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Health and Welfare**



# Young Australians

**THEIR HEALTH AND WELLBEING 2011**

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# Summary

*Young Australians: their health and wellbeing 2011* is the fourth in a series of national statistical reports on young people aged 12–24 years produced by the Australian Institute of Health and Welfare (AIHW). This report provides the latest available information on how Australia's young people are faring according to national indicators of health and wellbeing.

## Key findings

Many young Australians are faring well according to the national indicators presented in this report; however, there is considerable scope for further gains, particularly among Aboriginal and Torres Strait Islander young people.

### The good news

- Large declines in death rates (mostly due to declines in injury deaths).
- Declines in asthma hospitalisations, notifications for hepatitis (A, B and C) and improved survival for cancer, with survival for melanoma very high.
- Favourable trends in some risk and protective factors, such as declines in smoking and illicit substance use, and most Year 10 and Year 12 students using contraception.
- The majority of young people rate their health as 'good', 'very good' or 'excellent'.
- Most young people are achieving national minimum standards for reading, writing and numeracy, are fully engaged in study or work, and have strong support networks.
- Most young people are able to get support from outside the household in times of crisis.

### Things to work on

- Rising rates of diabetes and sexually transmissible infections (largely chlamydia), and high rates of mental disorders and, among males, road transport accident deaths.
- Too many young people are overweight or obese, not meeting physical activity or fruit and vegetable guidelines, are drinking at risky or high-risk levels for short-term or long-term harm, are victims of alcohol- or drug-related violence, or are homeless.
- Although there have been improvements in some of these areas, the rates remain too high.

## Aboriginal and Torres Strait Islander young people

Indigenous young people are far more likely to be disadvantaged across a broad range of health, community and socioeconomic indicators compared with non-Indigenous young people. They are:

- twice as likely to die from all causes (6 times as likely from assault and 4 times from suicide)
- 10 and 6 times as likely to have notifications for sexually transmissible infections and hepatitis
- 6 times as likely to be teenage mothers
- 6–7 times as likely to be in the child protection system
- 15 times as likely to be in juvenile justice supervision or in prison
- twice as likely to be unemployed or on income support
- 3 times as likely to live in overcrowded housing
- 2–3 times as likely to be daily smokers.

### Young people living in remote areas

- have higher death rates
- have more dental decay
- are less likely to access general practitioners
- are less likely to meet minimum standards for reading, writing and numeracy and to be studying for a qualification
- are more likely to be in jobless families and live in overcrowded housing.

## Data gaps

- There are still a number of indicators for which there is a lack of national data, data for relevant age groups or recent available data including sun protection, sexual and reproductive health, community participation, sexual assault, oral health and mental health.
- Some indicators require significant indicator and data development—family functioning, and school relationships and bullying—and there are other areas of emerging concern that may require future indicator development. These include sleep disorders, media and communications, and the effects of climate change.

## Summary table: achievements, concerns and the unknown

Indicator area	Achievements	Areas of concern	What we don't know
Health status and wellbeing	<p>Youth mortality rates have halved between 1987 and 2007 (largely due to declines in injury).</p> <p>Asthma prevalence and hospitalisations have declined.</p> <p>Notifications for hepatitis (A, B and C) have seen large declines.</p> <p>Cancer survival continues to improve, with most surviving from melanoma of the skin (96% survival rate).</p>	<p>Indigenous young people have poorer outcomes in many areas (e.g. death rates over twice as high).</p> <p>Incidence of insulin-dependent diabetes is increasing (41% increase since 2001).</p> <p>Notifications for sexually transmissible infections have increased fourfold, mostly due to increases in notifications for chlamydia.</p> <p>Death rates from road transport accidents and suicide are high, particularly for males. Intentional self-harm among females is also of concern.</p>	<p>Whether the increase in GP encounters for mental health problems is a result of an increase in prevalence or an increase in seeking help.</p> <p>Prevalence of mental health disorders among 12–15 year olds.</p> <p>Whether the proportion of deaths from suicide has changed over time.</p> <p>Incidence of sleep disorders, malaise and psychosomatic symptoms among young people.</p>
Factors influencing health	<p>Smoking and illicit substance use have declined since 1998 (48% decline each).</p> <p>Almost all sexually active Year 10 and Year 12 students use contraception.</p>	<p>Over one-third of young people are overweight or obese, and less than half (46%) meet physical activity guidelines.</p> <p>Most young people (95%) do not consume recommended amounts of both fruit and vegetables.</p> <p>Considerable proportions are drinking alcohol at risky or high-risk levels for short-term harm (30%) and long-term harm (12%), and using illicit substances (19%).</p> <p>Teenage birth rate compares unfavourably with other OECD countries (22nd out of 26 countries) and is 5 times as high among young Indigenous women.</p>	<p>Overall use of sun protection among young people.</p> <p>Sexual behaviours of young adolescents.</p>
Families and communities	<p>Most young people (96%) can get help from outside the household in a time of crisis.</p> <p>Nearly three-quarters (72%) of young adults are involved in social groups or community support groups.</p>	<p>One in five young people live with parents with mental health problems.</p> <p>Nearly four in ten (38%) young people are victims of alcohol- and drug-related violence.</p> <p>Indigenous young people are overrepresented in the child protection system (5–7 times as high), and in the juvenile justice system and prison (each 15 times as high).</p>	<p>How many young people live in healthy, functioning families.</p> <p>Prevalence of bullying in schools.</p> <p>Prevalence of child abuse and neglect and whether this has changed over time.</p>
Socioeconomic factors	<p>Most Year 7 and Year 9 students meet or exceed minimum standards in reading, writing and numeracy (83–96%).</p> <p>Four in five young people fully participate in work or study.</p>	<p>One in ten young people are unemployed, twice as high as the overall labour force population.</p> <p>One in three young people live in households experiencing financial stress.</p> <p>One in ten young people live in jobless families.</p> <p>Indigenous young people experience poorer educational outcomes and are less likely to meet national minimum standards for literacy and numeracy—20–30 percentage points lower than non-Indigenous students.</p>	



## National indicators of youth health and wellbeing: quick reference guide

Key: ✓ = favourable trend; ✗ = unfavourable trend; ~ = no change or no clear trend; .. = no trend data available or presented.

Health status and wellbeing		Year of data	Value	Trend
<b>Physical and mental wellbeing</b>	Proportion of young people aged 15–24 years rating their health as 'excellent', 'very good' or 'good' <sup>(a)</sup> <sup>(b)</sup>	2007–08	93%	~
<b>Disability and activity limitation</b>	Proportion of young people aged 15–24 years with severe or profound core activity limitation	2009	7%	..
<b>Deaths</b>	Death rates for young people aged 12–24 years	2007	37 per 100,000	✓
<b>Mental health</b>	Proportion of young people aged 16–24 years having high or very high levels of psychological distress as measured by the Kessler 10 (K10) scale <sup>(a)(b)</sup>	2007	9%	~
	Prevalence of mental disorders among young people aged 16–24 years <sup>(a)(b)</sup>	2007	26%	..
<b>Injury and poisoning</b>	Injury and poisoning death rate for young people aged 12–24 years	2007	25 per 100,000	✓
	Road transport accident death rate for young people aged 12–24 years	2009	9 per 100,000	✓
	Assault death rate for young people aged 12–24 years	2007–08	1.3 per 100,000	✓
	Suicide rate for young people aged 15–24 years <sup>(a)</sup>	2007	10 per 100,000	✓
	Accidental poisoning death rate for young people aged 12–24 years	2007	1.1 per 100,000	~
	Injury and poisoning hospitalisation rate for young people aged 12–24 years	2008–09	2,199 per 100,000	✗
<b>Chronic conditions</b>	Prevalence of long-term conditions among young people aged 12–24 years	2007–08	60%	✓
	Proportion of young people aged 12–24 years with asthma as a long-term condition	2007–08	11%	✓
	Incidence of diabetes among young people aged 15–24 years <sup>(b)</sup>	2007	31 per 100,000	✗
	Incidence of cancer per 100,000 young people aged 12–24 years	2007	26 per 100,000	~
<b>Communicable diseases</b>	Incidence of vaccine-preventable diseases among young people aged 12–24 years	2008	73 per 100,000	~
	Pertussis	2008	64 per 100,000	~
	Hepatitis A, B and C notification rates for young people aged 12–24 years	2008	67 per 100,000	✓
	Hepatitis A	2008	1.8 per 100,000	✓
	Hepatitis B	2008	29 per 100,000	✓
	Hepatitis C	2008	36 per 100,000	✓
	HIV infection notification rate for young people aged 12–24 years	2008	3.1 per 100,000	✗
	Incidence of notifiable sexually transmissible infections among young people aged 12–24 years	2008	1,045 per 100,000	✗
Chlamydia	2008	945 per 100,000	✗	
<b>Oral health</b>	Proportion of young people aged 12 and 15 years decay-free <sup>(a)</sup>	2003–2004	12 years 58% 15 years 43%	~
	Mean number of decayed, missing or filled teeth (DMFT) at 12 and 15 years <sup>(a)</sup>	2003–2004	12 years 1.03 15 years 2.01	~

Factors influencing health		Year of data	Value	Trend
Overweight and obesity	Proportion of young people aged 12–24 years who are overweight or obese	2007–08	35%	..
Physical activity	Proportion of young people aged 15–24 years meeting the National Physical Activity Guidelines <sup>(b)(c)</sup>	2007–08	44%	..
Nutrition	Proportion of young people aged 12–24 years meeting Australian Dietary Guidelines	2007–08	5%	✘
Sun protection	Proportion of young people aged 12–24 years using sun protection			
	Use sunscreen (12–17 year olds) <sup>(b)</sup>		37%	~
	Wore sunglasses (18–24 year olds) <sup>(b)</sup>	2006–07	47%	✘
Substance use	Reported rate for substance use disorders for young people aged 16–24 years <sup>(b)</sup>	2007	13%	..
	Proportion of young people aged 12–24 years who are daily smokers	2007	11%	✓
	Proportion of young people aged 12–24 years who drink at risky or high-risk levels in the short term (ST) or long term (LT)	2007	30% (ST) 12% (LT)	~ ~
	Proportion of young people aged 12–24 years who had used an illicit drug within the last 12 months	2007	19%	✓
Sexual and reproductive health	Proportion of young people in Year 10 and Year 12 who have had sexual intercourse <sup>(b)</sup>	2008	40%	✘
	Proportion of young people in Year 10 and Year 12 who used a form of contraception at their most recent sexual encounter <sup>(b)</sup>	2008	99.8%	✓
	Age-specific birth rate for 15–19 year old women <sup>(a)</sup>	2008	17 per 1,000	~
Family and community factors		Year of data	Value	Trend
Family functioning	Under development		Data not available	
Parental health and disability	Proportion of parents rating their health as 'fair' or 'poor'	2008	16%	~
	Proportion of young people aged 15–24 years living with a parent with disability <sup>(b)</sup>	2003	25%	..
	Proportion of parents with a mental health problem	2008	19%	~
Social capital	Proportion of young people aged 18–24 years who are able to get support in a time of crisis from persons living outside the household <sup>(b)</sup>	2006	96%	~
Community and civic participation	Community participation rate for young people aged 18–24 years <sup>(b)</sup>	2006	72%	..
	Proportion of 17 and 18 year olds who have registered to vote	2008	19% (17 years) 60% (18–19 years)	✘
School relationships and bullying	Under development		Data not available	
Child protection	Rate of young people aged 12–17 years who were the subject of a substantiation or a child protection notification received in a given year <sup>(a)</sup>	2009–10	4.4 per 1,000	~
	Rate of young people aged 12–17 years who are the subject of care and protection orders <sup>(a)</sup>	2010	7.2 per 1,000	✘
Victims of violence	Rate of young people aged 15–24 years who have been the victim of physical or sexual assault <sup>(b)</sup>	2008–09	7%	..
	Alcohol- and drug-related violence victimisation rate for young people aged 12–24 years	2007	38%	✓
Young people and crime	Rate of young people aged 12–17 years who are under juvenile justice supervision <sup>(a)</sup>	2008–09	3.3 per 1,000	✘
	Rate of imprisonment for young people aged 18–24 years <sup>(a)</sup>	2009	2.6 per 1,000	✓
Environmental tobacco smoke	Proportion of households with young people aged 12–17 years where a household member smoked inside the home <sup>(a)</sup>	2007–08	12%	..
Homelessness	Proportion of young people aged 12–24 years who are homeless	2006	Less than 1%	✓
Overcrowded housing	Proportion of young people aged 15–24 years who live in overcrowded housing <sup>(b)</sup>	2007–08	9%	..

Socioeconomic factors		Year of data	Value	Trend
Education	Proportion of young people in Year 7 and Year 9 achieving at or above the national minimum standards for literacy and numeracy <sup>(a)</sup>	2009	Reading 90–96%	..
			Writing 83–96%	
			Numeracy 95–95%	
	Apparent retention rate from Year 7/8 to Year 12 <sup>(a)</sup>	2009	76%	~
	Proportion of young people aged 15–24 years undertaking study leading to qualifications <sup>(a)</sup>	2009	57%	✓
Employment	Full-time participation rate of young people aged 15–24 years in education or employment <sup>(a)</sup>	2009	81%	~
	Unemployment rate for young people aged 15–24 years <sup>(a)</sup>	2010	10.6%	✘
Income	Proportion of young people aged 15–24 years receiving government income support <sup>(a)</sup>	2008	17%	✓
	Proportion of young people aged 18–24 years who live in households that experience financial stress <sup>(b)</sup>	2006	36%	~
Socioeconomic status of parents	Proportion of young people aged 12–24 years whose parents did not complete secondary school (Year 10 or above)	2008	9%	~
	Proportion of young people aged 12–24 years living in jobless families	2006–07	11%	✓
Health system performance		Year of data	Value	Trend
Potentially preventable hospitalisations	Potentially preventable hospitalisation rate for young people aged 12–24 years	2008–09	1,086 per 100,000	✘
Teenage purchase of cigarettes and alcohol	Proportion of teenage smokers aged 12–17 years who personally purchased their most recent cigarette <sup>(a)</sup>	2005	23%	✓
	Proportion of teenage drinkers aged 12–17 years who personally purchased their most recent alcoholic drink <sup>(a)</sup>	2005	8%	✓
Survival for melanoma of the skin	Five-year relative survival rate for melanoma of the skin for young people aged 12–24 years	1998–2004	96%	✓
Cervical cancer	Cervical screening rates among women aged 20–24 years <sup>(a)</sup>	2007–08	47%	~
	Cervical cancer vaccination rates among women aged 12–24 years	2007	44–77%	..
Appropriate use of antibiotics	Proportion of upper respiratory tract infections managed for which oral antibiotics were prescribed	2008–09	57%	~
Delivery by caesarean section	Caesarean sections as a proportion of all deliveries for young women aged 15–24 years who gave birth <sup>(a)</sup>	2008	21%	✘
General practice consultations	Rate of general practice encounters for young people aged 12–24 years	2008–09	3.2 per person	✘
Waiting times in emergency departments	Proportion of patients aged 12–24 years who are treated within national benchmarks for waiting times across triage categories in public hospital emergency departments,	2008–09	70%	~
Adverse events treated in hospitals	Proportion of hospitalisations for young people aged 12–24 years where an adverse event was treated and/or occurred	2008–09	4%	~

(a) Most appropriate age range for indicator.

(b) Source data not available for full age range.

(c) A proxy measure is used to determine whether National Physical Activity Guidelines are met. See *Chapter 13 Physical activity* for more information.



# Part I

## BACKGROUND

### 1 Introduction

The health and wellbeing of young people not only affects their immediate quality of life and productivity but also shapes the future health of the whole population and, in a broader social sense, the health of society (Eckersley 2008). Tackling health and wellbeing issues when they occur in adolescence is socially and economically more effective than dealing with enduring problems in adulthood. Many of the attitudes and behaviours—even the illnesses—that largely determine adult health and wellbeing have their origins in childhood, adolescence and early adulthood. The benefits of investing in young people flow through to the entire population, with outcomes as disease, stronger families, and safer and more connected communities.

When young people are in good health they are more likely to achieve better educational outcomes, make a successful transition to full-time work, develop healthy adult lifestyles, experience fewer challenges forming families and parenting their own children, and are more actively engaged citizens (Muir et al. 2009). 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. Youth is a critical period for the reinforcement of positive health and social behaviours, as behaviours at this age are strong predictors of behaviours in later life (Muir et al. 2009).

The health and wellbeing of Australia's young people, and ensuring that they get the best possible start in life, are therefore central to the health, social inclusion and productivity agendas of the Australian Government. Policy initiatives in these areas draw on the principles of early intervention and prevention in recognition that young people are the key to Australia's future (see Box 1.1 for information on government reforms relating to young people).

The main areas that are critical for longer term outcomes for young people include relationships with friends and family, physical and mental health and wellbeing, education, employment and

income. Also important are other issues such as social participation, the use of technology, civic engagement, risk-taking behaviour and body image. This report includes information that covers most of these areas.

Youth, defined in this report as 12–24 years, includes the three main stages of adolescence—early, middle and late—in which physical, intellectual, emotional and social changes take place. While the actual age of each stage is different for each individual, youth is the period when the balance of influences on young people's behaviour shifts from the decisions and actions of their parents and guardians to their own and that of their peers. The environment and experiences of childhood years, however, are still important in youth development, as these provide the building blocks for current and later physical and mental health.

During adolescence and early adulthood, young people go through physical, social, emotional and neural developmental transitions. Physical and sexual maturation will normally be complete by the late teenage years (Lee 1980; Tanner 1963) but social, emotional and neural development takes longer. There is now strong evidence that brain development is not complete until the early 20s and that the area of the brain responsible for self-control, judgment and decision making is the last to mature (NIMH 2001).

The three stages of adolescence each have their own developmental changes. In early adolescence, young people enter puberty and begin the process of sexual maturation. Their friends start to become more important to them and they start to question the values of their immediate family. In middle adolescence, physical changes continue and young people rely more heavily on their friends and peer groups for support. They may begin to experiment with drugs, alcohol or engage in other risk-taking behaviours. By late adolescence, physical changes level off and adult thinking is more developed, though not yet fully mature (Chown et al. 2008).

The period of adolescence and young adulthood is largely one of good physical health, with attributes such as strength, speed, fitness and many cognitive abilities at their peak. However, puberty also brings a new set of health risks, some with potentially life-threatening consequences. The likelihood of injury increases, particularly among young men in late adolescence, as the propensity to engage in risk-taking behaviour increases. The risk of ill health from sexually transmissible infections, including HIV, increases as young people reach sexual maturity and become sexually active (Patton et al. 2009). Adolescence is also the time when some mental disorders may develop, although they may not be detected until later in adulthood. In turn, mental disorders may be associated with an increased risk of intentional self-harm, suicidal behaviour or suicide (Patel et al. 2007a). Consequently, health profiles change rapidly throughout the period of adolescence and early adulthood.

For young people in Australia, the transition to adulthood is made more complex by the social, economic, environmental and technological changes that have occurred both nationally and internationally in recent decades. The pathways from education to work have become more varied and complex and often extend over longer periods. Decreased job security and increased housing costs mean that young people often live in the parental home for longer. Socially, the current generation of young people has different ways of communicating than previous generations, having never known a world without constant access to mobile phones, the internet and email. For this current generation, there are additional global challenges to face, including climate change, terrorism, global economics, ageing societies and infrastructure (DEEWR 2010).

### Box 1.1: Government policy priorities and reforms relating to young people

At the national level, the most important policies for youth and family support in the past few years have been the development of the National Strategy for Young Australians and the National Reform Agenda on Human Capital of the Council of Australian Governments (COAG).

The Australian Government has embarked on a number of initiatives relating to young people. The current policy environment has a strong focus on education, employment and homelessness. The National Strategy for Young Australians, the Social Inclusion Agenda and the Closing the Gap on Indigenous Disadvantage initiative cut across a broad range of areas. Many of these reforms are being progressed through the COAG process. Key priorities and objectives in relation to young people include:

#### **Education and promoting economic independence**

- developing and implementing a national curriculum in key learning areas by 2011
- developing and implementing a Compact with Young Australians to create conditions that maximise the number of young people who remain in, or return to, education and training
- initiatives to increase Year 12 attainment (or equivalent) by 2015, and improving the transition to further education, training or employment

#### **Homelessness**

- reducing and preventing homelessness among young people, and breaking the cycle of homelessness

#### **Safety**

- improving the protection of children and young people through prevention, early intervention and best practice strategies under the National Framework for Protecting Australia's Children 2009–2020

#### **Closing the Gap on Indigenous Disadvantage initiative**

- halving the gap in reading, writing and numeracy achievements for children within a decade
- halving the gap for Indigenous students in Year 12 attainment (or equivalent) by 2020
- halving the gap in employment outcomes between Indigenous and non-Indigenous Australians within a decade

#### **Social Inclusion Agenda**

- ensuring that all Australians are able to play a full role in all aspects of Australian life through a variety of measures, including reducing the incidence and meeting the needs of jobless families with children, delivering effective support to children and young people at greatest risk of long-term disadvantage, reducing the incidence of homelessness, closing the gap in disadvantage for Indigenous youth and assisting in the employment of people with disability or mental illness.

## Purpose of the report

Timely, accurate and comprehensive information on the health and wellbeing of young people is essential for monitoring the progress of Australia's youth, and is critical for the development of evidence-based policy. Since 1999, the Australian Institute of Health and Welfare (AIHW) has produced three comprehensive national statistical reports on the health and wellbeing of young Australians (in 1999, 2003 and 2007), as well as a summary indicator-based report on measures of progress for children and youth, *Making progress* (AIHW 2008g). Complementing the reporting on youth, the AIHW reports every 4 years on the health and wellbeing of children aged 0–14 years, in *A picture of Australia's children* (1998, 2002, 2005, 2009).

This report, *Young Australians: their health and wellbeing 2011*, the fourth in the series, builds on work previously undertaken by the AIHW on the development and reporting of national indicators of young people's health and wellbeing. It presents information for young people aged 12–24 years on a broad range of indicators in the areas of health status, risk and protective factors influencing health and wellbeing, family and community environments, socioeconomic factors (education, employment, income), and health system performance. New topics in this fourth edition include school relationships and bullying, survival for melanoma of the skin, general practice consultations, cervical cancer vaccination rates, and teenage purchase of alcohol. In addition, some indicators from previous reports have been refined to better reflect policy requirements and improved data availability. These include indicators for substance use disorders, alcohol use, academic achievement, educational retention rates, social capital and financial stress.

While information is presented for the target age group of 12–24 years wherever possible, in some cases data are presented for a subset of the age range. The main reasons for this are relevance and appropriateness (e.g. legislation, policy) and data availability (e.g. the scope of particular surveys). The most recent data at the time of publication are presented in the report, subject to availability and fitness for purpose.

## National Youth Information Framework

This report is based on the national indicators of young people's health and wellbeing developed by the AIHW in consultation with the National Youth Information Advisory Group. The development of these national indicators builds upon the extensive work undertaken over the last decade by earlier expert advisory groups, taking into account recent Australian and international research and emerging policy issues for young people. A detailed description of the process for developing these indicators is provided in the bulletin *Health and wellbeing of young Australians: indicator framework and key national indicators* (AIHW 2010h).

The national indicators in this report are based on the National Youth Information Framework, which is closely aligned with the National Health Performance Framework (NHPF), with minor modifications to better capture health and wellbeing issues relevant to young people. The NHPF consists of three tiers: health status, determinants of health and health system performance, and includes a number of dimensions within each tier (NHPC 2001). Similarly, the National Youth Information Framework incorporates these three tiers, providing a comprehensive set of indicators across a range of dimensions that will help to monitor the health and wellbeing of young Australians (see Box 1.2).

The national indicators in this report also overlap with the Council of Australian Governments' (COAG) performance indicators. Of the 71 national indicators for young people, nearly one-quarter are the same or similar to COAG performance indicators in the national agreements, in the areas of health care, disability, education, affordable housing and Indigenous reform.



Box 1.2: National indicators reported on in the National Youth Information Framework

Tier 1: Health status			
Health conditions	Human function	Wellbeing	Deaths
Mental health Injury and poisoning Chronic conditions Communicable diseases Oral health	Disability and activity limitation	Self-assessed health	Deaths
Tier 2: Determinants of health			
Health behaviours	Family, community and environmental factors	Socioeconomic factors	
Overweight and obesity Physical activity Nutrition Sun protection Substance use Sexual and reproductive health	Family functioning Parental health and disability Social capital Community and civic participation School relationships and bullying Child protection Victims of violence Young people and crime Environmental tobacco smoke Homelessness Overcrowded housing	Education Employment Income Socioeconomic status of parents	
Tier 3: Health system performance			
Potentially preventable hospitalisations Teenage purchase of cigarettes or alcohol Survival of melanoma of the skin Cervical cancer screening Appropriate use of antibiotics Delivery by caesarean section General practice consultations Waiting times in emergency departments Adverse events treated in hospital			

## Report structure

The tiers and dimensions of the National Youth Information Framework form the basis of the structure of this report. There are five major parts to this report:

- Health status and wellbeing (Part II)
- Factors influencing health (Part III)
- Family and community factors (Part IV)
- Socioeconomic factors (Part V)
- Health system performance (Part VI).

Information on demographic and family characteristics is presented first, in Part I, to provide context for the information that follows.

In order to highlight the disparities in health and wellbeing experienced among subpopulations of young Australians, information is included on Aboriginal and Torres Strait Islander young people, and young people from regional, remote and socioeconomically disadvantaged areas (where robust data are available). In particular, this report includes a feature chapter on Aboriginal and Torres Strait Islander young people (Part VII), which explores issues affecting the health and wellbeing of this population group.

Information on data gaps and data development activities relating to young people are also discussed in this report (Part VIII).



## 2 Young people in Australia: demographic overview

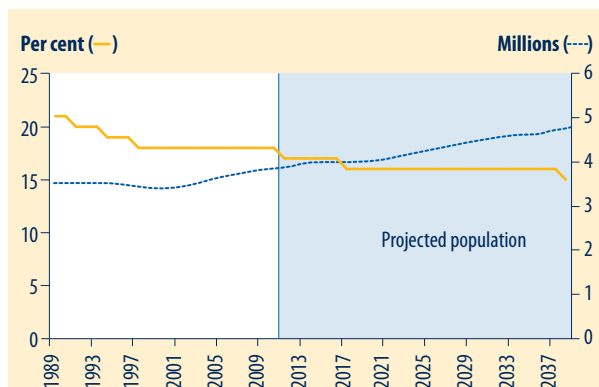
This chapter describes Australia's youth population in terms of size, composition and growth as well as regional distribution and cultural diversity. It provides a context for exploring the influences on young people's health and wellbeing. The size and composition of the youth population, including changing demographic trends, are important for policy development and planning, to provide and deliver the services required by young people, including education, health and welfare services.

There are a number of ways to define young people, depending on particular data collections or legal requirements. In this report young people are generally defined as aged 12–24 years. This may vary depending on the data source and what is considered to be appropriate for the indicator.

### How many young people live in Australia?

At 30 June 2009, there were nearly 4.0 million young people aged 12–24 years in Australia (2.0 million males and 1.9 million females), representing just under one-fifth of the total Australian population. Males made up a slightly higher proportion of the youth population than females (51% compared with 49%). Young people aged 15–19 and 20–24 years each accounted for around two-fifths of the total youth population; those aged 12–14 years accounted for around one-fifth (Table 2.1).

Between 1989 and 2009, the population of young people aged 12–24 years grew, on average, by about 0.6% per annum compared with 1.3% for the total Australian population. However, over the past 5 years, growth in both population groups has been



Note: Population projections (2010 onwards) are based on ABS Projection Series B. See ABS 2008h for the assumptions on which Projection Series B is based.

Sources: ABS 2009a and ABS 2008h

**Figure 2.1: Number of young people, and young people as a proportion of the total Australian population, 1989–2038**

about the same, at 1.5%. Although the number of young people has been increasing over the last two decades (from 3.5 to 4.0 million between 1989 and 2009), the youth population as a proportion of the total population has been steadily declining due to sustained low fertility and increased life expectancy, also known as 'population ageing'. As a result, the proportion of young people in the population has fallen from 21% in 1989 to 18% in 2009, and is projected to fall to 15% by 2038 (Figure 2.1). Despite this, the number of young people in Australia is projected to continue to grow, from 4.0 million in 2009 to 4.8 in 2038. These demographic projections are based on a total fertility rate of 1.8 per woman. This may underestimate the projected number of

**Table 2.1: Young people in Australia, June 2009**

Age group	Males		Females		Total young people	
	Number	Per cent	Number	Per cent	Number	Per cent
12–14 years	436,846	4.0	414,573	3.8	851,419	3.9
15–19 years	772,228	7.1	727,168	6.6	1,499,396	6.8
20–24 years	833,469	7.6	782,583	7.1	1,616,052	7.4
12–24 years	2,042,543	18.7	1,924,324	17.5	3,966,867	18.1
<b>Total Australian population</b>	<b>10,931,694</b>		<b>11,023,562</b>		<b>21,955,256</b>	

Source: AIHW population database (2010)

young people, as the fertility rate increased to 2.0 births per woman in 2008 before declining slightly to 1.9 in 2009 (ABS 2009c).

## Aboriginal and Torres Strait Islander young people

In 2006 there were an estimated 138,400 Aboriginal and Torres Strait Islander young people in Australia, making up 3.7% of the total youth population (Table 2.2). The gender distribution of Indigenous young people was the same as for all young people in Australia.

In contrast to the non-Indigenous population, the Indigenous population had a much younger age structure (Figure 2.2). This reflected the higher birth rate among Indigenous women (2.5 births) compared with all women, as well as the shorter life expectancy among Indigenous Australians (AIHW 2010b). Although Indigenous young people made up a small proportion of the total Australian

youth population, they represented more than one-quarter of the Indigenous population (27%)—1.5 times that of young people in the total Australian population (18%).

## Where do young people live?

The distribution of young people is similar across each of the states and the Australian Capital Territory—between 17% and 19% of the population in each of these jurisdictions in 2009. However, the Northern Territory has a slightly younger population than the other jurisdictions, with young people making up 20% of its population (Table 2.3).

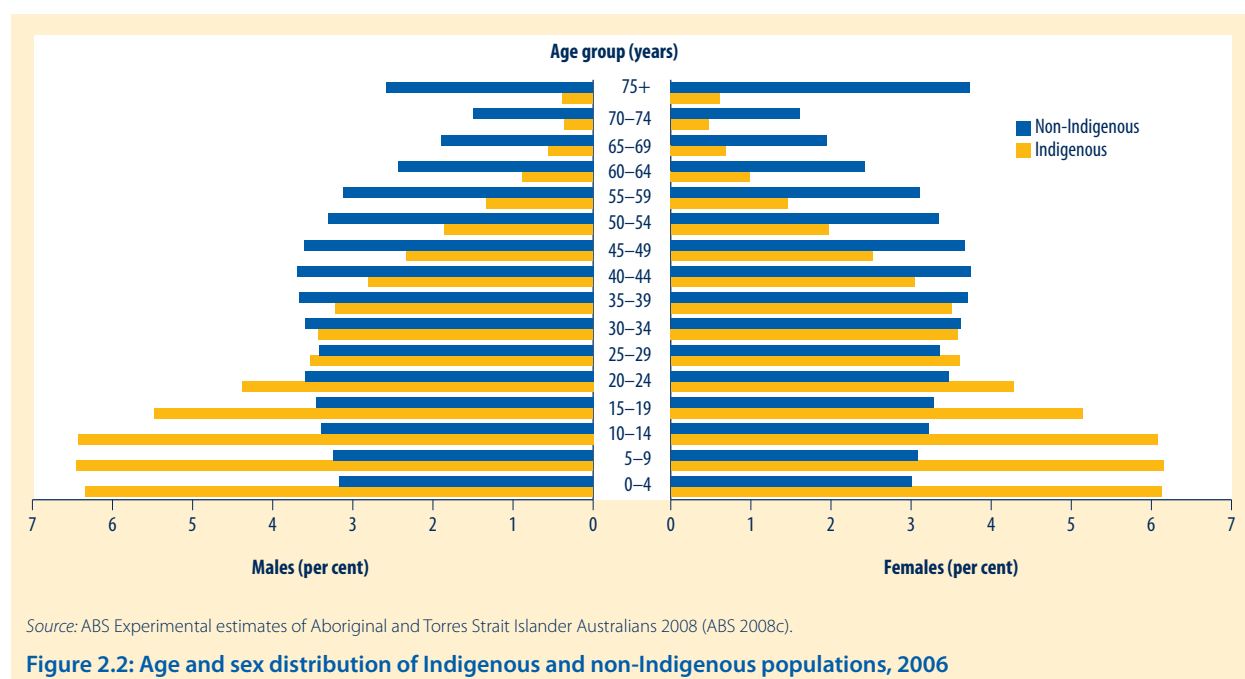
Three-quarters of the youth population live in the three most populous states—in 2009 almost one-third lived in New South Wales, one-quarter in Victoria and one-fifth in Queensland. This is similar to the population distribution for all Australians across the states and territories.

In 2006, the majority of young Australians aged

**Table 2.2: Indigenous young people aged 12–24 years, June 2006**

Age group	Males		Females		Young people	
	Number	Per cent <sup>(a)</sup>	Number	Per cent <sup>(a)</sup>	Number	Per cent <sup>(a)</sup>
12–14 years	19,870	4.6	18,780	4.6	38,650	4.6
15–19 years	28,329	3.9	26,614	3.9	54,943	3.9
20–24 years	22,657	3.0	22,122	3.1	44,779	3.0
12–24 years	70,856	3.7	67,516	3.7	138,372	3.7

(a) Proportion of equivalent Australian youth population in 2006  
Source: AIHW population database (2010) and (ABS 2008c)



**Figure 2.2: Age and sex distribution of Indigenous and non-Indigenous populations, 2006**

**Table 2.3: Distribution of young people across the states and territories, June 2009**

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia <sup>(a)</sup>
Proportion of state or territory population <sup>(b)</sup> (per cent)									
12–14 years	3.8	3.7	4.1	4.0	3.8	4.1	3.7	4.4	3.9
15–19 years	6.8	6.7	7.0	7.0	6.7	6.9	6.9	7.5	6.8
20–24 years	7.2	7.6	7.3	7.5	7.0	6.2	8.7	8.2	7.4
12–24 years	17.8	18.1	18.4	18.5	17.4	17.2	19.2	20.1	18.1
Proportion of Australian population 12–24 years <sup>(c)</sup> (per cent)									
12–24 years	32.0	24.8	20.5	10.5	7.1	2.2	1.7	1.1	100.0

(a) Includes other territories comprising Jervis Bay Territory, Christmas Island and the Cocos (Keeling) Islands.

(b) The denominator is the relevant total state or territory population.

(c) The denominator is the total Australian population aged 12–24 years.

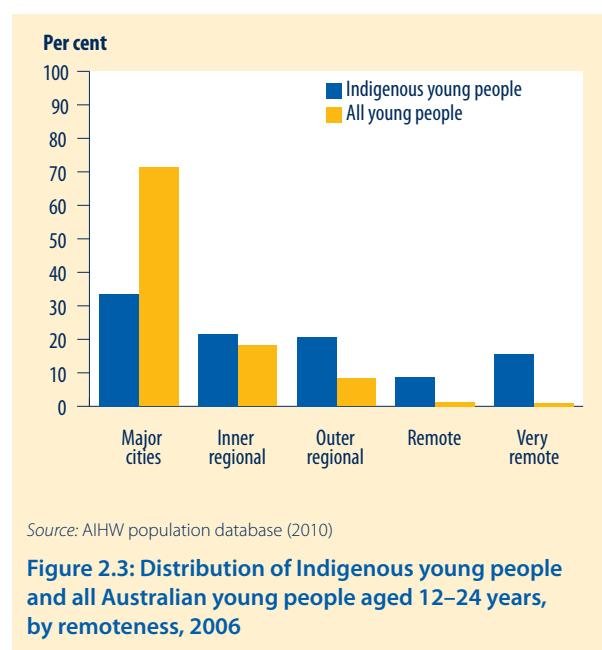
Source: AIHW population database (2011).

15–24 years (71%) lived in *Major cities*, 26% lived in *Inner* and *Outer regional* areas, and 2% lived in *Remote* and *Very remote* areas (Figure 2.3). People aged 15–24 and 25–44 years were more likely to live in *Major cities* than other age groups, and less likely to live in regional and remote areas, reflecting perhaps the greater availability of employment, education and training opportunities in these areas. These patterns have remained relatively constant over the last decade.

Indigenous young people are more evenly distributed across the regions, but the highest proportion still lives in *Major cities* (34%, or 33,400 young Indigenous people), followed by *Inner* and *Outer regional* areas (22% and 21% respectively), *Very remote* areas (16%) and *Remote* areas (9%). They were 11 times as likely to live in *Remote* and *Very remote* areas as all young Australians (Figure 2.3). Indigenous young people accounted for 38% of all young Australians in *Remote* and *Very remote* areas, despite accounting for under 4% of all young people in 2006.

### Interstate movement

People in their twenties are more likely than others to move interstate, as they seek education, employment, career or housing opportunities. In 2008–09, young people aged 20–24 years were the second largest single group to move interstate (50,500 movements), only exceeded by those aged 25–29 years (51,400). In comparison, 15–19 year olds were around half as likely to move interstate (27,300 movements). For young people, the most popular destination was Queensland, where the net gain for the 12-month period was nearly 4,000 young people aged 15–24 years (ABS 2010h).



**Figure 2.3: Distribution of Indigenous young people and all Australian young people aged 12–24 years, by remoteness, 2006**

## Cultural and linguistic diversity

Australia is one of the most culturally diverse countries in the world, with one-quarter of the Australian population born overseas. The proportion of young people aged 15–24 years born overseas is slightly lower than for the general population—22% or 675,300 young people in 2009 (ABS 2010h).

While most young people were born in Australia (78% or 2.4 million at 30 June 2009), around 167,700 (5%) were born in other English-speaking countries (the United Kingdom, New Zealand, the Republic of Ireland, Canada, the United States and South Africa) and around 507,600 (16%) were born

in all other countries (ABS 2010h). Even higher, however, according to the Australian Bureau of Statistics Census of Population and Housing, is the proportion of young people with one or both parents born overseas—in 2006, 27% of young people had both parents born overseas and a further 17% had one parent born overseas (the father for 10% and the mother for 7%) (ABS 2007a).

Of young people aged 15–24 years who were born in mainly non-English-speaking countries, the largest groups were from China (excluding Special Administrative Regions (SARs) and Taiwan Province) (18%), India (13%), Malaysia (5%), Republic of South Korea (5%), Hong Kong (SARs of China) (4%), and the Philippines (4%) (Figure 2.4). Between 1996 and 2009 there were large increases in the proportion of young people born in these countries, particularly China (excluding SARs and Taiwan Province) and India, with rates 10 and 7 times as high in 2009 as in 1996. Considerable increases were also seen for Liberia, Sierra Leone, Sudan and Nepal (ABS 2010h). These changes in migration trends, as well as Australia's diverse cultural and linguistic backgrounds, have implications for the provision of culturally sensitive and accessible services.

Of young people born in mainly English-speaking countries, the largest proportions were from New Zealand (43%) and the United Kingdom (32%) (ABS 2010h).

## Refugee young people

The challenges of resettlement for those born overseas are perhaps greatest for those who have arrived in Australia under humanitarian programs, initially as displaced persons and more recently as refugees. At 30 June 2009, there were 56,200 young people aged 12–24 years living in Australia who had arrived under the Humanitarian Program for refugees and others in refugee-like situations since 1993–94, accounting for 1.4% of all young people aged 12–24 years in Australia. Of these young people, 14% were Sudanese, 12% were Iraqi, 8% were Afghani and 8% were African (not further defined) (Table 2.4).

In 2008–09, 4,100 young people aged 12–24 years arrived in Australia under the Humanitarian Program. Since 1998–99 the number of refugee young people has ranged from a low of 2,500 in 1999–00 to a high of 4,400 in 2004–05 (Department of Immigration and Citizenship 2010 unpublished data).

**Table 2.4: Refugee young people aged 12–24 years<sup>(a)</sup> who had arrived in Australia between 1993–94 and 2008–09, by ethnicity**

Ethnicity	Number	Per cent
Sudanese <sup>(b)</sup>	7,562	13.5
Iraqi <sup>(c)</sup>	6,977	12.4
Afghani <sup>(d)</sup>	4,869	8.7
African (not further defined)	4,645	8.3
Bosnian/Bosniac	3,257	5.8
Serbian/Serb	3,164	5.6
Burman <sup>(e)</sup>	1,765	3.1
Other <sup>(f)</sup>	19,138	34.1
Unknown <sup>(g)</sup>	4,802	8.5
<b>Total</b>	<b>56,179</b>	<b>100.0</b>

(a) At 30 June 2009.

(b) 'Sudanese' includes Agaar, Bor, Dinka and Nuer/Neuer.

(c) 'Iraqi' includes Chaldean.

(d) 'Afghani' includes Hazara and Pashtun.

(e) 'Burman' includes Karen, Chin and Rohingya.

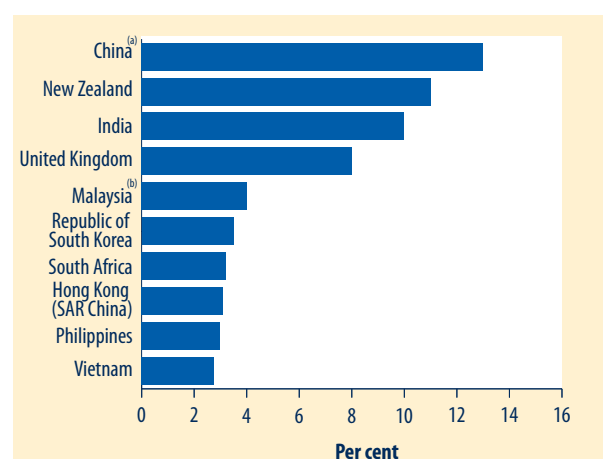
(f) 'Other' includes other specified ethnicity, stateless, no specific ethnicity and none.

(g) 'Unknown' includes not recorded, inadequately described and not stated/refused.

Note:

Ethnic groups commonly reported for young people arriving under the Humanitarian Program for refugees are separately identified in this table, while ethnic groups less frequently reported are grouped under 'other'.

Source: Australian Government Department of Immigration and Citizenship unpublished data.



Notes:

(a) Excludes Special Administrative Regions (SAR) and Taiwan Province.

(b) Includes Channel Islands and Isle of Man.

Source: ABS 2010h

**Figure 2.4: Leading countries of birth for young people aged 15–24 years born overseas, 2009**

## 3 Australian families

Families play a crucial role in the lives of most young people in Australia as they provide the environment in which young people are cared for. Through interactions in daily life, family members can have important influences in shaping adolescents' behaviours and choices during the transition from dependent children to independent adults. Research has shown that positive youth development is associated with favourable family environment factors, such as close family relationships, strong parenting skills, good communication and positive adult behaviours (Aufseeser et al. 2006; Hemphill et al. 2004).

Over the past two decades, social changes have seen people more likely to postpone partnering and childbearing, more likely to be divorced or separated and more likely to live longer than previous generations. As a result, family structures and compositions have become more diverse (ABS 2009k). Some families now experience a number of changes, such as family breakdown, re-partnership to form a step-family and, if children are born to the new couple, a blended family. Some young people may therefore experience a number of family transitions in their childhood or adolescence, and these changes can have significant effects on young people.

The conflicts and stresses young people are exposed to during family dissolution or the re-partnering of parents can lead to negative effects on their mental wellbeing. For some, these stresses result in poorer self-reported health status (Cartwright 2006; Heard et al. 2008; Young & Ehrenberg 2007). Family dissolution can have a profound effect on young people's transition into independent adult life. For example, young adults from divorced or separated families may find it harder to adjust to university life compared with those from intact families, and family changes may affect young people's attitudes towards relationship formation and cohabitation (Ames 2009; Cartwright 2006; Yu & Adler-Baeder 2007).

Changes in family structures do not always have negative effects on young people. There are many intervening factors, such as the quality of parent-child relationships, parenting style and supervision, that affect young people's ability to adjust to change. The transition may even help young people realise or build up their inner strength and self-determination (Cartwright & McDowell 2008).

These characteristics are conducive to young adults' adjustment to independent life.

This chapter describes the characteristics of Australian families in terms of family formation, dissolution and composition, and the living arrangements of young people.

### Family formation and dissolution

Since the 1970s the profile of Australian families has changed considerably with regard to marriage and long-term relationships. Fewer Australians are entering a registered marriage, and those who do, tend to marry at an older age. The crude marriage rate fell from 7.0 to 5.5 per 1,000 population between 1989 and 2008 and the median age at first marriage increased by almost 4 years over this period (ABS 2009i). These lower rates of marriage are associated with an increase in de facto relationships, with rates more than doubling over the last two decades (from 6% to 15% between 1986 and 2006), although in many cases these couples will eventually marry (DPMC 2008).

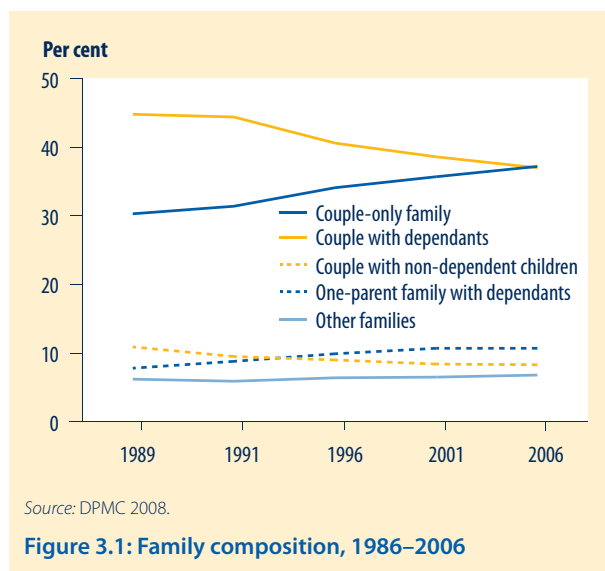
Relationship breakdown is also more common today, partly due to the increase in de facto relationships and their higher rate of relationship breakdown (Qu & Weston 2008). In terms of marriage breakdown, the divorce rate has fallen since 2000 to 2.2 per 1,000 people in 2008, after peaking at 4.5 per 1,000 people in 1976, following the implementation of the *Family Law Act 1975*, which made it easier for couples to divorce (ABS 2009i; DPMC 2008).

### Family composition

The composition of Australian families has changed considerably over the last 20 years. Although couple families with dependent children have long been the most common family type in Australia, their proportion has gradually declined from 45% of all families in 1986 to 37% in 2006. Coinciding with this decline has been an increase in the proportion of couple-only families, increasing from 30% to 37% of all families. This increase is partly due to population ageing, with more empty-nesters (older couples whose children have grown up and left home), but also reflects younger couples delaying having children or not having children at all (DPMC 2008). There has also been an increase in the



proportion of one-parent families from 8% to 11% of all families over this period. The proportion of couple families with non-dependent children has declined over this period (11% to 8%) (Figure 3.1).



**Figure 3.1: Family composition, 1986–2006**

These trends in the composition of Australian families are likely to continue. By 2026, couple families without children are projected to be the most common family type, and couple families with children are projected to decline as a proportion of all families. The proportion of one-parent families is projected to remain fairly stable (ABS 2004d).

## Living arrangements of young people

### Adolescents living with parents

Young people today grow up in a variety of family types, including couple families (intact, step- or blended families), one-parent families, non-parental care or shared care. Most young people experience a stable family environment, but some experience family dissolution or the re-partnering of parents while they are growing up. These young people may face disruptions to family life, a change in socioeconomic status, adjustments to new parent-child and sibling relationships, or changes in parenting styles and discipline (Wise 2003).

According to the Australian Bureau of Statistics' Family Characteristics and Transitions Survey, in 2006–07, most adolescents aged 12–17 years were living with parents (99%)—77% in couple and 22% in one-parent families (Table 3.1). Most of those in couple families were living in intact families (87%), with smaller

proportions living in blended families (6%) or in other arrangements such as stepfamilies, foster families or with grandparents (7%). Of those living in one-parent families, most (85%) lived with their mother. Since 1992 the proportion of young people living with parents has remained relatively stable.

**Table 3.1: Young people aged 12–17 years living with parents, by family composition, 2006–07**

Family structure	Number	Per cent <sup>(a)</sup>
Couple families	1,263,000	77.1
Intact <sup>(b)</sup>	1,096,000	66.9
Blended <sup>(c)</sup>	76,000	4.6
Other <sup>(d)</sup>	92,000	5.6
One-parent families	356,000	21.7
Lone mother	301,000	18.4
Lone father	54,000	3.3
<b>Total young people aged 12–17 years living with parents</b>	<b>1,619,000</b>	<b>98.8</b>

Notes:

- (a) As a percentage of total young people aged 12–17 years.
- (b) Couple families containing at least one child aged 0–17 years who is the natural or adopted child of both members of the couple, and no child aged 0–17 years who is the stepchild of either member of the couple. Intact families may also include other children who are not the natural or adopted children of either parent, such as foster children.
- (c) Couple families containing two or more children aged 0–17 years, of whom at least one is the natural or adopted child of both members of the couple, and at least one is the stepchild of either member of the couple. Blended families may also include other children who are not the natural children of either parent.
- (d) Other couple families that are not classified as intact or blended, for example, stepfamilies, grandparent families or families with only foster children present.

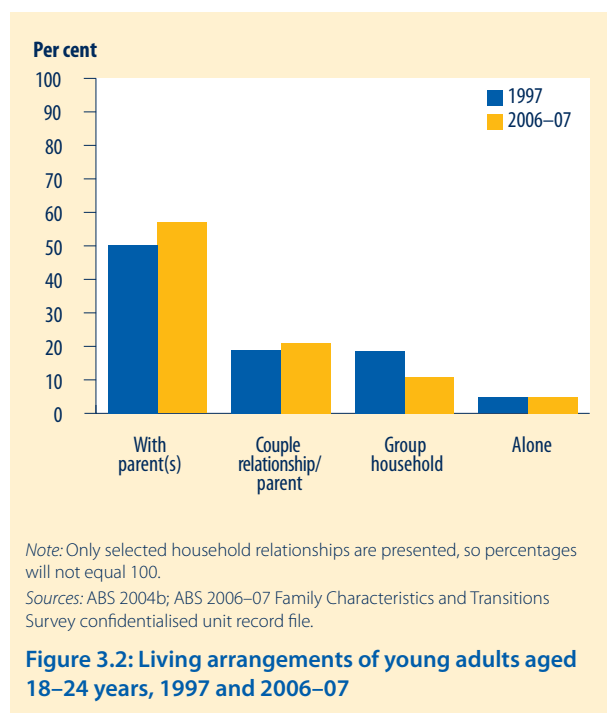
Source: AIHW analysis of the ABS 2006–07 Family Characteristics and Transitions Survey confidentialised unit record file.

Although most children live in intact families, some no longer live full time with both their natural parents—they may live full time with one parent or spend some time living with each parent in a shared-care arrangement. In 2006–07, about 228,000 (28%) young people aged 15–17 years had a natural parent living elsewhere—most of these (78%) were fathers. Of those with a natural parent living elsewhere, 35% saw their non-resident parent at least once a fortnight, and 29% saw their non-resident parent less than once a year or never (ABS 2008d).

### Living arrangements of young adults

Many young adults undergo a number of life transitions—completing study, taking up paid employment, moving away from home, forming relationships, marrying and having children (ABS 2009k). These transitions are reflected in the diversity of their living arrangements, which are

quite different from that of 12–17 year olds. In 2006–07, over half of young adults aged 18–24 years were living with one or both parents (57% or 1.1 million young adults), one in five (21% or 412,000) were themselves parents or partners in a family, 11% were living in group households and 5% lived alone (Figure 3.2). Young men were more likely to live with their parents than young women (62% compared with 51%).



Between 1997 and 2006–07, there was an increase in the proportion of young adults living with one or both parents from 50% to 57%. A trend towards staying in education for longer, delayed marriage and parenthood, and the rising cost of housing may explain this increase. Coinciding with this increase has been a decline in the proportion of young adults living in group households, from 19% to 11% in 2006–07. The proportions of young adults themselves being parents or partners in a family or living alone have remained much the same over the last decade.

For many young adults, moving out of the parental home is an important transition. In 2006–07, just over half of young adults aged 18–24 years (an estimated 53%, or around 1 million people) had moved out of the parental home at some stage, with the proportion slightly higher for females than males (55% compared with 51%). Of those aged 18–24 years who had moved out at some stage, females were more likely to have done so before

turning 18 (39% of females compared with 28% of males) (AIHW 2009a).

Independence and study were the most common reasons given by 18–24 year olds for first moving out (28% and 23% respectively). Males were more likely to cite employment as the main reason for moving out, while females were more likely to cite family conflict, to live with their partner or to get married. The most common living arrangements after first moving out were group households (for 45% of males and 35% of females) or living with a partner as part of a couple (for 15% of males and 31% of females). Nearly two in five young people who had moved out returned to the parental home at least once, and this was similar for both males and females (AIHW 2009a).

For the 47% or 900,000 young adults aged 18–24 years who had not moved out of home, the most common reason given for remaining at home was financial (41%), followed by the convenience or enjoyment of living at home (36%) (ABS 2008d).

A small proportion of young people are living in out-of-home care or are homeless. See *Chapter 23 Child protection* and *Chapter 27 Homelessness* for further information





# Part II

## HEALTH STATUS AND WELLBEING

Youth is a time of rapid emotional, physical and intellectual changes as the transition is made from childhood to adolescence to independent adulthood, and is also a crucial period for establishing positive health and social behaviours. During this period, young people acquire a range of skills and behaviours, face a range of life events and make decisions that can influence their physical and psychological health, their social development, and their educational and employment opportunities (WHO 2010).

Information on patterns and trends in young people's health, including which conditions represent the greatest disease burden, whether things are improving or getting worse, and the inequality between subpopulations within Australia, is essential to assess the health of young Australians. This information helps to shape health policy, plan health service delivery and create strategies for improving the health of Australia's young people.

Part II focuses predominantly on the presence or absence of disease or activity limitation; however, it is well known that health needs to be defined more broadly. The World Health Organization (WHO) defines health as a 'state of complete physical, mental and social wellbeing and not merely the absence of disease and infirmity' (WHO 2006a). In 2008, the WHO Commission on Social Determinants of Health concluded that health is influenced by the social and economic conditions of daily life as well as by biological conditions. It states that inequities in material circumstances, the social environment

and behaviours, which in turn are influenced by social position, education, occupation, income, gender, ethnicity and race, give rise to social inequalities in health (CSDH 2008; Marmot 2010).

This report reflects the broader view of health and recognises that addressing inequalities while people are still young can be expected to reap health rewards in later years (WHO 2010). Part III examines the health behaviours that place young people at risk or protection from serious illness, while Part IV and Part V look at the wider family, community and economic contexts in which Australian young people are living.

The aim of Part II is to provide a comprehensive picture of the health status of young people. The key indicators discussed are:

- physical and mental wellbeing
- disability and activity limitation
- deaths
- mental health
- injury and poisoning
- chronic conditions (asthma, diabetes, cancer)
- communicable diseases (vaccine-preventable diseases and sexually transmissible infections)
- oral health.

The following table shows how young people fare across the indicators presented in Part II, and whether there has been any improvement over time.

Key: ✓ = favourable trend; ✗ = unfavourable trend; ~ = no change or no clear trend; .. = no trend data available or presented.

Health status and wellbeing		Year of data	Value	Trend
Physical and mental wellbeing	Proportion of young people aged 15–24 years rating their health as 'excellent', 'very good' or 'good' <sup>(a)(b)</sup>	2007–08	93%	~
Disability and activity limitation	Proportion of young people aged 15–24 years with severe or profound core activity limitation	2009	7%	..
Deaths	Death rates for young people aged 12–24 years	2007	37 per 100,000	✓
Mental health	Proportion of young people aged 16–24 years having high or very high levels of psychological distress as measured by the Kessler 10 (K10) scale <sup>(a)(b)</sup>	2007	9%	~
	Prevalence of mental disorders among young people aged 16–24 years <sup>(a)(b)</sup>	2007	26%	..
Injury and poisoning	Injury and poisoning death rate for young people aged 12–24 years	2007	25 per 100,000	✓
	Road transport accident death rate for young people aged 12–24 years	2009	9 per 100,000	✓
	Assault death rate for young people aged 12–24 years	2007–08	1.3 per 100,000	✓
	Suicide rate for young people aged 15–24 years <sup>(a)</sup>	2007	10 per 100,000	✓
	Accidental poisoning death rate for young people aged 12–24 years	2007	1.1 per 100,000	~
	Injury and poisoning hospitalisation rate for young people aged 12–24 years	2008–09	2,199 per 100,000	✗
Chronic conditions	Prevalence of long-term conditions among young people aged 12–24 years	2007–08	60%	✓
	Proportion of young people aged 12–24 years with asthma as a long-term condition	2007–08	11%	✓
	Incidence of diabetes among young people aged 15–24 years <sup>(b)</sup>	2007	31 per 100,000	✗
	Incidence of cancer per 100,000 young people aged 12–24 years	2007	26 per 100,000	~
Communicable diseases	Incidence of vaccine-preventable diseases among young people aged 12–24 years	2008	73 per 100,000	~
	Pertussis	2008	64 per 100,000	~
	Hepatitis A, B and C notification rates for young people aged 12–24 years	2008	67 per 100,000	✓
	Hepatitis A	2008	1.8 per 100,000	✓
	Hepatitis B	2008	29 per 100,000	✓
	Hepatitis C	2008	36 per 100,000	✓
	HIV infection notification rate for young people aged 12–24 years	2008	3.1 per 100,000	✗
	Incidence of notifiable sexually transmissible infections among young people aged 12–24 years	2008	1,045 per 100,000	✗
	Chlamydia	2008	945 per 100,000	✗
Oral health	Proportion of young people aged 12 and 15 years decay-free <sup>(a)</sup>	2003–2004	12 years 58% 15 years 43%	✗ ~
	Mean number of decayed, missing or filled teeth (DMFT) at 12 and 15 years <sup>(a)</sup>	2003–2004	12 years 1.03 15 years 2.01	~ ~

(a) Most appropriate age range for indicator.

(b) Source data not available for full age range.

## 4 Physical and mental wellbeing

**Self-reported health is an effective general measure of the current and future health and survival of the population.**

**In 2008, 93% of young people aged 15–24 years rated their health as ‘excellent’, ‘very good’ or ‘good’.**

Physical and mental wellbeing is often difficult to define and measure using objective measures such as mortality, morbidity, or disability and activity limitations. Health is more than just the presence or absence of disease, or activity and participation restrictions, and it is well recognised that health needs to be defined more broadly.

The impact of social, emotional and behavioural factors on physical health is increasingly recognised. For example, peer pressure among young people can increase the likelihood of engaging in behaviours associated with injury or ill health such as fast driving and smoking (Gardner & Steinberg 2005). Emotional stress is known to affect the immune system’s ability to resist infections (Cohen et al. 1991).

In order to capture this broader and holistic view of health, an individual’s rating of his or her own overall health is often used as an indicator of health status and, at the population level, as a predictor of health service use and mortality (AIHW 2008d). A person’s perception of their own health has been shown to be a powerful, independent predictor of their future health and survival (Miilunpalo et al. 1997; Wang & Satariano 2007).

Self-assessment of health can be influenced by a range of factors, such as the presence of chronic conditions and diseases, disability or socioeconomic status. Overall, self-reported health is a simple yet effective general measure of population health but it is not without limitations. People may rate their health as good even though they suffer from certain health conditions. Indeed, research has shown that bringing certain health conditions to respondents’ attention can affect their responses to questions on self-assessed health status in surveys (Crossley & Kennedy 2000). Although most young people rate their health as good or excellent, some serious health problems specific to this age group have the potential to undermine an individual’s overall wellbeing, among them mental disorders, overweight, obesity or problems with substance use (Eckersley 2008; Muir et al. 2009).

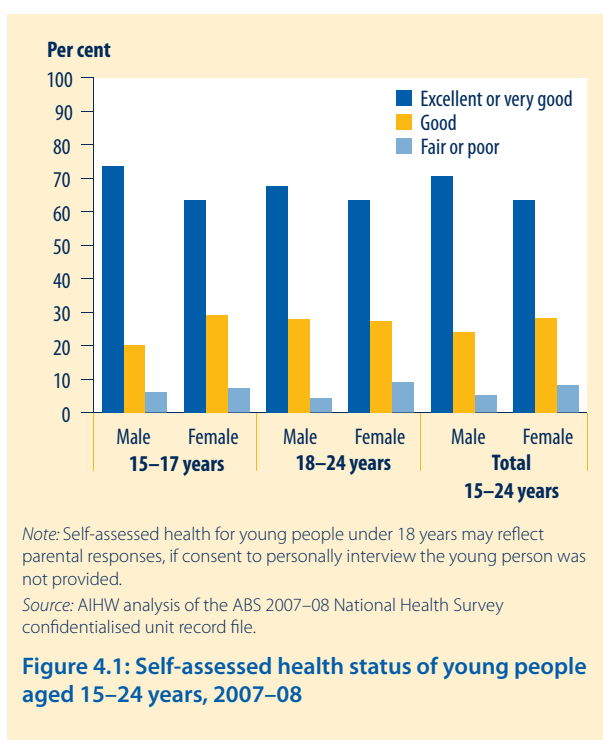
### Young people rating their health as ‘excellent’, ‘very good’ or ‘good’

This chapter examines how young people aged 15–24 perceive their physical and mental state as a whole, using information on self-assessed health status from the Australian Bureau of Statistics’ (ABS) National Health Survey (see *Appendix 2 Data sources* for more information on this survey). This survey collects information on people aged 15 years and over. Respondents were asked to assess their health against five grades, from excellent to poor.

**National indicator:** Proportion of young people aged 15–24 years rating their health as ‘excellent’, ‘very good’ or ‘good’

In 2007–08, among young people aged 15–24 years:

- A large majority (93%) rated their health as ‘excellent’, ‘very good’ or ‘good’, a similar proportion to 2004–05 and slightly more than in 2001 (91%). Ratings of ‘excellent’, ‘very good’ or ‘good’ were higher among 15–24 year olds than any other age group ranging from 93% to 89% for 35–44 year olds to 61% for those aged 75 years and over (Figure 4.1).
- Males were more likely than females to rate their health as ‘excellent’, ‘very good’ or ‘good’ (95% and 92% respectively) (Figure 4.1).
- The proportions reporting ‘excellent’, ‘very good’ or ‘good’ health were the same among 15–19 year olds and 20–24 year olds (both 93%).
- Those with a long-term health condition were less likely to rate their health as ‘excellent’, ‘very good’ or ‘good’ (91%) than those without a long-term condition (96%).



**Figure 4.1: Self-assessed health status of young people aged 15–24 years, 2007–08**

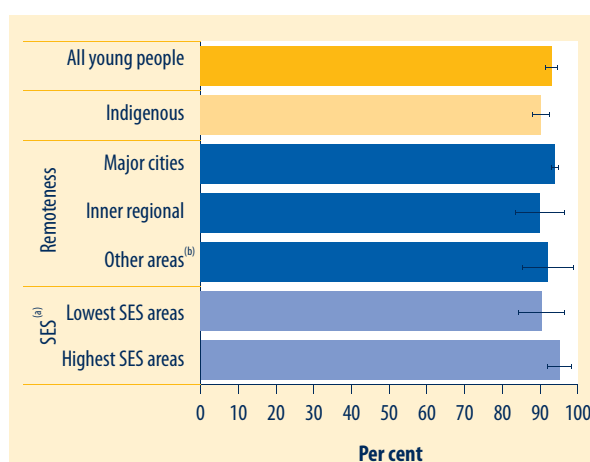
## Does self-assessed health status vary across population groups?

It is well documented that some population groups within Australia experience poorer health than others, in particular Aboriginal and Torres Strait Islander young people, those living in remote areas and those living in socioeconomically disadvantaged areas. Self-assessed health status can be affected by a number of factors besides actual presence or absence of disease. These include an individual's own expectations and aspirations, as well as their knowledge of and information about health, which in turn may be influenced by their socioeconomic status, levels of education, employment, housing conditions, remoteness and Indigenous status (Ahn 2003; Sibthorpe et al. 2001).

In 2007–08, among young people aged 15–24 years:

- Indigenous young people were slightly less likely to rate their health as 'excellent', 'very good' or 'good' than all young people (90% and 93% respectively), according to the ABS 2008 National Aboriginal and Torres Strait Islander Social Survey and the ABS 2007–08 National Health Survey. See *Chapter 42 Health and wellbeing of Indigenous young people* for further information.

- Similar proportions rated their health as 'excellent', 'very good' and 'good' for those living in *Inner regional areas* (90%), *Major cities* (94%), and *Outer regional or Remote areas combined* (92%).
- 90% of those living in areas of lowest socioeconomic status reported their health as 'excellent', 'very good' or 'good' compared with 95% of those in the highest socioeconomic status areas; however, these differences were not statistically significant (Figure 4.2).



(a) Other areas includes *Outer regional* and *Remote areas* combined (*Very remote areas* are excluded from the survey).

(b) Refer to *Appendix 1 Methods* for an explanation of 'socioeconomic status (SES)' and 'remoteness'.

Notes:

1. Self-assessed health for 15–17 year olds may reflect parental responses, due to consent not given for personal interview or the presence of parents or other family at the interview.
2. Refer to *Appendix 1 Methods* for notes on confidence intervals and overlapping error bars.
3. Data for non-Indigenous people are not available as data sources do not support direct comparison.

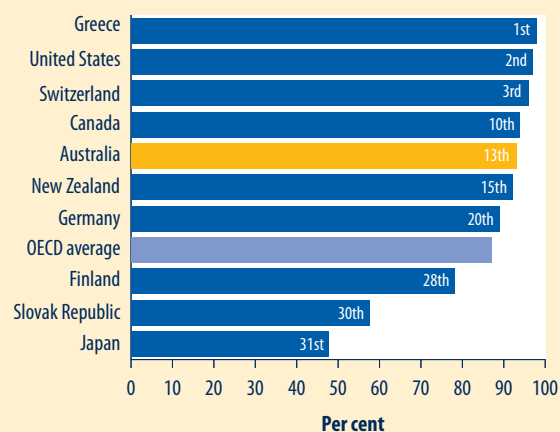
Sources: AIHW analysis of the ABS 2007–08 National Health Survey and ABS 2008 National Aboriginal and Torres Strait Islander Social Survey confidentialised unit record files.

**Figure 4.2: Young people aged 15–24 years rating their health as 'excellent', 'very good' or 'good', by selected population groups, 2007–08**

## How does Australia perform internationally for self-assessed health status?

Australia ranked higher than the OECD (Organisation for Economic Co-operation and Development) average for young people's self-assessed health status. Australia ranked 13th out of 31 OECD countries with recent available data, with 93% of young Australians aged 15–24 years rating their health status as 'good or better' higher

than the OECD average of 87%. The proportion of young people with 'good or better' self-assessed health status was highest in Greece (98%) and the United States (97%), and lowest in the Slovak Republic (58%) and Japan (48%) (Figure 4.3). These data should be used with caution as race, culture and social environment may influence the way in which people assess their own health (Ahn 2003).



*Notes:*

1. Data for Slovak Republic based on data for 2008.
2. Based on data from 31 OECD countries that have available data in the period 2007–08, including three accession countries as at August 2010—Slovenia, Estonia and Israel.

Source: OECD 2010b.

**Figure 4.3: Young people aged 15–24 rating their health status as 'good or better' in selected OECD countries, 2007**

## 5 Disability and activity limitation

**Young people with disability can have diverse physical, sensory, intellectual and psychiatric impairments, resulting in activity limitations and participation restrictions that affect their involvement in society.**

**An estimated 7% of young Australians reported having a disability in 2009, and of these around one-quarter had profound or severe core activity limitations (27%).**

Disability can adversely affect a young person's ability to engage in social activities, recreation, education and employment, and can limit their opportunity for development and social inclusion (Groce 2004). The United Nations Convention on the Rights of Persons with Disabilities recognises disability as an evolving concept:

Disability results from the interaction between persons with impairments and attitudinal and environmental barriers that hinders their full and effective participation in society on an equal basis with others (UN 2006).

Disability may be measured in terms of level of difficulty and/or need for assistance with some or all of the core activities of daily living. These are self care, mobility and communication (AIHW 2010b). Core activity limitations may present at different levels of severity—mild, moderate, severe or profound (ABS 2003). A person requiring assistance (either sometimes or always) with self-care, mobility and/or communication is described as having a 'severe or profound core activity limitation'; in the text this will be referred to as 'severe disability' for ease of reading. In addition to these core activity limitations, a person with disability may experience obstacles to participation in education, employment and social or recreational opportunities. These are referred to as participation restrictions.

Young people with disability can have diverse physical, sensory, intellectual or psychiatric impairments, some of which may result in activity and participation restrictions that reduce their full involvement in society, and that of their carers and siblings (Strohm 2002). A disability may be present at birth, become evident early in life, or may occur as the result of an accident. Some disorders can also emerge during development in childhood and adolescence.

Compared with other young people, young people with severe disability rely more heavily on parents, other family members and teachers for assistance, and many require formal intervention, including specialist health and disability services. They may also require lifelong support through specialist services and informal or formal care. This can place substantial strain on family relationships and is strongly associated with social and financial disadvantage for the individual and their family (Finch 2001; Hendley & Pascall 2002).

### Young people with severe disability

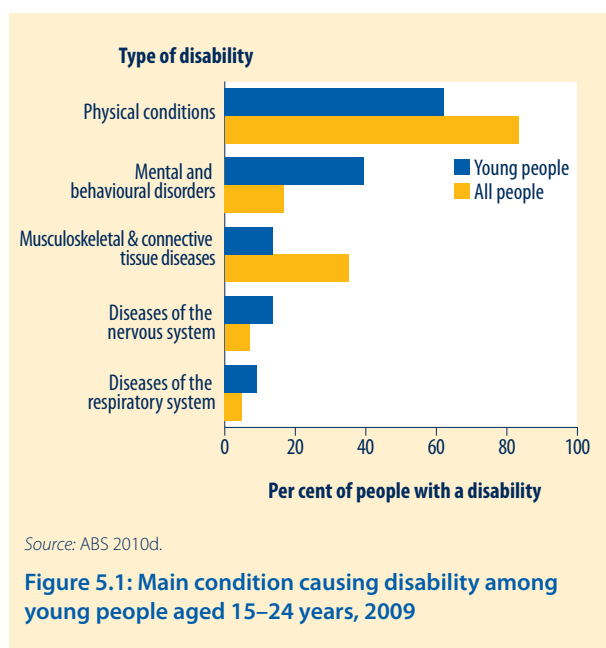
The Australian Bureau of Statistics' 2009 Survey of Disability, Ageing and Carers collects information on disability, severe disability, and education and employment restrictions (see *Appendix 2 Data sources* for more information on this survey). Disabilities may be classified into five broad groups: intellectual, psychiatric, sensory/speech, acquired brain injury and physical/diverse disability. These disability groups are based on similarities in the underlying health condition, activity limitations and participation restrictions, environmental factors and support needs. At the time of publication, only limited information on severe disability was available from the 2009 ABS Survey of Disability, Ageing and Carers for inclusion in this report.

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

In 2009, among young people aged 15–24 years:

- An estimated 204,000 young people (7%) reported some form of disability. Of those with disability in 2009, 56,000 reported severe disability, accounting for 27% of people with a disability, and 1.8% of all young people.

- There was no statistically significant difference between males and females for all levels of activity restriction 1.9% and 1.7%, respectively, for severe disability.
- Physical conditions were the main health condition causing disability (all disability including severe disability) among young people, reported for an estimated 126,900 young people (62% of those with a disability), followed by mental or behavioural disorders (39% or 80,400) (Figure 5.1).



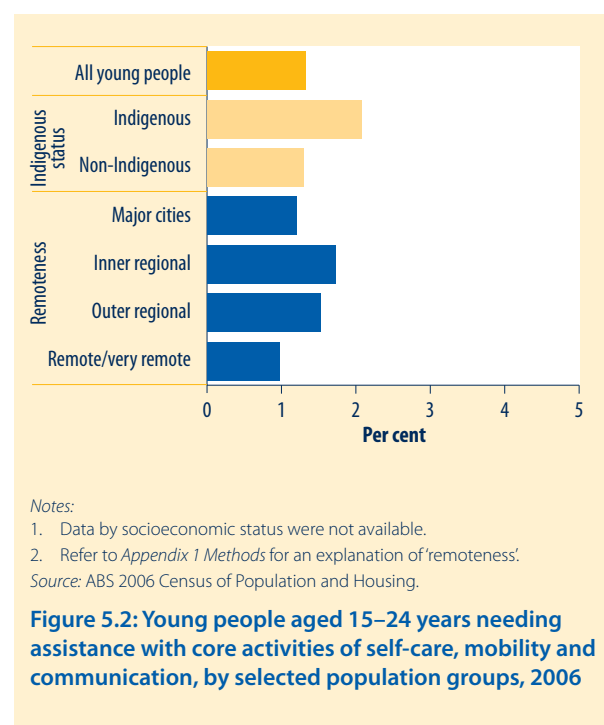
**Figure 5.1: Main condition causing disability among young people aged 15–24 years, 2009**

## Do rates of disability vary across population groups?

Disability appears to be associated with socioeconomic status, although the causal nature of this relationship is complex. The costs associated with having a child with a disability, such as purchasing special aids, health service costs, modifications to housing and reduced family income due to caring responsibilities, may lead to socioeconomic disadvantage and poverty for some families (AIHW 2004). Access to services is also a critical issue for families and young people living in regional and remote areas of Australia and those who are socioeconomically disadvantaged.

According to the ABS 2006 Census of Population and Housing, among young people aged 15–24 years:

- Indigenous young people were more likely to report needing assistance with core activities of self-care, mobility and communication than non-Indigenous young people—2.2% and 1.3% respectively (Figure 5.2).
- The proportions of young people needing assistance with core activities did not vary greatly by remoteness—1.2% in *Major cities*, 1.7% in *Inner regional* areas, 1.5% in *Outer regional* areas and 1.0% in *Remote and Very remote* areas combined.



**Figure 5.2: Young people aged 15–24 years needing assistance with core activities of self-care, mobility and communication, by selected population groups, 2006**



## 6 Deaths

**Death rates provide insight into the social and environmental conditions experienced by Australia's young people as they move through adolescence and into early adulthood.**

**In 2007, the death rate among young Australians was 37 per 100,000. Injury and poisoning accounted for two-thirds of these deaths. Death rates have halved among young Australians over the last 2 decades. However, rates among Indigenous young people and those living in *Remote and very remote* areas are substantially higher than the national rate (3 and 2.6 times as high).**

Mortality rates and causes are important indicators of the health of a population. They not only reflect the circumstances around the time of death but also provide insight into changes in social and environmental conditions, medical interventions, behaviours and trends in underlying risk factors.

High rates of mortality among children and young people are strongly associated with social and economic disadvantage, as for the general population. In 2008, the World Health Organization Commission on Social Determinants of Health concluded that inequities in material circumstances, the social environment and behaviours, which in turn are influenced by social position, education, occupation, income, gender, ethnicity and race, give rise to social inequalities in health (CSDH 2008; Marmot 2010). For all age groups, and for both males and females, the levels of mortality are higher, and life expectancy is lower among the most socioeconomically disadvantaged populations (Draper et al. 2005). Behavioural factors that contribute to the shorter life expectancy among the most disadvantaged groups are evident in adolescence and young adulthood, and include higher rates of smoking, poor diet and physical inactivity compared with their more affluent counterparts (Hanson & Chen 2007). The higher levels of these risk behaviours may be affected by factors such as poor parental role models (Kalesan et al. 2006), poorer understanding of nutrition (Inglis et al. 2005), peer or cultural factors (Gaviria & Raphael 2001; Nakajima 2007) and a lack of neighbourhood open space (Estabrooks et al. 2003).

These factors can be exacerbated among young people by their increased independence and ongoing development of decision-making abilities that come with adolescence; this can result in

increased engagement in risky behaviours, such as substance use, dangerous driving or unsafe sexual practices (NPHP 2004).

### Deaths among young Australians

This chapter examines mortality differentials and the main causes of death among young Australians, using data from the Australian Institute of Health and Welfare's National Mortality Database (see *Appendix 2 Data sources* for more information on this data collection). Mortality among young people is measured as the number of deaths of young people aged 12–24 years per 100,000 young people of the same age group. Mortality data presented in this chapter and elsewhere in the report are for 2007 in most instances, due to limited availability of data for more recent years. Mortality data for 2009 are included here where possible, and as more data become available, online updates through supplementary tables will be provided.

**National indicator:** Death rates for young people aged 12–24 years

In 2007 among young people aged 12–24 years:

- There were 1,418 deaths—a rate of 37 per 100,000 (51 and 23 per 100,000 for males and females, respectively).
- The death rate for 20–24 year olds (52 per 100,000) was almost 4 times as high as for 12–14 year olds (14 per 100,000) and 1.4 times as high as for 15–19 year olds (36 per 100,000). Over half (55%) of all deaths among young people occurred among 20–24 year olds.



- Males accounted for over two-thirds (70%) of all youth deaths. The difference between males and females varied with age among 12–14 year olds the rates were similar at 14 deaths per 100,000, increasing to 47 and 24 deaths among 15–19 year old males and females, and 75 and 28 deaths among 20–24 year old males and females, respectively.

Between 1987 and 2007, among young people aged 12–24 years:

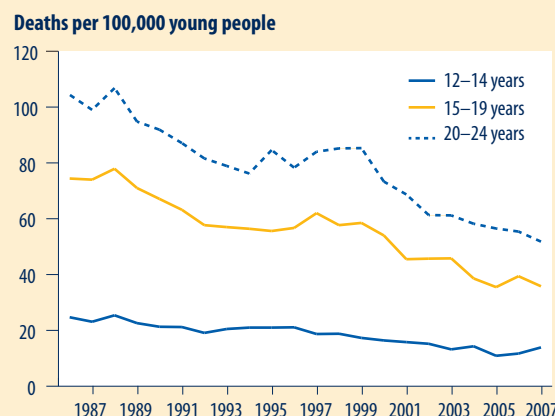
- Death rates halved from 72 to 37 deaths per 100,000 young people. This is largely due to the decrease in the injury and poisoning death rate among young people over this period, which fell from 52 to 24 deaths per 100,000. Deaths from land transport accidents and suicide contributed most to the decline in injury and poisoning deaths (see *Chapter 8 Injury and poisoning*).
- The decrease in death rates over the period was greater for males (51%) than for females (41%); however, the rate for males remained consistently higher than for females (more than twice as high) over this period.
- Declines in death rates occurred across all three age groups: 12–14, 15–19 and 20–24 years—declines of 40%, 52% and 48% respectively, over the period (Figure 6.1).

More recent data are available for deaths in 2009 for the reduced age range of 15–24 years. In 2009, among young people aged 15–24:

- There were 1,262 deaths — a rate of 41 per 100,000 (57 and 24 per 100,000 for males and females, respectively).
- The death rate for 20–24 year olds (45 per 100,000) was significantly higher than for 15–19 year olds (36 per 100,000).
- Males accounted for almost three-quarters (72%) of all youth deaths in the 15–24 year age group. A similar pattern occurred in both the 15–19 and 20–24 age groups. Among 15–19 year olds, male rates were 2.3 times as high as for females and among 20–24 year olds, 2.5 times as high.
- Between 1989 and 2009, death rates halved from 83 to 41 per 100,000 young people aged 15–24 years. This decline was apparent for both 15–19 year olds (49% decline) and 20–24 year olds (53% decline).

## Causes of death

The causes of death among young Australians are different from the population overall, reflecting the strong influence of that stage of life on susceptibility to deaths from certain causes. Among all ages,



Source: AIHW National Mortality Database.

**Figure 6.1: Death rates for young people aged 12–24 years, 1986–2007**

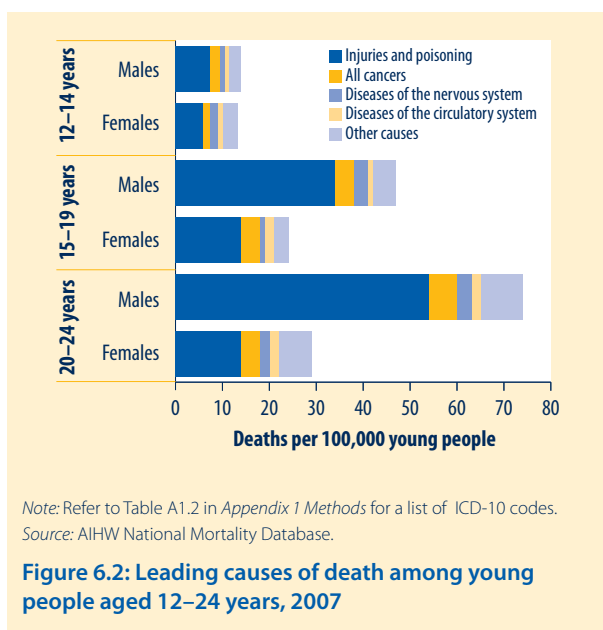
cancer and cardiovascular disease accounted for almost two-thirds (64%) of deaths (AIHW 2010b), whereas among 12–24 year olds injury and poisoning was the leading cause, accounting for a similar proportion of deaths (66%). See *Chapter 8 Injury and Poisoning* for further information.

In 2007, among young people aged 12–24 years:

- The leading causes of death were injury and poisoning (66%), cancer (10%) and diseases of the nervous system (5%)—rates of 25, 4 and 2 per 100,000 young people, respectively (Figure 6.2). These causes account for 81% of all deaths among young people.
  - Transport accidents and suicide were the leading causes of injury and poisoning deaths among young people, accounting for just over a third of deaths among young people in the relevant age groups (35% for transport accidents among 12–24 year olds, and 37% for suicide among 15–24 year olds).
  - One-third (32%) of cancer deaths among young people were due to lymphoid or myeloid leukaemia, with a further 11% due to brain cancer.
  - Three-quarters of deaths from diseases of the nervous system were due to cerebral palsy (31%), epilepsy (24%) or muscular dystrophy (21%).
- Injury and poisoning deaths were 3 times as high among males as females (36 and 12 per 100,000 respectively), reflecting the higher propensity of males to engage in risk-taking behaviour (Pawlowski et al. 2008). Death rates due to cancer and diseases of the nervous system were 38% and

60% higher among males than females but these differences were not statistically significant.

- Injury and poisoning death rates varied by age, from 7 per 100,000 among 12–14 year olds to 34 among 20–24 year olds. The difference between age groups was more pronounced among young males than young females. Death rates for cancer were significantly higher for young people aged 15–19 and 20–24 (3.9 and 4.8 per 100,000 respectively) than for 12–14 year olds (1.8 per 100,000) (Figure 6.2).



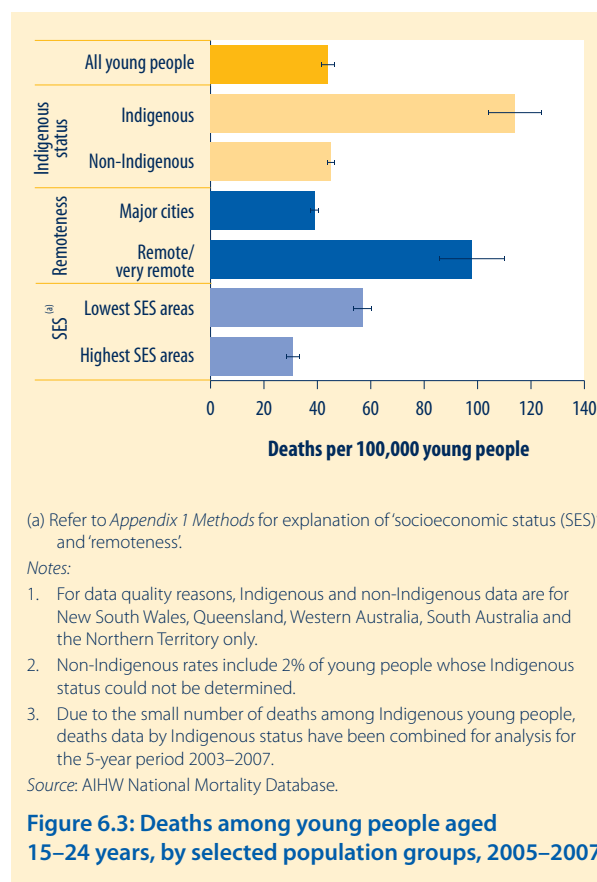
## Do rates of youth mortality vary across population groups?

Mortality rates vary greatly across different population groups, with the highest rates found among Indigenous young people and those living in remote or socioeconomically disadvantaged areas. To a large extent, these groups overlap, with young people living outside major cities being more likely to experience socioeconomic disadvantage and those in very remote areas being more likely to be Indigenous. Reasons for the higher death rates among these subpopulations include reduced access to health care services, higher rates of behavioural risk factors (AIHW 2008d) and hazards associated with driving on rural or remote roads (AIHW 2003).

Among young people aged 15–24 years:

- Indigenous death rates were 2.5 times as high as for non-Indigenous young people (113 and 45 deaths per 100,000 respectively), based on deaths in New

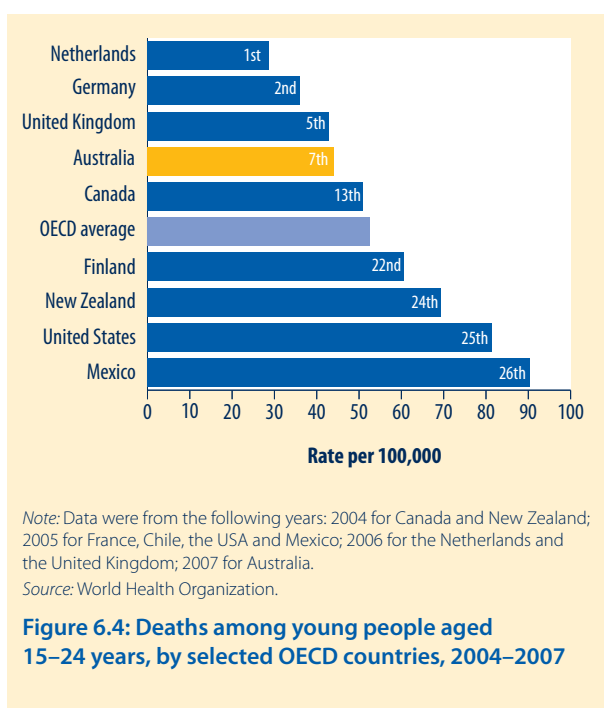
South Wales, Queensland, Western Australia, South Australia and the Northern Territory for 2003–2007 combined. As for all young people, injury and poisoning was the most common cause of death among Indigenous youth. Death rates, however, were almost 3 times as high as for non-Indigenous young people (82 per 100,000 Indigenous young people compared with 32 per 100,000 non-Indigenous youth) (Figure 6.3). See *Chapter 42 Health and wellbeing of Indigenous young people* for further information on Indigenous mortality.



- Death rates increase substantially with remoteness—death rates in *Remote and very remote* areas were almost 2.5 times as high as in *Major cities* (98 and 39 per 100,000 young people respectively) in 2005–2007. However, the gap in death rates has narrowed since 2002–2004, when the difference was almost 5 times as high (199 and 42 per 100,000 respectively) (AIHW 2007b).
- Death rates were higher for young people living in the lowest socioeconomic status areas compared with the highest socioeconomic status areas (57 and 31 per 100,000 respectively).

## How does Australia's youth mortality rate compare internationally?

Australia's mortality rate among young people aged 15–24 years was the 7th lowest of 26 OECD (Organisation for Economic Co-operation and Development) countries, and well below the average of 53 per 100,000 for these 26 countries (Figure 6.4). Mortality rates were highest in the United States and Mexico (81 and 90 per 100,000 young people, respectively) and lowest in the Netherlands (29 per 100,000).



## 7 Mental health

**Mental health problems affect young people's psychological growth and development, health-care needs, educational and occupational attainment, and involvement with the justice system.**

**In 2007, 9% of young Australians aged 16–24 years had high or very high levels of psychological distress. One in four experienced at least one mental disorder.**

Mental health is a National Health Priority Area. Mental health is:

a state of well-being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to his or her community (WHO 2001a).

Conversely, mental health problems and illnesses affect the perceptions, emotions, behaviour and resulting social wellbeing of individuals. Certain mental disorders, such as attention hyperactivity disorder, depressive disorder and conduct disorder have implications for a young person's psychosocial growth and development, health care needs, educational and occupational attainment, and involvement with the justice system (Bhatia & Bhatia 2007; Eme 2007). Young people with mental disorders may also experience stigma, which often leads to isolation and discrimination (Corrigan 2005). Poor mental health among young people can be a precursor to self-harm, thoughts about suicide, and suicide. It can also have a strong influence on mental disorders later in life (Patel et al. 2007b).

A range of factors may contribute to mental disorders in children and young people, including developmental factors such as prenatal brain damage or neural causes, genetic factors, low intelligence, physical and intellectual disability, poor social skills and low self-esteem (DHAC 2000). Other contributing factors include being bullied, failure to achieve academically, and physical or psychological trauma such as sustaining injuries, experiencing abuse or neglect, witnessing family violence and loss of family.

Other factors that can contribute to mental health disorders include the stress associated with poverty and social disadvantage, homelessness, recent immigration or refugee status, and racism and discrimination (Correa-Velez et al. 2010; DHAC 2000; Paradies et al. 2009).

Parents and family are also important influences on young people's mental health. Parental marital discord, family violence and breakdown, child abuse and neglect, being a young carer, and parental mental or substance use disorders are major risk factors for mental disorders in young people (Oyebode 2003; Patel et al. 2007a).

### Prevalence of psychological distress

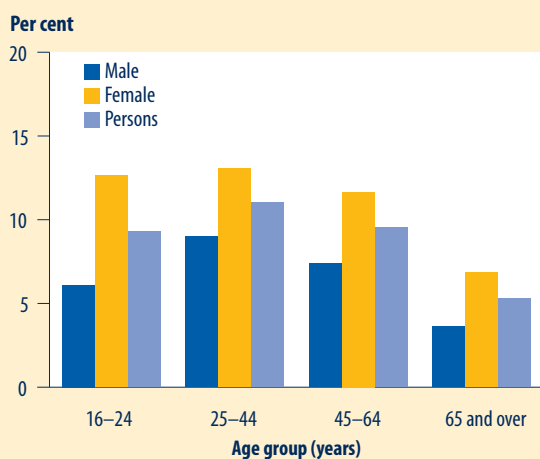
Psychological distress refers to an individual's overall level of psychological strain or pain, evidenced by psychological states such as depression, anxiety and anger. A measure of psychological distress is the Kessler 10 (K10) psychological distress scale, which is a 10-item questionnaire covering feelings of nervousness, hopelessness, restlessness, depression and worthlessness. There is a strong association between high scores on the K10 scale and current diagnosis of anxiety and affective disorders, as well as a lesser (but significant) association with other categories of mental disorder (Andrews & Slade 2001). The K10 scale has also been shown to be effective in detecting depressive symptoms (Cairney et al. 2007; Gill et al. 2007). Scores on the K10 range from 10 (minimum) to 50 (maximum) with cut-off scores grouped as 'low' (10–15), 'moderate' (16–21), 'high' (22–29) and 'very high' (30–50) levels of psychological distress.

