Australia's young people: their health and wellbeing 1999

The first report on the health of young people aged 12–24 years by the Australian Institute of Health and Welfare

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Preface

Australia's young people: their health and wellbeing 1999 is the first national report on the health status of youth in Australia. Included in this report is information on diseases and injuries, major risk factors and wider determinants of health and wellbeing. Separate sections are presented on the health status of particular priority groups: Aboriginal and Torres Strait Islander youth, young people living in rural and remote locations, overseas-born youth and those from socioeconomically disadvantaged groups. Much of the information has not previously been published.

This report is the second in a proposed series of biennial reports on the health of Australian children and youth to be published by the Institute. The first children's health report in the series was published in 1998.

Initial input on the structure and content of this report was provided by participants at the Workshop on the National Youth Information Framework, held in May 1999. The newly formed National Youth Health Information Advisory Committee also provided valued contributions to the structure of the report. Individual members of the Advisory Committee and others have commented on specific areas of the report. However, the content of the report remains the responsibility of the Australian Institute of Health and Welfare.

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Richard Madden
Director

Summary

There are divergent views about the health and wellbeing of young people in Australia (those aged 12–24 years). One opinion is that young people have better health than their older counterparts, while another is that this age group is particularly vulnerable to some of the ill-effects of modern society. This report documents some of the evidence for these perceptions and attempts to inform public debate on these issues. The report uses existing data sources to measure levels and trends in the health and wellbeing of young people. While recognising that there are gaps and deficiencies, this represents the best available data. Gaps in the analysis demonstrate that there is potential to further develop and improve the information available on young Australians.

Young people in Australia are in good health...

- Two-thirds of young people rated their health as 'excellent' or 'very good' (Chapter 3).
- Eight per cent of 15–19 year olds and 9% of 20–24 year olds self-reported as having a disability, the lowest of all age groups (Chapter 7).
- Furthermore, in relation to their disability, only 2% of males and 1% of females aged 15–24 years reported having restrictions in core activities to an extent classified as 'profound' or 'severe' (Chapter 7).
- Fifty-four per cent of young people aged 15–24 years were classified as being of 'acceptable weight', compared with only 35% of those over 24 years (Chapter 16).
- About 80% of those aged 20–24 years had completed secondary school, and 39% had some post-school qualification (Chapter 20).
- In 1993–94, 9.4% of total health expenditure was for 15–24 year olds, who accounted for 15.3% of the population (Chapter 23).

and it's getting better...

- Death rates for 12–24 year olds declined by 29% over the period 1979–1992 to 60 per 100,000, and have remained stable since then (Chapter 5).
- Part of the decline in death rates is due to a decline in motor vehicle accident deaths, which have fallen from 40 to 16 per 100,000 for males and 16 to 6 per 100,000 for females over the period 1979 to 1997 (Chapter 8).
- New cases of HIV infection among young males declined from 11 per 100,000 in 1991 to 3 per 100,000 in 1998; among young females HIV infection rates have consistently been much lower, about 1 per 100,000 (Chapter 6).
- Teenage fertility declined from 55 births per 1,000 women in 1971 to 20 in 1988, and has been stable since then (Chapter 11).
- Notifications of syphilis infections declined from 32 per 100,000 in 1992 to 11 per 100,000 in 1997 (Chapter 11).

but there are still some areas of concern...

