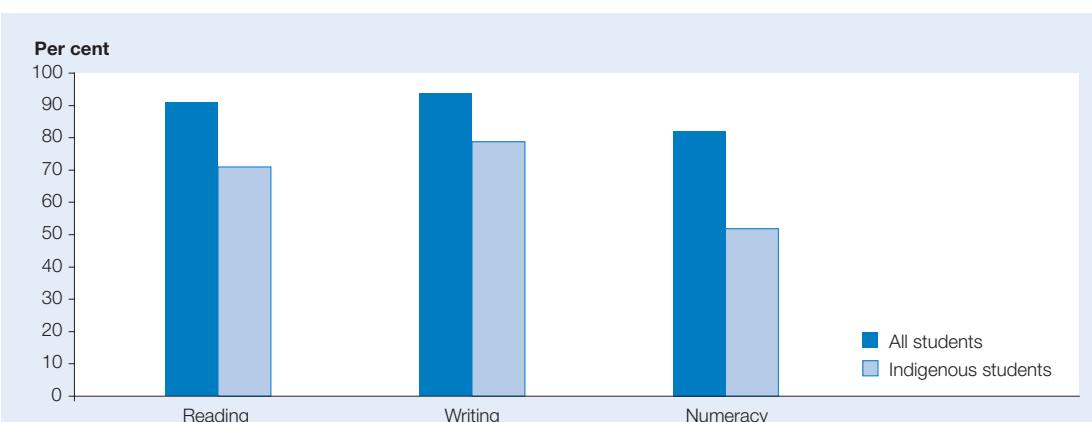
While education levels are generally high among young Australians, some groups of young people appear to be at a disadvantage. Indigenous young people, young people living in remote areas, and young people from low socioeconomic backgrounds often do not achieve the same educational outcomes as other young Australians, and are more likely to leave school early (Hunter & Schwab 2003; Lamb et al. 2000).

There are a variety of factors that may lead to underachievement among particular population groups, including social, cultural and language differences, differences in family and community attitudes to schooling, and proximity to schools. There is also a growing awareness of the importance of student engagement with the concepts of learning and with the school community in order to achieve academically. Underachievement among particular groups may reflect something in the school, home or social environment which is causing disengagement among these students.

### Aboriginal and Torres Strait Islander young people

The lower achievement of Indigenous students compared with other Australian students is apparent in the results of the OECD's 2003 Programme for International Student Assessment. In all areas of assessment, the average achievement of Indigenous students was considerably below the average achievement of other Australian students and, in many cases, significantly below international averages (Thomson et al. 2004).

A higher proportion of Indigenous students compared with other Australian students are also failing to meet national benchmarks in reading, writing and numeracy.



Source: MCEETYA 2006.

**Figure 3.23: Percentage of Year 7 students achieving national reading, writing and numeracy benchmarks by Indigenous status, 2004**

- In 2004, the proportion of Indigenous Year 7 students reaching the benchmarks for reading (71%), writing (79%) and numeracy (78%) was statistically significantly lower than the proportions of all Year 7 students reaching these benchmarks (91%, 94%, and 82% respectively).

While the percentage of Indigenous students completing Year 12 is increasing (ABS 2006c), most Indigenous students leave school before completion of Year 12. In 2006, the apparent retention rate to Year 12 for Indigenous students was 40%, compared with a rate of 76% for non-Indigenous students (ABS 2007b).

### Socioeconomic status

In 2004, students living in the most disadvantaged areas (3 lowest deciles) had a lower Year 12 completion rate than students living in the least disadvantaged areas (3 highest deciles) (59% compared with 79% respectively) (MCEETYA 2006). The Year 12 completion rate for the most disadvantaged areas was also lower than the national average (59% compared with 68%).

### Regional status

The MCEETYA Classification of Geographical Location divides students into three broad geographical areas: Metropolitan, Provincial and Remote. The classification is based on a combination of population size and the Accessibility/Remoteness Index of Australia (ARIA).

In 2004, the Year 12 completion rate in Metropolitan areas (70%) was higher than the rates for Provincial areas (63%) and Remote areas (54%) (MCEETYA 2006).

In 2003, a lower proportion of students in Remote areas compared with Metropolitan areas met national benchmarks for reading (83% compared with 92%), writing (84% compared with 94%), and numeracy (73% compared with 83%) (MCEETYA 2006).

## Employment

Secure and satisfactory employment offers young people not only financial independence, but also a sense of control, self-confidence and social contact. In contrast, unemployment, insecure employment and unfavourable working conditions have all been associated with low self-esteem, feelings of depression and mental health problems in young people (Morrell et al. 1998). Studies have also found an association between unemployment and a range of health concerns among both youth and adults, including low self-rated health, cardiovascular disease, and drug and alcohol abuse (Ahs & Westerling 2006; Hammarstrom & Janlert 2002; Jin & Shah 1995; Muir et al. 2003; Saunders 2002).

The Longitudinal Survey of Australian Youth (LSAY) found that young people who became unemployed experienced a 50% increase in the risk of psychological disturbance. Psychologically well young men who became unemployed reported feeling depressed, whereas young women reported loss of confidence; both complained of not having a useful role in their lives (Morrell et al. 1994). Morrell et al. (1998) reviewed evidence from a number of different data sources and found that youth unemployment, particularly for extended periods, is associated with self-harm, suicide and attempted suicide among young men.

Since the 1980s, increasing proportions of young people have participated in higher education rather than progressing directly from school to work (Wyn 2004). A large number of young people combine study and work, while others combine intervals of work and study. School leavers are now taking long (often years) and varied pathways from school to full-time work. This section looks at the patterns of participation in work and education among young people aged 15–24 years. Young people aged 12–14 years are too young to legally enter into paid employment and so are not included in the employment indicators. It is assumed that all young people aged 12–14 years are full-time students.

## Full-time participation

Full-time participation includes young people who are in full-time education and/or full-time work, and those who combine part-time study with part-time work. Young people who are not participating full-time in work and/or study are considered to be at risk of personal and social stresses and may have poorer long-term labour market outcomes than other young people (Dusseldorf Skills Forum & Monash University—ACER 2006).

**Table 3.30: Proportion of young people aged 15–24 years in employment and/or education by age group, 2006**

<b>Education and employment status</b>	<b>Age group</b>		<b>INDICATOR:</b> Full-time participation rate of young people aged 12–24 years
	<b>15–19 years</b>	<b>20–24 years</b>	
Full-time education only	41.3	10.0	
Full-time employment only	10.1	43.6	
Full-time employment and part-time education	5.4	8.6	
Full-time education and part-time employment	27.2	13.1	
Full-time education and full-time employment	0.8	1.0	
Part-time education and part-time employment	1.4	1.8	
Part-time education only	0.6	1.0	
Part-time employment only	5.6	8.6	
Not in education or employment	7.7	12.3	
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	

Source: ABS 2006g.

- Based on results of the ABS 2006 Survey of Education and Work, 85% of young people aged 15–19 years and 76% of young people aged 20–24 years were participating full-time in education and/or work in 2006.
- The majority (69%) of young people aged 15–19 years were in full-time education in 2006, including 28% who combined full-time education with part-time or full-time work.
- Half (53%) of young people aged 20–24 years were in full-time employment, including 10% who combined full-time employment with full-time (1%) or part-time study (9%).
- Around 8% of young people aged 15–19 years and 12% of young people aged 20–24 years were neither working nor studying. These figures include young people who were not in the labour force as well as those who were unemployed.

## Casual Employment

Casual employment is defined as employment where the employee is not entitled to either paid holiday leave or paid sick leave (ABS 2006b). Casual employment is more commonly part-time, but in contrast to the common perception, it is not necessarily short-term or irregular. In 2004, 55% of casual employees had been with their employer for 12 months or more, and 69% were part-time (ABS 2006p). Perhaps since many young people combine part-time work with study, they are over-represented among casual employees. While young people made up 21% of employees in 2004, they comprised 40% of casual employees (ABS 2006p).

In August 2005, 66% of employed 15–19 year olds and 33% of employed 20–24 year olds were casual employees. This is an increase from 1992, when the corresponding proportions were 54% and 23% respectively (ABS 2006b).

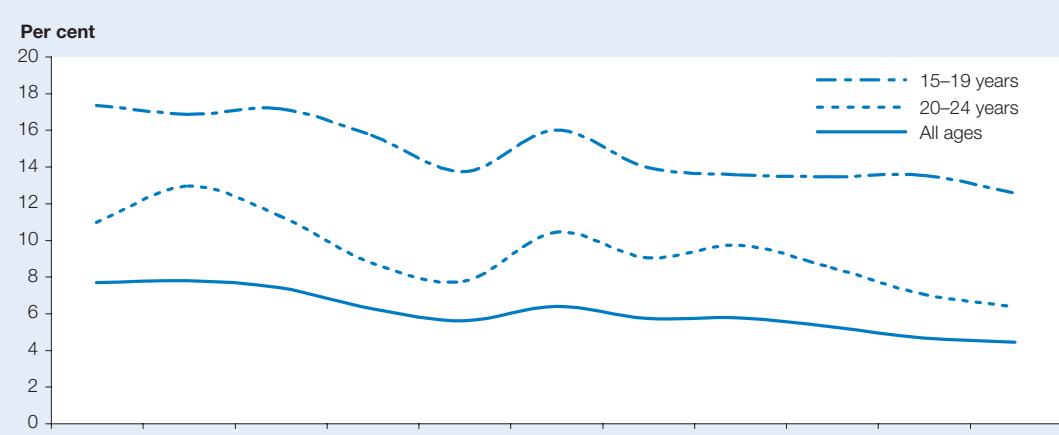
### INDICATOR:

Proportion of young people participating in casual work

## Unemployment

In July 2006, young people comprised 38% of the unemployed population—22% of the unemployed population were aged 15–19 years and a further 16% were aged 20–24 years (ABS 2006j). Many unemployed young people are either full- or part-time students. In May 2006, 58% of unemployed 15–19 year olds and 22% of unemployed 20–24 year olds were enrolled in a course of study (ABS 2006g).

**INDICATOR:**  
Unemployment rate for young people aged 15–24 years (per cent)



Source: ABS 2006j.

**Figure 3.24: Unemployment rates from July 1996 to July 2006**

- The unemployment rates for 15–19 and 20–24 year olds were 12.5% and 6.3% respectively in July 2006, a much higher rate than the national unemployment rate of 4.4%.
- Unemployment rates for young people aged 15–19 years and 20–24 years have shown a general decline over the last decade, although there have been some fluctuations. The unemployment rate for young people aged 15–19 years has decreased from 17.3% to 12.5% and for 20–24 year olds from 10.9% to 6.3%.
- Over the period, unemployment rates for young people aged 15–19 years and 20–24 years have remained consistently higher than the national rate. On average, the rate for young people aged 15–19 years and 20–24 years was 2.5 times and 1.5 times the national rate respectively.

### Long-term unemployment

Long-term unemployment is defined as a continuous period of unemployment of 12 months or more. The health risks associated with unemployment, particularly depression, have been found to increase with the duration of unemployment. People who experience long-term unemployment may also find it difficult to maintain and develop skills relevant to the work place, and so may have greater difficulty in finding work.

**INDICATOR:**

Proportion of young people aged 15–24 years who were long-term unemployed

**Table 3.31: Labour force underutilisation rates by age group, September 2005**

Age group (years)	Long-term unemployment rate	Unemployment rate	Underemployment rate	Labour force underutilisation rate
15–19	1.1	16.2	11.8	27.9
20–24	0.9	7.4	7.5	14.9
25–34	0.8	4.7	4.0	8.6
35–44	0.7	3.5	4.9	8.5
45–54	1.1	3.6	4.8	8.4
55–69	1.1	3.0	3.6	6.6
<b>Total</b>	<b>0.9</b>	<b>5.1</b>	<b>5.3</b>	<b>10.5</b>

Note: All rates are expressed as a proportion of the labour force. The labour force underutilisation rate is the unemployed and the underemployed as a proportion of the labour force.

Source: ABS 2006b.

- Despite high unemployment rates among young people, the long-term unemployment rates for young people aged 15–19 years (1.1%) and 20–24 years (0.9%) were similar to the national rate of 0.9%.

Since many young unemployed people are recent school leavers, the number of long-term unemployed young people as a proportion of all unemployed young people is comparatively low.

### **Underemployment**

Underemployment is conceptualised in a variety of ways, but most commonly in terms of an inadequate wage or an insufficient number of hours worked (for example, involuntary part-time work). Underemployed workers report lower levels of health and wellbeing than adequately employed workers and are more likely to experience low self-esteem, alcohol abuse and depression (Dooley et al. 2000; Friedland & Price 2003).

While unemployment rates are declining among young people, part-time work is increasing. In some cases, young people accept part-time work because they cannot find a full-time position—one-quarter of young people working part-time in 2002 were doing so only because they could not find full-time work (Dusseldorf Skills Forum & Monash University—ACER 2006). Since 1995, full-time jobs have declined by 14,000 for 15–19 year olds and 52,000 for 20–24 year olds (Dusseldorf Skills Forum & Monash University—ACER 2006). In contrast, full-time jobs for Australians aged 25–64 years have risen by more than one million (Dusseldorf Skills Forum & Monash University—ACER 2006).

In the ABS Labour Force Survey, underemployed workers are defined as employed persons who want, and are available for, more hours of work than they currently have (ABS 2006b). According to this survey, the underemployment rate for young people aged 15–24 years was higher than the rate for any other age group in September 2005. While the national underemployment rate was 5.3%, the rates for young people aged 15–19 years and 20–24 years were substantially higher at 11.8% and 7.5% respectively (see Table 3.31).

**INDICATOR:**

Underemployment rate for young people aged 15–24 years (per cent)

### **Income**

The relationship between income and health and, in particular, whether health status is associated with the inequality of income and wealth in a society, is a much debated area of interest. There is strong evidence from a number of research studies indicating that countries or regions with higher levels of income inequality (disparity between high and low incomes) had worse health status than those with lower levels of income inequality (AIHW 2006a; Mackenbach 2002; Mackenbach & Howden-Chapman 2003). Studies have also shown a link between level of morbidity and personal income (Marmot 2002; Wilkinson & Marmot 2003). However, it is difficult to interpret the relationship between income and health as there is little understanding of what determines income and what benefits incomes might bring (Martikainen et al. 2003). Personal income is, to a greater degree, determined by educational qualifications and occupational status and these are more important predictors of health status than income alone.

Nevertheless, higher personal incomes increase the ability to purchase health-related goods and services such as better food, housing, recreation and health care, and may provide psychological benefits such as a greater sense of control. Income can also lead to positive health-related behaviours and psychosocial wellbeing (Marmot et al. 1998). In Australia, 19% of the mortality burden for males and 12% for females has been associated with socioeconomic disadvantage (AIHW: Mathers et al. 1999). That is, if all Australians had the same death rates as people living in the least disadvantaged areas (highest socioeconomic quintile), then overall mortality rates would reduce by 19% for males and 12% for females.

This section examines the weekly income distribution of young people and the mean weekly earnings of full-time and part-time workers. Indicators of low income presented here are based on income support including the Youth Allowance received by young people, and young people experiencing hardship because of a shortage of money.

**INDICATOR:**

Proportion of young people who are financially dependent on their families

**Financial dependence**

Young people who are financially dependent on parents may have different standards of living as their peers depending on the willingness and ability of their parents to provide for them. Although the wellbeing of individuals who are financially dependent on parents are largely unknown, this may lead to conflict and family breakdown and, in extreme situations, this can lead to youth homelessness (Chamberlain & Mackenzie 2002; Schneider 2000). Studies in Sydney and Melbourne have shown that crimes involving stealing and drug dealing by young people were undertaken to supplement their incomes and in some cases for 'survival' (Vinson et al. 1997; White 1997).

According to the ABS, young people aged 15–24 years who are attending an educational institution on a full-time basis and living with parents are considered dependent on their parents. Young people living with parents are often not eligible for income support programs such as Youth Allowance, which is a means-tested income support payment to eligible people aged between 16 and 24 years, unless the parents themselves are considered low income earners. With high unemployment and extended periods spent in education, young people are not in a position to fully provide for their own expenses, and this will prolong their transition to independent living. As noted previously, the unemployment rate in July 2006 for 15–19 and 20–24 year olds were 12.5% and 6.3% respectively, a much higher rate than the national unemployment rate of 4.4% (ABS 2006j). The national apparent retention rate to Year 12 in 1980 was 35% but in 2006 this rate rose to 75% (ABS 2007b).

According to the 2001 Census, 38% of young persons aged 15–24 years (37% males and 39% females) were dependent students. Approximately 80% of these young dependent students lived in couple-parent families while the remainder were from one-parent families.

**INDICATOR:**

Proportion of young people aged 12–24 years who are receiving a regular allowance/income from parents

The HILDA survey provides data on pocket money or allowance received by young people from their parents, but this does not include the financial contribution from parents for accommodation and various goods and services.

**Table 3.32: Young people aged 15–24 years receiving any pocket money or a regular allowance from parents, 2004**

Per cent receiving income and average amount received	Age group (years)				
	15–17	18–19	20–21	22–24	15–24
Per cent receiving regular allowance from parents	41.5	25.0	19.4	11.2	25.1
Mean annual income received from parents	\$463	\$460	\$750	\$427	\$512

Source: AIHW analysis of HILDA Survey data, Wave 4 (release 4.1).

- In 2004, one-quarter of young people aged 15–24 years were in receipt of pocket money or a regular allowance from their parents. On average, young people received about \$500 annually from their parents, or just under \$10 per week.
- The proportion of young people receiving financial support from parents steadily decreased with increasing age. A little over 40% of young people aged 15–17 years in 2004 received a regular allowance from parents, while among young people aged 22–24 years this proportion was 11%.
- The average annual income provided from parents to young people is similar across all age groups, except for 20–21 year olds, who received over 1.5 times the amount received by others.

**Mean and gross income**

In 2005, approximately 60% of young people aged 15–24 years were in full- or part-time employment. The income received by young people varies considerably depending on whether they are in full-time or part-time employment.

**Table 3.33: Mean weekly earnings of employees in their main job by full- or part-time employment and age group, 2005 (dollars)**

Age group	Full-time employment			Part-time employment			Total		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
15–19 years	448	434	444	136	137	136	272	196	234
20–24 years	737	671	710	298	294	296	622	514	570
<b>All ages</b>	<b>1,047</b>	<b>854</b>	<b>979</b>	<b>342</b>	<b>374</b>	<b>366</b>	<b>946</b>	<b>630</b>	<b>798</b>

Source: ABS 2006h.

- The average weekly income of employed 15–19 year olds was lower (\$234) than the income earned by those aged 20–24 years (\$570). This is largely due to the higher proportion of 15–19 year olds working in part-time jobs and the lower rates of pay received by younger people.
- In total, males in both age groups earned more money than their female counterparts.
- The average weekly income of full-time employed 20–24 year olds was lower than that of all full-time employees (\$570 per week compared with \$798 per week).

The income earned by young people varies considerably depending on their employment status and whether they are in full-time or part-time education. Therefore, gross weekly income without information on study and labour force participation does not provide a complete picture of income distribution among young people. Most young people with no personal income live with their parents in middle- to high-income families. Those who have their own personal income receive it through employment and/or government income support. Most young people who receive government income support live in low-income families or independently on a low income.

**Table 3.34: Gross weekly income of young people aged 15–24 years, 2001 (per cent)**

Gross weekly income	Males		Females	
	15–19 years	20–24 years	15–19 years	20–24 years
\$1–\$119	46.5	7.2	52.1	9.0
\$120–\$199	17.5	15.5	20.0	15.7
\$200–\$399	25.3	22.8	21.8	29.7
\$400–\$599	8.2	29.5	5.1	27.7
\$600–\$799	1.7	15.6	0.7	13.6
\$800–\$999	0.4	5.6	0.1	3.1
\$1,000 or more	0.4	3.7	0.2	1.3
Negative/Nil income	34.3	6.3	30.0	6.2
<b>Total with an income</b>	<b>65.7</b>	<b>93.7</b>	<b>70.0</b>	<b>93.8</b>
<b>Total young people</b>	<b>591,025</b>	<b>582,192</b>	<b>571,046</b>	<b>574,390</b>

Note: Excludes 306,282 young people aged 15–24 years who were either visitors or whose income was not stated.

Source: ABS 2001 Census of Population and Housing, unpublished data.

- The proportion of young people aged 15–19 years without an income was 32% (34% males and 30% females). Among 20–24 year olds, the proportion of males and females without an income was just over 6%. Most of these young people with no income would have been dependent on their parents for financial support.
- Approximately two-thirds of males aged 15–19 years (66%) and 70% of females had an income in 2001. Of those aged 15–19 years with an income, 64% of males and 72% of females had an income of less than \$200 per week. A further 25% of males and 22% of females had a weekly income of \$200 to \$399.
- Around one-quarter of 20–24 year olds (23% males and 25% females) received an income of less than \$200 per week. Over 50% of males and females in this age group had their weekly incomes in the \$200–\$599 range.

INDICATOR:
Mean income earned by young people

- Overall, 98% of young people aged 15–19 years who had an income, had an income of less than \$600 per week. In comparison, 79% of those aged 20–24 years with an income had an income of less than \$600 per week.
- Young males aged 20–24 years were more likely to earn higher incomes than their female counterparts. Of those with an income, 25% of males compared with 18% of females had an income of \$600 or more per week.

### Government income support

The most common income support provided directly to young people is Youth Allowance. It should be noted that families may opt to continue to receive Family Tax Benefit, a payment made in respect of young people, when a young person turns 16 years. Since young people do not receive this payment directly, it is not included in Table 3.35. Young people in families which choose to continue to receive Family Tax Benefit are not entitled to receive Youth Allowance at the same time.

**Table 3.35: Government income support by age and type of benefit, 2001 and 2006 (per cent)**

INDICATOR:				
Proportion of young people aged 15–24 years receiving government income support				

Types of income support	2001		2006	
	15–19 years	20–24 years	15–19 years	20–24 years
<b>Youth Allowance (total)</b>	<b>20.0</b>	<b>9.8</b>	<b>15.8</b>	<b>8.3</b>
Youth Allowance (Full-Time Students)	15.1	7.9	11.5	7.0
Youth Allowance (other)	4.9	1.9	4.1	1.2
Youth Allowance (Australian Apprentice) <sup>(a)</sup>	n.a	n.a	0.2	0.1
<b>Parenting Payment</b>				
Parenting Payment Single	0.8	3.6	0.6	3.1
Parenting Payment Partnered	0.3	1.3	0.2	1.0
Newstart Allowance <sup>(b)</sup>	..	10.3	..	6.1
Disability Support Pension	1.1	1.8	1.2	2.0
Sickness Allowance	—	0.1	—	0.1
ABSTUDY	1.1	0.3	0.9	0.1
Young people receiving income support (per cent)	23.3	25.2	18.8	19.5
<b>Total number receiving income support</b>	<b>314,592</b>	<b>327,873</b>	<b>264,421</b>	<b>282,762</b>
<b>Total number of young people</b>	<b>1,352,745</b>	<b>1,302,412</b>	<b>1,405,419</b>	<b>1,453,429</b>

(a) Youth Allowance for Australian Apprentices was introduced on 1 July 2005.

(b) Newstart Allowance is paid to eligible people from age 21 and therefore the denominator population for this benefit was 21–24 year olds. In 2001, there were 8 persons aged 15–19 years who received Newstart Allowance.

.. Not applicable.

— Nil or rounded to zero.

#### Notes

- The denominator used to calculate proportions in this table was the estimated resident population in 2001 and 2006 at 30 June.
- This table excludes young people receiving Carer Payment and Special Benefits. In 2006, 1,025 and 389 young people aged 15–19 years and 2,623 and 515 young people aged 20–24 years received Carer Payment and Special Benefits respectively.

Source: Government income support data, 2001 and 2006, SuperStar Pensions Database, and Newstart SuperStar Database, unpublished data.

- In 2006, approximately 19% of 15–19 year olds and 20% of 20–24 year olds received some form of income support. The main type of income support received by young people was Youth Allowance.
- Between 2001 and 2006 the number and proportion of young people receiving government income support decreased for both 15–19 year olds (from 23% to 19%) and for 20–24 year olds (from 25% to 20%). This was largely true across all types of income support received by young people.

The legal age at which a person is considered an adult is 18 years and until then parents can be expected to provide much of the support to young people. However, a small proportion of young people aged 15–17 years are considered independent from parents for receiving the Youth Allowance.

At June 2006, 12,138 young people aged 15–17 years (1.5% of all 15–17 year olds) lived separately from their parents. Of them, 88% (38% males and 62% females) lived independently of their parents due to serious family breakdowns, 4% due to other exceptional circumstances, 1.3% for not having a parental home and 7% for other reasons not specified.

A further 2,367 young people aged 15–17 years lived independently at June 2006 for a number of reasons. These included being in state care/ward (34%), being an orphan (18%), earning 75% of Commonwealth Training Award pay (6%), parents not being able to exercise responsibilities (4%) and other (38%).

For young people, the transition to independent living is one of the most important decisions in their lives. While for most young people this is a daunting experience as it means severing their links with parents, home and familiar surroundings, for a minority, it may represent a break from a difficult family situation such as domestic violence or abuse. Whatever the context in which young people are seeking independent accommodation, the process of finding and establishing adequate, affordable housing can be a daunting experience (Burke et al. 2002).

Commonwealth Rent Assistance (CRA) provides assistance to low-income households and individuals in the private rental market to help improve their housing situation, as well as education and employment outcomes.

As at June 2002, there were 162,695 young people aged less than 25 years receiving CRA. On receiving CRA, the proportions of young people paying more than half of their income on rent decreased from 38% to 14%. However, compared with other CRA recipients, young people spent the largest proportion of their income on rent before and after receiving CRA. For example, 35% each of those aged 45–54 and 55–64 years spent more than 50% of their income on rent before CRA, but after CRA these proportions decreased to 12% and 10% for the two groups respectively (AIHW 2004b).