This section looks at the prevalence of psychological distress, as classified by K10 scores, among young people aged 16–24 years using data from the 2007 National Survey of Mental Health and Wellbeing (NSMHWB) conducted by the Australian Bureau of Statistics (ABS). This survey collects information from people aged 16 years and over. See *Appendix 2 Data sources* for more information on the survey.

**National indicator:** Proportion of young people aged 16–24 years having high or very high levels of psychological distress as measured by the Kessler 10 (K10) scale

In 2007, among young people aged 16–24 years:

- An estimated 236,700 young people, or 9%, had high or very high levels of psychological distress, a similar proportion to most other age groups, except for those aged 65 years and over where the rate was lower (5%) (Figure 7.1).
- Females were twice as likely as males to report high or very high levels of psychological distress (13% and 6% respectively).
- Among 18–24 year olds, the prevalence of high or very high levels of psychological distress was similar to the rates in 1997 (7% and 13% for males and females in 1997 compared with 7% and 12%, respectively, in 2007) (AIHW 2007b).
- High or very high levels of psychological distress were more prevalent among those young people who had been diagnosed with a mental disorder (21% compared with 4% of those reporting no mental disorder).



Source: AIHW analysis of the 2007 National Survey of Mental Health and Wellbeing confidentialised unit record file.

**Figure 7.1: Prevalence of high or very high levels of psychological distress, 2007**

The 2007 NSMHWB also collected self-assessed physical health status, which is a proxy measure of physical health. Physical and mental health are interdependent—changes in the status of one are likely to affect the other (AIHW 2007b). In 2007, young people aged 16–24 years with high or very

high levels of psychological distress were much less likely to rate their health status as ‘excellent’, ‘very good’ or ‘good’ than those with low psychological distress (75% and 94% respectively). Conversely, young people with high or very high levels of psychological distress were more likely to assess their health as fair (19%) or poor (6%) compared with those reporting low psychological distress (5.2% and 0.4% respectively).

## Prevalence of mental disorders

Mental health problems and disorders accounted for the highest burden of disease among young people, accounting for almost 50% of the burden of disease in this age group (Begg et al. 2007; Patel et al. 2007a). The leading specific cause of mental disease among young people is anxiety and depression, accounting for almost one-quarter (24%) of the burden of disease in this age group in 2003 (Begg et al. 2007).

This section looks at the prevalence of current mental disorders among young people aged 16–24 years using data from the 2007 NSMHWB. This survey provides estimates for lifetime and 12-month prevalence of mental disorders. This section reports on young people with a 12-month diagnosis of at least one mental disorder.

**National indicator:** Prevalence of mental disorders among young people aged 16–24 years

In 2007, among young people aged 16–24 years:

- An estimated one in four young people (26%, or 671,100) experienced at least one mental disorder in the preceding 12 months (Table 7.1).
- Females were more likely than males to have experienced mental disorders (30% and 23% respectively).
- Overall, the most commonly reported disorders were anxiety disorders (15%), substance use disorders (13%) and affective disorders (6%). While this pattern held true for females (22%, 10% and 8% respectively), among males substance use disorders were more prevalent than anxiety disorders (16% compared with 9% respectively). The prevalence of affective disorders was considerably lower among males than females (4% and 8% respectively).
- The most prevalent types of anxiety disorders were post-traumatic stress disorder and social

phobia, accounting for 50% and 35% of anxiety disorders, respectively.

- Harmful use of alcohol was the most common substance use disorder, accounting for almost one-third of substance use disorders.

## Health service use for mental health problems

People with mental disorders may access a wide range of health care and treatment services in Australia. This includes services provided by specialist

mental health services and mental health-related services provided by general health services in both residential and ambulatory settings (AIHW 2009b).

According to the 2007 NSMHWB, young people did not access services for mental health problems as often as other age groups. Specifically, 23% of those aged 16–24 years with a 12-month mental disorder accessed health services in the preceding 12 months, compared with 38% for those aged 25 years and over. Of those young people who accessed services, most accessed consultation services only (92%); 8% accessed both consultation

**Table 7.1: Prevalence of mental disorders<sup>(a)</sup> among young people aged 16–24 years, 2007**

	Males		Females		Persons	
	Number ('000)	Per cent	Number ('000)	Per cent	Number ('000)	Per cent
<b>Anxiety disorders</b>						
Panic disorder	21.9	1.7	33.9	2.7	55.7	2.2
Agoraphobia	23.7	1.8	47.9	3.8	71.6	2.8
Social phobia	47.5	3.7	90.9	7.3	138.3	5.4
Generalised anxiety disorder	5.0	0.4	29.4	2.4	34.3	1.3
Obsessive-compulsive disorder	16.1	1.2	40.1	3.2	56.3	2.2
Post-traumatic stress disorder	49.8	3.8	145.5	11.7	195.3	7.7
<i>Subtotal anxiety disorders<sup>(b)</sup></i>	<i>120.3</i>	<i>9.3</i>	<i>270.9</i>	<i>21.7</i>	<i>391.3</i>	<i>15.4</i>
<b>Affective disorders</b>						
Depressive episode <sup>(c)</sup>	14.8	1.1	57.6	4.6	72.4	2.8
Dysthymia	—	—	8.2	0.7	8.2	0.3
Bipolar affective disorder	41.5	3.2	45.5	3.6	87.0	3.4
<i>Subtotal affective disorders<sup>(b)</sup></i>	<i>56.3</i>	<i>4.3</i>	<i>105.0</i>	<i>8.4</i>	<i>161.4</i>	<i>6.3</i>
<b>Substance use disorders</b>						
Alcohol harmful use	128.9	9.9	88.8	7.1	217.7	8.6
Alcohol dependence	50.8	3.9	24.0	1.9	74.8	2.9
Drug use disorders <sup>(d)</sup>	57.1	4.4	29.5	2.4	86.5	3.4
<i>Subtotal substance use disorders<sup>(b)</sup></i>	<i>201.0</i>	<i>15.5</i>	<i>122.5</i>	<i>9.8</i>	<i>323.5</i>	<i>12.7</i>
<b>Total mental disorders<sup>(a)</sup></b>	<b>296.3</b>	<b>22.8</b>	<b>374.8</b>	<b>30.1</b>	<b>671.1</b>	<b>26.4</b>
<b>Total persons</b>	<b>1,299.3</b>	<b>100.0</b>	<b>1,246.1</b>	<b>100.0</b>	<b>2,545.4</b>	<b>100.0</b>

(a) Persons who met criteria for diagnosis of a lifetime mental disorder (with hierarchy) and had symptoms in the 12 months before interview. For details, see paragraphs 30–31 of 'Explanatory notes' in ABS 2008f.

(b) A person may have had more than one 12-month mental disorder. The components when added may therefore not add to the total shown.

(c) Includes Severe Depressive Episode, Moderate Depressive Episode, and Mild Depressive Episode.

(d) Includes Harmful Use and Dependence.

Source: AIHW analysis of ABS 2007 National Survey of Mental Health and Wellbeing confidentialised unit record file.



and hospital services. The health professionals young people most frequently consulted in the 12 months before the survey were general practitioners (63%) and psychologists (43%), with fewer young people consulting psychiatrists (17%).

### General practice encounters

There were an estimated 1.2 million mental health-related general practice encounters for young people in Australia, accounting for 32 encounters per 100 young people—an increase of around 21% since 1989–99, according to the 2008–09 Bettering the Evaluation and Care of Health (BEACH) survey of general practice activity and Medicare Benefits Schedule claims data (see notes to Table 7.2 for an explanation of the method). Young people have a considerably lower rate of mental health-related general practitioner encounters than the general population (32 encounters per 100 population compared with 61 for the general population) (AIHW 2010k).

Young females were almost twice as likely as young males to have mental health-related general practice encounters (41 encounters per 100 young females compared with 23 for young males). This is consistent with the observation that young females attend general practice more often than young males (see *Chapter 39 General practice consultations*).

The most common mental health problems managed for young people were depression (13.5 encounters per 100 young people), anxiety (5.7 encounters per 100), drug abuse (2 encounters per 100), and sleep disturbance (1.8 encounters per 100) (Table 7.2).

### Hospitalisations

In 2008–09, there were 44,300 hospital separations with a principal diagnosis of mental and behavioural disorders among young people aged 12–24 years—a rate of 1,141 per 100,000 young people. This represents 7% of all hospital separations for this age group and 14% of all separations for mental and behavioural disorders. Over half (57%) of the separations for mental and behavioural disorders among 12–24 year olds were same-day (that is, the patient was admitted and discharged on the same day), similar to the rate for all ages (58%). The hospital separation rate for mental and behavioural disorders has declined from 1,225 to 1,141 per 100,000 young people between 1998–99 and 2008–09—a significant decline of 7% over the last decade.

**Table 7.2: Most frequently managed mental health problems for young people aged 12–24 years, 2008–09**

Most frequently managed mental health problems <sup>(a)</sup>	National estimates of number of encounters for young people <sup>(b)</sup>	Encounters per 100 young people
Depression <sup>(c)</sup>	524,200	13.5
Anxiety <sup>(c)</sup>	221,700	5.7
Drug abuse	75,900	2.0
Sleep disturbance	71,000	1.8
Acute stress reaction	67,400	1.7
Tobacco abuse	56,300	1.5

(a) One general practice encounter can involve more than one mental health problem managed.

(b) The national estimates of number of encounters are based on the proportion of encounters in the BEACH survey of general practice activity that is mental health-related, multiplied by the total number of encounters for young people aged 12–24 years as in Medicare Benefit Schedule claims data.

(c) Includes grouped category of ICP-2 or ICP-2 PLUS codes. For details, see Britt et al. 2009.

Sources: 2008–09 BEACH survey conducted and analysed by Australian General Practice Statistics and Classification Centre (AGPSCC, The University of Sydney); Medicare Benefits Schedule claims data, unpublished data.

The leading causes of hospital separation for mental and behavioural disorders among young people aged 12–24 years in 2008–09 were:

- mood disorders (24% of mental and behavioural disorder separations), such as depressive disorders
- mental and behavioural disorders due to psychoactive substance use (19%)
- neurotic, stress-related and somatoform disorders (18%), such as anxiety disorders and adjustment disorders. See *Appendix 1 Methods* for more information on hospital separations.

### Community mental health service

Young people may also contact community mental health services for the treatment of mental health-related disorders. According to the National Community Mental Health Care Database, young people aged 15–24 years made 1.03 million contacts with community mental health services in 2007–08. This accounted for 17% of total mental health service contacts made in Australia in this period, and represented a rate of 346 contacts per 1,000 young people (AIHW 2010k).

Of young people who were in contact with community mental health services for the treatment of mental health-related disorders in 2007–08, the

leading principal diagnoses were schizophrenia (21%), depressive episode (13%), and reaction to severe stress and adjustment disorders (7%).

## Does the prevalence of mental health problems vary across population groups?

Young people from different backgrounds are faced with different levels and types of stresses in their life. Social and economic factors can affect the mental health of young people by contributing to the onset of mental health problems as well as by affecting access to primary health care services and willingness to use services. Geographical location and socioeconomic disadvantage can make accessing services difficult when the physical location and/or affordability of services are out of reach. Cultural barriers may also play a role in young people's willingness to use services (Anderson et al. 2004b; Durey 2010). Primary health care services play an important role in the prevention, identification and treatment of mental health problems, but these services may not be equally accessible to all young Australians.

### Aboriginal and Torres Strait Islander young people

The ABS 2008 National Aboriginal and Torres Strait Islander Social Survey (NATSISS) collected information on the Kessler 5 (K5) distress scale (a shorter version of the K10 using only 5 questions) (see *Appendix 2 Data sources* for more information on this survey). While some questions were modified for the NATSISS, to assist survey respondents with interpretation and to increase the cultural appropriateness of the scale, the K5 is still considered an appropriate measure of psychological distress. It should be noted that distress level estimates based on the K5 distress scales are not comparable with those based on the K10 scale.

According to the 2008 NATSISS, an estimated 31% of Indigenous young people aged 16–24 years had high or very high levels of psychological distress. Indigenous females were more likely to report high or very high levels of psychological distress than Indigenous males (35% and 26%, respectively), a similar pattern to that observed for all young people in the 2007 NSMHWB. See *Chapter 42 Health and wellbeing of Indigenous young people* for further information on psychological distress among Indigenous young people.

### Remoteness

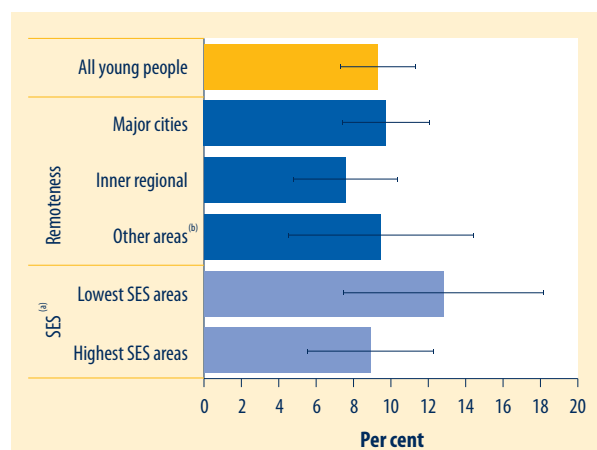
The prevalence of high or very high levels of psychological distress or mental disorders does not vary greatly by remoteness for 16–24 year olds, according to the 2007 NSMHWB:

- The prevalence of psychological distress ranged from 8% in *Inner regional* areas to 10% in *Major cities* (Figure 7.2).
- The prevalence of mental disorders ranged from 25% in *Outer regional* and *Remote* areas combined to 27% each in *Major cities* and in *Inner regional* areas (Figure 7.3).

### Socioeconomic status

According to the 2007 NSMHWB, there were no significant differences in the prevalence of high or very high levels of psychological distress or mental disorders among 16–24 year olds:

- Of young people living in areas of lowest socioeconomic status (SES), an estimated 13% had high or very high levels of psychological distress compared with 9% for those living in the highest SES areas (Figure 7.2).
- Over one in five young people in the lowest SES areas (22%) and one in four in the highest SES areas (26%) had mental disorders (Figure 7.3).



(a) Refer to *Appendix 1 Methods* for an explanation of 'socioeconomic status (SES)' and 'remoteness'.

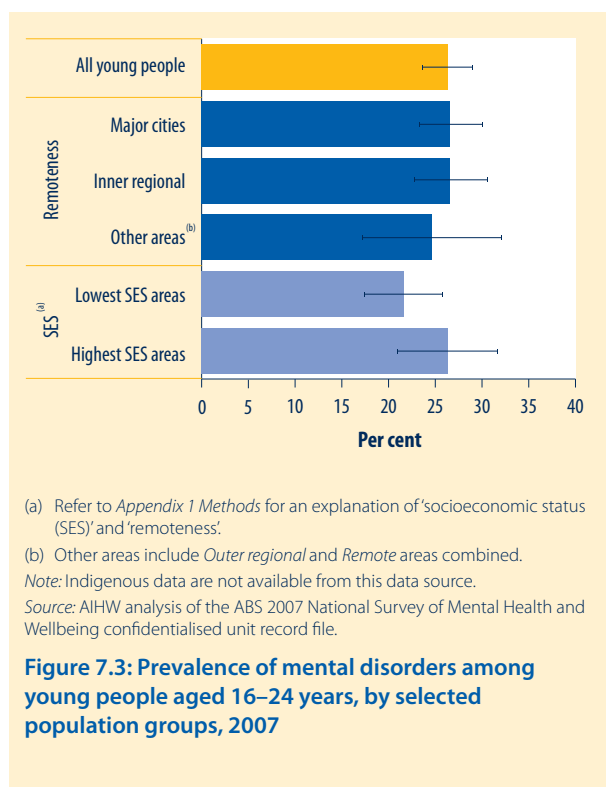
(b) Other areas include *Outer regional* and *Remote* areas combined.

Note: Indigenous data are not available from this data source.

Source: AIHW analysis of the ABS 2007 Survey of Mental Health and Wellbeing confidentialised unit record file.

**Figure 7.2: Prevalence of high or very high levels of psychological distress among young people aged 16–24 years, by selected population groups, 2007**





## 8 Injury and poisoning

**Injury and poisoning is the leading cause of death and hospitalisation among young people, yet many injuries are preventable through public health interventions.**

**In 2007, there were 926 deaths due to injury or poisoning among young Australians (a rate of 25 per 100,000), with land transport accidents and suicide accounting for two-thirds of these deaths. Injury death rates are substantially higher among Indigenous young people and those living in *Remote or Very remote areas*—3 times as high as the national rate.**

Injury, including poisoning, has a major, but largely preventable, impact on the health of young Australians. It is a leading cause of death and hospitalisation among young people and can leave many with serious disability or long-term conditions, such as acquired brain injury or spinal cord injury. This can severely affect their future health and wellbeing as well as their employment, educational and recreational opportunities. Effects may also extend beyond the injured person, as parents may need to resume or extend their care-giving role (NPHP 2004).

In adolescence and early adulthood, young people are most vulnerable to the influences of peer pressure and popular culture, and may be inclined to experiment, push boundaries and take risks that could result in accidents or injury (NPHP 2004). This is the stage of life when young people engage in behaviours that can jeopardise not only their current state of health but often their health for years to come (WHO 2010). The result is an over-representation of young people in injury and poisoning death statistics, in Australia and around the world.

Of particular concern is the over-representation of young people, particularly those aged 18–24 years, in road traffic accidents. This has been linked to risky driving behaviours including speeding, driving when fatigued, and driving under the influence of alcohol or other drugs (Smart et al. 2005). In high-income countries, traffic accidents caused 32% of deaths in males and 27% in females aged 10–24 years in 2004 (Patton et al. 2009). Intentional injuries, such as self-harm or suicide and assault, are also important causes of hospitalisation and death among young people.

Injuries are largely preventable and, because of their adverse effects on the health of individuals and their impact on Australia's health system, injury prevention and control was made a National Health Priority Area in 1986; this led to the development of the *National Injury Prevention and Safety Promotion Plan: 2004–2014* (NPHP 2004).

### Deaths from injury and poisoning

Injuries are a major cause of burden of disease among young people, accounting for an estimated 18% of the overall burden of disease in Australia among 15–24 year olds in 2003. Three-quarters of this burden was due to premature mortality. Among males, road transport accidents were the third leading specific cause of disease burden after anxiety, depression and substance use disorders (10%, 17% and 14% respectively) (Begg et al. 2007).

Unless otherwise stated, the Australian Institute of Health and Welfare's (AIHW) National Mortality Database is used in this chapter to examine injury mortality differentials and leading causes of injury deaths (see *Appendix 2 Data sources* for more information on this data collection). Reference should be made to *Appendix 1 Methods* for technical notes regarding the analysis of injury data, since recent changes in classification methods have complicated the interpretation of rates and trends for particular causes of injury and poisoning death.

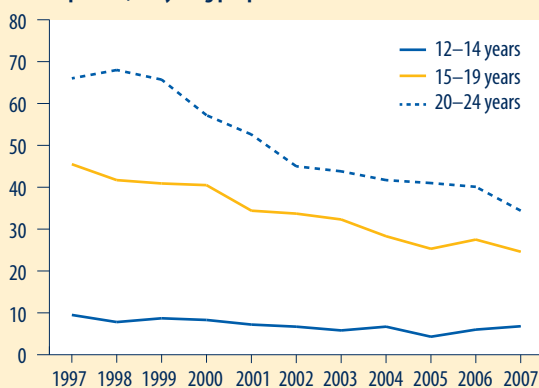
As with overall mortality, injury deaths are measured as the number of injury deaths per 100,000 young people of the same age group.

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

In 2007, there were 933 injury and poisoning deaths (hereafter referred to as injury deaths) among young people aged 12–24 years—a rate of 25 per 100,000 young people:

- Injury accounted for two-thirds (66%) of all deaths among young Australians. This proportion was similar for 15–19 and 20–24 year olds (69% and 66% respectively) but lower for 12–14 year olds (49%). Death rates from injury varied by age, from 7 per 100,000 for 12–14 year olds to 25 for 15–19 year olds and 34 for 20–24 year olds.
- Males accounted for over three-quarters (76%) of all injury deaths among young people. The injury death rate for young males was overall 3 times the rate for young females (36 and 12 per 100,000 respectively). However, the gap in injury deaths for males and females increases with age. Among 12–14 year olds, rates were similar (7 and 6 per 100,000 for males and females, respectively). Among 15–19 year olds, rates were twice as high for males as females (34 and 14 per 100,000 respectively), increasing to almost 4 times as high for 20–24 year olds (54 and 14 per 100,000 males and females, respectively).
- Injury death rates declined by 46% over the period 1997–2007, declining from 45 to 25 deaths per 100,000 young people. Death rates among males fell from 69 to 36 per 100,000 (47% decline) and among females from 21 to 12 (42% decline) over this period. The rate of decline over this period was similar among 15–19 and 20–24 year olds (46% and 48% decline, respectively), but was lower among 12–14 year olds (28% decline) (Figure 8.1).

Deaths per 100,000 young people



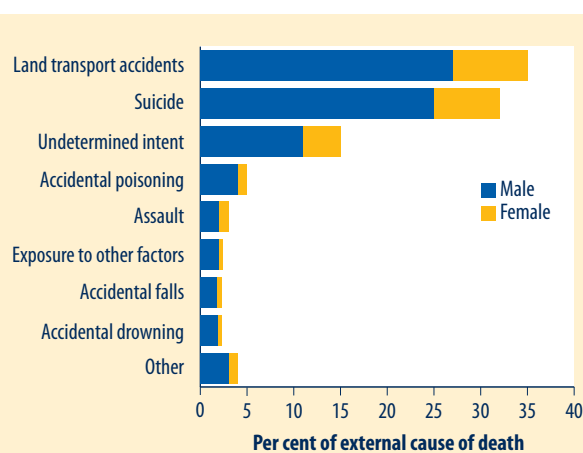
Source: AIHW National Mortality Database.

**Figure 8.1: Injury and poisoning death rates for young people aged 12–24 years, 1997–2007**

- Between 2002 and 2007, injury death rates continued to decline among 15–19 year olds and 20–24 year olds (27% and 24% decline, respectively); however, rates remained relatively steady among 12–14 year olds (4–7 per 100,000 over this period).

## Causes of injury deaths

In 2007, among 15–24 year olds, around one-third of injury deaths were caused by land transport accidents (35%, 303 deaths) and a further 32% were due to suicide (284 deaths). Accidental poisoning and assault were also responsible for a considerable number of deaths among young people aged 15–24 years (40 and 26 deaths respectively) (Figure 8.2). These specific causes are examined in more detail in the following sections.



Note: Refer to Table A1.2 in *Appendix 1 Methods* for a list of ICD-10 codes.

Source: AIHW National Mortality Database.

**Figure 8.2: Injury and poisoning deaths among young people aged 15–24 years, by external cause of injury, 2007**

## Road traffic accidents

Young people are a vulnerable group of road users because of cognitive, attitudinal, behavioural and social factors. Globally, road traffic injuries are the leading cause of death among young people—each year nearly 400,000 people under 25 years die on the world's roads (WHO 2007c). In high-income countries, traffic accidents caused 32% of deaths in males and 27% in females aged 10–24 years in 2004 (Patton et al. 2009).

Both globally and within Australia, young drivers are significantly over-represented among those killed or injured in road traffic accidents, as young drivers are more likely to engage in risky driving behaviours (WHO 2010).

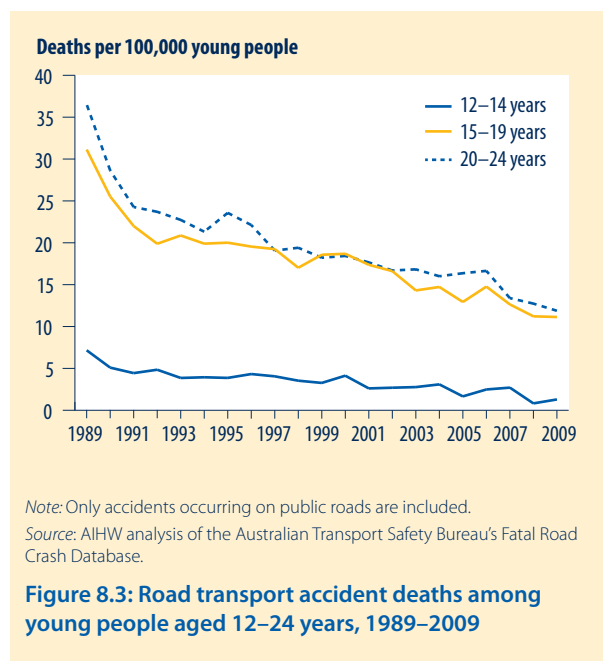
Over the last two decades there have been large declines in the number of young people dying on Australia's roads, mainly due to initiatives such as random breath testing, compulsory seat belts, safer vehicles and better roads. Many jurisdictions have also put in place young driver education programs, although there is no empirical evidence as yet that these programs have any effect on road crashes (Mayhew & Simpson 2002).

The most accurate information on road transport accident deaths is from the Australian Transport Safety Bureau's Fatal Road Crash Database (see *Appendix 2 Data sources* for more information on this database). These data are not comparable with those from the AIHW National Mortality Database for road transport accident deaths.

**National indicator:** Road transport accident death rate for young people aged 12–24 years

Based on the Fatal Road Crash Database, in 2009, among young people aged 12–24 years:

- There were 370 deaths due to road transport accidents, a rate of 9 per 100,000 young people, a substantial decline from 28 per 100,000 in 1989 (Figure 8.3).
- Young males accounted for three-quarters of road transport accident deaths, with death rates almost 3 times as high among males as females (13 and 5 per 100,000 respectively).



- Death rates varied by age among young people, ranging from 1 per 100,000 among 12–14 year olds to 11 and 12 among 15–19 and 20–24 year olds respectively. Death rates start to decline again over the age of 25 years to 9 per 100,000 among 25–34 year olds and 7 per 100,000 among those aged 35 years and over.
- Most transport accident deaths (80%) were related to either driving a car (45%) or being a passenger (36%), with considerably lower proportions for motorcycle riders (10%), pedestrians (8%) or cyclists (1%). As would be expected, this varied by age. Most deaths of 12–14 year olds occurred when the young person was a passenger in a car (73% of accident deaths), while 15–19 year olds were equally likely to be drivers or passengers (both 41% of accident deaths). For 20–24 year olds, the most common situation was for the death to occur while driving a car (50% of accident deaths).

### Assault and homicide

Both fatal and non-fatal assaults involving young people contribute significantly to the global burden of premature death, injury and disability. Violence among young people affects both the victims themselves and their families, friends and communities, contributing to increased health and welfare costs, reduced productivity, decreased value of property and disrupted essential services (Krug et al. 2002). Harmful and hazardous alcohol use are risk factors both for being victimised and perpetrating youth violence, and are therefore priority areas for intervention (WHO 2006b).

The most accurate information on assault (homicide) deaths is from the Australian Institute of Criminology's National Homicide Monitoring Program (NHMP), which reports regularly on the number of homicides in Australia and collates data from police and coronial reports to build up a picture of both offenders and victims. Data from the NHMP are not comparable with assault deaths in the AIHW National Mortality Database (see *Appendix 2 Data sources* for more information on these data collections).

**National indicator:** Assault death rate for young people aged 12–24 years

In 2007–08, among young people aged 12–24 years, according to the NHMP:

- There were 50 deaths due to assault (homicide), a rate of 1.3 per 100,000 young people.
- Two-thirds of assault deaths (64%) occurred among males, but rates between males and females were not significantly different (1.6 and 1.0 per 100,000 respectively).
- Death rates due to assault were higher among 20–24 year olds than 15–19 and 12–14 year olds (2.0, 1.2 and 0.4 per 100,000 respectively).
- Young people accounted for 18% of all homicide victims, similar to the proportion for 25–34 year olds (20%), but lower than for 35–49 year olds who made up 26% of all homicide victims.
- The overall assault (homicide) rate appears to have decreased from 1.8 in 2001–02 to 1.3 in 2007–08 (a 29% decline); however, this difference is not statistically significant due to the small number of reported cases.

## Suicide

A range of interacting factors—related to individual mental health, family and social circumstances—are associated with the increased risk of suicide among young people. Some of these factors include mental illness combined with harmful drug use, previous suicide attempts or intentional self-harm, family history of suicide or suicidal behaviour, socioeconomic disadvantage or poor education (Beautrais 2000; Goldney 1998). Other social risk factors identified for adolescent suicide include parental separation, divorce and family discord, as well as child abuse, bullying and peer victimisation (Brodsky et al. 2008; Klomek et al. 2008).

This is also the time in life when many mental illnesses develop and young people have the highest incidence of diagnosable symptoms of mental illness (ABS 2008f; Patel et al. 2007a), which may increase the risk of suicidal intentions and behaviour. Young people may also lack some protective factors, such as a spouse or de facto partner (Agerbo et al. 2006).

The AIHW National Mortality Database has been used in this section to report on suicide deaths. The number of reported suicide deaths is likely to be underestimated for young people, as many of these deaths are certified by a coroner, and there is a delay between the registration of a death and the final coding of cause of death (see injury deaths section in *Appendix 1 Methods* for further details). Many of these deaths may therefore be coded to

‘event of undetermined intent’, resulting in an over-reporting in this category.

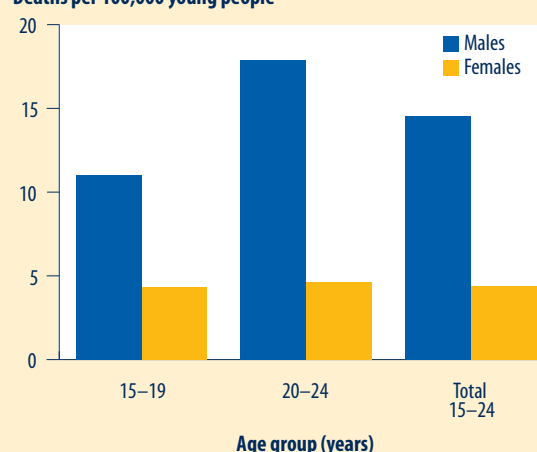
There are also specific issues related to the classification of suicide among young people aged 12–14 years, related to their ability to form intent. As such, some jurisdictions do not classify death as suicide among this age group. For this reason, the indicator for suicide rate is restricted to young people aged 15–24 years.

### National indicator: Suicide rate for young people aged 15–24 years

In 2007, among young people aged 15–24 years:

- Suicide deaths accounted for 284 deaths among young people (22%)—a rate of 10 per 100,000 young people—and was the second most common external cause of injury death among young people, after land transport accidents.
- Males were more likely to die from suicide than females, with rates being 3 times as high for males as for females overall (15 and 4 per 100,000 respectively). The difference between the sexes was greater among 20–24 year olds (18 and 5 per 100,000 males and females respectively) than among 15–19 year olds (11 and 4 per 100,000) (Figure 8.4).
- Suicide rates were similar for 15–19 and 20–24 year olds (8 per 100,000 15–19 year olds and

Deaths per 100,000 young people



Note: Suicide deaths for 2007 have been subject to one revision by the ABS. See *Appendix 1 Methods* for information on revisions to cause of death data.

Source: AIHW National Mortality Database.

Figure 8.4: Suicide rates for young people aged 15–24 years, 2007



11 per 100,000 20–24 year olds). The 15–24 year age group (together with 65–74 year olds) had the lowest suicide rate, while the highest rate occurred among 30–39 year olds (15 per 100,000).

Suicide rates appear to have declined since a peak in 1997 at 19 deaths per 100,000, after fluctuating between 14 and 16 per 100,000 between 1986 and 1997. These data should be interpreted with caution, as there are data quality issues with suicide data, which have resulted in an under-count of the number of deaths due to suicide from 2003 onwards (see *Appendix 1 Methods* for further details).

## Accidental poisoning

Accidental poisoning is one of the leading causes of death among young Australians.

Accidental poisoning includes poisoning by substances such as gases and vapours, pesticides, corrosive and caustic agents, glues and adhesives, paints, dyes, soaps and detergents, poisonous foodstuffs and poisonous plants. It also includes poisoning by drugs, including accidental overdose, accidents in the use of drugs, medicaments and biological substances in medical and surgical procedures, and cases where the wrong drug is given, taken in error or taken inadvertently. It does not include cases where there is drug dependence, administration with suicidal or homicidal intent, or where the correct drug is properly administered but an adverse effect occurs. The data presented in this section focuses on deaths due to accidental poisoning only, not all deaths due to poisoning.

The AIHW National Mortality Database has been used in this section to report on deaths from accidental poisoning.

**National indicator:** Accidental poisoning death rate for young people aged 12–24 years

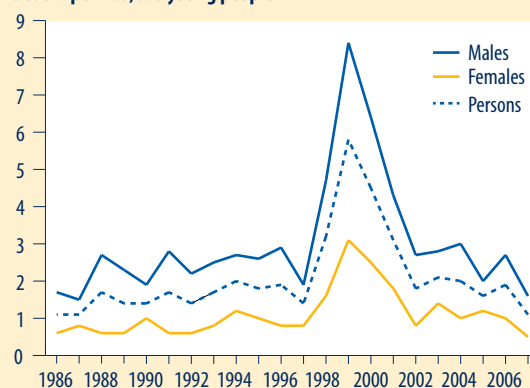
In 2007, among young people aged 12–24 years:

- Accidental poisoning accounted for 41 deaths among young people (3% of all youth deaths)—a rate of 1.1 per 100,000 young people. Accidental poisoning was the third highest specific cause of injury death among young people after land transport accidents and suicide.
- Death rates due to accidental poisoning were 3 times as high among males as females (1.6 and 0.5 per 100,000, respectively), with 20–24 year old males accounting for three-fifths (59%) of all the accidental poisoning deaths among young people.

- The death rate due to accidental poisoning among 12–24 year olds was the lowest of all age groups, with the highest death rates occurring among 25–34 year olds (5.3 per 100,000) and 35–44 year olds (4.8 per 100,000).
- Most accidental poisoning deaths were due to poisoning by drugs (71%). Alcohol and organic solvents each caused 7% of deaths, with the remaining 15% caused by other gases, vapours or substances.
- Death rates from accidental poisoning have remained steady over the past two decades, with rates generally fluctuating between 1.0 and 2.0 per 100,000 young people (Figure 8.5). The death rate increased between 1998 and 2001, with a peak in 1999 of 6 deaths per 100,000, which coincided with an epidemic of drug poisoning by opiate narcotics, mainly heroin (Henley et al. 2007).

## Injury and poisoning hospitalisations

Deaths per 100,000 young people



Source: AIHW National Mortality Database.

**Figure 8.5:** Accidental poisoning death rates for young people aged 12–24 years, 1987–2007

Hospital data provide an indication of the incidence of the more severe injuries sustained by young people, but this is only a part of the overall picture. For all the reasons previously stated that result in young people being more likely to engage in risk-taking behaviour, it stands to reason that they are more likely to sustain injury during this time of their life.

The Australian Bureau of Statistics' 2004–05 National Health Survey collected information about the most recent injury that was sustained in the 4 weeks preceding the survey for which an action was taken (for example, receiving medical treatment or reducing usual activities). After

children, young people were found to have the highest incidence rate of injury, with 23% of 12–24 year olds reporting having sustained an injury in the preceding 4 weeks. Only 6% of these attended hospital for treatment (including admitted hospital stays and visits to emergency or outpatient clinics), confirming that hospital data reveal only a small part of the overall burden of injury among young people (AIHW: Eldridge 2008).

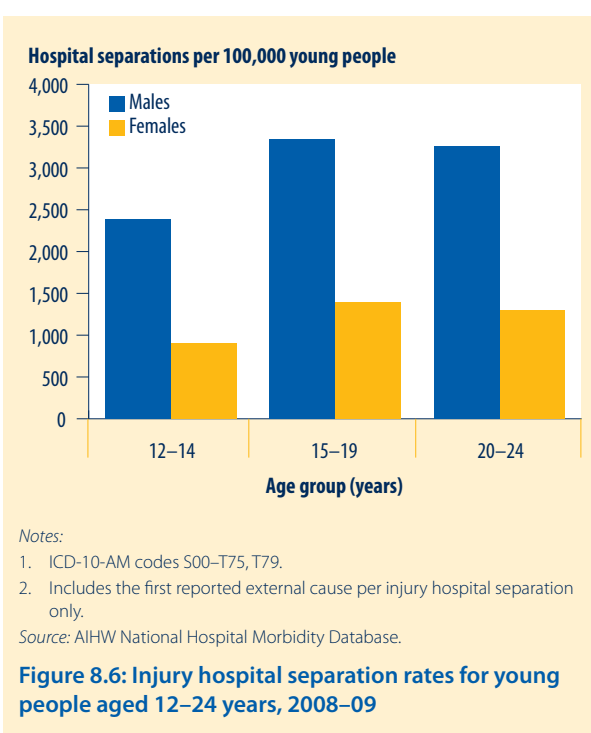
The information on injury hospitalisations in this section is obtained from the AIHW National Hospital Morbidity Database (see *Appendix 2 Data sources* for more information on this data collection). Hospitalisation data (also known as ‘hospital separations’) only include patients admitted for an episode of care and do not include those who attend emergency or outpatient clinics. The data are a measure of an episode of care, and multiple admissions for the same individual are therefore counted as multiple episodes of care (see *Appendix 1 Methods* for the methods used for analysing hospital separations for injury).

**National indicator:** Injury and poisoning hospitalisation rate for young people aged 12–24 years

In 2008–09, injury and poisoning (hereafter referred to as ‘injury’) was the third most common cause of hospital separation among young people aged 12–24 years, with 85,360 separations, representing 14% of all hospital separations for young people:

- The injury hospital separation rate was 2,199 separations per 100,000 young people, a 6% increase since 1998–99, with similar increases for males and females.
- Males accounted for 72% of injury hospital separations, varying little by age group (74%, 72% and 72% for 12–14, 15–19 and 20–24 year olds respectively)—a rate of 3,100 per 100,000 males and 1,251 per 100,000 females.
- The injury hospital separations rate for young people varied by age: 15–19 and 20–24 year olds had similar rates (2,394 and 2,305 respectively) while the rate for 12–14 year olds was lower (1,667) (Figure 8.6).

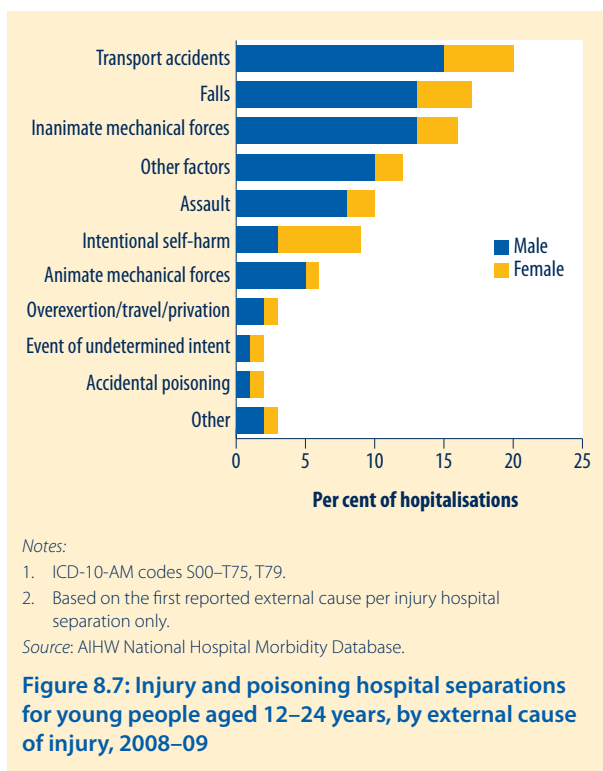
The event or circumstance that led to an injury is known as the external cause of injury. This provides important information for developing preventive strategies to reduce the risk of serious injury to young people. Multiple external causes of injury can be reported, but for this analysis, only



the first reported external cause is included. In 2008–09, among young people aged 12–24 years:

- The most common external cause of injury leading to hospitalisation was transport accidents, accounting for 21% of injury hospital separations among young people (17,539 hospitalisations, at a rate of 452 per 100,000 young people) (Figure 8.7).
- Falls and exposure to inanimate mechanical forces (for example, being struck by a thrown or fallen rock) were the second and third most common reason for injury hospitalisation, accounting for 17% and 16% of injury hospital separations, respectively.
- Males made up the majority of injury hospital separations for most external causes (52–83% of hospitalisations). The exceptions were intentional self-harm and accidental poisoning, where females accounted for 70% and 56% of these hospital separations, respectively.
- The most common external causes of injury hospitalisation differed for the youngest age group, with falls being the most common cause for 12–14 year olds (34% of separations), followed by transport accidents (22%).





**Figure 8.7: Injury and poisoning hospital separations for young people aged 12–24 years, by external cause of injury, 2008–09**

## Do injury mortality and hospitalisations vary across population groups?

Apart from young males, some groups of young people are more at risk of injury than others. These include Indigenous young people, those living in remote areas and those living in socioeconomically disadvantaged areas. The associated disadvantages of poorer education, lower incomes and fewer employment opportunities affect these young people’s opportunities for gaining knowledge about safety and injury prevention (NPHP 2004). In addition, other factors such as cultural background, parental modelling or peer pressure shape attitudes that can influence behaviours.

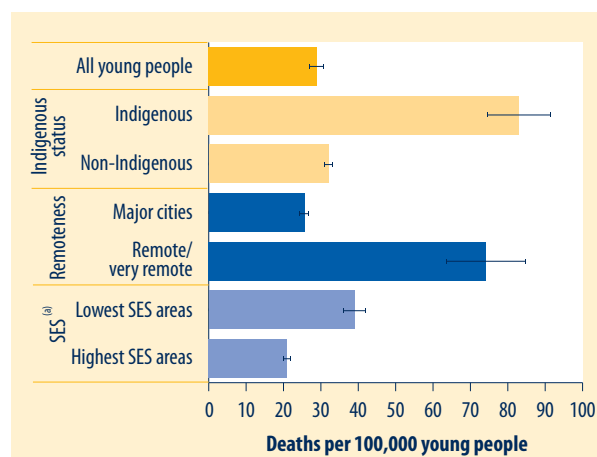
The data shown for suicide in this section differ slightly from those in the suicide indicator section as revised suicide rates were not available by population groups at the time of publication.

## Aboriginal and Torres Strait Islander young people

In 2003–2007, among Indigenous young people aged 15–24 years in New South Wales, Queensland, Northern Territory, Western Australia and South Australia:

- There were 373 deaths due to injury and poisoning, a rate of 84 per 100,000 Indigenous young people—a rate nearly 3 times as high as for non-Indigenous young people (31 per 100,000) (Figure 8.8).
- Suicide was the leading cause of injury death among Indigenous young people, with a rate of 33 per 100,000 (144 deaths)—4 times the rate for non-Indigenous young people. This was followed by land transport accidents (26 per 100,000—twice as high as the non-Indigenous rate) and assault (6 per 100,000—6 times the non-Indigenous rate). The ranking of the leading causes differed for non-Indigenous young people, where land transport accidents were the leading cause of death, followed by suicide and accidental poisoning.

Hospital separation rates for injury were also higher among Indigenous young people than other young people. Hospital separation data by Indigenous status excludes the Australian Capital Territory,



(a) Refer to *Appendix 1 Methods* for an explanation of ‘socioeconomic status (SES)’ and ‘remoteness’.

Notes:

1. For data quality reasons, Indigenous and non-Indigenous data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only.
2. Due to the small number of deaths among Indigenous young people, deaths data by Indigenous status has been combined for analysis for the 5-year period 2003–2007.

Source: AIHW National Mortality Database.

**Figure 8.8: Injury and poisoning deaths among young people aged 15–24 years, by selected population groups, 2005–2007**

Tasmania and private hospitals in the Northern Territory. In 2008–09, among Indigenous young people aged 15–24 years:

- There were 4,003 hospitalisations due to injury, a rate of 3,809 per 100,000 and 1.7 times that of other young people (2,243 per 100,000).
- The leading causes of injury hospitalisation differed from other young people. Assault was the most common cause of injury hospitalisation among Indigenous young people, with a rate of 1,195 per 100,000—5 times that of other young people (229 per 100,000). For other young people the leading cause was transport accidents.
- The second most common cause of injury that led to hospitalisation for both Indigenous and other young people was exposure to inanimate mechanical forces (591 per 100,000 Indigenous young people and 367 for other young people).
- Transport accidents were the third most common cause of injury hospitalisation for Indigenous young people (500 per 100,000). This was a similar rate as for other young people, for whom it was the leading cause (451 per 100,000).

See *Chapter 42 Health and wellbeing of Indigenous young people* for further information on injury among Indigenous young people

## Remoteness

In 2005–2007, among young people aged 15–24 years:

- Injury death rates increased with remoteness, with young people in *Remote* and *Very remote* areas combined being 3 times as likely as those in *Major cities* to die from injury (76 and 26 per 100,000 respectively) (Figure 8.8).
- This pattern was largely driven by higher death rates from the leading two causes of death, land transport accidents and suicide, in *Remote* and *Very remote* areas combined (death rates for both these causes were 3 times as high as those in *Major cities*). The third leading cause of death differs by remoteness—assault was the third leading cause in *Remote* and *Very remote* areas combined, while in *Major cities* it was accidental poisoning. This may reflect the higher proportion of Indigenous youth living in *Remote* and *Very remote* areas combined and the higher rate of assault occurring among this group.

In 2008–09 among 15–24 year olds:

- Hospital separation rates for injury were lowest in *Major cities* (1,959 per 100,000) and highest in *Remote* and *Very remote* areas (4,977 per 100,000).
- Hospital separation rates for all external causes were higher in *Remote* and *Very remote* areas combined than in *Major cities*. The greatest differences in rates between these areas were for assault (5.7 times as high—1,264 and 223 per 100,000 respectively) and land transport accidents (3.2 times as high—1,083 and 339 per 100,000 respectively).
- Intentional self-harm was also more common in *Remote* and *Very remote* areas combined than in *Major cities*, with rates of 320 and 207 per 100,000 respectively.

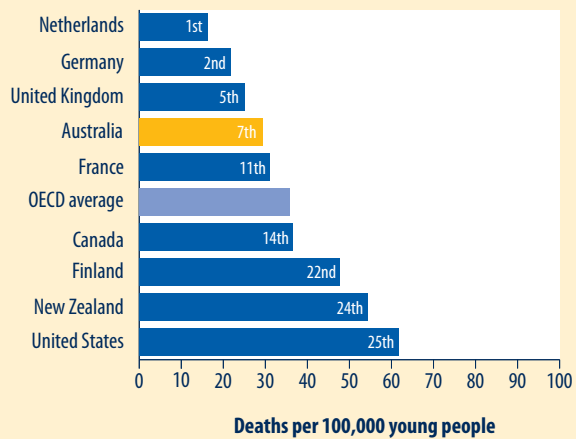
## Socioeconomic status

In 2005–2007, among young people aged 15–24 years:

- Injury death rates were highest in areas of lowest socioeconomic status (39 per 100,000 young people), compared with 21 per 100,000 in the highest socioeconomic status areas.

## How does Australia's injury mortality rate compare internationally?

Australia's injury and poisoning death rate among young people aged 15–24 years ranked 7th lowest out of 25 OECD (Organisation for Economic Co-operation and Development) countries in 2007. Australia's rate of 29 deaths per 100,000 young people was lower than the OECD average of 36 per 100,000 (Figure 8.9). The Netherlands and Germany had the lowest injury and poisoning death rates (16 and 22 per 100,000, respectively), while the United States and New Zealand had the highest rates (62 and 54 per 100,000 respectively), according to the World Health Organization Statistical Information System.



*Notes:*

1. Based on data from 25 OECD countries, using the most recent year of available data.
2. Data were from the following years: 2004 for Canada and New Zealand; 2005 for France and the USA; 2006 for the Netherlands, Germany, the United Kingdom and Finland; 2007 for Australia.

Source: WHO 2009.

**Figure 8.9: Injury and poisoning death rates among young people aged 15–24 years, by selected OECD countries, 2004–2007**

## 9 Chronic conditions

**Chronic conditions can affect a young person's normal growth and development, quality of life, long-term health and wellbeing, and successful participation in society.**

**In 2007–08, three in five young Australians (60%) had a long-term health condition, and over one in ten (11%) had asthma. While the prevalence of asthma is declining and cancer survival continues to improve, the incidence of insulin-treated diabetes is rising.**

A chronic condition is an ongoing impairment characterised by a physical or mental condition, functional limitation, and service use or need beyond routine care. Chronic conditions can affect the physical, social and emotional development of young people, for example, through fear of stigmatisation, school and employment absences or inability to participate in age-appropriate activities, and through physical pain and suffering that can negatively affect future functioning (Dell'Api et al. 2007). Chronic conditions are a significant challenge for Australia's young people. These conditions can affect a young person's normal growth and development, quality of life, long-term health and wellbeing, and successful participation in society, education and employment.

The effect of a chronic condition on a young person's life depends on many factors, such as the actual condition, the quality of care the young person receives and their social support (Varni et al. 2007). Young people with long-term conditions are also more vulnerable to various risks not directly associated with their condition, for example, mixing medications with recreational drugs, illicit or licit, which can produce significant side effects (Sawyer et al. 2007).

Chronic conditions can place young people and their families under social, psychological and economic pressure (Witt et al. 2009). The impact depends on the severity of the condition, its effects on daily living, and how well it can be managed or treated.

This chapter focuses on three chronic conditions affecting Australia's young people—asthma, diabetes and cancer. These conditions are National Health Priority Areas, due to their effects on health, the potential to reduce their burden, and community concern. These conditions accounted for 8% of the burden of disease among young

people aged 15–24 years in 2003 (Begg et al. 2007). Other chapters in this report relating to chronic conditions are *Chapter 5 Disability*, *Chapter 7 Mental health* and *Chapter 11 Oral health*.

### Prevalence of long-term conditions

The Australian Bureau of Statistics' (ABS) National Health Surveys collect information on long-term conditions, defined as 'a disease or health problem that has lasted, or was expected to last, 6 months or more' (see *Appendix 2 Data sources* for more information). This information is based on self-report and the disease or health problem identified may not have been medically diagnosed.

**National indicator:** Prevalence of long-term conditions among young people aged 12–24 years

In 2007–08, among young people aged 12–24 years:

- Almost 60% (2.2 million) of young people were estimated to have at least one long-term condition. The prevalence of long-term conditions among 15–24 year olds has declined since 2001, from 71% to 64%.
- Females were more likely to report a long-term condition than males (66% and 54% respectively).
- The prevalence of long-term conditions was higher among 20–24 year olds than among 12–14 or 15–19 year olds (68%, 59% and 48% respectively). These rates were considerably higher than those for children aged 0–11 years (34%), but lower than for 25–34 year olds (75%).
- Of those with a long-term condition, 46% reported only one long-term condition, 27% reported two and 27% reported three or more conditions.

- Almost one-third (33%) of young people with a long-term condition reported some form of disability, although only 17% of young people with a long-term condition reported some form of activity limitation.
- Hay fever and allergic rhinitis, and short-sightedness were the most frequently reported long-term conditions among young people (16% each), followed by asthma (11%) and long-sightedness (7%) (Figure 9.1).



## Asthma

Asthma is one of the most common long-term conditions affecting young Australians. It is a common chronic lung condition, which causes episodes of wheezing, breathlessness and chest tightness due to excessive narrowing of the airways. Among those with the condition, episodes can be triggered by a range of exposures, including viral infections, physical activity, air pollutants, tobacco smoke or specific allergens such as house dust mites, pollens, mould spores, animal danders and occupational allergens. Although the underlying causes of asthma are still not well understood, there is evidence that environmental and lifestyle factors, as well as genetic factors (such as parental asthma or allergic tendency), may increase the risk of developing asthma (Arshad et al. 2005).

For the majority of people with asthma, the condition can be effectively controlled with appropriate use of preventive and reliever medication, as well as by avoiding or controlling trigger factors. However, for some people, asthma can place considerable restrictions on their physical, social and emotional lives, and on their families (GINA 2005). Young people with asthma report a lower quality of life than their healthy peers, although the extent to which asthma affects their quality of life is dependent on the severity of the condition (Varni et al. 2007).

While deaths from asthma among young people are rare (10 deaths in 2007), asthma was the second highest cause of disease burden among young females, accounting for 7% of the burden of disease among 15–24 year old females in 2003 (overall, asthma accounted for 4% of the total disease burden among young people) (Begg et al. 2007).

## Prevalence of asthma

It is difficult to accurately estimate the prevalence of asthma in the population due to differences in how asthma is measured, for example, by self-reported wheeze, diagnosis by a general practitioner based on symptoms, or a combination of symptoms and lung function tests (GINA 2005). The ABS National Health Survey collects information on both self-reported asthma, as a long-term condition, and medically diagnosed asthma, along with interventions and actions taken by young people to treat their asthma. Medically diagnosed asthma may not be reported as a long-term condition, as the condition may no longer be current. According to the 2007–08 National Health Survey, the estimated number of young people with self-reported or medically diagnosed asthma was similar (396,000 compared with 400,000). This chapter presents information on self-reported asthma as a long-term condition to be consistent with the other chronic conditions presented in this chapter.

**National indicator:** Proportion of young people aged 12–24 years with asthma as a long-term condition

In 2007–08, among young people aged 12–24 years:

- An estimated 396,000 or 11% of young people reported asthma as a long-term condition. Among 15–24 year olds, the prevalence of asthma has declined from 16% to 11% between 2001 and 2007–08.

- The overall prevalence of self-reported asthma among young people was similar for males and females (both 11%). Among children (0–14 year olds) the prevalence of asthma was higher among boys than girls (13% and 8% respectively).
- Asthma prevalence was relatively stable across the age groups, ranging from 9% among 12–14 year olds to 12% among 15–19 year olds to 11% among 20–24 year olds. These rates are similar to the rate for children aged 0–11 years (11%), and people aged 25–64 years (9%). The prevalence of asthma peaked for males aged 5–9 years (15%).
- Of all young people with asthma, 28% had discussed asthma self-management with a general practitioner or specialist in the preceding 12 months.
- Of those young people aged 15–24 years reporting asthma as a long-term condition, almost one in five (18%) had days away from work, school or study (ABS 2009j).

There is currently no cure for asthma, although the condition can be effectively managed. Key elements in the management of asthma include a written asthma action plan and regular use of medications that control the disease and prevent flare-ups for people with persistent symptoms. However, according to the 2007–08 ABS National Health Survey, less than one in five young people (18%) reported having written asthma action plans.

## Health service use for asthma

### General practice encounters

Asthma was managed at 3.6% of general practice encounters for young people aged 12–24 years in 2008–09, according to the Bettering the Evaluation and Care of Health survey of general practice. See *Chapter 39 General practice consultations* for more information.

### Hospitalisations

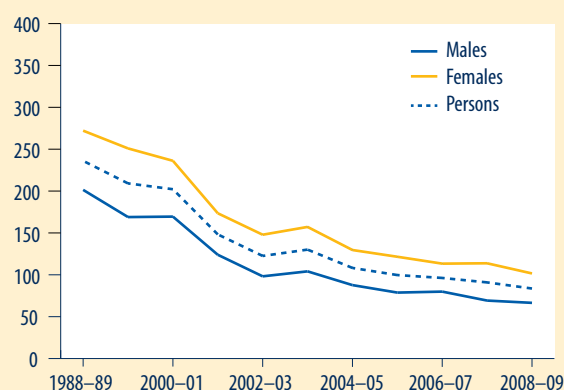
According to the Australian Institute of Health and Welfare's (AIHW) National Hospital Morbidity Database, in 2008–09, among young people aged 12–24 years:

- There were 3,245 hospital separations with a principal diagnosis of asthma a rate of 84 hospital separations per 100,000 young people (accounting for 0.5% of all youth hospital separations).
- The asthma hospital separation rate has declined considerably over the last decade from 236 per 100,000 young people to 84 between 1998–99 and 2008–09 (Figure 9.2). This decline may reflect improvements in asthma education, management

and treatment in the community, particularly in managing severe episodes.

- Females were more likely to be hospitalised for asthma than males (102 and 66 per 100,000 young people respectively), with females accounting for 59% of asthma separations.
- The rate of asthma hospital separations for young people declined with age (from 102 per 100,000 young people aged 12–14 years down to 76 per 100,000 young people aged 20–24); however, this pattern varied by sex. Among males, hospital separation rates declined with age, from 110 to 52 per 100,000 for 12–14 and 20–24 year olds, respectively, while among females the rates remained stable (95 and 103 respectively). The rate of asthma hospital separations among young people was significantly lower than the rate for children aged 0–11 years (630 per 100,000), and similar to those aged 25–64 years (82 per 100,000).

Hospitalisations per 100,000 young people



Note: Refer to Table A1.2 in *Appendix 1 Methods* for a list of ICD-10-AM codes.  
Source: AIHW National Hospital Morbidity Database.

**Figure 9.2: Trends in hospital separations for asthma, 1998–99 to 2007–08**

## Diabetes

Diabetes mellitus is a chronic condition marked by high levels of glucose in the blood. This condition is caused by the inability to produce insulin (a hormone produced by the pancreas to control blood glucose levels), or the insulin that is produced becoming less effective, or both. If left undiagnosed or poorly controlled, diabetes can lead to a range of complications including coronary heart disease, peripheral vascular disease, stroke, diabetic neuropathy (nerve disease), kidney failure, limb amputations, blindness, diabetic coma and premature death.



There are several types of diabetes with different causes and clinical histories. The three main types are Type 1, Type 2 and gestational diabetes. Type 1 diabetes most often appears during childhood and adolescence, and is marked by the inability to produce any insulin. Those affected need insulin replacement for survival. Type 1 diabetes is thought to be triggered by a combination of genetic and environmental factors, and currently there is no way to prevent the disease. Type 2 diabetes is the most common form of diabetes, occurring mostly in people aged 50 years and over, although in recent years it has started to appear during adolescence. People with Type 2 diabetes produce insulin but may not produce enough or the body cannot use it effectively. Type 2 diabetes is highly preventable through diet and exercise but, if developed, can be managed by lifestyle changes, oral glucose-lowering drugs, insulin injections or a combination of these. Gestational diabetes may develop during pregnancy, is short-term and is a marker of increased risk of developing Type 2 diabetes later in life. Some cases of gestational diabetes are managed by changes to diet and exercise, and some require insulin treatment.

There are very few deaths due to diabetes among young people: in 2007 there were 4 deaths from diabetes among 12–24 year olds. Diabetes accounted for 1% of the burden of disease among young people in 2003, and most of this burden was due to the disease itself rather than complications associated with it (Begg et al. 2007).

## Incidence of diabetes

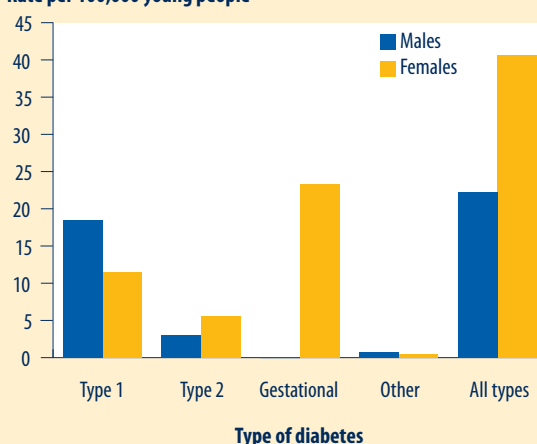
The National Diabetes Register collects information on new cases of insulin-treated diabetes, that is, all new cases of Type 1 diabetes and all other new cases of individuals needing insulin treatment, whether Type 2, gestational or other types of diabetes (see *Appendix 2 Data sources* for more information on this register). The data in this section are obtained from the register, and are likely to underestimate the incidence of diabetes among young people as the register records only insulin-treated diabetes, and the majority of Type 2 diabetes cases do not require insulin. This underestimate is likely to be small, as Type 2 diabetes predominantly occurs among those aged 50 years and over.

**National indicator:** Incidence of diabetes among young people aged 15–24 years

In 2007, among young people aged 15–24 years with insulin-treated diabetes:

- There were 921 new cases, a rate of 31 cases per 100,000 young people, representing a 41% increase in the rate of new cases compared with that in 2001 (22 per 100,000). Most of this increase occurred between 2004 and 2007, with the number of new cases rising from 645 to 921.
- Almost half of all new cases were Type 1 diabetes (48%; 443 cases) and over one-third gestational diabetes (36%; 336 cases). Insulin-treated Type 2 diabetes accounted for a substantially lower proportion, 14% (125 cases).
- Incidence rates were almost twice as high among young females as young males, 41 and 22 cases per 100,000 respectively (Figure 9.3). This difference was driven by the high proportion of new cases due to gestational diabetes. Incidence rates were more similar for males and females for Type 1, Type 2 and other forms of diabetes. When gestational diabetes is excluded, the rate of insulin-treated diabetes overall among males is higher than among females (22 per 100,000 compared with 17).
- Diabetes incidence rates varied with age. Young people have a higher annual incidence rate of diabetes than children (31 per 100,000 compared with 24 for children aged 0–14 years). Rates are almost twice as high among 20–24 year olds as 15–19 year olds (40 per 100,000 compared with 22). This reflects a higher rate among females aged 20–24 years (59 per 100,000) compared with those aged 15–19 years (22 per 100,000), a difference which is influenced by patterns in gestational diabetes.

Rate per 100,000 young people



Source: AIHW National Diabetes Register.

**Figure 9.3:** Incidence of insulin-treated diabetes among young people aged 15–24 years, 2007



## Health service use for diabetes

### Hospitalisations

According to the AIHW National Hospital Morbidity Database, in 2008–09, among young people aged 12–24 years:

- There were 5,745 hospital separations with a principal diagnosis of diabetes a rate of 148 per 100,000, representing 0.9% of all hospitalisations for young people, a higher rate than in 1998–99 (79 per 100,000).
- Females had a higher rate of diabetes hospital separations than males (188 and 110 per 100,000 respectively). Separation rates were similar for 12–14 year olds, 15–19 year olds and 20–24 year olds (146, 147 and 150 per 100,000 respectively).
- The majority of diabetes hospital separations among young people were for Type 1 diabetes (78% or 4,458), 18% were for gestational diabetes and 3% for Type 2 diabetes.

## Cancer

Cancer is a diverse group of diseases in which some of the body's cells become defective and multiply out of control. These cells form a mass called a neoplasm or tumour, and 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 nearby organs as they expand, while malignant tumours 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 number and types of cancers diagnosed vary by age and sex, with young people at considerably less risk of developing cancer than older people. Cancers in young people tend to differ from those observed in adults in appearance, site of origin and response to treatment. The cancers most commonly seen in young people are melanoma, Hodgkin lymphoma and testicular cancer, compared with colorectal, breast and prostate cancers seen in older populations.

While cancer is relatively uncommon in young people, it still causes significant morbidity and mortality, and even in those who are successfully treated there can be long-term effects on their health and wellbeing (Mertens et al. 2001; Schultz

et al. 2007). Cancer was the second leading cause of death among young people in 2007, after injuries and poisoning (see *Chapter 6 Deaths*), and was responsible for 2% of the burden of disease among young people in 2003 (Begg et al. 2007). However, over the last decade, medical advances and technological improvements in cancer diagnosis and treatment have resulted in improved survival and a decline in mortality among young people, despite cancer incidence rates remaining unchanged. Note that unless otherwise stated, the rates refer to crude rates expressed as the number of new cases or deaths per 100,000 population.

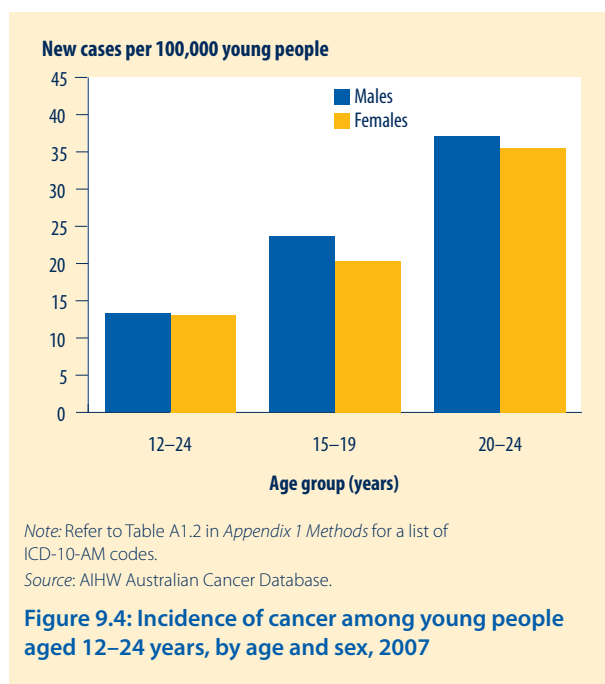
### Cancer incidence

The Australian Cancer Database contains clinical and demographic information on new cases of cancer (excluding basal and squamous cell carcinomas of the skin as they are not reportable) from hospitals, pathologists, cancer specialists, cancer treatment centres and nursing homes (see *Appendix 2 Data sources* for more information on this data collection).

**National indicator:** Incidence of cancer per 100,000 young people aged 12–24 years

In 2007, among young people aged 12–24 years:

- There were 979 new cases of cancer diagnosed—a rate of 26 new cases per 100,000 young people. Rates have remained stable since 1996, when the rate was 29 per 100,000.
- The incidence of cancer was similar for males and females, 27 and 25 new cases per 100,000 young males and females, respectively (Figure 9.4).
- The cancer incidence rate varied with age, from 13 to 22 to 36 new cases per 100,000 young people aged 12–14, 15–19 and 20–24 years, respectively.
- The most common type of new cancer diagnosed among young people overall was melanoma of the skin, with a rate of 5 new cases per 100,000. This varied by sex, with the most common cancer in males being cancer of the testis (5 per 100,000), followed by melanoma of the skin (4 per 100,000). Among females, melanoma of the skin was the most common (6 per 100,000), with Hodgkin lymphoma (4 per 100,000) the second most common.



## Health service use for cancer

### Hospitalisations

According to the AIHW National Hospital Morbidity Database, in 2008–09, among young people aged 12–24 years:

- There were 5,198 hospital separations with a principal diagnosis of cancer—a rate of 134 per 100,000 young people, representing 0.8% of all hospital separations for young people. The cancer separation rate was the same in 1998–99 (134 per 100,000 young people).
- Cancer hospital separation rates were higher for males than females (155 and 111 per 100,000 respectively) and lower for those aged 12–14 years (146 per 100,000) compared with those aged 20–24 years (129 per 100,000).
- The most common reasons for cancer hospital separations among young people were lymphoid leukaemia (22%), malignant neoplasm of bone (10%) and Hodgkin lymphoma (9%).

### Cancer deaths

In 2007, according to the AIHW National Mortality Database, among young people aged 12–24 years:

- There were 142 cancer deaths among young people—a rate of 3.7 deaths per 100,000 young people. Cancer was the second leading cause of death, after injury and poisoning (see *Chapter 6 Deaths*).

- Death rates from cancer have remained stable over the last decade, from 4.5 deaths per 100,000 in 1997 to 3.7 per 100,000 in 2007.
- The most common causes of cancer death among young people were acute lymphoblastic leukaemia (15% of deaths), cancers of the bone (14%) and brain cancers (11%).

### Cancer survival

Survival after a diagnosis of cancer can be used to assess the effectiveness of early cancer detection, access to appropriate treatment services, collaboration between health care professionals, and ongoing medical research and clinical trials. 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 from the general population. A 5-year relative survival rate of, say, 70% means that a person diagnosed with cancer has a 70% chance of still being alive 5 years after their diagnosis, relative to other Australians of the same sex and age.

The 5-year relative survival rate among young people aged 12–24 years diagnosed with cancer in 1998–2004 was 85% for all cancers, an increase from 77% for those diagnosed in 1982–1986. The gains in survival have not been consistent across all cancers: non-Hodgkin lymphoma increased by 18 percentage points since 1982–1986 (from 64% to 82%), Hodgkin lymphoma by 10 percentage points (from 87% to 97%), and survival from melanoma of the skin by 3 percentage points (from 93% to 96%) (see *Chapter 35 Survival from melanoma of the skin*). Survival rates for all cancers were higher for 19–24 year olds than 12–18 year olds (88% and 82% respectively).

## Do rates of chronic conditions vary across population groups?

Socioeconomically disadvantaged Australians generally experience poorer levels of health than other Australians. The reasons for this are complex but are the result of a range of factors such as having lower educational attainment, higher rates of unemployment, lower incomes, more overcrowded housing, and a higher rate of unhealthy factors such as smoking and alcohol misuse, poor nutrition, lower levels of physical activity and higher rates of overweight and obesity. Some young people in Australia, therefore, experience various levels of health disadvantage, in particular Aboriginal and Torres Strait Islander young people and those living in remote areas, as they experience higher levels of socioeconomic disadvantage compared with other Australians.

## Aboriginal and Torres Strait Islander young people

Among young people aged 12–24 years:

- There was no statistically significant difference in the prevalence of at least one long-term condition among Indigenous and non-Indigenous young people (59% and 63% respectively, according to the ABS 2004–05 National Aboriginal and Torres Strait Islander Health Survey and the ABS 2004–05 National Health Survey).
- The prevalence of asthma was relatively similar between Indigenous and non-Indigenous young people (16% and 13% respectively, according to the 2004–05 National Aboriginal and Torres Strait Islander Health Survey and the 2004–05 National Health Survey).
- The incidence of Type 1 diabetes was lower among Indigenous young people aged 15–24 years than non-Indigenous young people in 2005–2007 (9 compared with 13 per 100,000, according to the National Diabetes Register).
- Over the period 2003–2007 there were 56 diagnoses (14 new cases per 100,000) for cancer among young Indigenous Australians aged 12–24 in Queensland, Western Australia, South Australia and the Northern Territory. This was lower than the rate for non-Indigenous young Australians in the same states over this period (25 per 100,000).
- In 2008–09, for the states New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory combined, hospital separation rates with a principal diagnosis of asthma and diabetes for young people aged

12–24 years were 1.5 and 2.4 times as high for Indigenous young people as for other young people (120 and 332 per 100,000 compared with 83 and 138 respectively). However, cancer hospital separation rates were lower for Indigenous than for other young people (113 and 137 per 100,000 respectively) (Table 9.1).

See *Chapter 42 Health and wellbeing of Indigenous young people* for further information.

## Remoteness

Although the prevalence of long-term conditions and incidence of chronic conditions among young people aged 12–24 years did not vary by remoteness, cancer survival rates did vary by remoteness:

- The prevalence of long-term conditions was similar for young people living in *Major cities* (61%), *Inner regional* areas (58%) and *Outer regional, Remote* and *Very remote* areas combined (61%) in 2007–08.
- There were no statistically significant differences in asthma prevalence rates between *Major cities*, *Inner regional* areas, and *Outer regional, Remote* and *Very remote* areas combined—9%, 12% and 16% respectively in 2007–08.
- The incidence of insulin-treated diabetes (Type 1 and Type 2 diabetes) was similar across remoteness categories in 2007–20 per 100,000 in *Major cities*, 18 and 20 in *Inner regional* and *Outer regional* areas, and 24 in *Remote* and *Very remote* areas combined.

**Table 9.1: Hospital separations for young people aged 12–24 years, 2008–09 (per 100,000)**

Population group	Asthma		Diabetes		Cancer	
	Rate	Ratio	Rate	Ratio	Rate	Ratio
Indigenous status						
Indigenous	120	1.5	332	2.4	113	0.8
Other	83		138		137	
Remoteness						
Remote and very remote	145	2.0	143	1.0	102*	1.0
Major cities	71		100		128	
<b>All young people</b>	<b>78</b>		<b>147</b>		<b>130</b>	

\* There is no statistically significant difference in the cancer incidence rate by remoteness categories at the 95% confidence level.

Notes:

1. The ratio for hospital separation rates is calculated as Indigenous divided by Other, *Remote* and *Very remote* areas combined divided by *Major cities*.
2. Indigenous and other separations are presented for the states NSW, Vic, Qld, WA, SA and NT combined.

Source: AIHW National Hospital Morbidity Database.

- Over the period 2003–2007 there was no statistically significant difference in the incidence of cancer for young people aged 15–24 years living in *Major cities* (30 new cases per 100,000), *Inner regional* and *Outer regional* areas (33 and 34 per 100,000) and *Remote* and *Very remote* areas combined (27 per 100,000).
- The 5-year relative survival rate for cancer among young people was statistically significantly higher in *Major cities* (86%) and *Inner regional* areas (84%) than *Remote* and *Very remote* areas combined (78%) in 1998–2004. The lower survival rates in *Regional* and *Remote* areas of Australia may reflect poorer access and availability of diagnostic and treatment services in these areas (AIHW 2008f).
- In 2008–09 hospital separation rates for asthma among young people aged 15–24 years were statistically significantly higher for young people living in *Remote* and *Very remote* areas combined than in *Major cities* (145 and 71 per 100,000 young people respectively) (Table 9.1). Hospital

separation rates for cancer were not statistically significantly different between *Remote* and *Very remote* areas combined (102 per 100,000) and *Major cities* (143 per 100,000). Diabetes hospital separation rates were also similar across these areas —128 and 100 per 100,000 respectively.

## Socioeconomic status

Among young people aged 12–24 years the prevalence and incidence of chronic conditions did not vary by socioeconomic status (SES):

- The prevalence of long-term conditions was similar for young people living in the lowest and highest SES areas (60% and 62% respectively).
- The prevalence of asthma was similar for young people living in the lowest and highest SES areas (9% each).
- The incidence of insulin-treated Type 1 diabetes was similar for young people aged 15–24 years living in the lowest and highest SES areas (16 and 14 per 100,000 respectively).

### Box 9.1: Other chronic diseases affecting young people

There are also other chronic diseases and health problems that can have a significant effect on the health and wellbeing of young people. These conditions are less common than asthma, diabetes and cancer, and there is limited national information on the prevalence, incidence or health service use of these conditions in the general population. The conditions of greatest interest to young people are discussed below.

**Inflammatory bowel diseases and Crohn disease** affect the small and large intestines, causing pain, bleeding, diarrhoea and fatigue. These diseases can affect people for extended periods of time, and may increase the risk of later bowel cancer. They often respond poorly to treatment (Hungin et al. 2005; Schirbel et al. 2010).

In 2008–09 among young people aged 12–24 years, there were 11,535 hospital separations for bowel diseases, including 6,063 for non-infective enteritis, accounting for 1.8% and 1.0% of hospital separations for young people, respectively. Further, there were 777 hospitalisations for irritable bowel syndrome (20 per 100,000) and 3,397 hospitalisations for Crohn disease (87 per 100,000).

**Sleep disorders and sleep deprivation** have an impact on the health and wellbeing outcomes of young people by reducing their capacity to undertake normal everyday activities. Thinking, emotional balance and behaviour are all affected by chronic sleep deprivation (Carpenter 2001), with demonstrated outcomes such as poorer school grades (Curcio et al. 2006; Wolfson & Carskadon 2003) and a higher rate of traffic accidents (Lucidi et al. 2006). Epidemiological studies have demonstrated that earlier parental set bedtimes may protect against adolescent depression and thoughts of suicide by lengthening sleep duration (Gangwisch et al. 2010). It is estimated that adolescents need about 9 hours of sleep a night (Carskadon 1999). See *Chapter 44 Emerging issues of concern* for further information.

**Malaise and psychosomatic symptoms** refer to a range of low-grade non-clinical illnesses that are thought to have an emotional rather than clinical origin. These conditions can include stomach and back pains, headaches, tiredness, nervousness and irritability, and may affect young people's health and engagement in education (Sweeting & West 2003). Young people may present to general practitioners and school sick bays with a range of chronic, unexplained physical symptoms that place significant burden on both primary care and school medical resources (Shannon et al. 2010). While young people's experience of such symptoms in themselves is likely to impact on their quality of life, their health and wellbeing, the presence of these symptoms is said to be indicative of high levels of perceived stress in their everyday lives which may include issues with school, society, self-identity, being bullied and peer acceptance (Fekkes et al. 2006; Kelly et al. 2010, Sweeting et al. 2010). The development of these conditions potentially indicates how young people are responding to stressful situations (WHO 2000).

The non-clinical and varied nature of these conditions means that, currently, the prevalence and impact of psychosomatic symptoms on young Australians' health and wellbeing is unknown and requires further research and investigation. A possible indicator of the degree to which young Australians experience psychosomatic symptoms is the frequency of medication usage (WHO 2000).

# 10 Communicable diseases

**Communicable diseases, caused by infectious organisms, may result in significant illness and disability.**

**Between 1998 and 2008 there have been large increases in notification rates for sexually transmissible infections, particularly chlamydia (a fourfold increase). However, there have been large declines in the notification rates for hepatitis A, B and C, with rates halving over this period.**

The term ‘communicable diseases’ refers to diseases or illnesses due to harmful infectious organisms or their toxic products, and are causes of considerable illness, disability and death in many parts of the world. They may be spread by a variety of means including human and animal contact or through water or food. Communicable diseases can occur in outbreaks that affect many people. Depending on the severity of the disease, these diseases can cause pain and suffering in those infected, and if left untreated can cause long-term disability or death, for example, infertility from chlamydia or paralysis due to poliomyelitis. However, many of these diseases can be prevented by vaccines or barrier contraceptives, thus greatly reducing their effect.

Communicable diseases can be spread by people who are not aware of their infection. For instance, a large number of individuals infected with human immunodeficiency virus (HIV) remain asymptomatic. Individual vulnerability can then affect the disease outcome. For example, pertussis can be a mild disease in adolescents and adults but can be fatal when transmitted to infants. With public health measures such as improved sanitation and immunisation programs, along with the use of antibiotics, the effects of communicable diseases on the health of Australians have reduced markedly over the last century. Despite this, outbreaks of diseases such as measles, rubella and mumps still occur in Australia while diseases such as pertussis remain endemic.

Immunisation against a number of these diseases has had a dramatic influence on complications arising from contracting them, and hence on rates of illness, death and long-term complications which can be even more severe than the disease itself (Andre et al. 2008).

Protection from some childhood vaccines decreases over time, for example the pertussis vaccine, so adolescents, and adults may become an important

reservoir, facilitating transmission to children who have not completed the recommended doses of the vaccine. Young people are likely to engage in unsafe sexual behaviours—increasing their risk of acquiring diseases such as HIV, chlamydia, gonorrhoea and syphilis—and intravenous drug use, increasing the risk of HIV and hepatitis B and C infection. Young people are therefore particularly vulnerable to contracting and transmitting vaccine-preventable diseases, sexually transmitted infections (STIs) and bloodborne viruses. This chapter provides an overview of the incidence of vaccine-preventable diseases, hepatitis, HIV infection and other STIs in Australia.

## Notifications of vaccine-preventable diseases

Large-scale immunisation programs, such as the Immunise Australia program, have had a substantial influence on rates of illness and death from a wide variety of communicable diseases, including diphtheria, tetanus, pertussis, rotavirus, poliomyelitis, measles, mumps, rubella, *Haemophilus influenzae* type b (Hib), hepatitis B, varicella (chickenpox), invasive meningococcal disease and invasive pneumococcal disease. Measles and poliomyelitis are currently marked for eradication in Australia as part of a World Health Organization initiative. The increased immunisation coverage and public health measures have resulted in dramatic declines in the incidence of many of these vaccine-preventable diseases. Despite this progress, outbreaks of vaccine-preventable diseases still occur and these cases fall disproportionately among the unvaccinated population. Factors that influence notification rates for vaccine-preventable diseases include the natural history of a disease, immunisation coverage, the particulars of the vaccination program (for example, receiving all injections at the required age), and the length of time that an immunisation program has been in place.



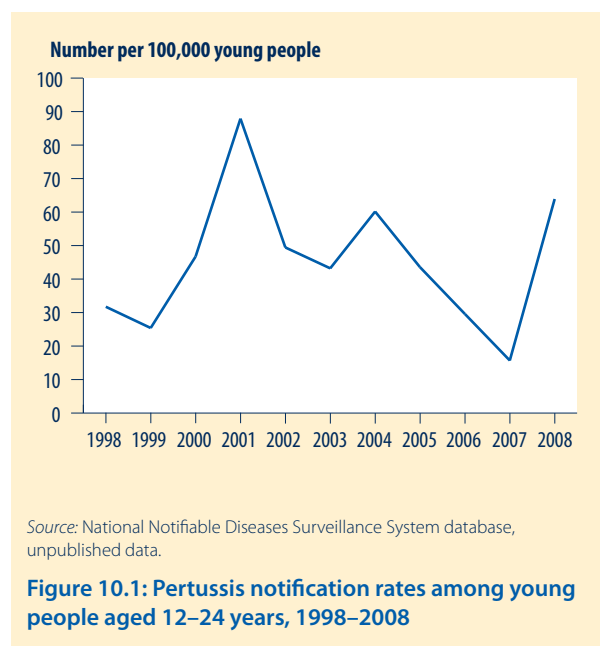
Most vaccine-preventable diseases are notifiable, meaning that the law requires them to be notified to government health authorities. This section examines the incidence of selected notifiable vaccine-preventable diseases—diphtheria, tetanus, pertussis, poliomyelitis, measles, mumps, rubella, Hib, invasive meningococcal disease and invasive pneumococcal disease. Hepatitis B is discussed in the following section.

The National Notifiable Diseases Surveillance System (NNDSS) compiles information on the incidence of all notifiable diseases in Australia. The quality and completeness of data compiled in the NNDSS are influenced by various factors—surveillance of communicable diseases varies between jurisdictions. Therefore, the proportion of diagnosed cases of a particular disease that is notified to health authorities is not known with certainty and may vary among diseases, between jurisdictions and over time (see *Appendix 2 Data sources* for more information on this data collection). Data are presented as a rate per 100,000 people according to the ABS estimated resident population for the relevant age group and year (see *Appendix 1 Methods* for further details).

**National indicator:** Incidence of vaccine-preventable diseases among young people aged 12–24 years

In 2008, among young people aged 12–24 years:

- There were 2,816 notifications for vaccine-preventable diseases, a notification rate of 73 per 100,000 young people aged 12–24 years. Most of these notifications were for pertussis, with a rate of 64 per 100,000 (2,480 notifications). Since 1998 there has been no significant change in the incidence of vaccine-preventable diseases.
- Pertussis was the most common notified vaccine-preventable disease among young people 2,480 notifications, a rate of 64 per 100,000. Periodic epidemics of pertussis occur every 3–5 years in Australia and can be affected by seasonal variations. Since 1998, there have been peaks in the incidence of pertussis for young people in 2001 (88 per 100,000), 2004 (60 per 100,000) and 2008 (64 per 100,000) (Figure 10.1).
- There were very few notifications of tetanus, diphtheria, Hib or poliomyelitis among young people between 1998 and 2008—fewer than one notification per year for each of these diseases over this period. In 2008, notifications



**Figure 10.1: Pertussis notification rates among young people aged 12–24 years, 1998–2008**

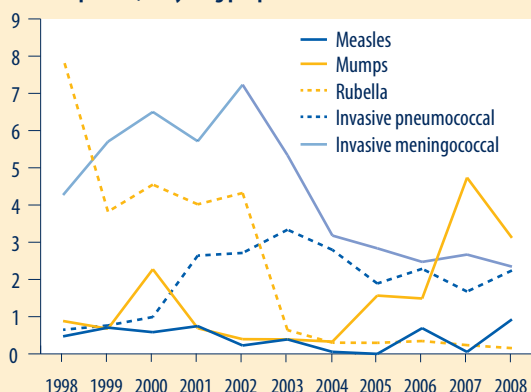
for invasive pneumococcal disease (87), invasive meningococcal disease (91), mumps (121), measles (36) and rubella (6) were also relatively low (notification rates of 2.2, 2.3, 3.1, 0.9 and 0.2 per 100,000 young people respectively).

- For invasive meningococcal disease and rubella, notification rates have fallen considerably since 1998, from 4.3 to 2.3, and 8.0 to 0.2 per 100,000 respectively. However, the notification rates for mumps increased, from 0.9 to 3.1 over the same period. This increase has been occurring since 2004 and indicates endemic mumps transmission within Australia, though an outbreak in the Kimberley region was responsible for the increase in 2007 (NNDSS 2007). During this time the incidence rate for measles remained steady (0.5 to 0.9 per 100,000 young people) (Figure 10.2).

## Notifications for viral hepatitis

Hepatitis (inflammation of the liver) is caused by a variety of viral and non-viral infections. Hepatitis A is spread through contaminated food and water, or direct contact with a person infected by the virus, and there is an effective vaccine available. Hepatitis B and C viruses are transmitted through exposure to infected blood or other bodily fluids containing blood (for example, through unprotected sex or intravenous drug use), or parent-to-child transmission, and can cause chronic liver damage and liver cancer. The risk of chronic infections is greatest among those infected as infants, particularly in the perinatal period (the period from a few weeks before birth through to 4 weeks after

Number per 100,000 young people



Note: Hib has not been included as the number of notifications is too low (one to two cases per year between 1998 and 2008).

Source: National Notifiable Diseases Surveillance System database, unpublished data.

**Figure 10.2: Notification rates for selected vaccine-preventable diseases among young people aged 12–24 years, 1998–2008**

birth) (Wright 2006). Vaccination against hepatitis B has been routine for newborns since 2000. No vaccine is currently available to prevent hepatitis C. Preventive strategies to reduce hepatitis C are aimed at reducing transmission through blood transfusions and unsafe injecting practices.

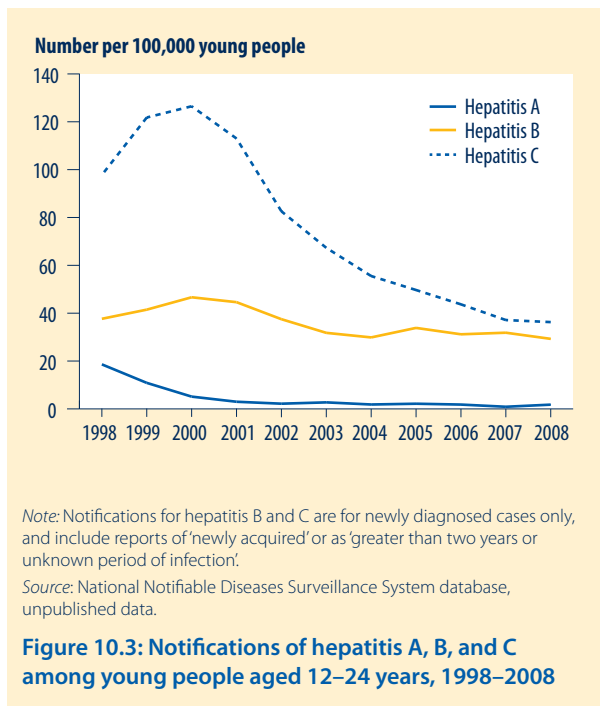
Notifications for hepatitis B and C are for all newly diagnosed cases within the respective period, and are defined as the first occasion of diagnosis of the infection, regardless of whether they were notified as ‘newly acquired’ or as ‘greater than two years or unknown period of infection’. This makes it difficult to obtain an accurate incidence rate. Some cases are also asymptomatic and may not be included in surveillance data, as notifications of hepatitis are dependent on health seeking behaviour and testing practices.

**National indicator:** Hepatitis A, B, and C notification rates for young people aged 12–24 years

In 2008, among young people aged 12–24 years:

- There were 2,613 notifications of hepatitis A, B, or C a combined rate of 67 per 100,000 young people aged 12–24 years. This was a substantial decline from 154 per 100,000 young people in 1998 (Figure 10.3). For those aged 25 years and over, the rate of decline has not been as rapid, from 170 to 136 per 100,000 over this period.
  - Notifications of hepatitis overall (A, B or C) were similar for males and females (69 and 66 per 100,000 respectively).
  - Hepatitis C was the most commonly reported newly diagnosed hepatitis virus among young people (1,408 notifications; a rate of 36 per 100,000 young people), followed by hepatitis B (1,136 notifications; 29 per 100,000).
  - Notification of hepatitis A was considerably lower at 69 notifications (1.8 per 100,000 young people). Hepatitis A notification rates were slightly higher among 18–24 year olds, 2.4 per 100,000, compared with 1.0 for 12–17 year olds.
  - The notification rates of hepatitis B among 18–24 year olds (44 per 100,000) were 4 times as high as for 12–17 year olds (11 per 100,000). Notification rates for hepatitis B were higher among those aged 25 years and over (48 per 100,000 compared with 29 for young people aged 12–24 years).
  - The notification rates of hepatitis C among 18–24 year olds (61 per 100,000) were over 10 times as high as for 12–17 year olds (6 per 100,000). Notification rates for hepatitis C were higher among those aged 25 years and over (87 per 100,000 compared with 36 for young people aged 12–24 years).
  - Hepatitis C notification rates have decreased by 63% since 1998, compared with a 22% decline for hepatitis B. The group with the largest decrease was 12–17 year olds for hepatitis C (from 24 to 6 per 100,000).
  - Notification rates for hepatitis A have also decreased considerably, from 19 to 1.8 per 100,000 between 1998 and 2008, in part due to the introduction of a hepatitis A vaccination program among Indigenous children in north Queensland in 1999 (Australian Government 2008).
- The national adolescent hepatitis B ‘catch-up’ vaccination program, introduced as part of the universal infant vaccination program in 2000, may have contributed to a reduction in rates of hepatitis B notifications observed since 2001. However, the reasons for the decline in rates of new hepatitis C infections over the same period are not as clear, and may be attributed to factors such as less injecting drug use, reductions in risk behaviour related to drug injecting and/or reduced testing (Razali et al. 2007).





## Notifications for sexually transmissible infections

STIs remain a major public health concern, contributing to significant long-term morbidity (Bowden et al. 2002; DoHA 2005). In Australia, there are currently seven STIs of public health importance, other than HIV. These are chlamydia, gonorrhoea, syphilis, hepatitis B, trichomoniasis, herpes simplex virus and human papillomavirus. Ongoing surveillance is important in order to monitor the rates of these infections and guide preventive measures.

In addition, a lack of knowledge about STIs, inconsistent condom use, or a lack of communication and negotiation skills which can make using condoms difficult, also contributes to adolescents being at increased risk (Sales & DiClemente 2010).

Biologically, adolescents may be more vulnerable to STIs due to immature reproductive and immune systems (Sales & DiClemente 2010).