- The major burden of disease (measured as a combination of the effect of mortality and disability) for this age group is from mental disorders (clinically recognisable symptoms or behaviour associated with stress and interference with personal functions) (Chapter 4).
- Injury is the leading cause of death for 12–24 year olds with two-thirds of all deaths attributed to some form of injury, including accidents and suicide (Chapters 5 and 8).
- Injury death rates for 15–24 year olds are higher than all other age groups under 75 years (Chapter 8).
- While 54% of 15–24 year olds in 1995 were of acceptable weight, 22% were overweight or obese (Chapter 16).
- Suicide has not followed the declines seen for most other causes of death in this age group—suicide rates increased over the period 1979–1997, particularly for males (Chapter 10).
- Chlamydia is the main sexually transmissible disease among young people, especially females, and notifications for this infection increased from 105 to 292 per 100,000 over the period 1991–1998 (Chapter 11).
- Drug dependence accounted for 7% of youth deaths.
- Deaths where drugs and medicinal substances were either the underlying or contributing cause represented 24% of youth deaths.
- One in 5 males and 1 in 10 females in the 18–24 years age group were found to have substance use disorders ('harmful use' or 'dependence' on drugs and/or alcohol) (Chapter 9).
- Alcohol dependence was more prevalent than drug dependence, with 12% of males having alcohol dependence compared with 9% for cannabis and opioid dependence.
- Nearly half of 14–24 year old males and one-third of females of the same age had an alcoholic drink at least once a week (Chapter 13).
- In 1998, 25% of young persons aged 14–19 years and 40% of those aged 20–24 years were regular or occasional smokers (Chapter 13).
- Thirty-eight per cent of young people aged 14–24 years reported using marijuana in the past 12 months (Chapter 13).
- Between 1995 and 1998, the proportions reporting using illicit drugs in the past 12 months increased for all drugs (Chapter 13).
- The proportions of young people who reported exercising at a 'vigorous' or 'moderate' level for sport or recreation declined with age, from about 61% of males aged 15–17 to about 44% of males aged 20–24, and from 41% of females aged 15–17 to 31% of those aged 20–24 (Chapter 14).
- Similarly, the proportions of young people who reported that they ate cereals and fruit products and dishes on the previous day decreased with age (Chapter 15).
- Young people aged 15–24 years were less likely (35%) to always use sun protection measures, compared with children under 15 (56%) and adults over 24 years (46%) (Chapter 17).
- Rates of retention in secondary school through to Year 12 declined since reaching a peak in 1992, from 73% for males and 82% for females to 66% for males and 78% for females in 1998 (Chapter 20).
- Young people were more likely to be victims of assault, sexual assault and robbery than the whole population (Chapter 22).
- Young people, especially males, were also more likely to be in prison than those over 24 years (Chapter 22).

some groups are comparatively worse off...

- Using recent data, death rates for young Aboriginal and Torres Strait Islander people were found to be 2.8 times higher for males and 2.0 times higher for females than their non-Indigenous counterparts (Chapter 25).
- The 20% of males in the lowest socioeconomic group were 1.7 times more likely to die and 1.4 times more likely to be hospitalised than the 20% of males in the highest socioeconomic group; for females, these ratios were 1.4 and 1.2 respectively (Chapter 27).
- Twenty per cent of unemployed youth in 1995 assessed their health status as being fair or poor, compared with 9% of employed youth and 8% of students (Chapter 21).
- Youth living in rural and remote areas appear to have poorer health compared with those in capital cities and other metropolitan areas—both death rates and hospitalisation rates increase with increasing remoteness (Chapter 26).

and there are differences between males and females.

- Among young Australians, there are about three male deaths to every one female death (Chapter 5).
- Higher death rates for young males from accidents and suicide account for most of this difference (Chapter 5).
- The gap in death rates between the lowest and highest socioeconomic status groups widened between 1985–87 and 1995–97 for males but narrowed for females (Chapter 27).
- Rates of depressive disorders are three times higher for young females than for males (Chapter 9).
- On the other hand, the rate of substance use disorders for males is twice the rate for females (Chapter 9).
- The higher rate of substance use disorders in males is reflected in higher rates of alcohol and drug dependence: 12% of males were alcohol dependent, compared with 4% of females, and 9% of males were cannabis and opioid dependent, compared with 3% of females (Chapter 9).
- The male suicide rate was four times the female rate, but the female hospitalisation rate for parasuicide was greater at all ages and more than three times the rate for males at ages 15 and 16 (Chapter 10).
- Of those whose weight is outside the 'acceptable' range, a higher proportion of males are overweight or obese (25% of all males compared with 19% of all females), while a higher proportion of females are underweight (26% compared with 19%) (Chapter 16).
- Female secondary school retention rates to Year 12 have been about 10% higher than those of males since 1989 (Chapter 20).
- Males under 25 years are much more likely to be in prison than females, with a rate of 428 per 100,000 compared with a rate of 17 per 100,000 for females (Chapter 22).