#### INDICATOR:

Proportion of young people who are living independently and receiving rent assistance

### Debt and financial hardship

Young people taking on increasing levels of debt have become a concern in recent years. This is exacerbated by various financial and telecommunication companies' strategy of 'buy now, pay later', and young people's lack of money management skills (Dangar Research 2003).

A small-scale survey of NSW's city and regional young people aged 15–24 years conducted in 2003 provides quantitative and qualitative data on youth debt. Types of debt covered in the study include: mobile phones, credit cards, car, fines, personal loans, rent arrears, gambling, HECS, and Centrelink debt. The data may not be generalised to all young people, as there are many biases associated with small sample size (see Dangar Research 2003 for details).

According to the NSW survey, approximately 20% of young people (11% of 15–17 year olds and 24% of 18–24 year olds) had experienced personal debt sometime in their lives. The survey also reported that over half of young people had either gotten into problematic debt themselves, or knew someone who had.

#### INDICATOR:

Proportion of young people aged 12–24 years who carry various types of debt (and overall debt)

**Table 3.36: Common types of debt experienced by young people in 2003, NSW (per cent)**

Type of debt	15–17 years	18–24 years
Mobile phone bills	35	22
Car repayments/expenses	14	33
Fines	6	4
Credit card debt	4	15
Phone bill	11	9
Personal loans	11	11
Debt to family	8	5
Drug debt	7	1
Debt to friends	14	2
Rent arrears	4	3
Gambling	3	7
Centrelink debt	2	2
Miscellaneous	2	2

Note: Multiple responses were permitted therefore total responses exceed 100%.

Source: Dangar Research 2003.

- Of the young people who have encountered various debts, the most common types of debt among those aged 15–17 years were mobile phone bills, car repayments/expenses, debt to friends, phone bills and personal loans. Among young people aged 18–24 years, the most common types of debt were car repayments/expenses, mobile phone bills, credit card debt and personal loans.

The same survey also estimated that the average debt among young people aged 15–17 years was \$3,300 while it was \$5,830 among those aged 18–24 years.

A number of factors were mentioned by both parents and young people themselves as contributing to youth debt. These included social pressures that encourage spending: the credit mentality and the need to ‘keep up’ with peers and to ‘belong’. In addition, credit is easily available to young people without being informed of the realities and risks of paying back the debt. Parents felt that young people lacked money management skills, as they often purchased things on credit, and that families give into children’s demands too easily.

The HILDA survey asked young people whether they owned any credit cards, store cards and charge cards, and how often they paid off monthly balances.

**Table 3.37: Frequency of paying off credit card balances by young people aged 15–24 years, 2004 (per cent)**

Payment frequency	Age group (years)				
	15–17	18–19	20–21	22–24	15–24
Pays off entire balance always/almost always	22.4	42.1	46.2	49.9	47.2
Pays off entire balance most months	6.2	14.0	11.5	14.8	13.7
Pays off entire balance about half the time	10.9	3.2	12.1	7.7	8.3
Pays off entire balance not very often	0.0	14.0	9.0	12.3	11.4
Pays off entire balance hardly ever/never	60.6	26.7	21.1	15.3	19.5
<b>Proportion with credit cards</b>	<b>2.0</b>	<b>11.5</b>	<b>22.2</b>	<b>43.5</b>	<b>19.7</b>
<b>Total number with credit cards</b>	<b>17,269</b>	<b>64,505</b>	<b>126,514</b>	<b>335,438</b>	<b>543,725</b>

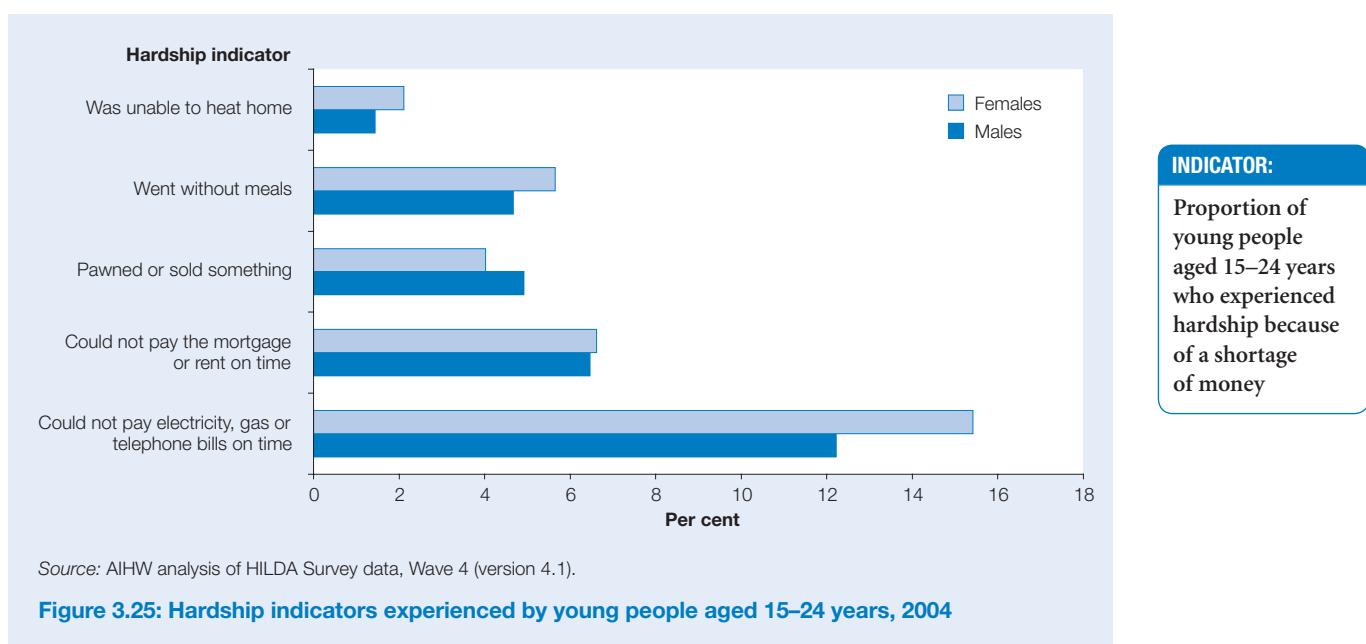
Source: AIHW analysis of HILDA Survey data, Wave 4 (version 4.1).

- In 2004, an estimated 543,725 young people aged 15–24 years responded that they owned a credit card (20% of all responding young people).

- Almost half (47%) of the young people aged 15–24 years who owned and used a credit card, always or almost always paid off the entire card balance. A further 14% said that they paid off the entire balance most months.
- The proportion of young people who always paid off credit card balances increased with age; half of young people aged 22–24 years with credit cards always or almost always paying off the entire balance, compared with 22% for 15–17 year olds.
- Young people aged 15–17 years were less likely to pay off credit card bills: approximately 61% of those who used a credit card said they hardly ever/never paid off the entire credit card balance. However, of all young people who owned credit cards, 15–17 year olds accounted for only 3%.
- The proportion of young people owning a credit card increased with age, from 2% among 15–17 year olds to 44% among 22–24 year olds.

Young people experiencing financial hardship may have a range of poor health and wellbeing outcomes, including experiencing stress and distress, lacking money to visit doctors and other health professionals, and being unable to socialise with other young people (Nicholson et al. 2004).

The HILDA survey included questions on various types of hardship experienced by young Australians. Hardship includes being unable to pay bills on time, being unable to pay mortgage or rent on time, pawning or selling something, going without meals, being unable to heat home, asking for financial help from friends or family and asking for help from welfare/community organisations. This information was collected from all young people aged 15–24 years participating in the survey, regardless of their living arrangements.



- In 2004, the most common form of hardship experienced by young people aged 15–24 years was not being able to pay electricity, gas or telephone bills on time because of a shortage of money (12.2% of males and 15.4% of females).
- Just over 6% of males and females could not pay mortgage repayments or rent on time.
- Around 5 to 6% of young people aged 15–24 years had gone without meals and less than 2% were unable to heat their homes due to a shortage of money.

The HILDA survey results also showed that 19% of males 23% females aged 15–24 years had difficulty raising \$2,000 in an emergency. Young people also reported that they needed to seek financial assistance from friends or family (19% and 22% of young males and females) and welfare/community organisations (3% males and 4% females).

## Socioeconomic status of parents

When looking at the social and economic circumstances of young people, it is important to also consider the socioeconomic status of their parents. Young people who are still living in the family home, and particularly those who are financially dependent on their parents, will share the same social and economic circumstances as their parents. This section presents indicators relating to the socioeconomic circumstances of parents in the areas of education and employment.

As previously noted, socioeconomic disadvantage is associated with higher morbidity and mortality rates. There is also evidence to suggest that the socioeconomic status of parents can have a lasting impact on the health of young people, even after young people reach adulthood and financial independence. Research suggests that people who were socially disadvantaged during childhood are more likely to experience certain health problems as adults, regardless of their current social circumstances. While improvements in socioeconomic status are generally associated with improvements in health, the impact of social disadvantage in earlier years appears to persist for health problems such as cardiovascular disease and obesity (Ball & Mishra 2006; Claussen et al. 2003).

### Parental employment

Living in a jobless family may have long-term effects on young people's development, their educational progress and their own employment prospects. Families without an employed parent generally have low incomes and live in poor economic circumstances. Such families are also more likely to be socially isolated than families with an employed parent. Long-term unemployment often leads to stress, tension and family conflict, which may impact on young people's emotional and mental health (McClelland 1994). Jobless parents may experience particular difficulty providing financially for young people with chronic or serious health problems, adding to the stress a family is experiencing.

**Table 3.38: Proportion of young people aged 12–24 living in households where no parent is employed, 2003 (per cent)**

INDICATOR:		Age of young person			
		Child 12–14 years	Dependent student 15–24 years	Non-dependent child 15–24 years	Total 12–24 years
<b>Young people in families where no parent is employed</b>					
	Couple-parent family	7.1	7.6	10.0	8.2
	Lone-parent family	46.7	32.1	32.9	37.4
	All families	15.8	12.0	14.5	13.9
<b>Young people in households where no-one is employed</b>					
	Couple-parent family	5.9	3.9	1.5	3.8
	Lone-parent family	40.6	18.8	10.0	23.7
	All families	13.6	6.6	3.2	7.7

Source: ABS 2004d.

- In 2003, around 13.9% of young people aged 12–24 years were living in a family where no parent was employed, and around 7.7% of young people were living in a family where no-one was employed.
- Across all age-groups, young people in lone-parent families were more likely than young people in couple families to live in a family where no parent was employed. This difference was most pronounced among children aged 12–14 years. Almost half (47%) of children in lone-parent families were living with a parent who was not employed, compared with 7% of children in couple-parent families.

INDICATOR:	Proportion of young people aged 12–24 years where no parent is employed
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INDICATOR:	Proportion of young people aged 12–24 years living in jobless families
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- Young people in lone-parent families were also more likely to live in jobless households than young people in couple-parent families. For example, 19% of dependent students aged 15–24 years were living in jobless households compared with 4% of those living in couple-parent families.

### Parental education

Caldwell (1999) has shown that mortality and morbidity in young people are highly correlated with maternal education. The evidence in less developed countries has been that even when controlling for factors such as family income and access to services, parental education (especially mother's education) is one of the best predictors of child health.

In more developed countries such as Australia, a direct link between parents' education and children's health is harder to establish, however parental education is clearly associated with employment and income (Ewald & Boughton 2002; Silburn et al. 1996). The problem-solving skills and health knowledge that are often acquired through education may also assist parents in caring for the health and wellbeing of young people and promoting positive health behaviours. For example, children of more highly educated mothers have been found to consume a diet that more closely conforms to guidelines on healthy eating (Rogers & Emmett 2003).

**Table 3.39: Young people aged 12–24 years living with their parents: parents' highest year of school completed by family type, 2004 (per cent)**

Highest year of school completed by parent	Couple family <sup>(a)</sup>	Lone-parent family	Total	INDICATOR:
<b>Parent completed secondary school</b>				
Year 12 or equivalent/Senior secondary	52.9	43.9	50.9	Proportion of young people aged 12–24 years whose parents did not complete secondary school (Year 10 or above)
Year 11 or equivalent	14.7	6.9	13.0	
Year 10 or equivalent/Junior secondary	25.9	29.6	26.7	
<i>Subtotal</i>	93.5	80.4	90.6	
<b>Parent did not complete secondary school</b>				
Year 9 or below	6.5	19.6	9.4	
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	

(a) Highest year of school completed by either parent.

Source: AIHW analysis of HILDA Survey data, Wave 4 (release 4.1).

- In 2004, based on results from the 2004 HILDA survey, almost 1 in 10 (9%) young people aged 12–24 years were living with parents who did not complete secondary school.
- Young people in lone-parent families were more likely than those in couple-parent families to be living in a family where no parent had completed secondary school (20% compared 7%).
- Differences between family types were not as large for Year 12 completion rates—43% of young people in lone-parent families were living with a parent who had completed Year 12, compared with 53% of young people in couple-parent families.

### Aboriginal and Torres Strait Islander young people

Based on results from the 2004 HILDA survey, almost one-quarter (24%) of Indigenous young people aged 12–24 years were living in a household where no parent had completed junior secondary school (Year 10). The corresponding figure for non-Indigenous young people was 9%. These results are based on a small Indigenous sample and should therefore be interpreted with caution.

## 3.4 Environmental factors

Environmental factors include many physical, chemical and biological conditions and agents that may affect human health, both positively and negatively. Clean air, water and food, and safe human-made environments benefit the health and wellbeing of individuals and communities. On the other hand, the natural environment and natural disasters can be harmful, as can human-caused changes such as land degradation, freshwater depletion and climate change (AIHW 2006a).

Environmental influences on health can be direct or indirect, obvious or subtle, straightforward or complex, and immediate or delayed. This makes it challenging to estimate the full range and scale of the harmful health effects of the environment. These effects include communicable diseases due to microbial contamination of food or water, vectorborne diseases transmitted by insects such as mosquitoes, respiratory and heart diseases due to air pollution and chemicals in workplaces, other consequences of chemical toxicity, effects of noise and heat, and injuries due to poorly designed traffic systems and home or workplace environments. The increasing interest in global climate change has focused attention on how ecological systems influence disease occurrence (AIHW 2006a).

Young people have biological and behavioural characteristics than can place them at increased risk of exposure to environmental contaminants, relative to adults. For example, adolescents have higher metabolic rates, which means they consume more oxygen, water and food (and any environmental hazards contained therein) per kilogram of body weight than an adult (Pike-Paris 2004; Yassi et al. 2001). In addition, their normal growth may be affected when exposed to pollutants at critical periods of development (Hansen et al. 2003; Mathieu-Nolf 2002). Young people are also at a higher risk of exposure to certain environmental factors (for example, air pollution) as they tend to spend more time outdoors than adults, participating in physical play and sports activities (Hansen et al. 2003).

This section presents data on two indicators: environmental tobacco smoke and the housing environment. Additional information on air, water and food quality are also presented.

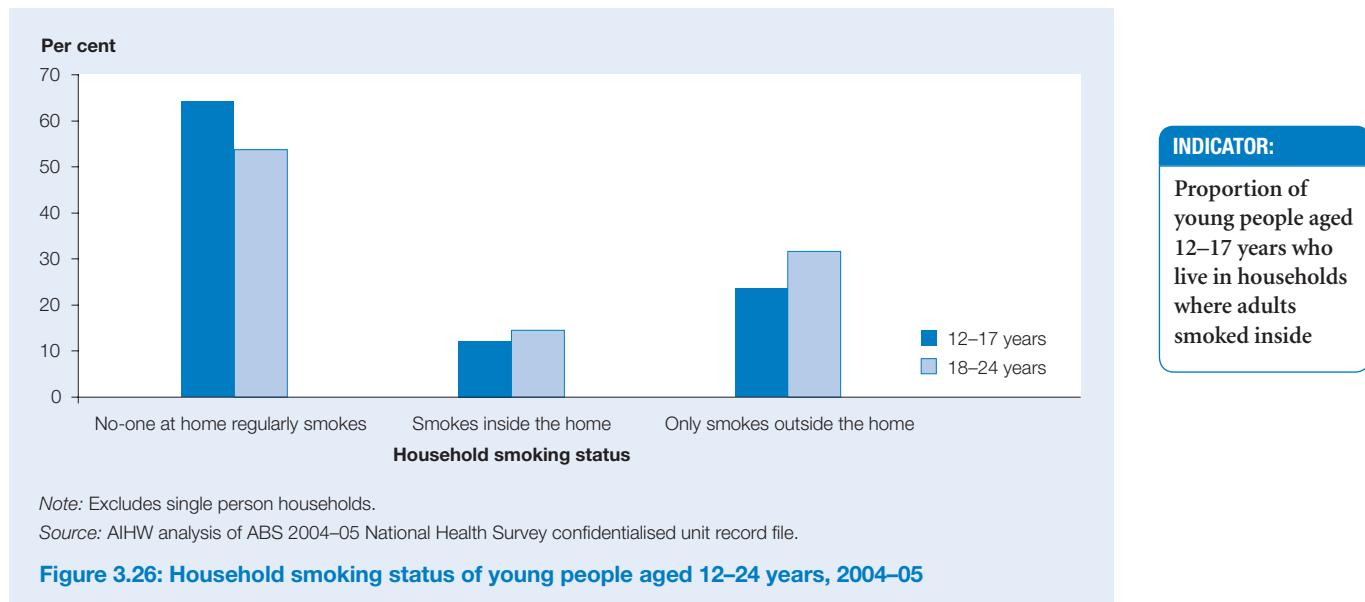
### Environmental tobacco smoke

Environmental tobacco smoke is a toxin known to contain more than 4,000 different chemical substances, making it one of the most hazardous environmental exposures for young people (Kum-Nji et al. 2006). The adverse health effects of inhaling environmental tobacco smoke, commonly referred to as passive smoking, are well documented. Exposure to environmental tobacco smoke is associated with respiratory illness, decreased lung function, increased risk of cardiovascular disease, and an increase in the frequency and severity of asthma symptoms among young people (Cook & Strachan 1997; Corbo et al. 1996; Jordan et al. 2005; U.S. Department of Health and Human Services 2006). It has also been associated with an increase in illness-related school absences (Wenton et al. 2005).

Young people in households with a smoker are more likely to take up smoking themselves. Darling & Reeder (2003) found a threefold increase in daily smoking behaviour among high school students exposed to passive smoking.

With increased awareness about the harmful effects of environmental tobacco smoke, and increasing legislation, smoking restrictions at home, work, school and public places are becoming more common (Merom & Rissel 2001; Wakefield et al. 2000). According to the ABS National Health Survey (NHS), between 1995 and 2004–05 the proportion of Australian households with dependent children where household members smoked inside decreased from 31% to 12%. In households without dependent children, the proportion of indoor smokers decreased from 32% to 17% over this period (AIHW 2006a).

It has been argued that, because of the enormous potential harm to children and adolescents from tobacco exposure, implementing effective tobacco control through legislation and other government initiatives is not only a valid concern, but also a binding obligation under the UN Convention on the Rights of the Child (WHO 2001b).



- In 2004–05, 13% of young people aged 12–24 years lived in households where household members smoked inside the home. Proportions were similar for young people aged 12–17 and 18–24 years (12% and 15% respectively).
- Young people aged 18–24 years were less likely than those aged 12–17 years to live in households where no household members smoked (54% compared with 64%). They were also more likely than those aged 12–17 years to live in a household with more than one regular smoker (21% compared with 13%). This may be because young adults are more likely to be smokers themselves (see *Substance use* in Part 3 of this report).

### Aboriginal and Torres Strait Islander Young People

In 2004–05, Indigenous young people aged 12–24 years were more likely than non-Indigenous young people (almost 3 times) to be living in households where household members smoked inside (36% compared with 13%) (AIHW analysis of ABS 2004–05 NATSIHS confidentialised unit record file).

### Housing environment

In 2001, while most young people lived in the family home, around 1 in 6 (16%) young people aged 15–24 years lived in independent accommodation (ABS 2006a). The majority (96%) of young people aged 12–24 years lived in private dwellings—of these, 83% lived in a separate house, with a further 16% living in flats, apartments or townhouses (ABS Census of population and housing 2001, unpublished data). Only 4% resided in non-private dwellings such as boarding houses, hostels, residential colleges and boarding schools. Less than 1% of young people were living in accommodation that could be considered temporary, including caravans, cabins or houseboats, improvised homes or tents. Homelessness among young people is discussed under *Homelessness* in Part 3 of this report.

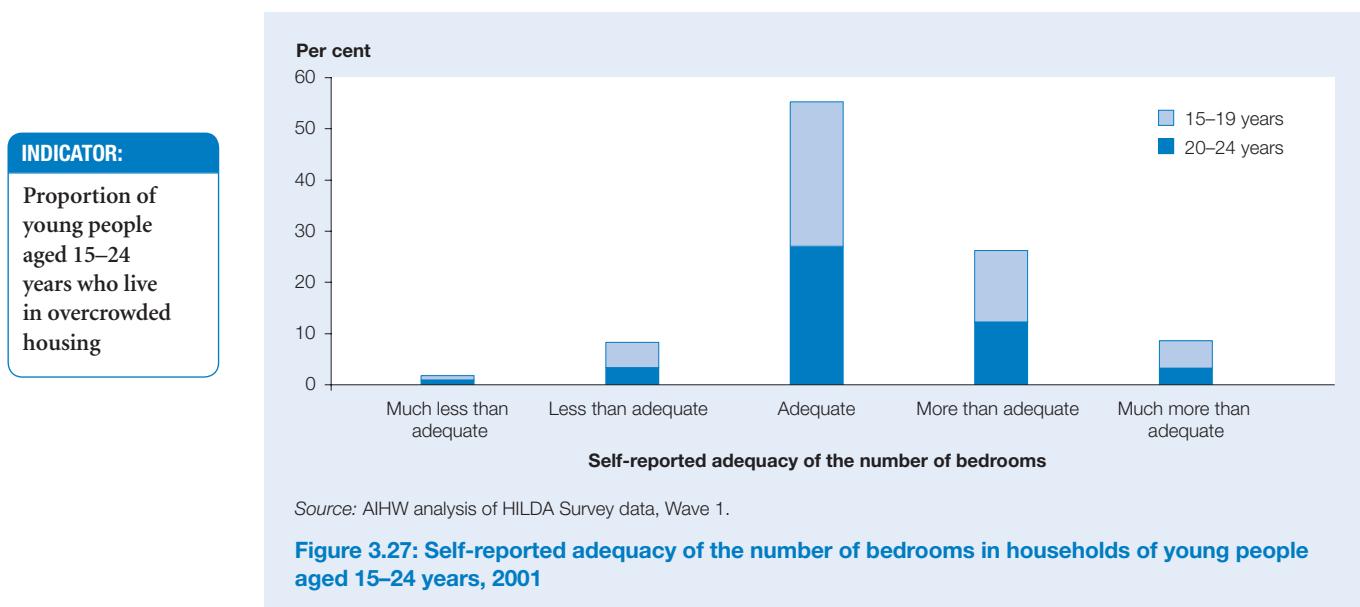
A number of links between health and housing are especially relevant to young people. Due to financial constraints, young people are more likely to live in substandard or overcrowded dwellings and therefore be at increased risk of poor health outcomes. Waters (2001) found that people living in rented accommodation in Australia were significantly more likely to report fair or poor health status, to be smokers, to have recently visited a doctor, or to have a higher than average number of serious health conditions than home owners.

Overcrowding can be a subjective concept, and may be influenced by cultural norms. Indigenous people may have different views about what constitutes overcrowding, especially in remote areas. For a number of Indigenous people, living in large family groupings may be culturally acceptable or non-problematic (Keys Young 1998). Nevertheless, overcrowding can result in severe health and wellbeing problems (Waters 2001).

Overcrowding can put excessive demand on bathroom, kitchen and laundry facilities, as well as on sewerage systems such as septic tanks. It can lead to the spread of infectious diseases such as meningococcal meningitis or septicaemia, tuberculosis, rheumatic fever, respiratory diseases and skin infections (Bailie & Runcie 2001; Waters 2001). It has also been associated with poorer self-reported health and higher rates of smoking (Waters 2001). In 2001, the proportion of Indigenous households that were overcrowded was 6 times as high as that of other households (9.5% compared with 1.6%) (AIHW 2005f).

Various measures can be used to assess the extent of overcrowding in dwellings. Occupancy standards are well-recognised, objective measures of overcrowding, which relate the household size and composition to the number of bedrooms available. For example, a house may be defined as overcrowded where two or more extra bedrooms are required to satisfy the proxy occupancy standard (AIHW 2005c). Using this measure, 6% of young people aged 12–24 years in public rental dwellings and state owned and managed Indigenous dwellings lived in overcrowded households at 30 June 2005 (AIHW analysis of National Housing Data Agreement national minimum data set).

This report mostly uses data on the self-reported adequacy of the number of bedrooms in the homes of young people, obtained from the HILDA longitudinal survey, as a measure of overcrowding.



- In 2001, around 1 in 10 young people aged 15–24 years considered the number of bedrooms in their home to be less than adequate (8%) or much less than adequate (2%).
- The vast majority of young people lived in households where the number of bedrooms was perceived as adequate (55%), more than adequate (26%) or much more than adequate (9%).

Of young people aged 15–24 years, similar proportions of those living with their parents and those not living with their parents considered the number of bedrooms in their home to be less or much less than adequate (10% compared with 9%). However, those living with their parents were 1.6 times as likely as those not living with their parents to report that the number of bedrooms in their home was more or much more than adequate (40% compared with 25%).

## Other environmental factors

In addition to passive smoking and overcrowding, there are a range of other environmental factors that can have an impact on the health and wellbeing of young people, including air and water quality, vectorborne diseases and food quality.

### Air quality

The air can be contaminated by pollutants, micro-organisms and odours, all of which can be harmful to human health and wellbeing. Ambient (that is, outdoor) air pollution in Australia is mainly caused by emissions from motor vehicles, heavy industry and mining activities. Air may also contain emissions from the combustion of fossil fuels for electricity generation, smoke from home heating and bushfires, and wind-blown dust. Indoor air may contain pollutants such as nitrogen dioxide from gas cookers and unflued gas heaters, volatile organic compounds from surface coatings and adhesives, moulds from moist surfaces, and tobacco smoke (AIHW 2006a).