This section provides information on nationally notifiable STIs including HIV and other major notifiable STIs of interest (chlamydia, donovanosis, gonorrhoea and syphilis). Herpes and trichomoniasis are not included here as they are currently not notifiable diseases. Hepatitis B was discussed in the previous section, and the human papillomavirus is examined in *Chapter 36 Cervical cancer*.

## Human immunodeficiency virus

HIV can be transmitted by sexual contact with an infected person, through infected blood products, to the fetus during pregnancy and to infants through breastfeeding by an infected mother. Those infected can remain without symptoms for many years but are still able to infect others. In most untreated cases, the virus will progressively damage the immune system over many years (by destroying white blood cells), which can lead to a person becoming susceptible to a number of serious infections and cancers. This stage is known as the acquired immune deficiency syndrome (AIDS). The prevalence of HIV in Australia is very low compared with other countries, 0.12% compared with almost 20% in South Africa and Zimbabwe (National Centre in HIV Epidemiology and Clinical Research 2009; UNAIDS 2008). In Australia, HIV primarily affects men who have sex with men, and was responsible for an estimated 0.2% of the total national burden of disease in 2003 (Begg et al. 2007; National Centre in HIV Epidemiology and Clinical Research 2009).

Infection with HIV cannot be cured and currently there is no vaccine to prevent it, although research into a vaccine continues. However, a wider variety of more effective antiviral medications has allowed people with HIV to lead relatively normal lives.

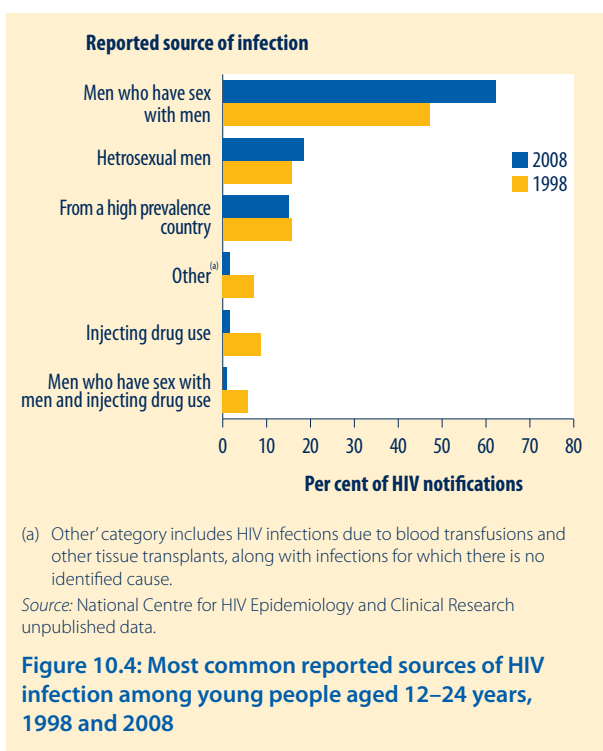
The National Centre in HIV Epidemiology and Clinical Research (NCHECR) maintains the National HIV Registry and the National AIDS Registry, which comprises state and territory HIV and AIDS notifications. Notifications within the registries may be an underestimate of the total number of HIV positive people, as many people do not know they are HIV positive (Wilson et al. 2009).

### National indicator: HIV infection notification rate for young people aged 12–24 years

In 2008, among young people aged 12–24 years:

- There were 119 notifications of new cases of HIV among young people, an overall rate of 3.1 per 100,000 young people aged 12–24 years; an increase from 2.1 per 100,000 in 1998.
- Almost all young people (94%) diagnosed with HIV were aged 18–24 years (112 or 5.2 per 100,000, compared with 0.4 for those aged 12–17 years). The rate for young people is lower than for people aged 25–59 years (869 notifications, a rate of 6 per 100,000).

- The majority of HIV notifications among young people were for men (76%), with rates of 4.5 and 1.5 per 100,000 for young males and females respectively. Among 12–17 year olds, rates were similar among males and females, while among 18–24 year olds the rate for males was 3 times as high as for females (7.9 and 2.4 respectively).
- The majority of HIV cases (62% or 74 cases) were reported as being acquired via men who have sex with men, while almost one-in-five (18%) were reported as being acquired from heterosexual contact. A number of infections were among people originating from high prevalence countries (15% of cases). Injecting drug use as a reported source of HIV infection was substantially lower, being responsible for 2% of cases.
- Since 1998, the proportion of cases due to injecting drug use has declined from 9% to 2%, while the proportion of cases reported as being acquired via men having sex with men has increased from 47% to 62% over this period). Comparisons over time should be used with caution due to small numbers and possible volatility from year to year (Figure 10.4).



## Other sexually transmissible infections

In Australia, chlamydia, donovanosis, gonorrhoea and syphilis are nationally notifiable STIs of interest, in addition to HIV, AIDS and hepatitis reported

above. Chlamydia is the most commonly notified STI in Australia, and its most important feature is that it is often asymptomatic in both males and females. In males, it can affect the prostate, urethra and testes while females can develop infections of the cervix, uterus and pelvis, and complications may result in chronic pelvic pain, ectopic pregnancy and infertility. Gonorrhoea can cause a similar spectrum of diseases to chlamydia but tends to be more symptomatic.

Syphilis causes sores on the infected person's genitals in its early stages. The disease responds well to penicillin but untreated it becomes a chronic disease with a variable course and long periods of latency. It can arise 10 years after the original infection, with serious damage to the brain, other parts of the nervous system and the cardiovascular system.

Donovanosis is a bacterial infection, leading to sores similar to those seen in syphilis along with damage to the soft tissue of the infected areas. Treatment with antibiotics is highly effective, and has helped to reduce the number of cases in most developed countries. In Australia, the disease is uncommon, and predominantly occurs in rural and remote Indigenous communities in central and northern Australia. If left untreated, donovanosis can lead to extensive scarring and tissue damage to the infected person's genitals. Donovanosis is currently targeted for elimination through the National Donovanosis Elimination Project.

Young people may be at high risk of STIs, due to unsafe sexual practices and recreational drug and alcohol use (see also *Chapter 16 Substance use and Chapter 17 Sexual and reproductive health*). The presence of STIs, especially those with skin or mucosal ulceration, may increase susceptibility to HIV infection

Data in this section are sourced from the NNDSS.

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

In 2008, among young people aged 12–24 years:

- There were 40,575 notifications for STIs (chlamydia, donovanosis, gonorrhoea and syphilis), a rate of 1,045 per 100,000 young people aged 12–24 years. This was nearly 4 times the rate for 1998, when the rate was 280 per 100,000 young people. This increase is likely to

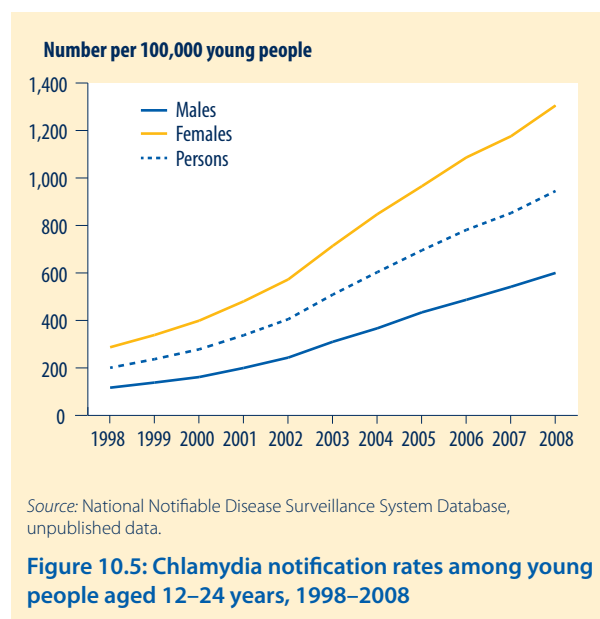
reflect not only increases in testing and hence case ascertainment, but also true increases in chlamydia transmission.

- As would be expected, STI notification rates were lower among 12–17 year olds than 18–24 year olds (433 and 1,537 per 100,000 respectively). This pattern was observed for both males and females, but was more pronounced for males. Among those aged 25–64 years the rate of STI notifications was considerably lower at 253 per 100,000 (297 and 209 per 100,000 for males and females aged 25–64 years respectively).
- STI notifications were highest in young females compared to young males (1,399 and 706 per 100,000 respectively), with the sex difference greater for 12–17 year olds (308 and 82 per 100,000 for females and males respectively) than 18–24 year olds (1,091 and 624 per 100,000 respectively).
- Chlamydia was the most commonly notified STI among young people (36,683 notifications), a rate of 945 per 100,000 young people aged 12–24 years, and accounting for 90% of the notifications for STIs. Since 1998 the notification rate for chlamydia has increased nearly fivefold, from 201 to 945 per 100,000 (Figure 10.5). Nearly two-thirds of chlamydia infections occur among young people.
- Gonorrhoea notification rates have increased over the last decade, from 67 to 92 per 100,000 young people, with rates higher for males (96) than females (87).
- There were 326 notifications for syphilis (includes infectious and non-infectious syphilis), a rate of 8 per 100,000 young people. This was a decline from 1998 when the rate was 11 per 100,000. Syphilis was more common in males than in females (10 and 7 per 100,000 young people).
- There were no notifications for donovanosis infection in 2008.

## Health service use for communicable diseases

### Hospitalisations

There are very few hospital separations for communicable diseases among young people. According to the Australian Institute of Health and Welfare's (AIHW) National Hospital Morbidity Database, among young people aged 12–24 years in 2008–09:



- There were 182 hospital separations for selected vaccine-preventable diseases, a rate of 5 per 100,000 young people. Most hospitalisations (135; 74%) were for invasive meningococcal disease.
- There were 58 hospital separations for hepatitis A, B and C (a rate of 1.5 per 100,000). Rates were similar for the three different types of hepatitis: 0.8 per 100,000 young people for hepatitis A, 0.4 for hepatitis B and 0.4 for hepatitis C.
- There were 6 hospital separations for HIV (0.2 per 100,000 young people).
- There were 211 hospital separations for chlamydia, gonorrhoea, syphilis and donovanosis combined, a rate of 5 per 100,000 young people, with rates almost 5 times as high among females as males (9 and 2 per 100,000 respectively). Most of the hospital separations for STIs were for chlamydia (63%) and gonorrhoea (36%)—chlamydia: 132 hospitalisations or 3 per 100,000; gonorrhoea: 75 hospitalisations or 2 per 100,000 young people.

### Deaths from communicable disease

In 2007, according to the AIHW National Mortality Database, there were very few deaths due to communicable diseases among young people: a total of 5 deaths for the diseases presented in this chapter. In contrast, there were 186 deaths for these diseases for people aged 25 to 64 years, the majority of which were due to HIV (45% of deaths) or hepatitis C (45%).

## Do rates of communicable diseases vary for Aboriginal and Torres Strait Islander young people?

The incidence of communicable diseases is relatively low among young people in Australia compared with other countries; however, for some subpopulations of young people, particularly Aboriginal and Torres Strait Islander young people, incident rates are considerably higher (AIHW 2008c). There are some communicable diseases that are serious health issues for Indigenous young people living in regional and remote areas, such as rheumatic fever and rheumatic heart disease, which are very rare in non-Indigenous young people. These diseases are discussed in further detail in *Chapter 42 Health and wellbeing of Indigenous young people*.

The NNDSS records information on Indigenous status for diseases notified in Australia. However, under-identification of Indigenous Australians at the point of data collection is a key issue in this data source, consistent with many other administrative data sets. The completeness of Indigenous status varies with the disease and by state and territory, and there is some level of under-identification for all diseases reported here. The data in this section should therefore be used with caution. Records for which Indigenous status was unknown are excluded from the analysis, and results are only presented for diseases for which there was at least 50% completeness.

In 2008, among Indigenous young people aged 12–24 years:

- Overall, the notification rates for vaccine-preventable diseases was almost 3 times as high among Indigenous as non-Indigenous young people (121 and 43 per 100,000 young people aged 12–24 years, respectively). Rates of pertussis were considerably higher among Indigenous than non-Indigenous young people (56 and 37 per 100,000 young people), as well as notification rates for mumps and invasive pneumococcal disease (49 and 16 per 100,000, compared with 0.9 and 1.3 per 100,000 for non-Indigenous young people, respectively). Indigenous status was unknown for 37% of vaccine-preventable diseases and for about 40% of records for pertussis.
- Hepatitis rates were substantially higher among Indigenous than non-Indigenous young people (185 and 30 per 100,000, respectively). Indigenous status was unknown for 4% of Hepatitis A records and nearly 50% of records for hepatitis B and C.
  - Hepatitis C rates were higher among Indigenous young people (123 compared with 15 per 100,000 for non-Indigenous young people).
  - The rate of hepatitis B was significantly higher among Indigenous young people—61 per 100,000 compared with 13 per 100,000 for non-Indigenous young people.
- Rates of hepatitis A were similar for Indigenous and non-Indigenous young people (1.4 and 1.7 per 100,000 young people, respectively). The introduction of a hepatitis A vaccination program among Indigenous children in north Queensland in 1999 has contributed to the decline in hepatitis A in this area where previously the disease was endemic (Australian Government 2008).
- Between 2004 and 2008 there were 20 notifications for HIV in Indigenous young people, a rate of 2.9 per 100,000 young people aged 12–24 years, similar to the rate for non-Indigenous young people (2.6 per 100,000). The vast majority of notifications were for those aged 18–24 years. Among Indigenous young people, most of the notifications were for males (75%), and most of these cases were reported as being acquired from sexual contact with other men (55%) and heterosexual contact (25%). Information about the completeness of Indigenous identification was not available for these data.
- There were 6,345 notifications for STIs among Indigenous young people, a rate of 4,519 per 100,000 young people, a rate substantially higher than for non-Indigenous young people (428 per 100,000).
  - The majority (89%) of STI notifications were for chlamydia, where the rate was 7 times that of non-Indigenous young people (2,880 per 100,000 compared with 405 per 100,000 young people, respectively). Indigenous status was unknown for about 48% of records.
- Notifications for gonorrhoea and syphilis were also much higher among Indigenous young people. For gonorrhoea the rate was 1,540, compared with 19 per 100,000 for non-Indigenous young people, and for syphilis the rates were 100 and 4 per 100,000 young people, respectively. Indigenous status was unknown for 19% of records for gonorrhoea and 9% of records for syphilis.

- Higher rates of STIs in the Indigenous population are not necessarily associated with increased levels of sexual activity in this population. There is a strong relationship between poverty, marginalisation and STI infection. Poor access to health services, lack of awareness, issues of confidentiality in small communities and stigma are some of the reasons Indigenous people experience higher rates of HIV and STI infection (Wright et al. 2005).



# 11 Oral health

**Good oral health during adolescence contributes to better dental outcomes in adulthood—less decay and the loss of fewer natural teeth.**

**The mean number of decayed, missing or filled teeth is twice as high for 15 year olds as it is for 12 year olds.**

Good oral health and hygiene during childhood and adolescence positively affects the physical, social and psychological wellbeing of young people and contributes to better dental health outcomes in adulthood, resulting in less decay and reduced loss of natural teeth (AIHW 2005). Conversely, oral disease and decay during childhood and adolescence can negatively affect young people's health and wellbeing.

The presence of dental caries can adversely affect children's growth and, if left untreated, facilitate abscess formation, infection, cellulitis, the systemic spread of disease and tooth loss (Brennan et al. 2007). Symptoms include pain, problems with eating or drinking, loss of sleep, social embarrassment, school absenteeism and poor academic performance (Armfield et al. 2009; Berg & Congilio 2006). Studies also show that poor oral health may be associated with increased incidence of chronic diseases later in life such as obesity, heart disease, cancer, stroke, diabetes, chronic pulmonary obstructive disease and mental illness, due to shared risk conditions (Petersen 2003; Watt 2005).

A number of factors cause dental decay in young people. These include excessive plaque build-up through infrequent substandard tooth cleaning (such as not flossing regularly or brushing with fluoride toothpaste), poor diet involving high exposure to acidic foodstuffs or fermentable carbohydrates that contain sugar, reduced salivary flow due to medication usage or inadequate stimulation, and limited exposure to fluoride in the form of toothpastes or fluoridated public water (Armfield et al. 2009). The increased consumption of bottled water and other non-fluoridated water (such as tank water) over fluoridated tap water has been shown to influence increased rates of dental decay in children (Armfield & Spencer 2004).

In Australia and internationally, poor dental health is associated with a range of factors, including low socioeconomic status, low income levels, one-parent families, younger mothers, mothers with low

education levels, ethnicity other than Caucasian, and living in rural and remote areas (Gilbert et al. 2003; Kruger et al. 2005; Sabbah et al. 2007; Sanders 2007; Watt 2005).

Teenagers may be at increased risk of dental decay and the oral health of teenagers appears to be worsening (Armfield et al. 2009). With regards to dental health services, teenagers often fall in the gap between the almost universal eligibility offered by school dental services (catering mostly for children up to the age of 11 or 12 years, although some jurisdictions offer the service to older children as well) and the private system used by most adults. Most adolescents must rely on their parents to ensure they receive dental care, primarily at private dental clinics or surgeries (Armfield et al. 2009). In 2008, the Australian Government introduced the Medicare Teen Dental Plan, which is targeted towards children aged 12–17 years who are not eligible for school dental services and lower and middle-income families. The scheme provides vouchers for a subsidised annual dental preventative check (Medicare Australia 2010).

## Oral health among adolescents

The number of teeth decayed, missing or extracted due to decay, or with fillings, is an indicator of oral disease in the population and is an important measure of oral health. The number of decayed (D), missing (M) or filled (F) permanent teeth is expressed as a 'DMFT' score at particular ages. There are two measures of young people's oral health included in this chapter: the proportion of young people who were decay-free at 12 and 15 years of age (where DMFT = 0) and the mean number of decayed, missing or filled teeth in young people aged 12 and 15 years of age (where DMFT is greater than or equal to 0).

Information on the oral health of children and adolescents is available from the 2003–2004 Child Dental Health Survey, conducted by the Australian Institute of Health and Welfare's Dental Statistics

Research Unit. See *Appendix 2 Data sources* for further information on this survey). These data are combined for the years 2003 and 2004. There are a number of limitations in relation to the data included in this chapter. DMFT at age 12 is a commonly used relatively robust measure of children's oral health. However, access to school dental services for older children tends to be restricted, and as a result the data are less reliable for children over the age of 12 years. DMFT for 15 year olds is used to give an indication of adolescents' oral health, but the 2003–2004 Child Dental Health Survey does not include data for 15 year olds living in Victoria and contains only limited data on 15 year olds living in the Australian Capital Territory and the Northern Territory (Armfield et al. 2009). The survey data also exclude all young people living in New South Wales due to non-representativeness of the sample in that state. These limitations make it difficult to obtain an accurate picture of young people's oral health at the national level within the reference years, and should therefore be used with caution. In addition, oral health data on Indigenous young people for 2003–2004 are not included due to limited data availability and data quality concerns. Data from the 2002 survey for Victoria, Queensland, South Australia and the Northern Territory indicate that Indigenous children have a mean DMFT score almost twice that of other children (1.8 and 1.0 respectively).

## Adolescents free from dental decay

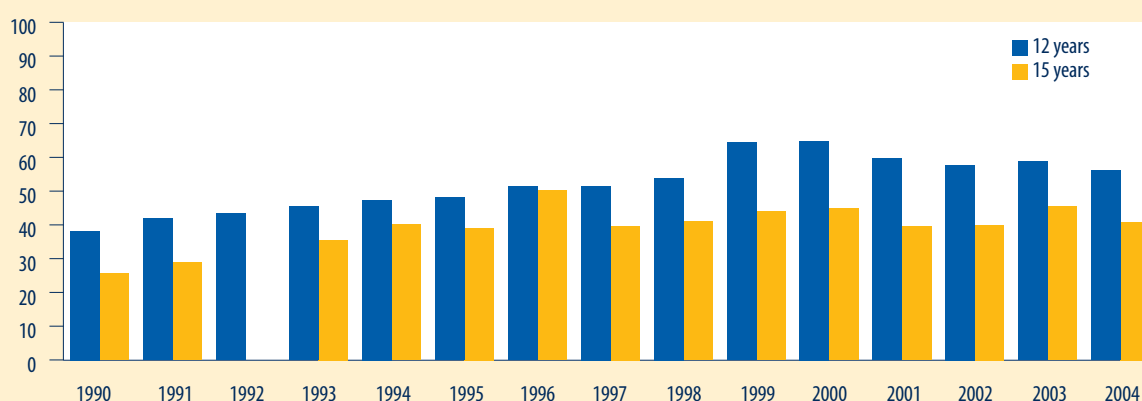
**National indicator:** Proportion of young people aged 12 and 15 years decay-free

In 2003–2004, among young people aged 12 and 15 years:

- Over half (58%) of 12 year olds were decay-free, declining to 43% for 15 year olds.
- Males were more likely than females to be decay-free at age 12 (59% compared with 56%) and at age 15 years (45% compared with 41%).
- The proportion of 12 year old children free from dental decay increased from 38% to 65% between 1990 and 2000 but has since declined by 9 percentage points to 56% in 2004. Among 15 year olds, the proportion increased by 19 percentage points from 26% to 45% between 1990 and 2000 before declining slightly to 41% in 2004 (Figure 11.1). Note that trend data could be affected by different and changing levels of coverage in the Child Dental Health Survey, particularly for New South Wales.

The slight increase seen in tooth decay levels among adolescents in recent years may be related to changes in dietary patterns, including increased sugar consumption, reduced oral hygiene standards or changes to the school dental scheme that have made the service less accessible to students (Ellershaw & Spencer 2009). However, additional research is required to determine the exact cause of this increase in tooth decay among young people.

Per cent



Note: Data for 15 year olds are unavailable for 1992.

Source: Child Dental Health Survey, various years, unpublished data.

**Figure 11.1: Proportion of young people decay-free at age 12 and 15 years, 1990–2004**



## Adolescents with decayed, missing or filled teeth

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

In 2003–2004, among young people aged 12 and 15 years:

- The mean DMFT is twice as high for 15 year olds (2.01) as for 12 year olds (1.03).
- The mean DMFT was higher for females than males at age 12—1.11 compared with 0.95—but the difference at age 15—2.00 and 1.93 for females and males respectively—was not statistically significant. Higher decay experience among females is a recognised pattern, and may be explained by the earlier eruption of teeth among females than males and therefore a longer period of exposure to decay-causing factors (Lukacs & Largaespada 2006).
- The mean DMFT has declined overall for young people over the last 2 decades. Between 1990 and 2000 there was a steady decline in mean DMFT from 1.4 to 0.8 among 12 year olds and from 3.5 to 1.9 among 15 year olds. However, since then, the mean DMFT has remained relatively steady (Figure 11.2). Note that trend data could be affected by different and changing levels of coverage in the Child Dental Health Survey, particularly for New South Wales.

## Does oral health vary across population groups?

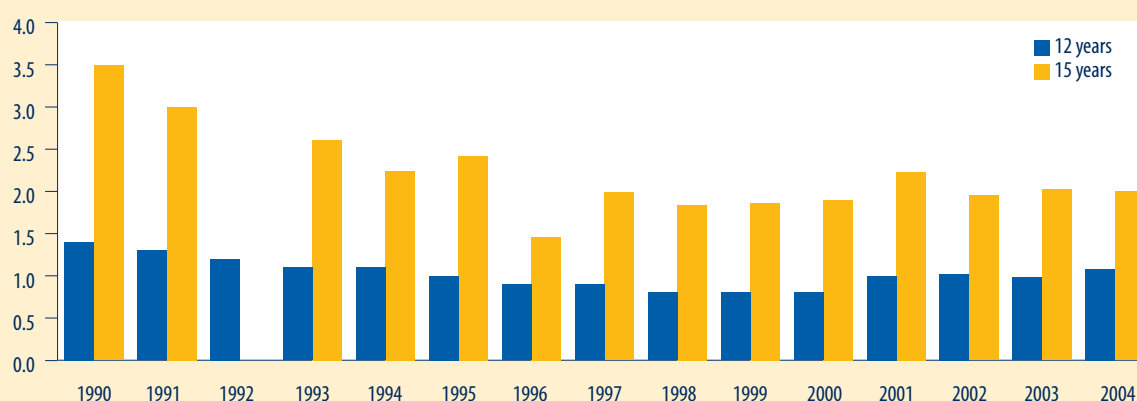
While most Australian children and young people experience good oral health, some have poorer oral health, in particular Aboriginal and Torres Strait Islander adolescents and those living outside *Major cities* and in the most socioeconomically disadvantaged areas. The higher dental decay among these population groups, particularly those at a socioeconomic disadvantage, may be due to low education levels, lack of access to oral care services, and poorer food choice and availability (Kruger et al. 2005; Roberts-Thomson et al. 2008). Further, not all parts of Australia have fluoride in the public water supply, which may result in higher dental decay in these areas.

### Remoteness

In 2003–2004, among young people aged 12 and 15 years:

- The proportion of 12 year olds who were decay-free was lower in *Remote* and *Very remote* areas combined (53%) than in *Major cities* (61%). However, for 15 year olds, the proportions who were decay-free were similar in *Major cities* (47%) and in *Remote* and *Very remote* areas combined (50%) (Figure 11.3).

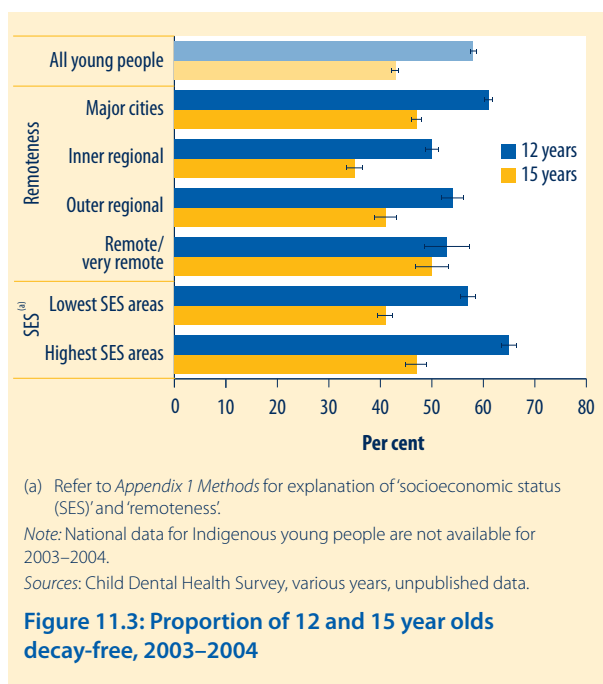
Mean DMFT



Note: Data for 15 year olds are unavailable for 1992.

Source: Child Dental Health Survey, various years, unpublished data.

**Figure 11.2: Mean number of decayed, missed and filled teeth (DMFT) among 12 and 15 year olds, 1990–2004**



**Figure 11.3: Proportion of 12 and 15 year olds decay-free, 2003–2004**

- The mean DMFT for 12 year olds living in *Remote* and *Very remote* areas combined (1.1) was higher than for their counterparts in *Major cities* (0.9). For 15 year olds, mean DMFT was higher in *Inner regional* areas (2.3) and *Outer regional* areas (2.2) than in *Major cities* (1.8) and *Remote* and *Very remote* areas combined (1.5).

### Socioeconomic status

In 2003–2004, among young people aged 12 and 15 years:

- The proportion of 12 year olds who were decay-free was higher for those living in areas of highest socioeconomic status (SES) than those in the lowest SES areas (65% and 57% respectively). This pattern was also evident for young people aged 15 years (47% and 41% respectively) (Figure 11.3).
- The mean DMFT for 12 year olds living in the highest SES areas was lower than for those living in the lowest SES areas (0.7 and 1.1 respectively). For 15 year olds, mean DMFT did not vary significantly by SES.

### Access to fluoridated water

Water fluoridation is an effective and equitable public health measure to prevent dental decay. The prevalence of dental decay is lower in areas where fluoride is naturally present in the water supply or where fluoride has been added (Armfield et al. 2007). Fluoride can help to reduce the number of cavities an individual will develop in their life, as it makes the enamel of the tooth more resistant to the acid attacks of plaque bacteria (ADA 2001; US DHHS 1991; MRC 2002).

Most young people aged 15–24 years (84%) live in areas with access to fluoridated water, but there are some parts of Australia without fluoride in the public water supply. In 2008, around 90% of young people in all jurisdictions except the Northern Territory (82%), Victoria (80%) and Queensland (66%) had access to optimally fluoridated water (Table 11.1). In Queensland, access to fluoridated water has improved markedly since 2001. The Queensland Government has committed to providing more than 90% of Queenslanders with fluoridated water supply by 2012 (Qld DPC 2008).

### How do Australia's rates of child dental health compare internationally?

Australia compares favourably with other OECD (Organisation for Economic Co-operation and Development) countries in the mean number of decayed, missing or filled teeth among 12 year olds (internationally comparable data are not available for 15 year-olds). Australia ranked 8th out of 22 OECD countries in 2003–06, with a mean DMFT of 1.1—better than the OECD average of 1.4 (Figure 11.4). Mean decay experience was lowest in Germany and the United Kingdom (0.7 each), and highest in the Czech Republic (2.6).

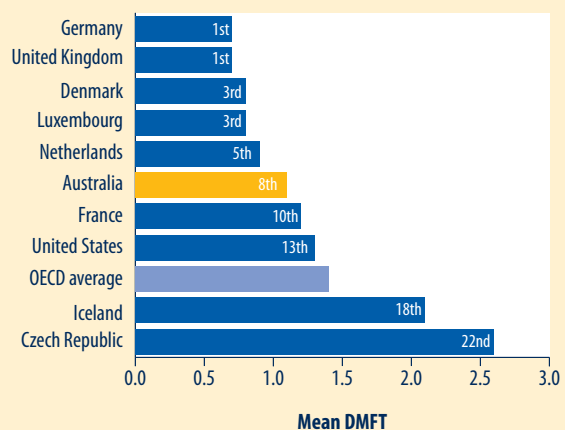
Internationally, reductions in caries and other dental problems have been achieved through numerous public health measures such as community water fluoridation, along with changed living conditions, and improved disease management and oral hygiene (OECD 2008).

**Table 11.1: Proportion of young people aged 15–24 years residing in areas with optimum<sup>(a)</sup> fluoride concentration, 2008**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Per cent	92.5	79.7	65.6	91.7	92.1	94.2	99.3	82.3	83.9

Note: Optimum levels are between 0.7 and 1.2 ppm, depending on climatic conditions. In the Northern Territory water is optimally fluoridated if the level is more than 0.6 ppm

Source: University of Adelaide Dental Practice Education Research Unit unpublished data 2010.



Note: Based on mean DMFT over the period 2003–2006 using the most recent years of available data from 22 OECD countries.

Source: OECD 2010b.

**Figure 11.4: Mean number of decayed, missing or filled teeth (DMFT) among 12 year old children in selected OECD countries 2003–2006**



# Part III

## FACTORS INFLUENCING HEALTH

Part II of this report looked at health status measures, such as mortality, morbidity and disability, and showed that, while many young Australians experience relatively good health, some experience considerably worse health than others in the population. The health of young people is influenced by the interaction of many health determinants such as human biology, behaviours, socioeconomic and environmental factors, and health interventions. The consideration of these determinants is key to the prevention of disease, illness and injury.

Part III focuses on factors that increase the risk of ill health among young people, commonly referred to as risk factors. During adolescence it is important to reduce the factors that adversely affect health and promote factors that enhance health (WHO 2010).

The aim of Part III is to provide information on the main protective or risk factors affecting young people:

- overweight and obesity
- physical activity
- nutrition
- sun protection
- substance use
- sexual and reproductive health.

Environmental, social, economic and cultural factors also play a major role in young people's health and wellbeing, and these are discussed in other parts of this report.

The following table shows how young people fare for the indicators presented in Part III, and whether there has been any improvement over time.

Key: ✓ = favourable trend; ✗ = unfavourable trend; ~ = no change or no clear trend; .. = no trend data available or presented.

Factors influencing health		Year of data	Value	Trend	
<b>Overweight and obesity</b>	Proportion of young people aged 12–24 years who are overweight or obese	2007–08	35%	..	
<b>Physical activity</b>	Proportion of young people aged 15–24 years meeting the National Physical Activity Guidelines <sup>(b)(c)</sup>	2007–08	44%	..	
<b>Nutrition</b>	Proportion of young people aged 12–24 years meeting Australian Dietary Guidelines	2007–08	5%	✗	
<b>Sun protection</b>	Proportion of young people aged 12–24 years using sun protection	2006–07	Used sunscreen (12–17 year olds) <sup>(b)</sup>	37%	~
	Wore sunglasses (18–24 year olds) <sup>(b)</sup>		47%	✗	
<b>Substance use</b>	Reported rate for substance use disorders for young people aged 16–24 years <sup>(b)</sup>	2007	13%	..	
	Proportion of young people aged 12–24 years who are daily smokers	2007	11%	✓	
	Proportion of young people aged 12–24 years who drink at risky or high-risk levels in the short-term (ST) or long-term (LT)	2007	30% (ST) 12% (LT)	~ ~	
	Proportion of young people aged 12–24 years who had used an illicit drug within the last 12 months	2007	19%	✗	
<b>Sexual and reproductive health</b>	Proportion of young people in Year 10 and Year 12 who have had sexual intercourse <sup>(b)</sup>	2008	40%	✗	
	Proportion of young people in Year 10 and Year 12 who used a form of contraception at their most recent sexual encounter <sup>(b)</sup>	2008	99.8%	✓	
	Age-specific birth rate for 15–19 year old women <sup>(a)</sup>	2008	17 per 1,000	~	

(a) Most appropriate age range for indicator.

(b) Source data not available for full age range.

(c) A proxy measure is used to determine whether National Physical Activity Guidelines are met. See *Chapter 13 Physical activity* for more information.

# 12 Overweight and obesity

**Overweight and obesity affects young people's psychological wellbeing and increases the risk of developing chronic conditions and adult obesity.**

**In 2007–08, over one-third (35%) of young Australians were estimated to be overweight or obese—23.3% overweight but not obese, and 11.3% obese.**

Overweight and obesity increases a young person's risk of poor health and is a risk factor for developing many serious health conditions in both the short and long term. In the short term, overweight and obesity affects the psychological wellbeing of young people, and increases the risk of developing cardiovascular conditions, asthma and Type 2 diabetes. Long-term health consequences include adult obesity, increased rates of coronary heart disease, diabetes, certain cancers, gall bladder disease, osteoarthritis and endocrine disorders (Lobstien et al. 2004; Reilly 2005).

In addition to physical health problems, obesity in adolescence and young adulthood is also associated with social and economic conditions, including poorer educational attainment, lower income and lower likelihood of dating or marrying (Gortmaker et al. 1993). Bullying and teasing directed towards obese children and adolescents can also contribute to poor body image and low self-esteem, and may have a major effect on future psychological and social wellbeing (Royal College of Physicians of London 2004).

There are many interacting factors that lead to increased body weight. For excess weight gain to occur, an imbalance must exist between the amount of energy young people are consuming and the energy they expend over an extended period of time. Risk factors associated with obesity in childhood and adolescence include genetic makeup, ethnicity, lack of physical activity, dietary intake and eating patterns, being formula-fed as infants, and presence of other health conditions (NHMRC 2003a). In the general population, people affected by overweight and obesity are also more likely to come from socioeconomically disadvantaged backgrounds (AIHW 2010b).

Overweight and obesity accounted for less than 1% of the burden of disease among young people but contributed 7.5% to the total burden of disease in 2003 among the total Australian population (Begg et al. 2007). Many of the risk factors associated with overweight and obesity are preventable and

amenable to public health intervention programs. In view of this, in 2008, Australian health ministers made obesity a National Health Priority Area. The Preventive Health Taskforce was established to develop a national obesity strategy.

## Overweight and obesity among young people

Overweight and obesity can be indirectly measured at the population level using body mass index (BMI). The BMI is a measure of the ratio of weight in kilograms divided by height in metres squared ( $\text{kg}/\text{m}^2$ ). BMI changes considerably with age, rising steeply in infancy, falling during preschool years and increasing during adolescence and adulthood (DoHA 2009b). Young people are considered to be overweight or obese if their BMI scores exceed international cut-off points for their age and sex for 12–17 year olds (Cole et al. 2000), or if their BMI score is  $\geq 25$  (or for obese  $\geq 30$ ) for 18–24 year olds. In this chapter, overweight and obesity estimates for 12–24 year olds have been obtained by taking into account the differences in BMI scores for 12–17 year olds and 18–24 year olds.

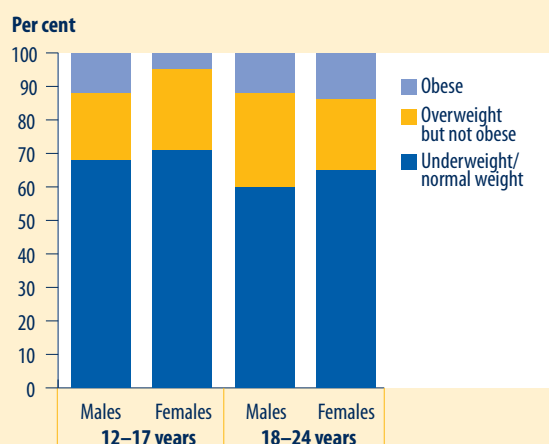
This chapter uses data from the Australian Bureau of Statistics' (ABS) National Health Survey to report on overweight and obesity, based on measured height and weight information (see *Appendix 2 Data sources* for more information on this survey).

**National indicator:** Proportion of young people who are overweight or obese

In 2007–08, among young people aged 12–24 years:

- Over one-third (35%) of young people were overweight or obese—23.3% overweight but not obese, and 11.3% obese. This is higher than the rate among children aged 5–11 years (17% overweight but not obese, 8% obese), but lower than the rate among 25–34 year olds (35% overweight but not obese and 19% obese).





Note: Excludes young people where measured height and weight data was missing.

Source: AIHW analysis of the ABS 2007–08 National Health Survey confidentialised unit record file.

**Figure 12.1: Young people aged 12–24 years by body mass index category, 2007–08**

- Young adults were more likely to be overweight or obese than adolescents—37% for 18–24 year olds and 31% for 12–17 year olds. This difference is even greater for obesity, where 18–24 year olds were 40% more likely to be obese than 12–17 year olds (13% and 9% respectively). Rates of ‘overweight but not obese’ did not vary greatly by age (24% for 18–24 year olds and 22% for 12–17 year olds).
- Overall, there was no statistically significant difference in the prevalence of overweight or obesity between males and females (37% and 32% respectively). However, these patterns differ by BMI category, age and sex—adolescent males were twice as likely as females to be obese (12% and 5% respectively), while rates for ‘overweight but not obese’ were similar (20% and 24% respectively). Among 18–24 year olds the pattern was reversed—males were more likely to be overweight but not obese (28% and 21% respectively); however, rates were similar for obesity (12% and 14% respectively) (Figure 12.1).
- Since 1995, when BMI based on measured height and weight was included in the ABS National Nutrition Survey (NNS), the proportion of 18–24 year olds who were overweight but not obese has not changed significantly (22% and 24%, respectively). The proportion who were obese has increased, however, from 9% in 1995 to 13% in 2007–08. The NNS also provides data for 13–17 year olds and a similar pattern emerged: the proportion who were overweight but not obese did not change significantly (16% and 19% in 1995 and 2007–08,

respectively) but the proportion who were obese did increase (from 5% to 9%).

## Do overweight and obesity vary across population groups?

Young people who are socially, economically and geographically disadvantaged are at an increased risk of ill health due to high levels of biomedical factors such as overweight and obesity. These young people may not have the same opportunities for good health as other young people due to, for example, lower availability and affordability of fresh fruit and vegetables, and fewer opportunities to participate in physical activity.

### Aboriginal and Torres Strait Islander young people

There is currently no national information available on the prevalence of overweight or obesity among Indigenous young people, based on measured height and weight. Self-reported height and weight information is however, available for 15–24 year olds from the 2004–05 National Aboriginal and Torres Strait Islander Health Survey:

- Indigenous young people aged 15–24 years were more likely to be overweight or obese than non-Indigenous young people (37% and 27% respectively), and twice as likely to be obese (15% and 6% respectively).

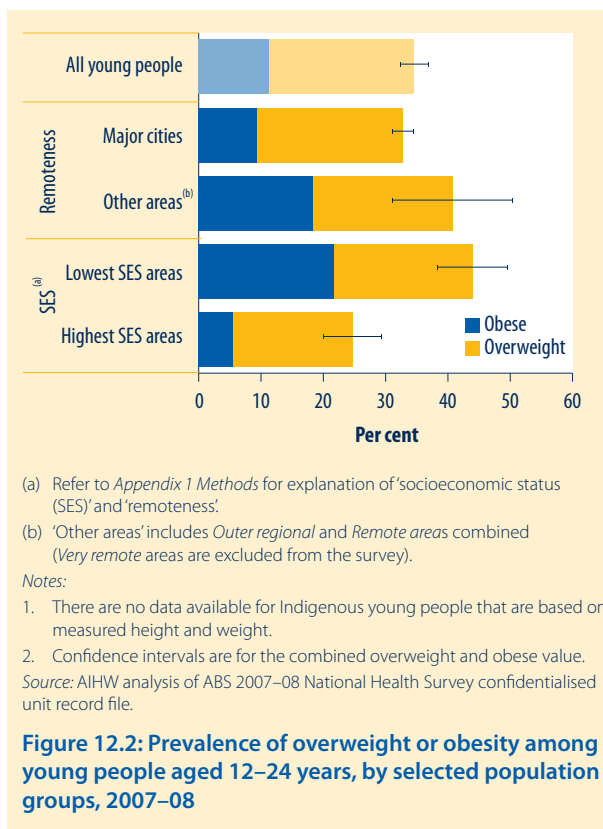
It is worth noting that several studies have shown that respondents, especially females, tend to underestimate their weight and overestimate their height when responding to these surveys (Oliveira et al. 2009; Villanueva 2001).

### Remoteness and socioeconomic status

According to the ABS 2007–08 National Health Survey, among young people aged 12–24 years:

- There was no significant difference in the prevalence of overweight or obesity by remoteness—33% in *Major cities* and 41% in *Outer regional* and *Remote* areas combined (Figure 12.2).
- Those living in the lowest socioeconomic status (SES) areas were considerably more likely than those in the highest SES areas to be overweight or obese (44% and 25% respectively). This is largely attributed to the high prevalence of obesity in the lowest SES areas, with rates over 3 times as high as those in the highest SES areas (22% and 6%

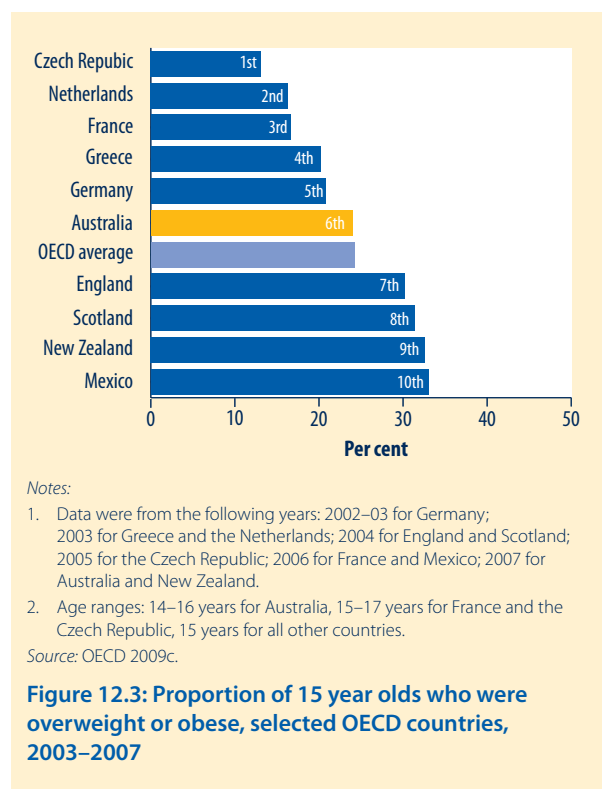
respectively). The prevalence of 'overweight but not obese' was similar across SES areas (22% and 19% respectively).



**Figure 12.2: Prevalence of overweight or obesity among young people aged 12–24 years, by selected population groups, 2007–08**

## How does Australia's overweight and obesity rate compare internationally?

There are limited internationally comparable data available for overweight and obesity among young people. There are currently 10 OECD (Organisation for Economic Co-operation and Development) countries where overweight and obesity data, based on measured height and weight, are available between 2003 and 2007 for 15 year olds. Australia's rate of 24% is the sixth lowest. It is similar to the OECD average, but is considerably higher than the Czech Republic (13%), and the Netherlands and France (16% and 17% respectively). The highest rates were in New Zealand and Mexico (both 33%) (Figure 12.3).



**Figure 12.3: Proportion of 15 year olds who were overweight or obese, selected OECD countries, 2003–2007**

# 13 Physical activity

**Regular physical activity is important in maintaining good health and reduces the risk of overweight or obesity, high blood pressure and Type 2 diabetes, and improves the psychosocial wellbeing of young people.**

**Four in ten young people (44%) met the physical activity guidelines in 2007–08; however, rates were substantially lower among those living in Outer regional and Remote areas combined (34%) and Indigenous young people (14% in 2004–05).**

Physical activity has many benefits for the health and wellbeing of young people, and is important in maintaining good health. Regular physical activity reduces cardiovascular risk and also positively affects cardiovascular risk factors such as overweight or obesity, high blood pressure and Type 2 diabetes. It protects against some forms of cancer, and strengthens the musculoskeletal system (AIHW 2008d; NHMRC 2003a; Okely et al. 2008). Strengthening the musculoskeletal system in childhood and adolescence helps to reduce the likelihood of osteoporosis (low bone-mineral density), and falls and fractures in later life (AIHW 2006a). Physical activity may also improve an adolescent's psychosocial wellbeing by reducing symptoms of depression, stress and anxiety, and through improvements in self-confidence, self-esteem, energy levels, sleep quality and ability to concentrate (Hill et al. 1998).

A young person's participation in physical activity is shaped by individual preferences, in combination with cultural and family influences, and can be affected by the presence of disease or disability. While parents can influence adolescents' physical activity, participation in physical activity tends to decrease with age, and males and females may engage in different levels of physical activity, particularly vigorous activity (Armstrong & Welsman 2006; Zakarian et al. 1994). How young people perceive the benefits of, or barriers to, exercise can also affect physical activity levels. Decreases in physical activity over time may be due to increases in technology in the home, passive leisure activities such as watching television or playing computer games, reliance on car transportation and less physically demanding work choices (Kumanyika et al. 2002; Zakarian et al. 1994). Environmental factors that encourage or discourage people from being physically active include neighbourhood layout, perceptions of neighbourhood safety, access to facilities or public open space, climate

and public transport (Gill et al. 2005). Engaging in regular physical activity during adolescence increases the likelihood of positive health behaviours in adulthood.

Physical activity is a critical factor in determining a person's body weight. If energy intake (via food and drink) is not balanced by energy expenditure (via activity and internal body functions) on a sustained basis, the excess food energy is stored as body fat. Physical inactivity and poor nutrition are important contributors to the rising levels of obesity in the general population (AIHW 2008d; see also *Chapter 12 Overweight and obesity* and *Chapter 14 Nutrition*).

## Physical activity among young Australians

In Australia, National Physical Activity Guidelines have been developed around the intensity, duration and frequency of physical activity that is necessary to obtain health benefits for children and young people. These guidelines recommend at least 60 minutes of moderate to vigorous physical activity (for example, a brisk walk or a game of netball or football) every day of the week for children aged 5–17 years. For those aged 18 years and over, the guidelines recommend at least 30 minutes of moderate intensity physical activity on most (preferably all) days of the week. This is consistent with research showing that the health benefits of physical activity are often linked to the intensity at which an activity is performed.

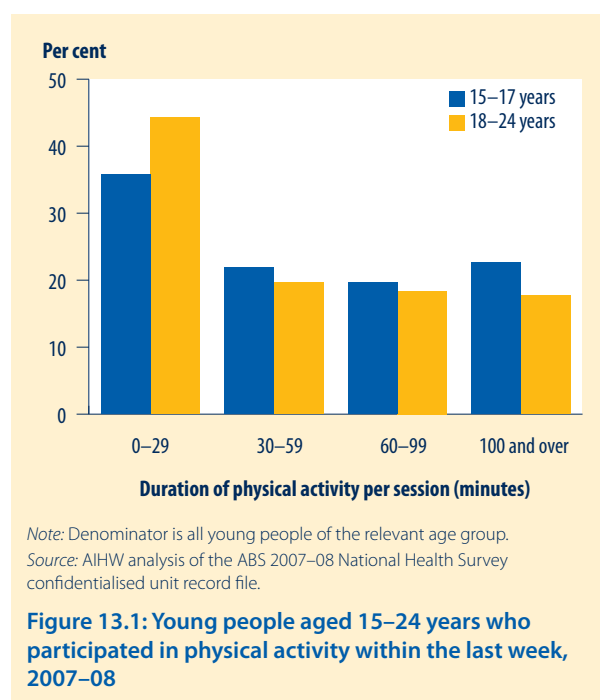
Measuring compliance against these guidelines in the general population is usually done using surveys to ascertain the amount of time spent on various levels of activity and the number of sessions undertaken for each level over 1 week. The latest available physical activity data comes from the Australian Bureau of Statistics' (ABS) 2007–08

National Health Survey, which included questions about exercising for sport, recreation and fitness, as well as transport for those aged 15 years and over (see *Appendix 2 Data sources* for more information on this survey). These data cannot be used to directly measure compliance with the national guidelines. However, by using the number of days on which exercise was undertaken over a 1-week period as a proxy for the number of sessions, these data are a proxy measure of young people meeting National Physical Activity Guidelines as both the frequency of physical activity and the duration are taken into account

**National indicator:** Proportion of young people aged 15–24 years meeting the National Physical Activity Guidelines

In 2007–08, among young people aged 15–24 years:

- Four in ten (44%) met the National Physical Activity Guidelines for moderate to vigorous physical activity (in terms of both time and proxy sessions in a 1-week period), equating to an estimated 1.3 million young Australians.
- Overall, similar proportions of males and females met the guidelines (48% and 41% respectively).
- Young adults (18–24 year olds) were more likely than adolescents to meet the National Physical Activity Guidelines (47% and 39% respectively). This may reflect the differences in the definition of sufficient physical activity in the guidelines for these two age groups for adolescents the duration of the activity per day is defined as 60 minutes, twice as long as the 30 minutes defined for young adults.
- While adolescents are less likely to meet the guidelines, many still report significant levels of physical activity, with 23% reporting between 30 and 59 minutes of physical activity per day on most days of the week (Figure 13.1).
- Young adults (18–24 year olds) were more likely to meet the physical activity guidelines than older adults (25–64 year olds) 47% and 40% respectively.
- More than one in four young people (27%) were sedentary (no exercise or very low levels of physical activity), and the proportion of people who were sedentary was higher among 18–24 year olds than 15–17 year olds (29% and 23% respectively). Young people aged 15–24 years were less likely to be sedentary than those aged 25–64 years (27% and 34% respectively).



## Screen time use

The National Physical Activity Guidelines recommended that children not exceed more than 2 hours of non-educational screen time (for example, watching movies or playing computer games) per day (CSIRO 2007). Evidence suggests that children who engage in more than 2 hours of non-educational screen time per day are more likely to be overweight; be less physically active; consume more sugary drinks; snack on foods high in sugar, salt and fat; and have fewer social interactions (CSIRO 2007).

According to the National Secondary Students' Diet and Activity Survey (NaSSDA) in 2009–10, on week days 71% of students in years 8 to 11 exceeded the recommended screen time, while on weekends 83% exceeded the guidelines. Males were more likely to exceed the recommended screen time than females, on both weekdays (74% and 64% respectively) and weekends (85% and 81% respectively) (Cancer Council Australia 2010b).

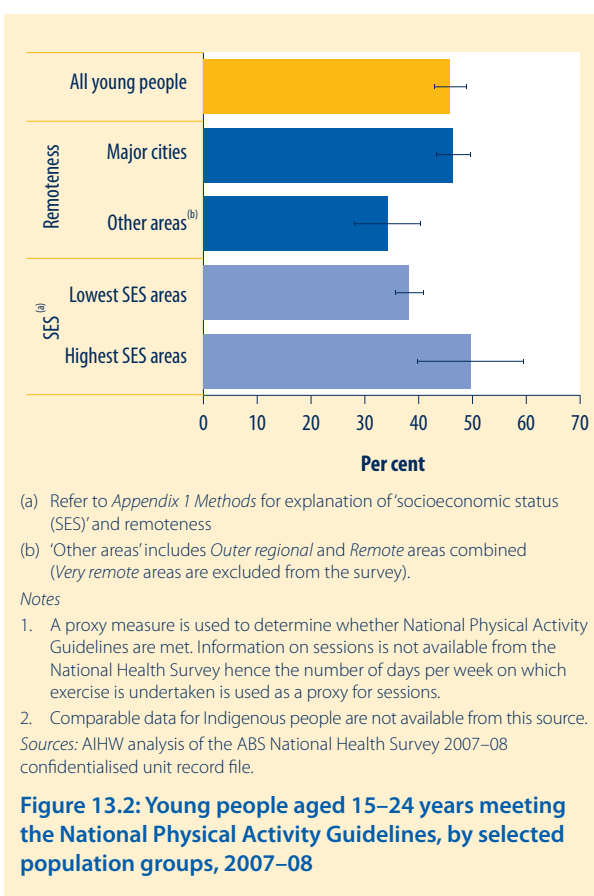
## Does physical activity vary across population groups?

Physical activity may be influenced by economic, cultural and environmental factors, which may limit the accessibility of physical activity among certain population groups, such as Aboriginal and Torres Strait Islander young people, young people living in remote areas and those who experience socioeconomic disadvantage.

Reduced levels of physical activity may be more prevalent in communities with a lack of supporting infrastructure such as sportsgrounds, playgrounds, skate parks, bike paths and public open spaces. Socioeconomic status may be a factor in the type of activity that young people participate in, particularly if infrastructure is inaccessible to people without private transport or participation fees are too expensive (Booth et al. 2002; Transportation & Research Board 2005). Lower levels of physical activity may also occur in neighbourhoods with lower levels of perceived safety (Oliver & Hayes 2005). Perceptions of safety or levels of infrastructure may be lower in areas of socioeconomic disadvantage or in some remote communities. Cultural background and gender may also affect physical activity levels (Booth et al. 2002).

Among young people aged 15–24 years meeting the National Physical Activity Guidelines for moderate to vigorous physical activity:

- Indigenous young people were substantially less likely than non-Indigenous young people to meet the guidelines (14% and 34% respectively), according to the ABS 2004–05 National Aboriginal and Torres Strait Islander Health Survey and the 2004–05 National Health Survey.
- Physical activity rates decreased with remoteness—from 46% among those living in *Major cities* to 34% in *Outer regional* and *Remote* areas combined, according to the ABS 2007–08 National Health Survey (note that people living in *Very remote* areas are excluded from this survey) (Figure 13.2).
- There was no statistically significant difference in physical activity rates for young people living in the lowest and highest socioeconomic status areas (38% and 50% respectively) (Figure 13.2).



**Figure 13.2: Young people aged 15–24 years meeting the National Physical Activity Guidelines, by selected population groups, 2007–08**



# 14 Nutrition

**Maintaining a healthy, balanced and varied diet is an important part of a healthy lifestyle and prevents diseases such as cardiovascular disease, Type 2 diabetes and some types of cancer.**

**Although very few young people (5%) met the daily recommended serves of both fruit and vegetables in 2007–08, over one in ten (11%) met the recommendations for daily serves of vegetables and almost one-third (32%) for daily serves of fruit.**

Good nutrition is important in supporting the rapid growth and development that occurs during childhood and adolescence, and is important in maintaining good health. Consuming a variety of foods, including adequate daily consumption of fruit and vegetables and choosing foods low in salt, is a protective factor against many diseases including coronary heart disease, hypertension, stroke, Type 2 diabetes, oxidative stress and many forms of cancer (Holt et al. 2009; NPHP 2001). Nutrition and physical activity are also critical factors in determining a person's body weight. General overconsumption consuming more kilojoules than required to meet energy levels may be contributing to the increase in obesity in the general population (AIHW 2008d) (see also *Chapter 12 Overweight and obesity*).

The development of healthy eating habits is particularly important during childhood and adolescence as these habits are likely to persist across the lifespan. In adolescence the body experiences rapid growth, resulting in significant changes in body mass and height. Boys on average gain 20 centimetres in height and 20 kilograms in weight while girls average about 16 centimetres and 16 kilograms (AIHW 2007b). Appropriate nutrition is essential in sustaining adolescent growth and development (NHMRC 2001). Adolescence is also an important period for calcium absorption and for gaining bone density, particularly for girls (AIHW 2007b).

Young Australians typically consume sufficient carbohydrate, protein and fat, but consumption of fruit and vegetables is often insufficient. There are several reasons why a young person may not be consuming sufficient fruit and vegetables for a healthy diet. There may be a lack of supply of fresh fruit and vegetables, particularly in very remote areas of Australia, and a lack of education about the importance of healthy eating or in food preparation techniques (Brimblecombe & O'Dea 2009). Further,

healthy fresh foods are often more expensive than foods with poorer nutritional content and greater energy density (Darmon & Drewnowski 2008).

## Daily intake of fruit and vegetables

The National Health and Medical Research Council (NHMRC) has developed a set of Australian dietary guidelines to maintain the best health and reduce the risk of chronic disease. The guidelines emphasise the importance of a wide variety of nutritious foods, namely vegetables and legumes, fruit, cereals, dairy, and meat or meat alternatives. The NHMRC also recommends that care should be taken to limit saturated fat and restrict total fat intake, to choose foods low in salt and to limit sugar intake.

The guidelines highlight the recommended servings of foods that are estimated to provide the required nutrient intakes for health. For young people aged 12–18 years three serves of fruit and four serves of vegetables are recommended each day, and, for 19–24 year olds, this changes to two serves of fruit and five serves of vegetables (NHMRC 2003a, 2003b). In this chapter, estimates for the daily recommended serves of fruit and vegetables for 12–24 year olds have been obtained by taking into account the differences in the guidelines for 12–18 year olds and 19–24 year olds.

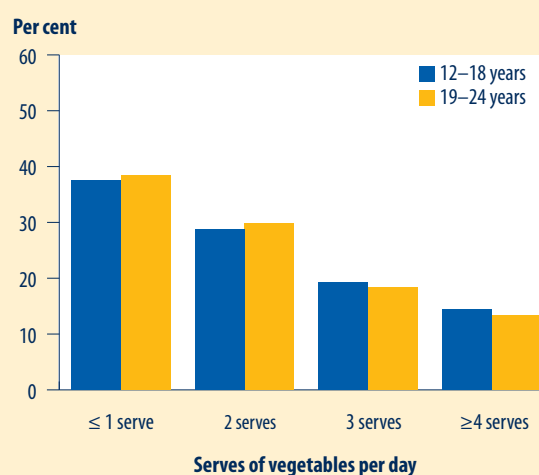
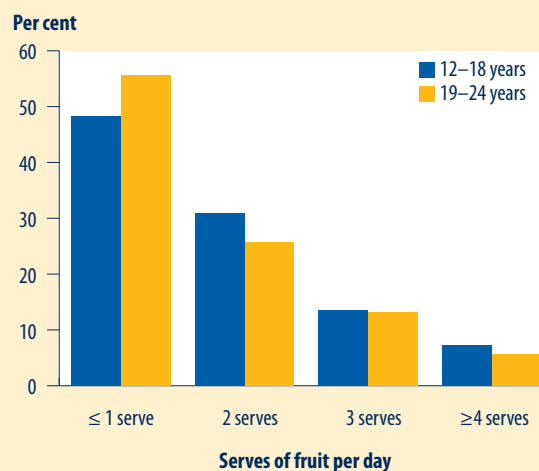
This chapter uses data from the Australian Bureau of Statistics' (ABS) 2007–08 National Health Survey to report on the number of serves of fruit and vegetables consumed by young people (see *Appendix 2 Data sources* for more information on this survey). These data were analysed according to the current nutrition guidelines, which were introduced in 2003 and were current during the collection period. The dietary guidelines are currently under review and are expected to be re-issued in mid-2011.



**National indicator:** Proportion of young people aged 12–24 years meeting Australian Dietary Guidelines

In 2007–08, among young people aged 12–24 years:

- One in twenty (5%), or an estimated 172,100 young people, met the daily recommended serves of both fruit and vegetables, a decrease from 8% in 2005. Almost one-third (32%) met the recommendations for daily serves of fruit and 11% for daily serves of vegetables. However, some young people reported not eating fruit (6% of young people) or vegetables (1%).
- Similar proportions of males and females met both the daily recommended serves of fruit and vegetables (4% and 5%); similar patterns were observed for daily serves of fruit (30% and 34%) and daily serves of vegetables (10% and 11% respectively).
- Overall, similar proportions of adolescents (12–18 year olds) and young adults (19–24 year olds) met both fruit and vegetable consumption guidelines (5% and 4% respectively). However, adolescents were twice as likely to meet the daily recommended serves of vegetables as young adults (14% and 7% respectively), while young adults were twice as likely to meet the fruit consumption guidelines (44% compared with 21% for adolescents). These patterns may reflect the differences in the guidelines for number of daily serves of fruit and vegetables for these age groups.
- Most young people usually consumed some fruit and vegetables each day but at levels below the recommended number of serves. For those aged 12–18 years, 38% consumed at least 2 daily serves of both fruit and vegetables, 63% at least 2 serves of vegetables, and 52% at least 2 serves of fruit; the corresponding proportions for 19–24 year olds were 31%, 62% and 44% respectively (Figure 14.1).
- Those who met the dietary guidelines for fruit and vegetable consumption were also more likely (36%) to report moderate or high levels of physical activity than those who did not meet the guidelines (21%).



Notes:

1. A particular number of serves means that at least that number and up to the next number of serves was consumed e.g. 2 serves means that at least 2 and up to 3 serves were consumed.
2. Data excludes those who did not report eating fruit (6% of young people) or vegetables (1% of young people).

Source: AIHW analysis of the ABS 2007–08 National Health Survey confidentialised unit record file.

**Figure 14.1: Usual daily consumption of fruit and vegetables among young people aged 12–24 years, 2007–08**

## Does fruit and vegetable intake vary across population groups?

In remote areas, where Aboriginal and Torres Strait Islander people are highly represented, lengthy transportation processes increase the cost of fresh nutritious foods. Other factors such as limited availability or, for some people, limited household storage and food preparation capacity, can also contribute to poor nutrition choices (Brimblecombe & O’Dea 2009). Nutrient-rich foods are usually

more expensive for a given quantity of energy and also spoil faster than low-nutrition foods (Darmon & Drewnowski 2008).

The types of food that people consume can also be affected by social, cultural and psychological factors. Cultural beliefs and nutrition patterns vary considerably worldwide and differences in the nutrient composition of diets can vary with cultural background. While social interactions around food are common across cultures, there is cultural variation in the values attached to food.

Environmental influences also affect the food choices that people make. Environments with lower than average neighbourhood availability of healthy foods and higher than average availability of fast food restaurants, combined with exposure to targeted food marketing, may contribute to a reliance on high-calorie foods and beverages that are socially and culturally valued (Kumanyika 2008).

Among 12–24 year-olds:

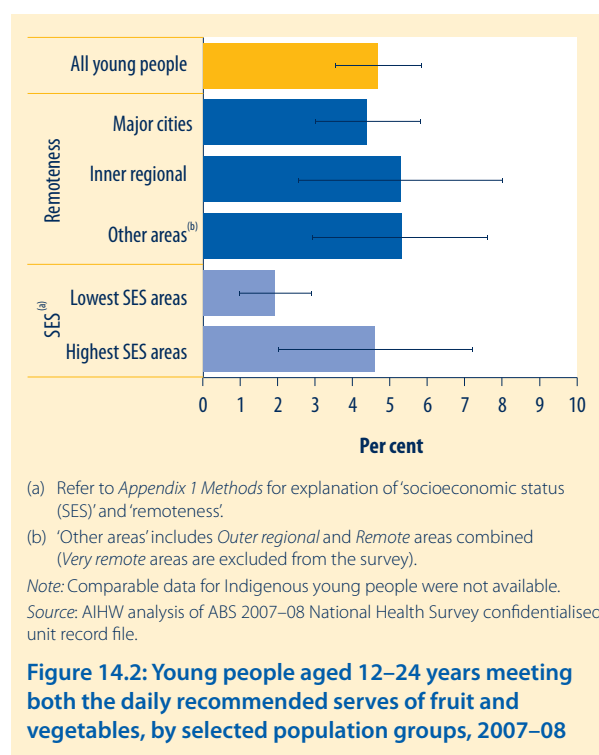
- One in twenty (5%) Indigenous young people living in non-remote areas met both the daily recommended serves of fruit and vegetables—lower than the rate for non-Indigenous young people (8%) (according to the ABS 2004–05 National Aboriginal and Torres Strait Islander Health Survey and the 2004–05 National Health Survey).
  - This is largely attributable to the lower levels of fruit consumption among Indigenous young people—20% met the guidelines for fruit consumption compared with 34% for non-Indigenous young people.
  - The proportions meeting the guidelines for vegetable consumption were more similar (15% and 18% respectively).

See *Chapter 42 Health and wellbeing of Indigenous young people*, for further information on fruit and vegetable consumption among Indigenous young people.

- The proportion of young people meeting both daily fruit and vegetable consumption guidelines did not vary significantly by remoteness, ranging from 4% in *Major cities* to 5% each in *Inner regional* areas, and *Outer regional* and *Remote* areas combined, according to the 2007–08 National Health Survey (excludes *Very remote* areas) (Figure 14.2).
  - A similar pattern was observed for those meeting daily recommended serves of

vegetables, with no significant difference between those in *Major cities* and *Outer regional* and *Remote* areas combined (9% and 14%, respectively).

- However, for those meeting fruit consumption guidelines, young people in *Major cities* were almost twice as likely to meet the guidelines as those in *Outer regional* and *Remote* areas combined (35% and 19% respectively).
- There was no statistically significant variation by socioeconomic status (SES) in the proportions of young people meeting the dietary guidelines for fruit and vegetable consumption—2% of young people living in the lowest SES areas met the guidelines compared with 5% in the highest SES areas in 2007–08 (Figure 14.2).
  - Similar patterns were observed for those meeting individual vegetable or fruit consumption guidelines—9% of young people in the lowest SES areas and 10% in highest SES areas met the daily recommended serves of vegetables; corresponding proportions for fruit consumption were 30% and 34%, respectively.



# 15 Sun protection

**Sun protection is a major concern in Australia where exposure to high levels of UV rays contribute to skin cancer, the most commonly diagnosed cancer in young people.**

**Sunscreen was the most commonly used sun protective behaviour among 12–17 year olds (37%), while use of sunglasses was the most common among 18–24 year olds (47%) in 2006–07.**

Sun exposure during childhood and adolescence is considered to be the most significant risk factor for developing the most serious type of skin cancer—melanoma—as well as other types of skin cancer in adulthood. Australia has the highest rate of skin cancer in the world, with skin cancers accounting for 80% of all new cancers diagnosed each year (AIHW 2007b). Annually, around 380,000 Australians are treated for skin cancer, with general practitioners experiencing almost one million patient encounters per year for skin cancer (Cancer Council Australia 2009).

While the risk of melanoma increases with age, melanoma remains the most common cancer diagnosed among young Australians aged 15–24 years (AIHW 2008e). The reasons for the high incidence of skin cancer among young people is attributable to increased exposure to harmful ultraviolet rays from the sun, most likely due to increased outdoor activity during the warmer months of the year combined with inadequate sun protection (Dobbinson et al. 2008b).

Research indicates that young people's sun protective behaviours are positively influenced by health professionals, health organisations, teachers and work supervisors (White et al. 2008a). Yet the influence of parents, siblings, friends and the media on sun protection behaviour is just as likely to be negative as it is positive (White et al. 2008a).

Over the last two decades the incidence of melanoma has been declining, most likely due to public education campaigns and government legislation aimed at increasing the awareness of the risks associated with skin cancer, for example, the implementation of interventions such as shade provision and 'no hat, no play' policies in schools (Rigel & Carucci 2000). It has been estimated that regular use of sunscreen during the first 18 years of life could reduce the incidence of non-melanoma skin cancer by around 60% (Cancer Council Australia 2009).

## Sun protection behaviours

The Cancer Council of Australia's 2006–07 National Sun Protection Survey examined people's sun-related knowledge, attitudes and behaviours, and sunburn experiences over the summer of 2006–07 (see *Appendix 2 Data sources* for more information on this survey).

The survey found that the great majority of young Australians (82% of 12–17 year olds and 71% of 18–24 year olds) were outdoors on the weekend for more than 15 minutes during peak ultraviolet radiation times (between 10 a.m. and 3 p.m.). The average time spent outside was 111 minutes for adolescents and 120 minutes for 18–24 year olds. This level of sun exposure would result in sunburn for most skin types without adequate protection.

Almost one-quarter (24%) of 12–17 year olds and nearly one-fifth (19%) of 18–24 year olds reported being sunburnt on summer weekends, with the incidence of sunburn remaining similar to 2003–04 levels among 12–17 year olds (25%) and 18–24 year olds (22%). The most common parts of the body that were sunburnt were upper body areas such as the head and face, neck and shoulders, and arms and hands. Young people aged 12–17 years were most likely to experience sunburn when participating in water activities (39%), active recreational activities such as bush walking and bike riding (20%), and organised sport (17%). The reasons most commonly cited in the survey for getting sunburnt were 'forgetting to protect' and poor application of sunscreen (Dobbinson et al. 2008a).

One in five adolescents aged 12–17 years (22%) reported that they had intentionally attempted to tan, a 10 percentage point decrease from 2003–04. Further, very few young people reported using solariums in 2006–07—1% of 12–17 year olds and 4% of 18–24 year olds used a solarium in the previous 12 months.

**National indicator:** Proportion of young people aged 12–24 years using sun protection

In 2006–07, among young people aged 12–24 years:

- Sunscreen was the most commonly used sun protective behaviour while outdoors on the weekend among 12–17 year olds (37%), followed by wearing three-quarter or longer leg-cover (30%), a hat, cap or visor (29%), and sunglasses (24%). Among 18–24 year olds, wearing sunglasses (47%) was the most common sun protective behaviour, followed by leg-cover (37%), head wear and sunscreen (33% each) (Table 15.1).
- The use of sun protection behaviours among adolescents has remained relatively similar since 2003–04.
- Sun protection behaviours varied by sex among adolescents aged 12–17 years—a higher proportion of males wore a hat, cap or visor compared with females (38% and 18% respectively), while more females wore sunglasses (32% compared with 17%) or stayed mainly in the shade (25% compared with 17%). Similar proportions of adolescent males and females wore a wide-brimmed hat, used sunscreen and wore long leg-cover. Similar patterns were observed for 18–24 year olds, with more males using head wear than females (39% and 24%), and more females wearing sunglasses (53% and 43%) and staying in the shade (26% and 19%) than their male counterparts.

**Table 15.1: Sun protection behaviours during peak UV periods among young people aged 12–24 years, 2003–04 and 2006–07 (per cent)**

Sun protection behaviours	2003–04		2006–07	
	12–17 years	18–24 years	12–17 years	18–24 years
Head wear (hat, cap or visor)	38	37	29	33
15+ sunscreen	37	36	37	33
¾ length or long top	11	11	9	12
¾ length or long leg-cover	37	37	30	37
Stayed mostly in the shade	19	26	20	22
Wore sunglasses	23	52	24	47
Sunburnt	25	22	24	19

Note: Rows do not add up to 100% as respondents can have multiple responses. Sources: Dobbins et al. 2005, Dobbins et al. 2008a.

## Skin checks

In addition to using sun protection, regular skin checks are important as the early detection of skin cancer is more likely to improve treatment outcomes. Skin checks may focus on a specific mole or part of the body (such as the face or shoulders) or involve an all-over body check.

According to the Australian Bureau of Statistics' 2007–08 National Health Survey, almost half (45%) of young Australians aged 12–24 years had their skin regularly checked for changes in freckles and moles, with skin check rates higher among females than males (48% and 41% respectively), yet the difference between sexes was not statistically significant. Regular skin checks were slightly, but not significantly, different between 12–14 year olds and 20–24 year olds (49% and 43% respectively).

## Does sun protection use vary across population groups?

There is limited national information on the use of sun protection behaviours for subpopulations of young people in Australia.

According to the 2006–07 National Sun Protection Survey there was little evidence for any significant variation in sun protective behaviours by adolescents' socioeconomic status (Dobbins et al. 2008a). The 2007–08 National Health Survey also reported similar rates for young people checking their skin regularly for changes in freckles or moles across areas of lowest and highest socioeconomic status (42% and 41% respectively). However, the proportion of young people having their skin regularly checked for changes in freckles and moles did appear to vary with remoteness—rates in *Major cities* (41%) were statistically significantly lower than both *Inner regional* areas, and *Outer regional* and *Remote* areas combined (53% and 54% respectively).

# 16 Substance use

**Many young people experiment with substances that can cause immediate and long-term health and social problems.**

**Over one in ten (11%) young people were daily smokers, three in ten (30%) drank alcohol at risky or high-risk levels for short-term harm and over one in ten (12%) for long-term harm, and almost two in ten (19%) had used an illicit substance in 2007.**

Youth is a stage in life when many people begin to experiment with substances that can cause immediate and long-term health and social problems. In the short term, this experimentation may result in hospitalisations due to acute intoxication and related injuries, dependence, withdrawal symptoms, psychotic disorders and amnesia. In the long term, alcohol and other drug use can lead to depression, infections with bloodborne diseases, damage to the liver, heart and brain, and increased risk of cancers and other serious health conditions (Bruner & Fishman 1998; Moran et al. 2006).

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). Other factors include peer antisocial behaviour, poor parental control and supervision, drug use among family members, low self-esteem, academic failure, leaving school early, poor connection with family, school and community, and legal and financial problems (Spooner & Hetherington 2005). Substance use can also be associated with a range of mental illnesses, such as depression, anxiety, personality disorders and schizophrenia, with evidence suggesting that people with mental illness are up to 4.5 times as likely to have a substance use disorder than the general population (WHO 2004). However, it is unclear whether substance use is primary (appearing before the onset of mental illness) or secondary (appearing after the onset of mental illness).

This chapter discusses the use of tobacco, alcohol and illicit drugs among young Australians, using a range of data collections.

## Substance use disorders

Substance use disorders involve the harmful use of and/or dependence on alcohol and/or drugs. The misuse of drugs, defined as the use of illicit substances and the misuse of prescribed medicines, includes the drug categories of opioids, cannabinoids, sedatives and stimulants. This section uses the Australian Bureau of Statistics' (ABS) 2007 National Survey of Mental Health and Wellbeing, which collects information on substance use disorders among those aged 16–85 years (see *Appendix 2 Data sources* for more information on this survey).

**National indicator:** Reported rate for substance use disorders for young people aged 16–24 years

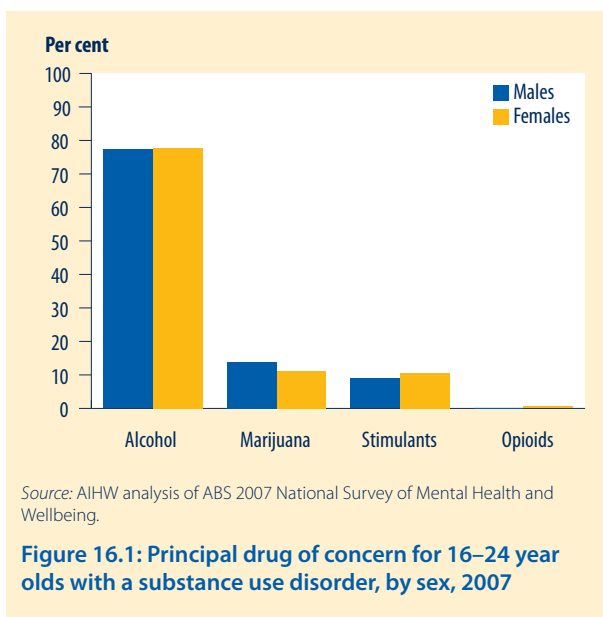
In 2007, among young people aged 16–24 years:

- An estimated 323,500 young people (13%) reported having a substance use disorder.
- Males were more likely than females to have a substance use disorder (15% and 10% respectively).
- Alcohol was the most common principal drug of concern among young people with substance use disorders (77% for males and 78% for females), followed by marijuana (14% and 11%) and stimulants (9% and 10%) (Figure 16.1).

Misuse of alcohol and other drugs may result in hospitalisations due to acute intoxication and related injuries, dependence, withdrawal symptoms, psychotic disorders and amnesia. In 2008–09, there were 8,442 hospital separations for young people aged 12–24 years with a principal diagnosis of mental and behavioural disorders due to drug and alcohol use, a rate of 218 per 100,000 young people. These represent 1.3% of all hospital separations for young people and 14% of all separations for



substance use disorders, according to the Australian Institute of Health and Welfare's (AIHW) National Hospital Morbidity Database. Over half of the hospitalisations with a principal diagnosis of mental and behavioural disorders due to drug and alcohol use among young people were due to alcohol use (61%), a further 14% were due to cannabis use, 9% to 'multiple drug use and other psychoactive substances' and 7% to 'other stimulants, including caffeine'. See *Appendix 1 Methods* for further information on the ICD-10-AM classification of diseases and related health problems.



Among young people, there were 15 deaths from drug dependence disorders and accidental poisoning by alcohol, narcotics and hallucinogens in 2007, according to the AIHW National Mortality Database.

## Smoking

The detrimental health effects of tobacco smoking are well established. In the short term, tobacco use may lead to respiratory problems, shortness of breath, nicotine dependence (and subsequent withdrawal symptoms), persistent coughing and reduced physical fitness. In the long term, tobacco smoking is a major risk factor for a number of serious health conditions including coronary heart disease, chronic obstructive pulmonary disease, stroke, peripheral vascular disease, lung cancer and numerous other cancers, and a number of other diseases and conditions (AIHW 2008d).

Most tobacco smokers take up smoking in adolescence, with very few people beginning to smoke as adults (Mathers et al. 2006). Those who begin smoking at younger ages (12 or 13 years) have been found to smoke more cigarettes per day on average, and to reach this higher level of smoking at a younger age than those who begin smoking when they are older (Hoffmann et al. 2006). Adolescent tobacco use is associated with a range of social and health problems in early adulthood, such as continued smoking, problematic alcohol use, and mental health, academic and sleep problems (Mathers et al. 2006).

There are a number of factors known to affect the likelihood of smoking among children and adolescents. The smoking behaviour of peers is strongly associated with smoking uptake (Kobus 2003), and parents and siblings can also influence smoking behaviour (Avenevoli & Merikangas 2003). Lower socioeconomic status and exposure to the positive depiction of smoking in the media have also been associated with smoking among young adults (Fergusson et al. 2007; USNCI 2008).

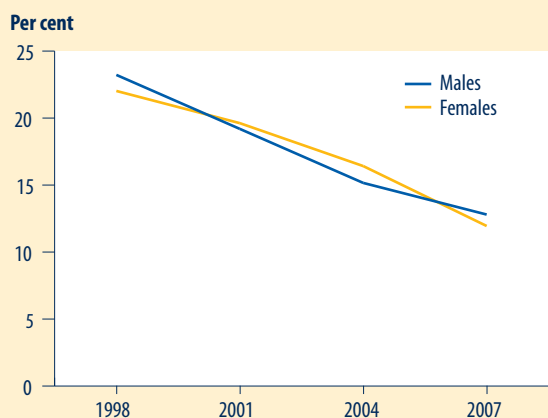
**National indicator:** Proportion of young people aged 12–24 years who are daily smokers

According to the 2007 National Drug Strategy Household Survey, among young people aged 12–24 years:

- Over one in ten (11%) were daily tobacco smokers, equating to an estimated 402,600 young people Australia-wide. A further 3% smoked either weekly or less than weekly, 5% were ex-smokers and 81% had never smoked.
- Overall, similar proportions of males and females were daily smokers (11% and 10%, respectively).
- Young adults aged 18–24 years were almost 6 times as likely to be daily smokers as 12–17 year olds (17% and 3%, respectively); however were less likely to be daily smokers than 25–34 year olds (24%). The average age of initiation for tobacco use was 14.7 years.
- The prevalence of daily smoking among 14–24 year-olds has almost halved since 1998, declining from 23% to 12% over this period (Figure 16.2). The rate of decline was similar for those aged 14–17 years and 18–24 years over this period (from 10% to 5% and from 30% to 17%, respectively).

For information on underage purchase of cigarettes, see *Chapter 34 Teenage purchase of cigarettes or alcohol*.





Source: AIHW National Drug Strategy Household Survey, various years.

**Figure 16.2: Daily smoking rates among young people aged 14–24 years, by sex, 1998–2007**

## Parental smoking

Parental smoking can have adverse effects on the health and wellbeing of young people, as children with parents who smoke are more likely to take up smoking later in life (Kestila et al. 2006). According to the 2008 Household, Income and Labour Dynamics in Australia (HILDA) Survey, over one in five (22%) parents with co-resident young people aged 12–24 years were current smokers. Fathers and mothers were similarly likely to be current smokers (22% and 21% respectively). Of parents who were current smokers, most (89%) smoked daily, around 4% smoked at least weekly (but not daily), and 7% smoked less often than weekly. See *Chapter 26 Environmental tobacco smoke* for more information.

## Alcohol misuse

Alcohol use by children and adolescents can have far-reaching effects on their health and wellbeing. Alcohol use can lower inhibitions and impair decision making, which can lead to unsafe behaviour with negative short-term and long-term consequences (US DHHS 2007). Heavy drinking in childhood and adolescence can also have significant and detrimental effects on brain development during a critical period of brain maturation (De Bellis et al. 2005).

Alcohol use at young ages is associated with more frequent use during late adolescence and an increased risk of later dependence (Brown et al. 2009). Additionally, the risk of health problems, such as accidental injuries and mental health and social problems, are increased when alcohol use starts early. Intoxication during first experience with alcohol has also been associated with an increased risk of problem drinking in adulthood (Warner et al. 2007).

## Short-term and long-term harm of risky drinking among young people

This section focuses on risky drinking, which is when a person drinks heavily over a short period of time, resulting in immediate and severe intoxication. Possible outcomes from risky drinking include damage to the small bowel and subsequent diarrhoea, depression of the central nervous system, headaches, and stomach problems resulting in nausea, shakiness and vomiting (NDARC 2004). Risky drinking can also increase the risk of injury (for example from falls, assault or road accidents), can foster coercive sexual activity and unprotected sex (Bonomo et al. 2001; NHMRC 2009), and increases the likelihood of tobacco and illicit drug use (US DHHS 2007). Acute alcohol intoxication can lead to alcohol poisoning, which may result in coma or death.

Drinking heavily on a regular basis is a risk factor for future hazardous patterns of alcohol consumption. Long-term excessive use of alcohol can lead to a number of physical, emotional and social problems, including alcohol addiction, poor diet, stomach problems, liver, heart and brain damage, infections with bloodborne diseases, increased risk of cancers, depression, family and relationship problems, and legal and financial difficulties (Bruner & Fishman 1998; NDARC 2004; NHMRC 2001).

Measuring the health risks posed by different levels and patterns of drinking is complex and informed by a large body of research. The National Health and Medical Research Council have released guidelines to help Australians reduce their health risks from drinking alcohol (Box 16.1).

### Box 16.1: Australian alcohol consumption guidelines

In March 2009 the National Health and Medical Research Council (NHMRC) released new Alcohol Guidelines. These guidelines move away from previous threshold-based definitions of 'risky' or 'high-risk' drinking in recognition of the fact that the lifetime risk of harm from consuming alcohol increases progressively with the amount consumed (NHMRC 2009). These guidelines lowered the maximum number of drinks on one occasion to four standard drinks for adults, and advised that for those under the age of 18 years not drinking is the safest option, and that this is especially important for children aged under 15 years (NHMRC 2009).

The new guidelines have implications for the interpretation of data from surveys that collect alcohol information and were conducted before 2009. In this report, results from the 2007 National Drug Strategy Household Survey were analysed using the older guidelines, as these were current during the collection period. These older guidelines were released by the NHMRC in 2001, and were expressed in terms of short-term and long-term risk of harm (injury, ill health and death).

#### Level of risk in the short term:

Males:

Low risk: the consumption of up to 6 standard drinks on any one day

Risky or high risk: the consumption of 7 or more standard drinks on any one day

Females:

Low risk: the consumption of up to 4 standard drinks on any one day

Risky or high risk: the consumption of 5 or more standard drinks on any one day

#### Level of risk in the long term:

Males:

Low risk: up to 28 standard drinks per week

Risky: 29–42 per week

High risk: 43 or more per week

Females:

Low risk: up to 14 standard drinks per week

Risky: 15–28 per week

High risk: 29 or more per week

These were guidelines for adults; children and adolescents may be physically smaller and have less experience with alcohol so it is likely that for adolescents consumption below these levels would also pose significant risks.

**National indicator:** Proportion of young people aged 12–24 years who drink at risky or high-risk levels in the short or long term

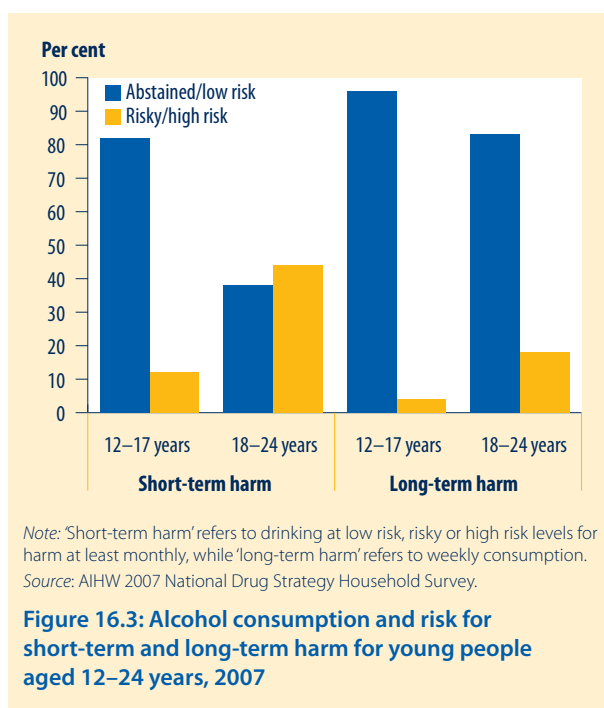
According to the 2007 National Drug Strategy Household Survey, nearly one-third (31%) of young people aged 12–24 years had not consumed alcohol in the previous 12 months (abstainers). Over one-quarter (26%) of young people consumed alcohol at levels considered low risk for alcohol-related harm in the short term, and over half (57%) consumed alcohol at levels considered low risk for long-term harm. The average age of initiation for alcohol consumption for those aged 12–24 years was 14.9 years.

In 2007, among young people aged 12–24 years drinking at risky or high-risk levels for **short-term harm**, at least once a month:

- Nearly one in three (30%) drank at these levels, including 11% who did so at least once a week. Since 2001 the rates of risky or high-risk drinking at least monthly have remained relatively stable among 14–24 year olds (35–37%).
- The prevalence of risky or high-risk drinking was similar for males and females (30% each) in 2007.
- Young adults aged 18–24 years had the highest rate of risky or high-risk drinking (44%)—nearly 4 times as high as 12–17 year olds (12%), and higher than both 25–34 year olds (31%) and 35–44 year olds (21%) (Figure 16.3).

In 2007, among young people aged 12–24 years, drinking at risky or high risk levels for **long-term harm**:

- One in eight young people (12%) drank at these levels, with rates among 14–24 year olds remaining relatively stable between 2001 and 2007 (15% in 2001 and 13% in 2007).
- Prevalence was similar for males and females (10% and 13% respectively).
- Young adults aged 18–24 years had the highest rate of risky or high-risk drinking (18%)—nearly 4 times as high as 12–17 year olds (4%), and higher than both 25–34 year olds (12%) and 35–44 year olds (11%) (Figure 16.3).



## Illicit substance use

Other substances that can also have harmful effects on young people include illicit drugs, and licit drugs used inappropriately. Illicit drug use is a major risk factor for ill health and death, being associated with HIV/AIDS, hepatitis C virus (when injecting equipment and needles are shared), low birthweight (for babies of drug users), malnutrition, infective endocarditis (leading to damage to the heart valves), poisoning, mental illness, brain damage, respiratory problems, suicide, self-inflicted injury and overdose (Loxley et al. 2004).

Illicit drug use is also associated with psychological and behavioural problems, such as delusions and hallucinations, memory problems, thoughts of suicide, and aggressive and erratic behaviour, which are often exacerbated when multiple drugs are used in combination (Abetz 2005; Loxley et al. 2004; Vasica & Tennant 2002). It is also linked with criminal behaviour, with 59% of young people in juvenile justice detention reporting that they were under the influence of either alcohol or illicit drugs at the time of offending (NSW Department of Juvenile Justice 2003). Young people engaging in substance use at younger ages are much more likely to develop dependency, in addition to a variety of physical, social and emotional problems (Bruner & Fishman 1998; Moran et al. 2006).

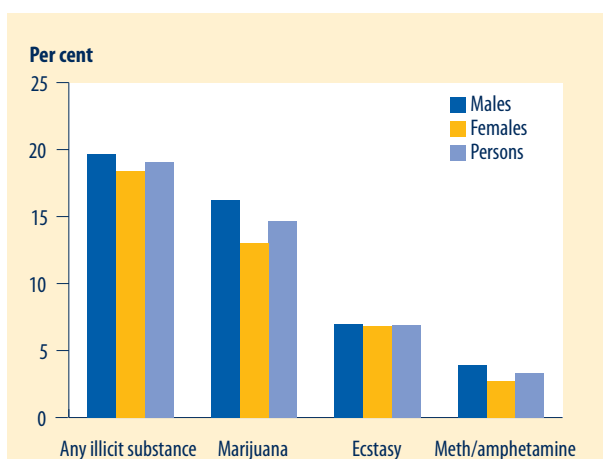
This section focuses on illicit drug use among young people, using data from the 2007 National Drug Strategy Household Survey. It examines illicit substances such as marijuana, ecstasy, meth/amphetamine and opiates. While underage drinking and cigarette smoking are also regarded as illicit substances they are not discussed here, but have been presented in the previous sections of this chapter. Information on illicit purchase of cigarettes or alcohol is presented in *Chapter 34 Teenage purchase of cigarettes or alcohol*.