Where to now?

Australian governments recognise the need for good quality information on the health of young people in Australia. This report goes some way to improving the information available on the health and wellbeing of Australian youth.

There remain a number of important gaps in the data available and deficiencies in existing information (Chapter 29), including:

- lack of adequate information on the physical, biomedical and behavioural risk factors affecting youth health;
- lack of a measure of health status and wellbeing for the 12–17 year olds; and
- inability to link determinants of health with health status, especially over time.

The identification of such data gaps and deficiencies will provide a basis from which the progress for improved national data can begin.

Part II Background information

Chapter 1 Introduction

Chapter 2 Population and family characteristics

1 Introduction

Compared with many parts of the world, young people in Australian enjoy relatively high levels of health. However within Australia, some groups of young people are disadvantaged in their health status compared with others. Aboriginal and Torres Strait Islander young people are one such group.

The health status of young people, as measured by the more widely used health indicators, is also relatively high compared with other age groups in the community. For example, mortality rates are generally lower than for older people (AIHW 1998:256). In terms of morbidity, young people generally have lower rates of disease than older Australians. This is largely a reflection of the fact that many of the most prevalent diseases in Australia today are diseases related to age—the longer people live, the more likely they are to develop these diseases. Obvious examples include cardiovascular disease and most types of cancer. However, there are a number of conditions that are particularly important in young people, including injury, asthma and mental health problems.

This first national statistical report on the health of Australian young people aged 12–24 years presents information on both health status and determinants of health. The inclusion of information on health determinants reflects the importance of factors and behaviours that affect health status, both within this age range and into adulthood (for example, substance use and diet).

This is the second report on young Australians by the Australian Institute of Health and Welfare. The first—*Australia's Children: their Health and Wellbeing 1998* (Moon et al. 1998) on the health of children aged 0–14 years was published late last year. Also, a previous report (Mathers 1996) included detailed information on health differentials of young people from different sub-population groups. The ABS (1997) also published a related report on youth.

In the national monitoring of young people's health, a broad definition of health which also includes concepts of wellbeing is used. This is consistent with the World Health Organization's definition of health (WHO 1946):

> a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity.

This definition identifies health as a positive entity. Departures from 'complete' health, such as disease, are important to measure when examining health status. However, the absence of disease does not necessarily mean that the person is 'healthy'.

Despite the desire to measure health as defined above, the majority of information on the health and wellbeing of young people (at least currently) mainly relates to mortality, morbidity, or determinants of health. This is at least in part due to difficulties in defining and measuring such a broad concept as 'wellbeing' (AIHW 1998).

In general, information presented in this report is about young Australians aged 12–24 years. This provides an overlap with the age range used in *Australia's Children*, recognising that the transition from childhood to young adulthood is a gradual process, beginning and ending at different ages for different individuals. The actual age ranges used in each chapter, however, are constrained by data availability, resulting in a more limited age range than the 12–24 years being presented.

This report provides a comprehensive picture of the health status of Australian young people based on available information. There is currently work under way to identify: the most appropriate means for reporting national health information on young people; the availability of corresponding data; and how best to collect the data not currently available (see Chapter 29). It is hoped that data on further aspects of young people's health will be available for subsequent reports.

There have been a number of health policy documents relating to young people published in Australia in recent years. This report concentrates on youth health information, but these documents provide valuable contextual background. The main health policy documents relevant to this report are outlined briefly below.