Exposure to air pollutants has been associated with respiratory illness, asthma, allergy symptoms, eye and throat irritation, and reduced lung function among young people (Hansen et al. 2003; Peters et al. 1999). However, adverse health effects can also extend to cardiovascular conditions, impaired mental development and premature mortality (BTRE 2005; Kjellstrom et al. 2002).

### Urban air pollution

Air quality in Australia is relatively good by international standards (Manins et al. 2001) but requires regulation and continual monitoring. Environmental regulation has markedly reduced the ambient levels of sulfur dioxide, nitrogen dioxide, lead and carbon monoxide (BTRE 2005), and the concentration of lead in urban air has decreased substantially since unleaded fuels were introduced in the mid-1980s (Australian State of the Environment Committee 2001). However, levels of nitrogen oxides and of particulate matter with diameters of up to 10 microns ( $PM_{10}$ ) are of ongoing policy concern, as are those with diameters less than 2.5 microns ( $PM_{2.5}$ ), known to cause respiratory and cardiovascular illness (AIHW 2006a).

In 2004, two major capital cities exceeded the maximum allowable number of days when pollutant concentrations exceeded the National Environmental Protection Measure (NEPM) ambient air quality standard levels—Melbourne for  $PM_{10}$  and Sydney for ozone concentrations (AIHW 2006a). There are no national data on air quality specific to young people.

### Water quality

Providing a safe drinking water supply is fundamental to maintaining good public health. Disease outbreaks from public water supplies are rare in Australia, but they periodically occur from small private water supplies. In Australia, 93% of households are connected to mains water supplies, and over 80% use mains water as their primary source of drinking water. Other important sources of drinking water are rainwater tanks (11% of households), particularly in rural areas, and bottled water (7.6%) (ABS 2005c).

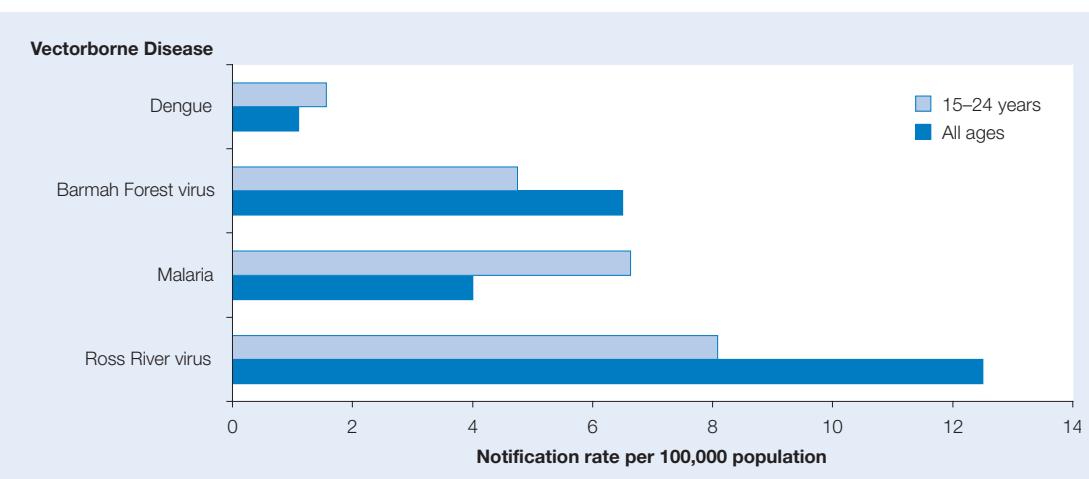
While national data are not available, results for New South Wales in 2003 indicate that almost 100% of drinking water samples met guidelines for permissible levels of inorganic chemicals and pesticides (NSW Department of Health 2004). Although most Australians have access to good quality drinking water, in 2001 it was found that about 17,000 people living in Indigenous communities had drinking water supplies that failed testing at least once in the 12 months before the survey (ABS 2002b).

Fluoridation of tap water delivers public health benefits by reducing dental caries, and most young Australians live in areas that are currently supplied by fluoridated mains water (see *Oral health* in Part 2 of this report).

Water-based recreation promotes healthy physical activity and enhances wellbeing, but may also expose participants to microbial (such as blue-green algae) or chemical contaminants. Public swimming pools have been the source of a number of outbreaks of cryptosporidiosis in recent years in Australia (Hellard et al. 2000; Paterson & Goldthorpe 2006).

### Vectorborne disease

Water also provides a habitat for insect vectors of water-related diseases, such as mosquitoes (Yassi et al. 2001). The occurrence of vectorborne disease fluctuates considerably with patterns of human mobility, weather, and the ecology of vector species. Changes in the environment, weather and climate, but also mosquito control activities, influence the prevalence and geographic range of some mosquito-borne diseases within Australia (AIHW 2006a). These include dengue (44 cases notified in Australia in 2005, among 15–24 year olds), Ross River virus disease (228 cases), Barmah Forest virus disease (134 cases) and malaria (187 cases).



Source: National Notifiable Diseases Surveillance System.

**Figure 3.28: Vectorborne disease notifications for young people aged 15–24 years, 2005**

- In 2005, the most common vectorborne disease among 15–24 year olds was Ross River virus (8.1 per 100,000 young people), followed by malaria (6.6 per 100,000), Barmah Forest virus disease (4.8 per 100,000), and dengue (1.6 per 100,000).
- In 2005, notification rates for young people for dengue and malaria were higher than the national notification rates.
- Of all age groups in Australia in 2005, the 20–24 year and 15–19 year age groups had the second and third highest malaria notification rates (6.8 and 6.5 respectively).

## Food quality

Contamination of food anywhere on the food chain from ‘paddock to plate’ can lead to foodborne illness. An estimated 4 to 7 million cases of foodborne infection (gastroenteritis) occur annually in Australia (Hall et al. 2005) and foodborne infectious illnesses other than gastroenteritis can also occur. Various pesticides and other non-natural contaminants can also be found in some foods, but the estimated average dietary exposures to pesticides and other contaminants in Australia remain within acceptable health standards (AIHW 2006a; FSANZ 2002).

## Foodborne infections

Poor hygiene and temperature control in any part of the food production chain can increase the risk of illness. In Australia, notification rates for potentially foodborne infections have increased over recent decades. This is partly because of more complete reporting and improved laboratory capacity to identify pathogens, but is probably also due to changed behaviours—people are eating more takeaway and pre-prepared meals, which may pose higher risks if not carefully prepared (AIHW 2006a).

Campylobacteriosis and salmonellosis are common types of bacterial gastroenteritis. All age groups can be affected but infection is more common in children under 5 years of age and young adults. The most common symptoms of infection are diarrhoea, abdominal pain, fever, nausea and vomiting. Dehydration can be a serious complication.

**Table 3.40: Foodborne disease notification rates<sup>(a)</sup> for young people aged 15–24 years, 2001 to 2005**

Disease	Age (years)	2001	2002	2003	2004	2005
Campylobacteriosis	15–19	110.4	102.8	105.1	107.0	113.2
	20–24	169.4	166.0	161.1	155.2	166.2
	All ages	125.3	116.2	116.4	116.5	121.6
Salmonellosis	15–19	28.8	28.7	27.2	28.5	32.1
	20–24	31.6	40.0	35.4	41.3	46.0
	All ages	36.2	39.8	35.3	39.0	41.5

(a) Notification rate per 100,000 population.

Source: National Notifiable Diseases Surveillance System.

- In 2005, there were 3,768 notifications of salmonellosis and campylobacteriosis among 15–24 year olds, with 60% of these occurring in young people aged 20–24 years.
- Since 2001, the campylobacteriosis notification rate among young people aged 20–24 years has remained much greater than the notification rate for all ages (33% to 43% greater). In addition, this age group had the second highest campylobacteriosis notification rates across all age groups in Australia over this period (ages 0–4 years had the highest).
- Since 2001, the notification rates for salmonellosis and campylobacteriosis have remained relatively constant among young people aged 15–24 years.



# Part 4:

## Aboriginal and Torres Strait Islander young people

Aboriginal and Torres Strait Islander people suffer much more ill health than other Australians (ABS & AIHW 2005). They die at much younger ages and are more likely to experience disability and reduced quality of life due to ill-health than other Australians (ABS & AIHW 2005). This health disadvantage begins at an early age and continues to impact on health and wellbeing throughout life.

The health inequalities experienced by Indigenous Australians reflect broader disadvantage across a range of socioeconomic factors that impact on health and wellbeing. In 2002, Aboriginal and Torres Strait Islander people reported lower incomes, higher rates of unemployment, poorer educational achievement and lower rates of home ownership than other Australians (ABS 2004f). Despite some improvement in the mortality of Indigenous Australians over the past decade, and increases in educational attainment, employment and home ownership, the gap in social and economic circumstances between Indigenous and non-Indigenous Australians remains large (ABS & AIHW 2005; Paradies & Cunningham 2002; Ring & Firman 1998).

However, socioeconomic status alone does not account for all of the variations in health status that exist between Indigenous and non-Indigenous Australians. The determinants of health and wellbeing are multifactorial—cultural, historical, environmental and socioeconomic factors can all contribute to health and wellbeing (Abbot & Close 2002; Booth & Carroll 2005). Aboriginal and Torres Strait Islander views of health are holistic, encompassing the social, emotional, spiritual and cultural wellbeing of an individual together with their families and communities (NATSIHC 2000). These aspects of wellbeing have been severely disrupted by the trauma and loss experienced by generations of Indigenous people as a result of dispossession of land and disruption of culture, family and community (NATSIHC 2003; Ring & Brown 2002).

The aim of Part 4 of this report is to present an overview of how young Aboriginal and Torres Strait Islander people are faring in terms of their health and wellbeing and highlights areas where there are opportunities for further gain. It draws together the information on Indigenous young people that is presented throughout the report, but also includes additional information in order to provide a more comprehensive picture of the issues affecting this population group. This part is presented in four sections—data quality, demographic characteristics of young Indigenous Australians, health status and outcomes, and factors influencing health.

## Data quality

Over the last decade, there has been much progress in collecting information on Aboriginal and Torres Strait Islander people. The AIHW and the ABS, in partnership with state and territory authorities, are making considerable efforts to improve the completeness with which Aboriginal and Torres Strait Islander people are identified in administrative data sets and other key national data collections.

The availability and quality of data on Indigenous Australians are limited by a number of factors that include:

- uncertainties surrounding the estimation of the size and composition of the Indigenous Australian population
- incomplete identification of Indigenous Australians in administrative data collections including hospital records, and birth and death registrations
- the statistical and practical challenges of surveying a population that is small (2.4% of the total population), with a relatively high 'remote area' component, and the relevance of the questions and concepts used.

Good quality trend data are needed to properly assess changes in health status for Aboriginal and Torres Strait Islander people. Such data requires complete and consistent identification of Aboriginal and Torres Strait Islander people in Censuses, surveys and administrative data collections. Over the last few decades a considerable effort has been put into improving the enumeration of Indigenous Australians in successive Censuses, surveys and administrative data collections (AIHW & ABS 2006). However, the changes in the completeness of Indigenous identification that have occurred over time make it difficult, or impossible, to compare different time periods. For this reason, no trend analyses have been included in this section.

At present, there is considerable variation across the states and territories in the completeness of mortality and hospital data for Aboriginal and Torres Strait Islander people. The extent of under-counting of Indigenous people in hospital use and death records is not known. Currently, hospitalisation and mortality data from Queensland, Western Australia, South Australia and the Northern Territory are considered sufficient for statistical reporting on mortality and hospital use. Interpretation of results should take into account the relative quality of the data from these jurisdictions, and the fact that data from these jurisdictions are not necessarily representative of the jurisdictions excluded or of Australia as a whole.

In accordance with guidelines for the use of hospital data (AIHW 2005e), records where Indigenous status was not stated or inadequately described in hospital data were included in the other Australians category. This may lead to further underestimation of the number of Indigenous people in this data set. For mortality data, where Indigenous status was not stated or inadequately described, these records have been excluded from analysis, and therefore the categories for comparison are Indigenous and non-Indigenous. See Box 4.1 for more detail on terminology.

The AIHW has also examined the quality of Aboriginal and Torres Strait Islander identification and documented data quality improvement activities for a number of community services data collections, including the National Child Protection (NCP) Data Collection, the Supported Accommodation Assistance Program (SAAP) National Data Collection and the Juvenile Justice National Minimum Data Set, from which data were obtained for this report (AIHW 2007b).

### **Box 4.1: Terminology used to describe Aboriginal and Torres Strait Islander people and other Australians**

*'Aboriginal and Torres Strait Islander people', 'Indigenous Australians', and 'Indigenous people' are used interchangeably when referring to people who have identified as Aboriginal and/or Torres Strait Islander.*

*Non-Indigenous Australians are those that have stated they are not Aboriginal and/or Torres Strait Islander.*

*'Other Australians' is used when referring to people that have not identified as Aboriginal and/or Torres Strait Islander. This group includes those people who have said they are non-Indigenous but may also include individuals for whom the relevant information was not collected.*

## **Demographic characteristics of young Indigenous Australians**

### **Age and sex distribution**

In 2001, there were estimated to be 116,698 Aboriginal and Torres Strait Islander people aged 12–24 years, representing 3.4% of all young Australians (see Table 1.3). Their number is projected to have grown to 143,128 (low series projection) by mid-2007 (AIHW & ABS 2006).

**Table 4.1: Young Indigenous Australians aged 12–24 years, by age and sex, June 2001**

	Number	Per cent
<b>Age group</b>		
12–14 years	32,710	28.0
15–19 years	46,579	39.9
20–24 years	37,409	32.1
<b>Sex</b>		
Males	58,875	50.5
Females	57,823	49.5
<b>Total Indigenous young people</b>	<b>116,698</b>	<b>100.0</b>

Source: ABS various years.

- Of all young Indigenous Australians in 2001, 28% were aged between 12 and 14 years and 40% were 15–19 year olds. Combined, 12–19 year olds comprised 68% of young Indigenous Australians aged 12–24 years.
- The proportions of young Indigenous males and young Indigenous females was very similar (50.5% compared with 49.5% respectively).

There was a higher proportion of Indigenous young people aged 12–14 years compared with all Australians (28% and 23% of 12–24 year olds respectively) and a lower proportion of Indigenous young people aged 20–24 years (32% compared with 39% of 12–24 year olds). This is consistent with the younger age structure of the Indigenous population (Figure 1.1). Among the Indigenous population, 26% were aged 12–24 years in 2001, compared with 18% for all Australians.

### **Regional status**

People living in Remote and Very Remote areas of Australia are disadvantaged in educational and employment opportunities, income, access to goods and services and, in some areas, access to basic necessities such as clean water and fresh food (AIHW 2003e). Rates of smoking, physical activity, risky alcohol consumption and poorer nutrition are also higher outside of Major Cities. This could adversely affect the health of young people living in those areas (AIHW 2003e).

**Table 4.2: Young Indigenous Australians and all young Australians aged 15–24 years, by region, 2001**

<b>Region</b>	<b>Indigenous</b>		<b>All Australians</b>	
	<b>Number</b>	<b>Per cent</b>	<b>Number</b>	<b>Per cent</b>
Major Cities	25,923	30.9	1,834,243	69.1
Inner Regional	16,627	19.8	510,157	19.2
Outer Regional	18,737	22.3	244,593	9.2
Remote	7,408	8.8	39,055	1.5
Very Remote	15,294	18.2	27,108	1.0
<b>Young people aged 15–24 years by region</b>	<b>83,988</b>	<b>100.0</b>	<b>2,655,157</b>	<b>100.0</b>

Source: ABS various years.

- In 2001, 31% of young Indigenous people aged 15–24 years lived in Major Cities, 42% in Inner Regional and Outer Regional areas and 27% in Remote or Very Remote areas. By comparison, over two-thirds (69%) of all young people aged 15–24 years lived in Major Cities and only 3% lived in Remote or Very Remote areas in 2001.
- Indigenous young people accounted for over 50% of all young Australians living in Very Remote areas.

As more than one-quarter of young Indigenous people live in Remote or Very Remote areas, they are likely to experience difficulties in accessing health services. In addition, a lack of trained Indigenous staff among health and welfare professionals and other workers and a lack of understanding about the knowledge and values of Indigenous people can discourage Indigenous people in all regions from accessing services that are available (AIHW 2003a).

## Fertility

Birth rates among the Indigenous population are higher compared with the total Australian population. This is shown by the difference in the total fertility rate between Indigenous Australians and all Australians (2.06 babies for Indigenous women compared with 1.81 babies for all Australian women in 2005) (ABS 2006d).

Indigenous women also tend to give birth at younger ages than non-Indigenous women, with teenage (women aged under 20 years) births far more common among Indigenous women than among other women. In 2005, the teenage fertility rate of Indigenous women (69 babies per 1,000 women) was more than 4 times the fertility rate of all teenage women (16 babies per 1,000), while the fertility rate of Indigenous women aged 20–24 years was more than twice the fertility rate of all women in this age group (122 per 1,000 compared with 53 babies per 1,000 women) (ABS 2006d). The 20–24 year age group was the peak age group for births to Indigenous women, compared with 30–34 years for all women (ABS 2006d).

Teenage pregnancies are associated with a number of adverse reproductive outcomes such as fetal complications and low birthweight (Fraser et al. 1995). In 2004, the proportion of pre-term births and babies of low birthweight among Indigenous mothers was around twice that of non-Indigenous mothers (AIHW: Laws et al. 2006a).

## Health status and outcomes

As with the Indigenous population as a whole, young Aboriginal and Torres Strait Islander people suffer poorer health than their non-Indigenous counterparts. Young Aboriginal and Torres Strait Islander people experience higher rates of death, injury and disability than other young Australians, and are more likely to live with certain chronic diseases.

In 2004–05, young Indigenous Australians aged 15–24 years were more likely to report fair or poor health than non-Indigenous young people (9% compared with 7%), and were less likely to report excellent or very good health (59% compared with 70%) (ABS 2006).

This section looks at factors directly related to health status, such as life expectancy, disability and activity limitation, health conditions including mental health, injury and poisoning, chronic diseases, communicable diseases, and deaths.

### **Life expectancy**

The estimated life expectancy at birth for Aboriginal and Torres Strait Islander people is much lower than for other Australians, a reflection of higher death rates, particularly in the mid-adult and older age groups. For the period 1996–2001, the life expectancy at birth was estimated at 59 years for Indigenous males and 65 years for Indigenous females—well below the 77 years for all Australian males and 82 years for all Australian females in 1998–2000 (17–18 years lower) (ABS & AIHW 2005). The life expectancy of Aboriginal and Torres Strait Islander people is similar to that of the total Australian population in 1901–1910 for males and in 1920–1922 for females (ABS & AIHW 2005).

### **Disability and activity limitation**

Indigenous Australians aged 18–24 years were 1.5 times as likely to have a disability or long-term health condition as non-Indigenous young people (ABS & AIHW 2005). According to the 2002 National Aboriginal and Torres Strait Islander Social Survey, an estimated 18,800 Indigenous Australians aged 15–24 years had a disability or long-term health condition (23% of young Indigenous people). Of these, 1 in 6 had a profound or severe core activity limitation, meaning that they always or sometimes needed assistance with at least one activity of everyday living (self-care, mobility or communication). For more information on disability among Indigenous Australians, see ABS & AIHW (2005).

### **Health conditions**

Information on general practitioner (GP) visits and hospital admissions can provide an understanding of the extent of ill-health among Aboriginal and Torres Strait Islander young people.

The ABS 2004–05 National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) collected information on health related actions taken by young Indigenous Australians aged 15–24 years in the 2 weeks prior to interview (12 months for hospital separations).

Results from the ABS 2004–05 NATSIHS indicated that:

- Lower proportions of Indigenous young people accessed primary health care services—15% of Indigenous young people consulted a GP/specialist and 3% consulted a dentist, compared with 17% and 6% of non-Indigenous young people respectively.
- Indigenous young people were more likely to make use of tertiary health care services, such as being admitted to hospital or visiting casualty/outpatients than non-Indigenous young people (16% of Indigenous young people were admitted to hospital and 5% visited casualty/outpatients, compared with 12% and 2% of non-Indigenous young people respectively).

Hospital separation statistics are not a measure of the prevalence or incidence of a disease, but can provide some insights into the health status of various population groups. In 2004–05, Indigenous young people aged 12–24 years were more likely than other young Australians to be hospitalised for most diseases and conditions, indicating a higher occurrence of acute illness.

In Queensland, Western Australia, South Australia and the Northern Territory, the most common diagnosis for young Indigenous Australians aged 12–24 years hospitalised during 2004–05 was ‘pregnancy, childbirth and the puerperium’, followed by ‘injury, poisoning and other external causes’, ‘contact with health services’ (51% of which was care involving dialysis) and mental and behavioural disorders. This was similar to the pattern for other young Australians, although rates were higher for Indigenous young people (Table 4.3).

**Table 4.3: Hospital separations for Indigenous young people aged 12–24 years, by principal diagnosis, 2004–05**

<b>Principal diagnosis</b>	<b>Observed hospitalisations</b>	<b>Expected hospitalisations</b>	<b>Ratio</b>
Pregnancy, childbirth and the puerperium (O00–O99)	6,431	2,541	2.5
Injury, poisoning and other consequences of external causes (S00–T98)	3,069	1,898	1.6
Contact with health services (Z00–Z99)	2,456	1,063	2.3
Mental and behavioural disorders (F00–F99)	1,330	928	1.4
Genitourinary system (N00–N99)	731	616	1.2
Skin diseases (L00–L99)	726	395	1.8
Respiratory system (J00–J99)	706	587	1.2
Certain infectious and parasitic diseases (A00–B99)	276	201	1.4
Circulatory system (I00–I99)	238	113	2.1
Nervous system (G00–G99)	208	159	1.3
Ear diseases (H65–H95)	153	63	2.4
Other	2,575	4,074	0.6
<b>Total hospital separations</b>	<b>18,899</b>	<b>11,187</b>	<b>1.7</b>

Note: For data quality reasons, this table includes data for Queensland, Western Australia, South Australia and public hospitals in Northern Territory only. The data presented here are not necessarily representative of the jurisdictions excluded.

Source: AIHW National Hospital Morbidity Database.

- In 2004–05, the hospital separation rate for Aboriginal and Torres Strait Islander young people aged 12–24 years was 1.7 times the rate for other young Australians.
- Indigenous young people had higher separation rates than other young Australians for a number of diagnoses. The largest disparities in separation rates were for ‘pregnancy, childbirth and puerperium’ (2.5 times), ear diseases (2.4 times), ‘contact with health services’ (2.3 times), the circulatory system (2.1 times), and skin disease (1.8 times).

### Mental health

National data on the prevalence of mental illness among young Indigenous Australians are not available. The age-standardised hospital separation rate for mental and behavioural disorders among Indigenous 12–24 year olds was 2,028 per 100,000 young people in 2004–05 (1,989 for males and 2,070 for females) (ICD-10-AM codes F00–F99). This rate was 1.6 times that of other young Australians. Separation rates increased with age, from 394 per 100,000 young people for 12–14 year olds to 1,570 per 100,000 young people aged 15–19 years and 2,942 per 100,000 for 20–24 years-olds.

Schizophrenia was the main mental and behavioural disorder associated with hospitalisation among young Indigenous males aged 12–24 years in 2004–05 (35%). This was followed by mental and behavioural disorders due to psychoactive substance use (32%) (13% due to alcohol use alone) and reaction to severe stress and adjustment disorder (9%). Among young Indigenous females, the main reasons for mental and behavioural disorder separations were psychoactive substance use (25%) (9% due to alcohol use alone), reaction to severe stress and adjustment disorder (16%) and schizophrenia (15%). Use of alcohol was responsible for 42% and 35% of hospital separations for psychoactive substance use among young Indigenous males and females respectively.

Over 49,000 community mental health services contacts were made by young Indigenous people aged 15–24 years in 2003–04 and 58% of the contacts had a specific principal diagnosis. The most common principal diagnoses among young Indigenous people were schizophrenia (accounting for 32% of the service contacts), and depressive disorders (15%) (NCMHCD, unpublished data).

## Injury and poisoning

As for other young Australians, injury has a major, but largely preventable, impact on the health of Indigenous young people. In 2004–05, 16% of hospital separations among Indigenous young people aged 12–24 years were for injury. While this proportion was similar to that for other young Australians (15%), the patterns of injury due to specific external causes differed somewhat between the two groups. Assault was the leading external cause of injury among Indigenous young people, accounting for 33% of all injury hospital separations. In contrast, assault accounted for 7% of hospital separations for injury among other young Australians, with transport accidents being the leading cause (23% of injury hospital separations).

**Table 4.4: Injury and poisoning hospital separations for Indigenous young people aged 12–24 years, by external cause, 2004–05**

<b>External cause</b>	<b>Males</b>			<b>Females</b>		
	<b>Observed</b>	<b>Expected</b>	<b>Ratio</b>	<b>Observed</b>	<b>Expected</b>	<b>Ratio</b>
Assault (X85–Y09, Y87.1)	457	119	3.8	546	18	31.0
Transport accidents (V00–V99, Y86)	277	321	0.9	105	104	1.0
Accidental falls (W00–W19)	241	209	1.2	110	62	1.8
Intentional self-harm (X60–X84, Y87.0)	86	49	1.8	126	49	1.1
Other	748	649	1.2	373	237	1.6
<b>All injury separations</b>	<b>1,809</b>	<b>1,347</b>	<b>1.3</b>	<b>1,260</b>	<b>541</b>	<b>2.3</b>

Note: For data quality reasons, this table includes data for Queensland, Western Australia, South Australia and public hospitals in Northern Territory only. The data presented here are not necessarily representative of the jurisdictions excluded.

Source: AIHW National Hospital Morbidity Database.