**National indicator:** Proportion of young people aged 12–24 years who had used an illicit drug within the last 12 months

In 2007, among young people aged 12–24 years:

- Almost one in five (19%) had used an illicit substance in the previous 12 months, equating to an estimated 721,500 young people in Australia (Figure 16.4).
- The rate of illicit substance use among 18–24 year olds (27%) was 2–3 times as high than among 12–17 year olds and those aged 25 years and over (10% and 12%, respectively).
- Overall, males and females had a similar usage rate of illicit substances (20% and 18% respectively). This varied by age—among 12–17 year olds illicit substance use was higher among females than males (12% for females and 7% for males), while among 18–24 years olds there was no statistically significant difference (24% for females and 29% for males).

- Marijuana was the illicit substance most often used by young people (15% of young people), followed by ecstasy (7%), and meth/amphetamine (3%) (Figure 16.4).
- Illicit substance use has almost halved over the last decade among 14–24 year olds —declining from 42% to 22% between 1998 and 2007. Marijuana use decreased notably from 38% to 17% and meth/amphetamine use from 10% to 4% over this period. The use of ecstasy has remained relatively steady, around 7–9%.
- Among the most commonly used illicit substances, the mean age of initiation ranged from 15.9 years for marijuana to 18.1 years each for ecstasy and meth/amphetamines.



Source: AIHW 2007 National Drug Strategy Household Survey.

**Figure 16.4: Illicit drug use in the previous 12 months among young people aged 12–24 years, 2007**

## Does substance use vary across population groups?

Some population groups within Australia experience poorer health, and some of these health disparities are attributed to risk factors such as smoking, risky or high-risk alcohol use, and illicit drug use (AIHW 2010b). Substance use plays a significant role in the gap in life expectancy and health between Indigenous and non-Indigenous Australians, and can cause serious harm to the social health of Indigenous people and their communities (AIHW 2011c).

Those living in remote areas and areas of socioeconomic disadvantage have also been found to experience higher rates of substance use. As well as the health consequences of substance use, it may

also have severe social and economic effects on communities, including family and social disruption such as domestic violence, crime and assault (AIHW 2010b, 2011c).

## Aboriginal and Torres Strait Islander young people

Substance use data for Indigenous young people are not available for all young people aged 12–24 years, with smoking data only available for 15–24 year olds and alcohol use for 18–24 year olds. For illicit substance use, while data are available for Indigenous young people, no comparable data are available for other young Australians. See *Chapter 42 Health and wellbeing of Indigenous young people* for further information on substance use among Indigenous young people.

Indigenous young people aged 15–24 years were more than twice as likely to be daily smokers as non-Indigenous young people (39% and 16% respectively for males, and 40% and 14% respectively for females, according to the ABS 2007–08 National Health Survey and the ABS 2008 National Aboriginal and Torres Strait Islander Social Survey).

According to the ABS 2004–05 National Aboriginal and Torres Strait Islander Health Survey and 2004–05 National Health Survey, among young people aged 18–24 years:

- Indigenous young people were more likely than non-Indigenous young people to drink at risky or high-risk levels for short-term harm at least once a week (23% and 15% respectively).
- Indigenous and non-Indigenous young people reported similar rates of drinking at risky or high-risk levels for long-term harm (16% and 14% respectively).

Note that risky or high-risk alcohol consumption in the surveys is defined as 4 and 2 standard drinks or more per day for males and females, respectively, averaged over the week before interview. This definition in terms of quantity and frequency differs from that presented in the alcohol misuse section in this chapter.

## Remoteness

In 2007, according to the National Survey of Mental Health and Wellbeing, among young people aged 16–24 years with a substance use disorder, similar proportions were living in *Major cities* (12%), *Inner regional* areas (14%) and *Outer regional* and *Remote* areas combined (13%).

According to the 2007 National Drug Strategy Household Survey among young people aged 12–24 years:

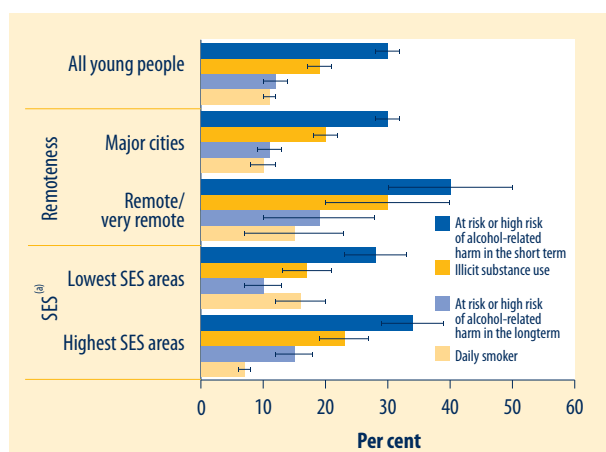
- There was no statistically significant difference by remoteness in the prevalence of daily tobacco smoking among young people—15% in *Remote* and *Very remote* areas combined, 12% in *Inner regional* areas, 13% in *Outer regional* areas and 10% in *Major cities*.
- For risky or high-risk drinking for short-term or long-term harm there was also no statistically significant difference by remoteness:
  - For risky or high-risk drinking for short-term harm at least monthly, rates ranged from 40% in *Remote* and *Very remote* areas combined to 30% in *Major cities* to 29% each for *Inner regional* areas and *Outer regional* areas.
  - For risky or high-risk drinking for long-term harm, rates ranged from 19% in *Remote* and *Very remote* areas combined to 12% each in *Inner* and *Outer regional* areas to 11% in *Major cities*.
- Those living in *Remote* and *Very remote* areas combined were almost twice as likely to have used an illicit substance in the previous 12 months as those in *Inner regional* areas (30% and 16% respectively). The use of illicit substances did not differ significantly in other areas (20% in *Major cities*, 18% in *Outer regional* areas) (Figure 16.5).

## Socioeconomic status

According to the 2007 National Survey of Mental Health and Wellbeing young people aged 16–24 years living in the lowest socioeconomic status (SES) areas had lower rates of substance use disorders than those in the highest SES areas (8% and 14% respectively).

In 2007, according to the National Drug Strategy Household Survey, among young people aged 12–24 years:

- Those living in the lowest SES areas were more than twice as likely to be daily smokers as those in the highest SES areas (16% and 7% respectively).
- There was no statistically significant difference between the lowest and highest SES areas for risky or high-risk drinking for short-term harm (28% and 34% respectively) or long-term harm (10% and 15% respectively).
- Illicit substance use did not vary significantly between the lowest and highest SES areas (17% and 23%).



(a) Refer to *Appendix 1 Methods* for explanation of 'socioeconomic status (SES)' and 'remoteness'.

Notes:

1. For alcohol use, short-term harm refers to drinking at risky or high-risk levels for harm at least monthly, while long-term refers to weekly.
2. Illicit substance use refers to use of an illicit drug in the previous 12 months.
3. Comparable Indigenous data not available.

Source: AIHW 2007 National Drug Strategy Household Survey.

**Figure 16.5: Substance use among young people aged 12–24 years, by selected population groups, 2007**



# 17 Sexual and reproductive health

**Sexual behaviour during adolescence can have far-reaching consequences in later life, including contracting sexually transmissible infections and resulting in unwanted pregnancies.**

**In 2008, 27% of Year 10 students and 56% of Year 12 students had experienced sexual intercourse. Two-thirds (68%) of sexually active students used a condom at their most recent sexual encounter.**

Sexual development is a normal part of adolescence; however, sexual and reproductive behaviour during this time can have far-reaching consequences in later life. A supportive social environment is critical to healthy adolescent development, and a strong relationship with parents, a connection to school and open communication with sexual partners have been shown to be important in reducing unsafe or unwanted sexual behaviour among adolescents (WHO 2005).

Age at first sexual intercourse can be an indicator of later adult sexual activity. Earlier sexual experience is associated with having more sexual partners over the lifetime, having sex more frequently, a greater likelihood of having ever been diagnosed with a sexually transmissible infection (STI), and a greater likelihood of having had anal intercourse, oral sex or homosexual experience (Rissel et al. 2003). Sexually active secondary school students also report having unwanted or unprotected sex as a result of being intoxicated (Kang et al. 2007).

Sexual activity can be associated with health risks. Unsafe sexual practices accounted for an estimated 0.4% of the overall disease burden in Australia among 15–24 year olds in 2003. Among young males, most of this burden was associated with HIV/AIDS while among females most burden was associated with unspecified STIs (Begg et al. 2007). Unprotected intercourse can transmit infections such as chlamydia, gonorrhoea, HIV and syphilis, and can result in unwanted pregnancies. Unprotected sexual activity has also been associated with an increased risk of specific cancers such as cervical cancer and anal cancer (AIHW 2010b) (see *Chapter 10 Communicable diseases* and *Chapter 36 Cervical cancer* for further information on these conditions).

Young people are at greater risk of STIs as a result of inexperience and lack of knowledge regarding risks associated with unprotected sex and access

to contraception, social pressure, frequency of partner change, substance use and reluctance to talk with parents or their family general practitioner (DoHA 2005). Sexual activity can also result in unplanned pregnancies for young women. Teenage motherhood poses significant long-term risks, including poorer health, educational and economic outcomes for both mother and child (Klein & Committee on Adolescence 2005; Sleebos 2003). Knowledge about reproductive matters and access to contraception are important factors in preventing unintended teenage pregnancies.

## Sexual experience among young people

This section looks at the proportion of young people who have had sexual intercourse, using data from the 2008 National Survey of Australian Secondary Students and Sexual Health (see *Appendix 2 Data sources* for more information on this survey). As this is a school-based survey, information is presented for students rather than all young people. Information from this survey is only available for Year 10 and Year 12 students, and given that not all young people remain in school to Year 12 it is likely to underestimate the sexual behaviour of all adolescents aged 16–18 years. Despite these limitations, it is the only national data collection available on sexual and reproductive health of young Australians.

According to the survey, most students (70% of Year 10 and 88% of Year 12) had experienced some form of sexual activity such as deep kissing, sexual touching or oral sex. Students in Year 12 were more likely than those in Year 10 to have experienced each type of activity (89%, 78% and 58% compared with 71%, 56% and 34% respectively), and overall rates were higher among females than males. The majority of Year 10 and Year 12 students overall (91%) reported sexual attraction only to people



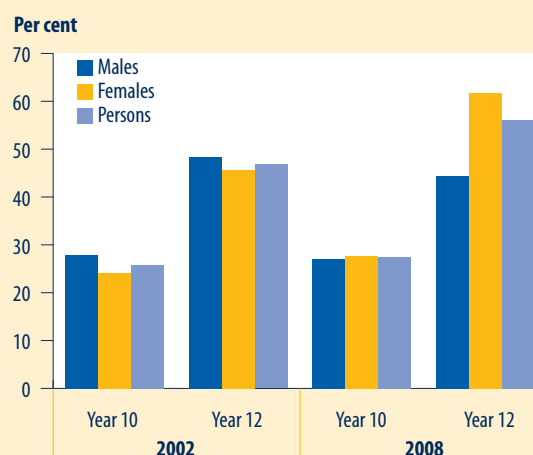
of the opposite sex; however, 6% reported sexual attraction to people of both sexes, 1% to people of only the same sex and 2% were unsure. These proportions have remained stable since 2002. A considerable number of students reported feeling 'very confident to confident' in talking to parents about sex-related matters (43% of Year 10 students and 53% of Year 12 students) (Smith et al. 2009).

## Sexual intercourse

**National indicator:** Proportion of young people in Year 10 and Year 12 who have had sexual intercourse

In 2008, among students in Year 10 and Year 12:

- An estimated 40% had experienced sexual intercourse, with rates twice as high among Year 12 as Year 10 students (56% and 27% respectively).
- There was an increase in the overall rate of sexual intercourse, up from 35% in 2002, reflecting an increase among Year 12 students (from 47% to 56%). Among Year 10 students rates were similar in 2002 and 2008 (Figure 17.1).
- Females appeared slightly more likely to have had sexual intercourse than males (43% and 34% respectively) but this difference was not statistically significant.
- Half (52%) of sexually active students had experienced sexual intercourse with only one partner in the previous 12 months, 15% with two people and 30% with three or more people. Male students were more likely than female students to have had three or more sexual partners (37% and 27% respectively). There was no statistically significant difference in the number of sexual partners across the year levels.
- Almost one in three sexually active students reported having experienced unwanted sex, with females considerably more likely to have had unwanted sex than males (38% compared with 19% respectively). The difference between the genders was greater among Year 12 students (40% of females and 17% of males) than among Year 10 students (34% for females and 21% for males).
- One in four sexually active students (24%) reported being drunk or high the last time they had had sexual intercourse, with rates higher among males (34%) than females (20%).
- The most common location reported for the students' last sexual encounter was a partner's house (37%), followed by their own house (28%).



Source: Smith et al. 2009.

**Figure 17.1:** Students in Year 10 and Year 12 who have ever had sexual intercourse, 2002 and 2008

## Contraceptive use

The success of lowering unwanted pregnancies and the prevalence of STIs among young people relies heavily on the knowledge about reproductive matters and access to and use of effective contraception. Use of condoms is the most effective method of protection against STIs among sexually active people, and is effective in preventing unintended pregnancies.

Rates of STIs have been increasing over the past decade, with chlamydia the most frequently reported STI in 2008 (see *Chapter 10 Communicable diseases*). Chlamydia overwhelmingly affects young heterosexual men and women with those most at risk being young women aged 15–29 years. Other contributing risk factors include a history of prior STIs, new or multiple sex partners, and inconsistent use of barrier contraceptives (DoHA 2005).

**National indicator:** Proportion of young people in Year 10 and Year 12 who used a form of contraception at their most recent sexual encounter

In 2008, among sexually active students in Year 10 and Year 12:

- Almost all students (99.8%) had used some form of contraception at their last sexual encounter, an increase from 91% in 2002.

**Table 17.1: Type of contraceptive method used or used by partner for sexually active students at last sexual encounter, 2008 (per cent)**

	Males			Females			Persons		
	Year 10	Year 12	Total	Year 10	Year 12	Total	Year 10	Year 12	Total
Condom	79	69	73	74	61	65	75	63	68
Contraceptive pill	31	49	41	40	61	54	37	58	50
Withdrawal	11	3	7	14	9	11	13	8	10
Morning-after pill	5	4	4	4	12	9	4	10	8
IUD	4	0	2	2	1	1	2	1	1
Rhythm method	3	0	1	0.1	0.3	0.2	1	0.2	1
Diaphragm	1	0	1	0	0	0	0.4	0	0.2
Other	2	3	3	3	4	3	2	4	3
No contraception used	0.4	0.0	0.2	0.4	0.1	0.2	0.4	0.1	0.2

Note: Some students reported more than one method of contraception and therefore components will not add to 100%.

Source: Smith et al. 2009.

- Two-thirds (68%) reported using condoms at their last sexual encounter, 50% used the contraceptive pill, 10% the withdrawal method and 8% the morning-after pill (Table 17.1).
- Use of the contraceptive pill has increased by a third since 2002 (from 37% to 50%) and use of the morning-after pill has doubled (from 4% to 8%). However, condom use has remained relatively stable between 2002 and 2008 (64% and 68% respectively).
- Of those young people who reported using the contraceptive pill at their last sexual encounter, about half (49%) also used a condom, a similar rate to 2002.
- Half (51%) of sexually active young people reported always using a condom in the past 12 months and a further 43% sometimes did. Overall, males were more likely to report always using a condom (61%) than females (46%), with this proportion higher among Year 10 than Year 12 males (66% and 51% respectively).

## Children born to teenage mothers

Teenage motherhood, particularly at younger ages, can pose significant long-term risks to both mother and child. Teenage mothers often delay having their pregnancy confirmed and/or seeking antenatal care, and are more likely to engage in risky behaviour, including smoking and drinking alcohol during pregnancy. Consequently, teenage mothers face increased risk of miscarriage, preterm birth, low

birthweight and other complications of pregnancy and birth, and perinatal mortality (WHQW 2008). A number of factors are associated with teenage birth including family history of teenage pregnancy, sexual abuse in childhood, unstable housing arrangements, poor school attendance and performance, socioeconomic disadvantage, absence of a father figure, living in rural and remote areas, and being Indigenous (Slowinski 2001).

Parenthood during the teenage years can often mean interrupted schooling, a high risk of lone parenthood, greater dependence on government assistance, increased problems in engaging with the labour market and poverty (Sleeboos 2003). These negative consequences can affect the health, educational and economic futures of the children born to teenage parents (Sleeboos 2003). Children born to teenage mothers develop more behavioural problems and are more likely to be born into, and continue to live in, social and economic disadvantage (Ambert 2006). They are also more likely to become a teenage parent themselves (Felice & Feinstein 1999 cited in Pursche 2007).

Information on births to teenage mothers is available from the Australian Institute of Health and Welfare's National Perinatal Data Collection (see *Appendix 2 Data sources* for more information on this data collection).

**National indicator: Age-specific birth rate for 15–19 year old women**

In 2008:

- Around 12,050 babies were born to teenage mothers—a rate of 17 live births per 1,000 females aged 15–19 years. Teenage mothers accounted for around 4% of all women who gave birth in Australia (Laws & Sullivan 2010).
- Of teenagers that gave birth, 83% were first-time mothers.
- Teenage births declined in the decade to 2003 (from 22 live births per 1,000 females aged 15–19 years in the mid-1990s to 17 in 2003), but rates appear to have stabilised from 2003 onwards.

## Does sexual and reproductive health vary across population groups?

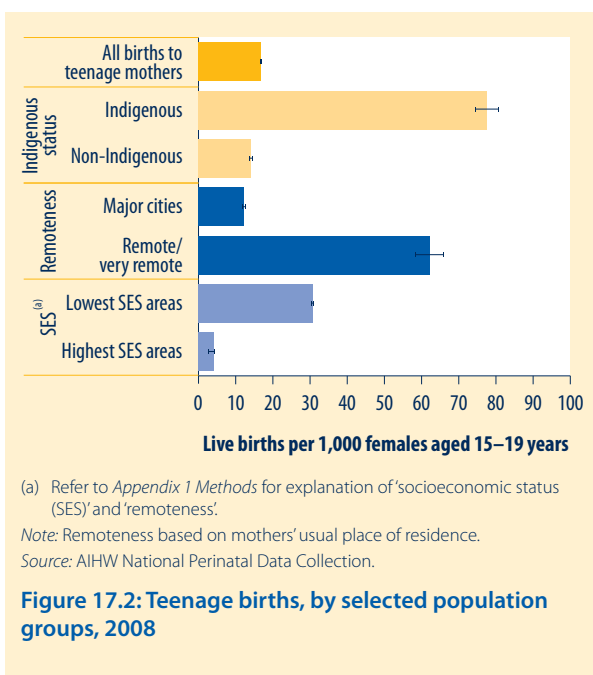
Adolescent pregnancy and STIs may disproportionately affect young people who are socioeconomically and geographically disadvantaged and those from different cultural backgrounds. Aboriginal and Torres Strait Islander young women are over-represented among adolescent mothers as well as for chlamydia and gonorrhoea notifications (Kang et al. 2007). Research suggests that limited access to family planning information and services may contribute to relatively high numbers of teenage births in rural communities (Pursche 2007). Homeless and incarcerated youths may also have higher rates of chlamydia. Young people who undertake same sex activity may be more vulnerable to STIs (Kang et al. 2007).

In 2003, unsafe sexual practices were found to be the cause of 1.2% of the burden of disease among Indigenous Australians overall, twice the proportion for the general population. Cervical cancer, chlamydia and HIV/AIDS accounted for 70% of this burden among Indigenous Australians. While cervical cancer and HIV/AIDS are high contributors to the burden in both the general and Indigenous populations, chlamydia is more common in the Indigenous population and hepatitis B in the general population (Vos et al. 2007).

In 2008:

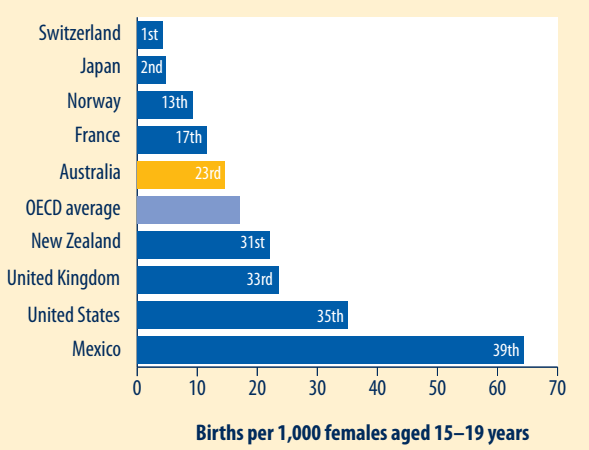
- The Indigenous teenage birth rate (15–19 years) was 5 times the non-Indigenous rate—78 births per 1,000, compared with 14 for non-Indigenous teenagers (Figure 17.2). See *Chapter 42 Health and wellbeing of Indigenous young people* for further information on teenage births and STIs among Indigenous young people.

- The teenage birth rate increased with remoteness, with teenage females in *Remote* and *Very remote* areas combined being more than 5 times as likely to give birth as their peers in *Major cities* (62 per 1,000 compared with 12).
- The teenage birth rate was higher among young women in the lowest socioeconomic areas (31 per 1,000 live births) than among those in the highest socioeconomic areas (4 per 1,000 live births).



## How does Australia's teenage birth rate compare internationally?

Australia's teenage birth rate (using OECD reporting methods, which is derived from birth registration data) ranked 22nd out of 34 OECD countries in 2008 (Figure 17.3). At 15 births per 1,000 teenage females, the Australian rate was lower than the OECD average (16.3) and substantially higher than Switzerland (4) and Japan (5), the best ranked OECD countries. Teenage birth rates were highest in Mexico (64).



Notes:

1. Data do not include births to mothers aged less than 15 years.
2. Data only include births of infants above 1000g or 28 weeks gestation.
3. Based on data from 34 OECD countries.

Source: OECD 2010a.

**Figure 17.3: Teenage births among selected OECD countries, 2008**

# Part IV

## FAMILY AND COMMUNITY FACTORS

In addition to behavioural risk and protective factors, wider environmental factors, such as the social, emotional, physical and economic wellbeing of families and the strength of communities in which they live, also play a role in determining young people's health and wellbeing. The family, community and physical environments are the focus of Part IV. Socioeconomic factors are discussed in Part V of this report.

Family, school, home and community environments play a vital role in protecting young people from physical and emotional harm, which can have significant effects on their health and wellbeing both in the short term and throughout their adult life. Families play a central role in providing young people with physical, social and economic support, and strong family relationships are critical influences on young people's development and psychological wellbeing. Communities also play a role in shaping young people's health and wellbeing, with strongly connected communities and social networks associated with positive outcomes for young people (Baum et al. 2000). The physical and emotional safety of a young person's environment can be considered in terms of factors such as the adequacy of the shelter or housing, home and community environments that are free from abuse and violence, and reducing

exposure to environmental contaminants such as unsafe water and environmental tobacco smoke. These environments set the foundations for young people's learning, behaviour and health over the course of their life.

Part IV provides information on the family, community and physical environments in which young Australians are living, and includes indicators on:

- family functioning
- parental health and disability
- social capital
- community and civic participation
- school relationships and bullying
- child protection
- victims of violence
- young people and crime
- environmental tobacco smoke
- homelessness
- overcrowding.

The following table shows how young people fare for the indicators presented in Part IV, and whether there has been any improvement over time.

Key: ✓ = favourable trend; ✖ = unfavourable trend; ~ = no change or no clear trend; .. = no trend data available or presented.

Family and community factors		Year of data	Value	Trend
<b>Family functioning</b>	Under development		Data not available	
	Proportion of parents rating their health as 'fair' or 'poor'	2008	16%	~
<b>Parental health and disability</b>	Proportion of young people aged 15–24 years living with a parent with disability <sup>(b)</sup>	2003	25%	..
	Proportion of parents with a mental health problem	2008	19%	~
<b>Social capital</b>	Proportion of young people aged 18–24 years who are able to get support in a time of crisis from persons living outside the household <sup>(b)</sup>	2006	96%	~
<b>Community and civic participation</b>	Community participation rate for young people aged 18–24 years <sup>(b)</sup>	2006	72%	..
	Proportion of 17 and 18 year olds who have registered to vote <sup>(a)</sup>	2008	19% (17 years) 60% (18–19 years)	✖
<b>School relationships and bullying</b>	Under development		Data not available	
<b>Child protection</b>	Rate of young people aged 12–17 years who were the subject of a substantiation of a child protection notification received in a given year <sup>(a)</sup>	2009–10	4.4 per 1000	~
	Rate of young people aged 12–17 years who are the subject of care and protection orders <sup>(a)</sup>	2010	7.2 per 1000	✖
<b>Victims of violence</b>	Rate of young people aged 15–24 years who have been the victim of physical or sexual assault <sup>(a)(b)</sup>	2008–09	7%	..
	Alcohol- and drug-related violence victimisation rate for young people aged 12–24 years	2007	38%	✓
<b>Young people and crime</b>	Rate of young people aged 12–17 years who are under juvenile justice supervision <sup>(a)</sup>	2008–09	3.3 per 1,000	✖
	Rate of imprisonment for young people aged 18–24 years <sup>(a)</sup>	2009	2.6 per 1,000	✓
<b>Environmental tobacco smoke</b>	Proportion of households with a young person aged 12–17 years where a household member smoked inside the home <sup>(a)</sup>	2007–08	12%	..
<b>Homelessness</b>	Proportion of young people aged 12–24 years who are homeless	2006	Less than 1%	✓
<b>Overcrowded housing</b>	Proportion of young people aged 15–24 years who live in overcrowded housing <sup>(b)</sup>	2007–08	9%	..

(a) Most appropriate age range for indicator.

(b) Source data not available for full age range.



# 18 Family functioning

**Strong family relationships and communication styles have been shown to positively influence adolescent sociability and academic achievement while decreasing incidence of substance misuse and risk behaviour.**

**There is no national indicator or definition for family functioning for families with young people aged 12–24 years.**

Families play a central role providing young people with social and economic support. The degree to which families are capable of providing this support is one of the most important influences on a young person's health, development and wellbeing.

Family functioning relates to a family's ability to interact, communicate, make decisions, solve problems and maintain relationships. A family with high levels of family functioning interacts effectively to provide the ideal environment for young people to grow and be strong, resilient, emotionally healthy and able to cope well with adverse conditions (DeFrain 1999). Models of strong families usually describe those that are cohesive, flexible and communicate well (Olson & Gorall 2003). The level of functioning within a family can be affected by changes in family circumstances, relationships between individual family members, the balance between parental employment and family life, and other external stressors that may affect the home environment (Silberberg 2001).

The benefits for young people living in strong, stable families are many, including having positive role models for building relationships, being more able to cope with change and stressful events, and having better self-esteem (Geggie et al. 2000; Shek 2002). In addition, good family relationships and communication have been shown to positively influence adolescent sociability and academic achievement, as well as reducing the incidence of substance misuse and risk behaviour (Fleming et al. 2010; Ghazarian & Buehler 2010; Henderson et al. 2006; Li-Nang 1999).

Family cohesion, that is, the ability of the family to get along with one another, is one aspect of family functioning. It relates to the degree of separation or emotional bond that exists between family members and is typically measured by the degree of family tensions (Craddock 2001). Young people who experience low levels of family cohesion have been shown to be more at risk of suicide, substance

use and mental health problems. In comparison, high levels of family cohesion may assist to buffer these effects, along with rates of adolescent distress and deviance (Farrell et al. 1995; Sawyer et al. 2000; Toumbourou & Gregg 2001).

This chapter outlines the complexities associated with measuring family functioning, and provides information on support within the family.

## Measuring family functioning

**National indicator:** Under development

Currently, there is no national indicator or definition of family functioning or family coherence due to the dynamic and multidimensional nature of each concept. As a family goes through periods of change or stress, the degree to which that family successfully functions may change; measuring family functioning at a single point in time will not capture this changeability. Further, successful family functioning will mean different things to different families, making it difficult to develop consistent and unambiguous measurement tools.

One tool that attempts to provide an overarching measure of family functioning is the General Functioning Scale of the McMaster Family Assessment Device. It provides a single summary measure of family functioning, derived from a number of questions about communication, problem-solving and closeness within the family (Epstein et al. 1983). The McMaster Family Assessment Device has been found to be a valid measuring tool capable of identifying the degree of family functioning, using self-report ratings, from the points of view of both individuals and the whole family (Cook 2004; Georgiades et al. 2008). It has been recommended for use by the Australian Government Department of Families, Housing, Community Services and Indigenous Affairs, and

has been used in a number of state-level health and wellbeing surveys across Australia (New South Wales and Victoria), and in national surveys overseas (Rowe et al. 2004; Zubrick et al. 2000).

While some national data are available in relation to specific aspects of family functioning as it relates to young people, further research and consultation is required to determine which of these aspects, if any, is the most appropriate for use in measuring the degree of family functioning in the lives of young Australians.

## Young people living in healthy functioning families

Although there is no real consensus on what constitutes 'family functioning', a number of Australian and international studies have identified similar key components: positive communication; spending time together; affection, support and commitment to the family; and adaptability (CFFC 2003; DeFrain 1999; Geggie et al. 2000; Wolcott 1999; Zubrick et al. 2000).

No national data are available on an overarching measure of family functioning in families with children aged 12–24 years. National data are, however, available on specific components of family functioning, such as communication and closeness between family members as well as young people's satisfaction with their family. These individual measures could be used as a proxy for family functioning.

Information on family functioning, based on the General Functioning Scale of the McMaster Family Assessment Device, data is available from Victoria for children aged 0–12 years.

The Australian Bureau of Statistics' 2007 National Survey of Mental Health and Wellbeing collects information from 16–24 year olds on some components of family functioning (see *Appendix 2 Data sources* for more information on this survey).

In 2007, among 16–24 year olds:

- Almost all young people (95%) were able to confide in at least 1 family member, with 41% able to confide in 1–2 family members and just under one-third (30%) in 3–4 family members.
- Almost all young people (95%) living away from home had contact with their family at least once a week, including 80% who had contact nearly every day. Only 1% had contact with their family less than once a month.

The National Survey of Young Australians, conducted each year by Mission Australia, also contains questions relating to the concepts of family functioning and family cohesion, and the importance of family relationships to young people.

In 2009, among young people aged 11–24 years:

- Three-quarters (76%) of young people ranked family relationships highest among their personal values, followed by friendships and personal independence (61% and 33% respectively).
- One-quarter of young people (24%) reported family conflict as an issue of concern, ranking it similar to drugs (27%), suicide (26%) and body image (26%) as issues of concern.

A further national data source relating to family functioning is the Household, Income and Labour Dynamics in Australia Survey, which collects information on family satisfaction (see *Appendix 2 Data sources* for more information on this survey). The survey asked parents and young people aged 15–24 years to rank their relationship satisfaction levels with their families on a rating scale from 0 (completely dissatisfied or strongly disagree) to 10 (completely satisfied or strongly agree). In 2008, among young people aged 15–24 years:

- Around nine in ten (89%) young people were 'highly satisfied' with their relationship with their parents (rating of 6 and above), including one-quarter (25%) who were 'completely satisfied' with their relationship with their parents.
- Most parents (93%) surveyed were 'highly satisfied' with their relationship with their children aged 15–24 years (rating of 6 and above), including just under one-quarter (23%) who were 'completely satisfied'.
- Family satisfaction varied by socioeconomic status (SES)—young people living in highest SES areas were significantly more likely to report being 'completely satisfied' with their relationship with their parents compared with young people living in the lowest SES areas (31% and 24% respectively). However, similar proportions of young people living in the highest and lowest SES areas were 'highly satisfied' (rating of 6 and above) with their relationship with their parents (91% and 87% respectively).

## How does Australia perform internationally on family functioning?

There is limited internationally comparable data on family functioning among young people. However, the 2007 *UNICEF Innocenti Report Card 7* report (UNICEF 2007) includes two indicators on family relationships:

- proportion of 15 year olds that eats the main meal of the day with their parents 'several times per week'
- proportion of 15 year olds whose parents spend time 'just talking to them' several times a week.

The Organisation for Economic Co-operation and Development's (OECD) 2000 Programme for International Student Assessment (PISA) survey collects information on these two indicators. This study measures proficiency in reading, mathematical and science among 15 year old students in 42 OECD and non-OECD countries. For 28 of these countries information is also available on family relationships.

In the 2000 PISA study, Australia ranked in the bottom third (20th) of the 28 OECD and non-OECD countries with available data on the proportion of young people sharing a meal with their parents. With a rate of 70%, Australia performed worse than the OECD average (79%)—considerably below Italy (94%), Iceland (91%) and France (90%), the best performing countries. Rates were lowest in Israel (58%) and Finland (60%).

Similarly for parents spending time 'just talking' with young people, Australia ranked 20th out of 28 OECD and non-OECD countries. With a rate of 51%, Australia performed worse than the OECD average (63%) and considerably below Hungary (90%), Italy (87%) and Finland (79%), the best performing countries. Rates were lowest in Israel (37%) and Iceland (44%) (UNICEF 2007).

# 19 Parental health and disability

**The physical, emotional or economic needs of young people living with a parent with chronic illness or disability may not be met, adversely affecting their health, wellbeing and educational outcomes.**

**Around 16% of parents living with young people rated their health as fair or poor, and around one-fifth (19%) had poor mental health in 2008. An estimated one in four young people (25%) lived with a parent with disability in 2003.**

Having a parent with a chronic illness or disability may adversely affect the health and wellbeing of a young person. While many parents who have a chronic illness or disability are capable parents, these health problems can affect the parent–child relationship and educational and health outcomes for young people.

Depending on the severity of the parental illness or disability, the wellbeing of dependants may be affected by family discord, discontinuity of care, poor parenting skills, social isolation and poverty, and children may experience developmental delays (AICAFMHA 2001; McConnell et al. 2003). Parents with disability or a chronic health condition may also 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. Studies have shown that children whose parents have a mental illness are more likely to experience learning disabilities and perform poorly academically, and are susceptible to substance abuse (Kowalenko et al. 2000; Lancaster 1999).

A young person living with a chronically ill parent or parent with disability may be required to take on greater responsibilities or, in some cases, care for the parent. While taking on a caring role may have 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. These young people may also be less involved in community, educational and social activities (Noble-Carr et al. 2001). The ability of young people to cope in these circumstances varies with their age, gender, developmental stage, personality, severity of their parent's health condition and the support they receive from other family members (Steck et al. 2005).

This chapter explores four aspects of parental health and disability: self-assessed health status, disability, poor mental health and smoking.

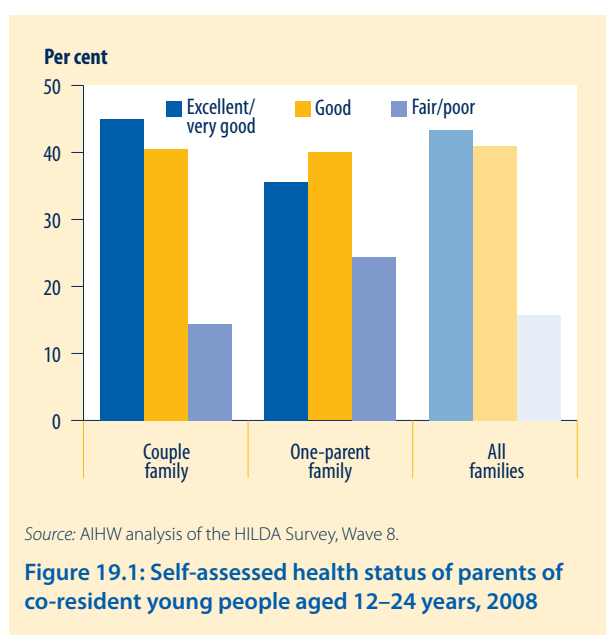
## Parents with poor health

Even relatively mild health conditions that do not greatly affect a parent's functioning may lead to some adverse outcomes for young people. An individual's rating of their own overall health is often used as an indicator of health status and, at the population level, as a predictor of health service use and mortality (AIHW 2008d). The Household, Income and Labour Dynamics in Australia (HILDA) Survey includes information on people's self-assessed health status as well as their parental status (see *Appendix 2 Data sources* for more information on this survey).

**National indicator:** Proportion of parents rating their health as 'fair' or 'poor'

In 2008, among parents of co-resident young people aged 12–24 years:

- An estimated 16% of parents (or around 439,500) rated their health as 'fair' or 'poor', similar to the rate in 2004 (17%) (AIHW 2007b). The majority of parents rated their health as 'good', 'very good' or 'excellent' (84% or an estimated 2.4 million parents).
- Parents in one-parent families were significantly more likely to rate their health as 'fair' or 'poor' compared with parents in couple families (24% and 14% respectively) (Figure 19.1). This is consistent with findings that indicate that one-parent families have a greater risk of social disadvantage in terms of employment, housing, income and social participation, leading to poorer health outcomes (Robinson 2008).



## Parents with disability

Raising children and young people involves physical, emotional and financial demands that can pose significant challenges to a parent with disability. Parental disabilities may include physical and mental health problems. These disabilities can affect young people in different ways, for example, by reducing family income, limiting opportunity for community participation or increasing levels of stress (Mukherjee et al. 2002). Living with a sibling with disability may also affect a young person's health and wellbeing, as they may be partly responsible for the sibling's care while growing up and may take on sole responsibility when their parents age or die. This may cause financial stress, and affect family and social relationships.

Some young people who provide intensive ongoing care to a parent or sibling with disability may have their schooling interrupted, with long-term implications for educational attainment, employment and the successful transition from home to independent living (Noble-Carr et al. 2001). Young people living in one-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 another carer.

The Australian Bureau of Statistics' (ABS) Survey of Disability, Ageing and Carers (SDAC) collects information on young people aged 15 years and over living with parents with disability. In this survey a person is considered to have a disability if

they reported at least one of a list of impairments, health conditions or limitations that restricted everyday activities and that had lasted—or was likely to last—for at least 6 months (see *Appendix 2 Data sources* for more information on this survey). The latest available data on parental disability is from the 2003 SDAC, as only limited data were available from the 2009 SDAC at the time of publication of this report.

**National indicator:** Proportion of young people aged 15–24 years living with a parent with disability

In 2003, among young people aged 15–24 years living with parents:

- An estimated one-quarter (25%), or 468,900 young people, lived with a parent with disability. Of these, over one-third, or 168,400, young people lived with a parent who had severe or profound core activity limitation (meaning they sometimes or always need assistance with activities of daily living—self-care, mobility and communication).
- Seven per cent of young people were caring for a family member with disability. The most common recipient of care was a parent—4.7% of young people were caring for one or both of their parents, 1.6% were caring for other relatives, and less than 1% were caring for a spouse or partner.

In 2003, physical/diverse conditions were the most prevalent disability group reported by parents who were being cared for by a child aged under 25 years (81% of parents), followed by psychiatric (35%), sensory/speech (28%) and intellectual (21%) conditions. The most common form of assistance provided by carers aged under 25 years to parents with a long-term health condition or disability was home maintenance or gardening (32%). Household tasks (28%), private transport (26%) and mobility tasks (25%) were other common forms of assistance provided to parents. One in ten carers under 25 years was helping their parents with self-care tasks (AIHW 2007b).

## Parents with a mental health problem

Children and young people living with a parent with a mental health problem may be at increased risk of social, psychological and physical health problems compared with those living in families not affected by mental illness (Mayberry et al.



2005). They may experience physical and sexual violence, verbal abuse, neglect, loss of close intimate contact with a parent, and social and emotional problems as a result of poor parental mental health (Cooklin 2006). 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.

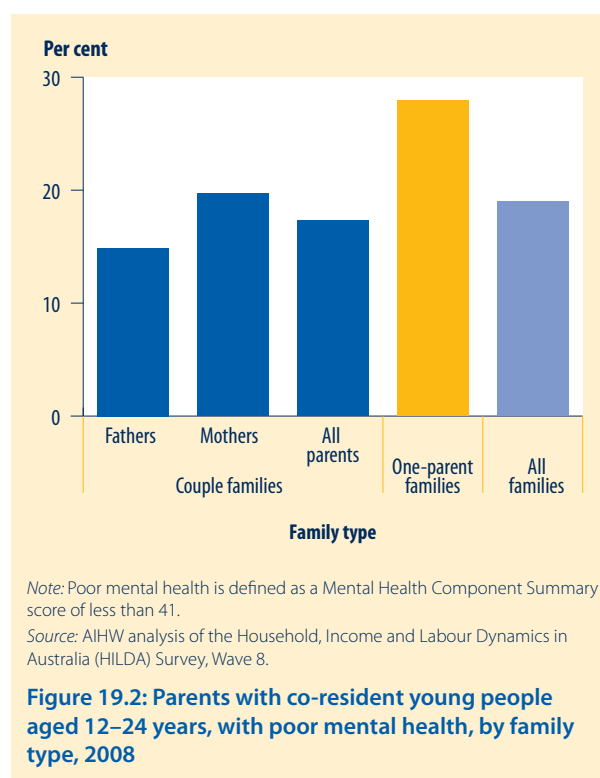
Adolescents living with a parent with a mental illness are at significantly increased risk of developing mental health issues themselves (Hargreaves et al. 2008). This may be due to a combination of factors, including genetic inheritance, poverty, homelessness and extra caring responsibilities (Fudge & Mason 2004).

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

**National indicator:** Proportion of parents with a mental health problem

In 2008, according to the HILDA Survey, among parents with co-resident young people aged 12–24 years:

- Around one-fifth (19%) had MCS scores of less than 41, indicating poor mental health, similar to the rate in 2001 (20%).
- In all families, a significantly higher proportion of mothers scored poorly (MCS score of less than 41) than fathers (22% and 15% respectively).
- Lone parents were significantly more likely to have poorer mental health (MCS score of less than 41) than parents in couple families (28% and 17% respectively) (Figure 19.2).



## Does parental health status vary across population groups?

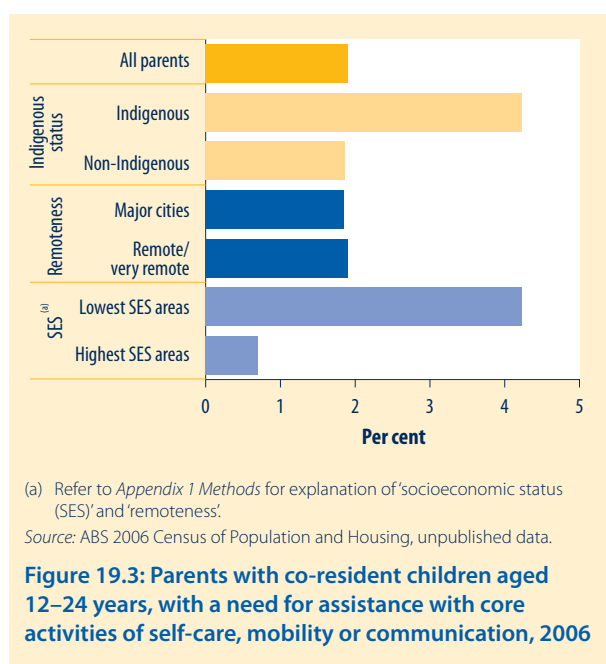
The prevalence of chronic disease and disability are higher among some subpopulations in Australia, especially Aboriginal and Torres Strait Islander people, and those living in remote and socioeconomically disadvantaged areas (AIHW 2010b). Parents in these population groups could also be expected to experience similarly higher rates of chronic illness and disability compared with other parents. The poorer health of these population groups is a result of a multitude of factors, but largely reflects a higher prevalence of behavioural risk factors, reduced access to health care services and high levels of socioeconomic disadvantage.

### Aboriginal and Torres Strait Islander young people

Only a small number of Indigenous parents are included in the 2008 HILDA Survey, therefore reliable results cannot be reported from this survey.

According to the ABS 2006 Census of Population and Housing, Indigenous parents with co-resident young people aged 12–24 years were more than twice as likely to need assistance with core activities of self-care, mobility and communication as non-Indigenous parents (4.2% and 1.9% respectively) (Figure 19.3).





## Socioeconomic status

Parents with co-resident young people aged 12–24 years in the lowest socioeconomic status (SES) areas were:

- more than twice as likely to report fair or poor health as those in the highest SES areas (22% and 10% respectively, according to the 2008 HILDA Survey)
- six times as likely as those in the highest SES areas to need assistance with core activities of self-care, mobility and communication (4.2% and 0.7% respectively, according to the ABS 2006 Census of Population and Housing) (Figure 19.3)
- more likely to have poor mental health, as indicated by MCS scores of less than 41, than those in the highest SES areas (20% and 14% respectively, according to the 2008 HILDA Survey).

## Remoteness

For parents with co-resident young people aged 12–24 years, parental health rates did not vary significantly by remoteness:

- The proportion of parents rating their health as fair or poor ranged from 16% in *Major cities* to 14% in *Outer regional* and *Remote* areas combined (according to the 2008 HILDA Survey).
- Similar proportions of parents had need of assistance with core activities—1.8% in *Major cities*, 2.0% and 2.1% in *Inner regional* areas and *Outer regional* areas respectively, 1.7% in *Remote* areas and 2.3% in *Very remote* areas (according to the 2006 Census) (Figure 19.3).
- The proportion of parents with an MCS score of less than 41, indicating poor mental health, ranged from 19% in *Major cities* to 21% in *Outer regional* and *Remote* areas combined (according to the 2008 HILDA Survey).

## 20 Social capital

**Strong support networks result in positive health and education outcomes, better employment opportunities, and protects against the effects of socioeconomic disadvantage.**

**Most young people aged 18–24 years (96%) were able to get support in a time of crisis from persons living outside the household; however, rates were lower for those living in the most socioeconomically disadvantaged areas (88%) and among Indigenous young people (90%).**

Social capital is an important aspect of the social context in which a young person develops. 'Social capital' refers to networks of social relationships, enabling people to come together to collectively share experiences or resolve problems and where trust and mutual benefit are necessary components. Such relationships can exist within a family or household, but most often extend to friends and other sections of the community. Strong connections between individuals promote a sense of belonging and provide access to support. This can be represented by the degree to which people feel they can get assistance from neighbours, allow their children to play outside safely, and participate in community activities (Zwi & Henry 2005).

Families with rich social networks have been found to have increased access to information, material resources, and friends and neighbours to help them in managing their daily lives and problems (Cornwell & Cornwell 2008). For young people, the benefits of social capital include positive mental health and behavioural outcomes in childhood and later life, reduced school dropout rates and an increased likelihood of gaining meaningful employment (Ferguson 2006). Social support may also have positive psychological and emotional effects, helping people to better cope with stress and illness (Cornwell & Cornwell 2008; Lucey 2007).

Studies looking specifically at the link between social support and adolescent health have found a relationship between a young person's low 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).

Strong family relationships and supportive neighbourhoods protect children and young people against the adverse effects of socioeconomic disadvantage, leading to improved health for children and youth in economically poor communities (Zwi & Henry 2005).

### Social support for young people

Social capital can be measured in a variety of ways. The Australian Bureau of Statistics (ABS), for example, has developed the Social Capital Framework, which contains four broad dimensions to describe social networks and relationships: network qualities, network structure, network transactions and network types. The framework is based on the notion that people have social networks and relationships with other people in society such as family members, friends, neighbours, colleagues and acquaintances, and with organisations (ABS 2006a).

Due to the multidimensional nature of social capital, it is difficult to summarise in one measure. Measures of social capital used in this chapter are limited to social support networks, due to lack of available data. Support networks, a key aspect of social capital, can act in a variety of ways, such as providing information or emotional, practical or financial support, and these in turn give individuals a sense of belonging.

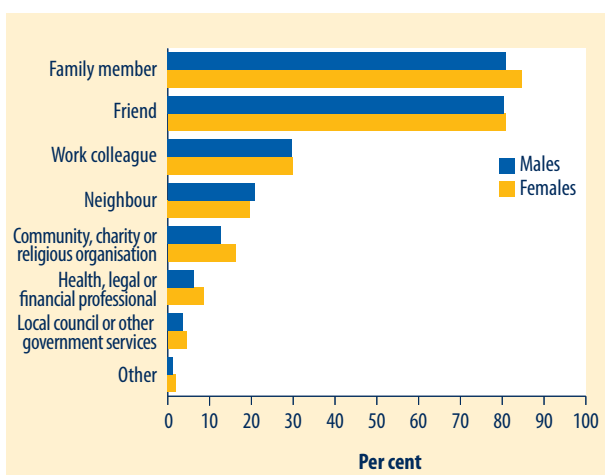
A range of evidence supports the importance of interactions with wider social environments to healthy development and overall wellbeing for children and young people. Of particular importance are rich social networks, adequate access to social support from community organisations and informal networks of family and friends, high levels of trust and social participation (AIHW 2010f). Social support in a time of crisis

is a strong indicator of the quality of family relationships with others outside the immediate family, and therefore has been selected as the proxy indicator for social capital in this report. Contact with family and friends, sources of social support (where young people could ask for small favours), and generalised trust (whether young people feel that most people can be trusted), are also presented here as indicators of the quality of young people's social networks. Information on these measures of social support networks is available from the ABS 2006 General Social Survey for people aged 18 years and over (see *Appendix 2 Data sources* for more information on this survey).

**National indicator:** Proportion of young people aged 18–24 years who are able to get support in a time of crisis from persons living outside the household

In 2006, among young people aged 18–24 years:

- An estimated 96% of young people were able to get support in a time of crisis from persons living outside the household, a similar rate to 2002 (98%) (ABS 2004c). Rates among young people were also similar to those aged 25 years and over (93%) in 2006.
- The person most frequently contacted for support in a time of crisis was a family member or friend (81% and 80% respectively), followed by a work colleague (30%) or a neighbour (21%) (Figure 20.1).



Source: AIHW analysis of ABS 2006 General Social Survey confidentialised unit record file.

**Figure 20.1: Most common sources of support in a time of crisis from persons living outside the household, among young people aged 18–24 years, 2006**

- Similar proportions of males and females were able to get support in times of crisis (94% and 97% respectively).
- Similar proportions of young people in couple families and one-parent families were able to get support in a time of crisis from someone outside the household (97% and 92% respectively).
- There was no statistically significant difference by employment status, with the majority of young people who were employed, unemployed or not in the labour force being able to get support in a time of crisis from persons living outside the household (97%, 93% and 89% respectively).
- Around 93% of young people could ask for small favours from people living outside the household, 99% reported having contact at least once a week with family or friends outside the household, and over half (53%) trusted 'most people'.

Levels of generalised trust for those aged 18 years and over are high in most OECD (Organisation for Economic Co-operation and Development) countries according to the World Values Survey, wave 2005–08, with Australia ranked as having the sixth highest level of trust (46%). Norway had the highest level of generalised trust at 74% (Morrone et al. 2009).

## Does access to support vary across population groups?

The understanding and measurement of social capital may differ depending on the cultural, socioeconomic and geographic context.

For example, among Aboriginal and Torres Strait Islander people the measurement of social capital needs to take into account not just the existence or number of relationships, but who the relationships are with. Indigenous young people may be rich in relationships with people with whom they share many common characteristics, which can reduce social isolation and provide sources of support in times of need. However, they may be poor in relationships with people they have less in common with (for example, those with different cultural backgrounds or different positions in society) who can provide a connection with 'mainstream' sources of employment, health care or education (Baum 2007).

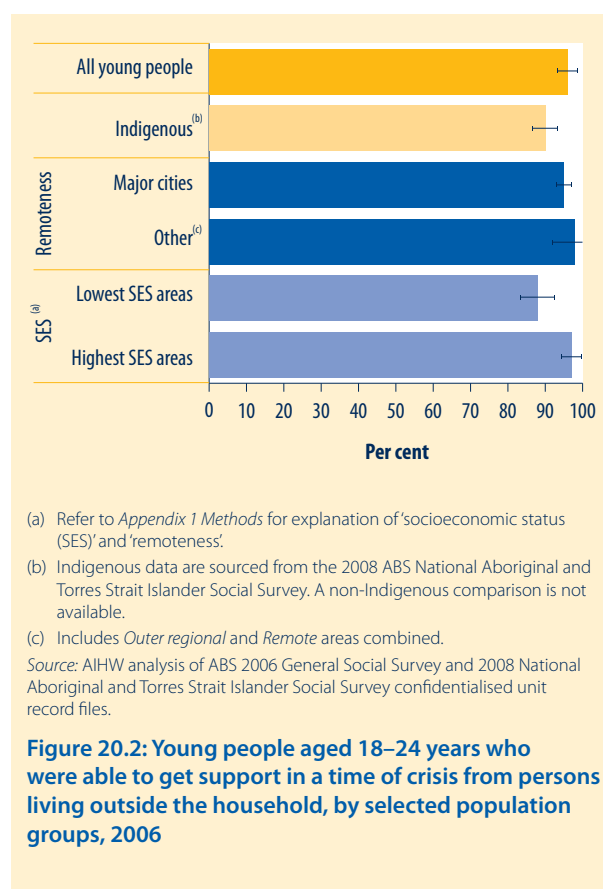
This may also be the case for young people living in socioeconomically disadvantaged areas. Evidence suggests that people with a lower socioeconomic status tend to use local and family ties, and since these ties are usually similar in knowledge and

resources, full potential of social capital is not always utilised (Nan 2000).

Remoteness may also influence the way in which people form networks and interact with others. Although those living in *Regional and remote* areas may have strong networks despite their relative geographic isolation, these links may differ from those that exist in other areas of Australia (ABS 2006a).

Among young people aged 18–24 years:

- Indigenous young people were less likely to be able to get support in a time of crisis from persons living outside the household than all young people (90% and 96%, respectively, according to the ABS 2008 National Aboriginal and Torres Strait Islander Social Survey and the 2006 General Social Survey) (Figure 20.2).
- See *Chapter 42 Health and wellbeing of Indigenous young people* for further information on social capital among Indigenous young people.
- There was little variation by remoteness in the ability of young people to get support in a time of crisis—ranging from 95% each in *Major cities* and *Inner regional* areas, and 98% in *Outer regional* and *Remote* areas combined in 2006.
- Those living in the lowest socioeconomic status (SES) areas were less likely to be able to get support in a time of crisis from someone outside the household than those in the highest SES areas (88% and 97% respectively) in 2006.



## 21 Community and civic participation

**Social and community participation is an important aspect of life, promoting healthy social and mental wellbeing, and life satisfaction.**

**In 2006, nearly three-quarters (72%) of young adults were involved in social groups or community support groups. Around 60% of 18–19 year olds were registered to vote in 2008.**

Community and civic participation not only allows individuals to have a say in the future direction of their communities, but also promotes a cohesive network of people from various backgrounds. Both the community and young people themselves benefit from the participation of young people, with advantages such as increased social trust and social ties, and greater capacity for collective action (Baum et al. 2000). Community and civic participation refers to those activities that demonstrate people's connectedness to their community, and includes activities such as being involved in clubs and community organisations, cultural activities, enrolling to vote, signing a petition and volunteering.

Dworkin and colleagues (2003) identified six qualities that a young person can develop from participation in community activities, including gaining self-knowledge; developing initiative (such as learning to set goals, taking action and responsibility for achieving goals, and allocating time); learning to self-regulate emotions; developing peer relationships; knowledge, teamwork and social skills; and forming adult networks and social capital that can be used as a source of support (Dworkin et al. 2003).

Social and community participation or engagement is associated with better mental health and greater feelings of subjective wellbeing and life satisfaction (Berry & Welsh 2010). This participation enriches the social networks available to the individual, thus providing them with feelings of belonging that promote healthy social and mental wellbeing (Brooks 2007; Muir et al. 2009).

Community and civic participation have also been shown to be positively associated with labour force participation and educational attainment, and negatively associated with crime rates, poverty rates and poor health outcomes (Kawachi et al. 1999). Participation in civic activities such as voting, representation in protests and signing petitions has also been linked with positive health outcomes (Ziersch et al. 2005).

Some groups within the population may be less likely to participate in community and civic activities, including those from low socioeconomic or culturally and linguistically diverse backgrounds, those with disability, Aboriginal and Torres Strait Islander people, and young people who are, or have been, under guardianship (particularly those in foster care) (Bell et al. 2008).

### Young people engaged in community participation

Participation in social and community life is an important aspect of life for most people, and provides social and psychological benefits that are important for health and wellbeing. Social time with family and friends, volunteering, involvement with sporting teams and community groups, and other leisure activities within the community are forms of community participation.

The Australian Bureau of Statistics' (ABS) 2006 General Social Survey collects information on community participation among young people (see *Appendix 2 Data sources* for more information on this survey). It focuses on participation in:

- social groups, such as sport and recreation, religious, social, multicultural, and arts and heritage groups
- community support groups, such as education and training, emergency services, service clubs, and parenting, children and youth groups
- unpaid voluntary work.

National data are only available for young people aged 18 years and over.

**National indicator:** Community participation rate for young people aged 18–24 years



According to the 2006 General Social Survey, nearly three-quarters (72%) of young people aged 18–24 years were involved in social groups or community support groups in the previous 12 months, with participation in social groups higher than in community support groups (67% and 30% respectively). Overall, participation rates were similar for males and females (72% and 71% respectively).

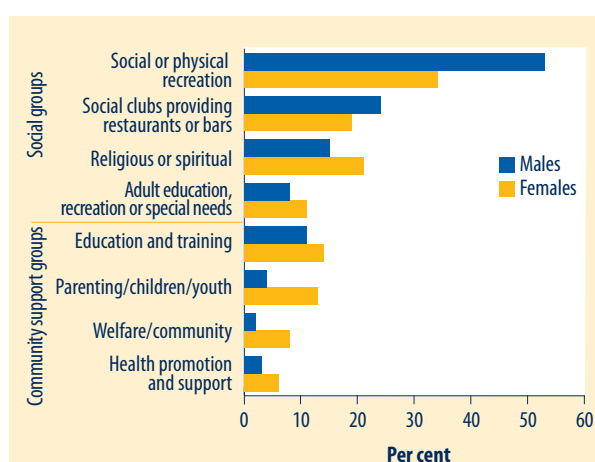
For participation in **social groups** among young people aged 18–24 years:

- An estimated 1.3 million or two-thirds (67%) of young people reported participating in social groups in the previous 12 months, a higher proportion than for those aged 25 years and over (62%).
- The most common types of social groups that young people participated in were sport or physical recreation groups (44%), social clubs with restaurants or bars (21%), and religious or spiritual groups (18%) (Figure 21.1).
- Males and females had a similar rate of participation in social groups (70% and 64% respectively). However, participation varied by type of social group. Males were more likely to take part in sport or physical recreation groups (53%, compared with 34% of females); females were more likely to participate in religious or spiritual groups (21%, compared with 15% of males).
- Employed young people were considerably more likely to participate in social groups than those not in the labour force (70% and 51% respectively). However, there was no statistically significant difference between unemployed young people (65%) and those either employed or not in the labour force.
- Social group participation did not vary significantly between young people who reported English as the main language spoken at home, and those who mainly spoke a language other than English at home (66% and 71% respectively).

For **community support groups**, among young people aged 18–24 years:

- Nearly one-third (30%) reported participating in community support groups in the previous 12 months, a similar level of participation to those aged 25 years and over (34%).
- Education and training groups (13%), and parenting, children and youth groups (8%) were the most common types of community support groups in which young people were involved (Figure 21.1).

- Overall, females were more likely to participate in community support groups than males (38% and 23% respectively). Female participation was particularly high in welfare and community organisations (8% compared with 2% for males) and parenting, children and youth groups (13% compared with 4%).
- Community support group participation did not vary significantly between young people who reported English as the main language spoken at home, and those who mainly spoke a language other than English at home (31% and 27% respectively).



Source: AIHW analysis of ABS 2006 General Social Survey confidentialised unit record file.

**Figure 21.1: Most common types of social or community support groups in which young people aged 18–24 years participated in, in the previous 12 months, 2006**

## Participation in unpaid voluntary work

Volunteering is one form of community participation that not only provides young people with social contact and learning opportunities but also provides a valuable contribution to many community and welfare organisations.

According to the ABS 2006 General Social Survey, nearly one-third (30%) of young people aged 18–24 years were involved in unpaid voluntary work in the previous 12 months, a similar proportion to 2002 (28%) (ABS 2007b; ABS 2004c).

Sport and physical recreation organisations were the most frequently reported types of organisations in which young people were engaged in unpaid voluntary work (11%), followed by welfare and community organisations (6%) (ABS 2007b).



Young people were less likely to be involved in voluntary work than people in most other age groups—the volunteering rate peaked among 35–44 year-olds (43%) and was lowest among those aged 85 years and over (14%).

No national data are available on volunteering rates among young people aged less than 18 years. However, in Victoria, two-thirds (67%) of Year 6 and Year 8 students reported engaging in voluntary work in the previous 12 months in 2006 (DEECD 2008). This proportion may be higher than that reported in the 2006 General Social Survey, as it did not specify ‘voluntary work through an organisation’, whereas the General Social Survey did.

## Young people involved in civic activities: voting

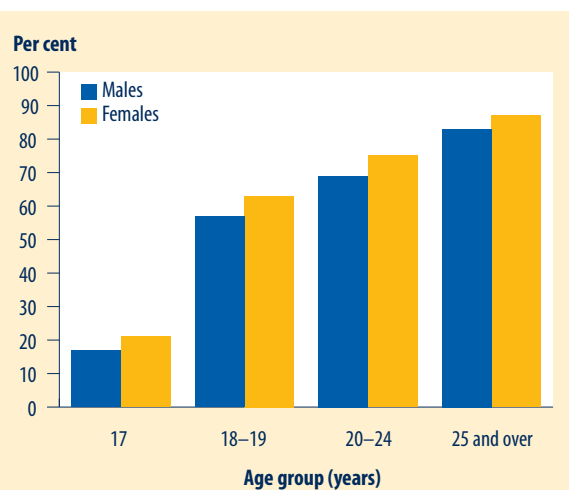
Civic engagement is an extension of community engagement, and refers to where an individual has a direct input into the policy formation or political processes. It includes involvement in both formal and informal political processes, such as council or community meetings, protest meetings, petitions, voting and regular commitment to non-profit organisations.

One of the most fundamental civic activities in Australia is participation in the electoral process. At age 17, all Australian citizens are entitled to register on the electoral roll, and voting is compulsory for those aged 18 years and over. It is important for young people to feel that they have a voice and that their opinion will count. Engagement in voting and other community and civic activities strengthens social networks and allows the individual to feel a part of their community (Brooks 2007; Muir et al. 2009).

**National indicator:** Proportion of 17 and 18 year olds who are registered to vote

According to data from Australian Electoral Commission, in 2008:

- Almost one in five (19%) 17 year olds and three in five 18–19 year olds (60%) were registered to vote, a considerably lower rate than for 20–24 year olds (72%) and those aged 25 years and over (85%).
- Females were more likely to be registered to vote than males—among 17 year-olds, 21% of females were registered to vote compared with 17% of males, and among 18–19 year olds the corresponding proportions were 63% and 57% respectively (Figure 21.2).
- There appears to be a decline in the proportion of young people registered to vote between the 2004 and 2008—82% of 17–25 year olds were registered to vote in 2004, declining to 69% for those aged 18–24 years in 2008.



Note: The rates are calculated based on the Australian Estimated Resident Population, which include residents who are not citizens and are therefore ineligible to register to vote. In 2006, 86% of people living in Australia were citizens (ABS 2010g).

Source: AEC 2008.

**Figure 21.2: Electoral roll registrations, by age group and sex, 2008**

Being involved in civic and political groups or being engaged in civic activity can also give an indication of civic participation. According to the ABS 2006 General Social Survey, one in ten (11%) young people aged 18–24 years were involved in civic and political groups, with the most common being environmental or animal welfare groups (4%) and trade union, professional and technical associations (3%). Participation in civic and political groups was considerably higher for those aged 25 years and over (20%, twice as high as for young people).

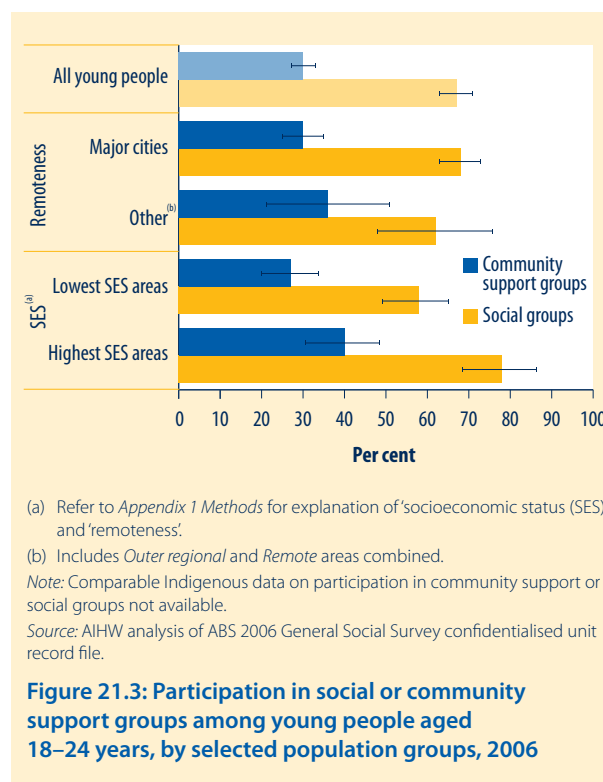
One-third (34%) of 18–24 year olds had engaged in some type of civic activity in the previous 12 months. Signing a petition (19%) and boycotting or deliberately buying products for political, ethical or environmental reasons (17%) were the most common civic activities that young people engaged in. Once again, those aged 25 years and over had considerably higher rates of participation (46%) than young adults. Young people who reported English as the main language spoken at home were more likely to engage in civic activity than those who mainly spoke a language other than English at home (38% and 15% respectively).

## Do rates of community participation vary across population groups?

Participation in community and civic activities varies among subpopulations of young people in Australia. For example, involvement in social and civic activities has been reported less frequently by those with low incomes and low levels of education (Baum et al. 2000). Participation in community and civic activities may also be affected by remoteness, as proximity to others offers opportunities for different types of social and civic participation (ABS 2006a). Further, community participation and empowerment have been identified as crucial to the improvement of the health and quality of life of Aboriginal and Torres Strait Islander people (Campbell et al. 2007). There is currently no comparable national data on community participation among Indigenous young people, although the ABS 2008 National Aboriginal and Torres Strait Islander Social Survey found that most Indigenous young people aged 18–24 years (93%) had been involved in social, sporting or community activities in the previous 12 months.

In 2006, among young people aged 18–24 years:

- Community participation did not vary significantly by remoteness—participation in social groups was similar in *Major cities* (68%), *Inner regional* areas (65%) and *Outer regional* and *Remote* areas combined (62%), while for community support groups the participation rates ranged from 36% in *Outer regional* and *Remote* areas combined to 30% in *Major cities* and 27% in *Inner regional* areas (Figure 21.3).
- Participation in social groups increased with socioeconomic status (SES), with young people living in the lowest SES areas much less likely than those in the highest SES areas to participate in social groups (58% and 78% respectively). However, there was no statistically significant difference in participation in community support groups by SES areas (27% and 40% respectively).



## 22 School relationships and bullying

**Young people who are bullied may experience higher levels of absenteeism, physical harm, anxiety, depression, risk of suicide, and alcohol and substance use.**

**No national data are currently available on bullying due to definition and measurement difficulties.**

School environments that promote school connectedness and supportive social relationships have been shown to positively influence health and academic outcomes in school-aged children, for example, lower levels of absenteeism, aggression, substance use and sexual risk behaviour, and higher levels of academic performance and self-esteem (Hopkins et al. 2007; Springer et al. 2006). Bullying within the school environment is a serious social problem both in Australia and globally (Gini & Pozzoli 2009; Morrison 2001).

Bullying often occurs because of differences between the bullies and the victims, such as culture, ethnicity, age, ability or disability, religion, body size, physical appearance, personality, sexual orientation and socioeconomic status (Rigby 2009).

School bullying has been shown to adversely affect the social, emotional, educational and physical wellbeing of young people. Adolescents who were bullied reported higher absenteeism, felt less connected to school, experienced lower academic achievement and consequent lower vocational and social achievement, school failure, lower self-esteem, higher levels of physical harm, psychological and health problems (such as anxiety, depression, physical and somatic symptoms, and risk of suicide), and alcohol and substance use (Lodge 2008; Skues et al. 2005; Spector & Kelly 2006). Both bullies and those who are bullied experience long-term psychological and social problems associated with their behaviour, such as depression and thoughts of suicide that may extend well beyond their schooling years, and are at greater risk of criminal conviction and school drop-out (Beaty & Alexeyev 2008; Brunstein-Klomek et al. 2007; Lodge 2008).

In recent years, the means by which school bullying occurs has diversified alongside advances in communication technologies. Cyber-bullying involves the use of electronic communication tools such as e-mail, web sites, chat rooms, text or image messaging to engage in bullying behaviour (Kowalski & Limber 2007). Victims of cyber-

bullying are likely to experience similar health and wellbeing issues to those associated with school bullying, but cyber-bullying is less likely to be reported (Bhat 2008). It has been suggested that young people who experience cyber-bullying are likely to be more psychologically vulnerable than young people who experience bullying only at school. Cyber-bullying may occur in any location in which young people have access to the internet or mobile phones, making traditional places of refuge from bullying, such as the home, vulnerable to attack (Kowalski & Limber 2007; Bhat 2008).

### Measuring bullying in schools

Although there is currently no nationally agreed definition of bullying in Australia, the most commonly cited definition is the 'repeated oppression, psychological or physical harm, of a less powerful person by a more powerful person or group of persons' (Rigby 1996). Bullying typically involves a power imbalance and deliberate acts that cause physical, psychological and emotional harm (Lodge 2008).

There are a number of important aspects to consider when measuring bullying, including the severity (type of bullying and frequency) and the effect that bullying has on the child, which may vary depending on the child's resilience.

A widely used instrument to measure bullying behaviours in school-aged children is the Olweus Bully/Victim Questionnaire. This questionnaire measures bully and victim problems in children aged between 8 and 16 years of age, such as exposure to various physical, verbal, indirect, racial or sexual forms of bullying; various forms of bullying other students; where the bullying occurs; pro-bully and pro-victim attitudes; the extent to which the social environment (teachers, peers, parents) is informed about and reacts to the bullying; victims' experiences and feelings of acceptance by classmates; negative self-evaluations; and depressive tendencies (Jimerson & Furlong 2006; Olweus 1996).

The Peer Relations Questionnaire is another instrument used to estimate the prevalence of bullying in school children aged 8 to 18 years. The instrument is used to determine how children feel about bullying, how they typically react towards bullying in terms of the frequency or intensity of the bullying, and what they are prepared to do about it. Information was also collected on how children are affected by bullying depending on their resilience (Rigby & Slee 1993).

The Strengths and Difficulties Questionnaire collects information about children's risk of developing a clinically significant behavioural problem (Goodman 2001). This questionnaire has been widely used within Australia. The questionnaire collects information from parents on whether their child (aged 4–16 years) was picked on or bullied by other children or young people. Alternatively, the questionnaire can be completed by individuals 11–16 years of age. However, it does not incorporate questions on the severity, regularity or effects of bullying.

## Prevalence of bullying in Australian schools

**National indicator:** Under development

Obtaining an accurate count of the prevalence and incidence of bullying among young people is problematic, as not all cases of bullying are reported to teachers or other authority figures due to feelings of shame, weakness or fear of further attacks (Student learning and support services taskforce of the ministerial council on education 2003).

There is currently no indicator or national data source available on the prevalence or effects of bullying in Australian schools among children and young people, due to definition and measurement difficulties. Further research and consultation are required to identify the most appropriate tool to use in measuring and collecting information on school relationships and bullying in Australian schools.

While no national data are available on school relationships and bullying, there have been jurisdictional studies that have measured important aspects relating to bullying. The Centre for Adolescent Health conducted a Healthy Neighbourhood Project in 2006, which investigated the health and wellbeing of 8,000 young people in Years 6 to 8 (12–14 years of age) living in 30

selected communities across three states: Victoria, Queensland and Western Australia (Williams 2007). The project reported on young people who had been bullied in the previous 12 months in the form of name calling, teasing, being deliberately left out or threatened physically or verbally; and bullying of others. Data from this study are presented here in the absence of a national data source on school relationships and bullying.

In 2006, over one-third of young people (38%) experienced bullying in the previous 12 months (40% of females and 37% of males). Of these, almost two-thirds were bullied on a less than weekly basis; however, for almost one in five bullying was either a weekly or a daily event (19% respectively). Further, one in five young people said they had bullied others. Of these, the majority (81%) bullied others on a less than weekly basis, 13% on a weekly basis, and 7% on most days (Williams 2007).

## Bullying among Aboriginal and Torres Strait Islander young people

As mentioned above, bullying behaviour occurs as a result of dissimilarities between bully and victim. Differences in race, ethnicity, culture or religion are factors that can result in acts of bullying.

Young Aboriginal and Torres Strait islander people, as well as other ethnic minority groups within Australia, may experience bullying based on racial or ethnic discrimination.

The 2005 West Australian Aboriginal Child Health Survey obtained self-reported information on the experiences of school bullying and racism among Indigenous young people aged 12–17 years. According to the survey, almost one-third (31%) of young people attending school reported being bullied at school and, of these, almost a third (30%) experienced racism.

The Australian Bureau of Statistics' 2008 National Aboriginal and Torres Strait Islander Social Survey collected information from parents regarding the effects of ethnically motivated bullying on their children aged 12–14 years. Over one-quarter of parents (27%) reported that their child's progress at school was affected by bullying due to their ethnicity. Every parent surveyed whose child was bullied had indicated that bullying had adversely affected their child's ability to make friends and engage in sporting and recreational activities.

## 23 Child protection

**Young people who have been abused or neglected may experience reduced social skills, poor school performance, mental health issues and a higher likelihood of criminal offending.**

**In 2009–10, 4 in every 1,000 young people aged 12–17 years were the subject of a substantiated report of abuse or neglect. Indigenous young people were over-represented at 6 times the rate of other young people.**

There is a demonstrated relationship between the health and wellbeing of young people and the environment in which they grow up. Young people who are raised in supportive, nurturing environments are more likely to have better social, educational, behavioural and health outcomes (McCain & Mustard 2002; Stanley et al. 2003). The reverse is also true: young people who have been abused or neglected often have poor outcomes in the short-term and long-term. Young abuse and neglect victims may experience reduced social skills, poor school performance, impaired language ability, a higher likelihood of criminal offending, and mental health issues such as eating disorders, substance abuse and depression (Chartier et al. 2007; Gupta 2008; Zolotor et al. 1999).

The adverse effects of abuse and neglect can last a lifetime. Adult survivors of childhood abuse and neglect tend to experience higher levels of alcohol and substance abuse, homelessness, chronic physical ill health, and mental health problems such as depression, self-harm and post-traumatic stress. They are also more likely to experience abuse and violence in adulthood, and abuse or neglect their own children (Lamont 2010). The short- and long-term consequences of abuse are thought to be related to the type, severity and duration of abuse, and the context in which it occurs.

There are a range of factors that may place children and young people at higher risk of abuse and neglect. These include family stressors such as financial difficulties, social isolation, domestic violence, mental health problems, disability, alcohol and substance abuse, and the lack of safe and affordable housing (Layton 2003; Tennant et al. 2003; Vic DHS 2002b). Many of these factors are interrelated and therefore exacerbate the problems faced by some families.

The complex nature of child abuse and neglect is widely acknowledged. In response, the Australian Government has implemented the National

Framework for Protecting Australia's Children 2009–2020, which promotes preventive initiatives to improve the safety and wellbeing of all children (COAG 2009b).

### Measuring child abuse and neglect

There are no reliable data on the prevalence of child abuse and neglect in Australia, mainly due to the difficulties in defining measures and collecting data. Available data relate to situations where children have come to the attention of child protection authorities, but these cases are an unknown proportion of all abuse and neglect cases in the community.

In Australia, statutory child protection is the responsibility of the state and territory governments. The Australian Institute of Health and Welfare's National Child Protection Data Collection includes national data on child protection notifications, investigations and substantiations; children on care and protection orders; and children in out-of-home care, for children aged 0–17 years (Box 23.1). This chapter presents data from this collection on young people aged 12–17 years (see *Appendix 2 Data sources* for more information on this data collection). Child protection data are reported annually (see AIHW 2010e and earlier issues).

While the broad processes in state and territory child protection systems are similar, child protection legislation, policies and practices vary. Variations between jurisdictions in recorded cases of abuse or neglect may reflect these differences in each jurisdiction, rather than a true variation in the levels of child abuse and neglect (Bromfield & Higgins 2005). Trend data must also be interpreted with caution, as increases over time may reflect more children requiring a child protection response, but are more likely to be the result of increased



community awareness or changes to policies, practices and data reporting methods. These differences should be noted when interpreting child protection data across jurisdictions and over time.

### Box 23.1: Definitions of notification, investigation and substantiation

A child protection **notification** is an allegation of child abuse or neglect, child maltreatment or harm to a child that is made to an authorised department. Notifications can be made by persons or organisations, for example, a concerned relative, friend or neighbour, teacher or school, police, or health professional.

**Investigation** is the process of obtaining more detailed information about a child who is the subject of a notification, and the assessment of the degree of harm or risk of harm to the child. A finalised investigation refers to an investigation where an outcome has been reached; that is, the notification is substantiated or not substantiated.

**Substantiation** refers to the conclusion, after investigation, that a child has been, is being or is likely to be abused or neglected or otherwise harmed. An appropriate level of continued involvement by the state or territory child protection and support services would then be made. This generally includes the provision of support services to the child and family. In situations where further intervention is required the child may be placed on a **care and protection order** or in **out-of-home care**.

Source: AIHW 2010e.

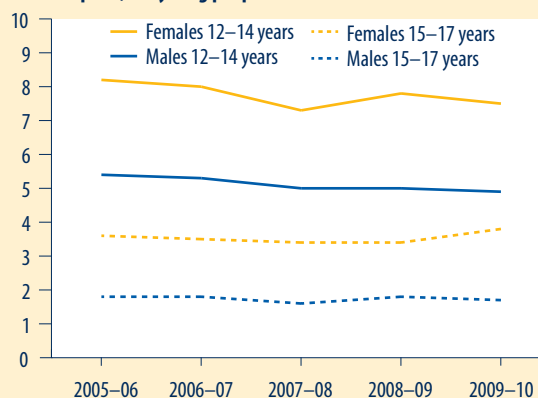
## Child protection substantiations

**National indicator:** Rate of young people aged 12–17 years who were the subject of a substantiation of a child protection notification received in a given year

In 2009–10, among young people aged 12–17 years:

- Around 7,600 young people were the subject of one or more substantiations of a notification received in 2009–10—a rate of 4.4 per 1,000 young people.
- The substantiation rate has remained relatively steady among young people since 2005–06, when the rate was 4.7 per 1,000 young people (Figure 23.1).
- Substantiation rates varied by age—12–14 year olds were more than twice as likely to be the subject of a substantiation than 15–17 year olds (6.2 and 2.7 per 1,000 respectively). In comparison, infants under 1 year of age had the highest substantiation rate (13.0 per 1,000).
- Young females were more likely to be the subject of a substantiation than young males—7.5 compared with 4.9 per 1,000 respectively for 12–14 year olds, and 3.8 and 1.7 per 1,000 for 15–17 year olds. This pattern has remained consistent since 2005–06 (Figure 23.1).
- The main type of abuse reported was emotional abuse (31% of young people subject to a substantiation), followed by physical abuse (25%), sexual abuse (25%) and neglect (19%). Young females most commonly experienced sexual and emotional abuse (33% and 27% respectively), while for young males, emotional and physical abuse were most common (37% and 27% respectively).

Number per 1,000 young people



Notes:

1. Trend data must be interpreted with caution as changes over time may reflect changes in community awareness regarding child abuse and neglect and/or changes to jurisdictional policies, practices and reporting methods.
2. Children may have been the subject of more than one substantiation in a given year.
3. Legislation and practice differs across jurisdictions in relation to children aged 17 years. In some jurisdictions, children aged 17 years are not substantiated and this means the substantiation rate per 1,000 may be lower for those jurisdictions.

Source: AIHW National Child Protection Data Collection.

**Figure 23.1: Young people aged 12–17 years who were the subject of a substantiation of a child protection notification received in a given year, 2005–06 to 2009–10**



## Care and protection orders

If a young person has been the subject of a child protection substantiation, there is often a need for state and territory child protection and support services to have continued involvement with the family. The relevant department generally attempts to protect the young person through the provision of appropriate support services to the child and family. In situations where further intervention is required, the department may apply to the relevant court to place the young person on a care and protection order. Recourse to the court is usually a last resort—for example, where supervision and counselling are resisted by the family, where other avenues for resolution of the situation have been exhausted, or where the removal of the young person to out-of-home care needs legal authorisation. Young people may also be placed on care and protection orders for reasons other than abuse and neglect—for example, in situations where the parents are deceased, ill or otherwise unable to care for the child, or where there is an irreversible breakdown in the child–parent relationship.

**National indicator:** Rate of young people aged 12–17 years who are the subject of care and protection orders

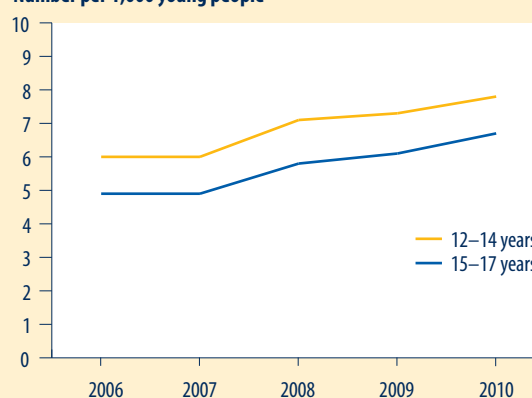
At 30 June 2010, among young people aged 12–17 years:

- Around 12,500 young people were on care and protection orders (7.2 per 1,000 young people), a 35% increase since 2006 (5.5 per 1,000 young people).
- Younger children were slightly more likely to be on an order than older children—7.8 per 1,000 12–14 year olds compared with 6.7 for 15–17 year olds. This has been a consistent pattern since 2006 (Figure 23.2). In comparison, similar rates of 1–4 and 5–9 year olds were on orders (7.2 and 8.3 per 1,000 respectively), with those under 1 year the least likely to be on an order (3.9 per 1,000).
- Nearly one in three (31%) young people on care and protection orders lived in foster care, 30% in relative or kinship care, 10% in residential care, and 9% with their parents.

The increase in the number of young people on care and protection orders partly reflects the increasing number of families that are considered unable to adequately care for children, but may also be due to changing community standards in

relation to child safety. Some of the increase may also be a flow-on effect from the greater number of cases substantiated over the last 5 years and the accumulation of young people in the system as they remain on orders for longer periods of time. Over this 5-year period, more young people were admitted to care and protection orders each year than were discharged. The increased duration of care and protection orders reflects the increasing complexity of family situations faced by these young people (Layton 2003; Tennant et al. 2003; Vic DHS 2002b).

Number per 1,000 young people



Source: AIHW National Child Protection Data Collection.

**Figure 23.2: Young people aged 12–17 years on care and protection orders at 30 June, 2006–2010**

## Out-of-home care

Out-of-home care provides alternative overnight accommodation for young people who are unable to live with their parents. In most cases, young people in out-of-home care are also on a care and protection order of some kind. Young people in out-of-home care include those in both legal and voluntary placements—they may have been the subject of a child protection substantiation and require a more protective environment, their parents may be incapable of providing adequate care, or alternative accommodation may be needed during times of family conflict.

Of the 11,800 (6.8 per 1,000) young people aged 12–17 years in out-of-home care at 30 June 2010, 44% were living with relatives or kin, 39% were in foster care and 12% were in residential care. The type of out-of-home care young people lived in varied somewhat across age groups—12–14 year olds were more likely to be in foster and relative or kinship care (88% compared with 77% among

older young people), while residential care and independent living arrangements (such as private board and lead tenant households) were more common among young people aged 15–17 years (19% compared with 9% among 12–14 year olds).

The National Framework for Protecting Australia's Children has identified the provision of transition services to support young people leaving care at age 18 as a priority. In addition, the government and non-government sectors are committed to ensuring that vulnerable children are cared for and supported, through the development of nationally consistent standards for out-of-home care (COAG 2009b).

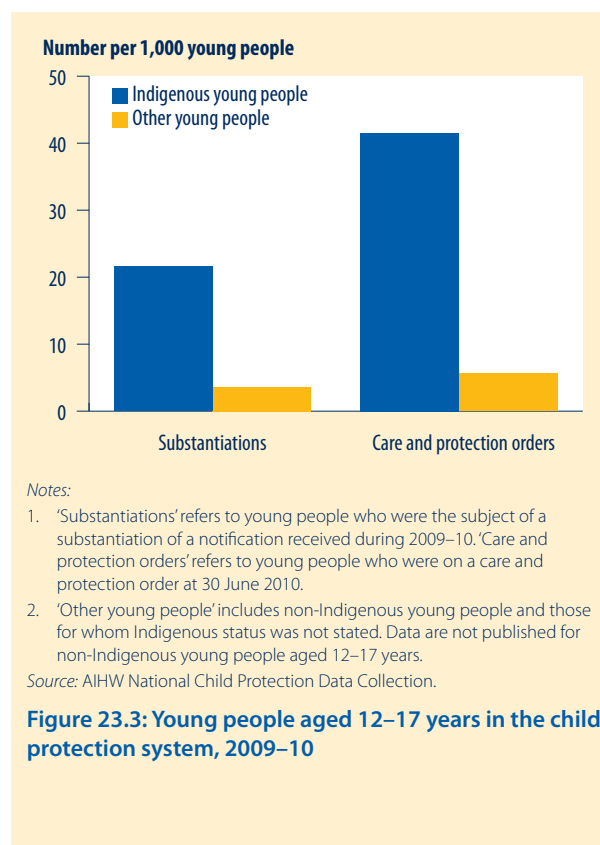
## Do rates of child protection vary for Aboriginal and Torres Strait Islander young people?

Aboriginal and Torres Strait Islander young people are over-represented in the child protection system (AIHW 2010e). The reasons for this are complex and include the inter-generational effects of separation from family and culture (a legacy of the Stolen Generations), perceptions arising from cultural differences in child-rearing practices, and the relative socioeconomic disadvantage of Indigenous Australians (HREOC 1997; Stanley et al. 2003).

Among young people aged 12–17 years:

- Around 1,700 Indigenous young people were the subject of a substantiation—a rate of 22 per 1,000 young people in 2009–10 (16 and 28 per 1,000 for Indigenous males and females, respectively). The rate for Indigenous young people was almost 6 times the rate for other Australian young people (4 per 1,000) (Figure 23.3).
- Indigenous young people were 7 times as likely as other young Australians to be on a care and protection order—a rate of 42 per 1,000 compared with 6 per 1,000. Around 3,200 Indigenous young people were on a care and protection order at 30 June 2010.

See *Chapter 42 Health and wellbeing of Indigenous young people* for further information on child protection among Indigenous young people.



## 24 Victims of violence

**Physical and sexual assault can have complex short-term and long-term adverse effects on the physical and psychological health of young people, and increases the risk of these young people later victimising others.**

**In 2008–09, an estimated 138,000 young people (7%) were victims of physical or sexual assault and, in 2007, nearly 40% of young people were victims of alcohol- or drug-related violence.**

Being a victim of violence can be detrimental to a young person's health, sense of safety and security, and their feelings about the future. For some young people, being victimised may lead to diminished educational attainment and social participation in early adulthood, or may result in physical injury, thoughts of suicide and suicidal behaviour, depression, disability and even death (Arboleda-Florez & Wade 2001; Macmillan & Hagan 2004; Simon et al. 2002).

Physical and sexual assault can have complex short-term and long-term negative effects on the physical and psychological health of young people. In particular, a history of child sexual abuse has been associated with psychopathology, depression, anxiety disorder, phobias, panic disorder, post-traumatic stress disorder, substance abuse, and violent and sexual offending later in life (Lee & Hoaken 2007; Molnar et al. 2001; Rick & Douglas 2007).

Of major concern is that young people who are victimised are at greater risk of perpetrating violence, and adolescence is the peak period for both being victimised and offending. International approaches to crime prevention are increasingly recognising the strong links between youth victimisation and offending. Young victims of violent crime are also more likely than other young people to become victims of violent crime in adulthood (Johnson 2005).

Obtaining an accurate count of the number of young people who are victims of violence is difficult. Victims of crime, especially violent crime, are often reluctant to report crimes to the police and therefore the actual level of crime experienced by young people is likely to be underestimated. Children and young people, in particular, may feel intimidated and reluctant to report personal crimes if the perpetrator is known to them or in a position of power (for example, they may be older or an authority figure).

### Physical and sexual assault

This section examines physical and sexual assault among young people, using data from the Australian Bureau of Statistics' (ABS) 2008–09 Crime Victimization Survey (see *Appendix 2 Data sources* for more information). Information on physical assault is only available for 15–24 year olds and on sexual assault for 18–24 year olds.

There is currently no Australian crime victim survey that collects information on those aged under 15 years, although information is available on recorded crime statistics reported to police and substantiations for child abuse for this age range (for further information see *Chapter 23 Child protection*). Victimization rates from administrative data sources tend to be significantly lower than those based on survey data, as many people do not report crimes to the police or child protection authorities.

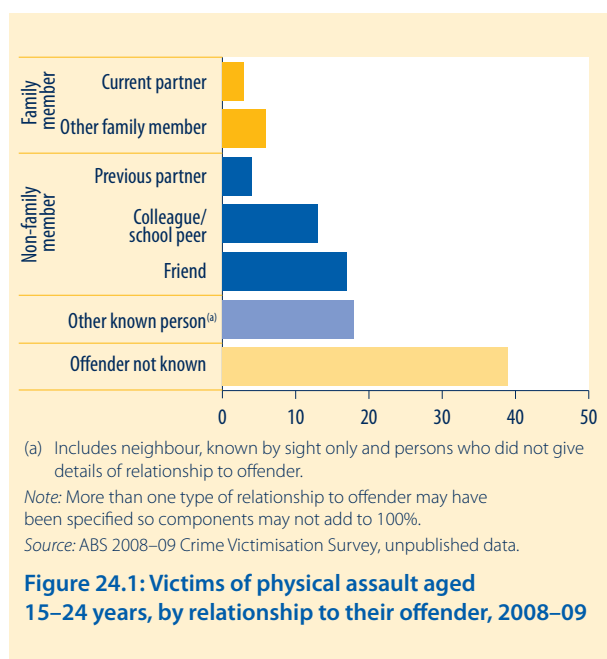
**National indicator:** Rate of young people aged 15–24 years who have been the victim of physical or sexual assault

Physical assault and threatened assault were the most common types of crimes affecting young people aged 15–24 years in 2008–09 (each affecting 7% of young people), while sexual assault and robbery were less common, affecting around 1% of young people (sexual assault refers to those aged 18–24 years; ABS 2010b).

An estimated 138,000 young people aged 18–24 years reported being victims of physical or sexual assault—a victimisation prevalence rate of 7% in 2008–09.