- *The Health of Young Australians: A National Health Policy for Children and Young People* (DHSH 1995) is a joint statement by the Health Ministers of the Commonwealth, States and Territories of Australia. Its stated intention is to set a clear direction for the future development of health and health-related services for children and young people in Australia.
- The *National Health Plan for Young Australians* (DHFS 1997) was prepared by the Australian Health Ministers' Advisory Council Working Party on Child and Youth Health to cover the seven key action areas identified in *The Health of Young Australians* (outline above). The Australian Health Ministers' Conference endorsed the plan in July 1996. The plan indicates a need to move towards an evidence-based approach to monitoring the health of children and young people.

As mentioned above, work has recently been undertaken to identify an appropriate means of reporting national youth health information. The Australian Institute of Health and Welfare (AIHW) convened a workshop in May 1999 to examine a number of issues relating to the national monitoring and reporting of youth health. The workshop was organised under the auspices of the National Public Health Information Working Group (established by the National Public Health Partnership). Workshop participants endorsed a conceptual 'framework' for organisation of national youth health information (included in Appendix 6 of this report). The framework and the discussions at the workshop provided valuable input into the content and structure of this report. However, many of these issues involve data development and/or analysis requiring longer lead times than were available for the production of this first edition of the national report on the health of Australian youth. These, along with other issues relating to youth health information, are being examined by the National Youth Health Information Advisory Committee, formed subsequent to the workshop. The committee is providing advice to the AIHW on the development of national youth health information.

Report structure

As already mentioned, the structure of this report is guided by the National Youth Health Information Framework. However, given the availability of information, it is not currently possible to report on all aspects of the framework. Therefore, this report is based on currently available information that nonetheless covers the majority of areas included in the framework.

The first part of the report provides background information on the youth population. Part II covers the health status of young people, including mortality, morbidity and disability. Part III covers biological and behavioural determinants of health, many of which will have their greatest impact later in life. Part IV— social determinants—also

covers determinants of health, but includes those that affect young people from their wider environment. Part V includes information on health and community services for young people. For easier identification of relevant information, we have chosen to include information on the health status of particular population groups in a separate part —Part VI—rather than to include this information throughout the report. The final part provides some views on the data gaps and deficiencies in youth health and action to address these problems.

The majority of information in this report covers the health of Australian young people at the national level. However, where available, the main measures of youth health status are given at the State and Territory level in the tables in Appendix 1.

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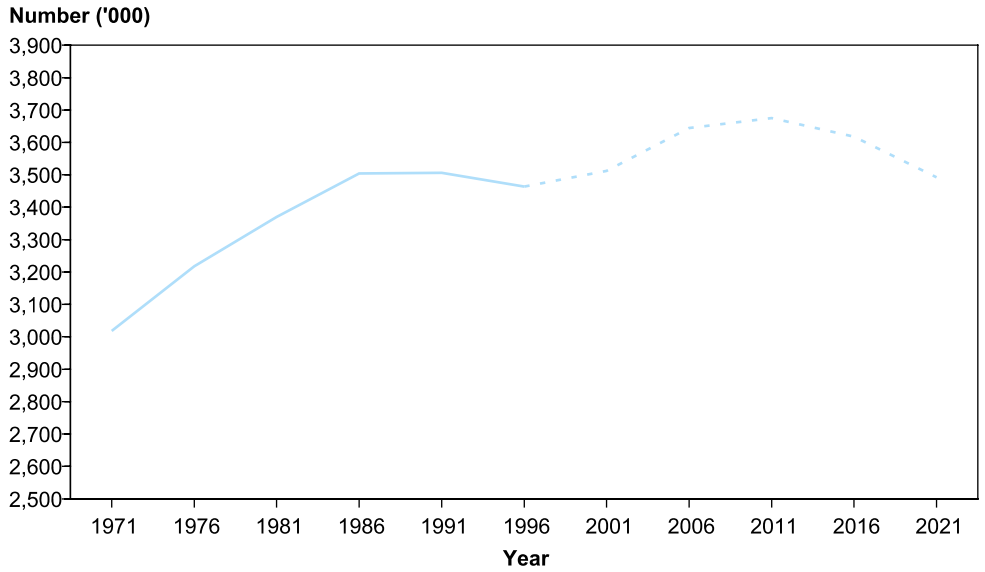
2 Population and family characteristics

This chapter gives details of the population and family characteristics of Australia's youth. These characteristics provide important background information for understanding the health and wellbeing of this age group. Such characteristics include the size of the youth population, their numbers relative to the total population, their distribution at each single year of age and for each sex, their distribution by geographic areas, and the numbers of Aboriginal and Torres Strait Islander and overseas-born youth. Other information about Australia's youth that assists in building a picture of their situation includes their living arrangements, main activity (studying or working) and income levels.