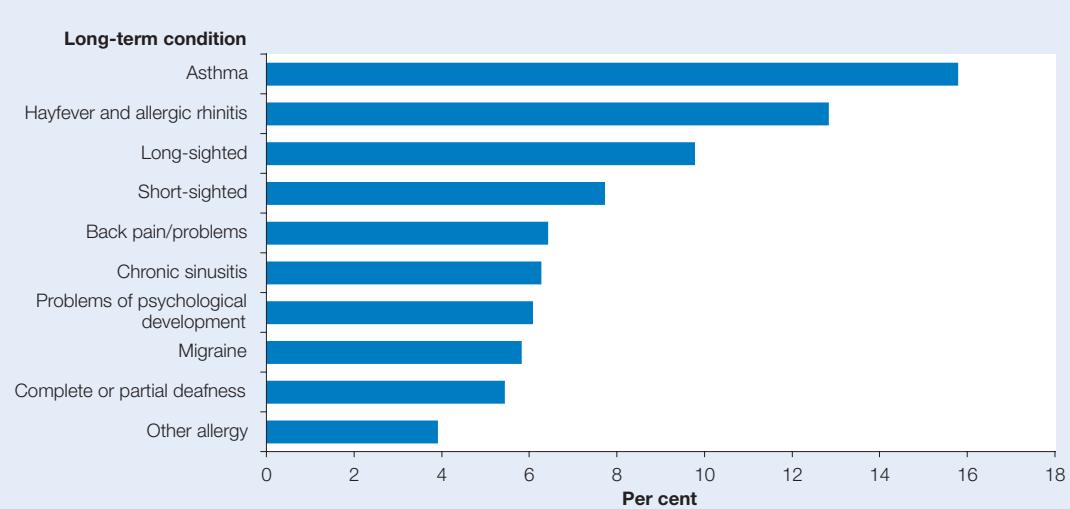
- In 2004–05, the injury hospital separation rate for young Indigenous males aged 12–24 years was 1.3 times the rate for other young males, and the rate for young Indigenous females aged 12–24 years was 2.3 times the rate for other young females.
- Among young Indigenous females, separation rates for assault and accidental falls were substantially higher than for other young females (31.0 and 1.8 times as high respectively). Young Indigenous males had higher hospital separation rates for assault (3.8 times the rate for other young males) and intentional self-harm (1.8).

There were 205 deaths of young Indigenous Australians aged 12–24 years due to injury and poisoning during the period 2002–2004—a rate of 137 per 100,000 young people, which was almost 4.5 times that for young non-Indigenous Australians (31 per 100,000 young people) (data are for Queensland, Western Australia, South Australia and the Northern Territory only). The male rate was higher than the female rate for all age groups. The death rate was lowest among those aged 12–14 years and increased with age.

External causes of injury and poisoning accounted for the majority of deaths among Indigenous young people aged 12–24 years in 2002–2004 (Table 4.5).

## Chronic diseases

Many of the chronic diseases affecting young Aboriginal and Torres Strait Islander people are similar to those affecting all young Australians. However, rates for some conditions, such as asthma and diabetes, are higher among young Indigenous people than among all young people. Additionally, rheumatic heart disease, which is largely associated with socioeconomic disadvantage, almost exclusively affects Indigenous people (Box 4.2).



Note: Long-term conditions are defined here as conditions lasting, or expected to last, 6 months or more.

Source: AIHW analysis of 2004–05 ABS National Aboriginal and Torres Strait Islander Health Survey confidentialised unit record file.

**Figure 4.1: Most frequently reported long-term conditions in young Indigenous people aged 12–24 years, 2004–05**

- In 2004–05, 59% of young Indigenous Australians aged 12–24 years reported a long-term condition, compared with 63% of all young Australians. The same proportion of young Indigenous people reported multiple long-term conditions as all young Australians (34%).
- Asthma was the long-term condition most frequently reported by young Indigenous people (16%), followed by hay fever and allergic rhinitis (13%) and long-sightedness (10%).

The long-term conditions reported most frequently were similar for both Indigenous and all young people in 2004–05 (see Figure 2.13), although 5% of young Indigenous Australians reported complete or partial deafness, and 6% reported problems of psychological development. The prevalence of anxiety-related problems was similar between Indigenous and all young Australians (3.7% and 3.4% respectively). The proportion of Indigenous young people reporting asthma was higher compared with all young Australians (16% compared with 9%).

## **Box 4.2: Rheumatic heart disease among Aboriginal and Torres Strait Islander people**

Rheumatic heart disease is caused by the long-term damage done to the heart muscle or heart valves by acute rheumatic fever. Acute rheumatic fever is a delayed complication of an untreated throat infection from Group A Streptococcus bacteria and there is some evidence that it may also be caused by streptococcal skin sores (AIHW 2004c). It can affect the heart valves, the heart muscle and its lining, the joints and the brain. Repeated or prolonged episodes of rheumatic fever in childhood and adolescence can cause permanent damage to the heart valves (rheumatic heart disease). In many Indigenous children, episodes of acute rheumatic fever are not being diagnosed, and are therefore not treated (Carapetis et al. 1996).

Both acute rheumatic fever and rheumatic heart disease are important and preventable causes of ill health and death. They are a significant problem in the Indigenous Australian population of northern and central Australia, among children in particular. In contrast, they are extremely rare in other Australian children (Carapetis et al. 1996). Australia's Aboriginal and Torres Strait Islander peoples living in remote areas have among the highest rates of these diseases in the world (AIHW 2004c).

Acute rheumatic fever and rheumatic heart disease are typically associated with overcrowding, poor sanitary conditions and other aspects of social and economic disadvantage. In Australia, some population group's limited access to medical care for diagnosis and treatment of these diseases is also recognised as a contributing factor to their occurrence (Couzos & Carapetis 2003).

Data on the incidence of acute rheumatic fever and the prevalence of rheumatic heart disease are from regional disease registers for the Top End and Central Australia (see AIHW (2004e) for further information). Hospital separations data are from the AIHW National Hospital Morbidity Database.

### **Incidence of acute rheumatic fever**

Acute rheumatic fever is frequently under-reported because of difficulty in diagnosis and reduced awareness of the disease—therefore its true incidence is underestimated. The peak age of incidence of acute rheumatic fever is 5–14 years, but cases do occur in adults (AIHW 2004e).

In 2002, Aboriginal children aged 5–14 years accounted for 32 cases of acute rheumatic fever in the Top End of the Northern Territory (55% of all cases diagnosed in this area)—a rate of 346 per 100,000 Indigenous children. There were no reported cases of acute rheumatic fever among non-Indigenous children living in the area. Data from Central Australia present a similar picture. In 2002, the highest incidence rate was found among 5–14 year olds (15 cases or 365 per 100,000 Indigenous children, representing 56% of all cases diagnosed in this area).

### **Prevalence of rheumatic heart disease**

The prevalence of rheumatic heart disease is higher among 15–24 year olds than 5–14 year olds. In 2002, the prevalence in Central Australia among Indigenous young people was highest among 15–24 year olds, with a rate of 18.6 per 1,000 population, and second highest after the 25–44 year age group in the Top End of the Northern Territory, with a rate of 19.8 per 1,000 population. The corresponding rates for other Australians aged 15–24 years were 0.5 per 1,000 and 0.3 per 1,000 population respectively.

### **Hospital separations**

Among young Indigenous Australians aged 12–24 years, the age-standardised hospital separation rate for acute rheumatic fever and rheumatic heart disease was 134.4 per 100,000 young people in 2004–05 (ICD-10-AM codes I00–I02 and I05–I09), which is 100 times that for other Australians (1.3 per 100,000 young people) (data for Qld, WA, SA and NT only).

### *Asthma*

As mentioned previously in this part of the report, the estimated prevalence of asthma among young Indigenous people aged 12–24 years in 2004–05 was 16% (12% for males and 19% for females). This compares with 9% for all young Australians.

Among young Indigenous Australians aged 12–24 years, the age-standardised hospital separation rate for asthma was 144 per 100,000 young people in 2004–05 (111 per 100,000 for young males and 178 per 100,000 for young females), which is one-third higher than the rate of other Australians (107 per 100,000 young people) in Qld, WA, SA and NT. The rate for young Indigenous females was 1.6 times the rate for young Indigenous males, however when the age group is broken down, young Indigenous males aged 12–14 years had a higher rate than Indigenous females of the same age. The rate was highest overall among those aged 12–14 years, followed by those aged 20–24 years.

### *Diabetes*

In 2004–05, the age-standardised hospital separation rate for diabetes was 318 per 100,000 young people among young Indigenous Australians aged 12–24 years. This is more than 3 times as high as the rate for other young Australians (104 per 100,000 young people) in Qld, WA, SA and the NT. The difference is largely due to separations of young Indigenous females for diabetes mellitus in pregnancy.

### **Communicable diseases**

Pertussis was the vaccine-preventable disease with the most notifications for Indigenous young people aged 12–24 years in 2005 (40 notifications), with a notification rate of 30 per 100,000 young Indigenous persons (see Table 2.23). By comparison, the rate for all young people was 43 per 100,000 young people. Over the last 4 years, the rate of notification for pertussis remained fairly constant among young Indigenous people.

In 2005, there were 18 cases (a rate of 13 per 100,000) of incident hepatitis C reported for young Indigenous people aged 12–24 years, accounting for 14% of total incidents of hepatitis C reported for young people. By comparison, the rate for all young people was 3.5 per 100,000.

### *Sexually transmitted infections*

In 2005, chlamydia and gonorrhoea were the most commonly notified sexually transmitted infections among Indigenous Australians aged 12–24 years, with rates of 2,067 and 1,699 per 100,000 young Indigenous people respectively (see Table 2.24). Notifications for chlamydia and gonorrhoea among Indigenous young people accounted for 13% and 64% of all notifications for young people for these respective infections. There were 177 notifications of syphilis among young Indigenous people, accounting for 56% of the total number notified for young people in 2005 (a rate of 131 per 100,000).

Similar to trends among all young Australians, between 2002 and 2005, the rate of chlamydia and gonorrhoea notifications among young Indigenous people increased (by 13% and 34% respectively) and the notification rate for syphilis decreased (by 54%).

### **Deaths**

Between 2002 and 2004, there were 273 deaths among Aboriginal and Torres Strait Islander people aged 12–24 years in Queensland, Western Australia, South Australia and the Northern Territory. This represents an age-standardised rate of 158 per 100,000 young people, which is almost 4 times the rate for other young Australians. The death rate for young Indigenous males was almost twice that for young Indigenous females (209 compared with 107 per 100,000 young people). Deaths among young people comprised 6% of deaths in the Indigenous population compared with 1% of deaths in the non-Indigenous population.

As for non-Indigenous young people, injury and poisoning accounts for the majority of deaths among young Aboriginal and Torres Strait Islander people. During 2002–2004, 75% (205 deaths) of all deaths among Indigenous young people aged 12–24 years were due to injury and poisoning, compared with 70% of deaths among non-Indigenous young people. For Indigenous young people, the age-standardised rate was 4 times that of other young Australians in Queensland, Western Australia, South Australia and the Northern Territory.

Patterns of mortality among Indigenous young people differ slightly from those for non-Indigenous young people. During 2002–2004, the leading cause of death among Indigenous young people was suicide (accounting for 29% of deaths), followed by land transport accidents (26%) and assault (7%). Over the same period, the leading causes of death among non-Indigenous young people were land transport accidents (33%), suicide (19%), and accidental poisoning (4%).

**Table 4.5: Leading causes of death<sup>(a)</sup> among Indigenous young people aged 12–24 years, 2002–2004**

<b>Cause of death</b>	<b>Male</b>		<b>Female</b>		<b>Persons</b>	
	<b>Number</b>	<b>Percent</b>	<b>Number</b>	<b>Percent</b>	<b>Number</b>	<b>Percent</b>
Intentional self-harm (suicide) (X60–X84)	61	33.3	18	20.0	79	28.9
Land transport accidents (V01–V89)	53	29.0	18	20.0	71	26.0
Assault (homicide) (X85–Y09)	7	3.8	11	12.2	18	6.6
Symptoms, signs and ill-defined conditions (R00–R99)	10	5.5	3	3.3	13	4.8
Accidental threats to breathing (W75–W84)	8	4.4	5	5.6	13	4.8
Other causes	44	24.0	35	38.9	79	28.9
<b>Total deaths</b>	<b>183</b>	<b>100.0</b>	<b>90</b>	<b>100.0</b>	<b>273</b>	<b>100.0</b>

(a) Leading causes of death were determined using the classifications developed by Becker et al. 2006.

Note: For data quality reasons, this table includes data for Queensland, Western Australia, South Australia and the Northern Territory only.  
The data presented here are not necessarily representative of the jurisdictions excluded.

Source: AIHW National Mortality Database.

- During 2002–2004, one-third and one-fifth of deaths among young Indigenous males and females respectively were due to intentional self-harm (suicide).
- The proportion of deaths due to land transport accidents was higher among young Indigenous males (29%) compared with females (20%). In contrast, the proportion of deaths due to assault was higher among young Indigenous females (12%) compared with males (4%).

## Factors influencing health

As discussed in the introduction to Part 4, the determinants of health and wellbeing are multifactorial—cultural, historical, environmental and socioeconomic factors all contribute to the poorer health and wellbeing of Indigenous Australians (Abbot & Close 2002; Booth & Carroll 2005).

A wide body of research has demonstrated strong associations between health risk factors and the onset and prognosis of a variety of chronic diseases (ABS & AIHW 2005). There is a higher prevalence of established risk factors among young Indigenous Australians compared with other young Australians—young Indigenous Australians are more likely to smoke, have higher proportions who are obese and physically inactive, have poorer nutrition and higher rates of substance use.

It is important to remember that these higher levels of risky health behaviour sit within a broader social and economic context of disadvantage, and socioeconomic status is an important determinant of the likelihood that individuals and populations are exposed to health risk factors (Blakely et al. 2004). The socioeconomic disadvantage experienced by Indigenous young people includes lower income, poorer educational outcomes and higher unemployment rates. Other factors influencing the health of Indigenous young people include poor housing, and exposure to violence.

## Health behaviours

The following section looks at behavioural risk factors that affect health status such as weight, physical activity, nutrition, substance use and sexual and reproductive health.

### Weight

Overweight and obesity are risk factors for kidney disease, Type 2 diabetes, cardiovascular diseases and other chronic conditions (AIHW 2006a). Overweight and obesity prevalence estimates for young Indigenous Australians aged 15–24 years from the ABS 2004–05 NATSIHS can be compared with prevalence estimates for all 15–24 year olds from the ABS 2004–05 National Health Survey (NHS).

The proportions of young Indigenous and all young people classified as overweight (but not obese) was similar (17% and 18% respectively), but a much lower proportion of Indigenous Australians were recorded as being in the normal or healthy weight range (41% compared with 57% respectively). Young Indigenous Australians aged 15–24 years were twice as likely to be obese as all young Australians (12% compared with 6%) (ABS 2006l).

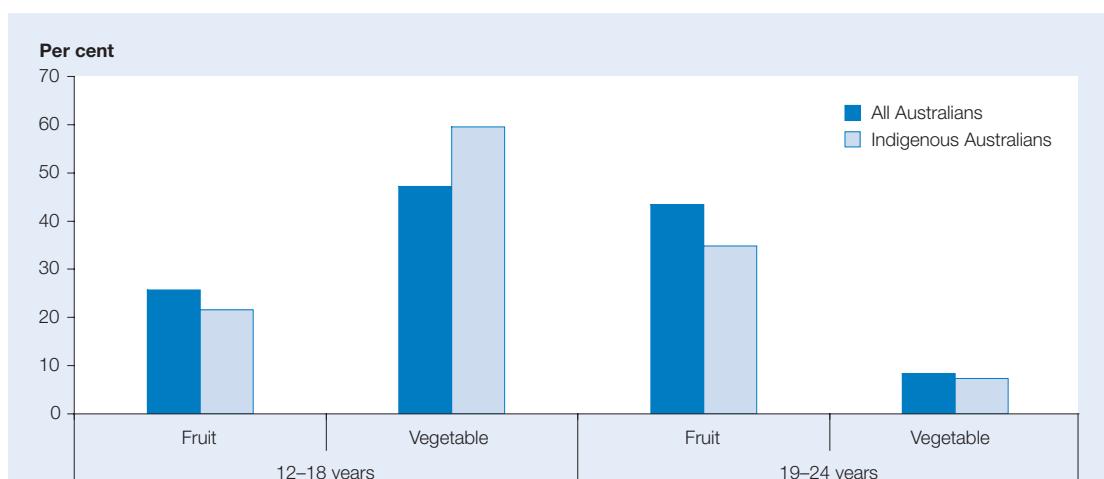
### Physical activity

A sedentary lifestyle doubles the risk of cardiovascular disease, Type 2 diabetes and obesity. It also increases the risks of colon and breast cancer, high blood pressure, lipid disorders, osteoporosis, depression and anxiety in later life (ABS & AIHW 2005).

In 2002, around one-quarter (24%) of young Indigenous males and two-fifths (42%) of young Indigenous females aged 15–24 years had not played sport or participated in physical recreation activities in the last 12 months (ABS 2004f).

### Nutrition

Over the last 200 years, 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. Such changes, along with physical inactivity, have increased the risk of obesity and chronic disease, including Type 2 diabetes (AIHW 2006a).



Source: AIHW analysis of ABS 2004–05 National Health Survey and ABS 2004–05 National Aboriginal and Torres Strait Islander Health Survey confidentialised unit record files.

**Figure 4.2: Proportion of young people consuming the recommended serves of fruit and vegetables, by age and Indigenous status, 2004–05**

- In 2004–05, less than one-quarter (22%) of young Indigenous people aged 12–18 years reported eating the recommended number of serves of fruit each day. Around 27% reported having 2 serves of fruit a day and 42% reported eating 1 serve or less. While these proportions were similar for all 12–18 year olds, Indigenous young people were more likely to not eat any fruit (10% compared with 7%).
- Approximately 35% of Indigenous 19–24 year olds consumed the daily recommended number of serves or more of fruit, compared with 43% of all 19–24 year olds. A further 50% consumed 1 serve or less and 15% did not eat any fruit.
- While only 7% of Indigenous 19–24 year olds ate the recommended number of serves of vegetables (compared with 8% for all 19–24 year olds), approximately 60% of Indigenous 12–18 year olds consumed the recommended daily serves of vegetables (compared with 47% for all 12–18 year olds). Around 50% of 19–24 year olds had 2 serves of vegetables or less each day and a further 39% had 3 to 4 serves.

### **Substance use**

Tobacco smoking increases the risk of coronary heart disease, stroke, peripheral vascular disease, numerous cancers, and a variety of other diseases and conditions. Based on results from the ABS 2004–05 NATSIHS, one in two young Indigenous young people aged 18–24 years were current daily smokers—a rate twice as high as for other young Australians (50% compared with 26% respectively). Just over one-third (35%) of young Indigenous people aged 18–24 years had never smoked, compared with over half (58%) of non-Indigenous young people.

Excessive alcohol consumption is associated with wide ranging impacts on the health, safety and wellbeing of individuals and communities (Ministerial Council on Drug Strategy 2006). Long-term health problems associated with excessive alcohol consumption include diabetes, liver disease and some forms of cancer. Drinking to intoxication is also associated, in the short term, with an increased risk of motor vehicle accidents, falls, burns, suicidal ideation and self-harm and can lead to anti-social behaviour, domestic violence and family breakdown (ABS & AIHW 2005). According to the ABS 2004–05 NATSIHS, Indigenous young people aged 18–24 years were more likely than their non-Indigenous counterparts to have a level of alcohol consumption that is classified as risky or high risk (16% compared with 14%) (ABS 2006l). Similar proportions of Indigenous and non-Indigenous young people reported that they never consumed alcohol (9% and 8% respectively).

Indigenous Australians are also at risk of ill health through the harmful use of substances such as marijuana, heroin, amphetamines and inhalants. In 2004–05, an estimated 28% of Indigenous people aged 18 years or over in non-remote areas had reported recently using an illicit substance within the last 12 months and 50% reported trying an illicit substance at least once in their lifetime (AIHW 2006a).

Petrol sniffing is a type of substance abuse that is particularly widespread in Indigenous communities in rural and remote regions of Australia. It is most common among adolescents and young adults (8–30 years), with rates 3 times as high in males than in females. Due to the remoteness of the communities where petrol sniffing occurs and the fact that it is often a concealed activity, the number of people engaging in this type of substance abuse is hard to estimate. A study of the Anangu population in 2000 indicated that around 12% of the population between the ages of 10 and 35 years were engaged in petrol sniffing (Nganampa Health Council as cited by Aboriginal and Torres Strait Islander Social Justice Commissioner 2004).

### **Sexual and reproductive health**

Based on results from the ABS 2004–05 NATSIHS, condoms and the contraceptive pill were the main methods of contraception reported by young Indigenous women aged 18–24 years in 2004–05 (25% and 16% respectively). An estimated 14% of young Indigenous women reported primarily not using any contraception (see Table 3.17).

Infection with the sexually transmissible human papilloma virus (HPV) is believed to be necessary, though not sufficient, for development of cervical cancer (NHMRC 2005). Infection with a high-risk form of the virus may result in a lesion that may eventually progress to cancer. Pre-cancerous changes or lesions can be detected through a Pap smear, and if they are promptly treated, cervical cancer can be prevented. According to the ABS 2004–05 NATSIHS, around half (52%) of young Indigenous women reported having regular Pap smear tests. This is similar to the proportion for all young women aged 20–24 years (around 50%). Indigenous women in remote areas were less likely than their non-remote counterparts to have heard of Pap smears (94% compared with 79%).

### **Community and family capacity**

This section describes some of the factors related to family and community that impact on the wellbeing of Aboriginal and Torres Strait Islander young people. These include parent health, child protection, juvenile justice and homelessness.

#### **Parental health**

Parents with a disability or chronic health condition may pay less attention to the needs of their children, or may be unable to provide their children with sufficient physical, emotional, or economic support. With higher rates of chronic illness and disability among Indigenous people, it could be expected that Indigenous parents experience poorer health than their non-Indigenous counterparts. Results for parents responding to the HILDA survey suggest that this may be the case, although the results are based on a small Indigenous sample and should therefore be interpreted with caution.

Indigenous parents with co-resident children aged 12–24 years and responding to the HILDA survey were more likely than non-Indigenous parents to report their health as fair or poor (30% compared with 17%) and less likely to report their health as good or excellent (20% compared with 45%).

#### **Child protection**

Indigenous young people are over-represented in the child protection system. Likely reasons for this include the intergenerational effects of the 'stolen generation' such as separation from family and culture, the poor socioeconomic status of Indigenous families, family violence and cultural differences in child-rearing practices (AIFS 2005; AIHW: Al-Yaman et al. 2006; Cunneen & Libesman 2000; Memmott et al. 2001).

The AIHW compiles national data on child protection notifications, investigations and substantiations, children on care and protection orders, and children in out-of-home care. These are discussed under *Child protection* in Part 3 of this report and also in *Child protection Australia 2005–06* (AIHW 2007a). During 2005–06, Indigenous young people aged 12–16 years were almost four times as likely to be the subject of a substantiated child protection report than other young Australians—a rate of 19 per 1,000 Indigenous young people, compared with 5 per 1,000 among other young Australians.

Indigenous young people aged 12–16/17 years were also 6 times as likely as other young Australians to be on care and protection orders and to be placed in out-of-home care. In 2005–06, the rate of Indigenous young people on care and protection orders was 29 per 1,000 young people, compared with 5 per 1,000 for other Australians. Similarly, 25 per 1,000 Indigenous young people were in out-of-home care, compared with 4 per 1,000 for other Australians.

The Aboriginal Child Placement Principle outlines the preferential order for the placement of Aboriginal and Torres Strait Islander children when they are placed outside their immediate family: with the child's extended family; within the child's Indigenous community; then with other Indigenous people. All jurisdictions have adopted the Aboriginal Child Placement Principle either

in legislation or policy. The impact of the Principle is reflected in the relatively high proportion (76%) of Indigenous children who were placed either with Indigenous caregivers or with relatives at 30 June 2006.

### **Homelessness**

The rate of homelessness among Indigenous Australians is considerably higher than among other Australians. While 2.4% of the Australian population identify as Indigenous, 9% of the homeless population at the 2001 Census were Indigenous (ABS 2003b).

Young Indigenous people are over-represented among Supported Accommodation Assistance Program (SAAP) clients (see *Homelessness* in Part 3 of this report or AIHW (2006e) for a description of SAAP). In 2004–05, 19% of SAAP clients aged 12–24 years were Indigenous.

Among young people aged 12–24 years, the age-standardised rate for seeking SAAP assistance for Indigenous females (74 per 1,000) was 8 times the rate for non-Indigenous females (9 per 1,000), and the rate for Indigenous males (27 per 1,000) was 4 times the rate for non-Indigenous males (6 per 1,000).

### **Juvenile justice**

National data on young people under juvenile justice supervision, either pre-sentence or sentenced, are available from the Juvenile Justice National Minimum Data Set (JJ NMDS) (AIHW 2006f).

Indigenous young people experience high rates of imprisonment and juvenile justice supervision. In 2005, the Indigenous imprisonment rate for young people aged 18–24 years (2,404 per 100,000) was 13 times the non-Indigenous rate (181 per 100,000) (see Table 3.28). Indigenous young people accounted for almost one-third of the prison population aged 18–24 years, despite accounting for only 2% of the total Australian population aged 18–24 years.

In 2003–04, the rate of Indigenous 12–17 year olds in juvenile justice supervision was 13 times the non-Indigenous rate (5,430 per 100,000 compared with 409 per 100,000). This pattern was observed for both sexes (see Figure 3.21).

### **Socioeconomic factors**

The following section presents information on socioeconomic factors which are important determinants of health, including education, employment, income and parental socioeconomic status.

### **Education**

As for all Australians, education is generally considered to be a key factor in improving the health and wellbeing of Indigenous Australians (ABS & AIHW 2005). Higher levels of educational attainment improve employment prospects, which, in turn, affect income, standard of housing and access to health care.