In 2008–09, for **physical assault** among young people aged 15–24 years:

- An estimated 200,700 young people reported being victims of physical assault—a victimisation prevalence rate of 7%. Over half of these victims (55%) experienced physical injury and 39% of victims reported the assault to police.
- Adolescents aged 15–19 years had the highest victimisation rates for physical assault across all age groups—9%, compared with 5% among 20–24 year-olds, 4% among 25–44 year olds and 2% among those aged 45 years and over (ABS 2010b).
- The rate for young males was over twice as high as for young females (10% compared with 4% respectively).
- Nearly two-thirds (61%) of young people who experienced physical assault knew the offender, with almost one in ten (9%) indicating that the offender was a family member, 17% a friend, and 13% a colleague or fellow student (Figure 24.1).
- The most common location of the assault was in the street or other open land (28%), followed by at work or place of study (19%), and at a place of entertainment or recreation (14%).
- Of the victims of physical assault, half experienced one physical assault, 19% two and 31% experienced three or more physical assaults in the previous 12 months.



In 2008–09, for **sexual assault** among 18–24 year olds:

- An estimated 13,000 young people reported being victims of sexual assault—a victimisation rate of 0.6%, a similar rate to those aged 25 years and over (0.3%) (ABS 2010b).
- Around 29% of sexual assaults were reported to police, but this estimate should be interpreted with caution due to the small sample size.

## Alcohol- and drug-related violence

There is a strong link between alcohol and other drug consumption and violence. Young people are significantly over-represented among victims of alcohol- and drug-related violence, particularly young males (Wells & Thompson 2009). Hazardous and harmful levels of alcohol use and substance use are also key risk factors for domestic violence. Domestic violence can feature in relationships between young people and in family breakdown, which can have significant effects upon young people (AIHW 2011c; WHO 2006b).

Violence can include physical and verbal abuse, as well as being put in fear by another person, which can affect a person's health and wellbeing (AIHW 2007b; Regoeczi 2000).

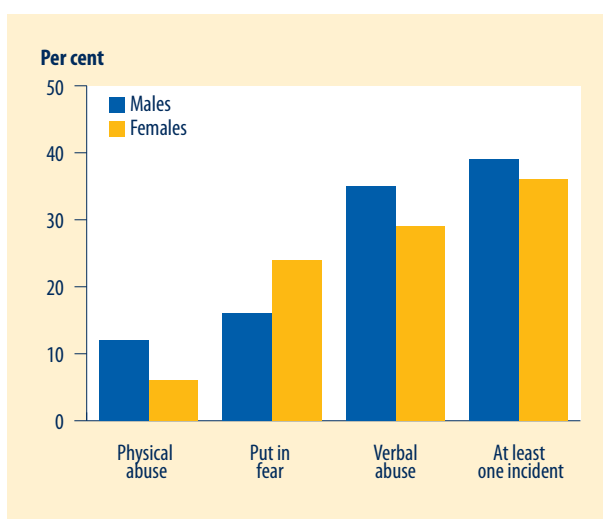
The ABS National Drug Strategy Household Survey collects information on alcohol- and drug-related violence and is the data source used in this section (see *Appendix 2 Data sources* for more information on this survey).

### National indicator: Alcohol- and drug-related violence victimisation rate for young people aged 12–24 years

In 2007, among young people aged 12–24 years:

- An estimated 1.43 million young people reported being victims of alcohol- or other drug-related violence (including physical and verbal abuse, and being put in fear by another person) in the previous 12 months—a victimisation rate of 38%. Since 1998 the victimisation rate has declined for 14–24 year olds, from 52% to 42% in 2007.
- Verbal abuse was the most common form of alcohol- or drug-related violence experienced (32%), followed by being put in fear (20%) and physical abuse (9%).

- Males were more likely than females to have experienced physical abuse (12% and 6% respectively). Females were more likely to have been put in fear as a result of the alcohol or drug use of others (24%, compared with 16% for males) (Figure 24.2). There was no statistically significant difference in the proportions of young males and females experiencing verbal abuse (35% and 29% respectively).
- Older youth (18–24 year olds) were over twice as likely to be victims of alcohol- or drug-related violence as those aged 12–17 years (49% and 23% respectively), and had the highest victimisation rate across all age groups. Those aged 12–17 years had the second lowest victimisation rate (23%), with only those aged 65 years and over having a lower rate (11%).
- The victimisation rate for alcohol-related violence (36%) was higher than the rate for incidents related to drugs (17%).



Source: AIHW 2007 National Drug Strategy Household Survey.

**Figure 24.2: Young people aged 12–24 years who were victims of alcohol- or other drug-related violence in the previous 12 months, by type of incident, 2007**

## Do rates of physical and sexual assault vary across population groups?

Cultural, historical, environmental and socioeconomic factors all contribute to health and wellbeing, and may place certain population groups at higher risk of a variety of factors, including violence (ABS & AIHW 2008; AIHW 2008d). Aboriginal and Torres Strait Islander

people, and those living in remote areas and areas of socioeconomic disadvantage have been found to have higher rates of interpersonal crime and violence (Bourke & Geldens 2007; De Costa 2002; Haynie et al. 2006).

Alcohol and drug use can also have severe social and economic effects on communities, including domestic violence, crime and assaults, which can be more prevalent in low socioeconomic areas, remote areas and in Aboriginal and Torres Strait Islander communities (AIHW 2010b, 2011c). Alcohol-related violence is disproportionately high in Indigenous communities—70% of Indigenous homicides over the period 1999–2000 to 2006–07 involved both the offender and victim having consumed alcohol, compared with 23% of non-Indigenous homicides (SCRGSP 2009). Those living in remote areas and areas of socioeconomic disadvantage have also been found to have higher rates of alcohol and substance use, which also increases their risk of experiencing violence.

## Aboriginal and Torres Strait Islander young people

Indigenous young people aged 18–24 years were more likely to experience physical or threatened violence than all young people (33% compared with 24% respectively, according to the ABS 2008 National Aboriginal and Torres Strait Islander Social Survey and the ABS 2006 General Social Survey). The disparity is even greater for young Indigenous females, where the rate of physical or threatened violence was twice that of all young females (34% and 17% respectively). This may reflect the higher rate of domestic violence among Aboriginal and Torres Strait Islander populations (AIHW 2006b).

## Remoteness

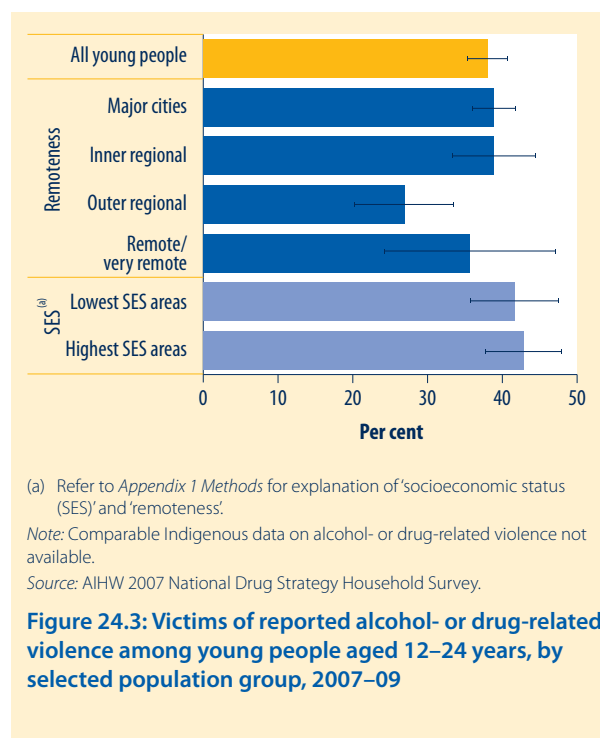
The victimisation rate of reported physical or sexual assault among young people aged 18–24 years was similar across areas of remoteness, with *Major cities* and *Other* areas (including *Inner regional*, *Outer regional* and *Remote* areas) both experiencing a victimisation rate of 7%.

Victimisation rates of reported alcohol- or other drug-related violence among young people aged 12–24 years was significantly lower in *Outer regional* areas than in *Major cities* (27% and 39% respectively). Young people in *Inner regional* areas (39%) and *Remote* and *Very remote* areas combined (36%) also experienced higher victimisation rates than those in *Outer regional* areas (27%), however this difference was not statistically significant (Figure 24.3).

## Socioeconomic status

Victimisation rates for reported physical or sexual assault and alcohol- or other drug-related violence did not vary significantly by socioeconomic status (SES) for young people:

- For physical or sexual assault among those aged 18–24 years, victimisation rates were 6% and 9%, respectively, for young people living in areas of highest and lowest SES.
- For alcohol- or drug-related violence among 12–24 year olds, those living in the lowest and the highest SES areas had victimisation rates of 42% and 43% respectively (Figure 24.3).





## 25 Young people and crime

**Young people in the criminal justice system represent a particularly disadvantaged population and are vulnerable to continued and more serious offending later in life.**

**In 2008–09, 3 out of every 1,000 young people were under juvenile justice supervision (12–17 year olds) or in prison (18–24 year olds). Indigenous young people were over-represented in both, at 15 times the rates of non-Indigenous young people.**

During their youth, some young people will have an encounter with the criminal justice system. Each year, around 160,000 young people aged 12–24 years commit an alleged offence for which they are proceeded against by the police (ABS 2010c). Among this age group, around seven in ten alleged offences are for theft, public order offences (such as disorderly conduct), assault or illicit drug offences. For most young people, this offending will be relatively minor, infrequent and short-lived (Marshall 2006). However, a small number of young people have more serious interactions with the criminal justice system, leading to juvenile detention or imprisonment in early adulthood. It is these young people who are most vulnerable to continued and more serious offending later in life (Makkai & Payne 2003).

Young people in the justice system represent a particularly disadvantaged group, characterised by low socioeconomic status, low educational attainment, significant physical and mental health needs, substance abuse problems, and a history of childhood physical abuse and neglect (Kenny et al. 2006; NSW Department of Juvenile Justice 2003; Prichard & Payne 2005; Stewart et al. 2002).

Depending on their age, young people accused of committing crimes are dealt with in either the juvenile justice system (up to 17 years) or the adult justice system (18 years or over), although this varies between the states and territories. The justice system involves several organisations, each having different roles and responsibilities: the police, who apprehend young people who have committed an offence; the courts, where matters regarding the charges are heard; the juvenile justice departments, which supervise young people on sentenced and unsentenced court orders; and the adult correctional system, including both community corrections and prison. Police proceedings against alleged offences may include formal court actions, informal warnings or conferencing. As such, not all young people proceeded against by police will appear in the juvenile justice or adult correctional systems.

### Juvenile justice

A major feature of the juvenile justice system is the diversion of young people away from the formal system. This may occur at the police or court level. If a young person is not diverted and is proven guilty of the offence, the court may order the young person to serve an unsupervised sentence, a community-based supervised sentence (such as suspended detention, community service order, probation or good behaviour bond) or a period of detention. Children and young people under supervision, both in the community and in detention, have poorer physical and mental health and a higher death rate than other young people in the population (Coffey et al. 2004; Kenny et al. 2006; NSW Department of Juvenile Justice 2003).

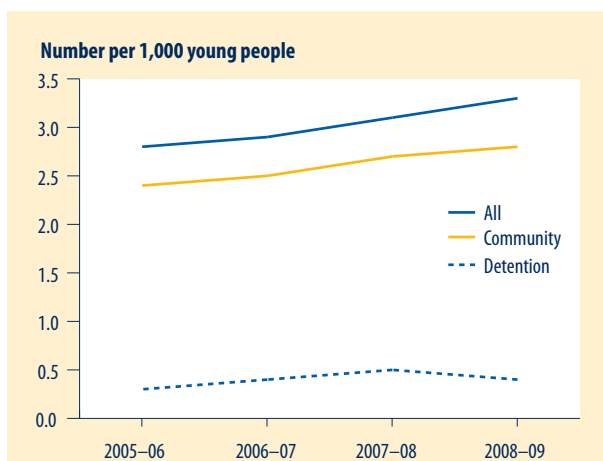
This section reports on young people aged 12–17 years who are under juvenile justice supervision. It includes young people who have been found guilty of an offence and are serving supervised sentences, and those who are being supervised while awaiting trial or sentencing. Young people who are supervised by other agencies, such as the police, are not included. This section presents data from the Australian Institute of Health and Welfare's (AIHW) Juvenile Justice National Minimum Data Set (see *Appendix 2 Data sources* for more information on this data collection).

**National indicator:** Rate of young people aged 12–17 years who are under juvenile justice supervision

All juvenile justice data in this chapter exclude Western Australia and the Northern Territory, as data were not supplied for 2008–09. For this reason, the reported juvenile justice rates may not be nationally representative (see *Appendix 2 Data sources* for more information).

On an average day in 2008–09, among young people aged 12–17 years in New South Wales, Victoria, Queensland, South Australia, Tasmania and the Australian Capital Territory:

- 5,010 young people were under juvenile justice supervision—a rate of 3 per 1,000 young people. This rate increased slightly from 2.8 to 3.3 per 1,000 between 2005–06 and 2008–09 (Figure 25.1).
- Most young people were under community-based supervision (86%), with the remainder in detention.
- Males were more likely to be under supervision than females (6 per 1,000 compared with 1 per 1,000 respectively), with males accounting for 84% of all young people under supervision.
- Supervision rates for 16–17 year olds were 6 times that of 12–13 year olds (6 per 1,000 compared with 1 per 1,000 respectively). This pattern remained similar between 2005–06 and 2008–09.
- An additional 1,024 young people aged 18–24 years were under juvenile justice supervision. This includes young people who continue to be supervised by juvenile justice agencies for offences committed or allegedly committed when aged 10–17 years, and young people supervised by juvenile justice agencies instead of adult corrective services due to their vulnerability or immaturity.



Notes:

1. Data for Western Australia and the Northern Territory are excluded from the trend figure as data were not available for 2008–09.
2. The daily average is calculated by summing the number of days each young person spent under supervision during the financial year, and dividing by the number of days in the financial year.

Source: AIHW Juvenile Justice National Minimum Data Set.

**Figure 25.1: Young people aged 12–17 years under juvenile justice supervision on an average day, by type of supervision, 2005–06 to 2008–09**

There are currently limited national data on the types of offences for which young people are under juvenile justice supervision. National data on the cases finalised in the Childrens Courts during 2008–09 (ABS 2010c) showed that the most common principal offence types for young people aged 10–17 years who received a principal sentence of detention or community-based supervision (such as home detention, suspended detention, community service orders or probation) were:

- acts intended to cause injury (32% and 27% of finalised cases resulting in detention or community-based supervision, respectively)
- unlawful entry with intent (28% and 22% respectively)
- theft and related offences (12% and 15% respectively)
- robbery, extortion and related offences (11% and 7% respectively).

These data are only an indication of the types of offences for which young people may be under juvenile justice supervision in 2008–09. Firstly, young people may have been found guilty of other offences in addition to the principal offence reported above; secondly, the cases for some young people in supervision may have been finalised before 2008–09; and thirdly, some young people may not have had their case finalised in this period.

## Young people in prison

Prison populations are marked by severe disadvantage, stigmatisation, social exclusion, and poor physical and mental health. This section reports on young people aged 18–24 years who are prisoners in the legal custody of corrective services and are in an adult prison; it includes prisoners who have been found guilty of an offence and those who are in prison while awaiting trial or sentencing. Young people held in juvenile institutions, psychiatric custody and police custody are excluded. This section presents information from the Australian Bureau of Statistics' National Prisoner Census (see *Appendix 2 Data sources* for more information on this data collection).

Most people in the adult correctional system are in community-based corrections such as parole and community service, rather than in prison (67% and 33% respectively) (ABS 2009d). However, national community corrections data are not currently available by age group, and so are not presented in this section.

**National indicator:** Rate of imprisonment for young people aged 18–24 years

On 30 June 2009, among young people aged 18–24 years:

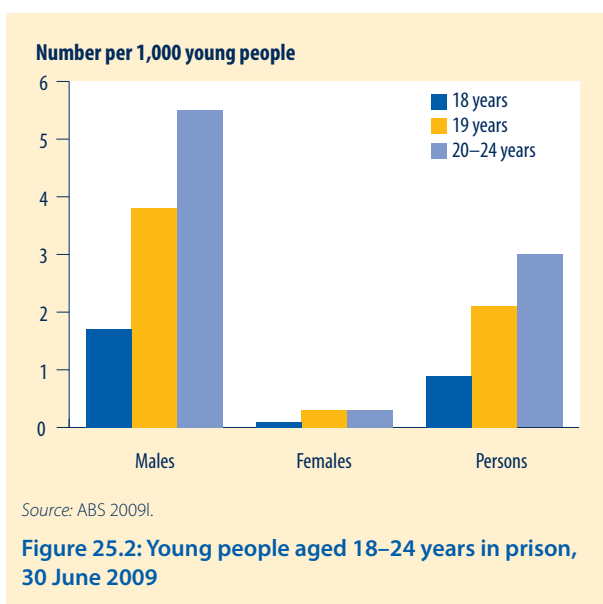
- Young people were over-represented in prisons, accounting for almost one in five (19%) of the total prison population. This reflects the general trend that involvement in crime tends to peak in adolescence and early adulthood (Fagan & Western 2005; Farrington 1986). There were around 5,600 young people in prison, a rate of 2.6 per 1,000 young people.
- The imprisonment rate among young people has fluctuated over time, but has decreased slightly since 2000, when the rate was 3.1 per 1,000 young people.
- Young males were far more likely to be in prison than young females, with imprisonment rates almost 16 times as high as those for females (4.7 and 0.3 per 1,000 respectively) (Figure 25.2). The great majority of all young people imprisoned were males (94%).
- Imprisonment rates among young people were 0.9, 2.1 and 3.0 per 1,000 for 18, 19 and 20–24 year olds respectively. In comparison, 25–29 year olds had the highest imprisonment rate (3.5 per 1,000), followed by 30–34 year olds (3.4 per 1,000).

The health status of prisoners is generally poor. Prisoner populations are more likely to engage in risky behaviours such as drug and alcohol use, smoking and unsafe sexual practices. Prisoners

therefore experience higher rates of bloodborne viruses such as viral hepatitis, sexually transmissible infections, drug dependence, mental illness and other health problems than the general population. Both young and adult prisoners have high death rates and excess mortality after their release (AIHW 2008d).

The AIHW’s first National Prisoner Health Census, conducted throughout Australia in 2009, revealed that poor mental health and substance misuse are the main health issues for young prisoners aged 18–24 years (AIHW 2010i):

- Poor mental health was found to be a key health concern among inmates on entry to prison. One-third (33%) of young prison entrants had been told by a doctor, psychiatrist, psychologist or nurse that they had a mental illness (including drug and alcohol abuse). One in five (21%) entrants reported having ever deliberately harmed themselves, and 5% were identified as being currently at risk of suicide or self-harm.
- A high rates of illicit drug use before prison entry was also common. The majority (74%) of young prison entrants reported using illicit drugs during the previous 12 months—considerably greater usage than that reported among the general population of 18–24 year olds (27%) (see *Chapter 16 Substance use*). Prison entrants reported notably high usage of cannabis/marijuana (60% of all new entrants aged 18–24 years), meth/amphetamines (28%) and heroin (12%) in the previous 12 months. Previous studies indicate that illicit drug use continues once in prison, and drug-related deaths are one of the leading types of death among young prisoners (AIHW 2008d).
- Mental health services are used by a considerable proportion of young prisoners while in prison. More than one-quarter (27%) of young inmates were referred to prison mental health services on entry to prison. During the census week, 20% of prisoners aged 18–24 years visited the prison health clinic (initiated by the prisoners themselves or by clinic staff)—23% of these visits were for a general health check, with a further 20% for psychological or mental health issues. Around one in six (16%) young prisoners was taking medication from the clinic for a mental health condition (excluding drug and alcohol abuse).



## Do juvenile justice supervision and prison rates vary for Aboriginal and Torres Strait Islander young people?

Indigenous young people are over-represented in juvenile justice supervision and adult prisons. The reasons for this are complex and varied but may include extreme social and economic disadvantage, dispossession, and alienation from traditional land and culture through the inter-generational effects of separation from family (a legacy of the Stolen Generations). In addition, some Indigenous people experience high rates of victimisation and racism, family violence, and drug and alcohol abuse, which may make them vulnerable to crime (Blagg et al. 2005; HREOC 1997; Wundersitz 2010). This disparity has been acknowledged as a key issue by the House of Representatives Inquiry into the high level of involvement of Indigenous juveniles and young adults in the criminal justice system that is currently underway (Parliament of Australia 2010).

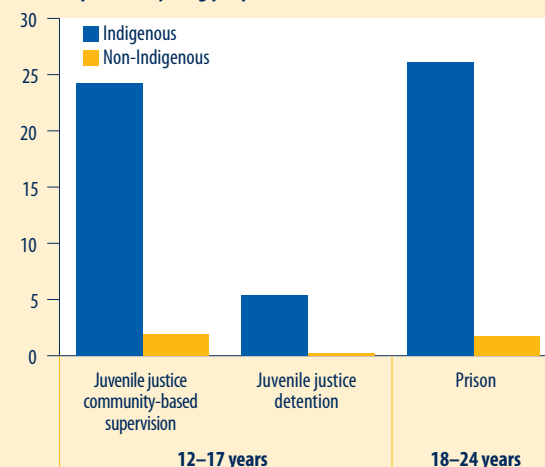
On an average day in 2008–09, among 12–17 year olds in New South Wales, Victoria, Queensland, South Australia, Tasmania and the Australian Capital Territory:

- Indigenous young people were 15 times as likely to be under juvenile justice supervision as non-Indigenous young people (30 and 2 per 1,000 respectively) (Figure 25.3).
- Indigenous over-representation was greater for juvenile detention than for juvenile community-based supervision. Indigenous young people were 13 times as likely as non-Indigenous young people to be under community-based supervision on an average day (24 and 2 per 1,000 respectively), but 24 times as likely to be in detention (5.4 and 0.2 per 1,000 respectively). Furthermore, almost half (48%) of young people in juvenile justice detention were Indigenous, while only 4% of the Australian population aged 12–17 years were Indigenous.

On 30 June 2009, among 18–24 year olds in all states and territories:

- The Indigenous imprisonment rate was 15 times as high as the non-Indigenous rate (26.1 per 1,000 compared with 1.7, respectively). This pattern of over-representation was observed for both sexes and across age groups.

Number per 1,000 young people



*Notes:*

1. Juvenile justice data refer to the number of young people under community-based supervision or detention on an average day during 2008–09. Prison data refer to the number of young people in prison at 30 June 2009.
2. Juvenile justice data exclude Western Australia and the Northern Territory, as data were not available for 2008–09. If data for these two jurisdictions were included, the level of Indigenous over-representation may be higher.

Sources: AIHW Juvenile Justice National Minimum Data Set; ABS 2009f.

**Figure 25.3: Young people in juvenile justice supervision and prison, by Indigenous status, 2009**

## 26 Environmental tobacco smoke

**Adolescents who are exposed to tobacco smoke are at an increased risk of poorer health and educational outcomes, and are more likely to take up smoking later in life.**

**Over one in ten (12%) households with adolescents had at least one person who smoked daily inside the home in 2007–08, with rates substantially higher among those living in *Outer regional* and *Remote* areas combined (20%), in the most socioeconomically disadvantaged areas (24%) and among Indigenous adolescents (33% in 2004–05).**

Environmental tobacco smoke is the combination of smoke emitted from the burning end of a cigarette or other tobacco product and smoke exhaled by the smoker (WHO 2007b). This smoke contains numerous toxic and cancer-causing chemicals that increase the risk of adverse health outcomes for adolescents, including onset and increased severity of asthma, respiratory infections and symptoms, increased risk of cardiovascular disease, slowed lung growth, and decreased lung function (CDC 2007; WHO 2007b). It has also been associated with an increase in illness-related school absences (Wenton et al. 2005), and young people in households with a smoker are more likely to take up smoking later in life (Kestila et al. 2006). Darling and Reeder found a threefold increase in daily smoking behaviour among high school students exposed to environmental tobacco smoke (Darling & Reeder 2003).

There is no safe level of exposure to environmental tobacco smoke. Adolescents are often exposed to environmental tobacco smoke involuntarily and in enclosed spaces, such as in the home and car, and have limited options for avoiding exposure. Al-Delaimy et al. 2001) found that children who lived with parents or with other household members who smoked had much higher hair nicotine levels than children who lived with non-smokers. Children and adolescents travelling in a car with someone smoking are also at risk, even if the windows are down (Sendzik et al. 2008; Sly et al. 2007).

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). Implementing effective tobacco control through legislation and other government initiatives is also a binding obligation under the United Nations Convention on the Rights of the Child

(WHO 2001b), which acknowledges the need for the health of children to be protected.

### Young people exposed to tobacco smoke in the home

This section focuses on young people's exposure to environmental tobacco smoke in the home using data from the Australian Bureau of Statistics' (ABS) 2007–08 National Health Survey (see *Appendix 2 Data sources* for more information on this survey).

**National indicator:** Proportion of households with a young person aged 12–17 years where a household member smoked inside the home

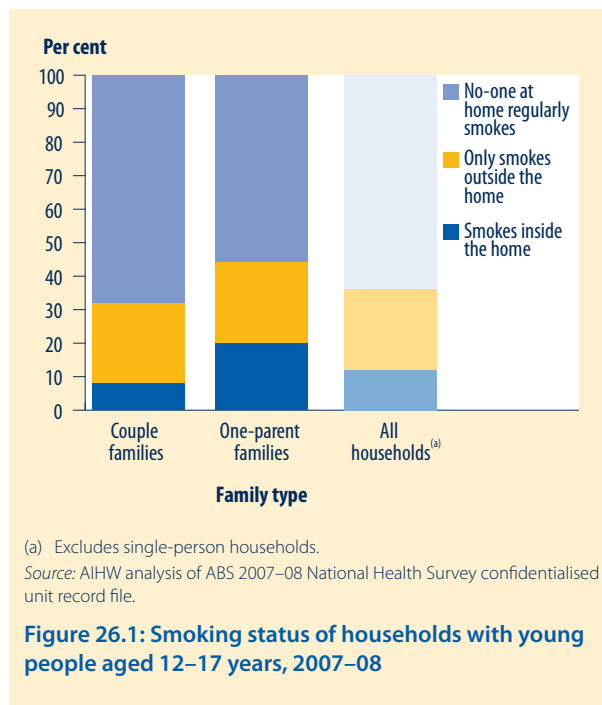
In 2007–08, of households with young people aged 12–17 years:

- Over one in ten (12%) or an estimated 142,400 households with adolescents had someone who smoked tobacco daily inside the home.
- Nearly one-quarter of households with adolescents (24%) had a daily smoker who smoked only outside the home, and almost two-thirds of the households (64%) did not have a daily smoker.
- Compared with their counterparts in couple families, adolescents living in one-parent families were over twice as likely to be exposed to environment tobacco smoke daily in the home 20% of one-parent families had a daily smoker who smoked inside the home, compared with 8% in couple families (Figure 26.1).

There is no long-term trend data available on adolescents exposed to daily tobacco smoke in the home. However, as the prevalence of smoking in the general population has halved over the last two



decades (AIHW 2010b), it follows that exposure to environmental tobacco smoke may also be on the decline. According to the Australian Institute of Health and Welfare's National Drug Strategy Household Survey, the rate of children aged 0–14 years exposed to tobacco smoke in the home has declined from 31% in 1995 to 8% in 2007 (AIHW 2009c).



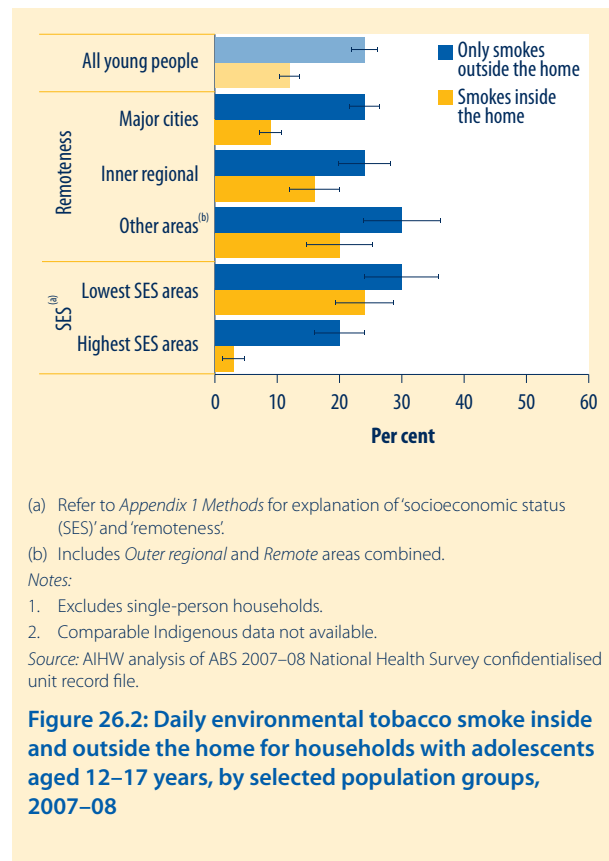
**Figure 26.1: Smoking status of households with young people aged 12–17 years, 2007–08**

## Do rates of exposure to environmental tobacco smoke vary across population groups?

Some groups within the population are more likely to smoke than others, including Aboriginal and Torres Strait Islander people, and those living in remote areas and areas of socioeconomic disadvantage (AIHW 2010b). Higher smoking rates among these groups can mean more exposure to environmental tobacco smoke for non-smokers, which also contributes to the differences in health status and mortality. Attitudes towards smoking in disadvantaged groups may partly explain higher smoking rates. In lower socioeconomic groups there is more social acceptance of smoking and a pro-smoking context can mean that smokers are less likely to succeed in quitting. Quitting may also be harder for lower socioeconomic smokers due to a perceived lack of resources needed to quit and a perceived acceptability of smoking (Paul et al. 2010).

Among young people aged 12–17 years:

- Indigenous adolescents were almost 3 times as likely as non-Indigenous adolescents to live in households where a daily smoker smoked inside the home in 2004–05 (33% and 12% respectively, according to the ABS 2004–05 National Aboriginal and Torres Strait Islander Health Survey and 2004–05 National Health Survey. Note the 2004–05 data are used for consistency and comparability).
- Households with adolescents living in *Major cities* were half as likely to be exposed to daily tobacco smoke inside the home (9%), as households in *Inner regional* areas (16%) and *Outer regional* and *Remote* areas combined (20%) in 2007–08 (Figure 26.2).
- Households with adolescents living in areas of lowest socioeconomic status (SES) were more than 8 times as likely as those in the highest SES areas to be exposed to daily tobacco smoke in the home (24% compared with 3%). The rate of households with daily smokers who smoked only outside the home was also higher among households in the lowest SES areas (30% compared with 20% for the highest SES areas), reflecting the higher prevalence of smoking among the most disadvantaged populations.



**Figure 26.2: Daily environmental tobacco smoke inside and outside the home for households with adolescents aged 12–17 years, by selected population groups, 2007–08**



## 27 Homelessness

**Young people who are homeless experience high rates of mental illness and have reduced access to education and employment.**

**Around 32,400 young people aged 12–24 years were homeless in 2006, representing almost one-third (31%) of the total homeless population.**

Young people who are homeless, whether as part of a family unit or on their own, experience significant negative social and health consequences. Homeless young people have high levels of mental health problems, including anxiety, depression, behavioural disorders, self-harm, and alcohol and drug misuse (Moore et al. 2007; Vostanis 2002). During periods of homelessness, young people are at increased risk of poor nutrition, gastrointestinal and respiratory conditions, sexually transmissible diseases, physical and sexual assault, and social isolation (Boivin et al. 2005; Moore et al. 2007). Furthermore, the instability and insecurity of temporary housing makes it difficult to access education, employment, health care and social services (Vostanis 2002). Homelessness can also become part of an intergenerational cycle. Young people who experience homelessness are more likely to be homeless in adulthood, and have an increased risk of long-term poverty, unemployment, poor health, and other forms of disadvantage and social exclusion (FaHCSIA 2008; MacKenzie & Chamberlain 2003).

The causes of homelessness are complex and may include factors such as poverty, unemployment, family violence and breakdown, or lack of stable and affordable housing. Reducing homelessness is one of the priorities of Australia's Social Inclusion Agenda, and in 2008 the Australian Government and state and territory governments set the goal of halving overall homelessness by 2020 (FaHCSIA 2008).

Obtaining an accurate count of the homeless population is difficult as some people move in and out of homelessness and may never be counted in official statistics, while some may never seek emergency assistance or are turned away from services. There are two main data sources that provide a national picture of the number of homeless children in Australia: the Counting the Homeless project and the Supported Accommodation Assistance Program National Data Collection (SAAP NDC) data. This chapter presents

information from both these sources (see *Appendix 2 Data sources* for more information). SAAP, which has been the main government response designed to help people who are homeless or at risk of becoming homeless, was replaced by the new National Housing Affordability Agreement on 1 January 2009; however, the NDC has been largely unaffected. A new collection, the Specialist Homelessness Services Collection, will replace the SAAP NDC on 1 July 2011.

### Youth homelessness

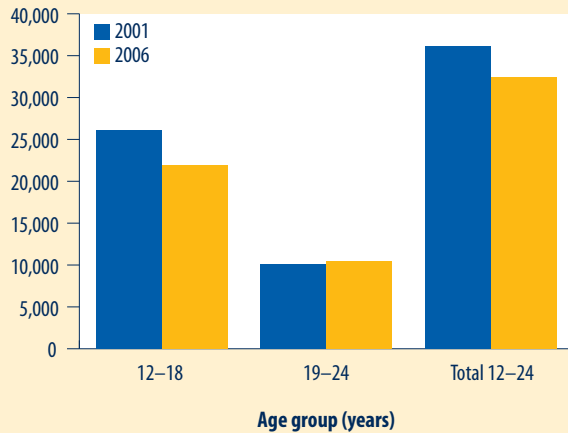
In this report, the Counting the Homeless project has been used as the primary data source for reporting on the number of young people who are homeless. This source uses data primarily from the Australian Bureau of Statistics' Census of Population and Housing to estimate the number of people homeless on Census night (Chamberlain & MacKenzie 2008). The methodology used in this report is currently under review.

**National indicator:** Proportion of young people aged 12–24 years who are homeless

On Census night in 2006:

- An estimated 32,400 young people aged 12–24 years were homeless—representing almost one-third (31%) of the total homeless population, but less than 1% of the general population aged 12–24 years. Adolescents aged 12–18 years were the largest age group in the homeless population, representing one-fifth (21%) of all homeless people (Figure 27.1) (Chamberlain & MacKenzie 2008).
- Similar proportions of males and females aged 12–24 years were homeless (48% and 52%, respectively). This pattern was also observed among the 12–18 and 19–24 year olds.

Estimated number of homeless people



Sources: Chamberlain & MacKenzie 2003, 2008.

**Figure 27.1: Homeless young people aged 12–24 years, 2001 and 2006**

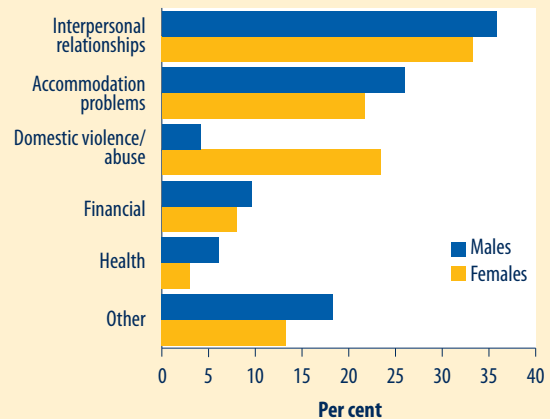
## Young people accessing the Supported Accommodation Assistance Program

Further information on homelessness is available on those who accessed SAAP services. However, the number of SAAP clients and accompanying children is not equivalent to the total number of homeless people, as the count from the SAAP data collection excludes those who did not approach or were turned away from a SAAP service, and includes some people who were ‘at risk’ of homelessness (that is, they were not homeless at the time a SAAP agency initially provided support). The SAAP data provide useful information about service utilisation among young homeless people, and are the most recent data available 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.

In 2008–09, among young people aged 12–24 years:

- Around 43,600 young people accessed SAAP services as a client (a rate of 11 per 1,000 young people). A further 14,900 children aged 12–17 years accompanied a parent or guardian who was receiving SAAP support.
- Females were around twice as likely as males to be SAAP clients (15 and 8 per 1,000 respectively). This pattern was consistent across the 12–14, 15–19 and 20–24 year age groups.

- Children were less likely to be SAAP clients than adolescents and young adults—a rate of 2 per 1,000 among 12–14 year olds compared with 15 and 12 for 15–19 and 20–24 year olds, respectively. Instead, 12–14 year olds usually accompanied a parent or guardian who was a SAAP client (11 per 1,000).
- The most common reasons for seeking SAAP assistance among young clients were interpersonal relationship problems, such as family breakdown (36% and 33% of all support periods for males and females, respectively). Domestic violence or abuse was a main issue for young female clients (23%). Accommodation problems were also commonly reported (26% for males and 22% for females) (Figure 27.2).
- Young SAAP clients often received multiple services—housing or accommodation services were commonly received (63% of all support periods), as were personal support services for issues such as domestic violence and family breakdown (60%), and basic services such as meals, showers and transport (50%). These proportions are similar to those for all SAAP clients (AIHW 2010g).



Note: Categories correspond to those used in AIHW 2010g, except ‘Interpersonal relationships’, which includes relationship or family breakdown, time out from family or other situation, and interpersonal conflict, and ‘Domestic violence/abuse’, which includes domestic or family violence, sexual abuse and physical or emotional abuse.

Source: Supported Accommodation Assistance Program (SAAP) National Data Collection 2008–09.

**Figure 27.2: Supported Accommodation Assistance Program (SAAP) support periods for clients aged 12–24 years, main reason for seeking assistance, 2008–09**

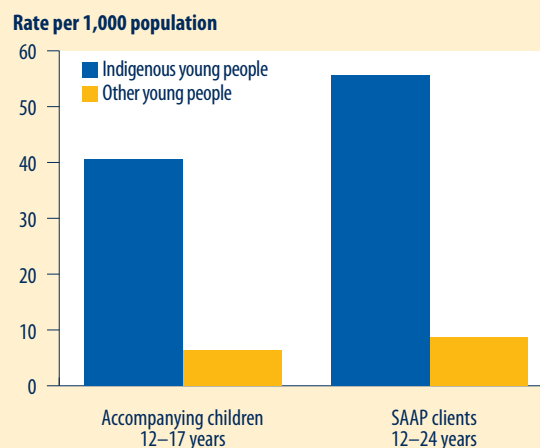
- On an average day, around 202 valid requests for SAAP accommodation by young clients were unmet. Among these, young people presenting alone were more likely to have an unmet request than young families (114 per day compared with 83). The majority of unmet requests occurred because there was a lack of accommodation vacancies (84%), or the type of accommodation or facilities required, such as longer term accommodation or special needs facilities, was not available (8%). Data on unmet demand were not available for Victoria, so this state is excluded from the numbers reported.

## Do rates of homelessness vary for Aboriginal and Torres Strait Islander young people?

In the Counting the Homeless project, Indigenous Australians were found to be over-represented among the homeless population. The reasons for this are complex and include the inter-generational effects of separation from family and culture (a legacy of the Stolen Generations), the relative socio-economic disadvantage of Indigenous Australians, and differing cultural perceptions of homelessness (Birdsall-Jones et al. 2010; Memmott et al. 2003). Although the number of Indigenous young people who were homeless was not reported, 9% of the total homeless population in 2006 were Indigenous, yet only 2% of the general Australian population were Indigenous (Chamberlain & MacKenzie 2008). The methodology used in this report is currently under review.

Indigenous young people were also over-represented in SAAP in 2008–09:

- The rate of Indigenous SAAP clients aged 12–24 years was 6 times that for other young Australians (56 per 1,000 compared with 9) (Figure 27.3). Around 19% of young SAAP clients were Indigenous, which was much greater than the 4% of the Australian population aged 12–24 years who were Indigenous.
- Indigenous young people aged 12–17 years accompanied their parent or guardian to a SAAP agency at a rate 6 times that for other adolescents (41 per 1,000 compared with 6).



Note: 'Other young people' includes non-Indigenous people and people for whom Indigenous status was not stated. Non-Indigenous young people could not be separately identified.

Source: Supported Accommodation Assistance Program (SAAP) National Data Collection 2008–09.

**Figure 27.3: Supported Accommodation Assistance Program (SAAP) clients and accompanying children, by Indigenous status, 2008**

## 28 Overcrowded housing

**Living in crowded conditions can negatively affect a young person's sense of autonomy, social behaviour, health, developmental outcomes and school performance.**

**Almost one in ten young people (9%) were living in overcrowded housing in Australia in 2007–08. Indigenous young people and young people in the most socioeconomically disadvantaged areas were 2–3 times as likely to live in overcrowded housing in 2006.**

Poor living conditions can have substantial effects on people's health and wellbeing (ABS 2010e). Several aspects related to housing conditions, such as overcrowding, damp, mould growth, lack of basic amenities, and housing type and tenures have been found to be related to adverse outcomes in health, education and development (ODPM 2004). Due to financial constraints, young people are more likely to live in substandard or overcrowded dwellings and are therefore at an increased risk of poor health outcomes. The lack of space that young people experience when living in crowded conditions can negatively impact on their sense of autonomy, social behaviour, health, developmental outcomes and academic performance (Evans et al. 2001; Goux & Maurin 2005).

Overcrowding can place excessive demand on bathroom, kitchen and laundry facilities, as well as on sewerage systems such as septic tanks. It has been shown to be associated with an increased risk of infectious diseases, such as meningococcal disease, rheumatic fever, tuberculosis, skin infections and infestations, diarrhoeal diseases, eye and ear infections, and respiratory diseases, and higher adult mortality rates (Harris & Menzies School of Health Research 2000; Howden-Chapman & Wilson 2000; Williams 2009). There is also an association between overcrowding and mental health, but the effects can be positive or negative. Overcrowding might induce psychological stress that could lead to verbal and physical abuse. On the other hand, the presence of many people in a household may indicate less social isolation and perhaps a reduction in stress (Booth & Carrol 2005).

Overcrowding is also associated with poorer educational outcomes. The effects may be both direct and indirect—children's and adolescents' education may be affected by overcrowding directly, through a lack of space for homework, as well as indirectly because of school absences

caused by illness (Habitat for Humanity 2010; ODPM 2004). Young people in overcrowded housing may also have irregular sleep patterns and less sleep due to different schedules of household members, which can lead to difficulty concentrating during the day and negatively affect mood and behaviour (Solari & Mare 2007).

### Young people living in overcrowded housing

Overcrowding can be defined as occurring when the dwelling size is too small for the size and composition of the household living in it, according to a national standard. In Australia, the Canadian National Occupancy Standard (CNOS) is used to measure the bedroom requirements of a household based on the number, age, sex and relationships of household members (ABS 2009n).

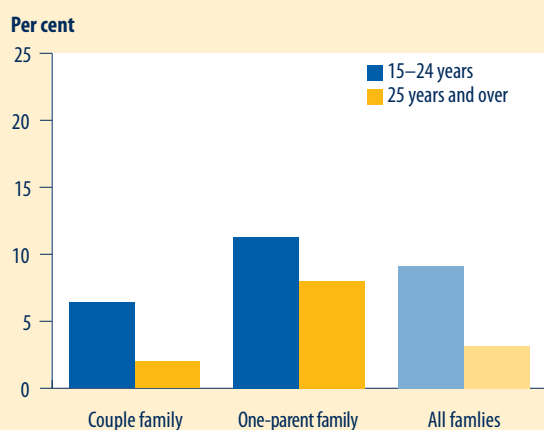
To measure levels of overcrowding, the definition used in this report is young people living in households that require one or more bedrooms to meet the CNOS. This is consistent with the definition of overcrowding used to measure performance under the National Affordable Housing Agreement (COAG Reform Council 2010).

This section examines the prevalence of young people aged 15–24 living in overcrowded housing, using data from the Australian Bureau of Statistics' (ABS) 2007–08 Survey of Income and Housing (see *Appendix 2 Data sources* for more information on this survey). This survey collects information on people aged 15 years and over.

**National indicator:** Proportion of young people aged 15–24 years who live in overcrowded housing

In 2007–08, among young people aged 15–24 years:

- Almost one in ten (9%), or an estimated 259,600 young people, were living in overcrowded housing, that is, a dwelling requiring one or more bedrooms to meet the national standard.
- Similar proportions of males and females were living in overcrowded housing (10% and 8% respectively).
- The prevalence of overcrowding was similar among adolescents and young adults 10% among 15–19 year olds and 8% among 20–24 year olds. When compared with all age groups, the rate of overcrowding was highest for young people almost twice as high as for those aged 25–44 years (5%) and 4 times that of 45–64 year olds (3%).
- More than one in ten (11%) young people in one-parent families were exposed to overcrowding, compared with 6% in couple-parent families. However, this difference was not statistically significant (Figure 28.1).
- Those in rental accommodation were almost twice as likely to experience overcrowding as those who own their own home outright or with a mortgage (13% and 7% respectively).



Note: 'All families' include other one-family households, multi-family households, and one-person households.

Source: AIHW analysis of the ABS 2007–08 Survey of Income and Housing confidentialised unit record file.

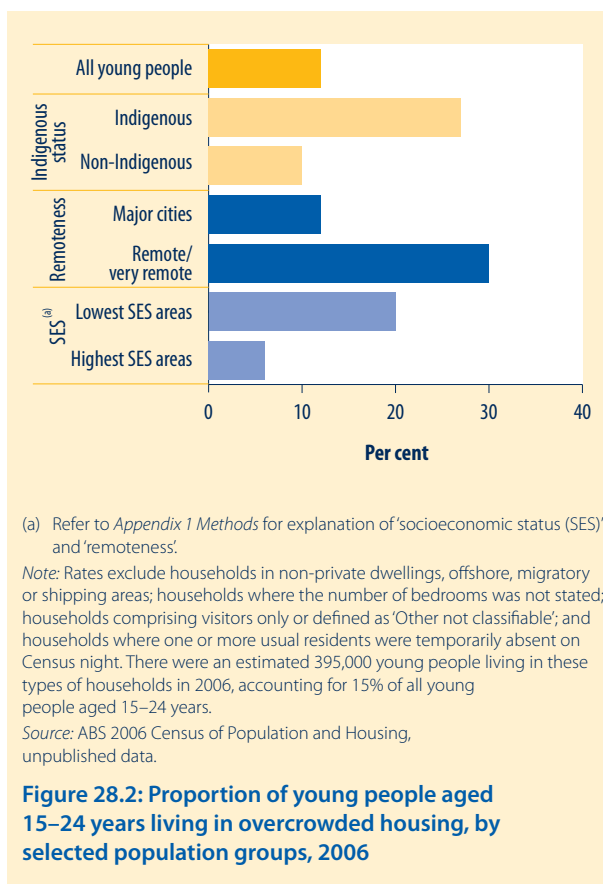
**Figure 28.1: Proportion of people living in overcrowded housing, by family type and age, 2007–08**

## Does overcrowding vary across population groups?

The concept of overcrowding is often linked with lower socioeconomic status and higher unemployment. Overcrowding can be the result of affordability pressures and it can contribute to severe socioeconomic disadvantage through its effects on health and education. Overcrowding can be a subjective concept and may be influenced by cultural norms. For instance, Indigenous people may have different views about what constitutes overcrowding and, for some, living in large family groups may be culturally acceptable or non-problematic (Keys Young (Firm) 1998). Nevertheless, overcrowding can result in severe health and wellbeing problems (Waters 2001). Between 2001 and 2006 the proportion of Indigenous people living in overcrowded housing declined from 31% to 27%, while for non-Indigenous people the proportion remained relatively stable at about 6% (ABS 2010e).

According to the ABS 2006 Census of Population and Housing, among young people aged 15–24 years:

- Indigenous young people were almost 3 times as likely to live in overcrowded housing as non-Indigenous young people (27% and 10% respectively) (Figure 28.2).
- The proportion of young people living in overcrowded housing increased with remoteness, ranging from around one in ten in *Major cities* and *Inner regional* areas (12% and 8% respectively) to 30% in *Remote* and *Very remote* areas combined. Half of the young people in *Very remote* areas were living in overcrowded housing.
- One in five young people (20%) living in areas of lowest socioeconomic status experienced overcrowding, compared with 6% in the highest socioeconomic status areas.





# Part V

## SOCIOECONOMIC FACTORS

Part IV discussed the importance of family, community and physical environmental factors in supporting and protecting the safety of young people. However, the health and wellbeing of young people is also strongly influenced by socioeconomic factors, such as education, employment and income.

Part V focuses on the socioeconomic circumstances of young Australians. People who are socially and economically disadvantaged live shorter lives, have higher rates of illness, disability and death, and often have limited access to health care services. Socioeconomic disadvantage can take many forms, including poor education, unemployment and low income.

People of low socioeconomic status often experience multiple forms of disadvantage, compounding the adverse effects on their health

and wellbeing. Socioeconomic status also has considerable intergenerational effects—many young people share the same level of disadvantage or advantage as their parents, even after they become independent.

The aim of Part V is to provide a comprehensive picture of the socioeconomic circumstances in which young Australians are living, including indicators on:

- education
- employment
- income
- socioeconomic status of parents.

The following table shows how young people fare for the indicators presented in Part V, and whether there has been any improvement over time.

Key: ✓ = favourable trend; ✘ = unfavourable trend; ~ = no change or no clear trend; .. = no trend data available or presented.

Socioeconomic factors	Year of data	Value	Trend	
Education	2009	Proportion of young people in Year 7 and Year 9 achieving at or above the national minimum standards for literacy and numeracy <sup>(a)</sup>	Reading 90–96% Writing 83–96% Numeracy 95–95%	..
		Apparent retention rate from Year 7/8 to Year 12 <sup>(a)</sup>	76%	~
		Proportion of young people aged 15–24 years undertaking study leading to qualifications <sup>(a)</sup>	57%	✓
Employment	2009	Full-time participation rate of young people aged 15–24 years in education or employment <sup>(a)</sup>	81%	~
	2010	Unemployment rate for young people aged 15–24 years <sup>(a)</sup>	10.6%	✘
Income	2008	Proportion of young people aged 15–24 years receiving government income support <sup>(a)</sup>	17%	✓
	2006	Proportion of young people aged 18–24 years who live in households which experience financial stress <sup>(b)</sup>	36%	~
Socioeconomic status of parents	2008	Proportion of young people aged 12–24 years whose parents did not complete secondary school (Year 10 or above)	9%	~
	2006–07	Proportion of young people aged 12–24 years living in jobless families	11%	✓

(a) Most appropriate age range for indicator.

(b) Source data not available for full age range.

## 29 Education

**Education is integral to a young person's health and wellbeing, as well as their future productivity and contribution to society.**

**In 2007, over 80% of Year 7 and Year 9 students met the minimum standards for literacy and numeracy, three-quarters of students remained in school to Year 12, and over half (57%) of all 15–24 year olds were studying for a qualification. However, rates were substantially lower among Indigenous students and those living in remote areas.**

A young person's learning and education is integral to their overall health and wellbeing as well as their future productivity and contribution to society. In the long term, learning is essential to securing a job, and participating in and connecting with the wider community. There is a link between intergenerational poverty and educational attainment—inadequate education and training is a common factor in Australia's most disadvantaged communities and may increase their risk of social exclusion (Vinson et al. 2007). Early educational experiences play a powerful role in determining one's social position in adulthood (Walsemann et al. 2008).

Early educational experiences also influence the onset and progression of physical and mental impairments across the life course (Alley et al. 2007), and individuals with higher levels of education are less likely to smoke, be physically inactive and overweight or obese than those with lower levels of education (Ball & Mishra 2006; Hill et al. 1998; Turrell et al. 2006). While the health advantages of higher levels of education are well recognised, recent studies have indicated that tertiary education itself can be a major source of stress for young people. A South Australian study has found that tertiary students were 4 times as likely to be classified as psychologically distressed than their population peers, and reported lower quality of life and poorer general health than their working peers (Leahy et al. 2010).

Successful educational outcomes during the schooling years are affected by a number of factors, such as a young person's home environment, their engagement with the school environment, the quality of their educational experience and their attitudes to school and learning (Lamb et al. 2004; Walsh & Black 2009). Several other factors have also been shown to have effects, such as school resources, parental level of education and school engagement, and socioeconomic status (Walsemann et al. 2008; Zammit et al. 2002).

This chapter focuses on student achievement at different points in a young person's education—literacy and numeracy outcomes in secondary education, retention to Year 12, and participation in further education.

### Young people meeting the national literacy and numeracy minimum standards

Literacy and numeracy skills acquired in the primary school years are essential for day-to-day living, further educational attainment, social development and employment. A national education goal is for every child leaving primary school to be numerate and able to read, write and spell at an appropriate level. Conversely, poor literacy and numeracy skills are a predictor of early school leaving (Parliament of Australia 2002).

National minimum standards have been developed for reading, writing and language conventions (spelling, grammar and punctuation) and numeracy for students in Years 3, 5, 7 and 9. Students who achieve at or above the minimum standards have demonstrated at least the basic understanding required for their year level. The first National Assessment Program—Literacy and Numeracy (NAPLAN) tests were conducted in 2008, allowing the consistent assessment of all students in Years 3, 5, 7 and 9 across Australia.

This section presents literacy (reading and writing) and numeracy results for students in Years 7 and 9—results are expressed in terms of the percentage of students who achieved at or above the national minimum standards for literacy and numeracy. Information is obtained from the Australian Curriculum Assessment and Reporting Authority's *National report: achievement in reading, writing, language conventions and numeracy 2009* (see *Appendix 2 Data sources* for more information).

**National indicator:** Proportion of young people in Year 7 and Year 9 achieving at or above the national minimum standards for literacy and numeracy

In 2009:

- Most Year 7 and Year 9 students met the minimum standards for reading (ranging from 90% to 96%), writing (83–96%) and numeracy (95% each), similar results to 2008 (Table 29.1).
- A higher proportion of female than male students achieved at or above the national minimum standards for reading and writing, while for numeracy the proportions were similar for males and females.
- The proportion of students that met the standards for literacy declined with increasing years of schooling, particularly for writing among males (89% in Year 7 falling to 83% in Year 9). For numeracy, the rates remained relatively stable across the years.

Data from the national literacy and numeracy tests are not directly comparable with data from previous state- and territory-based tests. For the period 2001–2007, the proportion of students meeting the literacy and numeracy benchmarks remained much the same from year to year (ACARA 2009).

**Table 29.1: Students in Year 7 and Year 9 achieving at or above the national minimum standards, 2009 (per cent)**

	Males		Females	
	Year 7	Year 9	Year 7	Year 9
Reading	92.1	89.9	95.9	94.7
Writing	89.4	82.8	95.8	93.0
Spelling	90.4	86.4	95.5	93.2
Grammar and punctuation	89.5	87.3	94.7	93.6
Numeracy	94.7	94.7	95.0	95.2

Source: ACARA 2009.

While all children enrolled in Year 7 and Year 9 should participate in the education department-based literacy tests, some children may have been absent on the day of the test, some may have been withdrawn by parents or caregivers from the testing, and others may have been attending a school that did not participate in the testing. Other students may have been formally exempted from the tests where testing would not be appropriate, such as students with a language background other than English

who arrived from overseas less than a year before the tests, and students with significant intellectual disabilities. In 2009, the majority of young people in Year 7 and Year 9 participated in the NAPLAN testing. However, 4–8% were exempt, absent or withdrawn from the testing (ACARA 2009).

## School attendance

Regular attendance at school is critical to successful student outcomes, as it helps children develop the basic building blocks for learning, educational attainment and social skills, and is an important factor in educational and life success. However, children who are regularly absent from school are at risk of missing out on these critical stages of educational development and may experience long-term difficulties with learning. According to the *National report on schooling in Australia 2008*, the attendance rate for students in Years 7 to 9 was 87–95% across all states and territories (except the Northern Territory) and across the three school sectors (government, Catholic and independent) (MCEETYA 2008). The lowest attendance rates were in the Northern Territory (81–91%). This is likely to reflect the high proportion of Indigenous students in the Northern Territory (40% compared with 1–7% in the other states and territories) (ABS 2009m), who have lower rates of school attendance. See *Chapter 42 Health and wellbeing of Indigenous young people* for further information on school attendance among Indigenous young people.

## Apparent retention rates to Year 12

Completion of secondary school is the first step along the pathway to either further education or entry into the labour market, and is considered important preparation for participation in many aspects of adult life. Students who fail to complete Year 12 may have fewer employment opportunities and are more likely to experience extended periods of unemployment than Year 12 graduates (Lamb et al. 2000). According to the Australian Bureau of Statistics' (ABS) 2009 Survey of Education and Work, nearly one-third of school leavers aged 15–24 years did not complete Year 12, and those who left school without completing Year 10 were twice as likely to be unemployed than those who completed Year 12 (25% compared with 12% respectively). To address this issue the Council of Australian Governments (COAG) has introduced a youth participation requirement from 1 January 2010, which requires young people to be in school

until they complete Year 10 and then to participate in full-time education, training or employment until they turn 17 (COAG 2009a).

One measure of Year 12 engagement is the apparent retention rate to Year 12, defined as the proportion of full-time students that remains in secondary education from the start of secondary school (Year 7/8) to Year 12. This section uses data the ABS National Schools Statistics Collection (see *Appendix 2 Data sources* for more information on this data collection).

**National indicator:** Apparent retention rate from Year 7/8 to Year 12

In 2009:

- The apparent retention rate was 76% and has remained fairly steady since 2003 (between 74% and 76%). The rate almost doubled during the 1980s (from 35% in 1980 to 64% in 1990), peaking at 77% in 1992 (Figure 29.1).
- The apparent retention rate was higher for females than males (81% compared with 71%), with rates consistently higher for females since 1981. This is consistent with other research showing that males are less likely than females to complete school, and are more likely to undertake vocational programs or to find employment (Curtis & McMillan 2008).

'Apparent progression rates' are another way of looking at student engagement. 'Apparent progression rates' refer to the proportion of

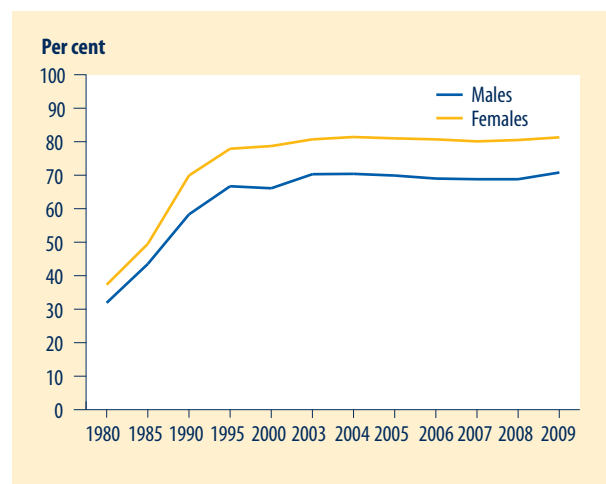
full-time students who continue their high school education by progressing to a higher grade. In 2009, students were less likely to progress to higher grades after reaching Year 10. While almost all students progressed from Year 9 to Year 10 (97%), a considerably lower proportion (88%) progressed from Year 10 to Year 11 and from Year 11 to Year 12 (84%). Males were less likely to progress from Year 11 to Year 12 than females (81% and 86% respectively).

While the apparent retention rate and progression rates provide an estimate of the proportion of young people who stay at school, it is not a measure of successful completion of Year 12. Staying on at school on a full-time basis is not the only option for young people after they complete Year 10. Some start an apprenticeship or begin studies at technical and further education institutions. In 2009, the Australian Government, through COAG, set an attainment target of 90% by 2015 for young people aged 20–24 years attaining Year 12 certificate or Certificate II or equivalent. In 2009, 85% of 20–24 year olds had received a Year 12 Certificate or a Certificate II or equivalent—an increase from 79% in 2001.

## Participation in further education

Increasingly, young people are continuing their studies beyond compulsory schooling. 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.

The proportion of Australians employed in the workforce who have qualifications is increasing and is expected to keep increasing to meet the needs of the labour market. The changing nature of the workforce will have a considerable impact on the education choices made by young people in the coming decades. It is forecast that from 2006 to 2016 the occupational and qualification composition of employment in Australia will change—while overall employment will grow more slowly in the coming decade, employment will grow more quickly in higher skilled than in lower skilled occupations, the employed workforce with a post-school qualification will increase and in most occupations more than half will have qualifications (Shah & Burke 2006).



Source: ABS 2009m.

**Figure 29.1: Apparent retention rates from Year 7/8 to Year 12, 1980–2009**

This section uses the ABS 2009 Survey of Education and Work to examine participation in school and post-secondary school studies, including technical and further education, colleges and tertiary institutions (see *Appendix 2 Data sources* for more information on this survey).

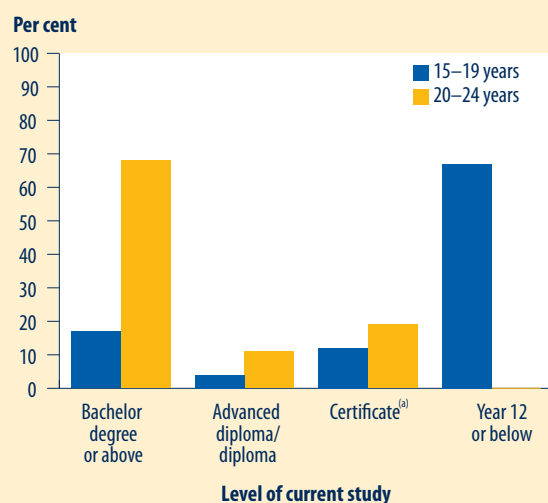
**National indicator:** Proportion of young people aged 15–24 years undertaking study leading to qualifications

In 2009, over half (57%) of young people aged 15–24 years were enrolled in a course of study leading to a qualification (including Year 12 or below):

- Participation rates were considerably higher among 15–19 than 20–24 year olds—76% and 39% respectively—reflecting that young adults are more likely to be in full-time employment (see *Chapter 30 Employment*).
- Overall rates have increased from 53% in 1998, largely attributable to the increase among 20–24 year-olds from 31% to 39% over this period. Among 15–19 year olds the rates have remained relatively stable (around 76–77% since 1998).
- The types of courses undertaken vary by age, reflecting different stages of educational participation (Figure 29.2):
  - Among 15–19 year olds, two-thirds were studying for a Year 12 qualification or below, 17% for a bachelor degree, 9% for a Certificate level III or IV, 4% for a diploma or advanced diploma, and 2% for a Certificate I or II.
  - Among 20–24 year olds, over half (59%) were studying towards a bachelor degree, a further 15% towards a Certificate level III or IV, 11% for a diploma or advanced diploma, and 7% were undertaking postgraduate studies.
- Overall, proportions were similar for males and females (58% and 57% respectively). For both age groups, females were more likely to be studying towards a bachelor degree, while males were more likely to be studying for a Certificate III or IV.

Changes in the Australian economy place early school leavers, particularly those without post-school qualifications, at greater risk of low income, unemployment and dependence on government welfare (Lamb et al. 2004). In 2009, according to the ABS Survey of Education and Work, 44% of 20–24 year olds had obtained a non-school qualification (that is, educational attainments other than those of pre-primary, primary or secondary

education). Of these, one-third each had obtained a Certificate level III or IV or Bachelor's degree, and 15% a diploma or advanced diploma. Females were more likely to have completed a Bachelor's degree (40% compared with 26% for males), while males were more likely to complete a Certificate level III or IV (41%, compared with 26% for females). Management and commerce was the most popular field of study for females, whereas engineering and related technologies was more common among males (ABS 2009e).



(a) Includes Certificates I–IV and certificate not further defined.  
 Note: Per cent refers to the level of current study of those 15–24 years who are currently studying  
 Source: ABS 2009e.

**Figure 29.2: Young people aged 15–24 years undertaking study leading to a qualification, 2009**

## Does educational achievement vary across population groups?

Some population groups in Australia, in particular Aboriginal and Torres Strait Islander young people, those living in remote areas and in socioeconomically disadvantaged areas, 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 is a range of factors that may account for the poorer educational outcomes of Indigenous young people, including higher absenteeism and lower school attendance rates. Improving educational outcomes for Indigenous young people is one way to help to close the gap that exists in life expectancy between Indigenous and non-Indigenous Australians.



Young people from socioeconomically disadvantaged backgrounds are also more likely to experience conditions that interfere with learning outcomes. Compared with their more affluent peers, Australian students from low socioeconomic backgrounds are more likely to underperform in literacy and numeracy, have negative attitudes to school, be truant, be suspended or expelled, and leave school early. They are also more likely to struggle with the transition from school to work, and less likely to take up or succeed in further education and training (Lamb & Mason 2008; Walsh & Black 2009).

There are conditions specific to regional and remote areas of Australia that may affect school performance. Schools in these areas are acknowledged to be more expensive to run, and have difficulty recruiting and retaining quality teaching staff. Schools in remote areas also reported that their student's learning was hindered by the poor physical condition of the buildings, a shortage of educational resources, a lack of instructional material, a lack of multimedia resources and inadequate laboratory facilities (Cresswell & Underwood 2004). Further, the lower education participation rate among young people living in *Regional* and *Remote* areas may be affected by the mobility of young people and their need to move to larger cities to access educational opportunities (ABS 2008a), but may also reflect the perception that tertiary education is of lesser importance to life and career opportunities for people living in these areas (James 2000).

### Aboriginal and Torres Strait Islander young people

Indigenous young people were:

- less likely to have achieved the Year 7 and Year 9 reading, writing and numeracy minimum standards—73%, 70% and 76% for Year 7 students and 67%, 59% and 75% for Year 9 students, respectively, in 2009—20–30 percentage points lower than for non-Indigenous students (Table 29.2)
- far less likely to remain in school to Year 12, with an apparent retention rate of 45% compared with 77% for non-Indigenous students in 2009. However, the gap in apparent retention rates has narrowed over the last decade, from 39 percentage points in 1999 to 32 percentage points in 2009 (ABS 2009m)
- less likely to be studying for a qualification than all young people (41% compared with 58% for 15–24 year olds in 2008, respectively), with the difference between Indigenous and all young people even greater for 20–24 years (16% and 39% respectively).

### Remoteness

- Students in Year 7 and Year 9 in *Remote* and *Very Remote* areas were less likely to meet the minimum standards for reading, writing and numeracy than those in *Metropolitan* areas in 2009 in *Remote* areas 10–18 percentage points and in *Very remote* areas 35–47 percentage points lower than those in *Metropolitan* areas (Table 29.2). These patterns may be influenced by the high proportion of Indigenous students in *Remote* and *Very remote* areas, and the poorer performance of these students. Remoteness is classified according to MCEETYA Schools Geographic Location scale.
- Young people aged 18–24 years living in *Major cities* were twice as likely to be studying for a qualification as those living in *Outer regional* and *Remote* areas combined (43% and 22% respectively, according to the ABS 2006 General Social Survey).

### Socioeconomic status

- Students in Year 7 and Year 9 with parents with the lowest level of educational attainment (Year 11 or equivalent or below) were less likely to achieve the minimum standards for reading, writing and numeracy (79–90%) than those with parents with a bachelor degree or above (96–99%) (Table 29.2). Further, students with parents not employed for the past 12 months were less likely to achieve the minimum standards for reading, writing and numeracy (75–87%) than students with parents in senior management and qualified professions (95–99%).
- Young people aged 18–24 years living in areas of lowest socioeconomic status (SES) were almost half as likely to be studying for a qualification as those in the highest SES area (31% and 59% respectively, according to the ABS 2006 General Social Survey). Further, those in the highest SES areas were almost 3 times as likely to have a bachelor degree or above as those in the lowest SES area (16% and 6% respectively).

## How does Australia perform internationally in reading, mathematics and science?

Internationally, awareness of the social and economic consequences of underachievement in literacy and numeracy has highlighted the importance of monitoring these core educational outcomes (OECD 2007b; UN 2005). There are currently no international data available on school-aged students



**Table 29.2: Students in Year 7 and Year 9 achieving at or above the minimum standards for reading, writing and numeracy, by selected population groups, 2009 (per cent)**

	Reading		Writing		Numeracy	
	Year 7	Year 9	Year 7	Year 9	Year 7	Year 9
Indigenous status						
Indigenous	73.2	67.0	69.9	59.0	75.8	75.0
Non-Indigenous	95.0	93.5	93.7	89.2	95.8	96.0
Remoteness						
Metropolitan	95.0	93.1	93.9	89.4	95.7	95.7
Provincial	92.9	91.3	90.7	85.0	94.0	94.3
Remote	83.1	79.3	80.4	71.3	85.3	85.3
Very remote	53.9	48.4	52.2	42.7	61.2	59.7
Parental education level						
Bachelor degree or above	98.5	98.0	97.5	95.7	98.7	98.8
Year 11 or equivalent	87.5	85.2	85.6	78.6	89.3	90.1
Parental employment						
Senior management and qualified professionals	98.5	98.0	97.3	95.4	98.6	98.7
Not employed in previous 12 months	84.5	82.0	82.5	75.3	86.2	87.3

*Notes:*

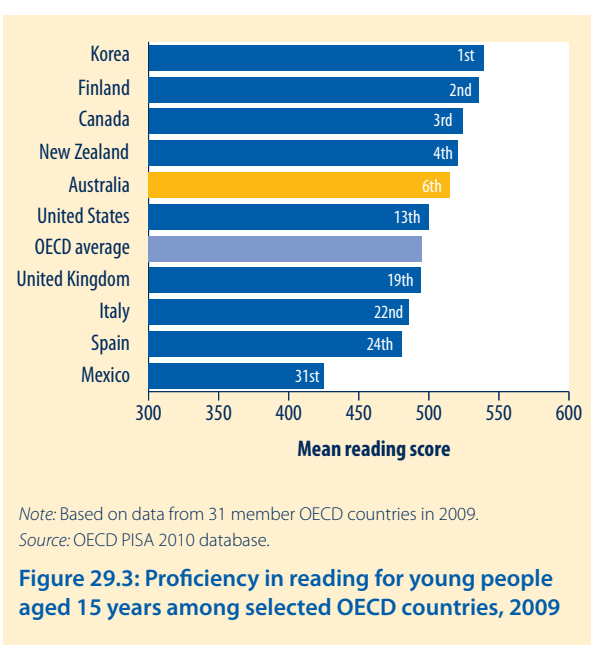
1. Parental education and parental employment was not stated for 19–24% of students.
2. Remoteness classified according to the MCEETYA Schools Geographic Location scale (see Jones 2004 for further information)

Source: ACARA 2009.

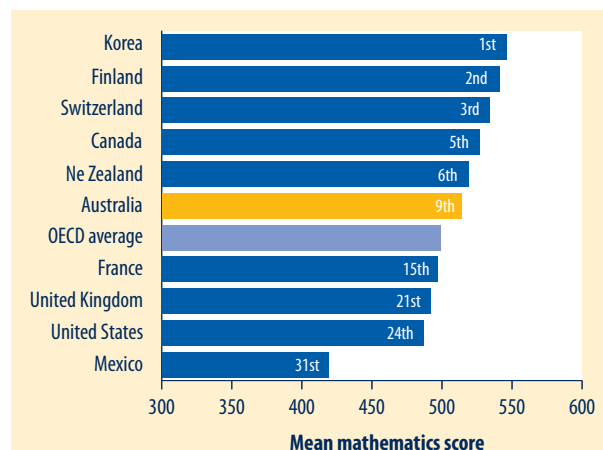
meeting literacy and numeracy minimum standards; however, data are available from the Programme for International Student Assessment (PISA) surveys on proficiency in reading, mathematics and science among 15 year old students.

PISA results show that in 2009, among 31 Organisation for Economic Co-operation and Development (OECD) countries, Australia's mean scores for reading (515), mathematics (514) and science (527) were higher than the OECD averages of these countries (495, 499 and 503 respectively).

- For reading, Australia ranked 6th out of the 31 countries with a score of 515. The highest ranked countries were Korea (539) and Finland (536), while Mexico was the lowest ranked country (425) (Figure 29.3).
- Australia ranked 9th for mathematics with a score of 514. Korea (546) and Finland (541) again had the highest scores and Mexico the lowest (419) (Figure 29.4).
- Finland (554) and Japan (539) were the highest ranked countries for science. Australia ranked 6th (527) and Mexico 31st (416).



While Australia generally performs well, some groups of Australian students perform more poorly. The 2006 PISA results showed a wide gap in academic achievement between Australia's Indigenous and non-Indigenous students, with very little improvement since PISA was first conducted in 2000. In 2006, the average performance of Australia's Indigenous students placed them 2.5 years behind Australia's non-Indigenous students (Thomson & De Bortoli 2008).



Note: Based on data from 31 member OECD countries in 2009.  
Source: OECD PISA 2010 database.

**Figure 29.4: Proficiency in mathematics for young people aged 15 years among selected OECD countries, 2009**

## 30 Employment

**Young people not participating in employment, education or training are more likely to experience social and economic disadvantages and poorer physical and mental health, and are at risk of social exclusion.**

**The great majority of young people (81%) were fully participating in education and/or work in 2009. However, one in ten young people were unemployed in 2010 (twice that of the overall labour force population), with unemployment rates twice as high among Indigenous youth.**

The completion of compulsory education is an important time for young people, and continuing participation in education, or commencing employment, helps develop individual capability and a socially inclusive society. However, the transition from school to further education or work is a time when young people are vulnerable because they may experience extended or fractured transitions (Jeffrey & McDowell 2004). Although the majority make a successful transition, there is a small proportion that is not in employment, education or training. These young people experience social and economic disadvantages and are at risk of social exclusion.

Not participating in employment, education or training is linked to future unemployment, lower incomes and employment insecurity (ABS 2010a). The long-term effects of this are most severe when they lead to prolonged unemployment. Subsequent consequences may also include difficult relationships, lack of social and political participation or inability to participate fully in society, poor physical and mental health, drug and alcohol abuse, parenting at a young age and criminal activity (Bynner & Parsons 2002; Coles et al. 2002). Further, the outcomes of non-participation in employment, education or training may have different effects on young men and women. For men, the main outcome appears to be underemployment or unemployment, while negative psychological states, such as a lack of a sense of control over life and dissatisfaction with life, tend to be more prevalent among women (Bynner & Parsons 2002).

For some young people who are not participating in employment, education or training, the foundations of disengagement are laid before the age of 16 years. The main risk factors for disengagement include deprivation, an unstable

home environment, truancy, behavioural issues, parental non-involvement in education, learning difficulties and disabilities, declines in academic achievement, and low aspirations as a result of joblessness within families and communities (Coles et al. 2002; Tunnard et al. 2008).

### Young people fully engaged in education or employment

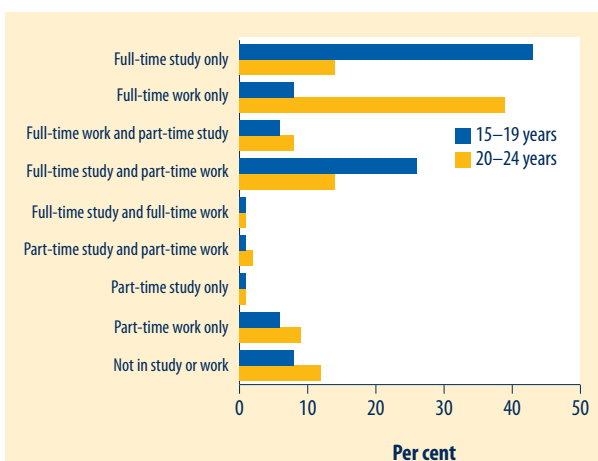
Youth unemployment or educational inactivity has been linked to a dependence on parents or on social welfare, family problems, substance abuse, physical abuse, violence and crime (Clifford 2002; UN 2007). To tackle this issue, the Australian Government has introduced several new measures to facilitate the participation of young people aged 15–20 years in education and employment. Through the Compact with Young Australians and the National Youth Participation Requirement initiatives, young people without a Year 12 or equivalent qualification must undertake full-time (25 hours or more a week) education or training to be eligible for Youth Allowance, and those in part-time education or training must undertake additional activities (for example voluntary work or paid employment) to meet the 25 hours a week target (COAG 2009a).

The Australian Bureau of Statistics' (ABS) Survey of Education and Work collects information on young people aged 15 years and over fully engaged in education or employment, defined as participating in either full-time education or employment or a combination of full-time and part-time education or employment (see *Appendix 2 Data sources* for more information on this survey). Survey data used in this chapter were collected prior to the Australian Government's changes to the eligibility criteria for the Youth Allowance.

**National indicator:** Full-time participation rate of young people aged 15–24 years in education or employment

In 2009, among young people aged 15–24 years:

- The great majority (81%) were fully participating in education and/or employment, and this rate has remained relatively steady over the last decade.
- Adolescents were more likely to be fully engaged than young adults—85% and 78% for 15–19 and 20–24 year olds, respectively.
- Full participation rates were similar for males and females for both 15–19 year olds (86% and 83% respectively) and 20–24 year olds (80% and 76%).
- One in five young people (28%) had more than a full-time load, either full-time education with additional employment or full-time employment with additional education, with 15–19 year olds almost twice as likely to have more than a full-time load (26%) than 20–24 year olds (14%) (Figure 30.1).
- Over two-thirds of 15–19 year olds (69%) were in full-time education (including 27% who combined full-time education with full-time or part-time employment). However, among 20–24 year olds full-time employment was the dominant category, with nearly half (47%) in full-time employment (including 9% who combined full-time employment with full-time or part-time education).



Source: ABS Survey of Education and Work 2009.

**Figure 30.1: Participation in education and/or employment among young people aged 15–24 years, 2009**

- Almost one in five (19%) young people were not fully engaged, with half of these not in education nor employment. Those aged 20–24 years were more likely not to be fully engaged than 15–19 year olds (22% and 16% respectively). The proportion not fully engaged, including those not in education nor in work, has remained relatively stable over the last decade. Young people aged 15–20 years not fully engaged may have difficulty in obtaining the Youth Allowance according to the eligibility criteria of 25 hours or more involvement in education, training or employment.

According to the ABS Survey of Education Training and Experience, in 2009, almost one in five (18%) young people aged 15–24 years wanted to participate in study in the previous 12 months, but did not do so. One-third of these young people cited financial reasons (19%), work-related reasons (15%) or no time (17%) as reasons for not participating in formal study in the previous 12 months (ABS 2009f).

## Youth unemployment

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 and poor physical and mental health. Unemployment in particular has been shown to be associated with adverse health effects, such as lower levels of general and physical health, more anxiety and depression, higher rates of smoking, and higher suicide rates among both young people and adults (Lakey et al. 2001; Mathers & Schofield 1998; Muir et al. 2003).

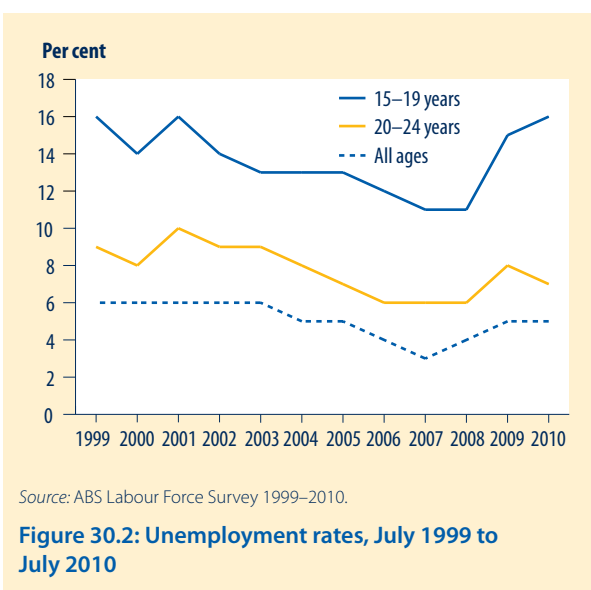
For young people, labour market indicators, such as unemployment and employment, may be misleading measures of labour market activity, as many young people tend to combine schooling with part-time work or searching for a job. They often intersperse spells of inactivity with spells of work or job searching, and the process of settling into the labour market is often prolonged and discontinuous rather than a smooth and quick transition (Quintini et al. 2007). According to the ABS Survey of Education and Work, many unemployed young people were studying full-time or part-time—51% and 33% of unemployed 15–19 and 20–24 year olds were enrolled in full-time or part-time education in 2009.

This section uses the ABS Labour Force Surveys to examine the unemployment rate of young people (see *Appendix 2 Data sources* for more information). Unemployment in this report is defined as ‘the number of unemployed young people expressed as a proportion of the total labour force’ (that is, employed plus unemployed people). To be unemployed a person must have actively looked for work at any time in the last 4 weeks and be currently available for work.

**National indicator:** Unemployment rate for young people aged 15–24 years

In July 2010, among young people aged 15–24 years:

- The unemployment rate for young people (10.6%) was more than twice as high as the overall rate (5.0%). The rates were 16.0% for 15–19 year olds, 7.2% for 20–24 year olds, and 3.8% for 25–64 year olds. Over the last decade, the unemployment rate among 15–19 year olds has remained consistently higher than for 20–24 year olds (1.4 to 2.2 times as high over the period) (Figure 30.2).
- Almost one-quarter (23%) of the unemployed population were aged 15–19 years and a further 16% were aged 20–24 years.
- The unemployment rate was similar for males and females among 15–19 year olds (15.9% and 16.1% respectively) and 20–24 year olds (7.4 and 7.0% respectively).
- Over one in ten unemployed young people (13%) were long-term unemployed (that is, unemployed for 12 months or more). The rate varied by age, from 11% among 15–19 year olds to 15% among 20–24 year olds and 22% among 25–64 year olds. The average duration of long-term unemployment was 85 weeks for 15–19 year olds and 92 weeks for 20–24 year olds.
- The youth unemployment rate has increased by 34% since July 2008, when the rate was 7.9%; an increase was also observed for 25–64 year olds (23%; from 3.1% to 3.8%). This recent increase in unemployment rates largely reflects the economic downturn in 2009. However, these rates are still lower than in 2001, when the unemployment rate was 16.0% and 10.2% for 15–19 and 20–24 year olds, respectively. Between 2001 and 2008, unemployment rates fell considerably for both young people and those aged 25–64 years (by around 37% each) (Figure 30.2).
- Part-time employment has remained fairly stable for 15–19 year olds over the last decade, at 30–31% in 1999 and 2010, but has increased slightly for 20–24 year olds, from 20% to 26% over this period. Coinciding with this has been a slight decline in the proportion of 15–19 year olds in full-time employment (from 18% to 15%) and a slightly larger decline among 20–24 year olds (from 55% to 48%).
- The proportion of young people not in the labour force has remained fairly constant since 1999—between 43% and 45% for 15–19 year olds, and between 18% and 20% for 20–24 year olds.



**Figure 30.2: Unemployment rates, July 1999 to July 2010**

### Youth underemployment

Although the majority (61%) of young people are employed, almost half of these young people (47%) were in part-time employment in July 2010. A characteristic of part-time employment is that jobs can be on a casual basis, without leave entitlements, and may not lead to full-time positions or fulfil young people’s career aspirations. Young people who work part-time and would prefer and are available to work more hours are considered underemployed part-time workers. Underemployment can have a detrimental effect on the financial, personal and social lives of young people—it affects their ability to find employment in their chosen field and to have job security. Underemployed workers may also be at risk of low self-esteem, alcohol abuse and depression (Dooley et al. 2000; Friedland & Price 2003).

In September 2009, according to the ABS Underemployed Workers Survey, almost one-third (33%) of all underemployed part-time workers

were aged 15–24 years. The youth part-time underemployment rate was nearly twice that for those aged 25 years and over (11.3% and 5.2% respectively), and was higher for 15–19 year olds than 20–24 year olds (15.0% and 9.0% respectively). The rate for young people has increased since September 2006, from 8.7% to 11.3% in September 2009.

Around one-quarter (24%) of underemployed part-time workers aged 15–24 years had been looking for more hours of work for 1 year or more. The average length of time young people were underemployed was 31 weeks for 15–19 year olds and 42 weeks for 20–24 year olds.

## Do rates of employment vary across population groups?

Young people living in rural and remote areas of Australia, including Aboriginal and Torres Strait Islander young people, have less access to higher education and employment opportunities, which makes them particularly vulnerable to social exclusion. Some of the reasons for this is that Indigenous young people and those living in rural and remote areas are more likely to be absent from school, are less likely to meet the minimum standards for literacy and numeracy, and are less likely to remain in school until Year 12 (see *Chapter 29 Education*), which may limit their opportunities for further education, securing a job, and participating and connecting with the wider community.

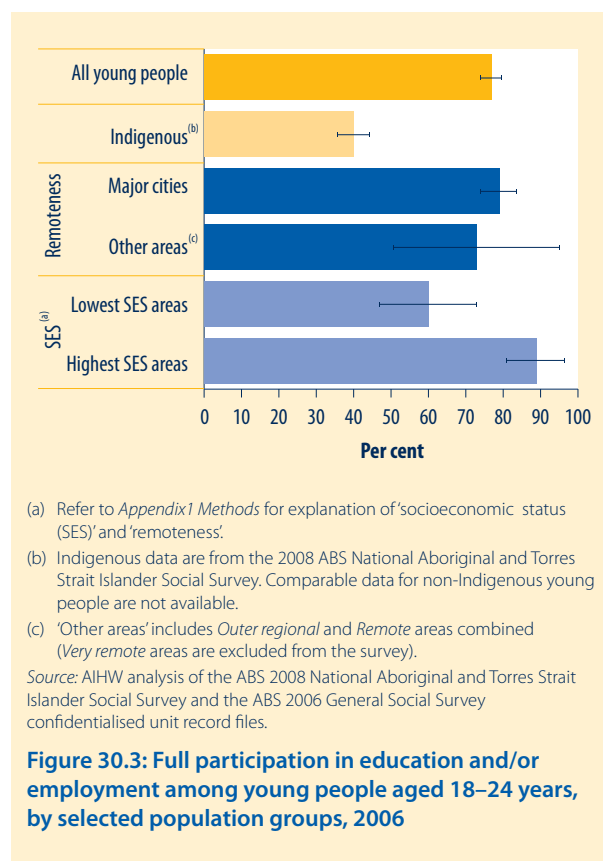
Major improvements in social determinants, such as education and employment, have the potential to help to close the gap that exists in life expectancy between Indigenous and non-Indigenous Australians. Halving the gap in employment outcomes between Indigenous and non-Indigenous Australians is a key priority of the Council of Australian Governments' Closing the Gap on Indigenous disadvantage initiative.

Information on full participation in education and employment for subpopulations of Australian young people is available from the ABS General Social Survey and the ABS National Aboriginal and Torres Strait Islander Social Survey for young people aged 18 years and over.

## Aboriginal and Torres Strait Islander young people

Indigenous young people were:

- almost half as likely as all young people aged 18–24 years to be participating fully in education or employment (40% and 77% respectively), and were over 3 times as likely not to be in education or employment as all young people (40% and 12% respectively), according to the ABS 2008 National Aboriginal and Torres Strait Islander Social Survey and the ABS 2006 General Social Survey (Figure 30.3)
- twice as likely to be unemployed as all young people aged 15–24 years—26.5% and 11.5% respectively, according to the ABS Labour Force Survey 2009 (ABS 2010f).





## Remoteness

Among young people:

- There was no statistically significant difference in full participation in education and/or employment among 18–24 year olds living in *Major cities* (79%) and *Outer regional and Remote* areas combined (70%) in 2006, according to the ABS General Social Survey.
- Unemployment rates among 15–24 year olds were higher for those living outside capital cities (13.0%) than for those in capital cities (9.2%) in July 2010.

## Socioeconomic status

According to the ABS 2006 General Social Survey, among young people aged 18–24 years, those living in the lowest socioeconomic status (SES) areas were less likely to be fully participating in education and/or employment than those in the highest SES areas (60% and 89% respectively). The disparity is even greater for those not participating in education or employment, where rates were 8 times as high for those living in the lowest SES areas (25% compared with 3% for the highest SES areas).

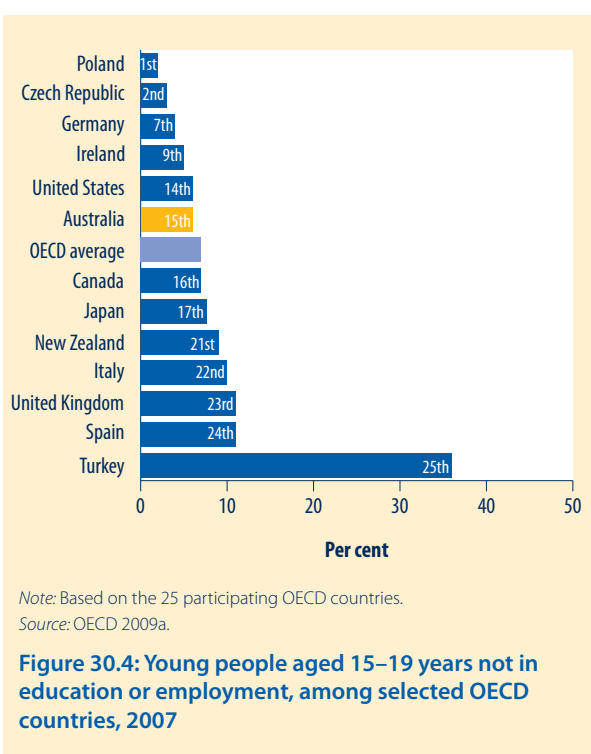
## How does Australia perform internationally on employment indicators?

### Participation in education or work

Australia ranked 15th out of 25 OECD (Organisation for Economic Co-operation and Development) countries, for the proportion of 15–19 year olds not in education or employment in 2007. With a proportion of 6.5%, Australia ranked higher than the OECD average (7.2%) but had a rate twice as high as Poland (2.5%), the Czech Republic and Luxembourg (2.9% each). Turkey and Spain had the highest rates at 36% and 11% respectively—nearly 5 times and 2 times Australia's rate, respectively (Figure 30.4).

### Unemployment

Australia compares favourably with other OECD countries for the unemployment rate among 15–19 year olds, ranking 10th out of 30 OECD countries in 2008. With a rate of 12.8%, Australia ranked higher than the OECD average (16.0%), but had a rate considerably higher than Switzerland (7.1%) and Mexico (7.3%). The Slovak Republic and Spain had the highest unemployment rates, at 41.5% and 39.4% respectively—over 3 times the rate of Australia.