In 2004, Indigenous students were less likely to achieve the national benchmarks for reading, writing and numeracy compared with all students. These benchmarks represent a minimum level of competence for literacy and numeracy at various grade levels, and non-achievement of these indicate that the student will have difficulty progressing satisfactorily at school (MCEETYA 2006). The proportion of Indigenous Year 7 students reaching the benchmarks for reading (71%), writing (79%) and numeracy (78%) was significantly lower than the proportions of all Year 7 students reaching these benchmarks (91%, 94%, and 82% respectively) (see Figure 3.5). Poorer educational performance in earlier years of schooling may have a cumulative effect on young Indigenous people as they move through the various stages of education and development.

The lower achievement of Indigenous students compared with other Australian students is also apparent in the results of the OECD's 2003 Programme for International Student Assessment. In all areas of assessment, the average achievement of Indigenous students was considerably below the average achievement of other Australian students and, in many cases, significantly below international averages (Thomson & Fleming 2004).

**Table 4.6: Apparent school retention rates, full-time students, selected years (per cent)**

From Year 7/8	1996	2001	2006
<b>To Junior Secondary (Year 10)</b>			
Indigenous	75.8	86.0	91.4
Non-Indigenous	97.3	98.2	98.9
<b>To Senior Secondary (Year 12)</b>			
Indigenous	29.2	36.3	40.1
Non-Indigenous	72.4	74.5	75.9

Source: ABS 2002d, 2007b.

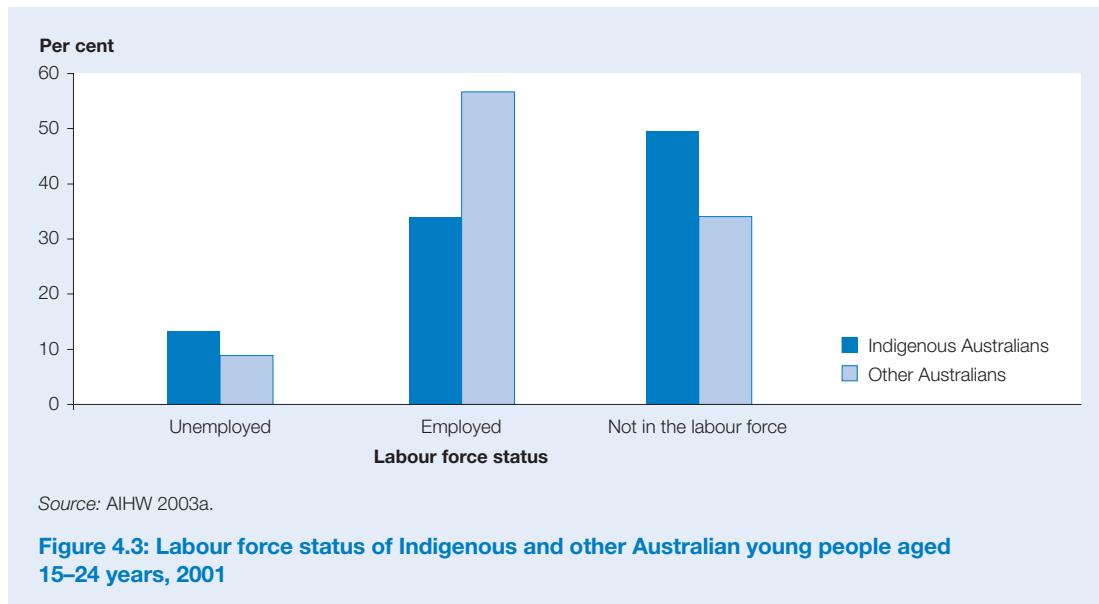
- In 2006, the apparent retention rate for Indigenous students from Year 7/8 to Year 12 was considerably lower than the rate for non-Indigenous school students (40% compared with 76%) (ABS 2007b) (see the Glossary for more information on apparent retention rates).
- Apparent retention rates for Indigenous students have increased between 1996 and 2006, from 76% to 91% for retention to Year 10 and from 29% to 40% for retention to Year 12.

In 2002, Indigenous young people aged 15–24 years were less likely to have a post-school qualification than all young people (15% compared with 25%). Indigenous young people were also approximately 15 times less likely to have a bachelor degree or above and around 23% less likely to have a certificate or diploma than all young Australians (ABS 2002a, 2004f).

Although there has been an increase in educational attainment, the attendance and achievement of Indigenous Australians remain below that of other Australians. This is partly due to chronic health problems such as middle ear infection and nutritional deficiencies that prevent their regular attendance at school. There are also other factors such as lack of access to educational institutions, financial constraints and social, cultural and language barriers affecting school participation (ABS & AIHW 2005).

### Employment and income

Young Indigenous Australians experience lower levels of employment and higher levels of unemployment than young non-Indigenous people. In 2001, Indigenous Australians aged 15–24 years were more likely to be unemployed than other young Australians—13% compared with 9% (Figure 4.3). Half of young Indigenous people (50%) were not in the labour force (that is, neither employed or looking for work), compared with one-third of other young Australians (34%).



- Only about one-third of Indigenous young people aged 15–24 years are employed (34%), compared with more than half of other Australian young people (57%). Of those Indigenous young people who were employed, around one-fifth were in community development employment programs (CDEP) and the remainder were in other types of employment.

The CDEP allows members of Indigenous communities to exchange unemployment benefits for opportunities to undertake work and training in activities which are managed by a local Aboriginal or Torres Strait Islander community organisation (ABS 2001b). However, these programs have quite restricted training opportunities for Indigenous people (AIHW 2003a).

The full-time participation rate is the proportion of the population, at specific ages, that are in full-time education or training, or in full-time work, or in both part-time education or training and part-time work. In 2001, the full-time participation rates were lower for those aged 20–24 years than for those aged 15–19 years among both Aboriginal and Torres Strait Islander and other Australian young people. However, for every age between 12–24 years, the full-time participation rate was lower for Indigenous than for other Australian young people. For young people aged 24 years, the full-time participation rate of other Australian young people was more than twice that of young Indigenous Australians in 2001 (66% compared with 31%).

In 2001, although the proportion of young people aged 15–24 years with personal income was similar between Indigenous and other Australian young people, the income distribution was different (Table 4.7).

**Table 4.7: Gross weekly income of Indigenous and other Australian young people aged 15–24 years, 2001**

	Indigenous Australians		Other Australians	
	Number	Per cent	Number	Per cent
<b>Gross weekly income</b>				
Negative/nil income	11,578	17.4	434,462	19.3
With income	55,102	82.6	1,817,511	80.7
<b>Total</b>	<b>66,680</b>	<b>100.0</b>	<b>2,251,973</b>	<b>100.0</b>
<b>Income distribution</b>				
\$1–\$119	11,524	20.9	465,587	25.6
\$120–\$199	19,555	35.5	297,139	16.3
\$200–\$399	14,915	27.1	455,037	25.0
\$400–\$599	6,007	10.9	356,171	19.6
\$600–\$799	2,016	3.7	165,970	9.1
\$800–\$999	494	0.9	48,344	2.7
\$1,000 or more	591	1.1	29,263	1.6
<b>Total</b>	<b>55,102</b>	<b>100.0</b>	<b>1,817,511</b>	<b>100.0</b>

Source: ABS 2001 Census of Population and Housing, unpublished data.

- Among those young people aged 15–24 years with personal incomes, other Australian young people had higher weekly incomes than Indigenous Australians—56% of Indigenous young people had incomes of less than \$200 per week, compared with 42% of other Australian young people.
- The proportion of Indigenous young people who had incomes of \$400 or more per week was 17%, compared with 33% of other Australian young people.

### Socioeconomic status of parents

When looking at the social and economic circumstances of young people, it is important to also consider the socioeconomic status of their parents. Young people who are still living in the family home, and particularly those who are financially dependent on their parents, will share the same social and economic circumstances as their parents.

One measure of socioeconomic status for which data are available for parents of young people is education. Based on results from the 2004 HILDA survey, almost one-quarter of Indigenous young people aged 12–24 years were living in a household where no parent had completed junior secondary school (Year 10). The corresponding figure for non-Indigenous young people was 9% (see Table 3.17). These results are based on a small Indigenous sample and should therefore be interpreted with caution.

### Environmental factors

#### Housing environment

Adequate housing is a major factor affecting wellbeing. Overcrowded housing increases the risk of infectious diseases such as meningococcal disease, rheumatic fever, tuberculosis, and respiratory infections (Waters 2001). However, overcrowding can be a subjective measure, and may be influenced by cultural norms. Indigenous people may have different views about what constitutes overcrowding, especially in remote areas where living in large family groupings may be culturally acceptable or non-problematic (Keys Young 1998).

Many Indigenous people live in housing conditions that are considered overcrowded and that are unacceptable by general Australian standards because they do not satisfy the basic requirements of shelter, safe drinking water and adequate waste disposal (AIHW 2006a). In 2001, the proportion of Indigenous households that were overcrowded was six times as high as that of other households (9.5% compared with 1.6%) (AIHW 2005f).

# Part 5:

## Health system performance

Many factors influence health. Most of the factors relevant to young people—socioeconomic factors, health behaviours, influence of families and communities and so on—have been discussed in previous parts of this report. In addition to these, the health system also plays an important role in influencing the health of a society.

Activities of a health system can range from clinical and preventive services and programs, through to efforts to improve the physical, social and economic environment for groups or individuals. Further, various strategies within a health system aim at developing individuals' personal skills to exercise more control over their own environments and decision-making, and enhancing a community's capacity to provide culturally relevant services (AIHW 2006a).

The overall goal of a health system is to contribute to improving population health, to be responsive to the people they serve and to be financed fairly (OECD 2004). The health system's effectiveness in achieving this goal is a function of its performance as a system. In 2001, the National Health Performance Committee (NHPC) adopted a framework specially designed for measuring the performance of Australia's health system (NHPC 2001). The national youth information framework used in this report is based on the NHPC framework and accordingly, health system performance is measured using a number of components: effective, appropriate, efficient, responsive, accessible, safe, continuous, capable and sustainable.

This part of the report provides a limited number of indicators used to measure some of these components. The indicators are limited by their relevance to a particular population group, that is, young people, and the availability of data for this population group.

Indicators presented in this part of the report are drawn heavily from the *National report on health sector performance indicators 2003*, which contains detailed information on indicators of health system performance. For further information, see this publication on the AIHW website at <[www.aihw.gov.au/publications/hwi/nrhspi03/nrhspi03a.pdf](http://www.aihw.gov.au/publications/hwi/nrhspi03/nrhspi03a.pdf)>.

### Ambulatory care sensitive conditions

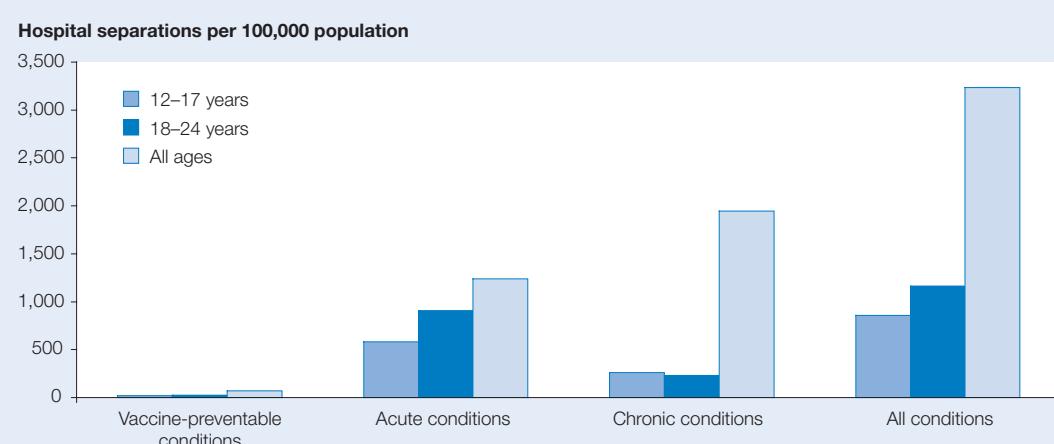
Ambulatory Care Sensitive Conditions (ACSCs) are those for which hospitalisation is thought to be avoidable through preventive care and early disease management, usually in the ambulatory setting. It is believed that timely and effective ambulatory care can reduce the risks of hospitalisation by preventing the onset of an illness or condition, controlling an acute illness episode or condition or managing a chronic disease or condition. ACSCs admission rates have also been proposed as a measure of access to health care (Victoria. Department of Human Services 2002).

The concept of access to primary health care can be broadly defined as ‘the timely use of personal health services to achieve the best possible health outcomes’. This definition encompasses barriers to receiving care, as well as the quality of the care provided. This definition can be used to ask whether access-related problems can explain the relatively poorer health outcomes of specific population groups. Better access to primary health care increases the use of ambulatory care, prevents unnecessary hospitalisations and improves the health status of the population.

#### INDICATOR:

Hospital separation rate for ambulatory care sensitive conditions

In 2004–05, there were over 3.5 million hospital separations for ACSCs among young people aged 12–24 years. This represented 6% of all ACSC separations for all ages and 7% of all separations for young people in that year.



Source: AIHW National Hospital Morbidity Database.

**Figure 5.1: ACSCs hospital separation rates, by broad categories and age, 2004–05**

- The hospital separation rate for all ACSC conditions among those aged 12–17 years was lower than for those aged 18–24 years (858 per 100,000 population and 1,163 per 100,000 population respectively), and substantially lower than the rate for all ages (3,236 per 100,000).
- Separation rates for vaccine-preventable ACSCs, acute ACSCs and chronic ACSCs were lower for young people aged 12–24 years than for persons of all ages.
- Young people were more likely to be hospitalised for acute ACSCs than for vaccine-preventable or chronic ACSCs. In contrast, hospital separations for patients of all ages were much higher for chronic ACSCs than for acute or vaccine-preventable conditions.

### Teenage purchase of cigarettes

Evidence suggests that there is a correlation between regular smoking, buying cigarettes and heavy cigarette consumption, and that decreasing the ability of teenagers to purchase their own cigarettes will assist in reducing the likelihood of teenagers making the transition from experimental to regular and addicted smoking (AIHW & NHPC 2004).

Prior to 1993, the legal age for purchasing cigarettes was 16 years in all states and territories except Western Australia (where the legal age for purchasing cigarettes has always been 18). In 1993, Victoria raised the legal age for purchasing cigarettes to 18. Other states followed suit, and in 1999 it was illegal to sell cigarettes to young people under the age of 18 throughout Australia.

According to the 2002 Australian secondary school students' survey, 14% of students aged 12–17 years were current smokers (defined as having smoked in the week before the survey), and 9% were committed smokers (defined as having smoked on at least 3 days in the week before the survey) (White & Hayman 2004b). For information on tobacco smoking among young people aged 12–24 years, see *Substance use* in Part 3 of this report.

In 2002, around 22% of current smokers aged 12–17 years personally purchased their cigarettes (14% of current smokers aged 12–15 years and 37% of those aged 16–17 years) (White & Hayman 2004b). The most common places for purchasing cigarettes for young people were milk bars (5%), petrol stations (5%) and supermarkets (4%) (White & Hayman 2004b).

Between 1987 and 2002, the proportion of current smokers aged 12–15 years buying their own cigarettes declined from 52% to 14% (White & Hayman 2004b). A similar decrease was found for current smokers aged 16–17 years.

#### INDICATOR:

Percentage of teenage smokers aged 12–17 years who personally purchased their most recent cigarette

Overall, the proportion of current smokers aged 12–17 years personally purchasing cigarettes decreased from 30% to 22% between 1999 and 2002. Corresponding with this decrease was an increase in the proportion of current smokers saying they obtained their cigarettes by asking someone older to buy them (15% to 20% between 1999 and 2002) (White & Hayman 2004b).

## Cervical screening

Up to 90% of all cases of cervical cancer could be prevented through regular screening. Increasing participation in cervical screening will reduce the number of women who develop cervical cancer and ultimately die from the disease. While cervical cancer is rare among young women under 24 years of age (2.1 per 100,000 for 20–24 year olds and 0.0 per 100,000 for females aged 15–19 years in 2002) (AIHW 2006b), it is recommended that women in the target age group of 20 to 69 years, who have ever been sexually active, have a Pap smear every two years. The organised National Cervical Screening Program was established in 1991. Between 1988 and 1998 the mortality rate for cervical cancer in the age group 20 to 69 years fell by 53% and the incidence rate fell by 41% (AIHW & NHPC 2004).

#### INDICATOR:

Participation rate for cervical screening among young women aged 20–24 years

**Table 5.1: Participation rate in National Cervical Screening Program, 1999–2000 to 2003–04, Australia (per cent)**

24-month period	Age group (years)										20–69 <sup>(a)</sup>
	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	
1999–2000	51.4	62.2	65.8	65.5	64.3	64.7	63.1	64.4	54.7	45.5	61.3 (61.2–61.3)
2001–2002	50.0	60.3	64.1	64.4	64.2	65.4	63.0	65.7	56.1	48.0	61.0 (60.9–61.0)
2003–2004	47.8	58.1	62.8	63.8	64.3	65.9	64.0	66.6	57.2	49.6	60.7 (60.6–60.7)

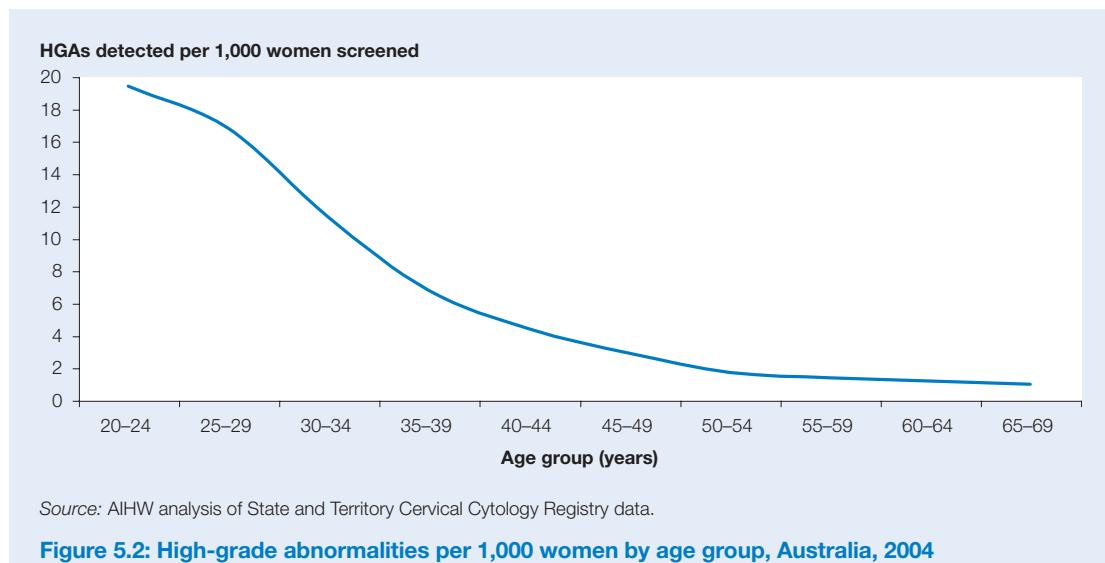
(a) Age-standardised to the 2001 Australian population with 95% confidence intervals.

Source: AIHW 2006b.

- The proportion of women aged 20–24 years participating in cervical screening has declined slightly, from 51% in 1999–2000 to 48% in 2003–04.
- In 2003–04, the participation rate for cervical screening among women aged 20–24 years was the lowest rate of all women in the target age group (48% compared with 61%).

Data from the ABS 2004–05 National Aboriginal and Torres Strait Islander Health Survey indicate that around 52% of young Indigenous women had regular Pap smear tests. This is similar to the general participation rate of young women aged 20–24 years in the cervical screening program (around 50%). Indigenous women in remote areas were less likely than their non-remote counterparts to have heard of Pap smears (94% compared with 79%).

Infection with human papilloma virus (HPV) is believed to be necessary, though not sufficient, for development of cervical cancer (NHMRC 2005). Infection with high-risk HPV is almost always sexually transmitted, and the most common age at first infection is between 15 and 25 years (NHMRC 2005). The infection may progress to a lesion which may eventually progress to cancer. High-grade lesions have a greater probability of progressing to invasive cancer than low-grade lesions. However, not all high-grade lesions result in cervical cancer, many will resolve spontaneously (NHMRC 2005).



- The rate of high-grade abnormalities detected was much higher in the younger age groups. Among those aged 20–24 years, the rate was 19 per 1,000 women screened, compared with less than 2 per 1,000 women aged 50–54 years and older. This age-specific distribution is the inverse of the pattern for cervical cancer mortality.

### Appropriate use of antibiotics

Upper respiratory tract infections (URTI) without complications are most often caused by viruses. Antibiotics have no efficacy in the treatment of viral infections, but are still frequently prescribed when they occur. Overuse of antibiotics increases antibiotic resistance in the general population. A decline in the prescribing rate of antibiotics for URTI may be an indication of more appropriate management of viral infections (AIHW & NHPC 2004).

Data from the Pharmaceutical Benefits Scheme (PBS) were not used for this indicator because they do not include information on diagnosis, on medications that fall below the subsidy threshold, or on private prescriptions. Data on prescriptions written by doctors was obtained from the BEACH survey of GPs (AIHW: Britt et al. 2002). Prescribing by GPs is somewhat higher than the prescriptions actually filled by the pharmacist (AIHW & NHPC 2004).

**Table 5.2: Proportion of URTI problems for which antibiotics were prescribed, for patients aged 12–24 years, 2001–02 to 2003–04**

Antibiotics	2001–02	2002–03	2003–04
Beta-lactam antibacterial, penicillins	19.5	22.7	20.8
Other beta-lactam antibacterials (includes cephalosporins)	5.4	6.4	5.0
All other antibiotics	10.4	13.0	11.1
<b>Total problems for which antibiotics were prescribed</b>	<b>35.3</b>	<b>42.2</b>	<b>37.0</b>

Source: AIHW analysis of BEACH data.

- In 2003–04, 37% of young people aged 12–24 years were prescribed antibiotics for URTIs—a decline from 42% in 2002–03, but little change from 2001–02 when the rate was 35%.

#### INDICATOR:

Proportion of prescriptions for oral antibiotics ordered by general practitioners for the treatment of upper respiratory tract infections (URTIs)

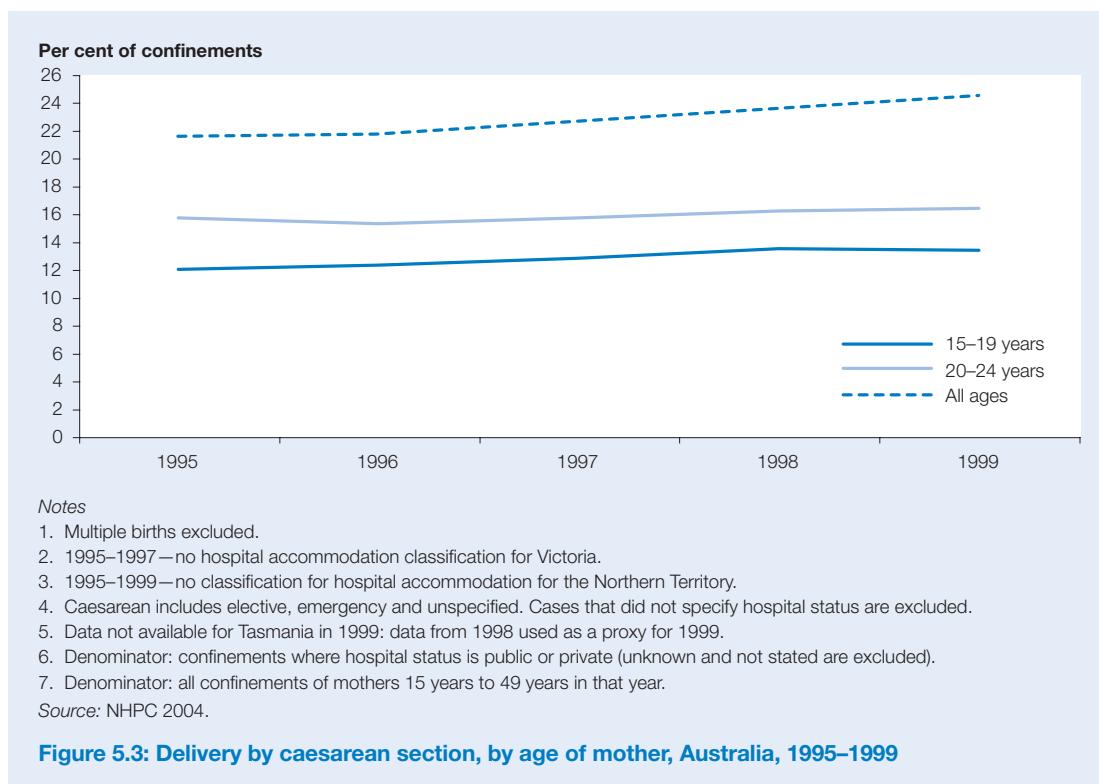
### Delivery by caesarean section

Caesarean section is one of the most common surgical procedures in Australia. Decisions to deliver by caesarean can be made before the onset of labour (elective caesarean) or after the onset of labour (emergency caesarean). Delivery by caesarean section is appropriate in a range of circumstances related to the clinical characteristics of patients, including failure to progress in labour, advanced maternal age, first births compared with second births, previous caesarean section, multiple pregnancy, breech presentation and low birthweight. However, studies across the world have shown that other factors are important contributors in the decision to deliver by caesarean section, including the practice patterns of individual doctors, and other non-clinical factors such as health insurance status, hospital characteristics and exercise of patient choice.

In 2000, 23% of hospital confinements in Australia were delivered by caesarean section—an increase of 32% over the last decade, from 18% in 1990.

#### INDICATOR:

Caesarean sections as a proportion of all confinements of young women aged 15–24 years



- In 1999, delivery by caesarean section as a proportion of all confinements was 13% for 15–19 year olds and 16% for 20–24 year olds. This was lower than the proportion for all ages (25%).

- Deliveries by caesarean section as a proportion of all confinements remained stable between 1995 and 1999 for 15–19 and 20–24 year olds. The proportion for all ages increased by 3 percentage points (from 22% to 25%).

Compared with other age groups, those aged 15–19 years and 20–24 years have the lowest rate of caesarean births.

Increasing use of caesarean section has been observed in all reporting OECD countries, except for the United States of America. Of the 21 OECD countries that reported caesarean section for 1999, Australia was ranked fourth highest. Italy had the highest percentage (32%) while the Netherlands had the lowest (11%). The median was Iceland (17%). Six countries were below 15% (OECD 2002).

### **Waiting times in emergency departments**

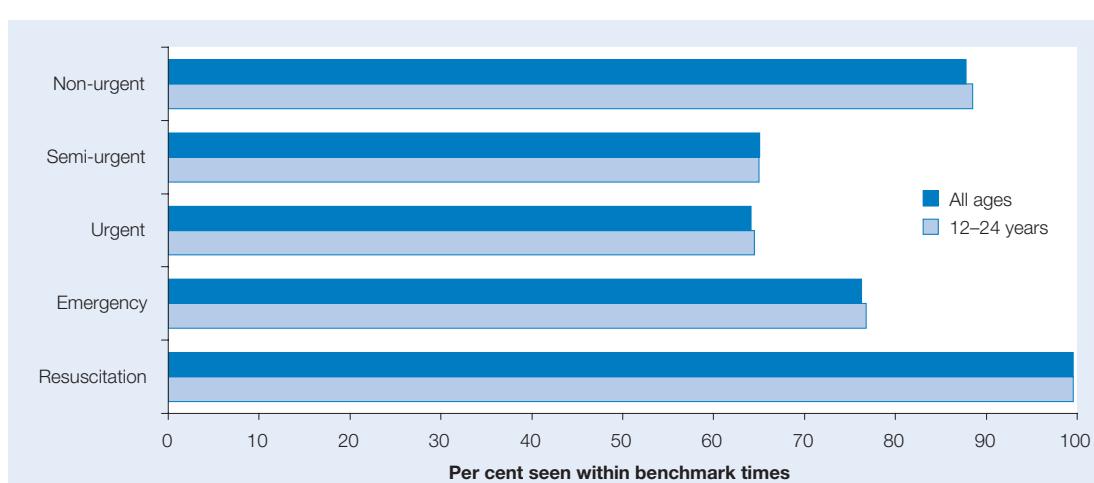
Emergency departments in public hospitals play a key role in ensuring that the public hospital system is able to manage emergency patients requiring rapid treatment and also less urgent cases where community-based medical care is not appropriate or not available.

Patients attending emergency departments should be treated within an appropriate time. All patients attending public hospital emergency departments are assessed and are assigned a triage category that reflects the urgency with which treatment should commence. The appropriate time for commencing treatment decreases as the urgency of the triage category increases. Within Australia, benchmarks for the commencement of treatment have been identified for each triage category (AIHW 2001). The benchmarks are:

- triage category 1: patient needs resuscitation (seen within seconds)
- triage category 2: emergency (seen within 10 minutes)
- triage category 3: urgent (seen within 30 minutes)
- triage category 4: semi-urgent (seen within 60 minutes)
- triage category 5: non-urgent (seen within 120 minutes)

This indicator measures the extent to which these benchmarks have been achieved.

<b>INDICATOR:</b>
Percentage of patients aged 12–24 years who are treated within national benchmarks for waiting in public hospital emergency departments for each triage category



Note: Resuscitation patients whose waiting time for treatment was less than or equal to 2 minutes were considered to have been seen on time.

Source: AIHW National Hospital Morbidity Database.

**Figure 5.4: Non-admitted patient emergency department presentations, by triage category and age, Australia, 2004–05**

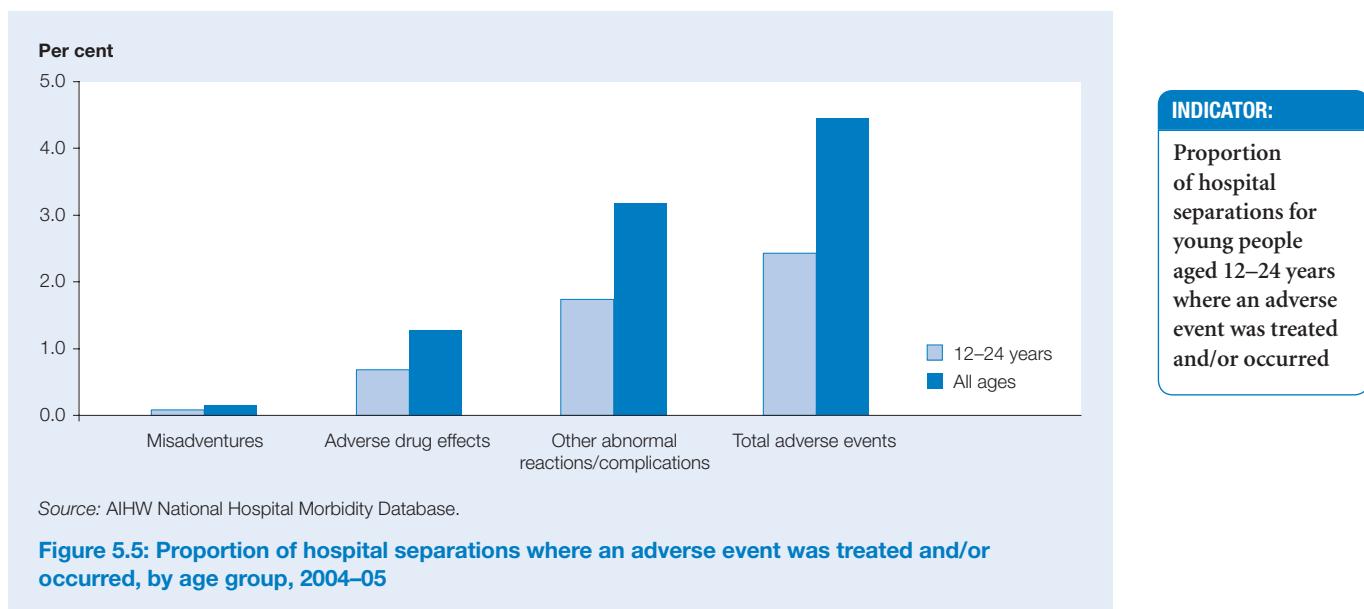
- In 2004–05, 69% of 12–24 year olds were seen within the national benchmark times, the same proportion as that for all ages. Young people in Major Cities were the least likely to be seen in time (65%) and young people in Remote areas were the most likely to be seen within the national benchmarks (80%).

- Approximately 100% of patient presentations in which the patient required resuscitation were seen immediately, and 76% of patient presentations for patients requiring emergency treatment were seen within 10 minutes. Around 64% of patient presentations requiring urgent treatment, 65% of patient presentations requiring semi-urgent treatment, and 88% of patient presentations requiring non-urgent treatment were seen within the national benchmark times. Rates for young people were the same as those for all Australians.

### Adverse events treated in hospitals

Adverse events occur when harm arises from health care management, rather than from the patient's underlying disease or condition. The Australian Commission on Safety and Quality in Health Care, government health authorities and others are working to support those who work in the health system to deliver safer patient care. The Commission is also working to improve the reporting and analysis of data on adverse events, in order to inform patient safety improvement activities. Increasing reports of adverse events may therefore reflect these initiatives, rather than increased risks in health care.

Data on hospital separations where an adverse event was treated and/or occurred are available from the AIHW National Hospital Morbidity Database. Not all adverse events are identifiable in the data—adverse events that occurred during a hospital admission but manifested after discharge (and did not result in a readmission) are not identifiable. Similarly, particular types of adverse events (such as those associated with obstetric care, in-hospital patient falls and accidental poisoning associated with incorrect use of drugs) are not identifiable. Consequently, the data shown here represent only a proportion of adverse events in health care.



- In 2004–05, there were 339,551 hospital separations where an adverse event was treated and/or occurred. Of these separations, 15,121 (5%) were for young people aged 12–24 years.
- Adverse events treated and/or occurred accounted for 2% of all separations among young people aged 12–24 years; a lower rate than for all ages (4%).
- Among young people, abnormal reactions/complications (such as post-operative infections and haemorrhages) were the most common type of adverse event (2% of separations), followed by adverse drug events (due to incorrect use) (1%), and misadventures (such as an accidental perforation during surgery) (0.2%). These patterns were similar to that for all ages, although rates for all ages were consistently higher across all types of adverse events.



# Part 6:

## Data gaps and developments

*Young Australians: their health and wellbeing 2007* aims to report on a comprehensive set of health and wellbeing indicators of young Australians and the contributing physical, mental, environmental, family and community influences. The report also aims to provide key information on indicators to monitor the performance of systems and services in terms of their effectiveness, efficiency, appropriateness, responsiveness, accessibility, safety, capability, sustainability and continuity. Information on all of the indicators in Tiers 1 and 2 of the *National Youth Information Framework* (see Box 1) have been included in this report. For indicators in Tier 3 of the Framework for monitoring health system performance, inclusion of indicators was limited by their relevance to a particular population group, i.e. young people, and the availability of data for this population group.

As mentioned in Part 1, the development of the key national indicators in this report was guided by an advisory group with particular expertise in the areas of health and wellbeing of young people. There were a number of additional indicators that were not considered by the expert advisory group as explaining key aspects of young people's health and wellbeing but have nevertheless been included where possible to complement the information presented in the report. A complete list of key national indicators and additional indicators is in Appendix 1 of the bulletin *Young Australians: their health and wellbeing. Key national indicators* (AIHW 2006h). It was not possible to report against all of these additional indicators as data were not readily available. Data relating to the following areas could not be included in this report:

- blood pressure, cholesterol, blood sugar and insulin, spinal disease, myopia, liver disease associated with overweight
- small-screen recreation (relationship to myopia leading to blindness)
- happiness at school and education
- use of medications
- volatile substance abuse
- foetal alcohol syndrome.

## Data gaps in existing indicators

There were a number of data issues in the existing indicators. Firstly, Indigenous identification in data collections varies considerably between states and territories and between different data collections. Although most data collections include an Indigenous status variable, there are outstanding issues in relation to the accuracy with which Aboriginal and Torres Strait Islander people are identified in these datasets, uncertainties about Indigenous population estimates, and concerns about whether the survey methods employed are the most suitable for this sub-population group. As such, it is difficult to use all Indigenous data with the same degree of confidence. These issues have affected the presentation of Indigenous data in this report and the analysis of key issues affecting young Indigenous people.

There is a significant amount of work being done currently by the ABS and AIHW in partnership with state and territory authorities to improve the completeness of Indigenous identification in key data collections. A detailed description of these national data development initiatives and future plans are provided in *The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples 2003* (ABS & AIHW 2003). The AIHW has also examined the quality of Aboriginal and Torres Strait Islander identification and documented data quality improvement activities for a number of community services data collections (AIHW 2007b).

Secondly, data for other sub-populations of young Australians, such as young people from culturally and linguistically diverse backgrounds (especially new migrants), young people living in geographically isolated areas or those from socioeconomically disadvantaged areas, are not available for all indicators presented in this report.

Thirdly, there is a lack of up-to-date objective national data on a number of areas relevant to young people's health, such as measured overweight and obesity, nutrition, physical activity, disability, sexual and contraceptive behaviour, and mental health. The current data available for these areas are typically self-reported.

Finally, there are limited data available on issues affecting young people's wellbeing in areas such as family functioning, social and emotional support, safety and security, adequacy of housing and homelessness, victimisation, and personal income and debt. There are also gaps in the current national data on child protection, due mainly to jurisdictional differences in both the definition and measurement of child abuse and neglect.

## New data developments relevant to young people

There are a number of new national data developmental activities relevant to young Australians. These are briefly outlined below.

### National Child Protection and Out-of-Home Care National Minimum Data Set

Since 1991, the AIHW has been the data custodian for the administrative by-product child protection data. The AIHW has an ongoing agreement with the states and territories to collect and report on the data on their behalf. Work is currently being undertaken by the AIHW in conjunction with the National Child Protection and Support Services (NCPASS) data group to broaden the scope of the national data collection and to improve comparability. A new national framework has been developed to count responses to calls received by community services departments in relation to the safety and wellbeing of children, including responses that occur outside the formal child protection system. Data elements such as the provision of advice and information, and assessment of needs, as well as general and intensive family support services, are incorporated into the new framework. It is anticipated that national reporting will be aligned with this new framework over the next few years.

As well, the AIHW is currently piloting the collection of child protection and out-of-home care data in unit record format. New data dictionaries to support the unit record level data collection, based on the new reporting framework described above, have been developed. The unit record data collection, when implemented, will provide a much richer data source with substantially improved analytic potential, enabling improved national reporting on children and young people in the child protection system.

### **AIHW Data linkage development activities**

Data linkage in the community services field has progressed in recent years via the use of statistical linkage keys (SLK). A number of data collections in the community services field now contain a common SLK consisting of a certain combination of letters from the person's name, their date of birth and sex. The SLK allows records belonging to the same individual to be matched anonymously and combined where appropriate. The SLK is not a unique identifier, so there is a small probability of error (AIHW: Ryan et al. 1999), which means that it can be used only for statistical purposes (and not for the identification of particular individuals). It has been well-tested and used successfully for statistical analysis in an increasing number of data sets (for example, AIHW 2005d). Such linked data sets can be extremely valuable for statistical and policy development work, for which perfect matching is not required for valid conclusions to be drawn (AIHW: Karmel 2005).

The AIHW is currently undertaking activities in these areas by exploring the feasibility of linking data between the Juvenile Justice National Minimum Data Set and the SAAP data collections. The aim of this analysis would be to establish the extent to which young people are clients of both SAAP services and juvenile justice, and establish the identifying characteristics of these clients. This work could be further extended by linking child protection data with SAAP data, when unit record data for child protection become available. This cross-sectoral data linkage activity would enable the characteristics of young people who flow between these three service sectors to be identified.

### **Mental Health and Wellbeing Survey 2007**

The ABS will be conducting a second national Survey of Mental Health and Wellbeing (SMHWB) in August to December 2007, with the support of the Australian Government Department of Health and Ageing. The scope of this survey has been expanded to include young people aged 16–17 years. Information will be collected from 11,000 people aged 16 to 85 years. The first survey, conducted by the ABS in 1997, was used to gather baseline information about the prevalence of mental illness in Australia and is still the most recent source of national mental health data in Australia. It is proposed that the World Mental Health Composite International Diagnostic Interview be used as the basis for the 2007 survey interviews. Similar to the previous survey, the 2007 survey will include information on a range of mental disorders, co-morbidities, substance use, gambling, health service use for mental health problems, social networks and caring for those with mental disorders.

There is no plan for the ABS to conduct a Child and Adolescent Component for the SMHWB, as was done in 1998. The ABS is undertaking ongoing work in collaboration with relevant information development committees to determine the appropriate strategies for collection of data on young people's mental health (ABS 2006i).

### **Improving Statistics on Children and Youth: ABS data developments**

In addition to planning and conducting regular national surveys of relevance to young people (for example, the National Health Surveys, Disability, Ageing and Carers Surveys, General Social Surveys, Labour Force Surveys, Crime and Safety Surveys and the Population Census) the ABS has also been involved in a number of other data development activities for children and young people in recent years. The Information Development Plan (IDP) is one such activity developed by the ABS, overseen by an expert steering group, and aimed at improving the collection and use of statistics on

children and youth. The IDP is based on 10 agreed priority areas for statistical data development and identifies actions required by key agencies to achieve the identified improvements within each of the priority areas. The ABS has recently published an Information Paper outlining the plan. The paper also includes a comprehensive list of data currently available on children and youth, and identifies gaps in the existing data (ABS 2006i).

The ABS is currently developing a Children and Youth Portal within the National Data Network (NDN). The primary aim of the NDN is to provide an internet-based library of data holdings relevant to policy analysis and research, as well as the ability to link datasets and undertake analysis and reporting on available datasets. The Child and Youth Portal is a pilot project aimed at demonstrating the benefits and functionality of the NDN using a range of datasets relevant to children and youth.

### National Children's Nutrition and Physical Activity Survey

The National Children's Nutrition and Physical Activity Survey will be conducted throughout Australia from February to August 2007, collecting data from 4,000 Australian children aged 2–16 years. The survey will record children's and young people's physical measurements, food intake and physical activity participation through a series of face-to-face interviews followed by telephone interviews. The survey is being managed by the University of South Australia and the CSIRO on behalf of the three funding agencies: the Australian Government Department of Health and Ageing, the Australian Government Department of Agriculture, Fisheries and Forestry and the Australian Food and Grocery Council.

The survey's results will be used to identify current rates of overweight and obesity among Australian children and adolescents and the proportion of Australian children and adolescents meeting the lifestyle recommendations described in Australia's Physical Activity Recommendations for Children and Young People and the Dietary Guidelines for Children and Adolescents. The survey results will also identify sub-populations of children at particular risk of nutritional deficiencies or inadequate physical activity participation. Analysis of the results will inform the development of population health policies, programs and interventions.

# Appendix 1: Methods

## Crude rates

A crude rate is defined as the number of events over a specified period (for example, a year) divided by the total population at risk of the event.

## Age-specific rates

An age-specific rate is defined as the number of events for a specified age group over a specified period (for example, a year) divided by the total population at risk of the event in that age group. Age-specific rates in this report were calculated by dividing, for example, the number of hospital separations or deaths in each specified age group by the corresponding population in the same age group.

## Age-standardised rates

Age-standardised rates enable comparisons to be made between populations that have different age structures. This publication uses direct standardisation, in which the age-specific rates are multiplied by a constant population. This effectively removes the influence of the age structure on the summary rate.

All age-standardised rates in this report have used the June 2001 Australian total estimated resident population as the standard population.

The method used for the calculation of age standardised rates consists of three steps:

- Step 1: Calculate the age-specific rate for each age group.
- Step 2: Calculate the expected number of cases in each age group by multiplying the age-specific rates by the corresponding standard population and dividing by 100,000 to get the expected number of cases.
- Step 3: Sum the expected number of cases in each age group, divide by the total of the standard population and multiply by 100,000. This gives the age-standardised rate.

## Confidence intervals

The observed value of a rate may vary due to chance even where there is no variation in the underlying value of the rate. Therefore, where indicators include a comparison between time periods, geographical locations, socioeconomic groups or Indigenous and non-Indigenous status, a 95% confidence interval has been calculated for administrative data (including data from the AIHW National Hospital Morbidity Database and the AIHW National Mortality Database).

The 95% confidence intervals for this report were calculated using a method for obtaining approximate confidence intervals for a weighted sum of Poisson parameters developed by Dobson et al. (1991). This method calculates approximate confidence intervals for a weighted sum of Poisson parameters.

The confidence intervals are used to provide an approximate indication of the differences between rates. Where the confidence intervals of two rates do not overlap, the corresponding rates are statistically significantly different from each other, that is, there is at least 95% confidence that the change in a rate is greater than that which could be explained by chance.

As with all statistical comparisons, care should be exercised in interpreting the results of the comparison. If two rates are statistically significantly different from each other, this means that the difference is unlikely to have arisen by chance. Judgement should, however, be exercised in deciding whether or not the difference is of any practical significance.

In this report, differences have been reported based on 95% confidence intervals. These confidence intervals are available on request.

For survey data, significance testing was undertaken where possible, using information about sampling variability.

## **Population data**

The ABS estimated resident population (ERP) data were used to calculate all rates presented in this report, with the exception of rates by Indigenous status and socioeconomic status.

Crude and age-specific rates were calculated using the ERP of the reference year as at 30 June for mortality and 31 December for hospital separations. For this report, population data for 2005 and 2006 were available as preliminary estimates only. Final estimates were used for all other years.

Alternative methods were used to calculate the denominators for rates by socioeconomic status and regional status. The denominators for these rates were calculated by applying an ABS concordance between statistical local area (SLA) and socioeconomic status and between SLA and regional status to the relevant ERP by SLA counts.

The most recent direct count of the Aboriginal and Torres Strait Islander population, for which data was available for this publication, was the 2001 Census. However, the ABS has released projected estimates for the Aboriginal and Torres Strait Islander population for more recent years and these were used in this report.

## **Population groups**

### **Aboriginal and Torres Strait Islander people**

At present, there is considerable variation across the states and territories in the completeness of mortality and hospital data for Aboriginal and Torres Strait Islander people. Information concerning the number of hospital separations and deaths of Indigenous people is limited by the accuracy with which Indigenous persons are identified in deaths and hospital records. Problems associated with identification result in an underestimation of deaths and hospital separations for Indigenous people.

Mortality data for Queensland, Western Australia, South Australia and the Northern Territory are considered to have sufficient level of coverage to produce reliable statistics on Indigenous Australian deaths for the period 1998–2004. Due to small numbers of deaths among young Indigenous people aged 12–24 years, three years of mortality data have been combined for analysis in this report (2002–2004).

Where Indigenous status is ‘Not stated/inadequately described’, these deaths have been excluded from analysis. As such, the categories used for presentation of mortality analysis are ‘Indigenous Australians’ and ‘non-Indigenous Australians’.

Guidelines developed by the AIHW for hospital separation data analysis using Indigenous status have been used in this report. This report recommended that data from the same jurisdictions as for mortality should be used for analytical purposes (Queensland, Western Australia, South Australia and the Northern Territory) (for further details see AIHW 2005e).

For these reasons the mortality and hospital separation data in this report include data from only Queensland, Western Australia, South Australia and the Northern Territory. Interpretation of results should take into account the relative quality of the data from these jurisdictions and the fact that data from these jurisdictions are not necessarily representative of the jurisdictions excluded.

Where Indigenous status is 'Not stated/inadequately described', these separations have been amalgamated with the separations for non-Indigenous people. As such, the categories used for presentation of hospital separation are 'Indigenous Australians' and 'Other Australians'.

### **Regional status**

This report uses the Australian Standard Geographical Classification (ASGC), which groups geographic areas into five classes. These classes are based on Census Collection Districts (CDs) and are defined using the Accessibility/Remoteness Index of Australia (ARIA). ARIA is a measure of the remoteness of a location from the services provided by large towns or cities. A higher ARIA score denotes a more remote location. The five classes of the ASGC Remoteness classification, along with a sixth 'Migratory' class, are listed in Table A1.

**Table A1: Remoteness areas for the ASGC Remoteness Classification**

<b>Region</b>	<b>Collection districts (CDs) within region</b>
Major Cities of Australia	CDs with an average ARIA index value of 0 to 0.2
Inner Regional Australia	CDs with an average ARIA index value greater than 0.2 and less than or equal to 2.4
Outer Regional Australia	CDs with an average ARIA index value greater than 2.4 and less than or equal to 5.92
Remote Australia	CDs with an average ARIA index value greater than 5.92 and less than or equal to 10.53
Very Remote Australia	CDs with an average ARIA index value greater than 10.53
Migratory	Areas composed of off-shore, shipping and migratory CDs

Source: ABS 2001a.

### **Socioeconomic status**

SEIFA indexes are summary measures of socioeconomic status. They summarise a range of socioeconomic variables associated with disadvantage. The SEIFA index used in this report is the Index of Relative Socioeconomic Disadvantage (IRSD) developed by the Australian Bureau of Statistics for use at the Statistical Local Area level.

Social disadvantage is typically associated with low income, high unemployment and low levels of education (see Adhikari (2006) for the complete list of variables and corresponding weights used for the IRSD).

Since this index only summarises variables that indicate disadvantage, a low score indicates that an area has many low income families, people with little training and working in unskilled occupations and may be considered as disadvantaged relative to other areas. A high score implies that the area has few families with low incomes and few people with little or no training and few people working in unskilled occupations. These areas with high index scores may be considered less disadvantaged relatively to other areas. It is important to understand that a high score reflects a relative lack of disadvantage rather than advantage.

In this report, SEIFA quintiles were used, with quintile 1 representing the most relatively disadvantaged area and quintile 5 representing the least relatively disadvantaged area.

It is important to note that the IRSD relates to the average disadvantage of all people living in a geographic area and therefore should not be presumed to apply to all individuals living within the area.

For further information see Adhikari (2006).

### Cause of death classification

Australia uses the International Statistical Classification of Diseases and Related Health Problems for coding of causes of death. The ninth revision (ICD-9) is available for the years 1979–1998 and the tenth revision from 1999 onwards. The ABS backcoded the 1997 and 1998 cause of death data in ICD-10 and consequently dual coding in ICD-9 and ICD-10 is available for use for these years. In this report, trend data for mortality used ICD-10 from 1997 onwards.

There are comparability factors available between ICD-9 to ICD-10. The comparability factors indicate the effect of the change on a particular code over time and can provide a means of bridging data between two revisions when presenting data over time. It was not necessary to apply comparability factors for the age groups used in this report.

The ICD-9 and ICD-10 codes used for analysis in this report are included throughout.

### Hospital diagnosis classification

For hospital diagnosis, the International Statistical Classification of Diseases and Related Health Problems is used with modifications. ICD-9-CM is a clinical modification of ICD-9, and has been used in the AIHW National Hospital Morbidity Database (NHMD) from 1993–94 to 1997–98. ICD-10-AM is an Australian modification of ICD-10, and has been used in the AIHW NHMD from 1998–99 onwards.

The ICD-9-CM and ICD-10-AM codes used for analysis in this report are included throughout.

### Hospital separations due to injury and poisoning

There are a number of issues when performing analysis on hospital separations for injury and poisoning and for external causes of injury and poisoning. The criteria used to select injury and poisoning and external cause of injury and poisoning hospital separations are described here.

For analysis at the injury and poisoning chapter level, the criteria used to select separations was a principal diagnosis in the ICD-10-AM range S00-T98 (*ICD Chapter XIX Injury and poisoning and certain other consequences of external causes*).

All records in the AIHW National Hospital Morbidity database that have a principal diagnosis of injury and poisoning should include one or more ICD-10-AM external cause codes. In 2004–05, among injury and poisoning hospital separations for 12–24 year olds, only 0.01% had no external cause code. Injury and poisoning separations without an external cause code are included in the total number of injury and poisoning separations, but are not included in external cause separations. This is because the focus of the injury and poisoning section of this report is to describe injury separations in terms of the external causes that brought them about.