**Figure 30.4: Young people aged 15–19 years not in education or employment, among selected OECD countries, 2007**

## 31 Income

**Young people on a low income are more likely to have insufficient economic resources to support a minimum standard of living, which affects their health and wellbeing and places them at greater risk of social exclusion.**

**In 2008, one in six (17%) young people aged 15–24 years received government income support and over one-third (36%) lived in households that had experienced financial stress, with rates substantially higher among Indigenous young people and those living in the most socioeconomically disadvantaged areas.**

Young people with a low income or living in low-income families are more likely to have insufficient economic resources to support a minimum standard of living. This can affect their nutrition and access to medical care, the safety of their environment, the level of stress in the family, the quality and stability of their care, and the provision of appropriate housing, heating and clothing (ABS 2006b; Shore 1997). The effects of low income may be broader than just material deprivation: it also includes exclusion from social networks and isolation from community life (The Senate Community Affairs References Committee 2004). Young people on low incomes can also experience adverse health outcomes, particularly mental health outcomes, partly due to their inability to pay for basic necessities such as food or medication. Low income, particularly when combined with limited educational attainment, is also associated with declines in health over time (Lantz et al. 2005).

Young people face significant disparities in income compared with the wider population (ACOSS 2003). They tend to have low incomes due to their stage in life and involvement in education and employment. This affects their ability to find secure, appropriate and affordable housing, which may result in their living in overcrowded conditions, moving frequently when more affordable housing can be obtained or, in the most extreme situations, becoming homeless (see *Part IV*). Many young people face difficulties in making the transition to independent living, because of insufficient support or lack of economic resources (Fahmy 2006; France 2008; Furlong & Cartmel 2006).

Young people on government income support, such as those who are unemployed, underemployed, studying full-time or with a long-term health condition, may experience financial hardship that can affect their health and wellbeing (Marmot 2002).

Those who live outside the family home, especially if they are aged between 16 and 19 years, have an increased risk of poverty, while those who stay at home may be protected from the harshness of poverty by family circumstances. However, if young people live in jobless households, this protection will be limited (Aassve et al. 2006).

### Income received by young people

The income received by young people can be obtained from a variety of sources, including from wages and salaries, government pensions and allowances, and other sources such as income from business (ABS 2007c). In 2007–08, the principal source of income among young people aged 15–24 years was wages and salaries (62%), followed by government pensions and allowances (10%). Nearly one in five young people (19%) received no income (ABS 2009h).

In 2007–08, the mean income received by young people was \$405 per week, less than half the amount received by those aged 25 years or over (\$886). Half of young people received less than \$291 per week. The mean income for 20–24 year olds was 3 times that of 15–19 year olds (\$628 and \$173 respectively), reflecting that many 15–19 year olds are still at school and financially dependent on their parents. Young people who are financially dependent on their parents may have different financial needs and expectations from their peers, depending on the willingness and ability of their parents to provide for them financially. The mean income for young people aged 15–24 years living with their parents was \$296 per week, compared with \$651 for those not living with their parents.

The financial situation of the whole household is also an important factor when considering whether

young people have sufficient economic resources. The mean equivalised disposable household income (adjusting household income for household size and composition) where the reference person was aged 15–24 years was \$756 per week, compared with \$811 per week for all households.

### Government income support

Young people for whom the principal source of income is government pensions and allowances or those who live in households where this is the case, have a reduced disposable income and are more likely to experience socioeconomic disadvantage. The Australian Government provides support to young people and families on low incomes through such income support payments as Youth Allowance, Newstart Allowance, Community Development Employment Projects, Disability Support Pension and Parenting Payment. Income support may also be provided to young people who are studying, and while these young people may not be disadvantaged in the longer term they can be while they are studying.

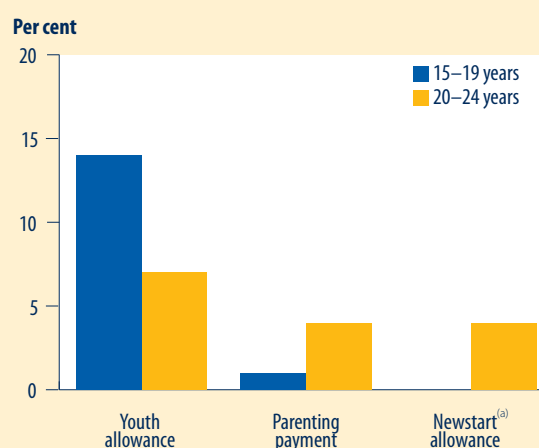
The Australian Government's Compact with Young Australians and the National Youth Participation Requirement initiatives require young people aged 15–20 years without a Year 12 or equivalent qualification to undertake full-time (25 hours or more a week) education or training to be eligible for Youth Allowance (COAG 2009a). Data used in this chapter were collected prior to the Australian Government's changes to the eligibility criteria for the Youth Allowance.

**National indicator:** Proportion of young people aged 15–24 years receiving government income support

In 2008, among young people aged 15–24 years:

- Almost half a million young people (17% of all young people) received government income support, a decline from 24% in 2001.
- Young females were more likely to receive government income support than young males (20% and 14% respectively).
- Similar proportions of 15–19 and 20–24 year olds received income support (16% and 17% respectively), and the rate of decline since 2001 was similar for both age groups— between 2001 and 2008 proportions declined from 23% to 16% for 15–19 year olds and from 25% to 17% for 20–24 year olds.

- Youth Allowance was the most common government income support received by young people (10% overall), with rates twice as high among 15–19 as 20–24 year olds (14% and 7% respectively) (Figure 31.1). Over three-quarters of young people (78%) receiving the Youth Allowance were full-time students. A small proportion of young adults aged 20–24 years also received the Newstart Allowance (4%) and the Parenting Payment (2%).



(a) Newstart Allowance is paid to eligible people from age 21 and therefore the denominator population for this benefit was 21–24 year olds.

Sources: Government income support data, 2006 and 2008; SuperStar Pensions Database; Newstart SuperStar Database, unpublished data.

**Figure 31.1: Government income support received among young people aged 15–24 years, by type of benefit, 2001 and 2008**

The Australian Bureau of Statistics' (ABS) 2007–08 Survey of Income and Housing also found that more than half (60%) of young people who received government income support as their principal source of income were studying full-time, and the majority of those who did not receive an income were also studying full-time (83%).

Commonwealth Rent Assistance (CRA) is another type of income support provided to low-income households and individuals in the private rental market to help improve their housing situation. In June 2009, 138,600 young people received CRA, with twice as many young females receiving rent assistance than young males (92,000 and 47,000 respectively). After receiving the CRA the proportion of young people paying more than half of their income on rent decreased from 44% to 20%.

## Young people experiencing financial stress

Financial stress is not limited to households with low incomes, nor does being on a low income necessarily imply that a person experiences financial stress. Financial stress refers to an inability to meet basic financial commitments, such as the ability to raise \$2,000 in an emergency, or having cash flow problems, including paying bills, buying food or having to seek financial help from family and friends. Measures of financial stress therefore provide direct evidence on the adequacy of both the economic resources and the financial knowledge of individuals and households (Butterworth & Crosier 2006).

Young people who are not fully engaged in study or employment are more likely to experience financial stress, and these young people are more likely to be socially disengaged, to feel dissatisfied with their life and to experience poorer health outcomes (Long 2006). People in financially insecure positions are also at greater risk of poor health, along with greater use of drugs and poor nutrition (Mathers & Schofield 1998).

A number of financial stress measures are commonly used in Australian surveys to identify households that are most at risk of experiencing deprivation because of a shortage of money. The measures used, for example, in the ABS 2006 General Social Survey were the ability to raise \$2,000 in an emergency within a week, cash flow problems and dissaving actions. Individual measures do not, on their own, identify a household as having financial stress; they may simply reflect household financial management through the temporary prioritising of particular expenditures over others. However, where households report multiple financial stress indicators, it is more likely that these households are experiencing genuine financial difficulties (ABS 2004a).

The ABS 2006 General Social Survey is used in this chapter to report on financial stress, with information available for young people aged 18–24 years living in households that have experienced financial stress (see *Appendix 2 Data sources* for more information on this survey).

In this section, 'financial stress' for young people is defined as those in households unable to raise \$2,000 in an emergency, as well as those with selected cash flow problems and hardship that are

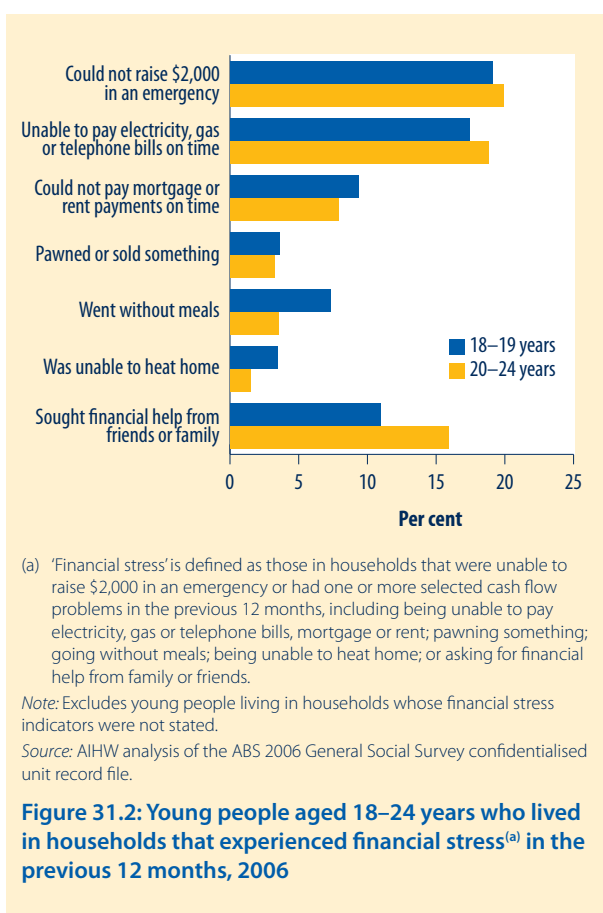
most appropriate for young people. For example, dissaving actions such as increasing the levels of debt or reducing savings have not been included in this definition as these are not as relevant for young people as for other age groups. The selected cash flow problems or hardship measures include being unable to pay electricity, gas or telephone bills, mortgage or rent; pawning something; going without meals; being unable to heat home; or asking for financial help from family or friends. Experiencing any one of these financial stressors can have a considerable effect on a young person's ability to live independently and begin or continue with their education, and can adversely affect their health and social inclusiveness.

**National indicator:** Proportion of young people aged 18–24 years who live in households that experience financial stress

In 2006, among young people aged 18–24 years:

- Over one-third of young people (36%) lived in households that were unable to raise \$2,000 in an emergency or had one or more selected cash flow problems in the previous 12 months (see above), similar to the rate in 2002.
- Similar proportions of males and females experienced at least one of the selected financial stressors (35% and 36% respectively), and this pattern was observed for 20–24 year olds (36% and 37% respectively) and 18–19 year olds (33% each).
- Of those young people whose household experienced financial stress, half experienced one financial stressor (50%), 24% experienced two, and 26% three or more financial stressors.
- Level of financial stress experienced varied by the living arrangements of young people. Over one-quarter of young people (26%) living with parents experienced at least one of the financial stressors. This increased to 38% for those living as a couple family, 52% for those living away from the family and 73% for those living as a lone parent.

- Overall, nearly one in five young people lived in households that could not raise \$2,000 in an emergency or pay electricity, gas or telephone bills on time (20% and 18% respectively), while one in six (15%) asked for financial help from family or friends. These patterns were similar for 18–19 and 20–24 year olds (Figure 31.2).



## Does receiving income support or experiencing financial stress vary across population groups?

'Adequate' income and the source of income can vary across population groups, including Aboriginal and Torres Strait Islander young people, and those living in remote areas and areas of socioeconomic disadvantage. As more than half of Indigenous young people are not studying or employed they are at an increased risk of having less disposable income to meet their needs and are more likely to be dependent on government income support than other young people. Young people who come from families that live in poor areas or are employed in some of the most insecure

occupations are at an increased risk of poverty because they have low incomes and limited support networks to help them make the transitions into independent living (France 2008).

### Aboriginal and Torres Strait Islander young people

- In 2008, Indigenous young people aged 15–24 years were almost 3 times as likely to receive government income support as non-Indigenous young people (45% and 16% respectively) according to the Government Income Support Database.
- In 2006, Indigenous young people aged 18–24 years were more likely than all young people (60% and 36% respectively) to live in households that experienced one or more financial stressors (unable to raise \$2,000 in an emergency or one or more selected cash flow problems in the previous 12 months), according to the ABS 2008 National Aboriginal and Torres Strait Islander Social Survey and the 2006 General Social Survey (Figure 31.3).

See *Chapter 42 Health and wellbeing of Indigenous young people* for further information on income and financial stress among Indigenous young people.

### Remoteness

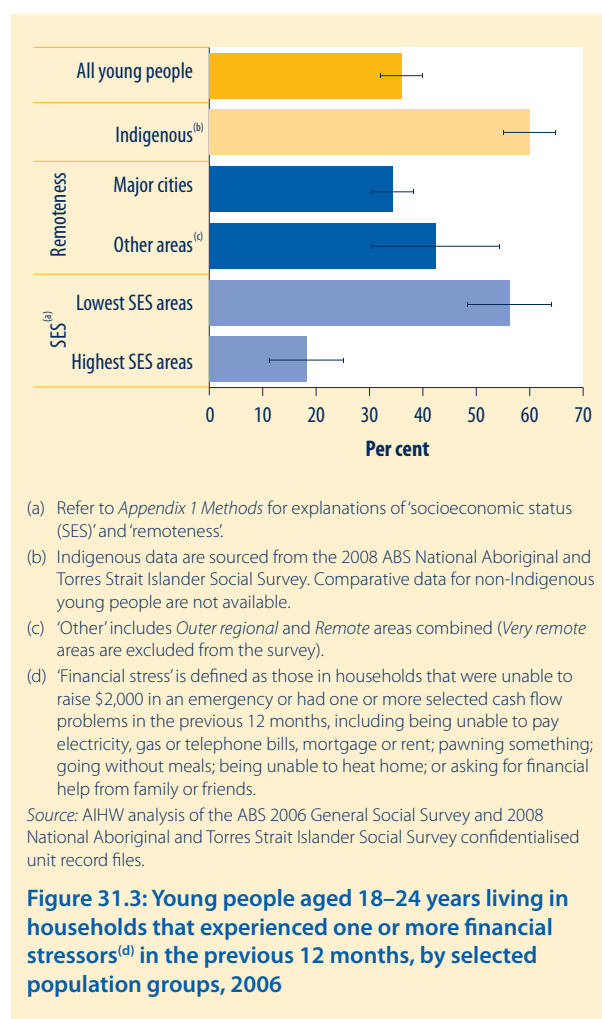
- In 2007–08, the proportion of young people aged 15–24 years that reported receiving government pensions and allowances as their principal source of income did not vary by remoteness—9% in *Major cities*, 11% each in *Inner regional areas* and *Outer regional and Remote areas combined*, according to the Survey of Income and Housing.
- In 2006, there was no statistically significant difference by remoteness in young people living in households experiencing one or more financial stressors (unable to raise \$2,000 in an emergency or one or more selected cash flow problems)—ranging from 42% in *Outer regional and Remote areas combined* to 34% in *Major cities* and 36% in *Inner regional areas*, according to the 2006 General Social Survey (Figure 31.3).

### Socioeconomic status

- In 2007–08, young people aged 15–24 years living in the lowest socioeconomic status (SES) areas were 5 times as likely as those in the highest SES areas to report government pensions and allowances as their principal source of income (20% and 4% respectively), according to the ABS Survey of Income and Housing.



- In 2006, young people aged 18–24 years in the lowest SES areas were 3 times as likely as those in the highest SES areas to live in households that experienced one or more financial stressors (unable to raise \$2,000 in an emergency or one or more selected cash flow problems) (56% and 18% respectively). The gap increases to 8 times as high for young people in households with three or more financial stressors (17% and 2% respectively) (Figure 31.3).





## 32 Socioeconomic status of parents

**Young people financially dependent on their parents will share the same social and economic circumstances as their parents. Parental education and employment protects against social exclusion and intergenerational disadvantage.**

**Nearly one in ten young people (9%) live in families where one or both of their parents did not complete secondary school (2008) and more than one in ten (11%) live in jobless families (2006–07). Rates are substantially higher (2–3 times as high) among one-parent families, Indigenous young people, and those living in *Remote* and *Very remote* areas combined.**

Young people living with their parents, particularly those who are financially dependent on their parents, share the same social and economic circumstances as their parents, and there is a link between intergenerational poverty and educational attainment (Vinson et al. 2007).

Higher levels of parental educational attainment lead to better employment opportunities and are associated with decreased periods of unemployment and higher income for parents, which has flow-on effects to their children (Cassen & Kingdon 2007). The level of parental education influences most aspects of a young person's life, such as parent–child interactions, the quality of the home environment, family functioning, the community environment (including housing conditions and safe neighbourhood), parental labour force participation, family resources, and school engagement, participation and achievement (Connors et al. 2004; Considine & Zappalà 2002; Du Prel et al. 2006; Nechyba et al. 1999; Powis et al. 2000;). Parental education also appears to exert a significant effect on adolescent aspirations, as the more educated the parents are the better they can help their children orient themselves towards high educational and professional objectives, and guide them to realise their aspirations (Gouvias & Vitsilakis-Soroniatis 2005).

Parental employment also has significant effects on young people, particularly the financial wellbeing of the family. Parental employment increases the economic resources available to families and protects against social exclusion and intergenerational disadvantage, as well as providing a positive role model for young people in terms of work ethics and social responsibility (AIHW 2009c).

Secure employment provides financial stability, self-confidence and social contact for parents, with positive effects flowing on to their children.

Conversely, members of households where no-one is employed report worse physical and mental health and lower life satisfaction than members of households where someone is employed (Headey & Verick 2006). Jobless families are disproportionately more likely to be reliant on welfare, have low incomes and experience financial stress, and parental unemployment may also create tension and hostility in relationships and reduce warmth and supportiveness in the home (Shonkoff & Phillips 2000). Studies on the effects of unemployment on other family members have identified relationships between parental joblessness and family conflict, family breakdown and child abuse (McClelland 2000).

This chapter focuses on two aspects of parental socioeconomic status: parental education and jobless families.

### Parental education

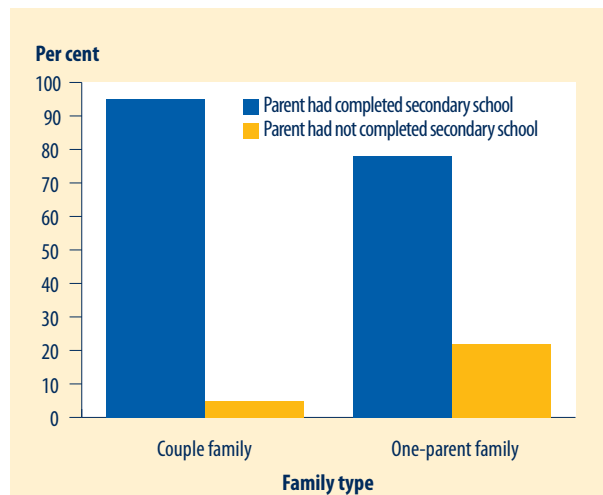
Lower educational qualifications among parents are often associated with other factors such as financial disadvantage, unemployment, poor housing conditions and unsafe neighbourhoods, single parenthood and younger maternal age (Connors et al. 2004; Du Prel et al. 2006; Powis et al. 2000). Consequently young people in these families are exposed to a range of biological, environmental and social risk factors that contribute to poorer health, educational and social outcomes in young people.

This section examines parental education, defined as whether parents completed secondary school (Year 10 or above), using data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey, Wave 8 (2008) (see *Appendix 2 Data sources* for more information on this survey).

**National indicator:** Proportion of young people aged 12–24 years whose parents did not complete secondary school (Year 10 or above)

In 2008, among young people aged 12–24 years living with their parents:

- Nearly 1 in 10 young people (9%) lived with parent(s) who had not completed secondary school, a similar proportion to 2001 (11%).
- Young people in one-parent families were 4 times as likely as those in couple-parent families to be living with a parent who had not completed secondary school (22% and 5% respectively) (Figure 32.1).
- Overall, more than half (51%) of young people lived with parents who had completed Year 12 or equivalent, 14% who had completed Year 11 and 25% Year 10 or equivalent. Relatively similar proportions of parents with young people in couple- and one-parent families completed Year 11 (15% and 13%) and Year 10 (24% and 27%), but parents in one-parent families were less likely to complete Year 12 or equivalent as those in couple-parent families (38% and 56% respectively).



(a) Parental education refers to highest year of school completed by either parent. Excludes those where parents' highest year of school completed was unknown.

Note: Excludes young people not living in couple or one-parent families.

Source: AIHW analysis of the HILDA Survey, Wave 8 (2008).

**Figure 32.1: Parental education<sup>(a)</sup> for young people aged 12–24 years living with their parents, 2008**

## Jobless families

Parents' employment patterns have a significant impact on the economic and social wellbeing of the family and are linked to social inclusion and intergenerational effects. Addressing the incidence and meeting the needs of jobless families with children has been identified as one of the priorities of the Australian Government's Social Inclusion Agenda (DEEWR 2009).

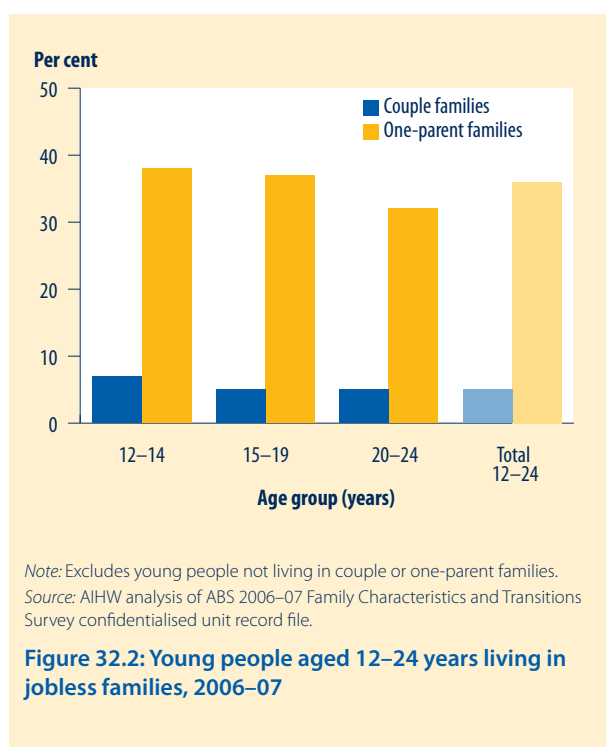
'Jobless families' in this report are defined as couple families where both parents are either unemployed or not in the labour force, or one-parent families where the lone parent is unemployed or not in the labour force. This is consistent with the Australian Bureau of Statistics' (ABS) definition of jobless families (ABS 2009b). The ABS Family Characteristics and Transitions Survey is used in this section to report on jobless families (see *Appendix 2 Data sources* for more information on this survey).

**National indicator:** Proportion of young people aged 12–24 years living in jobless families

In 2006–07, among young people aged 12–24 years:

- An estimated 359,300 young people, or around one in ten (11%), were living in jobless families—a decline from 16% in 1997.
- Over one-third of young people living in one-parent families (36%) did not live with an employed parent—a rate 7 times as high as in couple-parent families (5%) (Figure 32.2).
- The proportion of young people living in jobless families did not vary greatly by age—13% for 12–14 year olds, 12% for 15–19 year olds and 9% for 20–24 year olds. The rates of jobless families among children and young people were similar (11% each).

The effects on young people of living in a jobless family is dependent on whether the joblessness is persistent, transient or short-term. According to longitudinal analysis from the HILDA Survey between 2001 and 2005, 6% of children aged less than 15 years lived in jobless households for 1 year, 14% for 3 or more continuous years, while 6% experienced this for all 5 years. The rates were considerably higher for children living in lone-mother households. In 2005, 44% of children in these households were jobless, although this rate has decreased from around half (52%) in 2001. In particular, between 2001–05, 7% of lone-mother



**Figure 32.2: Young people aged 12–24 years living in jobless families, 2006–07**

households were jobless for 1 year, 21% for 3 or more years and 30% for 5 years running (Headey & Warren 2006b).

## Does parental education or joblessness vary across population groups?

Aboriginal and Torres Strait Islander people, and those living in rural and remote areas, and in socioeconomically disadvantaged areas, often have poorer access to higher education and employment opportunities. This may place young people at greater risk of growing up in households with low levels of parental education and parental joblessness, and hence at risk of social exclusion.

The ABS 2006 Census of Population and Housing has been used in this section to report on parental education and joblessness for subpopulations of young people aged 12–24 years (see *Appendix 2 Data sources* for more information on this data collection).

### Aboriginal and Torres Strait Islander young people

- Indigenous young people were 3 times as likely to have parents who did not complete secondary school as non-Indigenous young people (22% and 7% respectively) (Figure 32.3).

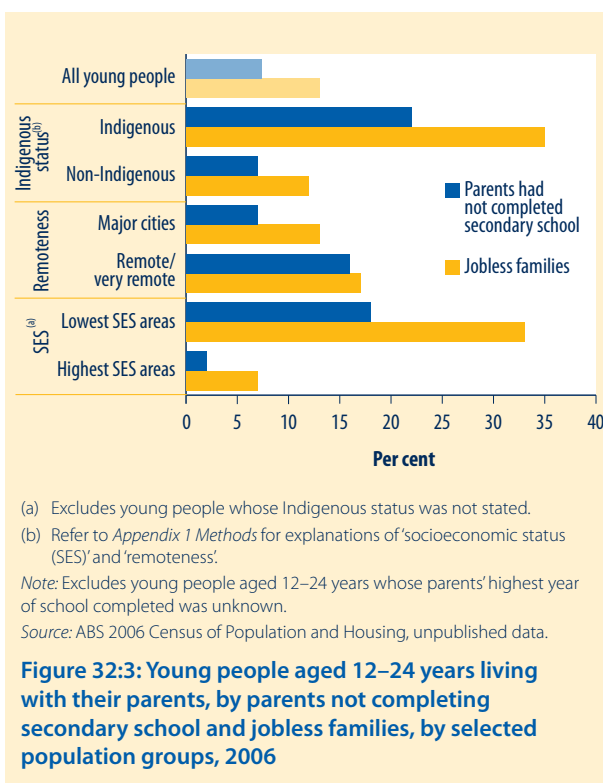
- Indigenous young people were almost 3 times as likely to live in jobless families as non-Indigenous young people (35% and 12% respectively). It should be noted that Indigenous status could not be determined for 20% of young people in jobless families.

### Remoteness

- Young people living in *Remote* and *Very remote* areas combined were twice as likely to be living with parents who did not complete secondary school as those in *Major cities* (16% and 7% respectively).
- The proportion of young people living in jobless families increased with remoteness, from 13% in *Major cities* to 17% in *Remote* and *Very remote* areas combined.

### Socioeconomic status

- Nearly one in five (18%) young people living in the lowest socioeconomic status (SES) areas had parents who had not completed secondary school, compared with 2% for those in the highest SES areas—a rate 9 times as high.
- Young people living in jobless families were almost 5 times as likely to be living in the lowest SES areas (33%) than the highest SES areas (7%).

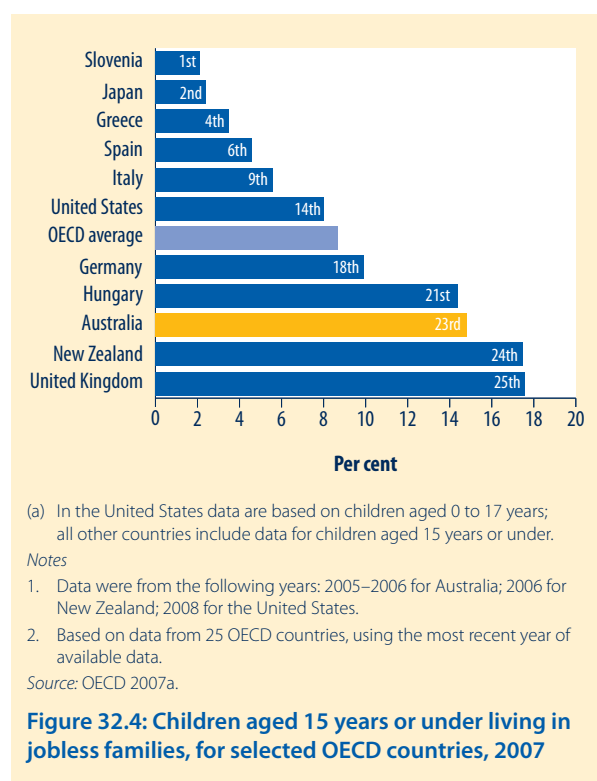


**Figure 32.3: Young people aged 12–24 years living with their parents, by parents not completing secondary school and jobless families, by selected population groups, 2006**

## How does Australia perform internationally on jobless families?

Internationally comparable data on young people aged 12–24 years living in jobless families are not available; however, information is available on young people aged 15 years or under living in jobless families. In 2007, Australia had the fourth highest proportion of children aged 15 years and under living in jobless families in the (Organisation for Economic Co-operation and Development (OECD), ranking 23<sup>rd</sup> out of 25 OECD countries. With a rate of 15%, Australian performed much worse than the OECD average (9%), and Slovenia and Japan, the best performing countries (2% each). The United Kingdom and New Zealand had the highest proportion of young people in jobless families (18%) (Figure 32.4).

Australia's high ranking is driven by the relatively high proportion of one-parent families in Australia and the high rate of joblessness among this group (55% compared with 6% among couple-parent families). This pattern of one-parent families having higher rates of joblessness is consistent across all OECD countries. The OECD average rate of jobless families among one-parent families was 36%, compared with 5% among couple-parent families.



# Part VI

## HEALTH SYSTEM PERFORMANCE

Many factors influence the health, development and wellbeing of young Australians. Most of the factors relevant to young people—health status, health behaviours, socioeconomic and environmental factors, and the influence of families and communities—have been discussed in previous parts of this report. In addition to these, the capacity of systems to deliver high-quality services plays a major role in influencing the health and wellbeing of young people.

Activities of the 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 individual's 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).

With respect to health systems, the goals shared by OECD (Organisation for Economic Co-operation and Development) countries are to provide care that is accessible and high quality, responsive to the population it serves, affordable and cost-effective (OECD 2004). Much work has been done in the measurement of health system performance. The National Health Performance Framework measures health system performance by the following components: effectiveness, appropriateness,

efficiency, responsiveness, accessibility, safety, continuity, capability and sustainability (NHPC 2004).

Part VI presents the indicators used to measure some of these components, and extends beyond the health system to look at teenagers' access to cigarettes and alcohol. The indicators presented are limited by the availability of information and the suitability of reporting on system performance indicators for young people.

The following indicators are included in Part VI to reflect how well systems are performing in delivering quality health and wellbeing actions to young Australians:

- potentially preventable hospitalisations
- teenage purchase of cigarettes and alcohol
- survival for melanoma of the skin
- cervical cancer
- appropriate use of antibiotics
- delivery by caesarean section
- general practice consultations
- waiting times in emergency departments
- adverse events treated in hospital.

The following table shows how young people fare across the indicators presented in Part VI, and whether there has been any improvement over time.

Key: ✓ = favourable trend; ✘ = unfavourable trend; ~ = no change or no clear trend; .. = no trend data available or presented.

Health system performance		Year of data	Value	Trend
Potentially preventable hospitalisations	Potentially preventable hospitalisation rate for young people aged 12–24 years	2008–09	1,086 per 100,000	✘
Teenage purchase of cigarettes and alcohol	Proportion of teenage smokers aged 12–17 years who personally purchased their most recent cigarette <sup>(a)</sup>	2005	23%	✓
	Proportion of teenage drinkers aged 12–17 years who personally purchased their most recent alcoholic drink <sup>(a)</sup>	2005	8%	✓
Survival for melanoma of the skin	Five-year relative survival rate for melanoma of the skin for young people aged 12–24 years	1998–2004	96%	✓
Cervical cancer	Cervical screening rates among women aged 20–24 years <sup>(a)</sup>	2007–2008	47%	~
	Cervical cancer vaccination rates among women aged 12–24 years	2007	44–77%	..
Appropriate use of antibiotics	Proportion of upper respiratory tract infections problems managed for which oral antibiotics were prescribed	2008–09	57%	~
Delivery by caesarean section	Caesarean sections as a proportion of all deliveries for young women aged 15–24 years who gave birth <sup>(a)</sup>	2008	21%	✘
General practice consultations	Rate of general practice encounters for young people aged 12–24 years	2008–09	3.2 per person	✓
Waiting times in emergency departments	Proportion of patients aged 12–24 years who are treated within national benchmarks for waiting times across triage categories in public hospital emergency departments	2008–09	70%	~
Adverse events treated in hospital	Proportion of hospitalisations for young people aged 12–24 years where an adverse event was treated and/or occurred	2008–09	4%	~

(a) Most appropriate age range for indicator.

(b) Source data not available for full age range.



## 33 Potentially preventable hospitalisations

**Potentially preventable hospitalisations are an indicator of the availability and effectiveness of ambulatory care services—high rates indicate barriers to accessing primary health care services.**

**In 2008–09, there were 1,086 potentially preventable hospitalisations per 100,000 young people. The rate was considerably lower for young people living in *Remote* and *Very remote* areas combined of Australia (half the rate of *Major cities*), but higher for Indigenous young people (1.9 times as high).**

Potentially preventable hospitalisations are those hospitalisations that could have been avoided through preventive care and early disease management in the ambulatory care setting. Ambulatory care refers to primary health-care services, such as general practices and community health and outpatient services. Timely and effective ambulatory care is expected to reduce the risks of hospitalisation by preventing the onset of an illness or condition, controlling an acute episodic illness or condition, or managing a chronic disease or condition (Vic DHS 2002a).

Potentially preventable hospitalisations serve as an indicator of the availability and effectiveness of ambulatory care services. Greater access to ambulatory care has been shown to lower rates of mortality and morbidity while allowing more efficient use of the resources allocated to health care (Bodenheimer & Fernandez 2005). Reducing potentially preventable hospitalisations, especially vaccine-preventable and chronic conditions, results in improvements in population health and efficiencies in the health-care system.

Primary health-care services may not be equally accessible for all population groups in Australia, particularly those that are geographically remote or socioeconomically disadvantaged. Reasons such as physical access to services, availability, affordability and cultural barriers may result in some groups of the population being unable to access appropriate ambulatory care services, resulting in higher rates of mortality and morbidity in these groups.

### Potentially preventable hospitalisations among young people

The Australian Institute of Health and Welfare's National Hospital Morbidity Database collects information on the conditions leading to hospitalisation for each patient, and the circumstances around their hospitalisation (see *Appendix 2 Data sources* for more information on this collection). These hospitalisations are then classified as potentially preventable or not potentially preventable, based on the details surrounding the hospitalisation (AIHW 2010c).

Three broad categories of potentially preventable hospitalisations have been used in this chapter. These have been sourced from the Victorian Ambulatory Care Sensitive Conditions Study (Vic DHS 2002a) and are classified as:

- **Vaccine-preventable.** These diseases can be prevented by proper vaccination and include influenza, bacterial pneumonia, tetanus, measles, mumps, rubella, pertussis and polio. The conditions are considered to be preventable, rather than the hospitalisation.
- **Acute.** These conditions may not be preventable, but theoretically would not result in hospitalisation if adequate and timely care (usually non-hospital) was received. These include complicated appendicitis, dehydration/gastroenteritis, pyelonephritis, perforated ulcer, cellulitis, pelvic inflammatory disease, ear, nose and throat infections, and dental conditions.

- **Chronic.** These conditions may be preventable through behaviour modification and lifestyle change, but they can also be managed effectively through timely care (usually non-hospital) to prevent deterioration and hospitalisation. These conditions include diabetes complications, asthma, angina, hypertension, congestive heart failure and chronic obstructive pulmonary disease.

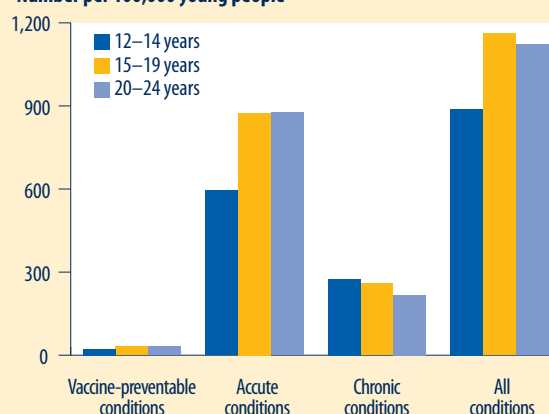
*Appendix 1* presents a detailed list of ICD-10 codes used in the potentially preventable hospitalisations classification. Further information on potentially preventable hospitalisations is available from *Australian hospital statistics 2008–09* (AIHW 2010c).

**National indicator:** Potentially preventable hospitalisation rate for young people aged 12–24 years

In 2008–09, among young people aged 12–24 years:

- There were 42,161 hospitalisations for potentially preventable conditions, a rate of 1,086 per 100,000 young people, representing 5% of all hospitalisations for young people and 6% of all potentially preventable hospitalisations. In comparison, the most common hospitalisations for young people were for pregnancy and childbirth, or for diseases of the digestive system, each accounting for 18% of hospitalisations for young people.
- The rate of potentially preventable hospitalisations has increased by 9% since 2002–03, when the rate was 992 per 100,000 young people. Over the same period there was a 12% increase in the rate of hospitalisations for young people overall.
- Females were more likely to be hospitalised for a potentially preventable condition than males—1,307 compared with 876 per 100,000. This difference was greater for 20–24 year old females and males (1,400 and 858 per 100,000 respectively) than among 12–14 year old females and males (942 and 838 per 100,000 respectively). Most of this difference is due to the higher rates of hospitalisation among females for pyelonephritis (238 compared with 19 per 100,000 for males), pelvic disease (50 per 100,000 for females, with no cases in males), dehydration and gastroenteritis (145 and 100 per 100,000, respectively), and asthma (102 and 67 per 100,000, respectively).
- The rate of potentially preventable hospitalisations overall was lower among 12–14 year olds (888 per 100,000) than 15–19 and 20–24 year olds (1,162 and 1,123 per 100,000, respectively) (Figure 33.1). The rates for young people were lower than for all other age groups, with the rate considerably higher among children aged 0–11 years (2,565 per 100,000) and for those aged 65 years and over (10,460 per 100,000), reflecting the higher incidence of acute and vaccine-preventable diseases among children and chronic diseases among the aged.
- Acute conditions accounted for three-quarters (75%) of the hospitalisations for potentially preventable conditions among young people, followed by chronic conditions (23%) and vaccine-preventable conditions (3%) corresponding to rates of 814, 246, and 30 per 100,000 young people, respectively. This is the reverse of what is seen across the entire population, where chronic conditions were the most common condition, accounting for 58% of all potentially preventable hospitalisations.

Number per 100,000 young people



Source: AIHW National Hospital Morbidity Database.

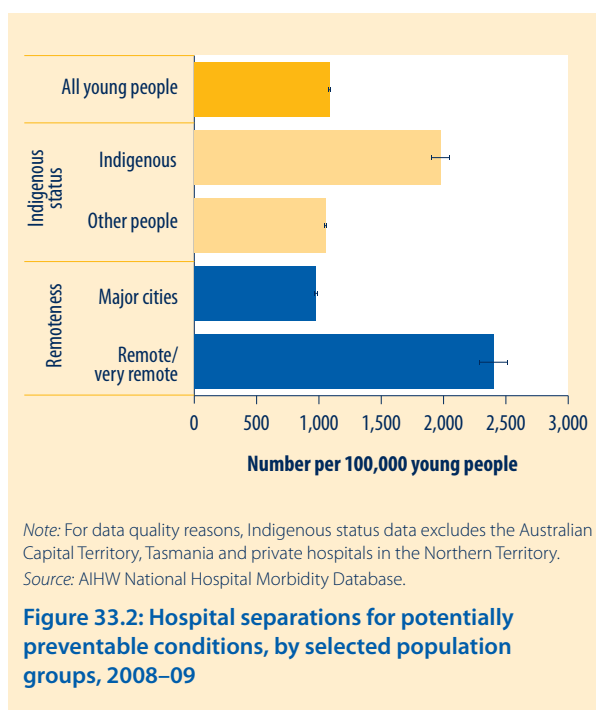
**Figure 33.1: Hospitalisations for potentially preventable conditions, by broad condition categories, 2008–09**

## Do hospitalisations for potentially preventable conditions vary across population groups?

As indicated previously, physical access to services, availability, affordability and cultural barriers may result in some groups of the population being unable to access appropriate ambulatory care services, resulting in higher rates of potentially preventable hospitalisations. This may particularly be an issue for those people who are geographically remote or socioeconomically disadvantaged, especially Indigenous Australians who are more likely to experience both these levels of disadvantage than their non-Indigenous counterparts.

In 2008–09, among young people aged 12–24 years, hospital separation rates for potentially preventable conditions were:

- considerably higher among Indigenous young people than other young people (1,977 and 1,054 per 100,000 respectively; data excludes the Australian Capital Territory, Tasmania and private hospitals in the Northern Territory) (Figure 33.2)
- over twice as high for young people aged 15–24 years living in *Remote* and *Very remote* areas as in *Major cities* (2,400 and 974 per 100,000 respectively). See *Chapter 39 General practice consultations* for more information on access to general practitioners outside city areas.



## 34 Teenage purchase of cigarettes or alcohol

**Current legislation prohibits the sale of tobacco and alcohol to young people under 18 years of age, yet tobacco and alcohol use is common among adolescents.**

**Among adolescents aged 12–17 years, almost one-quarter (23%) of smokers bought their own cigarettes, and 8% of drinkers purchased their last alcoholic drink themselves in 2005.**

In Australia, current legislation prohibits the sale of tobacco and alcohol to young people under 18 years of age. Despite this, the use of tobacco and alcohol among adolescents is common—each year, around three-quarters of teenagers consume alcohol and one-quarter smoke cigarettes (White & Hayman 2006a, 2006b).

Smoking is the leading cause of preventable death and ill health in Australia. 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 help in reducing the likelihood of teenagers making the transition from experimental to regular and addicted smoking (NHPC 2004). Adolescent tobacco use is also associated with a range of problems in adulthood such as problematic alcohol use, and mental health, academic and sleep problems (Mathers et al. 2006; Pitkänen et al. 2004).

Alcohol is the most commonly used licit or illicit substance among young people (AIHW 2008a). Consumption of alcohol in adolescence increases the risk of violent behaviour, accidental injury, sexual risk taking, poor mental health and social problems (Bonomo 2005; Hingson et al. 2006) (see *Chapter 16 Substance use* for further information on tobacco and alcohol use).

Adolescents are a key target group for policies and programs related to tobacco and alcohol control. Most adult smokers take up smoking during adolescence, and the consumption of alcohol in youth increases the risk of heavy drinking and alcohol dependence in adulthood (Lubman et al. 2007). As such, limiting adolescents' access to tobacco and alcohol is an important component in reducing their use of these substances and the associated short-term and long-term health effects. This chapter provides an indication of the enforcement of the laws regarding the sale of cigarettes and alcohol.

### Teenage purchase of cigarettes

Until 1992, the legal age for purchasing tobacco was 16 years in all states and territories except Western Australia (where the legal age has always been 18). From 1993, state and territory legislation was progressively revised, and since 1999 it has been illegal to sell tobacco to young people under the age of 18 years throughout Australia (White & Hayman 2006b).

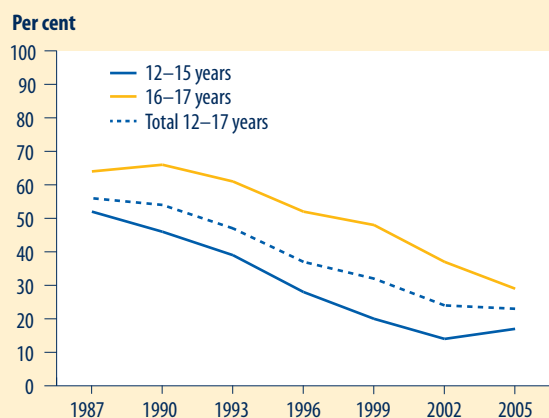
Reflecting these legal requirements, this section reports on young smokers aged 12–17 years who purchased their own cigarettes, using self-reported data from the 2005 Australian Secondary Students Alcohol and Drug (ASSAD) Survey (see *Appendix 2 Data sources* for more information on this survey). As this is a school-based survey, data in this section are for students, rather than all young people. Note that results from the 2008 survey were not available for inclusion in this report.

**National indicator:** Proportion of teenage smokers aged 12–17 years who personally purchased their most recent cigarette

In 2005, among the estimated 140,300 students (9%) aged 12–17 years who had smoked in the week before the survey:

- Almost one-quarter (23%) of young smokers reported that they had purchased their most recent cigarette themselves (instead of obtaining it some other way). However, friends were the most commonly reported means of obtaining cigarettes—many young smokers reported that friends had given them their most recent cigarette (41%), and a further 16% had someone else purchase the cigarettes for them (generally a friend over the age of 18 years).

- There has been a steady decline in smokers purchasing their own cigarettes—from 56% in 1987 to 47% in 1993 and 32% in 1999 (Figure 34.1). This appears to reflect the changes to the legal age for purchasing tobacco implemented between 1993 and 1999. This trend also corresponds with an increase in the proportion of young people getting someone else to purchase cigarettes for them—increasing from 4% to 16% between 1990 and 2005.
- Young male smokers were almost twice as likely as young female smokers to purchase their own cigarettes (30% and 16% respectively), despite smoking rates being similar among young males and females.
- Older adolescents were far more likely to have purchased their most recent cigarette themselves than younger adolescents—29% for 16–17 year olds compared with 17% among 12–15 year olds. This may reflect higher smoking rates among older adolescents (White & Hayman 2006b).
- Daily smokers were around twice as likely as non-daily smokers to purchase their own cigarettes.
- The most common access points used by young people who purchased their own cigarettes were supermarkets, milkbars and petrol stations (17% each), and convenience stores (13%).



Note: Data are for students who had smoked a cigarette in the week before the survey.

Source: Australian Secondary Students Alcohol and Drug Survey, unpublished data.

**Figure 34.1: Young smokers aged 12–17 years who purchased their most recent cigarette themselves, 1987–2005**

- Many young people (including non-smokers) thought it was easy to purchase cigarettes. A considerable proportion believed it would be easy or very easy to purchase cigarettes from local shops themselves (19%), or to get someone else to purchase cigarettes for them (51%). These perceptions were even more common among young people who had smoked in the past week (44% and 80% respectively).

## Teenage purchase of alcohol

State and territory legislations prohibit the sale of alcohol to young people less than 18 years of age. Reflecting these legal requirements, this section reports on young drinkers aged 12–17 years who purchased their own alcohol using self-reported data from the 2005 ASSAD Survey. As this is a school-based survey, data in this section are for students, rather than all young people.

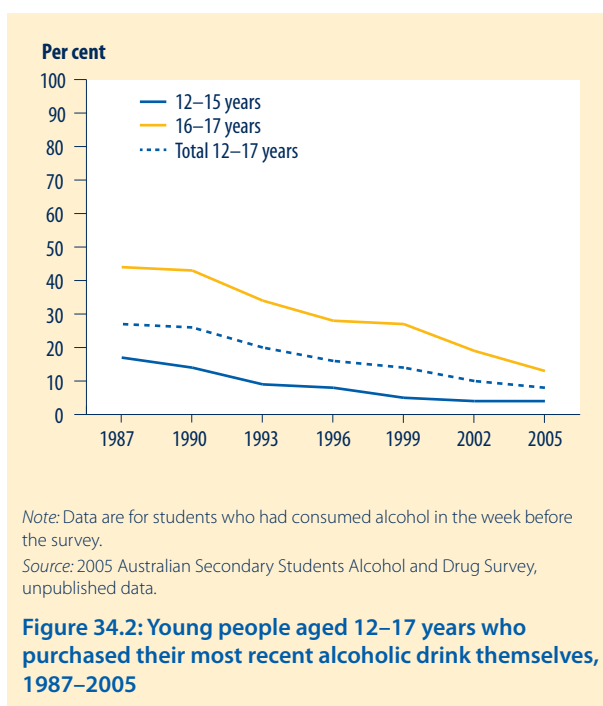
**National indicator:** Proportion of teenage drinkers aged 12–17 years who personally purchased their most recent alcoholic drink

In 2005, among the estimated 425,000 students (29%) aged 12–17 years who had consumed alcohol in the week before the survey:

- Fewer than one in ten adolescent drinkers (8%) reported that they purchased their most recent alcoholic drink themselves. Over half were given alcohol by their parents (37%) and friends (19%). A further 20% asked someone else to purchase alcohol for them—in most cases this was a friend aged 18 years or older.
- There has been a steady decline in adolescents purchasing their own alcohol since 1987, when the proportion was more than 3 times as high at 27%. A similar rate of decline was found among the 12–15 and 16–17 year age groups (Figure 34.2).
- Young male drinkers were almost twice as likely as young female drinkers to purchase their most recent alcoholic drink themselves (11% and 6% respectively), despite alcohol consumption rates being similar among young males and females (White & Hayman 2006a).
- Older adolescents were 3 times as likely to buy their own alcohol as younger adolescents—13% among 16–17 year olds compared with 4% among 12–15 year olds. This pattern may reflect the higher usage of alcohol among older adolescents (White & Hayman 2006a).



- Among those adolescents who purchased their own alcohol, the most common access points were bottle shops (38%), liquor stores and supermarkets (25%), and bars and pubs (13%).
- Similar patterns of purchasing their own alcohol were found among adolescents who had consumed alcohol at least once in their lifetime (86% of all students)—in 2005, around one in 20 (5%) reported that they had purchased their most recent alcoholic drink themselves, a considerable decline from 1996 when the proportion was twice as high at 10%.



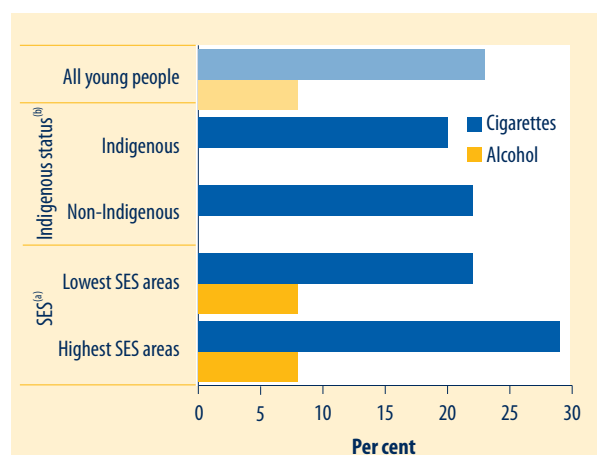
**Figure 34.2: Young people aged 12–17 years who purchased their most recent alcoholic drink themselves, 1987–2005**

## Does teenage purchase of cigarettes and alcohol vary by population groups?

Although Aboriginal and Torres Strait Islander young people and those living in socioeconomically disadvantaged areas tend to have higher rates of substance use (see *Chapter 16 Substance use*), these patterns were not reflected in the underage purchase of cigarettes and alcohol among these population groups. This may suggest that different population groups use similar means to access cigarettes and alcohol while underage. Nationally representative estimates for underage purchase of alcohol were not available for Indigenous students.

In 2005, among students aged 12–17 years:

- Similar proportions of Indigenous and non-Indigenous students who had smoked in the past week purchased their most recent cigarette themselves (20% and 22% respectively) (Figure 34.3).
- Students who had smoked in the past week and were living in the highest socioeconomic status (SES) areas were more likely to purchase their own cigarettes than those from the lowest SES areas (29% compared with 22%, respectively), despite the lower overall prevalence of smoking among those in the highest SES areas (see *Chapter 16 Substance use*).
- Similar proportions of students who had consumed alcohol in the past week from the lowest and highest SES areas purchased their own alcoholic drink (8% for both).



(a) 'Socioeconomic status (SES)' is measured using the SEIFA Index of Relative Socioeconomic Disadvantage (IRSDD) quartiles (White et al. 2008b). Other chapters in this report use SEIFA-IRSDD quintiles (see *Appendix 1 Methods* for further details).

(b) Information by Indigenous status for students who had purchased their own alcohol was not available for inclusion in this report.

Note: Data are for students who had smoked a cigarette or consumed alcohol in the week before the survey. Confidence intervals (95%) were not available for these data.

Source: 2005 Australian Secondary Students Alcohol and Drug Survey, unpublished data.

**Figure 34.3: Young people aged 12–17 years who purchased their most recent cigarette or alcoholic drink themselves, by selected population groups, 2005**



## 35 Survival from melanoma of the skin

**Effective treatment of melanoma is dependent on early detection and access to an effective health-care system that can provide timely and appropriate care.**

**Among young people, the 5-year relative survival rate from melanoma of the skin is very high (96% for those diagnosed in 1998–2004), and has increased from 93% in 1982–86.**

Melanoma is the most dangerous type of skin cancer. It is a malignant cancer (spreading to other parts of the body) that begins in the pigment cells of the skin—the cells that create freckles and moles on the skin and produce the brown colour of suntan (Melanoma Institute Australia 2009). Australia has one of the highest rates of skin cancer in the world (Cancer Council Australia 2010a), with melanoma of the skin accounting for 10% of all new registrable cancers diagnosed each year (AIHW 2010a). Although the risk of melanoma increases with age, it remains the most common notifiable cancer diagnosed among young Australians (AIHW 2007b). The high incidence of skin cancer is attributable to increased exposure to harmful ultraviolet rays from the sun, most likely due to increased outdoor activity during warmer months of the year combined with inadequate sun protection (Dobbinson et al. 2008b; see *Chapter 15 Sun protection*).

Treatment of melanoma varies depending on the characteristics of the tumour, and how advanced or aggressive the tumour is, and can include surgery, chemotherapy, immunotherapy and radiotherapy. Surgery is the primary treatment for melanoma, which is almost 100% effective when performed early (Rigel & Carucci 2000).

The 5-year survival rate from melanoma has improved substantially since the 1940s, from 40% to over 90% in the late 1990s (Rigel & Carucci 2000). While the effectiveness of surgery has not changed considerably over the past several decades, the improved survival can be attributed to better diagnostic methods, earlier detection, and to public education campaigns and government legislation aimed at increasing the awareness of the risks associated with skin cancer (Cancer Council Australia 2009; Rigel & Carucci 2000).

Effective treatment of melanoma is dependent on early detection, along with access to an effective health-care system that can provide timely and appropriate care, without which the life expectancy for people with melanoma would be greatly reduced.

### Melanoma survival among young people

The standard measure of cancer survival is 5-year relative survival, which indicates how long those with cancer are surviving relative to the general population and whether the length of survival is improving as care and early detection improves. This chapter examines the 5-year relative survival rate for melanoma of the skin for young people aged 12–24 years, using data from the Australian Cancer Database (see *Appendix 2 Data sources* for more information).

Relative survival is the ratio between the observed survival rate among a group of people diagnosed with cancer and the expected survival rate among the same group had they not been diagnosed with cancer. A 5-year relative survival rate of, say, 70% means that a person diagnosed with cancer has a 70% chance of still being alive 5 years after their diagnosis, relative to other Australians of the same sex and age. Caution should be exercised when interpreting these data because the mandatory reporting of cancer notifications across all states and territories in Australia from the mid 1990s may affect the interpretation of survival estimates during this time.

**National indicator:** Five-year relative survival rate for melanoma of the skin for young people aged 12–24 years

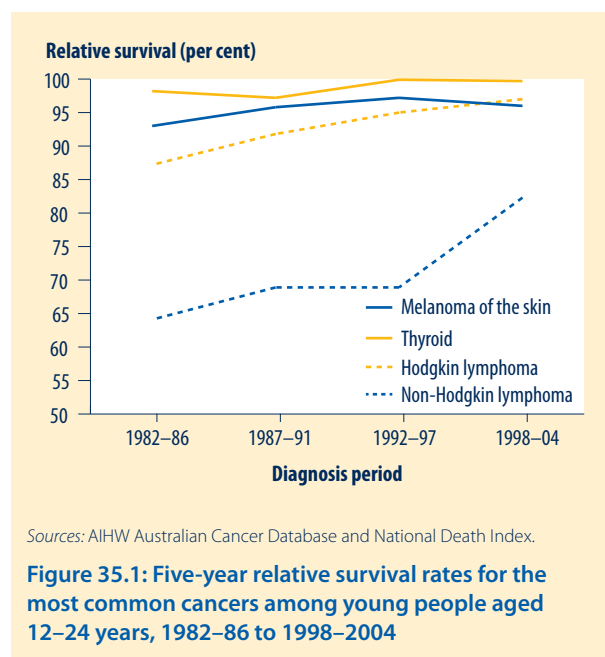
Among young people aged 12–24 years diagnosed with melanoma in 1998–2004:

- The 5-year relative survival rate was 96% (95% for males and 97% for females), an increase from 93% in 1982–1986. As noted above, caution should be used when interpreting trends in these data (Figure 35.1).
- The relative survival rate for melanoma of the skin was lower than for thyroid cancer (almost 100%), similar to Hodgkin lymphoma (97%), and was higher than for non-Hodgkin lymphoma (82%), which had the lowest survival rate of the four most common cancers in young people. However, non-Hodgkin lymphoma had the greatest improvement in survival rates between 1982–86 and 1998–2004, with rates increasing by 18 percentage points over this period (Figure 35.1).
- Survival rates for melanoma of the skin were similar for 12–18 and 19–24 year olds (95% and 96% respectively).

## Does survival from melanoma of the skin vary by remoteness?

Living in remote or very remote areas in Australia may impede access to relevant and timely health-care services, due to a lack or absence of services, potentially resulting in health disparities across geographical areas. However, according to data from the Australian Cancer Database, 5-year relative survival rates for melanoma of the skin were similar across remoteness areas for young people aged 12–24 years—around 96% to 97% for all geographic areas in 1998–2004.

No reliable national data are available on the 5-year relative survival rates for melanoma of the skin for Indigenous young people, and data are not published by socioeconomic status due to the small numbers of cases.



## 36 Cervical cancer

**Regular cervical screening, through the use of Pap tests, can reduce the incidence of and death from cervical cancer, which is caused by the human papillomavirus.**

**Cervical screening rates were lower among 20–24 year olds (47%) than among women aged 20–69 years (61%), and were lower for young people living in *Major cities* (45%) and in the most socioeconomically disadvantaged areas (43%) in 2007–2008.**

Cervical cancer can develop if cells in the lining of the cervix begin to grow abnormally and form pre-cancerous lesions. Over time, these lesions have the potential to develop into cancer and spread into the surrounding tissue. Abnormalities in the cells are caused by the presence of the human papillomavirus (HPV), which is spread through genital skin-to-skin contact during sexual activity. These abnormalities are termed 'low-grade' or 'high-grade', with high-grade abnormalities having a greater probability of progressing to cervical cancer than low-grade abnormalities. Infection with HPV is very common, and most people clear the infection with no symptoms. It is only when HPV is not cleared by the immune system that cell abnormalities leading to cancer can potentially occur.

There are a number of factors that increase the risk of developing cervical cancer after HPV infection, including smoking, multiple sexual partners, sexual activity at a young age, having a high number of pregnancies, long-term use of the oral contraceptive pill and a weakened immune system (WHO 2007a).

Early detection of pre-cancerous abnormalities allows treatment to prevent possible progression to cervical cancer, while early detection of cervical cancer improves treatment options and outcomes. The National Cervical Screening Program (NCSP), introduced in 1991, targets women aged 20–69 years for screening every 2 years. National policy states that women aged between 18 and 20 years should commence screening within 1 or 2 years of becoming sexually active (DoHA 2009a). The NCSP uses the Pap test (also called a Pap smear), in which cells sampled from the uterine cervix are examined under a microscope to look for abnormalities. In Australia, studies have shown that the median age for becoming sexually active is around 18 years (Rissel et al. 2003).

Since the NCSP was introduced, new cases and deaths from cervical cancer in Australia have dropped by a third. Cervical cancer has fallen from the 7th to the 13th most common type of cancer (1,092 new cases in 1991 declining to 715 in 2006) and deaths from cervical cancer have fallen from 324 to 208 between 1991 and 2007 (AIHW 2010d). Cervical cancer is rare in young women aged 20–24 years, with only 11 new cases of cervical cancer in 2006 (AIHW 2010d).

### Cervical screening among 20–24 year olds

Cervical cytology registers collect information on the number of Pap tests undertaken in each state and territory. A woman's details are included on the register automatically, unless she requests to be excluded, and are used for patient history, follow-up of abnormal tests, reminders for overdue tests and evaluation of the screening program.

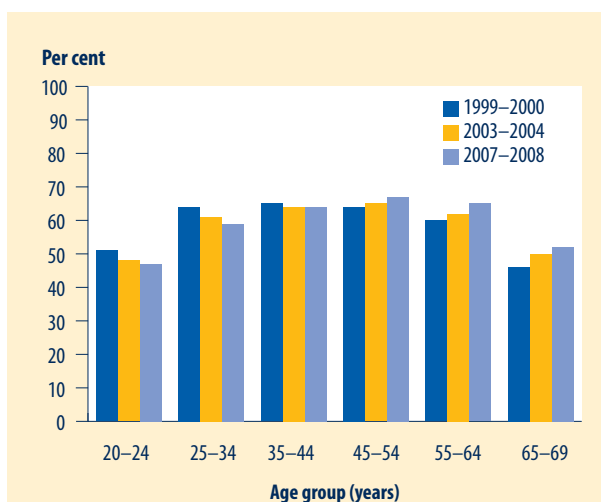
Not all young women aged 20–24 years are sexually active and therefore at risk of cervical cancer. As there are no data on the group at risk (that is, those who are sexually active), screening rates are calculated using the Australian Bureau of Statistics' (ABS) estimated population of all 20–24 year old women. The estimated population is adjusted to include only women with an intact cervix (using national hysterectomy data derived from the ABS 2001 National Health Survey).

**National indicator:** Cervical screening rates among women aged 20–24 years

Participation in the NCSP among women in the target age group of 20–69 years has remained stable at around 61% for most years since reporting began in 1996–1997.

In the 2-year period 2007–2008:

- Among 20–24 year olds, the participation rate in the cervical screening program was 47%, a considerably lower proportion than the overall rate of 61% and lower than for all other age groups. This is possibly a reflection of the fact that some 20–24 year olds are not sexually active.
- Among the target age group of 20–69 years, the highest participation rate was among 45–54 year olds (67%) (Figure 36.1).
- The participation rate among 20–24 year olds was similar between 2003–2004 and 2007–2008, but lower than in 1999–2000, when the rate was 51%.
- Younger women (those aged less than 35 years) are participating less in cervical screening than they were 10 years ago; participation has declined from 51% to 47% among 20–24 year olds and from 64% to 59% among 25–34 year olds between 1999–2000 and 2007–2008. However, among those aged 55 years and over the participation has increased over this period.



Source: AIHW 2010d.

**Figure 36.1: Participation of females in the National Cervical Screening Program, by age, 1999–2000 to 2007–2008**

## Cervical cancer vaccination among adolescent females

There are many types of HPV, only some of which are high-risk for cervical cancer. HPV types 16 and 18 account for around 70% of all cases of cervical cancer. Vaccination can prevent infection from both these types if individuals are vaccinated before they become infected. Studies have shown that vaccination results

in significantly lower rates of high-grade abnormalities due to types 16 and 18 in women who had not previously been infected with the relevant HPV virus type (The Future II Study Group 2007).

The National HPV Vaccination Program was established in 2007, and offers a course of three injections to be given over a 6-monthly period, with individuals considered fully immunised after the third injection. Until 31 December 2009 the program included both a school-based program to cover girls aged 12–18 years and a community-based catch-up program for those aged 18–26 years and younger females not in the education system. From 1 January 2010, the catch-up program was completed, with the school-based program for 12–13 year old girls continuing as part of the National Immunisation Program Schedule. Infection with HPV is not restricted to women and there is growing evidence that the virus is a cause of some cancers among men (principally throat, anal and penile cancers) (Gillison et al. 2008). It is possible, therefore, that the HPV vaccination program could in the future be extended to include young men as well as young women.

The National HPV Vaccination Program Register was established under Commonwealth legislation to record administered HPV vaccines. The register provides a means to monitor and evaluate the program, derive coverage rates and also maintain records for notification should a booster dose ever be required. The register receives notifications of each HPV vaccine administered through the school-based program and other vaccine providers.

Notification is not compulsory and individuals can request to opt out or be removed from the register at any time (DoHA 2007). National data from the register were not available in time for this report, but are expected to be available in the near future on the Immunise Australia website and HPV vaccination program register website.

During the initial phase of program implementation, school-based programs varied by jurisdiction in that they were aimed at different school years. In the first year of the program, New South Wales, the Northern Territory, Queensland and Western Australia provided vaccinations to schoolgirls in Years 10 to 12; the Australian Capital Territory and Victoria to girls in Years 7, 10, 11 and 12; South Australia to girls in Years 8 to 12; and Tasmania to all girls in Years 6 to 12 (Brotherton et al. 2008).

In addition, states and territories differ in their approach to estimating the eligible population.

Some states (for example, Western Australia and New South Wales) use the enrolled school population at the time each dose is administered, while others (for example, South Australia, Tasmania and Victoria) use start of year enrolments as the denominator. This makes direct comparisons between the states and territories difficult.

The data included in this section represent minimum estimates as they refer to coverage rates for the first year of the program and include only doses provided in school-based programs. These estimates therefore do not cover catch-up vaccinations given to school-aged girls through a non-school program.

**National indicator:** Cervical cancer vaccination rates among women aged 12–24 years

In 2007, across all states and territories, preliminary estimates on full immunisation rates ranged between 44–77% in the school-based program (Table 36.1):

- The highest rates of full immunisation were in South Australia for Year 8 girls (77%) and New South Wales for Year 10 and Year 12 girls (75%), while the lowest rates were in Tasmania for Year 11 and Year 12 girls (50% and 44% respectively).

In all states and territories, participation in the school-based program dropped off between dose 1 and dose 3 of the vaccine. However, there are no data to show whether these girls dropped out of the program altogether, did not have their doses recorded or received their final doses outside of school due to school absence or leaving the education system.

- The drop-out rate from dose 1 to dose 3 ranged from 4 to 18 percentage points across all states and territories.
- The drop-out rate was highest in the Australian Capital Territory for Years 10–12 combined (an 18 percentage point difference from 79% to 61% respectively) and lowest in South Australia for Year 9 (a 4 percentage point difference from 69% to 65% respectively) (Brotherton et al. 2008).

## Do rates of cervical screening vary across population groups?

Differences in cervical cancer screening rates among subpopulations of young people, such as Aboriginal and Torres Strait Islander people and those geographically and socioeconomically disadvantaged, may be the result of a range of factors such as physical access to screening facilities, poor transport, lack of child care, difficulty

**Table 36.1: Preliminary coverage<sup>(a)</sup> estimates of HPV vaccination in school-based programs, by school year and state and territory, 2007 (per cent)**

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Year 6	..	..	..	..	..	64	..	..
Year 7	..	75	..	..	..	61	68	..
Year 8	..	..	..	..	77	58	..	..
Year 9	..	..	..	..	65	55	..	..
Year 10	75	69	..	..	64	57	..	..
Year 11	72	70	..	..	57	50	..	..
Year 12	75	71	..	..	55	44	..	..
Years 10–12	..	..	62	60	..	..	61	64

.. Not applicable as this school year was not targeted by the state and territory in 2007.

(a) Coverage refers to full immunisation, indicated by having received all three doses of the vaccine.

Notes:

1. Coverage does not include catch-up doses delivered to school-aged girls outside the school-based programs, except for South Australia where these are partially recorded.
2. Data for Years 10 to 12 are combined for Queensland, Western Australia, the Australian Capital Territory and the Northern Territory.
3. States and territories use different population estimates for the denominator.

Source: Brotherton et al. 2008.

getting time off work, and poor education or knowledge about the screening process and its benefits (Australian Indigenous HealthInfoNet 2003). Cervical cancer vaccination data are not available by Indigenous status or remoteness.

### Aboriginal and Torres Strait Islander young women

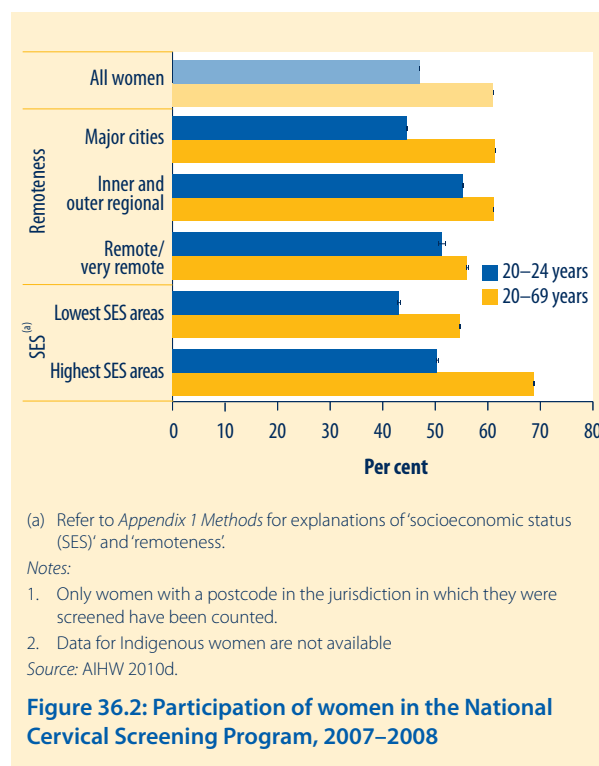
Calculation of participation in cervical screening by Indigenous women aged 20–24 years is not possible using cervical cytology register data, as Indigenous status is not currently able to be collected by these registers.

Self-reported data on use of Pap tests among Indigenous women are available from the ABS 2004–05 National Aboriginal and Torres Strait Islander Health Survey. According to this survey, an estimated 43% of Indigenous women aged 18–24 years had regular Pap tests. These data are not comparable with the participation rate of young women in the NCSP, as the information is self-reported rather than taken directly from medical records, and coverage is limited to the survey sample.

### Remoteness and socioeconomic status

In 2007–2008, the participation rate among 20–24 year olds in the NCSP:

- varied by remoteness, with rates lower in *Major cities* (45%) than in *Inner and Outer regional* areas (55%) combined and *Remote and Very remote* areas combined (51%). However, this pattern differed from the overall target group of 20–69 year old women, where the rate was higher in *Major cities* and *Inner and Outer regional* areas combined (61% each) than in *Remote and Very remote* areas combined (56%)
- increased with socioeconomic status—from 43% for 20–24 year olds living in areas of lowest socioeconomic status to 50% in areas of highest socioeconomic status. A similar pattern was also observed for the target group of 20–69 year olds (Figure 36.2).





## 37 Appropriate use of antibiotics

**Overuse of antibiotics increases antibiotic resistance, and a decline in their prescribing rate for upper respiratory tract infections (URTIs) may be an indication of more appropriate management of viral infections.**

**In 2008–09, oral antibiotics were prescribed for 57% of the URTIs among young people, similar to the rate in 1998–99 and higher than in 2007–08 (47%).**

Upper respiratory tract infections (URTIs) are a group of illnesses caused by acute infection of the upper respiratory tract such as nose, paranasal sinuses, pharynx and larynx. They are a frequent reason for seeking medical consultation with general practitioners. URTIs without complications are most often caused by viruses, and the use of antibiotics is not recommended as they are ineffective in treating viral infections. Overuse of antibiotics increases antibiotic resistance, which is a significant problem worldwide. A decline in the prescribing rate of antibiotics for URTIs may be an indication of more appropriate management of viral infections (NHPC 2004).

Overuse of antibiotics can be attributed to a number of factors, including the knowledge of both doctors and consumers, perceived patient pressure, fear of poor clinical outcomes, peer norms, local medical culture and supply mechanisms. Among them, perceived patient pressure is a strong influencing factor. With medical knowledge, doctors may feel uncomfortable prescribing antibiotics for URTIs; however, they may make a decision to prescribe antibiotics to nurture good relationships with patients (Dollman et al. 2005; Wutzke et al. 2007). In addition, there is a common belief in the community that antibiotics hasten recovery from URTIs and prevent more serious illness (Vanden Eng et al. 2003), which also drives inappropriate antibiotic prescription (Wutzke et al. 2007).

An effective strategy to reduce the unnecessary prescribing of antibiotics must include educational programs and public health campaigns aimed at both prescribers and consumers. In Australia, both nationwide and community programs have been shown to positively influence prescribers and consumers on their awareness, beliefs, attitudes and behaviour to appropriately use antibiotics for URTIs (Dollman et al. 2005; Wutzke et al. 2007). In line with these changes, the number of national antibiotic prescriptions dispensed declined from

23 to 21 million prescriptions between 1998–99 and 2001–02 (Wutzke et al. 2007).

This chapter looks at antibiotics prescription for URTIs including strep throat, acute upper respiratory tract infection (common cold), sinusitis, acute tonsillitis, acute laryngitis/tracheitis, influenza and epiglottitis.

### Prescription of oral antibiotics in the treatment of upper respiratory tract infections among young people

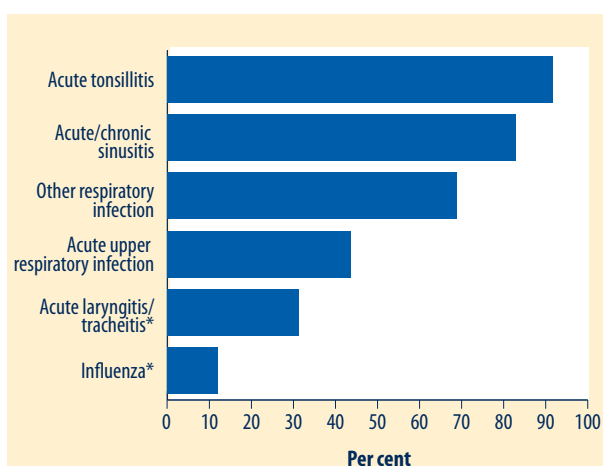
The Bettering the Evaluation and Care of Health (BEACH) survey of general practice collects information on prescriptions written by doctors as well as the type of problems managed during general practice consultations. This section focuses on the proportion of URTIs managed for which oral antibiotics were prescribed, using data from the BEACH survey (see *Appendix 2 Data sources* for more information on this survey). It should be noted that the number of prescriptions written by general practitioners is somewhat higher than the number of prescriptions filled by pharmacists (NHPC 2004). However, this does not affect the nature of the indicator as a measure of appropriate management of viral infections.

**National indicator:** Proportion of upper respiratory tract infections managed for which oral antibiotics were prescribed

In 2008–09, URTIs were the most frequently managed problem among young Australians, at 16.2 times per 100 general practitioner encounters.

In 2008–09, among the URTIs managed for young people aged 12–24 years:

- Oral antibiotics were prescribed for 57% of these problems (58% for males and 56% for females), a significantly higher rate than in 2007–08 (47%) but similar to the rates in 1998–99 to 2006–07 (52–58%).
- There was no statistically significant difference by age in the prescribing rates of oral antibiotics for URTIs managed among young people—ranging from 55% among 20–24 year olds to 58% and 59% among 12–14 and 15–19 year olds, respectively.
- Acute tonsillitis (92%) and sinusitis (83%) were the URTIs for which oral antibiotics were most commonly prescribed. These two conditions accounted for 18% and 13% respectively of the total number of URTIs managed for young people (Figure 37.1).
- Oral antibiotics were prescribed for 44% of the acute upper respiratory infection (common cold) problems managed—a condition which accounted for nearly two-thirds (62%) of the URTIs managed among young people.
- The most commonly prescribed oral antibiotic group were penicillins, prescribed for over one-third (37%) of URTIs. Macrolides, lincosamides and streptogramins were prescribed for over one in ten URTIs (11%), followed by other beta-lactam antibacterials (6%) and tetracyclines (2%).



\* These estimates have a relative standard error between 25% and 50%, and therefore should be used with caution.

Source: 2008–09 BEACH survey conducted and analysed by Australian General Practice Statistics and Classification Centre, The University of Sydney, unpublished data.

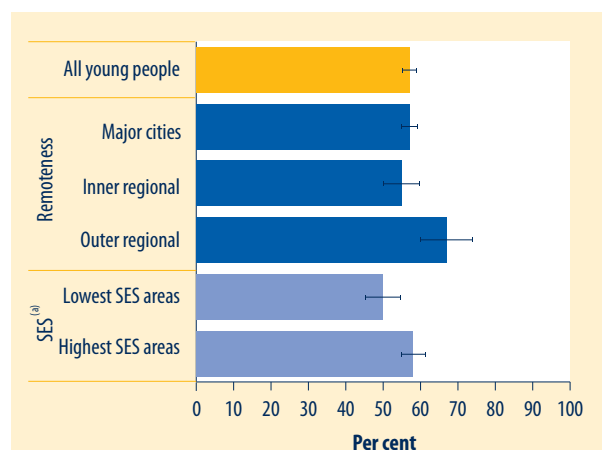
**Figure 37.1: URTIs for which oral antibiotics were prescribed by general practitioners for young people aged 12–24 years, 2008–09**

## Does prescription of oral antibiotics for upper respiratory tract infections vary across population groups?

The use of antibiotics in treating URTIs may be affected by peer norms, local medical culture and supply mechanisms (Wutzke et al. 2007). All these factors are likely to vary among some population groups across Australia. The BEACH survey of general practice only covers a very small sample of consultations involving Indigenous patients or patients in *Remote* and *Very remote* areas where oral antibiotics were prescribed for URTIs. Therefore, information for these population groups has not been presented in this section.

In 2008–09, among young people aged 12–24 years:

- There was no statistically significant difference by remoteness in the proportion of URTIs managed for which oral antibiotics were prescribed—57% in *Major cities*, 55% in *Inner regional* areas and 67% in *Outer regional* areas (Figure 37.2).
- There was no statistically significant difference between those living in the lowest and highest socioeconomic status areas in the prescription of oral antibiotics for URTIs managed (50% and 58% respectively).



(a) Refer to *Appendix 1 Methods* for explanations of 'socioeconomic status (SES)' and 'remoteness'.

Note: Data are not presented by Indigenous status or those living in *Remote* and *Very remote* areas due to small sample sizes.

Source: 2008–09 BEACH survey conducted and analysed by Australian General Practice Statistics and Classification Centre, The University of Sydney, unpublished data.

**Figure 37.2: Proportion of URTIs managed for which oral antibiotics were prescribed by general practitioners for young people aged 12–24 years, by selected population groups, 2008–09**

## 38 Delivery by caesarean section

**Delivery by caesarean section is appropriate in a range of circumstances, but the procedure can increase the risk of complications in future pregnancies.**

**One in five deliveries for young women (21%) were by caesarean section, a lower rate than among women aged 25 years and over (34%) in 2008.**

The onset of labour is categorised as spontaneous, induced or no labour, with most women (82% in 2007) undergoing a spontaneous or induced labour (Laws & Sullivan 2009). In cases where there is no labour a caesarean section is performed without labour having started. A caesarean section may also be carried out after labour has started, due to potential complications for the mother or her unborn baby.

The rate of caesarean section has risen in recent decades in all OECD (Organisation for Economic Co-operation and Development) countries, but not all births by caesarean section are medically necessary. It is appropriate in a range of circumstances relating to patients' and clinical characteristics, such as failure to progress in labour, advanced maternal age, previous caesarean sections, multiple pregnancy, breech presentation and low birthweight (NHPC 2004). However, much of the rise is attributed to non-medical factors such as the preferences of individual doctors, greater health insurance coverage, hospital characteristics and patient choice (OECD 2009b).

Medically necessary caesareans offer better outcomes for both the mother and her unborn baby; however, there are also risks associated with the procedure, mainly associated with future pregnancies. Various studies have shown that the likelihood of complications in future pregnancies increases if the mother has had a previous caesarean section (Getahun et al. 2006; Taylor et al. 2006).

### Caesarean section delivery among young women

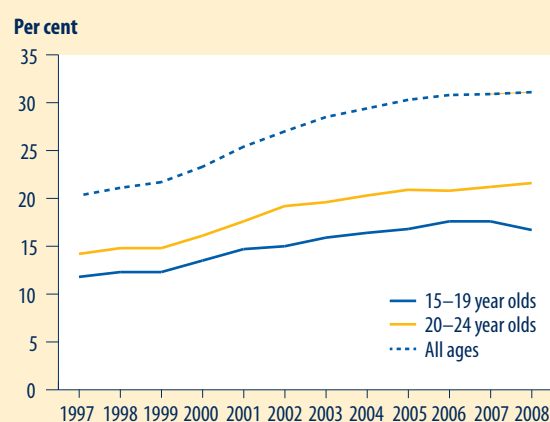
The Australian Institute of Health and Welfare's National Perinatal Data Collection includes information on the type of labour. Midwives and other staff, using information obtained from mothers and from hospital or other records, complete notification forms for each birth in each jurisdiction (see *Appendix 2 Data sources* for more information

on this data collection). Information is included for all live births and stillbirths of at least 400 grams birthweight or at least 20 weeks gestation.

**National indicator:** Caesarean sections as a proportion of all deliveries for young women aged 15–24 years who gave birth

In 2008, among young women aged 15–24 years who gave birth:

- One in five (21%; 11,164) deliveries were by caesarean section. The rate of caesarean section deliveries has increased in the decade to 2008 among both 15–19 year olds (36% increase) and 20–24 year olds (46% increase). The rate of increase was greatest between 1999 and 2005 but has stabilised since 2006 (Figure 38.1).
- The rate of caesarean section deliveries was 17% among 15–19 year olds, 22% among 20–24 year olds and 34% among those aged 25 years and over. The peak age group for delivery by caesarean section was 40 years and over (47% of deliveries).



Source: AIHW National Perinatal Data Collection.

**Figure 38.1: Caesarean section deliveries for women who gave birth, by age of mother, 1997–2008**

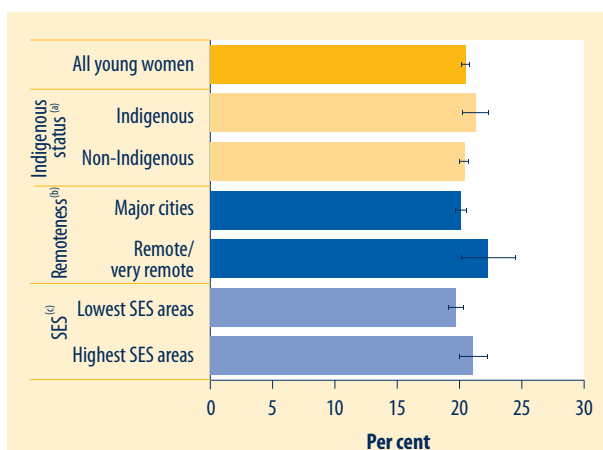
- Private hospitals had higher rates of caesarean deliveries than public hospitals among young people (28% and 20% respectively). This pattern was apparent across all age groups.

## Do rates of caesarean sections vary across population groups?

Overall, birth rates are higher among some population groups, such as Aboriginal and Torres Strait Islander women (ABS 2009c), reflecting cultural norms and perhaps limited access to family planning information and services. In women of all ages, caesarean sections are less common in the Indigenous population than in the non-Indigenous population (24% and 31% respectively) (AIHW 2010b). Caesarean sections are more likely to be carried out in private hospitals than in public hospitals, suggesting that the caesarean rate should be higher in the highest socioeconomic areas (ABS 2006e). Among 15–24 year old women, however, the rate of caesarean section does not differ by socioeconomic status (SES).

In 2008, the rates of caesarean section deliveries among 15–24 year olds were:

- similar between Indigenous and non-Indigenous women (21% and 20% respectively) (Figure 38.2)



- (a) 'Indigenous status' refers to Indigenous status of mother.  
 (b) Usual place of residence of mother.  
 (c) Refer to *Appendix 1 Methods* for explanations of 'socioeconomic status (SES)' and 'remoteness'.

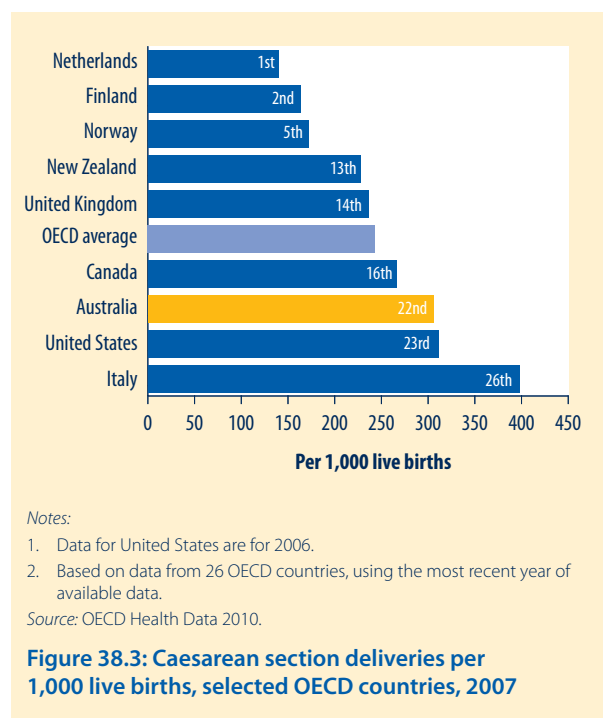
Source: AIHW National Perinatal Data Collection.

**Figure 38.2: Delivery by caesarean section among 15–24 year old women, by selected population groups, 2008**

- similar in all geographical areas 20% in *Major cities*, 21% in *Inner regional areas* and 22% in *Outer regional areas* and *Remote and Very remote areas* combined
- similar across SES areas—20% in the lowest SES area compared with 21% in the highest SES area.

## How does Australia's rate of caesarean sections compare internationally?

Australia's rate of caesarean section delivery per 1,000 live births ranked 22nd out of 26 OECD countries in 2007 (Figure 38.3). At 306 caesarean sections per 1,000 live births, the Australian rate was higher than the OECD average (251) and around twice as high as Finland (163) and the Netherlands (140), the OECD countries with the lowest rates. Rates of caesarean sections were highest in Italy (398) and Turkey (360).



Notes:

1. Data for United States are for 2006.
2. Based on data from 26 OECD countries, using the most recent year of available data.

Source: OECD Health Data 2010.

**Figure 38.3: Caesarean section deliveries per 1,000 live births, selected OECD countries, 2007**

## 39 General practice consultations

**Accessing general practitioners is of critical importance to young people, however significant impediments, such as personal concerns and structural barriers, currently exist for young people seeking timely health care.**

**In 2008–09, young Australians aged 12–24 years were less likely than those aged 25 years and over to attend general practice consultations—3.2 and 5.7 encounters per person, respectively.**

During adolescence, many young people establish contact with health services independently of their parents. The major health issues faced by young people include injuries, sexual and mental health problems, and substance abuse. These problems and behavioural factors are possible predictors of ill health in adult life, and are partly preventable or may be treated (Hetlevik et al. 2010). General practitioners are usually the first health service visited by young people with health or medical concerns. General practitioners play an important role in monitoring individuals' health and managing many health conditions, and many practitioners establish ongoing relationships with their patients. Therefore, young people's access to general practitioners is of great importance.

A major challenge confronting health services is how best to support and empower young people to access the health care they need in a timely manner. Significant barriers exist for young people seeking health care, the most important being young people's personal concerns, including feelings of embarrassment, concern that their queries will not be taken seriously, and fear about confidentiality or being judged. In addition, structural barriers, such as inflexible systems, opening hours, and the cost and transport involved in seeing a general practitioner, also restrict young people from accessing health care services (Bernard et al. 2004; Churchill 2009; Trigger et al. 2008).

Targeting young people's personal concerns and the structural barriers will help in improving young people's access to general practice. Establishing a trusting relationship between service providers and young people will encourage young people to seek medical advice when needed, which can be facilitated by a youth-friendly consulting environment and practitioners' improved knowledge on communication with young people (Bernard et al. 2004; Kefford et al. 2005). Further,

strategies to reduce the financial barriers may also improve access to general practice services, especially for young people from disadvantaged backgrounds (Trigger et al. 2008).

### General practice encounters among young people

This section examines the accessibility of general practice to young people, by calculating the rate of general practice encounters for young people aged 12–24 years, based on data from the Medicare Benefit Schedule claims data and the Bettering the Evaluation and Care of Health (BEACH) survey of general practice (see *Appendix 2 Data sources* for more information on this survey).

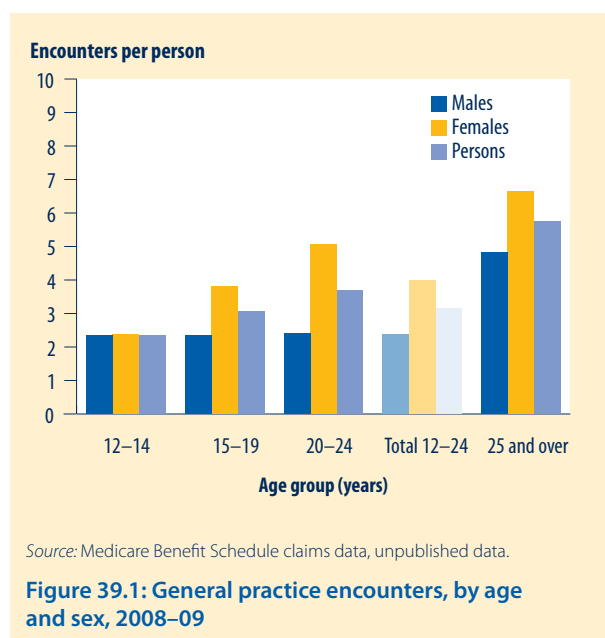
**National indicator: Rate of general practice encounters for young people aged 12–24 years**

In 2008–09, among young people aged 12–24 years:

- There were 12.25 million general practice encounters for young people, an average rate of 3.2 encounters per person a 20% decline since 1998–99.
- Overall, young females were more likely to attend general practice consultations than young males (4.0 and 2.4 encounters per person, respectively) (Figure 39.1).
- The rate of general practice encounters was lower among 12–14 year olds than among 20–24 year olds (2.3 and 3.7 encounters per person, respectively). This increase was largely due to the higher rate of general practice consultations among young females as they move from adolescence into adulthood (2.4 and 5.1 encounters per person for young females aged 12–14 and 20–24 years respectively).



- Young people were less likely than those in the older age groups to attend general practice consultations the average attendance rate among those aged 25 years and over was nearly twice that of young people (5.7 and 3.2 encounters per person, respectively).
- The most frequently managed problems by general practitioners were acute upper respiratory infection (common cold) and preventive immunisation, vaccination or medication (32 and 29 encounters per 100 young people, respectively), followed by oral contraception, depression, pregnancy and tonsillitis (17, 14, 10 and 10 encounters per 100 young people, respectively).



**Figure 39.1: General practice encounters, by age and sex, 2008-09**

## Do general practice consultations vary across population groups?

Structural barriers, especially the cost and transport involved, can have considerable impact on the accessibility of general practice services. As a result, Aboriginal and Torres Strait Islander people and those living in remote and socioeconomically disadvantaged areas may have more limited access to general practice services than the general population.