The criteria used to select separations for external causes was a principal diagnosis in the ICD-10-AM range S00-T98 (*ICD Chapter XIX Injury and poisoning and certain other consequences of external cause*) and an external cause code in the ICD-10-AM range V01-Y99 (*ICD Chapter XX External causes of morbidity and mortality*). As multiple external causes can be recorded, only the first reported external cause per hospital separation was selected (that is, one external cause per injury and poisoning separation).

The selection of injury and poisoning separations in this report was not limited by omitting records in which the mode of admission was recorded as being by transfer from another acute-care hospital, as the purpose was to report all hospital separations for injury and poisoning.

# Appendix 2: Data sources

A number of data sources were used to compile this report, including administrative data (for example, hospital separations), survey data, unit record data and published data. In all cases, the data used in this report has been the most recently available at the time of writing.

The two main data sources used throughout were the AIHW National Hospital Morbidity Database and the AIHW National Mortality Database. This section provides a brief description of most of the data sources used in this report.

## **AIHW data sources**

### **AIHW Child Protection Data Collection**

The AIHW collects annual statistics on child protection in Australia for children and adolescents aged 0–17 years. Data are provided by the state and territory community services departments and are used to produce *Child Protection Australia* and are also provided to the Productivity Commission for the *Report on Government Services*.

There are three separate child protection collections: child protection notifications, investigations and substantiations; children on care and protection orders and; children in out-of-home care.

Data availability: Care and protection orders annually from 2000–01 onwards, notifications, investigations and substantiations annually from 1990–91 onwards, and out-of-home care annually from 1998–99 onwards.

Further information: <[www.aihw.gov.au/childdyouth/childprotection/index.cfm](http://www.aihw.gov.au/childdyouth/childprotection/index.cfm)>

### **AIHW National Drug Strategy Household Survey (NDSHS)**

The NDSHS is a key data collection under the National Drug Strategy. The survey commenced in 1985 and has been managed by the AIHW since 1998.

The 2004 NDSHS was conducted between June and November 2004. It is the largest and most comprehensive survey concerning licit and illicit drug use ever undertaken in Australia. Almost 30,000 people aged 12 years and older participated in the survey, in which they were asked about their knowledge of and attitudes towards drugs, their drug consumption histories, and related behaviours.

The data collected from these surveys have contributed to the development of policies for Australia's response to drug-related issues.

Data availability: 1985, 1988, 1991, 1993, 1995, 1998, 2001 and 2004

Further information: AIHW 2005a or <[www.aihw.gov.au/drugs/strategies/index.cfm](http://www.aihw.gov.au/drugs/strategies/index.cfm)>

### **AIHW National Hospital Morbidity Database (NHMD)**

The NHMD is compiled by the AIHW from data supplied by the state and territory health authorities. It is a collection of electronic confidentialised summary records for separations (that is, episodes of care) in public and private hospitals in Australia.

Hospital records are for 'separations' and not individuals, and as there can be multiple admissions for the same individuals, hospital separation rates do not usually reflect the incidence or prevalence of the disease or condition in question.

The collection contains establishment data (information about the hospital), demographic data of the patient, administrative data, length of stay data and, clinical and related data.

Diagnoses have been classified according to ICD-10-AM since 1998–99. See Appendix 1 for more information on hospital diagnosis classification.

Data availability: Annual from 1993–94 onwards

Further information: <[www.aihw.gov.au/hospitals/nhm\\_database.cfm](http://www.aihw.gov.au/hospitals/nhm_database.cfm)>

### **AIHW National Mortality Database**

The AIHW National Mortality Database is held at the AIHW for the analysis of mortality statistics. The database includes information on the factors that caused death (usually referred to as the cause of death). The collection also contains information about the deceased person such as their age at death, the place of death, their country of birth, and where applicable, the circumstances of their death. These data are collected in Australia by the Registrars of Births, Deaths and Marriages in each state and territory. The data are then compiled nationally by the ABS, which codes the data according to the International Classification of Diseases (ICD). The tenth revision (ICD-10) is available for use from 1997. See Appendix 1 for more information on cause of death classification.

Data availability: Annual from 1964 onwards

Further information: <[www.aihw.gov.au/mortality/index.cfm](http://www.aihw.gov.au/mortality/index.cfm)>

### **Bettering the Evaluation and Care of Health (BEACH)**

The BEACH survey of general practice activity is a collaborative study between the AIHW and the University of Sydney. The BEACH project is a continuous collection of morbidity and treatment data from general practice across Australia, which aims to provide a quality database covering general practice activities.

Each year a random sample of 1,000 recognised general practitioners each record details of 100 consecutive consultations generating an annual database of 100,000 doctor-patient encounters.

Details collected include information about the consultation (for example, date, type of consultation), the patient (for example, date of birth, sex, reasons for encounter), the problems managed and the management of each problem (for example, treatment provided, prescriptions, referrals). Data on patient risk factors and health status and on general practitioner characteristics are also collected.

Data availability: Annual from 1998–99 onwards

Further information: AIHW: Britt et al. 2007

### **Juvenile Justice National Minimum Data Set (JJ NMDS)**

The JJ NMDS involves the annual collection of state and territory information on juvenile justice supervision in Australia. Data is provided by the department responsible for juvenile justice in each jurisdiction. The JJ NMDS is a joint project between the Australasian Juvenile Justice Administrators (AJJA) and the AIHW, with a focus on the experience of young people aged 10 years and over (10 years is the youngest age that a person can enter the formal criminal justice system) involved in juvenile justice supervision in Australia. The JJ NMDS is designed to provide relevant and comparable information that will contribute to the national monitoring of juvenile justice policies and programs.

Information collected includes: the number of juvenile justice clients and some client characteristics; number and type of supervision periods and; juvenile justice detention centre characteristics.

Data availability: Annual from 2000–01 onwards

Further information: <[www.aihw.gov.au/childyouth/juvenilejustice/index.cfm](http://www.aihw.gov.au/childyouth/juvenilejustice/index.cfm)>

### National Cancer Statistics Clearing House (NCSCH)

The AIHW maintains the NCSCH. Information on the incidence of cancer in the Australian population is provided to the NCSCH by the state and territory cancer registries. The data items provided to the NCSCH by the state and territory cancer registries enable record linkage to be performed (for example, to the National Death Index) and the analysis of cancer by site and behaviour.

The NCSCH collects information on incidence, mortality, specific cancer sites, cancer histology, geographical variation, trends over time and survival.

The NCSCH is the only national database of cancer incidence in Australia.

Data availability: The earliest cases recorded in the database are those diagnosed in 1982

Further information: <[www.aihw.gov.au/cancer/ncsch/index.cfm](http://www.aihw.gov.au/cancer/ncsch/index.cfm)>

### National Community Mental Health Care Database (NCMHCD)

The NCMHCD is a collation of data on specialised mental health services provided to non-admitted patients, in both government-operated community and hospital-based ambulatory care services such as community mental health services, outpatient clinics and day clinics.

Each record in the database is for a service contact, defined as a contact between a patient or client and an ambulatory mental health care service (including hospital and community-based services) that resulted in a dated entry being made in the individual's record.

The NCMHCD contains data on the date of service contact and on the characteristics of the patient, including demographic information such as age and sex, and clinically relevant information such as principal diagnosis and mental health legal status.

A mental health service contact for the purposes of this collection was defined as the provision of a clinically significant service by a specialised mental health service provider(s) for patients/clients, other than those admitted to psychiatric hospitals or designated psychiatric units in acute care hospitals, and those resident in 24-hour staffed specialised residential mental health services, where the nature of the service would normally warrant a dated entry in the clinical record of the patient/client in question. It should be noted that there is some variation across jurisdictions as to what they class as a service contact.

Data availability: Annual from 2000–01 onwards

Further information: AIHW 2005g

### National Dental Telephone Interview Survey (NDTIS)

The 2002 NDTIS, conducted by the AIHW Dental Statistics Research Unit at Flinders University, involved a random sample of Australian residents aged five years and over in all states and territories. The data items included in the 2002 survey were based on those used in previous rounds of the survey.

The NDTIS collects a wide range of information on: oral health status, access to dental services (such as time, place and reason for last dental visit; frequency of visits; visits and treatments received in the previous year; and waiting time), social impact of dental health, dental insurance, financial burden, perceived needs, and sociodemographic and economic details. There were 7,312 participants across Australia in the 2002 survey, 19% of which were aged 12–24 years.

Data availability: 1994, 1995, 1996, 1999, 2002

Further information: Carter & Stewart 2003

### National Diabetes Register (NDR)

The NDR, held at the AIHW, is a register of people living in Australia with insulin-treated diabetes. This includes persons using insulin to manage Type 1, Type 2, gestational and other types of diabetes.

People are eligible to be on the NDR if they use insulin to treat their diabetes and their insulin use began on or after 1 January 1999.

The NDR has two main data sources:

- the National Diabetes Services Scheme (NDSS) database, administered by Diabetes Australia
- the Australasian Paediatric Endocrine Group's (APEG) state and territory databases.

**Data availability:** Aims to collect all new cases of insulin-treated diabetes mellitus from 1 January 1999 onwards

Further information: <[www.aihw.gov.au/diabetes/ndr.cfm](http://www.aihw.gov.au/diabetes/ndr.cfm)>

### Supported Accommodation Assistance Program (SAAP) National Data Collection

The SAAP National Data Collection has been providing annual information on the provision of assistance through SAAP since 1996–97. The AIHW has had the role of National Data Collection Agency (NDCA) since the collection's inception.

The National Data Collection consists of distinct components, each of which can be thought of as a separate collection. Currently, four collections are run annually: the Client Collection, the Administrative Data Collection, the Demand for Accommodation Collection and the Casual Client Collection.

The Client Collection collects information about all clients receiving support under SAAP of more than 1 hour's duration. Data are recorded by service providers during, or immediately following, contact with clients and are then forwarded to the NDCA after clients' support periods have ended or, for ongoing clients, at the end of the reporting period (31 December and 30 June). Data collected include basic sociodemographic information and information on the services requested by, and provided to, each client. Information about each client's situation before and after receiving SAAP services is also collected.

The Administrative Data Collection consists of general information about the agencies providing accommodation and support services to people who are homeless or in crisis.

The Demand for Accommodation Collection is conducted annually over 2 weeks. It measures the level of unmet demand for SAAP services by collecting information about the number of requests for accommodation from SAAP agencies that are not met, for whatever reason.

The 2-week Casual Client Collection is conducted annually to elicit information about short-term or one-off assistance provided to homeless people.

**Data availability:** Annual from 1996–97 onwards

Further information: <[www.aihw.gov.au/housing/sacs/saap/index.cfm](http://www.aihw.gov.au/housing/sacs/saap/index.cfm)>

### ABS data sources

#### ABS Family Characteristics Survey

The 2003 Family Characteristics Survey is the fourth survey on the topic of family composition, the first being conducted in 1982. The survey collects information about the composition of households and families, and the characteristics and circumstances of people within them.

The 2003 survey specifically collected details on household and family composition including demographics, labour force, and family type. The survey collected information on people of all ages, however there was a particular focus on families with children aged 0–17 years. The additional information collected for these families included information about family structure, the social marital status of the parents, parental income and contact arrangements for children with non-resident parents.

Data availability: 1982 and 1992 (Family Survey), 1997 and 2003 (Family Characteristics Survey)

Further information: ABS 2004d or <[www.abs.gov.au/ausstats/abs@.nsf/5087e58f30c6bb25ca2568b60010b303/e6a9286119fa0a85ca25699000255c89!OpenDocument](http://www.abs.gov.au/ausstats/abs@.nsf/5087e58f30c6bb25ca2568b60010b303/e6a9286119fa0a85ca25699000255c89!OpenDocument)>

### **ABS General Social Survey (GSS)**

The first GSS was conducted by the ABS in 2002, with plans to repeat the survey at four-yearly intervals.

The aims of the GSS are to present data on a range of social dimensions of the Australian community at a single point in time by collecting data on a range of topics from the same individual; enable analysis of the interrelationship of social circumstances and outcomes, including the exploration of multiple advantage and disadvantage and; provide a base for comparing social circumstances and outcomes over time and across population groups.

The 2002 GSS collected information from 15,500 people aged 18 years and over across all states and territories of Australia. Information was collected about individuals and about the households in which they lived.

The focus is on the relationships between characteristics from different areas of social concern, rather than in-depth information about a particular field. Topics include health, housing, education, work, income, financial stress, broad assets and liabilities, transport, family and community, and crime.

Data availability: 2002, 2006 (not available for this publication)

Further information: ABS 2003c

### **ABS Labour Force Survey**

The Labour Force Survey collects information on labour market activity of the usually resident civilian population of Australia aged 15 years and over. The survey collects information on socio-demographics, persons in the labour force (for example, labour force status, unemployment rate, participation rate), employed persons (for example, status of employment in main job (full-time or part-time), hours worked, job tenure, underemployment, occupation and industry in main job), unemployed persons (for example, whether looking for work, reason for ceasing last job, duration of unemployment) and persons not in the labour force (for example, whether looking for work, permanently unable to work).

Data availability: Quarterly from 1960–1968 and monthly from February 1978 onwards

Further information: <[www.abs.gov.au/websitedbs/c311215.nsf/0/BF6068ABC64802DECA256BD500169F18!Open](http://www.abs.gov.au/websitedbs/c311215.nsf/0/BF6068ABC64802DECA256BD500169F18!Open)>

### **ABS National Aboriginal and Torres Strait Islander Health Survey (NATSIHS)**

The 2004–05 NATSIHS, conducted by the ABS provides information about the health circumstances of Indigenous Australians. The sample size was 10,439 persons (or about one in 45 of the total Indigenous population), considerably larger than the supplementary Indigenous samples in the 1995 and 2001 National Health Surveys. This survey, which was conducted in remote and non-remote areas throughout Australia, collected information from Indigenous Australians about health related issues, including health status, risk factors and actions, and socioeconomic circumstances.

The aims of the survey were to provide broad information about the health of Indigenous Australians, by remoteness, and at the national and state/territory levels; allow for the relationships across the health status, risk factors and health related actions of Indigenous Australians to be explored; provide comparisons over time in the health of Indigenous Australians; and provide comparisons with results for the non-Indigenous population from the 2001 and 2004-05 National Health Survey (NHS).

Data availability: 2004–05

Further information: ABS 2006l or <[www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4715.0Main+Features12004-05?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4715.0Main+Features12004-05?OpenDocument)>

### **ABS National Aboriginal and Torres Strait Islander Social Survey (NATSISS)**

The 2002 NATSISS was conducted between August 2002 and April 2003. Information was collected about the Aboriginal and Torres Strait Islander populations of Australia for a wide range of areas of social concern including health, education, culture and labour force participation. The survey is expected to be conducted at 6-yearly intervals.

Information was collected by personal interview from approximately 10,000 Aboriginal and Torres Strait Islander people aged 15 years and over throughout Australia, including those living in remote areas.

Data availability: 2002

Further information: <[www.abs.gov.au/Ausstats/abs@.nsf/0d21d0868273a2c3ca25697b00207e97/9ad558b6d0aed752ca256c7600018788?OpenDocument](http://www.abs.gov.au/Ausstats/abs@.nsf/0d21d0868273a2c3ca25697b00207e97/9ad558b6d0aed752ca256c7600018788?OpenDocument)>

### **ABS National Crime and Safety Survey**

The Crime and Safety Survey collects information from residents of private dwellings about selected household and personal crime and safety issues on the perception of crime problems in the neighbourhood, fear of crime, the incidence of selected categories of crime and reporting behaviour. The survey includes persons aged 15 years and over. Persons aged 18 and over were asked to provide information on sexual assault on a separate questionnaire.

The survey collection methodology has been different on each occasion, but similar data items were collected.

Data availability: 1975, 1983, 1993, 1998, 2002 and 2005

Further information: <[www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4509.0Main+Features1Apr%202005?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4509.0Main+Features1Apr%202005?OpenDocument)>

### **ABS National Health Survey (NHS)**

The most recent NHS was conducted between August 2004 and June 2005 by the ABS. The survey collected information from 19,501 Australians of all ages and from all states and territories and from urban and remote areas. Very remote areas were excluded.

The aims of the survey are to obtain national benchmark information on a range of health issues and to enable trends in health to be monitored over time. Information was collected about the health status of the Australian population, health-related aspects of lifestyle and other health risk factors and use of health services.

In the ABS National Health Surveys, information is reported by a parent/guardian for young people under the age of 15 years, a combination of self- and parent-report for ages 15–17 years and self-report only for aged 18 years and over.

Data availability: 1977–78, 1983, 1989–90, 1995, 2001 and 2004–05

Further information: ABS 2006m

### **ABS National Nutrition Survey (NNS)**

The NNS was conducted between February 1995 and March 1996 across all states and territories. It collected information for people aged two years and over on food and beverage intake, usual frequency of intake, food-related habits and attitudes, and physical measurements.

Data availability: 1995

Further information: <[www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4805.0Main+Features11995?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4805.0Main+Features11995?OpenDocument)>

### **ABS National Survey of Mental Health and Wellbeing of Adults (SMHWB)**

The ABS 1997 SMHWB collected information from approximately 10,600 people aged 18 years or over on a range of mental disorders. These included anxiety disorders (for example, obsessive-compulsive disorder, panic disorder), affective disorders (for example, depression, bipolar affective disorder) and alcohol and drug use disorders. The survey used the Composite International Diagnostic Interview (CIDI) to diagnose mental disorders.

The survey also collected information on: demographic and socioeconomic characteristics; physical conditions; disability associated with mental disorders; health service use for a mental health problem; and perceived need for health services for a mental health problem.

Data availability: 1997

Further information: ABS 1998

### **ABS Personal Safety Survey (PSS)**

The PSS collected information from persons aged 18 years and over about their safety at home and in the community.

Private, face-to-face interviews were conducted. Respondents were asked about their experiences of different types of violence, since the age of 15 years, by different types of male and female perpetrators (including current partner, previous partner, boyfriend/girlfriend or date, other known man or woman, and stranger). Information was collected about experiences of physical and sexual violence, the nature and extent of the violence against women and men, actions taken after experiencing violence, and the effect on their lives. Additional information was collected about incidents of abuse, stalking and other forms of harassment.

Data availability: 2005

Further information: <[www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4906.0Main+Features12005%20\(Reissue\)?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4906.0Main+Features12005%20(Reissue)?OpenDocument)>

### **ABS Survey of Children's Participation in Cultural and Leisure Activities**

The Survey of Children's Participation in Cultural and Leisure Activities collects information about the participation of children aged 5–14 years in cultural, sporting and other leisure activities, details on children's use of computers and the Internet, and their involvement in homework and other study.

Data availability: 2000, 2003, 2006

Further information: <[www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4901.0Main+Features1Apr%202006?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4901.0Main+Features1Apr%202006?OpenDocument)>

### **ABS Survey of Disability, Ageing and Carers (SDAC)**

The SDAC collects information about people of all ages with a disability, older people (aged 60 years and over) and people who provide assistance to older people and people with disabilities.

The aims of the survey were to measure the prevalence of disability in Australia, measure the need for support of older people and those with a disability; provide a demographic and socioeconomic profile of people with disabilities, older people and carers compared with the general population; and to estimate the number of, and provide information, about people who provide care to older people and people with disabilities.

People with a disability were asked questions relating to help and assistance needed and received for self-care, mobility, communication, cognition or emotion, health care, housework, property maintenance, meal preparation, paperwork (reading and writing tasks) and transport activities. They were also asked questions relating to computer and Internet use and participation in community activities. Those aged 5–20 years (or their proxies) were asked about schooling restrictions, and those aged 15–64 years about employment restrictions.

Data availability: 1981, 1988, 1993, 1998 and 2003

Further information: <[www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4430.0Main+Features12003?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4430.0Main+Features12003?OpenDocument)>

### **ABS Survey of Education and Work**

The Survey of Education and Work is conducted in May each year as a supplement to the Labour Force Survey. It presents information about the educational experience of persons aged 15–64 years, particularly in relation to their labour force status.

Information collected in the survey includes: participation in education in the year prior to the survey, and in the survey month; labour force characteristics; type of educational institution; level of education of current and previous study; highest year of school completed; level of highest non-school qualification; level of highest educational attainment; unmet demand for education in current year; and selected characteristics of apprentices. This survey was previously known as Transition from Education to Work, Australia.

Data availability: Transition from Education to Work: 1994, 1996, 1997

Education and Work: annual from 1997 onwards

Further information: <[www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/6227.0Main+Features1May%202006?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/6227.0Main+Features1May%202006?OpenDocument)>

### **ABS Survey of Work in Selected Culture and Leisure Activities**

The Survey of Work in Selected Culture and Leisure Activities is a supplement to the Monthly Population Survey and collects data from those aged 15 years and over on involvement in cultural activities and sports participation which are cross-classified by demographic characteristics collected from the Labour Force Survey.

The object of the survey is to obtain data about the population's paid and unpaid involvement in a range of culture, sport and leisure activities.

The 1998–99 data were collected from a different survey vehicle (Population Survey Monitor) for those aged 18 years and over. Caution should therefore be exercised when comparing this survey with other years.

Data availability: 1993, 1997, 1998–99, 2001, 2004

Further information: <[www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/6281.0Main+Features1Apr%202004%20\(Corrigendum\)?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/6281.0Main+Features1Apr%202004%20(Corrigendum)?OpenDocument)>

## Other data sources

### Australian Secondary Students Alcohol and Drug (ASSAD) Survey

The ASSAD survey is a triennial secondary school-based survey which monitors the use of tobacco, alcohol and other substances among adolescents in Australia. The most recent survey was conducted in 2005 and used a representative sample of over 20,000 secondary school students in Years 7–12 across Australia. The current survey in this series was developed from a triennial national survey of secondary school students' use of tobacco and alcohol, conducted collaboratively by the Cancer Councils in each state of Australia commencing in 1984.

In 1996, the survey was expanded to include questions on the use of illicit substances and federal, state and territory health departments became collaborators with the Cancer Councils in the project.

The questionnaire covers the use of tobacco, alcohol, pain relievers, sleeping tablets and the use of illicit substances such as cannabis and hallucinogens.

Students were administered an anonymous, written questionnaire and the presence of teachers during the survey is discouraged.

Data availability: 1984, 1987, 1990, 1993, 1996, 1999, 2002 and 2005

Further information: <[www.nationaldrugstrategy.gov.au/internet/drugstrategy/publishing.nsf/Content/home](http://www.nationaldrugstrategy.gov.au/internet/drugstrategy/publishing.nsf/Content/home)>

### Child and Adolescent Component of the National Survey of Mental Health and Wellbeing

The Child and Adolescent Component of the National Survey of Mental Health and Wellbeing was commissioned by the Mental Health Branch of the then Commonwealth Department of Health and Aged Care and undertaken by the University of Adelaide.

This survey was the first to investigate the mental health and wellbeing of children and adolescents aged 4–17 years at a national level in Australia. It provides an accurate estimate of the prevalence of mental health problems, the degree of disability associated with mental health problems and the extent to which children and adolescents are receiving help for their problems.

A representative sample of 4,500 children was recruited, and the response rate for the survey was 70%. Information was gathered from parents of all participants and from adolescents aged 13–17 years. Parents were interviewed, and both parents and adolescents completed a self-report questionnaire.

Data availability: 1998

Further information: Sawyer et al. 2000

### Household, Income and Labour Dynamics in Australia (HILDA) Survey

The HILDA Survey is a longitudinal household-based panel survey. The HILDA Survey is commissioned and funded by the Australian Government Department of Families, Community Services and Indigenous Affairs. The survey aims to describe the way people's lives are changing by tracking all members of an initial sample of households over an indefinite life.

Data are collected on a wide range of issues, including: household structure, family background, marital history, family formation, education, employment history, current employment, job search, income, health and wellbeing, child care, and housing. In addition, in every wave there is scope for additional questions on special topics. Interviews are conducted with all persons in the household aged 15 years and over, although information may be collected on persons aged under 15 years from other household members.

Data availability: 2001 (wave 1), 2002 (wave 2), 2003 (wave 3), 2004 (wave 4), 2005 (wave 5)

Further information: <[www.melbourneinstitute.com/hilda/](http://www.melbourneinstitute.com/hilda/)>

### National Notifiable Diseases Surveillance System (NNDSS)

The NNDSS was established in 1990 by the Communicable Diseases Network of Australia and New Zealand (CDNANZ). The NNDSS coordinates the national surveillance of more than 50 communicable diseases or disease groups. Notifications are made to state or territory health authorities under the provisions of the public health legislation in their jurisdiction. Computerised, de-identified unit records of notifications are supplied to the Australian Government Department of Health and Ageing on a daily basis for collation, analysis and publication on the internet and in the *Communicable Diseases Intelligence* journal.

Data provided for each notification include a unique record reference number, state or territory code, disease code, date of onset, date of notification to the relevant health authority, sex, age, Indigenous status and postcode of residence.

The quality and completeness of data compiled in the NNDSS are influenced by various factors. Surveillance of communicable diseases varies between jurisdictions, as each state and territory has specific requirements under its public health legislation for notification by medical practitioners, laboratories and hospitals. The notifiable diseases and the case definition may also vary between jurisdictions. Further, the way in which notifications are made differs between states and territories. In some jurisdictions, different diseases are required to be notified by different health care providers. Therefore, the proportion of diagnosed cases of a particular disease which are notified to health authorities is not known with certainty and may vary among diseases, between jurisdictions and over time.

Data availability: 1991 onwards

Further information: <[www9.health.gov.au/cda/Source/CDA-index.cfm](http://www9.health.gov.au/cda/Source/CDA-index.cfm)>

### National Survey of Secondary Students and Sexual Health

The National Survey of Secondary Students and Sexual Health has been conducted every five years throughout Australia since 1992. The third survey, conducted in 2002, involved 2,388 young people (55% young women) from Years 10 and 12 in all states and territories. For the first time students from both the Catholic and Independent school systems were included in the survey. The surveys are designed to inform educational policy and practice within the domain of sexual health.

The 2002 questionnaire collected information on students' personal experiences of sex, sexual attraction, condom use, alcohol and injecting drug use, body piercing, tattooing, general health, sources of information on sexuality and sexual health, and feelings and confidence in talking to peers and parents/guardians about a range of sexual matters. Detailed information was also collected on knowledge and perceived risk of HIV/AIDS, sexually transmitted infections and blood-borne viruses.

Data availability: 1992, 1997 and 2002

Further information: Smith et al. 2003

### NSW Schools Physical Activity and Nutrition Survey (SPANS)

The NSW SPANS is a key initiative in the *Prevention of Obesity in Children and Young People: NSW Government Action Plan 2003–2007*. The survey collected information from almost 5,500 primary and high school students aged 5–16 years in NSW. Information was collected on the prevalence of overweight and obesity, levels of physical activity, modes of travel to and from school, fundamental movement skills, sedentary behaviours, food habits and eating patterns, fitness levels, and risk factors for chronic disease.

The study builds on the NSW Schools Fitness and Physical Activity Survey 1997 (NSWSFPAS).

Data availability: 2004

Further information: Booth et al. 2006

## Appendix 3: Abbreviations

AACR	Australasian Association of Cancer Registries
ABS	Australian Bureau of Statistics
ACAM	Australian Centre for Asthma Monitoring
ACIR	Australian Childhood Immunisation Register
ACSC	Ambulatory Care Sensitive Conditions
ADHD	Attention-Deficit Hyperactivity Disorder
AIC	Australian Institute of Criminology
AIFS	Australian Institute of Family Studies
AIHW	Australian Institute of Health and Welfare
AMA	Australian Medical Association
ARIA	Accessibility/Remoteness Index of Australia
ASGC	Australian Standard Geographical Classification
ASSAD	Australian Secondary Students Alcohol and Drug survey
BMI	Body Mass Index
CDs	Collection Districts
CURF	Confidentialised Unit Record File
DALY	Disability-adjusted life year
DHAC	Commonwealth Department of Health and Aged Care
DMFT	Number of decayed, missing and filled permanent teeth
DoHA	Commonwealth Department of Health and Ageing
DSRU	Dental Statistics Research Unit
ERP	Estimated resident population
GSS	General Social Survey
FaCSIA	Commonwealth Department of Family and Community Services and Indigenous Affairs
GDP	Gross Domestic Product
GSS	General Social Survey
Hib	<i>Haemophilus influenzae</i> type b
HILDA	Household and Income Labour Dynamics in Australia Survey
HREOC	Human Rights and Equal Opportunity Commission
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 and Related Health Problems, 10th Revision
ICD-10-AM	International Classification of Disease and Related Health Problems, 10th Revision, Australian modification
IRSD	Index of Relative Socio-economic Disadvantage
JJ NMDS	Juvenile Justice National Minimum Data Set
K10	Kessler 10
MCEETYA	Ministerial Council on Education, Employment, Training and Youth Affairs
NATSIHS	National Aboriginal and Torres Strait Islander Health Survey

NATSISS	National Aboriginal and Torres Strait Islander Social Survey
NCIRS	Australian National Centre for Immunisation Research and Surveillance of Vaccine Preventable Diseases
NCP	National Child Protection
NCPASS	National Child Protection and Support Services
NCSCH	National Cancer Statistics Clearing House
NCMHCD	National Community Mental Health Care Database
NDARC	National Drug and Alcohol Research Centre
NDN	National Data Network
NDR	National Diabetes Register
NDSHS	National Drug Strategy Household Survey
NHMRC	National Health and Medical Research Council
NHPA	National Health Priority Area
NHPC	National Health Performance Committee
NHS	National Health Survey
NISU	National Injury Surveillance Unit
NMDS	National Minimum Data Set
NMSC	Non-melanoma skin cancer
NNDS	National Notifiable Diseases Surveillance System
NNS	National Nutrition Survey
NPHP	National Public Health Partnership
NPSU	National Perinatal Statistics Unit
OECD	Organisation for Economic Co-operation and Development
SAAP	Supported Accommodation Assistance Program
SEIFA	Socio-Economic Index for Areas
SF-36	Short Form 36
SLA	Statistical local area
TFR	Total Fertility Rate
TIMSS	Third International Mathematics and Science Study
USDHHS	United States Department of Health and Human Services
WHO	World Health Organization
YLD	Years of life lost due to disability
YLL	Years of potential life lost

### States/territories

ACT	Australian Capital Territory
NSW	New South Wales
NT	Northern Territory
Qld	Queensland
SA	South Australia
Vic	Victoria
WA	Western Australia
Tas	Tasmania

# Appendix 4: Glossary

**Aboriginal** A person of Aboriginal descent who identifies as an Aboriginal and is accepted as such by the community in which he or she lives. See also *Indigenous*.

**acute** Coming on sharply and often brief, intense and severe.

**affective disorders** Mood disorders such as depression, mania and bipolar affective disorder. (The term does not include *anxiety disorders*, which are classified as a separate group.)

**age-specific rate** A rate for a specific age group. The numerator and denominator relate to the same age group.

**age standardisation** A method of removing the influence of age when comparing populations with different age structures.

**ambulatory care** Care provided to hospital patients who are not admitted to the hospital, such as patients of emergency departments and outpatient clinics. The term is also used to refer to care provided to patients of community-based (non-hospital) health care services.

**anxiety disorders** A group of mental disorders marked by excessive feelings of apprehension, worry, nervousness and stress. Includes panic disorder, various phobias, generalised anxiety disorder, obsessive-compulsive disorder and post-traumatic stress disorder.

**apparent retention rate** The ratio of the number of students in a given year to the number originally entering secondary school.

**ASGC Remoteness** This classification is designed to compare, on the one hand, the major cities, and at the other extreme, very remote areas. This structure is based on the Accessibility/Remoteness Index of Australia (ARIA), which utilises road distance to various size service centres as a measure of physical remoteness. Within a state or territory, each remoteness area represents an aggregation of non-contiguous geographical areas that share common characteristics of remoteness.

The defined areas are:

- Major Cities of Australia
- Inner Regional Australia
- Outer Regional Australia
- Remote Australia
- Very Remote Australia
- Migratory: composed of off-shore, shipping and migratory collection districts (figures for these areas are not shown separately in this publication).

**associated cause(s) of death** Any condition(s), disease and injuries—other than the *underlying cause*—considered to contribute to a death. See also *cause of death*.

**asthma** A chronic inflammatory disease of the air passages causing widespread narrowing in them, obstruction of airflow, and episodes of wheezing, chest tightness and shortness of breath.

**average length of stay (ALOS)** The average length of stay for admitted patient episodes.

**benchmark** A standard or point of reference for measuring quality or performance.

**birth cohort** People who are born in the same year.

**birth rate** Number of live births per 1,000 population.

**bipolar affective disorder** A mental disorder where the person may be depressed at one time and manic at another. Formerly known as manic depression.

**birthweight** The first weight of the baby (stillborn or liveborn) obtained after birth (usually measured to the nearest 5 grams and obtained within 1 hour of birth).

**blended families** A couple family containing two or more children, of whom at least one is the natural child of both members of the couple, and at least one is the step-child of either member of the couple.

**body mass index (BMI)** The most commonly used method of assessing whether a person is normal weight, underweight, overweight or obese. It is calculated by dividing the person's weight (in kilograms) by their height (in metres) squared ( $\text{kg}/\text{m}^2$ ). Cut-off points for persons of different age and sex are used to determine if a person is overweight or obese.

**campylobacteriosis** A disease usually marked by diarrhoea, abdominal pain, fever, nausea and vomiting for a few days, caused by some types of Campylobacter bacteria and often foodborne.

**cancer** A large range of diseases in which some of the body's cells become defective, begin to multiply out of control, can invade and damage the area around them, and can also spread to other parts of the body.

**caries** See *dental caries*.

**cause of death** From information reported on the medical certificate of cause of death, each death is classified by the underlying cause of death according to rules and conventions of the 9th or 10th revision of the *International Classification of Diseases*. The *underlying cause of death* is defined as the disease that initiated the train of events leading directly to death.

**cerebrovascular disease** Any disorder of the blood vessels supplying the brain or its covering membranes.

**child protection investigation** The process whereby the community services department obtains more detailed information about a child who is the subject of a notification and makes an assessment about the harm or degree of harm to the child and the child's protective needs.

**child protection notifications** A report is made to an authorised department by persons or other bodies making allegations of child abuse or neglect, child maltreatment or harm to a child. Where it is claimed that two children have been abused or neglected, this is counted as two notifications, even if the children are from one family.

**child protection substantiation** A child protection notification made to relevant authorities which was investigated, the investigation was finalised, and it was concluded that there was reasonable cause to believe that the child had been, was being, or was likely to be abused, neglected or otherwise harmed.

**chronic disease** Term applied to a diverse group of diseases, such as asthma, diabetes, cancer and rheumatic heart disease (to name a few), that tend to be long-lasting and persistent in their symptoms or development. Although these features also apply to some *communicable diseases*, the term is usually confined to non-communicable diseases.

**cohort** A group of individuals being studied who have experienced the same event at a specified period in time; for example, *birth cohort*.

**communicable diseases (infectious diseases)** Diseases or illnesses due to infectious organisms or their toxic products. Transmission may occur directly or indirectly via contact with other humans, animals or other environments that harbour the organism.

**comorbidity** When a person has two or more health problems at the same time.

**conditions originating in the perinatal period** Conditions that have their origin in the perinatal period even though death or morbidity occurs later. These include pregnancy and birth complications, birth trauma, respiratory and cardiovascular disorders, infections, and disorders related to the length of gestation and fetal growth.

**confidence interval** A statistical term describing a range (interval) of values within which we can be ‘confident’ that the true value lies, usually because it has a 95% or higher chance of doing so.

**confinement** Pregnancy resulting in at least one birth.

**congenital** A condition that is recognised at birth, or that is believed to have been present since birth, including conditions which are inherited or caused by environmental factors.

**core activity restrictions** The extent of a person’s disability. Core activities are defined as self-care (bathing, dressing, eating, using toilet), mobility (moving around at home and away from home, getting into or out of bed or chair, using public transport), and communication (understanding and being understood by others). A person with a profound restriction is unable to perform a core activity, or always needs assistance with that activity, while a person with a severe restriction sometimes needs assistance to perform the activity.

**deciduous teeth** The teeth that are replaced by permanent (adult) teeth during childhood. Also called baby or milk teeth.

**dental caries** The disease process leading to tooth decay.

**depression** A mood disorder with prolonged feelings of being sad, hopeless, low and inadequate, with a loss of interest or pleasure in activities and often with suicidal thoughts or self-blame.

**determinant** Any factor that can increase the chances of ill health (risk factors) or good health (protective factors) in a population or individual. By convention, services or other programs which aim to improve health are often not included in this definition.

**diabetes (diabetes mellitus)** A chronic condition in which the body cannot properly use its main energy source, the sugar glucose. This is due to the relative or absolute deficiency in insulin, a hormone produced by the pancreas. Insulin helps glucose enter the body’s cells from the bloodstream and then be processed by them. Diabetes is marked by an abnormal build-up of glucose in the blood and it can have serious short- and long-term effects. For the three main types of diabetes see *Type 1 diabetes*, *Type 2 diabetes* and *gestational diabetes*.

**diagnosis** A decision based on the recognition of clinically relevant symptomatology, the consideration of causes that may exclude a diagnosis of another condition, and the application of clinical judgment.

**diphtheria** A bacterial infection that usually starts with soreness of the throat and tonsils but which can also affect other parts of the body and become severe enough to block breathing. It is preventable by vaccination.

**disability** Described by the International Classification of Functioning, Disability and Health as a concept of several dimensions relating to an impairment in body structure or function, a limitation in activities (such as mobility and communication), a restriction in participation (involvement in life situations such as work, social interaction and education), and the affected person’s physical and social environment. Described by the *Oxford concise colour medical dictionary* (1998) as ‘a loss or restriction of functional ability or activity as a result of impairment of the body or mind’.

**disability-adjusted life year (DALY)** Years of healthy life lost through premature death or living with disability due to illness or injury.

**disease** A physical or mental disturbance involving *symptoms* (such as pain or feeling unwell), dysfunction or tissue damage, especially if these *symptoms* and *signs* form a recognisable clinical pattern.

**DMFT** The number of permanent (adult) teeth currently decayed, extracted due to decay or with filling.

**donovanosis** Infectious disease (previously called granuloma inguinale) caused by the bacteria *Chlamydia granulomatis*. It features painless genital ulcers with tissue destruction, and can result in secondary infection and scarring.

**epidemic** An outbreak of a disease or its occurrence at a level that is clearly higher than usual, especially if it affects a large proportion of the population.

**epilepsy** A disturbance of brain function marked by recurrent fits and loss of consciousness.

**exclusive breastfeeding** Breastfeeding only—no other liquids or solids.

**external cause** Environmental event, circumstance and/or condition as the cause of injury, poisoning and/or other adverse effect. The term is used in disease classification.

**fertility rate** Number of live births per 1,000 women aged 15–49 years. See also *total fertility rate*.

**full-time/part-time employed** Full-time employed are those who work 35 or more hours per week; part-time employed are those who work less than 35 hours per week.

**generalised anxiety disorder** A mental disorder where a person is overly and unrealistically anxious and worried about many things over a long period. One of the group of *anxiety disorders*.

**gestation** The carrying of young in the uterus from conception to delivery.

**gestational diabetes** Diabetes which is first diagnosed during pregnancy (gestation). It may disappear after pregnancy but signals a high risk of diabetes occurring later on.

**Haemophilus influenzae type b infection** A bacterial infection of infants and children that can cause meningitis, pneumonia and other serious effects. It is preventable by vaccination.

**health** Term relating to whether the body (which includes the mind) is in a good or bad state. With good health the state of the body and mind are such that a person feels and functions well and can continue to do so for as long as possible. See also *public health*.

**health indicator** See *indicator*.

**health outcome** A change in the health of an individual or population due wholly or partly to a preventive or clinical intervention.

**health status** An individual's or population's overall level of health, taking account of various aspects such as *life expectancy*, amount of *disability*, levels of disease *risk factors* and so forth.

**hepatitis** Inflammation of the liver, which can be due to certain viral infections, alcohol excess or a range of other causes.

**Hodgkin's disease (Hodgkin's lymphoma)** A cancer marked by progressive painless enlargement of lymph nodes throughout the body. A form of *lymphoma*.

**hospital separation** An episode of care for an admitted patient, which can be a total hospital stay (from admission to discharge, transfer or death), or a portion of a hospital stay beginning or ending in a change of type of care (for example, from acute to rehabilitation). Separation also means the process by which an admitted patient completes an episode of care either by being discharged, dying, transferring to another hospital or changing type of care.

**illness** A state of feeling unwell, although the term is also often used synonymously with *disease*.

**immunisation** Inducing immunity against infection by the use of an antigen (vaccine) to stimulate the body to produce its own antibodies. See *vaccination*.

**incidence** The number of new cases (of an illness or event, and so forth) occurring during a given period. Compare with *prevalence*.

**incident** Newly acquired cases.

**indicator** A key statistic that describes (indicates) an aspect of population health status, health determinants, interventions, services or outcomes. Indicators are designed to help assess progress and performance, as a guide to decision making. They may have an indirect meaning as well as a direct one. For example, Australia's overall death rate is a direct measure of mortality but is often used as a major indicator of population health.

**Indigenous** A person of Aboriginal and/or Torres Strait Islander descent who identifies as an Aboriginal and/or Torres Strait Islander and is accepted as such by the community with which he or she is associated. See also *Aboriginal*, or *Torres Strait Islander*.

**infants** Children aged less than 1 year.

**inflammation** Local response to injury or infection, marked by local redness, heat, swelling and pain. Can also occur when there is no clear external cause and the body reacts against itself, as in *auto-immune diseases*.

**insulin** Hormone that is produced by the pancreas and regulates the body's energy sources, most notably the sugar glucose.

**International Classification of Diseases (ICD)** International Statistical Classification of Diseases and Related Health Problems. The World Health Organization's internationally accepted classification of death and disease. The 10th Revision (ICD-10) is currently in use. ICD-10-AM is the Australian modification of ICD-10, used for diagnoses and procedures recorded for patients admitted to hospitals.

**intervention (for health)** Any action taken by society or an individual which steps in (intervenes) to improve health, such as medical treatment and preventive campaigns.

**ischaemia** Reduced or blocked blood supply. See also *ischaemic heart disease*.

**ischaemic heart disease** Heart attack and angina (chest pain). Also known as coronary heart disease. See also *ischaemia*.

**length of stay** Duration of hospital stay, calculated by subtracting the date the patient is admitted from the day of separation. All leave days, including the day the patient went on leave, are excluded. A same-day patient is allocated a length of stay of one day.

**life expectancy** An indication of how long a person can expect to live. It is the number of years of life remaining to a person at a particular age if death rates do not change.

**live birth** Live birth is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy, which, after such separation, breathes or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached; each product of such a birth is considered live born.

**lymphoma** A cancer of the lymph nodes. Lymphomas are divided into two broad types, *Hodgkin's disease* lymphomas and *non-Hodgkin's lymphomas*.

**measles** A highly contagious infection, usually of children, that causes flu-like symptoms, fever, a typical rash, and sometimes serious secondary problems such as brain damage. It is preventable by vaccination.

**median** The midpoint of a list of observations ranked from the smallest to the largest.

**Medicare** A national, government-funded scheme that subsidises the cost of personal medical services for all Australians to help them afford medical care.

**melanoma** A cancer of the body's cells that contain pigment (melanin), mainly affecting the skin.

**meningitis** Inflammation of the brain's covering (the meninges), as can occur with some viral or bacterial infections.

**mental illness** Disturbances of mood or thought that can affect behaviour and distress the person or those around them, so the person often has trouble functioning normally. They include *anxiety disorders, depression* and *schizophrenia*.

**morbidity** Refers to ill-health in an individual and to levels of ill-health in a population or group.

**mortality** Death.

**mumps** A contagious viral disease marked by acute and painful swelling of the saliva-producing glands, often similarly affecting the testicles and sometimes other body parts.

**musculoskeletal** Relating to the muscles, joints and bones.

**National Health Priority Areas (NHPA)** The NHPA initiative is a collaborative effort involving the Australian Government and state and territory governments that seeks to focus public attention and health policy on those areas that are considered to contribute significantly to the burden of illness in the community, and for which there is potential for health gain.

**National Minimum Data Set (NMDS)** A minimum set of data elements agreed for mandatory collection and reporting at a national level.

**neonatal** The period of 28 days (4 weeks) after birth.

**neoplasm** Abnormal growth of tissue which may be benign or malignant; includes cancers and leukaemias.

**non-Hodgkin's lymphoma** A range of cancers of the lymphatic system (lymph glands and the channels they are linked to) that are not of the Hodgkin's variety.

**obsessive-compulsive disorder** A form of *anxiety disorder* where repeated and unwanted thoughts and impulses disturb and dominate a person. Often involves rituals such as excessive hand washing, checking and counting, which in turn cause anxiety if they are prevented or out of control.

**Organisation for Economic Co-operation and Development (OECD)** An organisation of 30 developed countries, including Australia.

**other Australians** 'Other Australians' is used when referring to people that have not identified as Aboriginal and/or Torres Strait Islander. This group will include those people who have said they are non-Indigenous but may also include either: (a) Aboriginal and/or Torres Strait Islander people who have chosen not to identify as such or (b) individuals for whom the relevant information was not collected.

**outcome (health outcome)** A health-related change due to a preventive or clinical intervention or service. (The intervention may be single or multiple, and the outcome may relate to a person, group or population, or be partly or wholly due to the intervention.)

**panic disorder** Marked by panic attacks (episodes of intense fear or discomfort) that occur suddenly and often unpredictably.

**Pap smear** Papanicolaou smear, a procedure to detect cancer and pre-cancerous conditions of the female genital tract.

**perinatal period** The period between 20 weeks (140 days) of gestation and 28 days after birth.

**pertussis (whooping cough)** A highly infectious bacterial disease of the air passages marked by explosive fits of coughing and often a whooping sound on breathing in. It is preventable by vaccination.

**phobia** A form of *anxiety disorder* in which there is persistent, unrealistic fear of an object or situation and which interferes with the person's life as they seek to avoid the object of their fear. Phobias include fear of heights, flying, open spaces, social gatherings, and animals such as spiders and snakes.

**poliomyelitis (polio)** Muscle paralysis, wasting and deformity of limbs after infection by a common virus (poliovirus) that can damage the so-called motor nerves in the spinal cord. It is preventable by vaccination.

**postnatal** The period of time after birth.

**post-traumatic stress disorder (PSD)** A form of *anxiety disorder* in which a person has a delayed and prolonged reaction after being in an extremely threatening or catastrophic situation such as a war, natural disaster, terrorist attack, serious accident or witnessing violent deaths.

**prevalence** The number or proportion (of cases, instances, etc.) present in a population at a given time. Compare with *incidence*.

**prevention (of disease or ill health)** Action to reduce or eliminate the onset, causes, complications or recurrence of disease or ill health.

**principal diagnosis** The diagnosis describing the problem that was chiefly responsible for the patient's episode of care in hospital.

**private hospital** A privately owned and operated institution, catering for patients who are treated by a doctor of their own choice. Patients are charged fees for accommodation and other services provided by the hospital and relevant medical and allied health practitioners. Compare with *public hospital*.

**problem (health problem)** A poorly defined term often used synonymously with *condition* or *disorder*. May be used more specifically to refer to health factors that a person or their doctor perceives as a concern—a problem—that needs attention; and which, for example, the person may list in a survey or their doctor may list in clinical notes.

**public health** Term variously referring to the level of health in the population, to actions that improve that level or to related study. Activities that aim to benefit a population tend to emphasise prevention, protection and health promotion as distinct from treatment tailored to individuals with symptoms. Examples include provision of a clean water supply and good sewerage, conduct of anti-smoking education campaigns, and screening for diseases such as cancer of the breast and cervix.

**public hospital** A hospital controlled by a state or territory health authority. In Australia, public hospitals offer free diagnostic services, treatment, care and accommodation to all Australians who need them.

**quintile** A group derived by ranking the population according to specified criteria and dividing it into five equal parts.

**rheumatic fever** An acute, serious disease that affects mainly children and young adults and can damage the heart valves, the heart muscle and its lining, the joints and the brain. Is brought on by a reaction to a throat infection by a particular bacterium. Now very rare in the non-Indigenous population, it is still at unacceptably high levels among Indigenous Australians living in remote areas. See *rheumatic heart disease*.

**rheumatic heart disease** Chronic disease from damaged heart valves cause by earlier attack(s) of rheumatic fever.

**risk factor** Any factor which represents a greater risk of a health disorder or other unwanted condition or event. Some risk factors are regarded as causes of disease, others are not necessarily so. Along with their opposites (protective factors) risk factors are known as *determinants*.

**rubella (German measles)** A communicable disease of children and young adults which has mild symptoms but which often causes serious birth defects if it occurs in a mother during the first three months of pregnancy. It is preventable by vaccination.

**salmonellosis** A disease commonly marked by sudden onset of headache, abdominal pain, fever, diarrhoea, nausea and sometimes vomiting, caused by some types of salmonella bacteria and often foodborne.

**schizophrenia** A group of serious mental disorders where imagined and disordered thoughts are key features, often with problems of behaviour, mood and motivation, and a retreat from social life.

**sign (clinical)** An indication of a disorder that is detected by a clinician or other observer who examines the person affected. Unlike with *symptoms*, a patient does not necessarily notice or complain of a sign and many signs are detected only with special techniques used by the person doing the examination.

**Socio-economic Index for Areas** SEIFA indexes are summary measures of socioeconomic status which are strongly linked with population health status. The SEIFA index used in this report is the Index of Relative Socioeconomic Disadvantage developed by the Australian Bureau of Statistics for use at the Statistical Local Area level. This index is derived from selected attributes including income, educational attainment, unemployment, and jobs in relatively unskilled occupations. Low scores on the index reflect census collection districts (CDs) with many relatively low income families and people with little training and unskilled occupations. High index scores indicate that the area has relatively few families with low income, little training and unskilled occupations (ABS 2001c).

**socioeconomic status** A relative position in the community as determined by occupation, income and level of education. The socioeconomic status measure used in this report is the Socio-economic Index for Areas (SEIFA)—Index of Relative Socioeconomic Disadvantage.

**Statistical Local Area (SLA)** Based on the administrative areas of local government where these exist. Where there is no incorporated body of local government, SLAs are defined to cover the unincorporated areas. The SLA is the base spatial unit used by the Australian Bureau of Statistics to collect and disseminate statistics other than those collected in Population Censuses.

**statistical significance** An indication from a statistical test that an observed difference or association may be significant or 'real' because it is unlikely to be due just to chance. A statistical result is usually said to be 'significant' if it would occur by chance only once in twenty times or less often.

**substance use disorder** Disorder of harmful use of and/or dependence on illicit or licit drugs, including alcohol, tobacco and prescription drugs.

**suicide** Deliberately ending one's own life.

**survival rates** The proportion of individuals diagnosed with a specific condition who have survived for a specified period of time since diagnosis.

**symptom** Any indication of a disorder that is apparent to the person affected. Compare with *sign (clinical)*.

**Torres Strait Islander** A person who identifies himself or herself to be of Torres Strait Islander origin. See also *Indigenous*.

**total fertility rate** The number of children a female would bear during her lifetime if she experienced current age-specific fertility rates at each age of her reproductive life.

**Type 1 diabetes** A form of *diabetes* usually arising in childhood or youth ('juvenile onset'), marked by a complete lack of insulin and needing insulin replacement for survival.

**Type 2 diabetes** The most common form of *diabetes*, occurring mostly in people aged 40 years or over, and marked by reduced or less effective insulin.

**underlying cause of death** The condition, disease or injury initiating the sequence of events leading directly to death; that is, the primary, chief, main or principal cause. Compare with *associated cause(s) of death*.

**vaccination** The process of administering a vaccine to a person to produce immunity against infection. See also *immunisation*.

**vector** An insect or other organism that transmits infectious micro-organisms from animal to human or human to human.

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