The BEACH survey of general practice only includes a small sample of consultations involving Indigenous patients, and Indigenous under-identification is likely to be an issue in this survey (Britt et al. 2002). The Australian Bureau of Statistics' (ABS) 2004-05 National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) collected information on health-related actions taken by Indigenous Australians in the 2 weeks before their interview. However, these data are not directly comparable with information from the BEACH survey, which records the content of general practice encounters. In this section general practice consultations among Indigenous young people are sourced from the NATSIHS, while remoteness and socioeconomic status (SES) information is available from the BEACH survey.

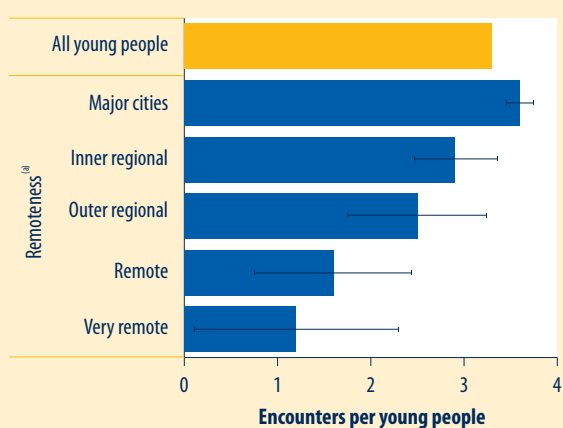
Among young people aged 12-24 years:

- Similar proportions of Indigenous and non-Indigenous young people consulted general practitioners in the 2 weeks before the survey in 2004-05 (both around 14%), according to the 2004-05 NATSIHS and the ABS National Health Survey.

In 2008-09, among young people aged 15-24 years:

- Those living in *Major cities* were significantly more likely to attend general practice consultations (3.6 encounters per person) than those in *Other areas* (ranging from 1.2 encounters per person in *Very remote areas* to 2.9 in *Inner regional areas*) (Figure 39.2).
- Of all general practice encounters for young people in 2008-09, nearly one-third (30%) were for young people living in the highest SES areas, compared with 13% for those in the lowest SES areas.





(a) Refer to *Appendix 1 Methods* for explanation of 'remoteness'.

Notes:

1. The estimates of encounters are based on the proportion of encounters with young people by remoteness areas in the BEACH survey of general practice, multiplied by the total number of encounters for young people aged 15–24 years in Medicare Benefit Schedule claims data.
2. Data for Indigenous young people are not presented due to small numbers of encounters.

Sources: 2008–09 BEACH survey conducted and analysed by the Australian General Practice Statistics and Classification Centre, The University of Sydney; Medicare Benefit Schedule (MBS) unpublished claims data.

**Figure 39.2: Rate of general practice encounters among young people aged 15–24 years, by remoteness, 2008–09**

## 40 Emergency department waiting times

**Patients attending public hospital emergency departments should receive treatment within an appropriate time, for the urgency of their condition.**

**Most young people (70%) presenting to emergency departments received treatment within the recommended time in 2008–09—almost all resuscitation cases (99.6%) and over three-quarters (78%) of emergency cases were seen on time.**

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 while also being on hand to assist non-threatening medical conditions in the absence or unavailability of appropriate community-based medical care. Treating patients within an appropriate time is important for young people as they are over-represented in road traffic accidents, violence, work-related injuries and other injuries that necessitate their attending hospital emergency departments for treatment. These injuries can affect a young person's employment, education and recreation, and can lead to permanent disability and disfigurement, which can then affect their future health and wellbeing (NPHP 2004).

The urgency of the patient's need for medical and nursing care is indicated by a triage category. When patients present to the emergency department a triage nurse assesses their overall condition and assigns them to one of five categories that indicate how soon they should receive care. The categories are:

- Resuscitation: immediate (within seconds)
- Emergency: within 10 minutes
- Urgent: within 30 minutes
- Semi-urgent: within 60 minutes
- Non-urgent: within 120 minutes.

Emergency department waiting times in public hospitals are indicators of access to public acute hospital services, and are discussed in this chapter.

### Waiting times for emergency department care for young people

This chapter examines patients who are treated within an appropriate time (for the urgency of their condition) in public hospitals in Australia, using

the Australian Institute of Health and Welfare's Non-Admitted Patient Emergency Department Care Database, which records details of those who present at public hospital emergency departments. These records relate to each event where a person attends an emergency department for care and therefore data in this chapter are for presentations to emergency departments, rather than for the persons who presented (see *Appendix 2 Data sources* for more information).

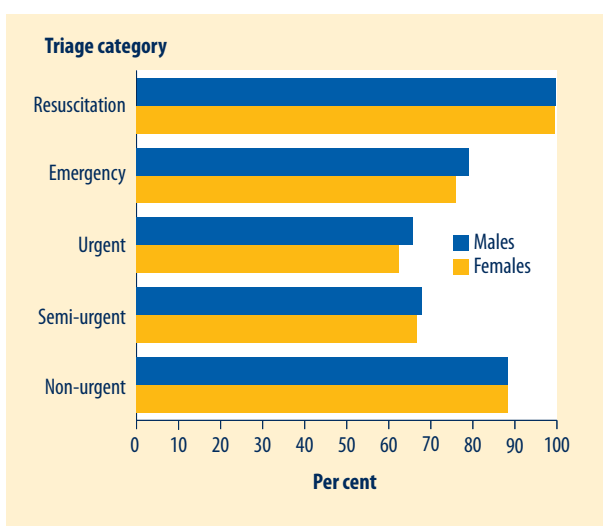
In 2008–09, 80% of emergency department activity was recorded in the Emergency Department Care Database, and valid waiting time data was available for 92% of the presentations for young people. Among young people presenting to public hospital emergency departments, around 0.5% of patients were assigned to the triage category of resuscitation, 5% to emergency, 78% to either urgent or semi-urgent, and 16% to non-urgent. These proportions were lower than for all people assigned to the resuscitation (0.7%) and emergency (9%) triage categories, but similar to those assigned to urgent or semi-urgent (77%), and higher for those in the non-urgent (13%) category.

**National indicator:** Proportion of patients aged 12–24 years who are treated within national benchmarks for waiting times across triage categories in public hospital emergency departments

In 2008–09, among young people aged 12–24 years:

- There were 971,600 visits to public hospital emergency departments and, of these, 682,300 (70%) were seen on time, with this rate remaining stable since 2003–04.
- Similar proportions of patient presentations (70–72%) were seen within national benchmark waiting times across all age groups.

- Almost all resuscitation cases (99.6%) and over three-quarters (78%) of emergency cases received treatment within the recommended time. However, a higher proportion of non-urgent cases (88%) was seen on time than urgent or semi-urgent cases (64% and 67% respectively).
- Similar proportions of presentations for males and females were seen on time (Figure 40.1).
- The overall mean waiting time among young people in public hospital emergency departments was 48 minutes. This varied substantially by triage category—the mean waiting time for resuscitation cases was 0 minutes; for emergency, 10 minutes; for urgent, 38 minutes; semi-urgent, 57 minutes; and non-urgent cases, 51 minutes. These mean waiting times have remained relatively stable since 2003–04.



Note: Waiting time data for young people are not available for 10% of presentations to public hospital emergency departments.  
Source: AIHW Non-Admitted Patient Emergency Department Care Database.

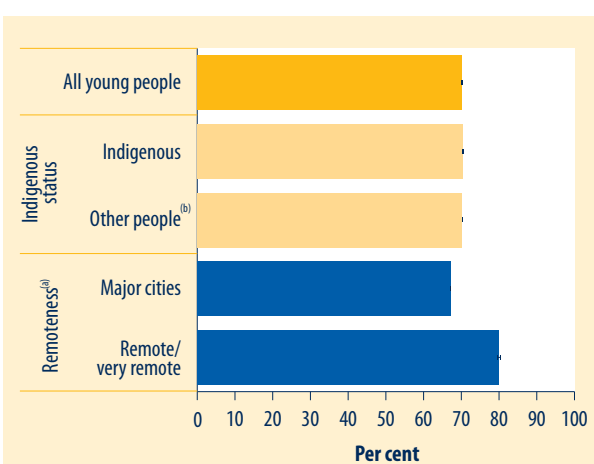
**Figure 40.1: Public hospital emergency department presentations treated within national benchmark waiting times across triage categories, among young people aged 12–24 years, 2008–09**

## Do waiting times in public hospital emergency departments vary across population groups?

Due to lower coverage among smaller emergency departments located in regional and remote areas, any estimates of emergency department waiting times for regional and remote services should be interpreted with caution.

In 2008–09, among young people aged 12–24 years receiving treatment within the recommended waiting times in public hospital emergency departments:

- Similar proportions of Indigenous and non-Indigenous young people were seen on time (70% of presentations each; data exclude the Australian Capital Territory, Tasmania and private hospitals in the Northern Territory) (Figure 40.2).
- Rates vary significantly by remoteness, from 67% for young people living in *Major cities* to 75% in *Inner* and *Outer regional* areas combined to 80% in *Remote* and *Very remote* areas combined.



(a) Refer to *Appendix 1 Methods* for explanation of remoteness. Not all remote hospitals are included in the Non-admitted Patient Emergency Department Care Database so the results should be interpreted with caution. See *Appendix 2 Data sources* for further information on this database.

(b) 'Other young people' includes non-Indigenous people and those for whom Indigenous status was not stated.

Notes:

1. For data quality reasons, data by Indigenous status exclude the Australian Capital Territory, Tasmania and private hospitals in the Northern Territory.
2. Data for socioeconomic status have not been presented due to data quality issues.
3. Waiting time data among young people are not available for 8% of presentations to public hospital emergency departments.

Source: AIHW Non-Admitted Patient Emergency Department Care Database.

**Figure 40.2: Public hospital emergency department presentations treated within national benchmark waiting times, among young people aged 12–24 years, by selected population groups, 2008–09**

# 41 Adverse events treated in hospital

**Adverse events are where harm is caused by health care. They are, in theory, preventable, and serve as a good measure of health system performance.**

**An adverse event occurred or was treated in 4% of hospitalisations for young people in 2008–09, with almost two-thirds of these hospitalisations (60%) due to complications of surgical procedures.**

Adverse events are defined as incidents involving harm to a person receiving health care; that is, they occur where harm is caused by health-care procedures rather than the underlying condition. They include infections, falls and other injuries, and reactions or complications due to surgery, medication or medical devices, some of which may be preventable (AIHW 2010c). Adverse events in health care may occur inside or outside hospitals, and can also be the cause of hospitalisation. It has been estimated that an adverse event is associated with about 10% of hospital separations in Australia and other developed countries (ACSQHC 2001). These events are, in theory, preventable, and serve as a good measure of health system performance.

While most adverse events do not result in death or permanent disability, about 2% of hospital separations have been estimated to be associated with serious adverse events causing major disability (1.7%) or death (0.3%) (Runciman et al. 2000). Further, adverse events that lead to permanent disability or death were more likely to be caused by negligence, compared with less serious adverse events (Brennan et al. 2004).

## Occurrence of adverse events treated in hospital among young people

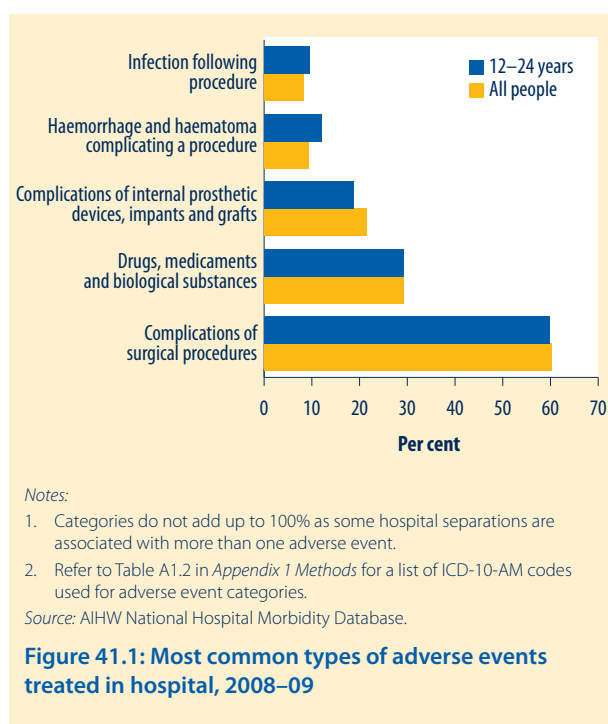
Public and private sector hospital separations data, available from the Australian Institute of Health and Welfare's National Hospital Morbidity Database, can be used to indicate the occurrence of adverse events (see *Appendix 2 Data sources* for more information on this data collection). Information is included on ICD-10-AM diagnoses, places of occurrence, and external causes of injury and poisoning that can indicate that an adverse event occurred or was treated during the hospitalisation. However, not all adverse events are identifiable using these codes, for example, falls while in

hospital or minor side effects that do not require re-admission. The data presented in this chapter can be interpreted as representing selected adverse events in health care occurring in various settings, that have resulted in, or have affected hospital admissions, rather than all adverse events that occurred in hospitals.

**National indicator:** Proportion of hospitalisations for young people aged 12–24 years where an adverse event was treated and/or occurred

In 2008–09, among young people aged 12–24 years:

- There were 18,342 hospital separations among young people where an adverse event occurred or was treated in hospital 3.8% of the 487,476 hospital separations among young people, a lower proportion than for all ages (5%). This is similar to the rate in 2001–02, when 2.4% of hospital separations (14,494 separations) among young people were associated with an adverse event.
- A higher proportion of hospital separations for males than females was associated with an adverse event (6.1% and 2.8% respectively).
- A slightly higher proportion of separations for 15–19 year olds (5.9%) was associated with an adverse event in hospital than for 12–14 and 20–24 year olds (3.7% and 2.9% respectively).
- The most common adverse events occurring in hospital for young people were *Procedures causing abnormal reactions/complications*, accounting for nearly two-thirds (60%; 10,963) of hospital separations with an adverse event among young people. Further, over one-quarter (29%) of hospital separations with an adverse event were due to *Adverse effects of drugs, medicaments and biological substances*, and almost one-fifth (19%) were due to *Complications of internal prosthetic devices, implants and grafts* (Figure 41.1).



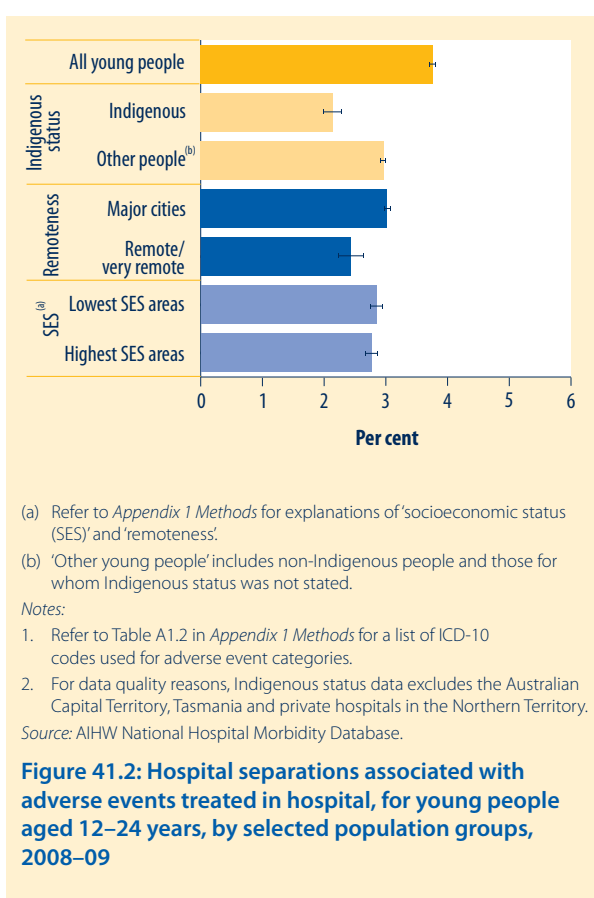
**Figure 41.1: Most common types of adverse events treated in hospital, 2008–09**

## Do hospital separation rates with an adverse event vary across population groups?

According to the available data, the number of hospital separations associated with an adverse event for young people does not appear to vary greatly across population groups.

In 2008–09 among young people aged 12–24 years, hospital separations associated with an adverse event:

- were lower for Indigenous young people than for other young people (2.1% compared with 3.0% respectively; data excludes the Australian Capital Territory, Tasmania and private hospitals in the Northern Territory) (Figure 41.2)
- varied from 3.0% in *Major cities* to 2.4% in *Remote* and *Very remote* areas combined
- were similar for those in the lowest and highest socioeconomic status areas (each 2.8%).



**Figure 41.2: Hospital separations associated with adverse events treated in hospital, for young people aged 12–24 years, by selected population groups, 2008–09**





# Part VII

## ABORIGINAL AND TORRES STRAIT ISLANDER YOUNG PEOPLE

### 42 Health and wellbeing of Indigenous young people

Aboriginal and Torres Strait Islander peoples generally have poorer health, are more likely to experience disability and reduced quality of life, and typically die at much younger ages due to ill health. This health disadvantage begins at an early age and often continues to adversely affect their wellbeing throughout life. The burden of disease and injury among Indigenous Australians is higher than for other Australians for all ages. For Indigenous young people, this burden is largely attributable to the high rates of mental disorders, such as anxiety and depression, substance use, and injuries (Begg et al. 2007).

The factors contributing to this health inequality between Indigenous and non-Indigenous Australians are complex, and include cultural, historical, environmental and socioeconomic elements.

Indigenous young people face particular challenges that affect their health and wellbeing. Some of the challenges affecting Indigenous youth today include threatened or actual loss of cultural identity; removal from family of origin; family conflict and disruption; violence and assault; social exclusion; social and emotional wellbeing and mental health issues; juvenile crime; and imprisonment (McDonald 2009). Other common stressors include poverty, frequent bereavement, pressure from relatives, a lack of culturally responsive services, and a sometimes hostile and racist environment (Brady 1993).

A strong sense of identity as an Aboriginal or Torres Strait Islander person is also vital to the wellbeing of Indigenous young people. A study in Western Australia found that having a strong sense of self, connection to family, kin, Aboriginal language, and Aboriginal culture and inheritance were recognised as important contributors to an Aboriginal person's racial identity (Kickett-Tucker 2009). Indigenous adolescents' identification with local cultures is

a protective factor in their social and emotional wellbeing; however, peer influences, for example encouraging alcohol consumption, may override the protective influence of cultural identity (Gazis et al. 2010; McDonald 2009).

There is evidence from Australia and other developed countries to show that low socioeconomic status, which arises from problems such as low levels of education, employment and income, is associated with poor health and increased exposure to health risk factors (Blakely et al. 2004; Turrell & Mathers 2000). The Indigenous population is disadvantaged over a range of socioeconomic conditions compared with the non-Indigenous population: they report lower incomes, higher rates of unemployment, lower educational attainment and lower rates of home ownership (AIHW 2007a, 2008d). In rural and remote communities, adolescents may also become enmeshed in intergenerational welfare dependence (McDonald 2009). This socioeconomic disadvantage places Indigenous Australians at greater risk of smoking, poor nutrition, alcohol misuse, overcrowded living conditions and violence (ABS & AIHW 2008).

As well as, and in combination with, the issues discussed above, accessibility to health care is a critical factor in the poorer health of Indigenous Australians. Indigenous people are less likely to access health care than non-Indigenous people, with such factors as distance, transport, cost, lack of education and the cultural appropriateness of services identified as key accessibility barriers (Anderson et al. 2004b; Durey 2010). An individual's experience of racism, discrimination or lack of cultural sensitivity when accessing health care can affect their attitude towards health care. Indigenous Australians who experience negative, racially based treatment that is physically and emotionally upsetting are more likely to have

poor health (Durey 2010). Research suggests that where clinician and patient are from different cultural backgrounds there is a greater likelihood of misdiagnosis and non-compliance (Durie 2004).

Despite some improvements in the mortality rates of Indigenous Australians in recent years, 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). In December 2007, the Council of Australian Governments (COAG) agreed to a partnership between all levels of government to work with Indigenous communities to achieve the target of closing the large inequality gap between Indigenous and other Australians (Box 42.1).

Part VII presents an overview of the health and wellbeing of Aboriginal and Torres Strait Islander

young people, and highlights areas where there are opportunities for further gains. It draws together the information on Indigenous young people presented throughout the report, but also includes additional information on issues affecting these young people. This part begins with a comparative table of indicator results for which data are available and then follows the general framework of the overall report, including information on data quality issues, demographics and families, and key issues in the following areas:

- health status (including mortality and health conditions)
- determinants of health
- families and communities
- socioeconomic factors
- housing
- health system performance.

#### Box 42.1: Monitoring the COAG Closing the Gap targets for Indigenous disadvantage

In 2008, COAG agreed to six specific targets and timelines to reduce disadvantage among Indigenous Australians. These targets acknowledge the importance of reducing the gap in health levels and of improving the social determinants of health. They include:

- closing the life expectancy gap within a generation (by 2030)
- halving the gap in mortality rates for Indigenous children within a decade (by 2018)
- ensuring that all Indigenous 4 year olds in remote communities have access to early childhood education within 5 years (by 2013)
- halving the gap for Indigenous students in reading, writing and numeracy within a decade (by 2018)
- halving the gap for Indigenous students in Year 12 attainment (by 2020)
- halving the gap in employment levels within a decade (by 2018).

The National Indigenous Reform Agreement has been established to outline the task of closing the gap in Indigenous disadvantage. It sets objectives, outcomes, outputs, performance indicators and performance benchmarks to assess progress against the targets. Also for this purpose, other national agreements and mainstream National Partnership Agreements include reporting arrangements that will see many indicators analysed by Indigenous status.

The Australian Government and states and territories will work in partnership to achieve the agreed COAG targets; develop, progress and review the national objectives and outcomes for Indigenous reform; and ensure that their data are of high quality and available for reporting. Fundamental to this is respectful and collaborative partnership with Indigenous Australians. This approach draws on the strengths of Indigenous cultures and is considered particularly important in creating lasting change in the lives of Indigenous Australians.

Source: COAG 2008.

## Comparative snapshot of the health and wellbeing of Indigenous young people

Health status and wellbeing		Indigenous	Non-Indigenous	Rate ratio <sup>(a)</sup>
Physical and mental wellbeing	Proportion of young people aged 15–24 years rating their health as 'excellent', 'very good' or 'good' (2007–08)	*90%	*93% <sup>(b)</sup>	1.0
Deaths	Death rates for young people aged 12–24 years (2003–2007)	*90 per 100,000	*38 per 100,000	2.4
Mental health	Proportion of young people aged 18–24 years having high or very high levels of psychological distress as measured by the Kessler 5 (K5) scale <sup>(c)(d)</sup> (2007–08)	*33%	*14%	2.4
Injury and poisoning	Injury and poisoning death rate for young people aged 15–24 years (2003–2007)	*84 per 100,000	*32 per 100,000	2.6
	Road transport accident death rate for young people aged 15–24 years (2003–2007)	*26 per 100,000	*13 per 100,000	2.0
	Assault death rate for young people aged 15–24 years (2003–2007)	*6 per 100,000	*1 per 100,000	6.0
	Suicide rate for young people aged 15–24 years (2003–2007)	*33 per 100,000	*8 per 100,000	4.1
	Accidental poisoning death rate for young people aged 15–24 years (2003–2007)	3 per 100,000	2 per 100,000	1.5
	Injury and poisoning hospitalisation rate for young people aged 15–24 years (2008–09)	*3,809 per 100,000	*2,243 per 100,000 <sup>(e)</sup>	1.7
Chronic conditions	Prevalence of long-term conditions among young people aged 12–24 years (2007–08)	59%	63%	0.9
	Proportion of young people aged 12–24 years with asthma as a long-term condition (2007–08)	*16%	*13%	1.2
	Incidence of diabetes among young people aged 15–24 years (Type 1 diabetes only, 2005–2007)	9 per 100,000	13 per 100,000	0.7
	Incidence of cancer per 100,000 young people aged 12–24 years (2003–2007)	*14 per 100,000	*25 per 100,000	0.6
Communicable diseases	Incidence of vaccine-preventable diseases among young people aged 12–24 years (2008)	*121 per 100,000	*43 per 100,000	2.8
	Pertussis (2008)	56 per 100,000	37 per 100,000	1.5
	Hepatitis A, B, and C notification rates for young people aged 12–24 years (2008)	*185 per 100,000	*30 per 100,000	6.2
	Hepatitis A (2008)	1.4 per 100,000	1.7 per 100,000	0.8
	Hepatitis B (2008)	61 per 100,000	13 per 100,000	4.7
	Hepatitis C (2008)	123 per 100,000	15 per 100,000	8.2
	HIV infection notification rate for young people aged 12–24 years (2004–2008)	3 per 100,000	3 per 100,000	1.0
	Incidence of notifiable sexually transmissible infections among young people aged 12–24 years (2008)	*4,519 per 100,000	*428 per 100,000	10.6
	Chlamydia (2008)	2,880 per 100,000	405 per 100,000	7.1
Gonorrhoea (2008)	1,540 per 100,000	19 per 100,000	81.1	

Factors influencing health		Indigenous	Non-Indigenous	Rate ratio <sup>(a)</sup>
Overweight and obesity	Proportion of young people aged 15–24 who are overweight or obese <sup>(d)</sup> (2007–08)	*37%	*27%	1.4
Physical activity	Proportion of young people aged 15–24 years meeting the National Physical Activity Guidelines (2007–08) <sup>(f)</sup>	*14%	*34%	0.4
Nutrition	Proportion of young people aged 12–24 years meeting Australian Dietary Guidelines (2007–08)	*5%	*8%	0.6
Substance use	Proportion of young people aged 15–24 years who are daily smokers <sup>(d)</sup> (2008 (Indigenous); 2007–08 (Non-Indigenous))	*Males 39%	*Males 16%	2.4
		*Females 40%	*Females 14%	2.9
	Proportion of young people aged 18–24 years who drink at risky or high-risk levels in the short term (ST) or long term (LT) <sup>(d)</sup> (2004–05)	*23% (ST) 16% (LT)	15% (ST) 14% (LT)	1.5 1.1
Sexual and reproductive health	Age-specific birth rate for 15–19 year old women (2008)	*78 per 1,000	*14 per 1,000	5.3
Family and community factors		Indigenous	Non-Indigenous	Rate ratio <sup>(a)</sup>
Social capital	Proportion of young people aged 18–24 years who are able to get support in a time of crisis from persons living outside the household (2008 (Indigenous); 2006 (all young people))	*90%	*96% <sup>(b)</sup>	0.9
Child protection	Rate of young people aged 12–17 years who were the subject of a substantiation of a child protection notification received in a given year (2009–10)	+22 per 1,000	+4 per 1,000 <sup>(e)</sup>	5.5
	Rate of young people aged 12–17 years who are the subject of care and protection orders (2009–10)	+42 per 1,000	+6 per 1,000 <sup>(e)</sup>	7.0
Victims of violence	Rate of young people aged 18–24 years who have been the victim of physical or threatened violence <sup>(d)(g)</sup> (2008 (Indigenous); 2006 (all young people))	*33%	*24%	1.4
Young people and crime	Rate of young people aged 12–17 years who are under juvenile justice supervision (2008–09)	+30 per 1,000	+2 per 1,000	15
	Rate of imprisonment for young people aged 18–24 years (2009)	+26 per 1,000	+2 per 1,000	13
Environmental tobacco smoke	Proportion of young people aged 12–17 years living in households where a household member smoked inside the home (2004–05) <sup>(h)</sup>	*33%	*12%	2.8
Overcrowded housing	Proportion of young people aged 15–24 years who live in overcrowded housing (2006)	27%	10%	2.7
Socioeconomic factors		Indigenous	Non-Indigenous	Rate ratio <sup>(a)</sup>
Education	Proportion of young people in Year 7 and Year 9 achieving at or above the national minimum standards for reading, writing and numeracy (2009)	*59–76%	*89–96%	..
	Apparent retention rate from Year 7/8 to Year 12 (2009)	+45%	+77%	0.6
	Proportion of young people aged 15–24 years undertaking study leading to qualifications (2008)	*41%	*58%	0.7
Employment	Full-time participation rate of young people aged 18–24 years in education or employment (2008) <sup>(d)</sup>	40%	77% <sup>(b)</sup>	0.5
	Unemployment rate for young people aged 15–24 years (2009)	26.5%	11.5% <sup>(b)</sup>	2.3
Income	Proportion of young people aged 15–24 years receiving government income support (2008)	+45%	+16%	2.8
	Proportion of young people aged 18–24 years who live in households that experience financial stress (2008 (Indigenous); (2006 all young people))	*60%	*36% <sup>(b)</sup>	1.7
Socioeconomic status of parents	Proportion of young people aged 12–24 years whose parents did not complete secondary school (Year 10 or above) (2006)	+22%	+7%	3.1
	Proportion of young people aged 12–24 years living in jobless families (2006)	+35%	+12%	2.9

Health system performance		Indigenous	Non-Indigenous	Rate ratio <sup>(a)</sup>
Potentially preventable hospitalisations	Potentially preventable hospitalisation rate for young people aged 12–24 years (2008–09)	*1,977 per 100,000	*1,054 per 100,000 <sup>(e)</sup>	1.9
Teenage purchase of cigarettes or alcohol	Proportion of teenage smokers aged 12–17 years who personally purchased their most recent cigarette (2005)	+20%	+22%	0.9
Delivery by caesarean section	Caesarean sections as a proportion of all deliveries for young women aged 15–24 years who gave birth (2008)	21%	20%	1.0
General practitioner consultations	Rate of general practice encounters for young people aged 12–24 years (2004–05) <sup>(h)</sup>	14%	14%	1.0
Waiting times in emergency departments	Proportion of patients aged 12–24 years who are treated within national benchmarks for waiting times across triage categories in public hospital emergency departments (2008–09)	70%	70% <sup>(e)</sup>	1.0
Adverse events treated in hospital	Proportion of hospitalisations for young people aged 12–24 years where an adverse event was treated and/or occurred (2008–09)	*2%	*3% <sup>(e)</sup>	0.7

\* Difference between Indigenous and non-Indigenous Australians is statistically significant.

+ Standard errors not available to calculate confidence intervals to assess whether rates are statistically significantly different.

(a) Rate ratio is the Indigenous rate divided by the non-Indigenous rate. See *Appendix 1 Methods* for further explanation of rate ratios.

(b) Indicates that the comparison group is all young people rather than non-Indigenous young people.

(c) Indigenous data are only available based on the Kessler 5 (K5) distress scale. The K5 is a shorter version of the K10, using only five questions. The K5 has been used in this comparison for both Indigenous and non-Indigenous young people.

(d) The age range used in this chapter differs slightly from that presented elsewhere in the report, as data by Indigenous status for this indicator were not available for the same age range.

(e) Indicates the comparison group is other young Australians rather than non-Indigenous young people.

(f) A proxy measure is used to determine whether National Physical Activity Guidelines are met. See *Chapter 13 Physical activity* for more information.

(g) This indicator is slightly different from that used in *Chapter 24 Victims of violence* as Indigenous data were not available for sexual assault.

(h) This indicator is slightly different from that used for the total population (see *Chapter 26 Environmental tobacco smoke*) in that, due to data availability and comparability, it refers to the proportion of people living in households rather than the proportion of households.

(i) This indicator is different to that presented for the total population in *Chapter 39 General practice consultations*.

#### Box 42.2: Terminology used to describe Aboriginal and Torres Strait Islander people

'Aboriginal and Torres Strait Islander people', 'Indigenous Australians' and 'Indigenous young people' are used interchangeably when referring to people who have identified as Aboriginal and/or Torres Strait Islander.

'Non-Indigenous Australians' and 'Non-Indigenous young people' are those who have stated they are not Aboriginal and/or Torres Strait Islander.

'Other Australians' is used when referring to people who 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 either Aboriginal and/or Torres Strait Islander people who have chosen not to identify as such or individuals for whom the relevant information was not collected.

## Quality of information on Indigenous young people

There has been much progress in collecting information on the health and wellbeing of Aboriginal and Torres Strait Islander people over the last decade, but many logistical, analytical and conceptual challenges remain (AIHW & ABS 2006). This is due partly to varying levels of identification of Indigenous people in administrative records, and partly to the statistical and practical challenges of surveying a population that is relatively small and less accessible—2.5% of the total population, one-quarter of whom live in *Remote* and *Very remote* areas. Improving both the counting of Indigenous Australians in the ABS Census of Population and Housing and identifying them in administrative data sets are key strategies towards better quality information about the Indigenous population.

With respect to mortality data, Indigenous deaths registrations are not yet complete enough in all states and territories to provide accurate national estimates. Deaths data from New South Wales, Queensland, Western Australia, South Australia and the Northern Territory are used to provide indicative national information. These five jurisdictions represent around 89% of the Indigenous youth population aged 12–24 years in Australia. The Australian Institute of Health and Welfare (AIHW) has recently assessed the extent of under-counting of Indigenous people in hospital records. The results show that the quality of identification in New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory is adequate for reporting on Indigenous hospital use (AIHW 2010b). These

six jurisdictions represent around 95% of the Indigenous youth population aged 12–24 years in Australia. In this report the jurisdictions considered to have the most complete coverage of Indigenous Australians are used in analysis of mortality and hospital data. Refer to *Appendix 1 Methods* for further information on the presentation of deaths and hospital data for Indigenous Australians.

Further improvements to Indigenous data quality will result from COAG initiatives (see Box 42.1). The National Indigenous Reform Agreement strongly emphasises the need for closing the data gaps through improvements in data quality for a number of sectors including health, education and employment, as well as improving Indigenous enumeration in the Census. COAG has agreed to a number of data quality improvements that Australian Government agencies, including the Australian Bureau of Statistics (ABS) and the AIHW, will undertake with the states and territories (see National Indigenous Reform Agreement Schedule F for a full list of data quality improvement activities).

### Data gaps

As discussed, accurately assessing the health and wellbeing of Indigenous young people is difficult. Although there are a number of surveys specifically relating to the Indigenous population, such as the ABS National Aboriginal and Torres Strait Islander Health Survey and the National Aboriginal and Torres Strait Islander Social Survey (NATSISS), these surveys do not collect information for many of the indicators or for the relevant age group covered in this report. Other surveys that collect information from Indigenous people often have inadequate sample sizes and this can result in high variability in the data, and apparent differences between Indigenous and non-Indigenous young people may not be statistically significant. These data deficiencies may mask true differences in these populations.

As a result, for many areas considered integral to the health and wellbeing of young people there is a lack of robust national information to assess how well Indigenous young people are faring, and how they compare with non-Indigenous young people. Although reliable national Indigenous data were available for over half of the indicators presented in this report, data were not available for indicators in the following areas:

- disability
- oral health
- sun protection



- sexual and reproductive health
- family cohesion/functioning
- parental health and disability
- community and civic participation
- school relationships and bullying
- sexual assault
- homelessness
- teenage purchase of alcohol
- melanoma of the skin
- cervical cancer
- appropriate use of antibiotics.

## Young Indigenous Australians: demographic overview

This section describes Australia’s Indigenous youth population in terms of its size, composition and geographical distribution. It provides a context for the health and wellbeing information presented in this chapter and, importantly, provides information for service planning and delivery.

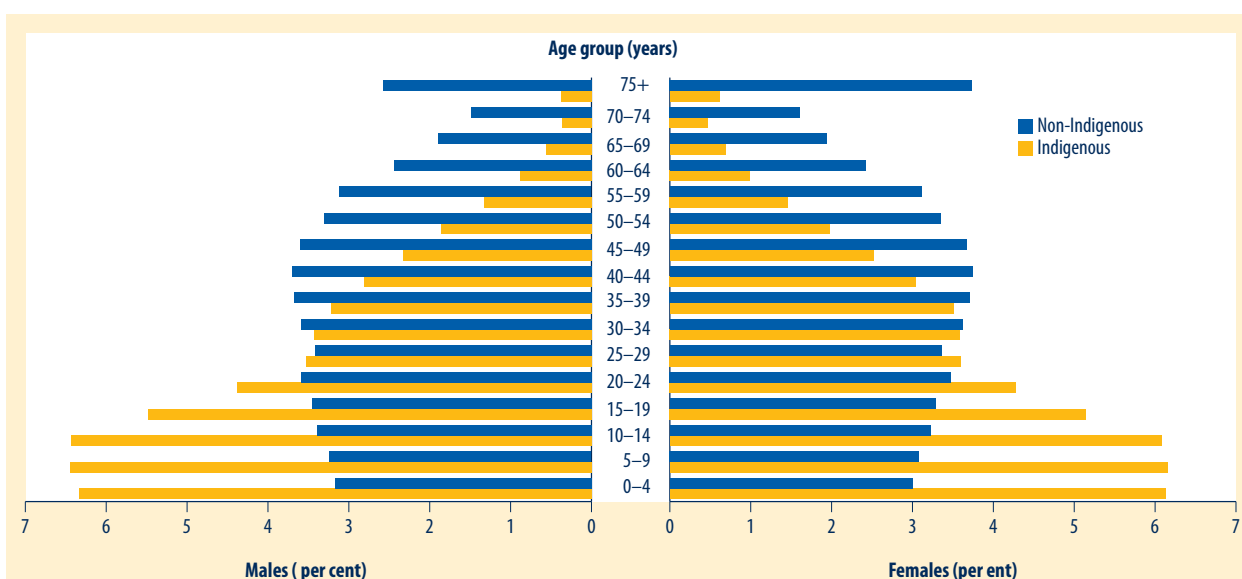
There were an estimated 138,400 Aboriginal and Torres Strait Islander young people aged 12–24 years in Australia in 2006, representing 3.7% of all young people in Australia. The measurement of the Indigenous population is complex, particularly due to under-enumeration of the Indigenous population

in the ABS Census of Population and Housing on which population estimates are based, and under-identification of Indigenous people in birth and death registrations.

In contrast to the non-Indigenous population, the Indigenous population has a much younger age structure (Figure 42.1). This reflects the higher birth rate among Indigenous women compared with all Australian women (2.5 births compared with 2.0 in 2008), and the higher mortality rate among Indigenous Australians of all ages (AIHW 2010b). Although Indigenous young people comprise a small proportion of the total Australian youth population (3.7%), they represent more than one-quarter of the Indigenous population (27%)—a higher proportion than for non-Indigenous young people (18%).

## Where do Indigenous young people live?

Despite the common perception that most Indigenous Australians live in remote areas, the majority (76%) of young Indigenous Australians aged 15–24 years live in *Major cities* and *Inner regional* and *Outer regional* areas (75,500 in 2006). However, a greater proportion of Indigenous young people (24%) live in *Remote* and *Very remote* areas than non-Indigenous young people (1%) (Table 42.1). Indigenous young people accounted for 38% of all young Australians in *Remote* and *Very remote* areas, despite accounting for 4% of all young people in 2006.



Source: ABS 2008c.

Figure 42.1: Age and sex distribution of Australia’s Indigenous and non-Indigenous populations, 2006

**Table 42.1: Distribution of Indigenous young people aged 15–24 years, by regional status, June 2006**

Region of residence	Number	Per cent
Major cities	33,427	33.5
Inner regional	21,422	21.5
Outer regional	20,603	20.7
Remote	8,746	8.8
Very remote	15,524	15.6
<b>Total young people aged 15–24 years<sup>(a)</sup></b>	<b>99,722</b>	<b>100.0</b>

(a) Includes 'Other territories' comprising Jervis Bay Territory, Christmas Island and the Cocos (Keeling) Islands.

Source: ABS 2008c.

The majority of Aboriginal and Torres Strait Islander young people lived in New South Wales (29% of the Indigenous youth population), Queensland (28%), Western Australia (14%) and the Northern Territory (13%) in 2006. Indigenous young people comprised 39% of the Northern Territory youth population, but 6% or less in all other states and territories (Table 42.2).

See *Chapter 2 Young people in Australia: demographic overview* for further information.

## Indigenous families and households

There is evidence that Indigenous Australians have more extensive and complex family relationships than most non-Indigenous Australians. Indigenous households differ from non-Indigenous households in that they tend to be larger, non-nuclear and more fluid in composition (ABS & AIHW 2008). Penman (citing Daly & Smith 1999), wrote that:

Indigenous households who make common provision for food and the like are often spread over more than one dwelling, just as Indigenous residents in the one dwelling may sleep there but eat elsewhere (Penman 2008).

These extended family structures are important for Indigenous Australians living in remote, traditionally orientated communities as well as for those living in more densely populated areas, and these relationships can potentially form an important safety net for many children (Daly & Smith 2005; Morphy 2006).

The ABS has acknowledged that the household and family structures used in the 2006 Census of Population and Housing may not 'fully reflect the richness and complexity of household and family relationships relevant to the Indigenous population...' (ABS 2008g). An 'Indigenous household' was defined in the Census as any household that had at least one person of any age as a resident at the time of the Census who identified as Aboriginal and/or Torres Strait Islander.

## Indigenous household structure and relationships

According to the 2006 Census, there were 166,700 Indigenous households, which were, on average, larger than other Australian households (3.3 people compared with 2.5 respectively). One-third (33%) of Indigenous households with dependent children had three or more children and 15% had four or more children, compared with 21% and 5% of other Australian households, respectively (ABS 2008g).

**Table 42.2: Distribution of Indigenous young people aged 15–24 years in the states and territories, June 2006**

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia <sup>(a)</sup>
Per cent of state or territory youth population <sup>(b)</sup>									
15–19 years	3.6	1.0	5.3	5.1	3.0	6.5	1.9	42.4	3.9
20–24 years	2.7	0.8	4.2	4.2	2.3	5.2	1.5	35.6	3.0
15–24 years	3.1	0.9	4.7	4.6	2.7	5.9	1.7	38.8	3.5
Per cent of Indigenous population 15–24 years <sup>(c)</sup>									
15–24 years	29.1	6.5	27.5	13.7	5.7	3.8	0.9	12.7	100.0

(a) Includes 'Other Territories' comprising Jervis Bay Territory, Christmas Island and the Cocos (Keeling) Islands.

(b) The denominator is the state or territory population of the same age.

(c) The denominator is the total Indigenous Australian population aged 15–24 years.

Source: ABS 2008c.

Indigenous households were less likely to be families without dependent children than other Australian households (25% compared with 37%), or one-person households (14% compared with 25%). Similar proportions of Indigenous and other households were couple families with dependants (28% and 26% respectively). However, Indigenous households were 3 times as likely to be one-parent families with dependent children (23% compared with 7%), or multi-family households (5% compared with 1%) (Table 42.3).

**Table 42.3: Household composition in private dwellings, 2006 (per cent)**

Household type	Indigenous households	Other households
One-family households		
Couples with dependent children <sup>(a)</sup>	28.2	26.4
One-parent families with dependent children <sup>(a)</sup>	23.0	6.8
Families without dependent children <sup>(a)</sup>	24.8	37.1
Multi-family households	5.3	1.2
Group households	4.9	3.9
One-person households	13.8	24.6
<b>Total (per cent)</b>	<b>100.0</b>	<b>100.0</b>
<b>Total (number)</b>	<b>166,700</b>	<b>6,977,400</b>

(a) A dependent child is either under 15 years of age or a dependent student aged 15–24 years. In 2006, 90% of the 178,300 Indigenous dependent children living in occupied private dwellings were children aged under 15 years.

Notes:

- Proportions exclude 'Not classifiable households'.
- An 'Indigenous household' was defined in the Census as 'any household that had at least one person of any age as a resident at the time of the Census who identified as Aboriginal and/or Torres Strait Islander'.

Source: ABS 2008g.

The patterns seen for Indigenous household composition are reflected in household relationships. In 2006, 39% of Indigenous Australians in private dwellings were children aged less than 15 years, almost twice the proportion for non-Indigenous Australians (20%). This was consistent with the younger age profile of the Indigenous population (see Figure 42.1). In contrast, Indigenous Australians were half as likely as non-Indigenous Australians to report that they were a husband, wife or partner with no dependants (24% compared with 48%), more likely to be lone parents (9% compared with 5%) or 'other related individuals' (6% compared with 2%), and less likely to live alone (6% compared with 10%). Similar proportions of Indigenous and non-Indigenous young people were dependent students (4% and 5% respectively), and Indigenous people

were slightly more likely to be non-dependent children (8% compared with 6% for non-Indigenous people) (ABS 2008g).

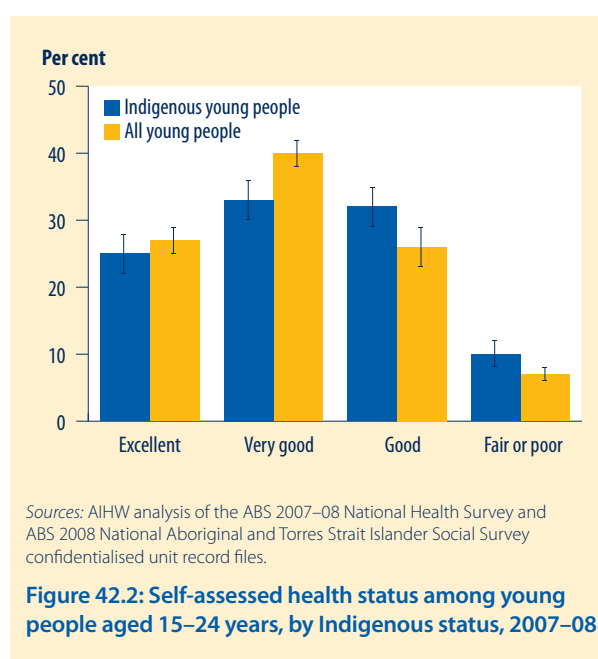
## Health status

There are various measures of health status that can provide information on both Indigenous health and the health inequality that exists between Indigenous and non-Indigenous Australians. These are self-assessed health status, life expectancy, mortality, hospitalisations, injuries and poisoning, and health conditions. These measures all show that young Indigenous Australians tend to have poorer health outcomes than non-Indigenous young people.

### Self-assessed health status

Young people's self-assessed health status can be affected by a number of factors such as levels of education, remoteness, Indigenous status and socioeconomic status.

The proportion of Indigenous young people rating their health as 'excellent', 'very good' or 'good' is similar to that for all young people (90% and 93% respectively). Indigenous young people aged 15–24 years were equally likely as all young people to rate their health as 'excellent' (25% and 27% respectively) but less likely to rate their health as 'very good' (33% and 40% respectively). Furthermore, higher proportions of Indigenous young people rated their health as 'good' (32% and 26% respectively), and fair or poor (10% and 7% respectively) than all young people (Figure 42.2).



**Figure 42.2: Self-assessed health status among young people aged 15–24 years, by Indigenous status, 2007–08**

See *Chapter 4 Physical and mental wellbeing* for more information.

## Life expectancy

Available data suggest that the life expectancy at birth for Aboriginal and Torres Strait Islander people is much lower than for non-Indigenous Australians, reflecting the higher death rates among Indigenous Australians, particularly in the mid-adult and older age groups. Recently, the ABS reviewed their method of compiling the Indigenous life tables, which are used to estimate life expectancy (Box 42.3).

For the period 2005–2007, the life expectancy at birth was estimated at 67 years for Indigenous males and 73 years for Indigenous females—well below the 79 years for non-Indigenous males and 83 years for non-Indigenous females over the same period. This is a difference of 12 years for males and 10 years for females (AIHW 2010b).

### Box 42.3: Estimating life expectancy for Aboriginal and Torres Strait Islander people

Over the years, a number of different methods have been used to estimate the life expectancy of Aboriginal and Torres Strait Islander people. The Australian Bureau of Statistics (ABS), after critically assessing a range of different methods, has recently concluded that indirect methods are no longer appropriate for estimating Indigenous life expectancy (ABS 2009g). The ABS applied the 'direct' demographic method to derive 2005–07 life tables for the Indigenous and non-Indigenous populations by adjusting death registrations data on the basis of identification rates obtained from the Census Data Enhancement Indigenous Mortality Quality Study. This study linked Census records with death registration records to examine differences in the reporting of Indigenous status across the two data sets.

The new ABS method suggests a markedly higher Indigenous life expectancy than previous estimates. Since the new method is significantly different from the earlier one, the revised estimate cannot be used to suggest that there has been a sudden dramatic improvement in Indigenous life expectancy.

Source: AIHW 2010b.

## All-cause mortality

Mortality rates and cause of death are key indicators of the health of a population. Death rates among Indigenous young people were over twice as high as for non-Indigenous young people in 2003–2007, reflecting the large disparities in environmental, health and social conditions experienced by Indigenous young people (see also *Chapter 6 Deaths*).

In 2003–2007, one in 10 deaths among young people aged 12–24 years (556 out of 5,412) were identified as Indigenous, based on deaths in New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only:

- The mortality rate among Indigenous young people was 2.5 times as high as for non-Indigenous young people—90 and 38 deaths per 100,000 respectively.
- As with young people overall, death rates among young Indigenous males were twice as high as for young Indigenous females (153 and 71 per 100,000 respectively).
- Death rates were considerably higher among 20–24 year olds (141 per 100,000) than 12–14 and 15–19 year olds (33 and 90 respectively).

## Conditions causing ill health and mortality

Several different health measures—self-reported prevalence, general practice consultations, hospitalisations, and mortality—consistently show the main conditions that cause ill health and mortality among Indigenous young people. For example, injury and poisoning is the leading cause of death and disease burden among Indigenous young people and is among the top three causes of hospitalisation. Information from prevalence surveys and disease registers indicate the burden of particular health conditions among Indigenous young people, as well as identifying conditions that are particularly prevalent among Indigenous young people such as trachoma, skin infections, diabetes, rheumatic heart disease and hearing problems or infections, which are relatively uncommon in the general population.

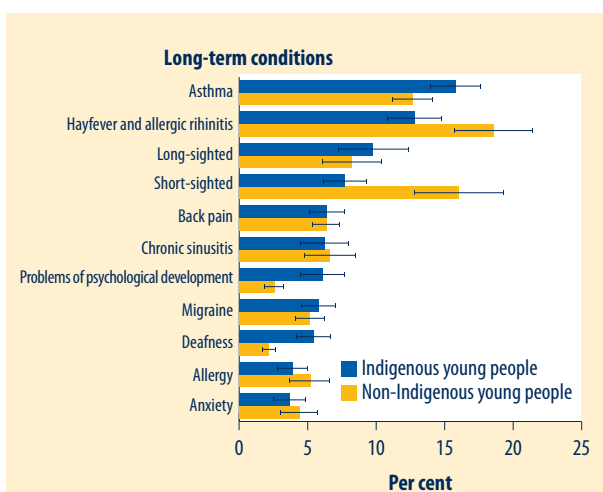
Among Indigenous young people aged 15–24 years in 2003, the leading causes of disease burden among males were mental health disorders (27%), intentional injury (20%) and unintentional injury (17%), and among females mental health disorders (29%), intentional injury and communicable disease (10% each) (Begg et al. 2007).

## Chronic conditions

Information on chronic conditions (that is, a condition that has lasted, or is expected to last, 6 months or more) among Indigenous young people is limited due to the small number of representative studies in this population.

Based on prevalence data from the National Aboriginal and Torres Strait Islander Health Survey, in 2004–05, among young people aged 12–24 years:

- An estimated 59% of young Indigenous Australians reported a long-term condition, a rate not statistically significantly different from that for non-Indigenous young people (63%). Around one-third of Indigenous and non-Indigenous young people reported two or more long-term conditions (34% each).
- Asthma was the most commonly reported long-term condition among Indigenous young people (16%), followed by hayfever and allergic rhinitis (13%), and long-sightedness (10%). The prevalence of self-reported asthma was slightly higher among Indigenous than non-Indigenous young people, while hayfever and allergic rhinitis, and short-sightedness were significantly lower among Indigenous young people. There was no statistically significant difference in the prevalence of long-sightedness between Indigenous and non-Indigenous Australians (Figure 42.3).
- Problems of psychological development and complete or partial deafness affected around one in 20 Indigenous young people (6% and 5% respectively), twice as high as among non-Indigenous young people (3% and 2% respectively). The prevalence of anxiety-related problems was similar for Indigenous and non-Indigenous young people (4% each).



Sources: AIHW analysis of the 2004–05 National Aboriginal and Torres Strait Islander Health Survey and 2004–05 National Health Survey confidentialised unit record files.

**Figure 42.3: Most common long-term conditions among young people aged 12–24 years, by Indigenous status, 2004–05**

## Diabetes

While diabetes mellitus is relatively uncommon in young people, it is a serious chronic disease resulting from poor blood glucose control and leading to significant morbidity, disability and premature death. The incidence of Type 1 diabetes among Indigenous young people aged 15–24 years was lower than for non-Indigenous young people in 2005–2007 (9 compared with 13 per 100,000), according to the National Diabetes Register. No reliable national information is available on the incidence of Type 2 diabetes or other types of diabetes among young people, as the register records only insulin-treated diabetes and the majority of Type 2 diabetes cases do not require insulin.

In 2008–09, hospital separation rates with a principal diagnosis of diabetes for young people aged 12–24 years were 2.4 times as high for Indigenous young people as for other young people (332 per 100,000 compared with 138, excluding data from the Australian Capital Territory, Tasmania and private hospitals in the Northern Territory), according to the AIHW National Hospital Morbidity Database.

See *Chapter 9 Chronic conditions* for more information.

## Eye health

Indigenous young people are at an increased lifetime risk of poor eye health, as several eye conditions are associated with Type 2 diabetes, which is more prevalent among Indigenous than non-Indigenous Australians (AIHW 2010b). The incidence of trachoma is also higher among Indigenous communities, which is a major cause of blindness among Indigenous Australians.

In 2004–05, an estimated one in five (20%; 25,100) Indigenous young people aged 12–24 years reported eye diseases, according to the 2004–05 National Aboriginal and Torres Strait Islander Health Survey. The most common eye diseases reported were short-sightedness and long-sightedness, followed by other eye diseases (8%, 10% and 5% respectively). These rates were generally lower than for non-Indigenous young people, with corresponding rates of 16%, 8% and 8% respectively.

Eye health problems are often treated in community settings by general practitioners; however, more serious problems may require admission to hospital. Between 2006–07 and 2008–09, there were around 235 hospital separations for eye health problems among Indigenous young people, with rates almost twice as high among Indigenous as other young



people (57 and 112 hospital separations per 100,000 respectively, excluding data from the Australian Capital Territory, Tasmania and private hospitals in the Northern Territory). Disorders of the eyelid, lacrimal system and orbit were the leading cause of hospital separations for both Indigenous and other young people (17 and 29 hospital separations per 100,000 respectively).

### Hearing problems

Indigenous young people have one of the highest rates of hearing loss and hearing impairments in Australia, which contributes to educational disadvantage, behavioural and substance use problems, and criminal offending (McDonald 2009). Particularly prevalent in Indigenous communities is otitis media, an infection and inflammation of the middle ear space and eardrum with symptoms including earache, fever and, in some cases, diminished hearing.

Overall, the prevalence of ear and mastoid diseases among Indigenous young people aged 12–24 years was over twice as high as for non-Indigenous young people (8% and 3% respectively, according to the 2004–05 National Aboriginal and Torres Strait Islander Health Survey and the ABS 2004–05 National Health Survey). Complete or partial deafness was over twice as high among Indigenous young people (5% compared with 2% for non-Indigenous young people), and otitis media was also substantially higher among Indigenous young people (1.6% and 0.4% respectively). However, other diseases of the middle ear and mastoid were similar for Indigenous and non-Indigenous young people (0.4% and 0.2% respectively).

In 2008–09, there were 396 hospital separations for diseases of the ear and mastoid among Indigenous young people aged 12–24 years—over 3 times the rate of other young people (278 and 87 per 100,000 respectively, excluding data from the Australian Capital Territory, Tasmania and private hospitals in the Northern Territory). The majority of these hospital separations for Indigenous young people were for perforation of the tympanic membrane (110 per 100,000), otitis media (98 per 100,000) and otitis externa (16 per 100,000).

### Skin disease

Skin infections and infestations are among the most common reasons for children in remote communities to present to primary health care centres.

In 2008–09, there were 1,245 hospital separations for diseases of the skin and subcutaneous

tissue among Indigenous young people aged 12–24 years—a rate almost twice as high as for other young people (875 and 480 per 100,000 respectively, excluding data from the Australian Capital Territory, Tasmania and private hospitals in the Northern Territory). Skin infections remain a significant public health problem among Indigenous populations in Australia. For example, scabies sores may increase the risk of other infections that lead to acute rheumatic fever (see Box 42.4) and kidney disease (Clucas et al. 2008).

#### Box 42.4: Rheumatic heart disease among Aboriginal and Torres Strait Islander people

Both acute rheumatic fever (ARF) and rheumatic heart disease (RHD) are preventable causes of ill health and death. They are typically associated with overcrowding, poor sanitary conditions and other aspects of social and economic disadvantage. Indigenous Australians in the Northern Territory have some of the highest rates of ARF and RHD in the world, and almost all new cases recorded in the Northern Territory are among Aboriginal and Torres Strait Islander people.

ARF is a delayed complication of an untreated throat infection from Group A Streptococcus bacteria ('strep throat'), but may also follow streptococcal skin sores. ARF occurs mainly in children and young adults. RHD is caused by the long-term damage done to the heart muscle or heart valves by ARF, and RHD increases the risk of recurrent infections and further heart damage (AIHW: Field 2004).

ARF is believed to be under-reported, partly because it is difficult to diagnose. Therefore, the reported incidence is likely to be an underestimate (AIHW: Field 2004).

##### Incidence of acute rheumatic fever

For new and recurrent cases of ARF in the Northern Territory between 2006 and 2009 there were 213 cases of ARF among Indigenous people. Around 21% of cases were for Indigenous young people aged 15–24 years (44 out of 213), with rates of 0.7 per 1,000 young Indigenous males and 1.0 for young Indigenous females. The rate among Indigenous children aged 5–14 years was considerably higher (1.8 and 2.7 per 1,000 Indigenous boys and girls), the peak age group for the incidence of ARF.

##### Prevalence of rheumatic heart disease

There were 324 cases of RHD in young people 15–24 years living in the Northern Territory at 31 December 2009. Nearly all of these cases (98%) were among Indigenous young people. The rate of RHD among Indigenous young people was 25.1 per 1,000. The prevalence of RHD was highest among 45–54 year olds (34.5 per 1,000) and 35–44 year olds (34.2 per 1,000), with rates considerably lower among Indigenous children aged 0–14 years (6.1 per 1,000).



## Mental health and social and emotional wellbeing

From the perspective of Indigenous Australians, mental health and social and emotional wellbeing are part of a holistic understanding of life that encompasses not only the wellbeing of the individual but also the wellbeing of their family and community (National Aboriginal Health Strategy Working Party 1989; Swan & Raphael 1995). For many Indigenous families and young people there are major barriers to accessing mental and community health services, partly due to fears relating to unwarranted intervention from government organisations, and long waiting times for treatment (Williamson et al. 2010). There is a consistent association between personal experiences of racism and mental health conditions such as psychological distress, depression and anxiety (Paradies 2006).

As a broad disease group, mental health problems and disorders accounted for the second highest burden of disease among Indigenous young people aged 15–34 years in 2003, after injuries and poisoning. It accounted for almost 27% of the burden of disease in this age group. The leading specific causes of disease burden from mental disorders among Indigenous young people were anxiety and depression, accounting for 13% of the burden in this age group (Vos et al. 2007). In comparison, mental disorders accounted for 42% of the burden of disease among all young people aged 15–34 years, and anxiety and depression accounted for 22% (Begg et al. 2007).

The 2008 NATSISS collected information on the social and emotional wellbeing of Indigenous young people. Indigenous young people aged 18–24 years were more than twice as likely to report high or very high levels of psychological distress than non-Indigenous young people (33% and 14% respectively, based on the Kessler 5 scale, according to the NATSISS and the 2007–08 National Health Survey). See *Chapter 7 Mental Health* for more information on the Kessler psychological distress scale.

Among Indigenous young people aged 16–24 years, in the 4 weeks prior to the NATSISS, 6% reported visiting a doctor or other health professional due to feelings of psychological distress, and 12% had one or more days in which they were unable to carry out normal activities due to such feelings. Of Indigenous young people who in the last year experienced high to very high levels of psychological distress, the most common personal stressor reported was the death

of a family member or close friend in the previous year (32%), not being able to get a job (24%), serious illness or accident (20%) and alcohol or drug-related problems (15%).

Indigenous young people also experience higher rates of hospitalisation for mental and behavioural disorders. In 2008–09, there were 2,643 hospital separations for mental and behavioural disorders among Indigenous young people aged 12–24 years—a rate almost 3 times as high as for other young people (1,858 and 678 per 100,000, excluding the Australian Capital Territory, Tasmania and private hospitals in the Northern Territory). The leading causes of these hospital separations for Indigenous young people were schizophrenia (306 per 100,000), mental and behavioural disorders due to use of alcohol (348 per 100,000) and reactions to severe stress (266 per 100,000). These rates were 2–3 times as high as for other young people, with corresponding rates of 83, 125, 119 per 100,000 respectively (Table 42.4).

**Table 42.4: Hospital separation rates for mental and behavioural disorders, by Indigenous status, 2008–09 (per 100,000)**

Hospital separations	Indigenous	Other young people	Rate ratio
<i>Mental and behavioural disorders</i>	1,858	678	2.7
Schizophrenia	306	83	3.7
Alcohol use	348	125	2.7
Reactions to severe stress	266	119	2.2

*Notes:*

1. For data quality reasons, Indigenous status data exclude Australian Capital Territory, Tasmania and private hospitals in the Northern Territory.
2. The rate ratio for hospital separation rates is calculated as the Indigenous rate divided by the 'Other Australians' rate.

Source: AIHW National Hospital Morbidity Database.

See *Chapter 7 Mental health* for more information.

## Injury and poisoning

Indigenous young people may have less opportunity to gain knowledge about safety and injury prevention due to the associated disadvantages of lower education, lower incomes and fewer employment opportunities.

Injury and poisoning was the leading cause of death among Indigenous young people aged 15–24 years in 2003–2007 (373 deaths), with rates almost 3 times as high as for non-Indigenous young

people (84 per 100,000 compared with 31 respectively, based on deaths in New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only).

Of the injury and poisoning deaths among Indigenous young people, suicide was the leading cause of death—a rate of 33 per 100,000. Suicide accounted for 40% of deaths due to external causes, and was 4 times the rate for non-Indigenous young people (8 per 100,000). This was followed by land transport accidents (26 per 100,000—twice as high as the non-Indigenous rate) and assault (6 per 100,000—6 times the non-Indigenous rate). The ranking of the leading causes differed for non-Indigenous young people, where land transport accidents were the leading cause of death, followed by suicide and accidental poisoning (Figure 42.4).

The disparity in hospital separation rates for injury and poisoning between Indigenous and other young people in 2008–09 was not as great as for mortality. There were 4,003 hospital separations due to injury and poisoning among Indigenous young people aged 15–24 years, a rate of 3,809 per 100,000 and 1.7 times that of other young people (2,243 per 100,000; excluding data from the Australian Capital Territory, Tasmania and private hospitals in the Northern Territory).

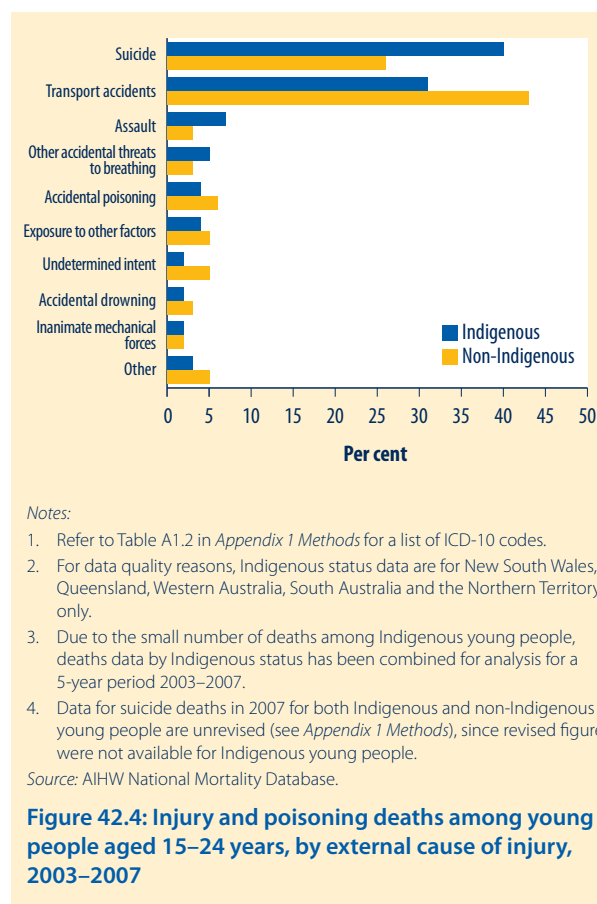
The leading causes of injury hospitalisation differed from other young people and for mortality. Assault was the most common cause of injury hospitalisation (1,195 hospital separations per 100,000 Indigenous young people aged 15–24 years), followed by exposure to inanimate mechanical forces (591 per 100,000) and land transport accidents (500 per 100,000). While the rate of hospital separations for transport accidents was similar for Indigenous and other young people, the rate for assault was 5 times as high among Indigenous young people. Transport accidents were the leading cause of injury hospitalisation among other young people.

See *Chapter 8 Injury and poisoning* for more information.

### Communicable diseases

The term ‘communicable diseases’ refers to diseases or illnesses due to harmful infectious organisms or their toxic products, and are large causes of illness, disability and death in many parts of the world. However, many of these diseases can be prevented by vaccines or barrier contraceptives, thus drastically reducing their impact.

The National Notifiable Diseases Surveillance



System (NNDSS) records information on notification rates among Indigenous Australians. However, the quality of Indigenous identification varies with the disease and by state and territory. Records for which Indigenous status was unknown are excluded from the analysis.

### Vaccine-preventable diseases

According to the NNDSS, in 2008, the overall notification rate of vaccine-preventable diseases was almost 3 times as high among Indigenous as non-Indigenous young people aged 12–24 years (121 and 43 per 100,000 respectively). Rates of pertussis were higher among Indigenous young people, 56 compared with 37 per 100,000 for non-Indigenous young people, along with rates of mumps and pneumococcal disease (49 and 16 per 100,000, compared with 0.9 and 1.3 per 100,000 for non-Indigenous young people). Indigenous status was unknown for 37% of vaccine-preventable diseases and about 40% of records for pertussis.

### Hepatitis

Hepatitis (inflammation of the liver due to infections) is caused by a variety of viruses. Hepatitis B and C viruses can cause chronic liver damage and liver cancer, and are transmitted

through exposure to infected blood (through unprotected sex or intravenous drug use), or parent-to-child transmission. According to the NNDSS, in 2008, the hepatitis incidence rate was 6 times as high among Indigenous as non-Indigenous young people (185 and 30 per 100,000 respectively). This difference was largely driven by the difference in hepatitis C incidence rates (123 per 100,000 compared with 15 per 100,000 for non-Indigenous young people). The rate of hepatitis B was also significantly higher among Indigenous young people—61 per 100,000 compared with 13 per 100,000 for non-Indigenous young people. Rates of hepatitis A were similar for Indigenous and non-Indigenous young people (1.4 and 1.7 per 100,000 young people, respectively). There is currently an immunisation program that provides hepatitis A vaccinations for Indigenous children in Queensland, Northern Territory, Western Australia and South Australia. Indigenous status was unknown for 4% of hepatitis A records and nearly 50% of records for hepatitis B and C.

#### *Human immunodeficiency virus (HIV)*

Rates of HIV in 2004–2008 were similar for Indigenous and non-Indigenous Australians aged 12–24 years (2.9 and 2.6 per 100,000 respectively), according to the National Centre in HIV Epidemiology and Clinical Research. The vast majority of these notifications were for those aged 18–24 years. Information on the completeness of Indigenous status was not available for these data.

#### *Sexually transmissible infections*

In 2008, there were 6,345 notifications for sexually transmissible infections (STIs) among Indigenous young people aged 12–24 years—a rate of 4,519 per 100,000, 10 times the rate for non-Indigenous young people (428 per 100,000). Chlamydia and gonorrhoea were the most commonly notified STIs among Indigenous young people, with rates of 2,880 and 1,540 per 100,000 young people, respectively, substantially higher than the rate for non-Indigenous young people (405 and 19 per 100,000 respectively). Indigenous status was unknown for about 48% of records for chlamydia, 19% for gonorrhoea and 9% for syphilis.

See *Chapter 10 Communicable diseases* for more information.

## Determinants of health

The health behaviours of young people—including levels of physical activity, eating habits, substance use and sexual practices—are

important determinants of their current and future health status. A range of social and economic factors—including culture, history, law, education, employment, models of governance, and social and community interactions and the physical environment—also affect the health of Aboriginal and Torres Strait Islander Australians (CSDH 2008).

### Poor nutrition, physical inactivity and overweight and obesity

Good nutrition and physical activity are important in maintaining good health, and are critical factors in determining a person's body weight. However, Indigenous young people may not have the same opportunities for good health as other young people due to factors such as the availability and affordability of fresh fruit and vegetables and the full range of opportunities for physical activity.

#### Fruit and vegetable consumption

In 2004–05, Indigenous young people aged 12–24 years living in non-remote areas were less likely than non-Indigenous young people to meet both the daily recommended serves of fruit and vegetables (5% and 8% respectively), according to the 2004–05 National Aboriginal and Torres Strait Islander Health Survey and the 2004–05 National Health Survey (Figure 42.5). This is largely attributable to the lower level of fruit consumption among Indigenous young people (20% compared with 34% for non-Indigenous young people). This pattern is likely to be driven by the greater accessibility and affordability, of food in urban centres compared with regional Australia where a higher proportion of the Indigenous population reside.

#### Physical activity

Indigenous young people aged 15–24 years were considerably less likely than non-Indigenous young people to meet the National Physical Activity Guidelines—14% and 34% respectively, according to the 2004–05 National Aboriginal and Torres Strait Islander Health Survey and 2004–05 National Health Survey (Figure 42.5). Note that these surveys provide a proxy measure for meeting the guidelines; see *Chapter 13 Physical activity* for more information.

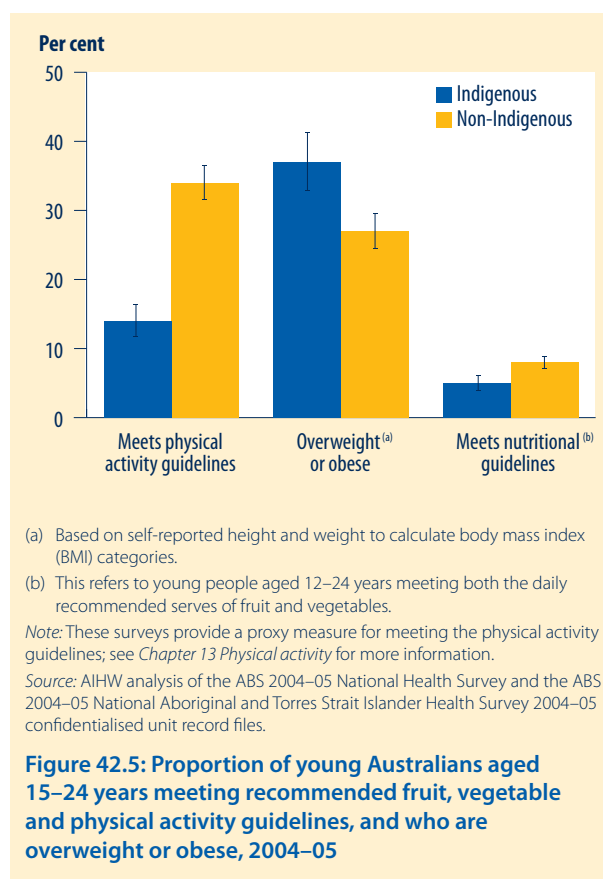
This pattern of lower physical activity among Indigenous young people is consistent with decreasing physical activity levels with increasing remoteness (43% in *Major cities* to 31% in *Outer regional* and *Remote* areas combined), which would disproportionately affect Indigenous young people. Factors such as neighbourhood layout, perceptions

of neighbourhood safety, access to facilities or public open space, climate and public transport may be key factors in participation in physical activity in regional and remote areas (Gill et al. 2005).

### Overweight and obesity

The prevalence of overweight and obesity is higher among Indigenous young people, based on self-reported height and weight information. Indigenous young people aged 15–24 years were more likely to be overweight or obese than non-Indigenous young people (37% and 27% respectively). However, they were almost twice as likely to be obese (15% and 6% respectively), according to the 2004–05 National Aboriginal and Torres Strait Islander Health Survey and the 2004–05 National Health Survey (Figure 42.5). It is worth noting that several studies have shown that respondents, especially females, tend to underestimate their weight and overestimate their height when responding to surveys, which will affect the categorisation of individuals into healthy and unhealthy weight categories (Villanueva 2001; Oliveira et al. 2009).

See *Chapter 12 Overweight and obesity*, *Chapter 13 Physical activity* and *Chapter 14 Nutrition* for more information.



### Substance use

Substance use plays a significant role in the gap in life expectancy and health between Indigenous and non-Indigenous Australians.

#### Smoking and exposure to environmental tobacco smoke

Indigenous young people aged 15–24 years were more than twice as likely to be daily smokers as non-Indigenous young people in 2007–08 (39% and 16% respectively for males, and 40% and 14% respectively for females), according to the 2007–08 National Health Survey and the 2008 NATSISS.

Indigenous adolescents were also far more likely to be exposed to environmental tobacco smoke—nearly 3 times as likely to live in households that had at least one person who smoked daily inside the home (33%) as non-Indigenous adolescents aged 12–17 years (12%), according to the 2004–05 National Aboriginal and Torres Strait Islander Health Survey and the National Health Survey. Note the 2004–05 data are used for consistency and comparability.

#### Alcohol misuse

Harm from alcohol consumption is also higher among young Indigenous Australians. Indigenous young people aged 18–24 years were more likely than non-Indigenous young people to drink at risky or high-risk levels for short-term harm at least once a week (23% and 15% respectively) in 2004–05. However, similar proportions of Indigenous and non-Indigenous young people drank at risky or high-risk levels for long-term harm (16% and 14% respectively), where risky or high-risk alcohol consumption in the survey is defined as 4 and 2 standard drinks or more per day for males and females respectively, averaged over the week before interview. Note that this definition in terms of quantity and frequency differs from that in the alcohol misuse indicators at the national level.

#### Illicit substance use

Indigenous Australians are also at risk of ill health through the harmful use of substances such as marijuana, heroin, amphetamines and inhalants. An estimated 13% of Indigenous young people aged 15–24 years living in non-remote areas had used an illicit substance within the previous 12 months, and 37% reported using an illicit substance at least once in their lifetime, according to the 2008 NATSISS. Marijuana was the illicit substance most often used (by 10% of Indigenous young people), followed by pain killers or analgesics used for non-medical purposes (3%), and amphetamines or speed (2%).



See *Chapter 16 Substance use* and *Chapter 26 Environmental tobacco smoke* for more information.

### Petrol sniffing

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 use is hard to estimate. According to the 2008 NATSISS, 2% of Indigenous young people aged 15–24 years experimented with petrol sniffing.

In 2008, according to a study in the Anangu Pitjantjatjara lands in South Australia, the introduction of Opal fuel has resulted in a decline in sniffing across the majority of the communities in the study. The number of people petrol sniffing has dropped substantially across all groups, with a decline of 60% in the number of people sniffing at occasional levels, 85% at regular levels, and 90% at heavy levels (d'Abbs & Shaw 2008).

### Hospitalisations for substance use disorders

Misuse of alcohol and other drugs may result in hospitalisations due to acute intoxication and related injuries, dependence, withdrawal symptoms, psychotic disorders and amnesia. According to the AIHW National Hospital Morbidity Database, in 2008–09 there were 576 hospital separations per 100,000 Indigenous young people aged 12–24 years for mental and behavioural disorders due to drug and alcohol use, representing almost 2.5% of all hospital separations for Indigenous young people, and 19% of all Indigenous separations for substance use (excluding the Australian Capital Territory, Tasmania and private hospitals in the Northern Territory). The corresponding proportions for other young Australians were 1.3% and 13% respectively. Of these hospital separations for mental and behavioural disorders among Indigenous young people, half were due to alcohol use (60%), a further 17% to cannabis use, and 8% to 'multiple drug use and other psychoactive substances', similar to the rates for other young Australians (61%, 13% and 10% respectively).

### Teenage births

There are social and cultural factors that increase the vulnerability of Indigenous adolescents to early pregnancy and birth, including poverty, early school leaving, community norms, and lower awareness of services and contraception use. Furthermore, a large proportion of Indigenous adolescents lives in *Remote* and *Very remote* areas (23% of 15–19 year old women in 2006) where educational and

employment opportunities for youth are limited and access to appropriate services can be difficult due to lack of choice, a lack of female doctors and distance. Culturally appropriate service provision to young Indigenous women is important; however, patient confidentiality issues may arise in Indigenous-specific services, particularly in remote areas (Slowinski 2001).

In 2008, the Indigenous teenage birth rate was 5 times the non-Indigenous rate—78 births per 1,000 Indigenous 15–19 year old females, compared with 14 for non-Indigenous teenagers. The high birth rate among Indigenous women at younger ages contributes to the relatively high birth rate of Indigenous women overall (2.5 babies per woman in 2008—25% higher than for all women, 1.97 babies per woman) (ABS 2009c).

See *Chapter 17 Sexual and reproductive health* for more information on teenage births.

## Families and communities

### Parental disability

Indigenous parents with disability with co-resident young people aged 12–24 years were more than twice as likely to need assistance with core activities of self-care, mobility and communication as non-Indigenous parents (4.2% and 1.9% respectively), according to the ABS 2006 Census of Population and Housing.

See *Chapter 19 Parental health and disability* for more information.

### Social capital

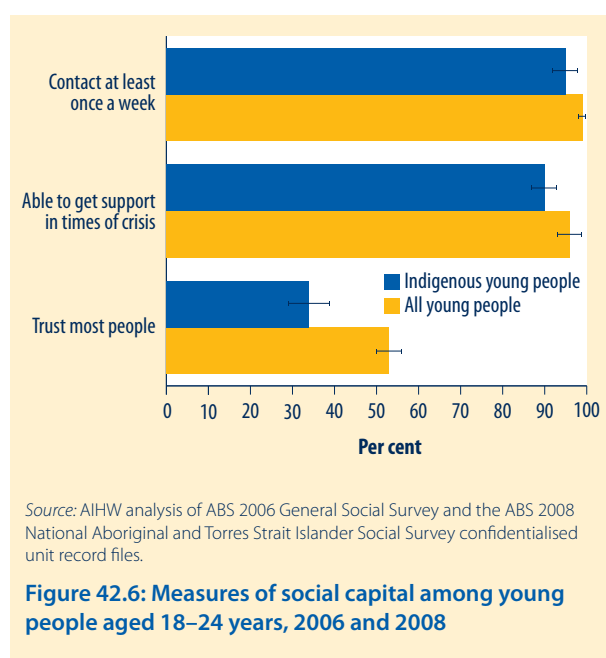
Social capital can be considered to be networks of social relationships characterised by norms of trust and reciprocity. Social organisation and kinship are complex subjects that are important to consider when measuring social capital in relation to the health of Aboriginal and Torres Strait Islander people and the role of social capital in creating healthy communities (Brough et al. 2007). The measurement of social capital needs to take into account not just the existence or number of relationships but also who the relationships are with.

Some measures of social capital are collected in ABS social surveys. Although the majority of Indigenous young people aged 18–24 years were able to get support in times of crisis from persons living outside the household, they were less likely to be able to do so than all young people (90% and 96% respectively), according to the 2008 NATSISS

and the ABS 2006 General Society Survey. The most common sources of support for Indigenous young people were family members (82%), friends (72%), neighbours (23%) or work colleagues (18%); these were also the most common sources of support among young people overall (81%, 80%, 21%, and 30% respectively).

Similar proportions of Indigenous young people and all young people had contact in the previous week with family or friends living outside the household (95% and 99% respectively). However, Indigenous young people were considerably less likely to trust 'most people' than all young people (34% and 53% respectively) (Figure 42.6).

See *Chapter 20 Social capital* for more information.



## Community and civic participation

Community and civic engagement not only allows individuals to have a say in the future direction of their communities but also promotes cohesive networks of people from various backgrounds. It contributes to the resilience of individuals and communities as well as contributing to the overall wellbeing of society.

Most Indigenous young people aged 18–24 years (93%) were involved in social, sporting or community activities in the previous 12 months, according to analysis of the 2008 NATSISS.

See *Chapter 21 Community and civic participation* for more information.

## Cultural heritage

Australia's Aboriginal and Torres Strait Islander peoples keep their cultural heritage alive by passing their knowledge, arts and rituals from one generation to another, speaking and teaching languages, and protecting sacred and significant sites, materials and objects (ABS 2008e).

In 2008, nearly two in three Indigenous young people aged 12–24 years (61%) reported that they recognised an area as their homeland or traditional country. The vast majority of those who recognised a homeland but were not living there were allowed to visit their homeland or traditional country (94%). One in three Indigenous young people (32%) spoke an Indigenous language (including only some words). Almost two-thirds of Indigenous young people (63%) felt that it was important to attend selected cultural activities, and 60% were involved in these activities in the previous 12 months. More than half of Indigenous young people (51%) identified with a clan, tribal group or language group, according to the 2008 NATSISS.

## School relationships and bullying

Differences in race, ethnicity, culture or religion are factors that can result in acts of bullying; and such acts of bullying are one form of racism.

The 2005 West Australian Aboriginal Child Health Survey obtained self-reported information on the experiences of school bullying and racism among Indigenous young people aged 12–17 years. According to the survey, almost one-third (31%) of young people attending school reported being bullied at school and, of these, almost a third (30%) experienced racism.

The 2008 NATSISS collected information from parents regarding the effects of ethnically motivated bullying on their children aged 12–14 years. Over one-quarter of parents (27%) reported that their child's progress at school was affected by bullying due to their ethnicity. Every parent surveyed whose child was bullied indicated that bullying had adversely affected their child's ability to make friends and engage in sporting and recreational activities.

## Child protection

Aboriginal and Torres Strait Islander young people are over-represented in the child protection system (AIHW 2010e).

Around 1,700 Indigenous adolescents aged 12–17 years were the subject of a substantiation of a



notification received in 2009–10—a rate of 22 per 1,000 young people (16 and 28 per 1,000 for Indigenous males and females, respectively). This compared with 4 per 1,000 for other young people. For Indigenous adolescents, the most common types of substantiated abuse were neglect (31%) and emotional abuse (27%), while for other adolescents emotional and sexual abuse were most common (32% and 27% respectively).

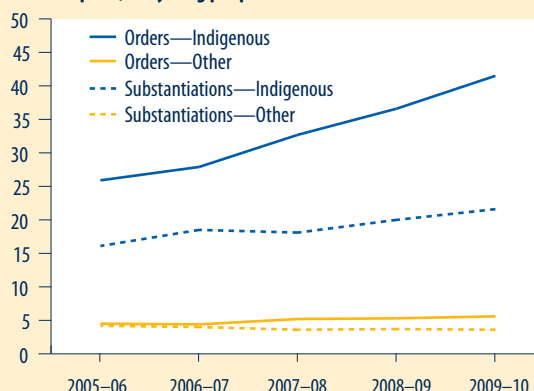
Indigenous adolescents were also far more likely to be on a care and protection order than other adolescents, at 7 times the rate—a rate of 42 per 1,000 compared to 6 per 1,000 respectively. Around 3,200 Indigenous adolescents were on a care and protection order at 30 June 2010.

Most Indigenous adolescents who were in out-of-home care lived with relatives or kin (55%), or in foster care (31%). In comparison, among other adolescents, relative or kinship care was less common (40%) and foster care was more common (42%). The Aboriginal Child Placement Principle outlines a preference for the placement of Aboriginal and Torres Strait Islander children with other Indigenous people when they are placed outside their family. The effect of this principle is reflected in the relatively high proportions of Indigenous children who are placed either with Indigenous caregivers or with relatives (AIHW 2011a).

Over recent years, the rates of Indigenous young people aged 12–17 years who were the subject of a substantiation or on care and protection orders have increased (Figure 42.7). Trend data must be interpreted with caution, as increases over time may reflect more children requiring a child protection response but are more likely to be the result of increased community awareness or changes to policies, practices and data reporting methods. Over the past 5 years, the rate of Indigenous adolescents who were on a care and protection order almost doubled (from 26 per 1,000 young people to 42 per 1,000 between June 2006 and June 2010), while for other adolescents the rate remained fairly steady (between 4 and 6 per 1,000). Similarly, between 2005–06 and 2009–10, the rate of Indigenous young people who were the subject of a child protection substantiation increased from 16 to 22 per 1,000, compared with a steady rate of 4 per 1,000 over this period for other young people.

See *Chapter 23 Child protection* for more information.

Number per 1,000 young people



Note: ‘Substantiations’ refers to young people who were the subject of a substantiation of a notification received during the financial year. ‘Orders’ refers to young people who were on a care and protection order at 30 June (at the end of the financial year).  
Source: AIHW National Child Protection Data Collection.

**Figure 42.7: Young people aged 12–17 years in the child protection system, by Indigenous status, 2005–06 to 2009–10**

### Victims of violence

Indigenous young people aged 18–24 years were more likely to experience physical or threatened violence than all young people (33% compared with 24% respectively), according to the 2008 NATSISS and the 2006 General Social Survey. The disparity is even greater for young Indigenous females, where the rate of physical or threatened violence was twice that of all young females (34% and 17% respectively) (AIHW 2006b).

See *Chapter 24 Victims of violence* for more information.

### Young people and crime

Indigenous young people are over-represented in juvenile justice supervision and adult prisons. The reasons for this are complex and varied, but may include the intergenerational effects of separation from family and culture (a legacy of the Stolen Generations) and the relative socioeconomic disadvantage of Indigenous Australians (HREOC 1997; Wundersitz 2010). Further, some Indigenous people experience high rates of victimisation and racism, family violence, and drug and alcohol abuse, which may make them vulnerable to crime (Blagg et al. 2005; HREOC 1997; Wundersitz 2010). This disparity has been acknowledged as a key issue by the House of Representatives *Inquiry into the high level of involvement of Indigenous juveniles and*

*young adults in the criminal justice system* that is currently underway (Parliament of Australia 2010).

On an average day in 2008–09, Indigenous young people aged 12–17 years were 15 times as likely to be under juvenile justice supervision as non-Indigenous young people (30 and 2 per 1,000 respectively). Indigenous young people are particularly over-represented in detention—almost half (48%) of young people in juvenile justice detention were Indigenous, while only 4% of the Australian population aged 12–17 years were Indigenous. The Indigenous detention rate was 24 times as high as the non-Indigenous rate (5.4 and 0.2 per 1,000 respectively). It is important to note that these data exclude Western Australia and the Northern Territory (as 2008–09 data were not supplied) and that, if data for these two jurisdictions were included, it is likely that the level of over-representation would be higher.

On 30 June 2009, among 18–24 year olds, the Indigenous imprisonment rate was 15 times as high as the non-Indigenous rate (26.1 per 1,000 compared with 1.7 respectively). This pattern of over-representation was observed for both sexes and across age groups.

See *Chapter 25 Young people and crime* for more information.

## Socioeconomic factors

It is widely acknowledged that in order to close the gap in Indigenous life expectancy, major improvements in the social determinants of health for Indigenous Australians, such as their education, employment, and housing, are required.

### Education

Education is considered a key factor in improving the health and wellbeing of Indigenous Australians. Circumstances more often experienced by Indigenous children, such as living in a geographically remote location, speaking English as a second language or suffering chronic health conditions, can lead to poorer educational outcomes for Indigenous children.

Indigenous young people are more likely to leave school early (Hunter & Schwab 2003; Lamb et al. 2000). In 2005, the non-completion rate at school for Indigenous youth was almost twice as high as the cohort average (30% and 16% respectively), according to the Longitudinal Survey of Australian Youth (Curtis & McMillan 2008).

## Literacy and numeracy

In 2009, Indigenous students assessed as part of the National Assessment Program—Literacy and Numeracy (NAPLAN) were less likely to have achieved the Year 7 and Year 9 minimum standards for reading, writing and numeracy than non-Indigenous students—73%, 70% and 76% for Year 7 Indigenous students and 67%, 59% and 75% for Year 9 Indigenous students, respectively—20–30 percentage points lower than for non-Indigenous students. The gap in the proportions of Indigenous and non-Indigenous students who met the national minimum standards was largest in reading and writing for both Year 7 and Year 9. For Year 7, the gap was 22 percentage points for reading and 24 for writing while for Year 9 the gaps were 27 and 30 percentage points, respectively (Table 42.5).

Indigenous students in *Very remote* areas were the least likely to have met the minimum standards for literacy and numeracy—for example 32%, 30% and 42% for reading, writing and numeracy among Year 7 students. Non-Indigenous students in *Very remote* areas also performed worse than those in other areas; however, the difference was not as marked as for Indigenous students. Indigenous students in *Metropolitan* areas still performed more poorly than non-Indigenous students overall in *Metropolitan* areas, although the difference was not as marked as in *Remote* or *Very remote* areas (Table 42.5).

The introduction of NAPLAN has meant that data from 2008 could not be compared with results from previous years. Between 2001 and 2007, some progress was made towards closing the gap between the proportions of Indigenous and all Year 7 students that met the reading benchmark; the gap narrowed by 3 percentage points over this period, from 28 percentage points in 2001 to 25 percentage points in 2007. However, there was no statistically significant change in the gap for Year 7 students meeting the writing and numeracy benchmark over this period. More recently, between 2008 and 2009, there has been no significant change in the gap between Indigenous and non-Indigenous students in Year 7 or Year 9 meeting the reading, writing or numeracy minimum standards.

See *Chapter 29 Education* for more information on literacy and numeracy.

### School attendance

School attendance among Aboriginal and Torres Strait Islander students is of particular concern, and the lower attendance rates among these students may contribute to their poorer educational outcomes. In 2008, Indigenous students were

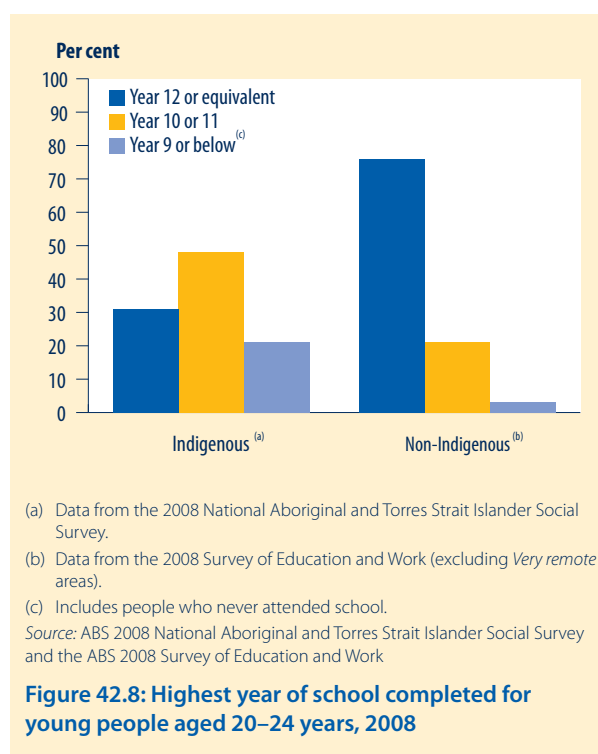
less likely to attend school than non-Indigenous students. For example, in 2008 the gap in attendance rates ranged from 3 percentage points for Year 7 students in Tasmania to 22 percentage points for Year 9 students in Western Australia (MCEETYA 2008).

### Apparent retention rates

Indigenous young people were far less likely to remain in school to Year 12—an apparent retention rate of 45% compared with 77% for non-Indigenous students. However, the gap in apparent retention rates has narrowed over the last decade—39 percentage points in 1999 to 32 percentage points in 2009, according to the ABS Schools Australia data collection.

### Highest year of school completed

Indigenous young people were considerably more likely to leave school early than non-Indigenous young people. In 2008 less than one-third (31%) of Indigenous young people aged 20–24 years had completed Year 12, a considerably lower proportion than for non-Indigenous young people (76%). Indigenous young people were also 7 times as likely as non-Indigenous young people to have only completed Year 9 or below (21% and 3% respectively), according to the ABS 2008 Survey of Education and Work and the 2008 NATSISS (Figure 42.8).



### Participation in further education

In 2008, Indigenous young people aged 15–24 years were less likely to be enrolled in a course of study leading to a qualification than all young people (41% compared with 58% respectively). This gap in participation rates between Indigenous and all young people was even greater for 20–24 year

**Table 42.5: Students in Year 7 and Year 9 achieving at or above the national minimum standards, 2009 (per cent)**

	Year 7			Year 9		
	Reading	Writing	Numeracy	Reading	Writing	Numeracy
Indigenous						
Metropolitan	83	80	84	74	67	81
Provincial	78	74	80	71	62	79
Remote	54	50	59	50	38	60
Very remote	32	30	42	26	21	41
<i>Total Indigenous</i>	73	70	76	67	59	75
Non-Indigenous						
Metropolitan	95	94	96	94	90	96
Provincial	94	92	95	93	87	96
Remote	93	91	95	91	84	95
Very remote	91	90	94	87	79	93
<i>Total non-Indigenous</i>	95	94	96	94	89	96

Note: Remoteness classified according to the MCEETYA Schools Geographic Location scale (See Jones 2004 for further information).

Source: ACARA 2009.

olds, where rates among young Indigenous adults were about half that of all young people (16% and 39% respectively). The difference was less marked for 15–19 year olds, with corresponding rates of 60% and 78%, according to the 2008 NATSISS and the 2008 Survey of Education and Work.

See *Chapter 29 Education* for more information.

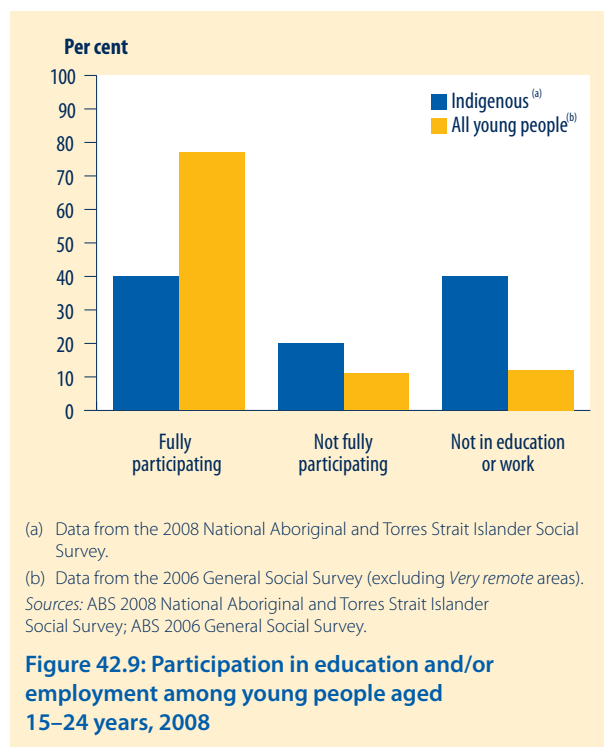
## Employment

Halving the gap in employment outcomes between Indigenous and non-Indigenous Australians is a key priority of the Closing the Gap on Indigenous disadvantage initiative.

In 2008, Indigenous young people aged 18–24 years were about half as likely as all young people to be participating fully in education or employment (40% and 77% respectively) and were over 3 times as likely not to be in education or employment (40%, compared with 12% for all young people), according to the 2008 NATSISS and the 2006 General Social Survey (Figure 42.9).

In 2009, Indigenous young people were twice as likely to be unemployed as all young people aged 15–24 years—an unemployment rate of 26.5% and 11.5% respectively, according to the ABS Labour Force Survey 2009 (ABS 2010f).

See *Chapter 30 Employment* for more information.



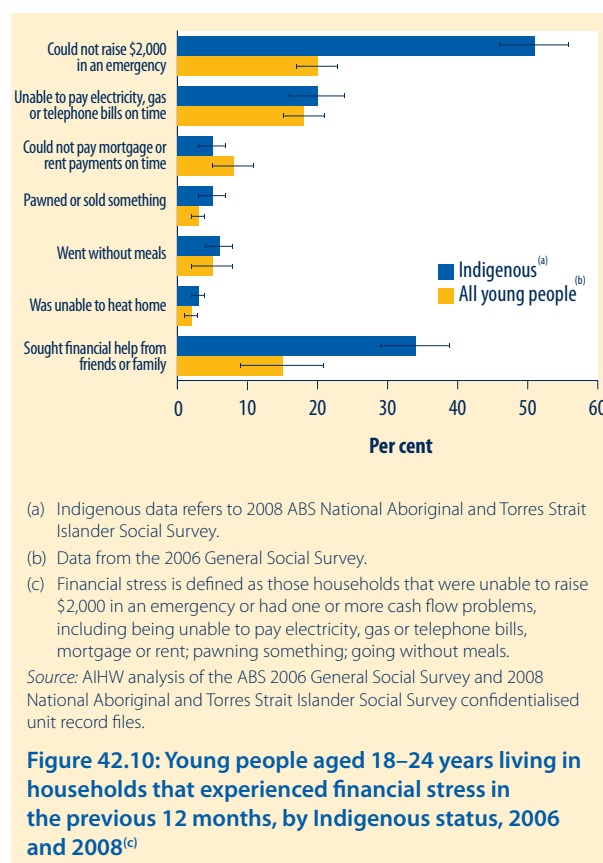
**Figure 42.9: Participation in education and/or employment among young people aged 15–24 years, 2008**

## Income

In 2008, Indigenous young people aged 15–24 years were almost 3 times as likely to be receiving government income support as non-Indigenous young people (45% and 16% respectively), according to the Government Income Support Database.

In 2007–08, almost half (47%) of Indigenous young people received government pensions and allowances as their principal source of income, with a further 6% receiving income from Community Development Employment Programs as their principal source of income. Indigenous young people had a slightly lower mean weekly income than all young people aged 15–24 years (\$382 and \$405 per week respectively), according to the 2008 NATSISS and the ABS 2007–08 Survey of Income and Housing.

Indigenous young people aged 18–24 years were more likely than all young people (60% and 36% respectively) to live in households that experienced one or more financial stressors (unable to raise \$2,000 in an emergency or one or more selected cash flow problems in the previous 12 months) (Figure 42.10). Of those Indigenous young people whose household experienced financial



**Figure 42.10: Young people aged 18–24 years living in households that experienced financial stress in the previous 12 months, by Indigenous status, 2006 and 2008<sup>(c)</sup>**



stress, nearly half (47%) lived in households that experienced one financial stressor, with a further 23% experiencing three or more financial stressors.

See *Chapter 31 Income* for more information.

### Socioeconomic status of parents

Indigenous young people aged 12–24 years were 3 times as likely to live with at least one parent who had not completed secondary school as non-Indigenous young people (22% and 7% respectively), according to the 2006 ABS Census of Population and Housing.

Indigenous young people aged 12–24 years were almost 3 times as likely to live in jobless families as non-Indigenous young people in 2006 (35% and 12% respectively), according to the Census. It should be noted that for 20% of young people in jobless families their Indigenous status could not be determined.

See *Chapter 32 Socioeconomic status of parents* for more information.

### Housing conditions

Many Indigenous young people live in houses that do not satisfy the basic Australian standards for shelter, safe drinking water and adequate waste disposal. In 2008, one in three Indigenous young people lived in houses that had major structural problems (30%) and over one in ten lived in houses that had facilities that were not available or did not work (13%), according to the 2008 NATSISS.

### Overcrowded housing

Indigenous households tend to be larger than other Australian households, with 3.4 residents per household compared with 2.6 in non-Indigenous households, according to the 2006 Census of Population and Housing. Indigenous young people aged 15–24 years were almost 3 times as likely to live in overcrowded housing as non-Indigenous young people in 2006 (27% and 10% respectively).

See *Chapter 28 Overcrowded housing* for more information.

### Homelessness

Indigenous Australians are over-represented both in Supported Accommodation Assistance Program (SAAP) services and in the homeless population enumerated in the Counting the Homeless project.

Among SAAP clients in 2008–09, Indigenous young people aged 12–24 years were 6 times as likely to access SAAP services as a client as other young Australians (56 per 1,000 compared with 9). Around 19% of young SAAP clients were Indigenous, which was much greater than the 4% of the Australian population aged 12–24 years who were Indigenous. Indigenous young people aged 12–17 years accompanied their parent or guardian to a SAAP agency at a rate almost 7 times that for other adolescents (41 per 1,000 compared with 6).

In the Counting the Homeless project, although the number of Indigenous young people who were homeless was not reported, 9% of the total homeless population in 2006 were Indigenous although only 2% of the general Australian population were Indigenous (Chamberlain & MacKenzie 2008).

See *Chapter 27 Homelessness* for more information.

### Health system performance

The capacity of the health system to deliver high-quality services plays a major role in influencing the health and wellbeing of young people. The information presented here are for those indicators in Part VI Health system performance that are of particular relevance for Indigenous young people and where there is available information by Indigenous status.

### Potentially preventable hospitalisations

Physical access to services, availability, affordability and cultural barriers may result in some groups of the population unable to access appropriate ambulatory care services, resulting in higher rates of potentially preventable hospitalisations.

In 2008–09, Indigenous young people aged 12–24 years were almost twice as likely to be hospitalised for potentially preventable conditions as other young people (1,977 and 1,054 per 100,000 respectively; excludes data from the Australian Capital Territory, Tasmania and private hospitals in the Northern Territory). Indigenous females were more likely to be hospitalised for potentially preventable conditions than Indigenous males (2,445 and 1,532 per 100,000 respectively).

See *Chapter 33 Potentially preventable hospitalisations* for more information.

## Teenage purchase of cigarettes or alcohol

Although daily smoking is more common among Indigenous young adults (see *Chapter 16 Substance use*), underage purchase of cigarettes was found to be similar to non-Indigenous students. According to the 2005 Australian Secondary Students Alcohol and Drug Survey, similar proportions of Indigenous and non-Indigenous students who had smoked in the past week purchased their most recent cigarette themselves (20% and 22% respectively).

See *Chapter 34 Teenage purchase of cigarettes or alcohol* for more information.

## Delivery by caesarean section

In 2008 Indigenous and non-Indigenous women aged 15–24 years had similar rates of caesarean section deliveries (21% and 20% respectively). However, among all women, caesarean sections are less common in the Indigenous population than in the non-Indigenous population (24% and 31% respectively) (AIHW 2010b).

See *Chapter 38 Delivery by caesarean section* for more information.

## General practice consultations

Similar proportions of Indigenous and non-Indigenous young people aged 12–24 years consulted general practitioners in the 2 weeks before interview (both around 14%), according to the 2004–05 National Aboriginal and Torres Strait Islander Health Survey and the 2004–05 National Health Survey. In remote Indigenous communities, many services that would normally be delivered by general practitioners are delivered by nurses and Aboriginal health workers (Malyon et al. 2010). Respondents to the survey may not have distinguished between these groups (Malyon et al. 2010).

See *Chapter 39 General practice consultations* for more information.

## Waiting time in emergency departments

In 2008–09, Indigenous young people aged 12–24 years were as likely as other young people to receive treatment within the recommended waiting times in public hospital emergency departments (70% of presentations for each; excludes data from the Australian Capital Territory, Tasmania and private hospitals in the Northern Territory).

See *Chapter 40 Emergency department waiting times* for more information.

## Adverse events treated in hospital

In 2008–09, Indigenous young people aged 12–24 years were slightly less likely to have a hospital separation associated with an adverse event that occurred or was treated in hospital than other young people (2.1% compared with 3.0% respectively; excludes data from the Australian Capital Territory, Tasmania and private hospitals in the Northern Territory). This pattern was largely driven by the lower rate among Indigenous females than other females (1.6% and 2.6% respectively), while the rates among Indigenous and other males were similar (3.4% and 3.5% respectively).



# Part VIII

## DATA GAPS AND DEVELOPMENTS

Timely, accurate, and comprehensive information on the health and wellbeing of Australia's young people is essential for monitoring the progress of young people, and is critical for the development of evidence-based policy. *Young Australians: their health and wellbeing 2011* aims to do this, by presenting the latest and most reliable information on national indicators of young people's health and wellbeing, and the contributing social, family, community and economic influences.

The previous report, *Young Australians: their health and wellbeing 2007*, identified data gaps in the indicator framework and the existing indicators. At that time, there was a lack of recent national data on risk and protective factors such as overweight and obesity, nutrition, physical activity, sexual and contraceptive behaviour, mental health, and family and community factors such as family functioning, adequacy of housing and homelessness, victimisation, and personal income and debt.

Since 2007, there have been a number of data development activities in the areas of young people's health and wellbeing, increasing the available information for a number of indicators and filling some of the data gaps identified in the 2007 edition. The 2011 edition includes additional indicators in the following areas: school relationships and bullying, survival for melanoma of the skin, general practice consultations, cervical vaccination rates, and teenage purchase of alcohol.

Part VIII of this report highlights:

- data gaps in existing indicators
- emerging issues of concern for young people
- new data developments relevant to young people.

## 43 Data gaps

The indicator framework in this report has been broadened from previous editions, reflecting the key issues facing the health and wellbeing of Australia's young people today, as well as the availability of additional data sources. However, as with previous editions, there are still a number of indicators for which there is a lack of national data or a lack of recent data.

Table 43.1 identifies where data gaps exist in the national monitoring of the health and wellbeing of young people in Australia. Further information on these data gaps and indicator developments can be found in the preceding chapters.

Even for those indicators that have a defined measure and recent available data, presenting this information by subpopulations of Australian young people, such as Aboriginal and Torres Strait Islander young people, and those living in geographically

isolated areas or socioeconomically disadvantaged areas, was not possible for all of the indicators presented in this report.

While there has been much progress in collecting information on the health and wellbeing of Indigenous young people over the last decade, many logistical, analytical and conceptual challenges still remain. This is due partly to varying levels of identification of Indigenous people in administrative records and partly to the statistical and practical challenges of surveying a population that is relatively small. As a result, there are many areas considered integral to youth health and wellbeing where, at the national level, there is not sufficiently robust information to show how well Indigenous young people are performing, or how they compare with non-Indigenous young people (see Part VII for further information).

**Table 43.1: Data gaps in existing national indicators**

Indicator	Data limitations and gaps	Data availability
Oral health	The most recent available national data are from the 2003–2004 Child Dental Health Survey. Data do not include all jurisdictions.	No recent data available
Mental health	No recent national data are available on the mental health of young people aged 12–15 years. However, the ABS Survey of Mental Health and Wellbeing collects information for those aged 16 years and over.	No recent data available for 12–15 year olds
Sun protection	There is no national information on the overall proportion of young people using sun protection, but information is available from 2006–07 National Sun Protection Survey on selected sun protection behaviours.	Data not available on sun protection overall
Sexual and reproductive health	There are no national data available on sexual behaviour among adolescents aged 12–15 years; information is only available for Year 10 and Year 12 students. Further, the data reported for Year 12 students from the 2008 National Survey of Secondary Students and Sexual Health are likely to be an underestimate as not all young people remain in school to Year 12.	Data not available for 12–15 year olds
Community participation	No national information is available on community participation among young people aged 12–17 years, but information is available for those aged 18 years and over from the ABS 2006 General Social Survey.	Data not available for 12–17 year olds
Sexual assault	No national information is available on sexual assault for young people aged 12–17 years, but information is available for those aged 18 years and over from the ABS 2008–09 Crime Victimization Survey.	Data not available for 12–17 year olds
Family functioning	Currently no defined measure or national data source for this indicator, due to difficulties in defining and measuring family functioning.	Indicator and development required
School relationships and bullying	Currently no defined measure or national data source for this indicator, due to difficulties in defining and measuring bullying.	Indicator and development required

Note: Shaded indicators are where considerable indicator and or data development work is required to report on these indicators

## 44 Emerging issues of concern

In recent years, a number of critical issues have emerged that are likely to adversely affect the health and wellbeing of young Australians more than previous generations, including technology and climate change. The current generation of young Australians have never known a world without constant access to mobile phones, the internet and email and information is therefore more readily available on global challenges, such as climate change and other environmental concerns. There is also growing recognition that the current generation of young people have high levels of perceived stress in their everyday lives, which may include issues with school, society, self-identity and peer relationships (Eckersley 2008). The development of emotional symptoms of ill health and sleep disorders in young people may indicate how young people are responding to these stressful situations.

While international and Australian research has highlighted the importance of these influences in the context of young people's health and wellbeing, there are currently no national data sources to report on these issues among young Australians. This chapter will provide contextual information on the importance of the following issues for young people:

- sleep disorders
- media and communication
- environmental issues.

Information on emotional symptoms of ill health (malaise and psychosomatic symptoms) is discussed in *Chapter 9 Chronic conditions*.

### Sleep disorders

Sleep is a recuperative state that promotes rest and relaxation and has been shown to assist the body's recovery from illness and injury as well as enhancing waking alertness, attention and memory functioning (Lockley et al. 2004; Rupp et al. 2009; Walker 2008a, Walker 2008b).

The amount of sleep required by people varies across the life span, with children and young people requiring more sleep than adults. Young people have been shown to require about 9 hours of sleep a night, which is as much sleep as pre-teen children (Carskadon 1999; Colten & Altevogt 2006).

Given the benefits of adequate sleep, it follows that not getting enough sleep may have consequences for health and wellbeing. Inadequate and poor sleep has been linked to a range of adverse health problems such as fatigue, cognitive impairment, reduced alertness, poor concentration and memory functioning, depression, suicidal thoughts, obesity and coronary heart disease (Carpenter 2001; Chandola et al. 2010; Dollman et al. 2007; Olds et al. 2010).

According to the Bettering the Evaluation and Care of Health (BEACH) survey of general practice, in 2008–09, among young people aged 12–24 years, there were:

- an estimated 70,300 general practice encounters for management of sleep disorders among young people, an average rate of 1.8 encounters per 100 young people
- no statistically significant differences in the rate of encounters for sleep disorders by sex (2.30 and 1.38 encounters per 100 young females and males, respectively), or by age (1.52 and 1.94 per 100 15–19 and 20–24 year olds, respectively). However, the rate of general practice encounters for sleep disorders was higher for 15–24 year olds than 12–14 year olds (0.25 per 100), suggesting that the prevalence of sleep disorders is of greater concern to adolescents and young adults than children.

Young people's poor sleeping habits have been attributed to a number of factors such as extensive television watching, video gaming, increased social and recreational demands, and academic pressure (Colten & Altevogt 2006). Sleep disorders have the potential to greatly reduce the quality and duration of the sleep that young people receive, yet the prevalence of sleep disorders or severity of their effect on young Australians' health and wellbeing is currently unknown.

Protective factors that have been found to be effective in combating the effects of poor sleep include earlier parentally monitored bedtimes and increased exercise levels (Brand et al. 2010; Gangwisch et al. 2010; Lund et al. 2010).

## Media and communication

Media and communication refers to the distribution of information using a range of technologies such as radio, television, magazines, mobile phones and the internet. Current research suggests that there are numerous adverse health and wellbeing risks associated with young people's exposure to media content and their usage of media technologies, ranging from physical health issues such as weight gain to psychological problems such as depression and increased aggression (Anderson et al. 2003; Eisenmann et al. 2008; Strasburger 2010).

### Media content

Various studies have indicated that young people are strongly influenced by media content that promotes adverse health behaviours. Both alcohol advertising and films depicting movie stars smoking cigarettes have been found to reinforce positive attitudes towards alcohol and cigarette consumption in young people (Durkin et al. 2009; Durkin & Blades 2009; Strasburger 2010). Media content has also been shown to adversely affect young people's self-perceptions such as body image. Adolescent girls who regularly read fashion and beauty magazines have been found to be more likely to develop body image problems in late adolescence than girls who read them less frequently (Tiggerman & Miller 2010).

With the increased availability of internet and mobile phone technologies, media users have progressed from passive viewers of media content to active contributors. While internet media resources can be used to enhance young people's social experiences through social networking sites such as Facebook, YouTube and Myspace, these resources can also be misused to intentionally harm others through acts of cyber-bullying (see *Chapter 22 School relationships and bullying* for more information), identity theft, online fraud and the distribution of harmful materials such as child pornography. The use of the internet to distribute misleading information can also affect young people's ability to make informed choices about their health and wellbeing. For instance, Strasburger (2010) reported that in 2010 there were more than 100 pro-anorexia websites promoting anorexic behaviours such as restricting caloric intake and purging as effective weight loss measures (Strasburger 2010).

### Media usage

In addition to media content, excessive exposure to and use of media technologies has also been found to have serious consequences on the health and wellbeing of young people.

Current health research has identified several psychological health risks associated with internet use. Studies suggest that the more often people use the internet the more likely they are to experience social isolation, depression, loneliness and social detachment (Durkin & Blades 2009; Sigman 2009). Other health risks associated with prolonged computer use include headaches, eyestrain, neck and shoulder pain, and poor sleep (Palm et al. 2007).

Serious health risks have also been associated with prolonged television viewing. Studies indicate that children who watch on average 3 hours of television a day are more likely to be overweight, have increased blood cholesterol levels, experience higher rates of poor nutrition and sleep, and are more likely to experience poor educational outcomes than children who watch less television (Durkin et al. 2009; Strasburger 2010). Additional evidence suggests that television viewing, regardless of content, has also been linked to the development of attention deficit disorder in children (Sigman 2009).

Mobile phone use may also affect young people's health and wellbeing, although the seriousness of these effects may not be known for several decades. Schoemaker et al. (2005) found that there were no immediate health problems associated with mobile phone use.

A more immediate threat to young people's health and wellbeing is the use of mobile phones, for texting or talking, while driving a road vehicle. Research shows that use of a mobile phone while driving can have a similar effect on concentration as being intoxicated, and increases the risk of having an accident by up to 4 times (Ship 2010). Cyber-bullying through mobile phone use may also cause serious psychological harm to young people (Campbell 2008).

### Potential indicators of media and communication

While there are both positive and negative effects associated with young peoples' use of media and its related technologies, more research is needed to determine a suitable health performance indicator or set of indicators that can be used to measure the effects of media and communication on the health of young Australians.

One potential indicator of the effects of media on young people is to measure screen time exposure. 'Screen time use' denotes the amount of time spent not only watching television but also on the computer and playing video games. The health effects of excessive screen time use are similar to those associated with excessive television exposure, including excess weight gain, high blood cholesterol levels, poor parental attachment and depression (Barnett et al. 2010; Richards et al. 2010; Zappalla 2010). For more information on screen time use refer to *Chapter 13 Physical activity*.

However, there are two main limitations of using screen time use as an indicator of the effects of media communication on the health and wellbeing of young people. Screen time only measures the amount of time spent using media technologies, and therefore does not cover the risks associated with media content. Further, screen time only provides data on television and computer use and excludes the use of mobile phone, radio and printed media. As such it does not provide an accurate picture of the health effects associated with the full range of media sources and technologies currently used by young people.

## Environmental issues

The effects of environmental issues on the health and wellbeing of young people are multiple. Exposure to environmental toxins, excessive use of fossil fuels, the effects of climate change, and air and water pollution all have the capacity to adversely affect the health and wellbeing of young Australians, now and into the future (UNEP et al. 2002; UNICEF UK 2008). Some of these issues are discussed in this section.

### Climate change

Climate change has been described as the biggest global health issue of the 21st century (Costello et al. 2009). It is responsible for an estimated 300,000 human deaths every year and affects the lives of 300 million people globally. The number of deaths attributable to climate change is predicted to increase to half a million people by 2030 (Mawle 2010). Climate change is the product of increased levels of carbon dioxide and methane gases in the Earth's atmosphere, resulting from human industry and agriculture (Mawle 2010).

Current research suggests that populations most likely to experience the health effects of climate change are children, older people, socioeconomically disadvantaged people and

people living in rural and remote areas. It follows that young Aboriginal and Torres Strait Islander people are particularly vulnerable to the adverse health effects of climate change as they are more likely to reside in rural and remote communities, and also to experience high levels of social and economic disadvantage compared with their non-Indigenous counterparts.

Research has indicated that young people are particularly susceptible to the social and psychological effects of climate change. An awareness of climate change issues has been shown to adversely affect how young people perceive both the present and the future, and may create despair and loss of motivation (Kefford 2006; Tucci et al. 2007). These mental health issues are further compounded by a lack of adequate health care and support services in rural and remote Australian communities, making them even more vulnerable to climate change health-related problems than they already are (Hanna et al. 2010).

The effects of climate change on young people are only now beginning to emerge in the health literature. Further research and consultation with relevant stakeholder groups and experts is required to determine the most effective indicator or set of indicators with which to measure the effects of climate change on the health and wellbeing of young Australians.

### Air quality

Air quality in Australian cities is generally good, although some localised problems still occur, which can aggravate a range of health conditions, including respiratory ailments and cardiovascular disease (Anderson et al. 2004a; Beeton et al. 2006). Air pollution has a range of sources, both natural and human. Natural sources include bushfires, dust storms and vegetation (for example, the volatile organic compounds released by some trees). Industrial activities and motor vehicle emissions are examples of human sources.

A range of standards have been introduced across Australia over recent decades. Although these regulations have reduced the ambient levels of a number of air pollutants, three pollutants remain of particular concern (DEH 2004). These are airborne particulate matter of 10 µm in diameter or less (PM<sub>10</sub>), particulate matter of 2.5 µm in diameter or less (PM<sub>2.5</sub>) and photochemical oxidants (as ozone). High temperatures are the main contributors to these pollutants in Australia. Sunlight and high temperatures play a key role in chemical reactions



associated with the production of ozone and also contribute to extreme events, such as bushfires and dust storms, that produce particulates (see the Australian Institute of Health and Welfare's report *Australia's health 2010* for further details).

## Water quality

Access to an adequate and safe supply of water is a fundamental requirement for good personal and public health. Water quality in Australia is generally of a very high standard; contamination is rare, especially in and around major population centres. Some viruses, bacteria and protozoa can be transmitted by contaminated water supplies. The presence of harmful microbes in drinking water is due mainly to contamination by human or animal faeces. Drinking or bathing in contaminated water can result in health effects ranging from irritated eyes, skin and throat, and mild gastroenteritis to more severe diarrhoea and potentially life-threatening dysentery, hepatitis and cholera.

In 2007–08, 82% of all water utilities in Australia reported full compliance with microbiological and chemical contamination standards (National Water Commission 2009). However, a high proportion of

Indigenous communities in *Remote* and *Very remote* areas are not connected to the town water supply. The drinking water in over one in four of these communities failed testing in 2006, according to the Community Housing and Infrastructure Needs Survey (AIHW 2007a).

## Vectorborne disease

Water also provides a habitat for insect vectors of water-related diseases, such as mosquitoes. The occurrence of vectorborne disease—the spread of an infectious disease from host to host, typically by mosquito—has the potential to create disease epidemics capable of killing thousands (Gubler 1998). Changes in human mobility, the environment, weather and climate influence the prevalence and geographical range of some mosquito-borne diseases within Australia (AIHW 2006a).

In 2009, according to the National Notifiable Diseases Surveillance System, the most common vectorborne disease among 15–24 year olds was Ross River virus (10.8 per 100,000 young people), followed by dengue (6.2), malaria and Barmah Forest virus (4.3 and 4.2 per 100,000 respectively).



## 45 New data developments relevant to young people

In recent years, there have been a number of new national data development activities relevant to young people, contributing to and improving the evidence base in national information on the health and wellbeing of Australia's young people. Those of particular relevance for this report are described in this chapter.

There have been a greater number of data development and information activities relating to children than for young people. The reasons for this are that most health, social and economic surveys already collect information from a subset of the youth population (those aged 15 or 18 years or over). However, there have been limited surveys that collect information on early childhood development or relate to children-specific issues. As a result there has been considerable investment in recent years in building the evidence base on the health, development and wellbeing of Australian children. Recent data development and information activities relevant to children are described in detail in the Australian Institute of Health and Welfare's (AIHW) report *A picture of Australia's children 2009* (AIHW 2009c).

### Data developments at the AIHW

#### AIHW Child Protection Data Collection

The AIHW and the states and territories are currently developing a National Child Protection Unit Record Collection with the aim of improving the analytic potential of the national Child Protection Data Collection. State and territory ministers agreed to work with the Commonwealth on this project. This new collection will allow much more in-depth analysis and reporting in relation to children and young people in the child protection system.

A unit-record module relating to carers of children in the child protection system is also currently under development. In addition, specifications for a national minimum data set are being developed for a national collection on treatment and support services in the context of child protection.

The AIHW is also continuing to work with the jurisdictions to improve the national aggregate

collection by reviewing and amending the national data standards, expanding the collection of Indigenous data, and developing collections on foster and relative or kinship carers.

In collaboration with the Performance and Data Working Group, the AIHW have also contributed to the development and reporting of indicators under the National Framework for Protecting Australia's Children 2009–2020.

#### AIHW Juvenile Justice National Minimum Data Set

The Juvenile Justice National Minimum Data Set, which is managed by the AIHW and funded by the Australasian Juvenile Justice Administrators, contains data from 2000–01 on children and young people in juvenile detention and under juvenile justice supervision in the community. In 2009, the Juvenile Justice National Minimum Data Set was expanded to contain information on all supervised orders rather than only the most serious supervised orders, and work is underway to further expand the collection to include information on charges and offences, and other activities conducted by juvenile justice agencies such as group conferencing. The AIHW is also linking juvenile justice data with information on young homeless people (from the Supported Accommodation Assistance Program data collection) and available child protection data to investigate pathways between child maltreatment, homelessness and juvenile offending. This project will help policy makers in developing early intervention policies and programs.

#### AIHW National Prisoner Health Census

The AIHW has been working with the Prisoner Health Information Group since 2004 on the development of a set of indicators on the health of Australia's prisoners. The indicators number over 60, and monitor key aspects of prisoner health. The data are collected predominately at reception to prison and in custody. It is hoped this collection will be expanded to include more data at the time of prisoners' release back into the community, and post-release. Current indicators include mental health issues, alcohol and other drug use,

chronic conditions and the use of prison health services, including prison health clinics and regular medications. The first data for reporting against these indicators, the National Prisoner Health Census, was collected during 2009, and reported on in June 2010.

## Data developments at the ABS

### ABS 2007 National Survey of Mental Health and Wellbeing

This survey was conducted by the Australian Bureau of Statistics (ABS) from August to December 2007, and collected similar, but not comparable, data to the 1997 National Survey of Mental Health and Wellbeing of Adults. The 2007 survey was expanded to include young people aged 16–17 years.

The 2007 National Survey of Mental Health and Wellbeing collects information from around 8,800 Australians aged 16–85 years on the prevalence of selected lifetime and 12-month mental disorders, by major disorder groups—*anxiety disorders* (for example *social phobia*), *affective disorders* (for example *depression*), and *substance use disorders* (for example *harmful alcohol use*). The survey also provides information on the level of impairment, health services used for mental health problems, physical conditions, social networks and caregiving, as well as demographic and socioeconomic characteristics. The survey was based on a widely-used international survey instrument developed by the World Health Organization for use by participants in the World Mental Health Survey Initiative.

The results of this survey have filled an important data gap on the prevalence of psychological distress and mental health disorders among young people aged 16–24 years. However, a critical data gap still exists on the prevalence of psychological distress and mental health disorders among young people aged 12–15 years and those aged less than 12 years.

### ABS Australian Health Survey

The Australian Health Survey will be conducted by the ABS in consultation with the Australian Government Department of Health and Ageing, beginning in March 2011. The survey comprises the existing National Health Survey, the National Aboriginal and Torres Strait Islander Health Survey, and two new surveys: the National Nutrition and Physical Activity Survey and the National Health Measures Survey.

Results from this survey will help fill important gaps in information on the health of Australians, in particular, in nutrition and physical activity. The Australian Health Survey will be the first national ABS survey since 1995 to obtain information about the nutritional status of Australians. Some of the aims of the survey are to provide estimates of certain chronic diseases and determinants, and to enable monitoring and reporting against national food, nutrition and physical activity guidelines and recommendations.

The survey will involve a sample of around 50,000 people, and will collect information using physical measures (for example, measuring height and weight, or the taking of blood pressure) and through biomedical measures, such as blood and urine samples.

First findings from the Australian Health Survey are expected to be published in late 2012.

### ABS Children and Youth Information Development Plan

The ABS, in conjunction with the Children and Youth Statistics Advisory Group, has developed an information development plan aimed at improving the collection and use of statistics on children and youth. The plan is based on 10 agreed priority areas for statistical data development. It reviews existing data, reports on data gaps and identifies actions required by key agencies to achieve improvements in each of the priority areas. The ABS published an information paper outlining the plan in 2006, and has released annual updates in 2007 and 2008 (ABS 2006c).

# 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. Unless otherwise stated, rates presented throughout this report are age-specific.

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.

### Rate ratio

Rate ratios are calculated by dividing the proportion of the study population (for example, Indigenous Australians) with a particular characteristic by the proportion of the standard population (for example, non-Indigenous Australians) with the same characteristic.

A rate ratio of 1 indicates that the prevalence of the characteristic is the same in the study and standard populations. Rate ratios of greater than 1 indicate higher prevalence in the study population and rate ratios of less than 1 indicate higher prevalence in the standard population.

### 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, age and sex, geographical locations or population groups, 95% confidence intervals have been calculated. The confidence intervals are used to provide an approximate indication of the differences between rates and are shown on selected graphs in this report as error bars. If the

error bars do not overlap, the difference can be said to be statistically significant.

However, in some instances where the confidence intervals (and error bars) overlap only slightly, a further significance test can indicate a statistically significant difference. Where this is the case, the difference has been noted in the text and can be taken as significant.

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. Judgment should, however, be exercised in deciding whether or not the difference is of any practical significance.

### Population data

The Australian Bureau of Statistics (ABS) estimated resident population (ERP) data were used to calculate most of the rates presented in this report.

Crude and age-specific rates were calculated using the ERP of the reference year at 30 June for calendar year data (1 January to 30 December), and at 31 December for financial year data (1 July to 30 June). For this report, population data for December 2008 and for June 2009 were available as preliminary estimates only. Final estimates were used for all earlier years.

The denominator for rates by socioeconomic status and remoteness area were calculated by applying an ABS concordance between statistical local area (SLA) and socioeconomic status, and between SLA and remoteness area, 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 report was the 2006 Census of Population and Housing. All forward and back projections of the Indigenous population in this report are based on the 2006 Census, due to large differences in Indigenous identification between Census years.

## Population groups

### Aboriginal and Torres Strait Islander people

Throughout this report, where analysis excludes cases where Indigenous status is not stated or inadequately described, the categories used for presentation of the data are 'Indigenous young people' and 'non-Indigenous young people'. Where analysis includes these cases where Indigenous status is not stated or inadequately described, the categories used for presentation of the data are 'Indigenous young people' and 'Other young people'.

#### Data quality in administrative data collections

At present, there is considerable variation across the states and territories in the completeness of mortality and hospital data for Indigenous people. Information concerning the number of deaths and hospitalisations of Indigenous people is limited by the accuracy with which Indigenous persons are identified in death and hospital records. Problems associated with identification result in an underestimation of deaths and hospitalisations of Indigenous people.

Mortality data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory are considered to have sufficient coverage to produce reliable statistics on Indigenous Australian deaths for the period 1998–2007 (2001–2007 for New South Wales). These five jurisdictions represent around 89% of the Indigenous youth population aged 12–24 years in Australia. Due to the small numbers of deaths among Indigenous young people, 5 years of mortality data have been combined for analysis in this report (2003–2007). Where Indigenous status is 'Not stated/inadequately described', these deaths have been excluded from the analysis. As such, the categories used for presentation of mortality analysis are 'Indigenous Australians' and 'non-Indigenous Australians'.

The Australian Institute of Health and Welfare (AIHW) has recently assessed the extent of undercounting of Indigenous people in hospital records. The results show that the quality of identification in New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory is adequate for reporting on Indigenous hospital use (AIHW 2010b). These six jurisdictions represent around 95% of the Indigenous youth population aged 12–24 years in Australia. Where Indigenous status is 'Not stated/inadequately described', these separations are included with those for non-Indigenous people. As such, the categories used for

presentation of hospital separations are 'Indigenous Australians' and 'Other Australians'.

In this report the jurisdictions considered to have the most complete coverage of Indigenous Australians are used in analysis of mortality and hospital data. Interpretation of Indigenous mortality and hospital statistics 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 excluded jurisdictions.

#### Survey data

There are many logistical, analytical and conceptual challenges in surveying the Aboriginal and Torres Strait Islander population, as the population is relatively small and less accessible—Indigenous Australians account for 2.5% of the total population, one-quarter of whom live in remote or very remote areas. Although there are a number of surveys specifically relating to the Indigenous population, such as the ABS National Aboriginal and Torres Strait Islander Health Survey and the ABS National Aboriginal and Torres Strait Islander Social Survey, these surveys do not collect information for many of the indicators or for the relevant age group covered in this report. The small size of the Indigenous youth population results in estimates from surveys being based on a small number of events that are subject to uncertainty, and data for many of the indicators are therefore not sufficiently robust to present.

#### Remoteness area

Except where otherwise stated, this report uses the Australian Standard Geographical Classification (ASGC), which groups geographical 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 A1.1.

#### Socioeconomic status

Socio-Economic Indexes for Areas (SEIFA) are summary measures of socioeconomic status (SES), and summarise a range of socioeconomic variables associated with disadvantage. Socioeconomic disadvantage is typically associated with low income, high unemployment and low levels of education. Unless otherwise stated, the SEIFA index used in this report is the 2006 SEIFA Index of Relative



**Table A1.1: Remoteness areas for the ASGC Remoteness classification**

Region	Collection districts (CDs) within region
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 2008b.

Socio-economic Disadvantage (IRSD) developed by the ABS for use at the SLA level or postcode of usual residence of persons, as opposed to the location of services. See Adhikari (2006) for the complete list of variables and corresponding weights used for the IRSD.

Since the IRSD only summarises variables that indicate disadvantage, a low score indicates that an area has many low-income families and many people with little training and working in unskilled occupations; and that this area 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 working in unskilled occupations. These areas with high index scores may be considered less disadvantaged relative to other areas. It is important to understand that a high score reflects a relative lack of disadvantage rather than advantage, and that the IRSD relates to the average disadvantage of all people living in a geographical area and cannot be presumed to apply to all individuals living within the area. For further information see Adhikari (2006).

SEIFA quintiles were used for this report—the most disadvantaged quintile is referred to as ‘lowest SES area’ and the least disadvantaged quintile is referred to as ‘highest SES area’.

## Mortality data

In this report, most of the mortality data are from the AIHW National Mortality Database (see

*Appendix 2 Data sources*). Unless otherwise stated, mortality analysis in this report is based on year of registration of death; results may therefore differ slightly from data based on year of occurrence of death. Data presented by state and territory are based on the state or territory of usual residence, unless otherwise stated. Data issues relating to a specific mortality analysis are footnoted in tables and figures throughout the report. Mortality analysis in this report is based on underlying cause of death (rather than multiple cause of death), unless otherwise stated.

## 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 causes of death were dual-coded in ICD-9 and ICD-10 for these years. In this report, trend data for mortality uses ICD-10 from 1997 onwards.

The ICD-10 codes used for analysis in this report are listed in Table A1.2.

## Hospital data

In this report, hospital data are from the AIHW National Hospital Morbidity Database (see *Appendix 2 Data sources*). Hospital records are for ‘separations’ and not individuals, and as there can be multiple admissions for the same individual, hospital separation rates do not usually reflect the incidence or prevalence of the disease or condition in question. For example, it is not possible to identify whether one patient was admitted 5 times or five patients were admitted once. People who receive treatment at hospital but are not admitted are not counted in hospital records. Hospital separation data are also affected by variations in admission practices, and the availability of and access to hospital and non-hospital services.

## ICD-10-AM Classification of diseases and related health problems

For hospital diagnosis, the 10<sup>th</sup> revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10) is used with modifications. The ICD-10-AM is an Australian modification of ICD-10, and has been used in the AIHW National Hospital Morbidity Database from 1998–99 onwards (NCCH 2008). Unless otherwise stated, all hospital data presented in this report are based on principal diagnosis.



**Table A1.2: ICD-10-AM codes used in this report for mortality and hospitals data<sup>(a)</sup>**

	ICD-10 and ICD-10-AM codes
Asthma	J45–J46
Diabetes	E10–E14, O24 (excluding O24.5)
Type 1 diabetes	E10
Type 2 diabetes	E11
Other diabetes	E12–E14
Gestational diabetes	O24.0–O24.4, O24.6–O24.9
Cancer	C00–C97, D45–D46, D47.1, D47.3
Brain	C71
Kidney	C64
Lymphoid leukaemia	C91
Myeloid leukaemia	C92–C94
Non-Hodgkin lymphoma	C82–C85, C96
Diseases of the nervous system	G00–G99
Diseases of the circulatory system	I00–I99
Vaccine preventable diseases:	A36, A35, A37.0, A80.9, B05, B26, B06, G00.0, B01.0, A39, G00.1
Diphtheria, tetanus, pertussis, poliomyelitis, measles, mumps, rubella, Haemophilus influenza type b (Hib), varicella (chickenpox), meningococcal C, and pneumococcal disease	
Hepatitis, A, B, and C	B15–B16, B17.1 (Acute hep C) B18.2 (Chronic hep C)
Sexually transmitted infections:	A51–A53, A54, A56, A58
Syphilis, gonorrhoea, Chlamydia, and donovanosis	
HIV	B20–B24
Injury and poisoning <sup>(b)</sup>	V01–Y98
Symptoms, signs and ill-defined conditions	R00–R99
Mental and behavioural conditions	F00–F99
Drug related mental and behavioural disorders	F10–F19
Due to use of alcohol	F10
Due to use of cannabinoids	F12
Due to use of other stimulants, including caffeine	F15
Due to multiple drug use and use of other psychoactive substances	F19
Schizophrenia, schizotypal and delusional disorders	F20–F29
Mood disorders	F30–F39
Neurotic, stress-related and somatoform disorders	F40–F48
Severe reaction to stress	F43
Diseases of the eye	H00–H59
Disorders of the eyelid, lacrimal system and orbit	H00–H06
Diseases of the ear	H60–H95
Otitis media	H65–H67
Otitis externa	H60
Perforation of the tympanic membrane	H72
Skin disease	L00–L99
Bowel disease	K50–K63
Non-infective enteritis	K50–K52
Crohn's disease	K50
Irritable bowel syndrome	K58

(a) Unless otherwise indicated throughout the report.

(b) Injury and poisoning hospital analysis presented in *Chapter 8 Injury and Poisoning and related sections uses the criteria described in the next section.*

**Table A1.3: ICD-10-AM codes used in this report for potentially preventable hospitalisation analysis**

	ICD-10 and ICD-10-AM codes
Vaccine-preventable hospitalisations	
Influenza and pneumonia	J10, J11, J13, J14, J15.3, J15.4, J15.7, J15.9, J16.8, J18.1, J18.8 in any diagnosis field, excludes cases with additional diagnosis of D57 (sickle-cell disorders) and people under 2 months
Other vaccine-preventable conditions	A35, A36, A37, A80, B05, B06, B16.1, B16.9, B18.0, B18.1, B26, G00.0, M01.4 in any diagnosis field
Chronic preventable hospitalisations	
Asthma	J45, J46 as principal diagnosis only
Congestive cardiac failure	I50, I11.0, J81 as principal diagnosis only, exclude cases with the following procedure codes: 33172-00, 35304-00, 35305-00, 35310-02, 35310-00, 38281-11, 38281-07, 38278-01, 38278-00, 38281-02, 38281-01, 38281-00, 38256-00, 38278-03, 38284-00, 38284-02,
Diabetes complications	E10–E14.9 as principal diagnoses E10–14.9 as additional diagnosis where the principal diagnosis was E87.0, E87.2, G45, G50–G64, H24–H28, H30–H36, H40–H42, I21–I22, I20, I23–I25, I50, I60–I64, I69.0–I69.4, I70–I74, K05, N00–N29, Z49
COPD	J20, J41, J42, J43, J44, J47 as principal diagnosis only, J20 only with additional diagnoses of J41, J42, J43, J44, J47
Angina	I20, I24.0, I24.8, I24.9 as principal diagnosis only, exclude cases with procedure codes not in blocks [1820] to [2016]
Iron deficiency anaemia	D50.1, D50.8, D50.9 as principal diagnosis only.
Hypertension	I10, I11.9 as principal diagnosis only, exclude cases with procedure codes according to the list of procedures excluded from the Congestive cardiac failure category above.
Nutritional deficiencies	E40, E41, E42, E43, E55.0, E64.3 as principal diagnosis only.
Rheumatic heart disease	I00 to I09 as principal diagnosis only. (Note: includes acute rheumatic fever)
Acute preventable hospitalisations	
Dehydration and gastroenteritis	E86, K52.2, K52.8, K52.9 as principal diagnosis only. A09.9 as principal diagnosis (aged >15 years only).
Pyelonephritis	N10, N11, N12, N13.6, N39.0 as principal diagnosis only.
Perforated/bleeding ulcer	K25.0, K25.1, K25.2, K25.4, K25.5, K25.6, K26.0, K26.1, K26.2, K26.4, K26.5, K26.6, K27.0, K27.1, K27.2, K27.4, K27.5, K27.6, K28.0, K28.1, K28.2, K28.4, K28.5, K28.6 as principal diagnosis only.
Cellulitis	L03, L04, L08, L88, L98.0, L98.3 as principal diagnosis only, exclude cases with any procedure except those in blocks 1820 to 2016 or if procedure is 30216-02, 30676-00, 30223-02, 30064-00, 34527-01, 34527-00, 90661-00 and this is the only listed procedure
Pelvic inflammatory disease	N70, N73, N74 as principal diagnosis only.
Ear, nose and throat infections	H66, H67, J02, J03, J06, J31.2 as principal diagnosis only.
Dental conditions	K02, K03, K04, K05, K06, K08, K09.8, K09.9, K12, K13 as principal diagnosis only.
Appendicitis with generalised peritonitis	K35.0 in any diagnosis field
Convulsions and epilepsy	G40, G41, O15, R56 as principal diagnosis only
Gangrene	R02 in any diagnosis field

**Table A1.4: ICD-10-AM codes used in this report for hospitalisations associated with adverse events**

Adverse Events	ICD-10 and ICD-10-AM codes
Drugs, Medicaments and biological substances	Y40–Y59
Misadventures to patients during surgical and medical care	Y60–Y82
Late effects of procedures	Y83–Y84
Sequelae with surgical and medical care as external cause	Y88
Nonsocomal condition	Y95
Events occurring in a health service area	Y92.22
Haemorrhage and haematoma complicating a procedure	T81.0
Infection following a procedure	T81.4
Complications of internal prosthetic devices, implants and grafts	T82–T85
Other diagnoses of complications of medical and surgical care	T80–T88 and T98.3, excluding those listed above

## Injury and poisoning

There are a number of considerations when performing injury and poisoning analysis on mortality and hospital separations. The methods and ICD codes used in this report are consistent with those used by the AIHW National Injury Surveillance Unit. These methods are summarised here, but are described in detail by Henley and colleagues (2007) (for mortality) and Berry and Harrison (2007) (for hospital separations).

### Injury mortality analysis

Injury mortality analysis, based on the AIHW National Mortality Database, uses multiple causes of death, rather than underlying cause of death, as this approach provides more valid estimates of injury incidence, and a more complete and reliable picture of the burden of injury mortality. The criterion used to select injury deaths was an ICD-10 multiple cause of death code in the range S00–T75, or T79; or an underlying cause of death code in the ranges V01–Y36, Y85–Y87, or Y89 (see Table A1.5 for detailed cause codes). Cases meeting this criterion are referred to as community injury, and exclude cases relating to complications of surgical and medical care.

In recent years, interpreting rates and trends in injury mortality in Australia has been complicated by classification issues, which have resulted in underestimation of some and overestimation of other external causes of injury in mortality data coded by the ABS. Investigations of how this occurred and revised estimates for part of the period have been presented elsewhere (Harrison et al. 2009; AIHW: Henley & Harrison 2009). Underestimation has mainly affected deaths data for suicides and homicides, and, to some extent, road deaths. Overestimation has occurred for

deaths recorded as unintentional and due to mechanisms that are common among suicides and homicides, chiefly poisoning, hanging and strangulation, and firearm discharge (AIHW: Henley & Harrison 2009). The main cause of the problem was a mismatch between the time to completion of processing of some coroners' cases and the ABS's schedule for producing annual files of cause of death data (Harrison et al. 2009). In addition, there are jurisdictional differences in practice among coroners in determining suicide as cause of death (The Senate Community Affairs References Committee 2010).

Beginning with the deaths registered in 2007, the ABS has introduced a revised way of treating information from coroners' cases that are still incomplete when the ABS is due to release its cause of deaths data in a given year. The relevant cases will be assigned a cause of death code based on the level of detail available on the cause, mechanism and intent of the death. The ABS will review their coding of these deaths periodically and it will be changed if indicated by information that becomes available when the coroner's case has closed. In future, therefore, the ABS will be releasing several versions of cause-of-death data.

For further information see ABS Cause of Death publication explanatory notes (<<http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/3303.0Explanatory%20Notes12007?OpenDocument>>).

## Injury hospital morbidity analysis

In this report, an approximate method has been used to reduce over counting of injury cases, by omitting records in which the mode of admission is recorded as being a transfer from another acute care hospital. These records have been excluded, as they are likely to result in multiple counting of the one injury case. This is consistent with other AIHW reports on injury (see, for example, Berry & Harrison 2007).

The criterion used to select injury hospitalisations was a principal diagnosis in the ICD-10-AM range S00-T75 or T79 (ICD-10-AM *Chapter XIX: Injury and poisoning and certain other consequences of external causes*). Cases meeting this criterion are referred to as community injury, and exclude cases relating to complications of surgical and medical care.

Specific causes of injury hospitalisation are further classified according to external cause codes in the ICD-10 range V01–Y98. As multiple external causes can be recorded, only the first reported external cause per hospitalisation was selected (that is, one external cause per injury hospitalisation). See Table A1.3 for the external cause codes used for specific causes of injury hospitalisation.

All records in the AIHW National Hospital Morbidity Database that have a principal diagnosis of injury should include one or more ICD-10-AM external cause codes. In 2008–09, of all injury hospitalisations for 12–24 year olds, only 0.07% had no external cause code. Injury hospitalisations without an external cause code are included in the total number of injury hospitalisations, but are not included in external cause hospitalisations as the aim of this analysis is to describe injury hospitalisations in terms of the external cause.

**Table A1.5: External cause codes used in this report for injury mortality and hospital data**

External cause	ICD-10 and ICD-10-AM codes
Transport accidents	V01–V99
Falls	W00–W19
Exposure to inanimate mechanical forces	W20–W49
Exposure to animate mechanical forces	W50–W64
Accidental drowning and submersion	W65–W74
Other accidental threats to breathing	W75–W84
Exposure to electric current, radiation and extreme ambient air temperature and pressure	W85–W99
Exposure to smoke, fire and flames	X00–X09
Contact with heat and hot substances	X10–X19
Contact with venomous animals and plants	X20–X29
Exposure to forces of nature	X30–X39
Accidental poisoning by and exposure to noxious substances	X40–X49
Over-exertion, travel and privation	X50–X57
Accidental exposure to other and unspecified factors	X58–X59
Intentional self-harm (suicide)	X60–X84
Assault	X85–Y09
Event of undetermined intent	Y10–Y34
Legal intervention and operations of war	Y35–Y36
Complications of medical and surgical care	Y40–Y84
Sequelae of external causes of morbidity and mortality	Y85–Y89





# Appendix 2

## DATA SOURCES

### Data sources of the Australian Institute of Health and Welfare and collaborating units

#### AIHW Child Protection Data Collection

The Australian Institute of Health and Welfare (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 departments responsible for child protection and are used to produce *Child protection Australia*. They are also provided to the Productivity Commission for the *Report on government services*.

There are four separate child protection collections: child protection notifications, investigations and substantiations; children on care and protection orders; children in out-of-home care; and intensive family support services.

Data availability: Annual from 1991 onwards

Further information: <[www.aihw.gov.au/childyouth/childwelfare/childprotection/index.cfm](http://www.aihw.gov.au/childyouth/childwelfare/childprotection/index.cfm)>

#### AIHW National Drug Strategy Household Survey

The National Drug Strategy Household Survey (NSDHS) is a key data collection under the National Drug Strategy. The survey began in 1985 and has been managed by the AIHW since 1998.

The 2007 NDSHS was conducted between July and November 2007. Almost 25,000 Australians aged 12 years or 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.

Reliable Indigenous data on substance use for young people are not available from the 2007 NDSHS.

Data availability: Triennially from 1985

Further information: AIHW 2008b or <[www.aihw.gov.au/drugs/ndshs07.cfm](http://www.aihw.gov.au/drugs/ndshs07.cfm)>

#### AIHW National Hospital Morbidity Database

The National Hospital Morbidity Database is a compilation of episode-level records from admitted patient morbidity data collection systems in Australian hospitals. The database contains data relating to admitted patients in almost all hospitals, including public acute hospitals, public psychiatric hospitals, private acute hospitals, private psychiatric hospitals and private free-standing day hospital facilities. Public sector hospitals that are not included are those not within the jurisdiction of a state or territory health authority (for example, hospitals operated by the Department of Defence or correctional authorities, and hospitals located in offshore territories).

Hospital records are for 'separations' and not individuals, and there can be multiple admissions for the same individuals.

The data supplied are based on the National Minimum Data Set for Admitted Patient Care and include demographic, administrative and length of stay data, and data on the diagnoses of the patients, the procedures they underwent in hospital, and external causes of injury and poisoning. Indigenous data are also available. Nationally about 89% of Indigenous Australians were identified correctly in hospital admissions data in a recent study (AIHW 2010j), and the 'true' number of separations for Indigenous Australians was about 12% higher than reported.

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 includes information on the conditions that caused death, and other information about the deceased person such as

age at death, 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 applied to mortality data from 1997.

Data availability: Annual from 1964 onwards

Further information: <[www.aihw.gov.au/mortality/index.cfm](http://www.aihw.gov.au/mortality/index.cfm)>

### AIHW National Perinatal Data Collection

The AIHW National Perinatal Data Collection (NPDC) is a national population-based cross-sectional data collection of pregnancy and childbirth. The data are based on births reported to the perinatal data collection in each state and territory in Australia. Midwives and other staff, using information obtained from mothers and from hospital or other records, complete notification forms for each birth. Selected information is then compiled annually into this national data set by the AIHW National Perinatal Epidemiology and Statistics Unit. Information is included in the NPDC on both live births and stillbirths of at least 400 grams birth weight or at least 20 weeks gestation.

Data availability: Annual from 1991 onwards

Further information: <[www.npsu.unsw.edu.au/NPSUweb.nsf/page/NPDC](http://www.npsu.unsw.edu.au/NPSUweb.nsf/page/NPDC)>

### Australian Cancer Database

The Australian Cancer Database (ACD), formerly known as the National Cancer Statistics Clearing House, collects information on the incidence of cancer in the Australian population. The data are provided by the state and territory cancer registries to the ACD, which is maintained by the AIHW. The ACD is the only national database of cancer incidence in Australia. It contains information on incidence, mortality, specific cancer sites, cancer histology, geographical variation, trends over time and survival.

Data items enable record linkage to be performed (for example, to the National Death Index) and the analysis of cancer by site and behaviour.

Data availability: Annual from 1982 onwards

Further information: <[www.aihw.gov.au/cancer/index.cfm](http://www.aihw.gov.au/cancer/index.cfm)>

### Bettering the Evaluation and Care of Health survey of general practice

The Bettering the Evaluation and Care of Health (BEACH) survey of general practice activity is a collaborative study between the AIHW and The University of Sydney. For each year's data collection, a random sample of about 1,000 general practitioners each report details of 100 consecutive general practice encounters of all types on structured encounter forms. On each form the general practitioner records information about the consultation (for example, date and type of consultation), the patient (for example, date of birth, sex and reasons for encounter), the problems managed and the management of each problem (for example, treatment provided, prescriptions and referrals). Data on patient risk factors, health status and general practitioners' characteristics are also collected.

Information in this report has been drawn from data collected and analysed by the Australian General Practice Statistics and Classification Centre at The University of Sydney in collaboration with the AIHW.

Data availability: Annual from 1998–99 onwards

Further information: Britt et al. 2009

### Child Dental Health Survey

The Child Dental Health Survey is an annual survey that monitors the dental health of children and young people enrolled in school dental services operated by the Australian state and territory health departments. This survey represents the only data routinely collected by all states and territories on child dental health.

Data for the Child Dental Health Survey are derived from routine examinations of children enrolled in the school dental services. The survey collects information on selected demographic characteristics and dental health status, including decay experience of deciduous and permanent teeth, immediate treatment needs (some states and territories only) and fissure sealants.

Data availability: Annual from 1990

Further information: Armfield et al. 2007

### Juvenile Justice National Minimum Data Set

The Juvenile Justice National Minimum Data Set (JJ NMDS) is the annual national collection

of information on young people in community supervision and detention in Australia. It contains flow data from 2000–01 for all states and territories in Australia (except the Australian Capital Territory, whose data are available from 2003–04). Data are provided by the department responsible for juvenile justice in each jurisdiction. 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 and characteristics of young people in juvenile justice supervision (age, sex and Indigenous status), patterns of supervision (type, length and location), and juvenile justice detention centre characteristics.

Western Australia and the Northern Territory did not supply juvenile justice data for the 2008–09 collection. As such, the juvenile justice rates for 2008–09 presented in this report may not be nationally representative. However, AIHW analyses have shown that the inclusion of estimates—based on previous years of data—for Western Australia and the Northern Territory have little impact on the national rate of supervision for all young people 10–17 years (AIHW 2011b). Estimates for Western Australia and the Northern Territory for the 12–17 year age group used in this report were not available.

Data availability: Annual from 2000–01 onwards

Further information: <[www.aihw.gov.au/phjj/juvenilejustice/index.cfm](http://www.aihw.gov.au/phjj/juvenilejustice/index.cfm)>

## National Diabetes Register

The National Diabetes Register (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 database, administered by Diabetes Australia (source of data in this report)
- the Australasian Paediatric Endocrine Group's state and territory databases.

Data availability: Annual from 1999 onwards

Further information: <[www.aihw.gov.au/diabetes/ndr.cfm](http://www.aihw.gov.au/diabetes/ndr.cfm)>

## National Prisoner Health Census

The National Prisoner Health Census, conducted and held by the AIHW, was conducted in 87 of the 93 public and private prisons throughout Australia in mid-2009. Data were collected over a 1-week period on all prison entrants, all prisoners who visited a clinic, all prisoners who were taking prescribed medication while in custody, prison clinic services and staffing levels.

The results from the Census are presented in the report *The health of Australia's prisoners 2009*—these data form a baseline for national prisoner health. Trends over time and state and territory comparisons will be available in future reports.

Data availability: 2009

Further information: <[www.aihw.gov.au/phjj/prisonerhealth/index.cfm](http://www.aihw.gov.au/phjj/prisonerhealth/index.cfm)>

## National Non-Admitted Patient Emergency Department Care Database

The National Non-Admitted Patient Emergency Department Care Database (NNAPEDCD) is a compilation of episode-level data for emergency department presentations in public hospitals. The database is based on the National Minimum Data Set for Non-Admitted Patient Emergency Department Care, as defined in the *National health data dictionary, version 14* (HDSC 2008). It includes data on the type and length of emergency department visit, triage category, waiting times, patient demographics, arrival mode and episode end status. The NNAPEDCD covers public hospitals that were classified as peer groups A (*Principal referral and Specialist Women's and children's hospitals*) and B (*Large hospitals*) in *Australian hospital statistics 2007–08* (AIHW 2009a). Data were also provided by some states and territories for hospitals in peer groups other than A and B.

Data availability: 2003–04 onwards

Further information: <[http://www.aihw.gov.au/hospitals/napedc\\_database.cfm](http://www.aihw.gov.au/hospitals/napedc_database.cfm)>

## Supported Accommodation Assistance Program National Data Collection

The Supported Accommodation Assistance Program (SAAP) National Data Collection has provided annual information on the provision of assistance through SAAP since 1996–97. The AIHW has had the role of National Data Collection Agency since the collection's inception. The National Data Collection consists of distinct components, each of which can be thought of as a separate collection—the Client Collection, the Administrative Data Collection and the Demand for Accommodation Collection.

The Client Collection collects information about all clients receiving SAAP support of at least 1 hour's duration. 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 support is also collected.

The Administrative Data Collection provides information about the agencies providing SAAP accommodation and support services.

The Demand for Accommodation Collection is conducted twice a year for two 1-week periods. It measures the level of unmet demand for SAAP accommodation by collecting information about the number of requests for accommodation from SAAP agencies that are not met, for whatever reason.

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)>

## Data sources of the Australian Bureau of Statistics

### ABS Births, Australia

The ABS compiles aggregate statistics on births, based on data provided by the parent(s) of the child to the state and territory Registrars of Births, Deaths and Marriages.

The statistics in the *Births, Australia* publication refer to births registered during the relevant calendar year. As there is usually an interval between the occurrence and registration of a birth, some births occurring in one year are not registered until the following year, or even later.

Data availability: Annual from 1993 onwards

Further information: <[www.abs.gov.au/AUSSTATS/abs@.nsf/mf/3301.0](http://www.abs.gov.au/AUSSTATS/abs@.nsf/mf/3301.0)>

### ABS Census of Population and Housing

The Census aims to provide an accurate measure of the number of people in Australia on Census night, their key demographic, social and economic characteristics, and the dwellings in which they live. The Census reports on a range of topics including population, cultural diversity, community, living arrangements, education, work, need for assistance, economic resources and housing.

Data availability: 1911 onwards; 5-yearly from 1976

Further information: <[www.abs.gov.au/websitedbs/D3310114.nsf/Home/census?opendocument?utm\\_id=GT](http://www.abs.gov.au/websitedbs/D3310114.nsf/Home/census?opendocument?utm_id=GT)>

### ABS Counting the Homeless

*Counting the homeless* (ABS cat. no. 2050.0) is the result of a research program to establish the extent of homelessness in Australia, involving collaboration between the Royal Melbourne Institute of Technology and Swinburne universities, the ABS and the AIHW. Funding for the research was provided by the Australian Government through the Community Services Ministerial Advisory Committee and the Housing Ministerial Advisory Committee.

The analysis of the ABS Census of Population and Housing is supplemented by information from the AIHW SAAP National Data Collection and the National Census of Homeless School Students.



The methodology is currently under review.

Data availability: 2001 and 2006

Further information: <[www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/2050.0Main+Features12006?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/2050.0Main+Features12006?OpenDocument)>

### ABS Crime Victimization Survey

This survey was conducted from July 2008 to June 2009 using the ABS Multipurpose Household Survey, and included information from 25,601 private dwelling households. The survey collects information about victims for a selected range of personal and household offences, whether victims reported these incidents to police, characteristics of victims and characteristics of their most recent incident, and people's perceptions of safety and problems in their neighbourhood.

There are no reliable Indigenous estimates from the ABS 2008–09 Crime Victimization Survey, due to the small number of Indigenous young people surveyed. People living in very remote parts of Australia and in non-private dwellings were excluded from this survey. However, this was expected to have only a minor effect on any aggregate estimates that are produced for individual states and territories, except in the Northern Territory where such people account for around 23% of the population.

The 2008–09 Crime Victimization Survey is not directly comparable to data from previous years of the survey as different data collection methods were used. The 2008–09 survey collected data by personal interviews by telephone or at selected dwellings, where previously respondents were required to self-complete the questionnaires. Survey data may vary according to the survey methodology and people's willingness to disclose their experience in the survey context.

Data availability: 2008–09

Further information: <[http://www.ausstats.abs.gov.au/Ausstats/subscriber.nsf/0/C153E64EDD32A47DCA2576CD00184756/\\$File/45300\\_2008-09.pdf](http://www.ausstats.abs.gov.au/Ausstats/subscriber.nsf/0/C153E64EDD32A47DCA2576CD00184756/$File/45300_2008-09.pdf)>

### ABS Criminal courts

*Criminal courts, Australia* is an annual publication that presents information on the characteristics of defendants dealt with by Australian state and territory criminal courts; including the Higher, Magistrates and Childrens Courts. It includes information on the offences and sentences

associated with those defendants. The statistics for the publication are derived from court administrative systems managed by the state and territory agencies.

Data availability: Annually from 2001–02 onwards

Further information: <[www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4513.0Main+Features12008-09?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4513.0Main+Features12008-09?OpenDocument)>

### ABS Family Characteristics and Transitions Survey

The Family Characteristics and Transitions Survey collects information on household and family composition including demographics, labour force status and family type. The survey has replaced the Family Transitions and History Survey and the Family Characteristics Survey.

The Family Characteristics and Transitions Survey provides information on families with children aged 0–17 years such as family structure, marital status of parents, parental income and contact arrangements for children with non-resident parents. The 2006–07 survey collected information from around 31,300 persons.

Data availability: 1992 (Survey of Families in Australia), 1997 and 2003 (Family Characteristics Survey), 2006–07 (Family Characteristics and Transitions Survey)

Further information: <[www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4442.0Main+Features12006-07?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4442.0Main+Features12006-07?OpenDocument)>

### ABS General Social Survey

The ABS conducted the General Social Survey (GSS) in 2002, 2006 and 2010, with plans to repeat the survey at 4-yearly intervals. In 2006, the GSS collected information from March to July from 13,375 private dwellings throughout non-remote areas of Australia. The aims of the GSS are to collect data on a range of social dimensions of the Australian community at a single point in time; 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 focus of the GSS is on the relationships between characteristics from different areas of social concern, rather than in-depth information about a particular field. Topics include demographic characteristics, health and disability, housing, education, work, income, financial stress, assets and liabilities, information technology, transport, family and community, crime and feelings of safety, attendance at culture and leisure venues, sports attendance and participation, social networks and social participation, voluntary work and visa category.

Data availability: 2002 and 2006

Further information: ABS 2007b or <[www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4159.0Main+Features12006?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4159.0Main+Features12006?OpenDocument)>

### ABS Labour Force Survey

The Labour Force Survey (LFS) collects information monthly on labour market activity of the usual resident civilian population of Australia aged 15 years and over. The survey collects information on sociodemographics and labour force characteristics, including labour force status, unemployment rate, participation rate, status of employment in main job (full-time or part-time), hours worked, job tenure, underemployment, occupation and industry in main job, whether looking for work, reason for ceasing last job, duration of unemployment and persons permanently unable to work.

Data availability: Quarterly from 1960 to 1968 and monthly from February 1978 onwards

Further information: <[www.abs.gov.au/websitedbs/c311215.nsf/o/BF6068ABC64802DECA256BD500169F18?Open](http://www.abs.gov.au/websitedbs/c311215.nsf/o/BF6068ABC64802DECA256BD500169F18?Open)>

### ABS National Aboriginal and Torres Strait Islander Health Survey

The ABS 2004–05 National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) provides information about the health circumstances of Indigenous Australians. This survey, which was conducted in remote and non-remote areas throughout Australia, collected information from 10,439 Indigenous Australians about health-related issues, including health status, risk factors and actions (including alcohol and smoking), and socioeconomic circumstances. The sample size was considerably larger than the supplementary Indigenous sample in the 2001 National Health Survey.

The aims of the NATSIHS were to provide broad information about the health of Indigenous Australians, by remoteness, and at the national and state and territory levels; allow the relationships among 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.

Data availability: 2001 and 2004–05

Further information: ABS 2006d 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

The 2008 National Aboriginal and Torres Strait Islander Social Survey (NATSISS) was conducted between August 2008 and April 2009. Information was collected from approximately 13,300 Indigenous Australians living in both remote and non-remote areas, including discrete communities.

The 2008 NATSISS provides information on a range of demographic, social, environmental and economic indicators, including personal and household characteristics, geography, language and cultural activities, social networks and support, health and disability, education, employment, financial stress, income, transport, personal safety and housing.

The 2002 NATSISS was conducted between August 2002 and April 2003. Information was collected by personal interview from about 10,000 Indigenous people aged 15 years and over throughout Australia, including those living in remote areas.

For 15–17 year olds, data may reflect parental responses or in some cases young people may have been personally interviewed with the consent of an adult.

Data availability: 2002 and 2008

Further information: <[www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4714.0Main+Features12002?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4714.0Main+Features12002?OpenDocument)>



## ABS National Health Survey

The 2007–08 National Health Survey (NHS) was conducted between August 2007 and June 2008, and collected information from around 21,000 people. Both urban and rural areas in all states and territories were included, but very remote areas of Australia were excluded. One person aged 18 years and over in each dwelling was selected and interviewed about their own health and, if there were children resident, an adult was asked about the health of one child.

The NHS collected information on the health status of the population, and on health-related aspects of people's lifestyles such as smoking, diet, exercise and alcohol consumption. Other information on the use of health services (such as consultations with health practitioners, visits to hospital, days away from work and other actions people have recently taken for their health) was also collected, along with demographic and socioeconomic characteristics.

The NHS is a comprehensive survey of the Australian population; however, the survey population may not be sufficient to get accurate information when looking at people of a given age with a particular health problem.

For 15–17 year olds, data may reflect parental responses or, in some cases, young people may have been personally interviewed with the consent of an adult.

Data availability: 1977–78, 1983, 1989–90, 1995, 2001, 2004–05, 2007–08

Further information: <[www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4364.0Main+Features12007-2008%20\(Reissue\)?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4364.0Main+Features12007-2008%20(Reissue)?OpenDocument)>

## ABS National Prisoner Census

The National Prisoner Census was established in 1983 by the Australian Institute of Criminology, and since 1995 has been maintained by the ABS. The census collects information on all persons in the legal custody of adult corrective services at 30 June each year. Data are derived from administrative records held by corrective services agencies within each state and territory. The annual *Prisoners in Australia* publication presents national statistics on the characteristics of prisoners, their sentence length and the most serious offence or charge for which offenders are imprisoned, and provides a basis for monitoring change over time.

Data availability: 1983 onwards, with annual ABS publications from 2000 onwards

Further information: <[www.abs.gov.au/AUSSTATS/abs@.nsf/allprimarymainfeatures/8D5807D8074A7A5BCA256A6800811054?opendocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/allprimarymainfeatures/8D5807D8074A7A5BCA256A6800811054?opendocument)>

## ABS National Survey of Mental Health and Wellbeing

The National Survey of Mental Health and Wellbeing (NSMHWB) was conducted by the ABS from August to December 2007. Funding for this survey was provided by the Australian Government Department of Health and Ageing. The survey collected information from about 8,800 Australians aged 16–85 years.

The NSMHWB provides information on the prevalence of selected lifetime and 12-month mental disorders by major disorder groups— anxiety disorders (for example, social phobia), affective disorders (for example, depression), and substance use disorders (for example, harmful use of alcohol). The survey also provides information on the level of impairment, health services used for mental health problems, physical conditions, social networks and caregiving, as well as demographic and socioeconomic characteristics.

The survey was based on a widely-used international survey instrument that was developed by the World Health Organization for use by participants in the World Mental Health Survey Initiative. Most of the survey was based on the international survey modules but some modules, such as Health Service Utilisation, were tailored to fit the Australian context.

In 1997 the ABS conducted the National Survey of Mental Health and Wellbeing of Adults. Due to differences in how the data were collected, data from 1997 are not strictly comparable with the results from 2007.

Data availability: 1997 and 2007

Further information: <[www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4326.0Main+Features12007?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4326.0Main+Features12007?OpenDocument)>

Discussion of issues between 1997 and 2007 surveys:

<<http://www.abs.gov.au/ausstats/abs@.nsf/Products/4326.0~2007~Appendix~Comparison+between+1997+and+2007+%28Appendix%29?OpenDocument#1421131413109948>>

## ABS National Voluntary Work Survey

The National Voluntary Work Survey conducted throughout Australia from March to July 2006 was part of the GSS (see above), and had a total sample size of 13,375 dwellings. The major aim of the voluntary work module (referred to here as the Voluntary Work Survey) was to collect data on rates of participation in voluntary work, the characteristics of people who volunteered, the types of organisations for which they worked and the activities they undertook, as well as data about the motivation for volunteering. Two similar national voluntary work surveys have been conducted by the ABS before—the first as part of the Monthly Population Survey in 1995, and the second conducted over four quarters in 2000 as part of the Population Survey Monitor. The information collected in the 2006 Survey is mostly a repeat of the 2000 Voluntary Work Survey. However, for the first time in 2006, data have also been collected on informal unpaid community work—caring for people with a disability and providing assistance to relatives, friends and others in the wider community. Information on whether people made monetary donations to organisations was also collected in 2006, as in the 2000 survey.

Data availability: 1995, 2000 and 2006

Further information: <[www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4441.0Explanatory%20Notes12006?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4441.0Explanatory%20Notes12006?OpenDocument)>

## ABS Recorded crime—victims

*Recorded crime—victims, Australia* is an annual publication that presents national crime statistics relating to victims of a selected range of offences that have been recorded by police. These statistics provide indicators of the level and nature of recorded crime victimisation in Australia and are a basis for measuring change over time. The statistics for the publication are derived from administrative systems maintained by state and territory police.

Data availability: Annual from 1993

Further information: <[www.abs.gov.au/AUSSTATS/abs@.nsf/allprimarymainfeatures/DA3DED213BAE8114CA257178001B6949?opendocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/allprimarymainfeatures/DA3DED213BAE8114CA257178001B6949?opendocument)>

## ABS Survey of Disability, Ageing and Carers

The Survey of Disability, Ageing and Carers (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. In 2003, after exclusions due to scope and coverage, the final sample comprised 36,241 people for the household component and 5,145 people for the cared-accommodation component.

The aims of the SDAC are to measure the prevalence of disability in Australia and 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 disability were asked questions relating to help and assistance needed and received for self-care, mobility and communication. Those aged 5–20 years (or their proxies) were also asked about schooling restrictions and 15–64 year olds about employment restrictions.

The most recent survey was conducted in 2009, with only preliminary and limited information from the 2009 survey available for inclusion in this report.

Data availability: 1981, 1988, 1993, 1998, 2003, 2009

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 (SEW) is conducted throughout Australia in May each year as a supplement to the monthly LFS.

The SEW provides a range of key indicators of educational participation and attainment of persons aged 15–64 years, along with data on people's transition between education and work. The survey specifically provides information on people currently participating in education, highest year of schooling, level and field of highest non-school qualification, characteristics of people's transition between education and work, and data on apprentices. The 2008 SEW collected information from 37,769 persons.

Data availability: Annual from 1964 onwards

Further information: <[www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/6227.0Main+Features1May%202008?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/6227.0Main+Features1May%202008?OpenDocument)>

## ABS Survey of Income and Housing

The Survey of Income and Housing (SIH) (previously known as the Survey of Income and Housing Costs) is a household survey that collects information from residents aged 15 years and over on sources of income and amount received, and also housing, household and personal information. In 2007–08, the sample for the SIH was around 10,000 households.

As income received by individuals is often shared between members of a household, equivalised household income is used in analysis of the SIH. This survey allows analysis of the amount of income received and the source of that income, and how these vary by age, state and territory, the remoteness of the household and household size. It is also possible to examine housing circumstances such as the rate of home ownership among various groups.

Data availability: Most years from 1994–95 to 2003–04 (no survey was run in 1998–99 or 2001–02), 2005–06, 2007–08

Further information: <[www.abs.gov.au/AUSSTATS/abs@.nsf/DOSSbyTopic/F0CDB39ECC092711CA256BD00026C3D5?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/DOSSbyTopic/F0CDB39ECC092711CA256BD00026C3D5?OpenDocument)>

## ABS Underemployed Workers Survey

The Underemployed Workers (UEW) Survey provides information about workers who are not fully employed, that is, part-time workers who indicate that they would prefer to work more hours, and full-time workers who did not work full-time hours in the reference period for economic reasons. While basic data on underemployment are available from the LFS, this supplementary survey provides greater detail on the characteristics and the job search activities of labour underutilisation.

This survey is conducted as part of the Monthly Population Survey, which comprises the LFS and, in most months, a supplementary survey topic.

Data availability: 1985, 1988 and 1991. In 1994, the survey became an annual survey, collected each September. There was a break in series in 2008 to align with the LFS.

Further information: <[www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/6265.0Sep%202008?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/6265.0Sep%202008?OpenDocument)>

## Other data sources

### Australian Institute of Criminology National Homicide Monitoring Program

The Australian Institute of Criminology has operated the National Homicide Monitoring Program (NHMP) since 1990.

The purpose of the program is to identify the characteristics of individuals that place them at risk of homicide victimisation and offending, and the circumstances that contribute to the likelihood of a homicide occurring. The two main data sources used by the program are police records and coronial files.

Data availability: Annual from 1989–90 onwards

Further information: <[www.aic.gov.au/research/projects/0001.html](http://www.aic.gov.au/research/projects/0001.html)>

### Australian Secondary Students' Alcohol and Drug Survey

The Australian Secondary Students' Alcohol and Drug (ASSAD) Survey is a triennial secondary school-based survey that monitors the use of tobacco, alcohol and other substances among adolescents in Australia. The first survey was conducted by the Cancer Councils in each Australian state and territory in 1984, and was restricted to secondary school students' use of tobacco and alcohol. In 1996, the federal, state and territory health departments became collaborators with the Cancer Councils, and the survey was expanded to include questions on the use of illicit substances.

The 2005 ASSAD Survey collected information from a representative sample of 21,805 secondary school students in Years 7–12 across Australia. The questionnaire covers the use of tobacco, alcohol, pain relievers, sleeping tablets and the use of illicit substances such as cannabis and hallucinogens.

The most recent survey was conducted in 2008; however, data were not available for inclusion in this report.

Data availability: 1984, 1987, 1993, 1993, 1996, 1999, 2002, 2005

Further information: <[www.nationaldrugstrategy.gov.au/internet/drugstrategy/publishing.nsf/Content/resources-menu?OpenDocument&CATEGORY=7Monographs&SUBMIT=Search](http://www.nationaldrugstrategy.gov.au/internet/drugstrategy/publishing.nsf/Content/resources-menu?OpenDocument&CATEGORY=7Monographs&SUBMIT=Search)> (see Monograph series nos 58, 59 and 60)

## Australian Transport Safety Bureau Fatal Road Crash Database

The Fatal Road Crash Database contains information on road transport crash fatalities in Australia, as reported by the police each month to the state and territory road safety authorities.

The data can be examined by either fatalities or fatal crashes. Information collected for fatal crashes includes date, location and type of crash. Information collected for fatalities includes age, gender and road user type.

Data availability: Annual from 1988

Further information: <[www.infrastructure.gov.au/roads/safety/road\\_fatality\\_statistics/fatal\\_road\\_crash\\_database.aspx](http://www.infrastructure.gov.au/roads/safety/road_fatality_statistics/fatal_road_crash_database.aspx)>

## Burden of Disease and Injury Study

The Burden of Disease and Injury Study looks at the extent and distribution of health problems in Australia, and then assesses the contribution of key health risk factors. The 2003 study is the second study of this type, the first having been released in 1999. This study presents information on the disability-adjusted life years associated with common conditions, such as diabetes and injuries, with breakdowns by population groups. Data are also presented on the health risks to Australians, such as poor nutrition, violence and drug use.

The data for the Burden of Disease and Injury Study were drawn from national minimum data sets, various specific disease studies and surveys of general population health.

Data availability: 1999, 2003

Further information: <<http://www.aihw.gov.au/publications/index.cfm/title/10317>>

## Household, Income and Labour Dynamics in Australia Survey

The Household, Income and Labour Dynamics in Australia (HILDA) Project was initiated and is funded by the Australian Government Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA), and is managed by the Melbourne Institute of Applied Economic and Social Research.

The HILDA Survey is a longitudinal household-based panel survey that began in 2001. It aims to describe the way people's lives are changing by tracking all members of an initial sample of households over an indefinite period. Interviews were obtained from 7,066 households in Wave 8 (2008), and these data were available as at August 2009. 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.

The findings and views reported in this publication, however, are those of the author and should not be attributed to either FaHCSIA or the Melbourne Institute.

Data availability: Annual from 2001 onwards

Further information: <[www.melbourneinstitute.com/hilda](http://www.melbourneinstitute.com/hilda)>

## National Assessment Program—Literacy and Numeracy

The National Assessment Program—Literacy and Numeracy (NAPLAN) tests are conducted in May each year for all students across Australia in Years 3, 5, 7 and 9. All students in the same year level are assessed on the same test items in the assessment domains of Reading, Writing, Language Conventions (Spelling, Grammar and Punctuation) and Numeracy.

Each year, over one million students nationally sit the NAPLAN tests. National Protocols for Test Administration ensure consistency in the administration of the tests by all test administration authorities and schools across Australia. The remoteness classification used is according to the MCEETYA Schools Geographic Location scale.



National minimum standards have been developed for reading, writing, spelling, language conventions (grammar and punctuation) and numeracy for students in Years 3, 5, 7 and 9. Students who achieve the minimum standards have demonstrated at least the basic understanding required for their year level. The first NAPLAN tests were conducted in 2008. For the first time, students in each state and territory sat the same tests, allowing the consistent assessment of students across Australia. There is now a common and continuous reporting scale used for all students in Years 3, 5, 7 and 9, that provides more information about student achievement than was previously available (MCEETYA 2008b).

The test administration authority in each state and territory manages the marking of the tests. Tests for Reading, Language Conventions (Spelling, Grammar and Punctuation) and Numeracy are marked using optical mark recognition software to score multiple-choice items. Writing tasks are professionally marked using well-established procedures for maintaining marker consistency.

Data availability: Annual from 2008

Further information: <[www.naplan.edu.au/verve/\\_resources/NAPLAN\\_2010\\_Summary\\_Report.pdf](http://www.naplan.edu.au/verve/_resources/NAPLAN_2010_Summary_Report.pdf)>

## National Centre in HIV Epidemiology and Clinical Research

The National Centre in HIV Epidemiology and Clinical Research (NCHECR) was established in 1986 by the Australian Government to fulfil a number of key roles in Australia's fight against HIV/AIDS. The NCHECR's primary functions relate to the coordination of national surveillance programs, clinical research and clinical trials. While its original focus was exclusively on HIV/AIDS, the NCHECR's work has expanded to encompass hepatitis B and C, and sexually transmissible infections. The NCHECR also conducts research into the transmission, prevention and natural history of these infections. The NCHECR's research program has increasingly taken on a regional focus, with major collaborative programs in Thailand and Cambodia. Other functions of the NCHECR include the training of health professionals, and input into the development and implementation of health policy and programs.

Data availability: 1986 onwards

Further information: <<http://www.nchechr.unsw.edu.au/>>

## National Children's Physical Activity and Nutrition Survey

This survey was conducted in 2007 by the Commonwealth Scientific and Industrial Research Organisation (CSIRO), the Preventative Health National Research Flagship, and the University of South Australia, with funding from the Australian Government Department of Health and Ageing, the Department of Agriculture, Fisheries and Forestry, and the Australian Food and Grocery Council.

The survey collected comprehensive information on overweight and obesity, physical activity and nutrition from more than 4,000 children aged 2–16 years. The survey data can be measured against Australia's Nutrient Reference Values, the Australian Dietary Guidelines for Children and the Australian Physical Activity Guidelines. As demographic information was not collected for those who refused to participate in this survey, it is not possible to estimate non-response bias.

Data availability: 2007

Further information: <http://www.health.gov.au/internet/main/publishing.nsf/content/phd-nutrition-childrens-survey>

## National Notifiable Diseases Surveillance System

The National Notifiable Diseases Surveillance System (NNDSS) was established in 1990 by the Communicable Diseases Network of Australia and New Zealand. Notifications of notifiable communicable diseases are reported 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 varies. Surveillance of communicable diseases varies between jurisdictions. Therefore, the proportion of diagnosed cases of a particular disease that is 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 Sun Protection Survey

The second National Sun Protection Survey of Australians was conducted in 2006–07 by the Centre for Behavioural Research at the Cancer Council Victoria. This survey was a follow-up to the first National Sun Protection Survey conducted in 2003–04. The National Sun Protection Survey looks at the sun safety behaviours of the Australian population, such as wearing hats and protective clothing, and attempts at tanning.

Data availability: 2003–04 and 2006–07

Further information: <<http://www.annualreview.cancer.org.au/ReducingTheImpact/ReducingRisk/ReducingSkinCancer/SunSurveyResults.htm>>

### National Survey of Secondary Students and Sexual Health

The National Survey of Secondary Students and Sexual Health has been conducted every 5 years throughout Australia since 1992. The fourth survey, conducted in 2008, involved 2,926 students in Year 10 and Year 12 in all states and territories, and included government, Catholic and independent schools. The surveys are designed to inform educational policy and practice within the domain of sexual health.

The 2007 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 or guardians about a range of sexual matters. Detailed information was also collected on knowledge and perceived risk of HIV/AIDS, sexually transmissible infections and bloodborne viruses.

Data availability: 1992, 1997 and 2002, 2008.

Further information: Smith et al. 2003

### Programme for International Student Assessment surveys

International comparison data for reading, mathematics and science is available through the Program for International Student Assessment (PISA). PISA is a triennial survey of the knowledge and skills of 15 year olds. It is the product of collaboration between participating countries and economies through the Organisation for Economic Co-operation and Development (OECD), and draws on leading international expertise to develop valid comparisons across countries and cultures (PISA 2006). In 2009, 470,000 students from 65 OECD and partner countries took part in the PISA.

For more information: <[http://www.pisa.oecd.org/pages/0,2987,en\\_32252351\\_32235731\\_1\\_1\\_1\\_1\\_1,00.html](http://www.pisa.oecd.org/pages/0,2987,en_32252351_32235731_1_1_1_1_1,00.html)>

### National Survey of Young Australians

The 2009 National Survey of Young Australians is the eighth annual survey of young Australians undertaken by Mission Australia.

The survey's primary goal is to identify the values and issues that concern young people aged 11–24 years. A total of 47,735 young people took part in the 2009 survey. The survey is a brief (15 questions) forced-choice questionnaire that includes demographic information including age, gender, Indigenous status, state or territory, postcode and disability status. Issues covered by the survey in addition to identifying young peoples' values and issues of concern include who young people turn to for advice and support, what activities they are involved in and who they admire.

Data availability: Annual from 2001 onwards.

Further information: Mission Australia, research and social policy unit.

<[www.missionaustralia.com.au/youthsurvey](http://www.missionaustralia.com.au/youthsurvey)>

# Appendix 3

## ABBREVIATIONS

### Abbreviations

ABS	Australian Bureau of Statistics	ICD-10	International Classification of Diseases and Related Health Problems, 10th Revision
ACD	Australian Cancer Database		
AIDS	acquired immune deficiency syndrome	ICD-10-AM	International Classification of Disease and Related Health Problems, 10th Revision, Australian modification
AIHW	Australian Institute of Health and Welfare		
ARF	acute rheumatic fever	IRSD	Index of Relative Socio-economic Disadvantage
ARIA	Accessibility/Remoteness Index for Australia	JJ NMDS	Juvenile Justice National Minimum Data Set
ASGC	Australian Standard Geographical Classification	K5	Kessler 5
ASSAD	Australian Secondary Students Alcohol and Drug (Survey)	K10	Kessler 10
BEACH	Bettering the Evaluation and Care of Health (survey of general practice)	LFS	Labour Force Survey
BMI	body mass index	LT	long term
CD	Census Collection District	MCS	Mental Health Component Summary
COAG	Council of Australian Governments	NAPLAN	National Assessment Program—Literacy and Numeracy
CRA	Commonwealth Rent Assistance	NATSIHS	National Aboriginal and Torres Strait Islander Health Survey
DMFT	Decayed, missing, or filled permanent teeth	NATSISS	National Aboriginal and Torres Strait Islander Social Survey
ERP	Estimated resident population	NCHECR	National Centre in HIV Epidemiology and Clinical Research
GSS	General Social Survey	NCSP	National Cervical Screening Program
Hib	<i>Haemophilus influenzae</i> type b	NDR	National Diabetes Register
HILDA	Household, Income and Labour Dynamics in Australia (Survey)	NDSHS	National Drug Strategy Household Survey
HIV	human immunodeficiency virus	NHMP	National Homicide Monitoring Program
HPV	human papillomavirus	NHMRC	National Health and Medical Research Council
ICD-9	International Classification of Diseases, 9th Revision		

NHS	National Health Survey	SDAC	Survey of Disability, Ageing and Carers
NNAPEDCD	National Non-Admitted Patient Emergency Department Care Database	SEIFA	Socio-Economic Indexes for Areas
NNDSS	National Notifiable Diseases Surveillance System	SES	socioeconomic status
NPDC	National Perinatal Data Collection	SEW	Survey of Education and Work
NSMHWB	National Survey of Mental Health and Wellbeing	SF-36	Short Form 36
OECD	Organisation for Economic Co-operation and Development	SIH	Survey of Income and Housing
PISA	Programme for International Student Assessment	SLA	Statistical Local Area
RHD	rheumatic heart disease	ST	short term
SAAP	Supported Accommodation Assistance Program	STI	sexually transmissible infection
SAR	special administrative region (of China)	UEW	Underemployed Workers (Survey)
		UK	United Kingdom
		URTI	upper respiratory tract infection
		USA	United States of America
		WHO	World Health Organization

#### Australian states and territories

ACT	Australian Capital Territory
NSW	New South Wales
NT	Northern Territory
Qld	Queensland
SA	South Australia
Tas	Tasmania
Vic	Victoria
WA	Western Australia

#### Symbols used in national indicators

✓	favourable trend
✗	unfavourable trend
~	no change or no clear trend
..	no trend data available or presented

#### Symbols used in tables

—	rounded to zero, including null cells
..	not applicable

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