Size of the youth population

The Australian Bureau of Statistics (ABS) publishes annual estimates of the size of the resident population of Australia by age and sex, and various projections of the population for about 50 years into the future. This information (estimated resident population at 30 June, and Series K of the population projections) is used here to examine the size of the youth population (Figure 2.1) and its size relative to the total population of Australia.



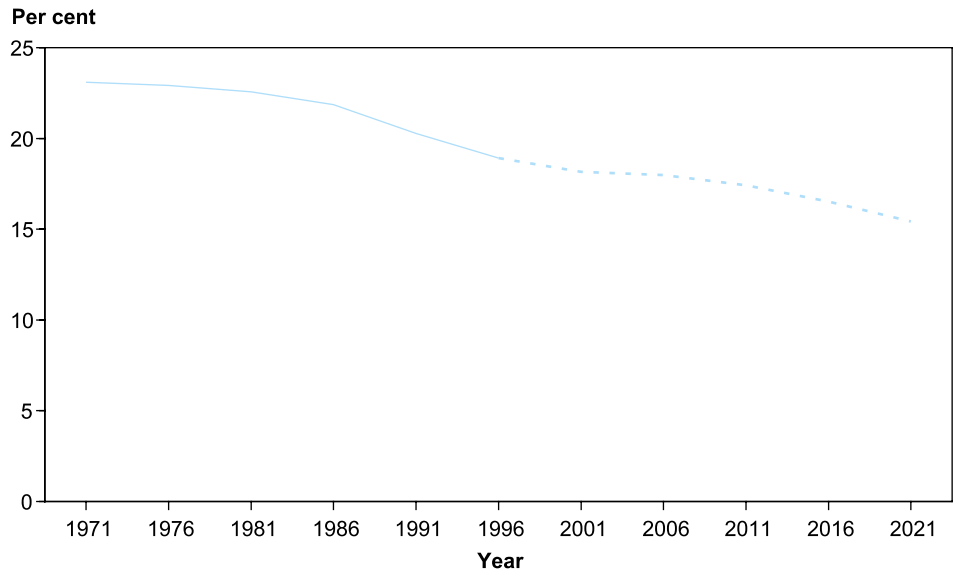
Source: ABS 1982:5,20; AIHW Population Database (from ABS estimated resident population for 1981 to 1998, and population projections to 2021, Series K).

Figure 2.1: Youth population, estimated 1971 to 1998 and projected 1999 to 2021

- The size of Australia's youth population, those aged from 12 to 24 years, was estimated to be 3,470,000 in mid-1998.
- The youth population has increased steadily in recent years, from 3,018,000 in 1971 to 3,509,000 in 1990, and then declined slowly to 3,456,000 in 1997.
- The ABS projections (Series K) indicate that the youth population will increase again to 3,675,000 in 2011. This projected increase is based on the number of births that have occurred in recent years (between 250,000 and 260,000 each year in the 1990s), assumptions about mortality (which will have only a small impact on the numbers in this age group) and net migration (which is expected to increase some single-year cohorts to over 290,000).
- After 2011, the numbers are projected to decline due to assumptions in Series K of declining numbers of annual births and lower levels of net migration.

Youth as a proportion of the total population

Even though the number of young people (aged 12–24 years) has increased until recently, and is projected to increase again up to 2011 (Figure 2.1), its proportion relative to the total population has declined and will continue to decline in the foreseeable future (Figure 2.2).



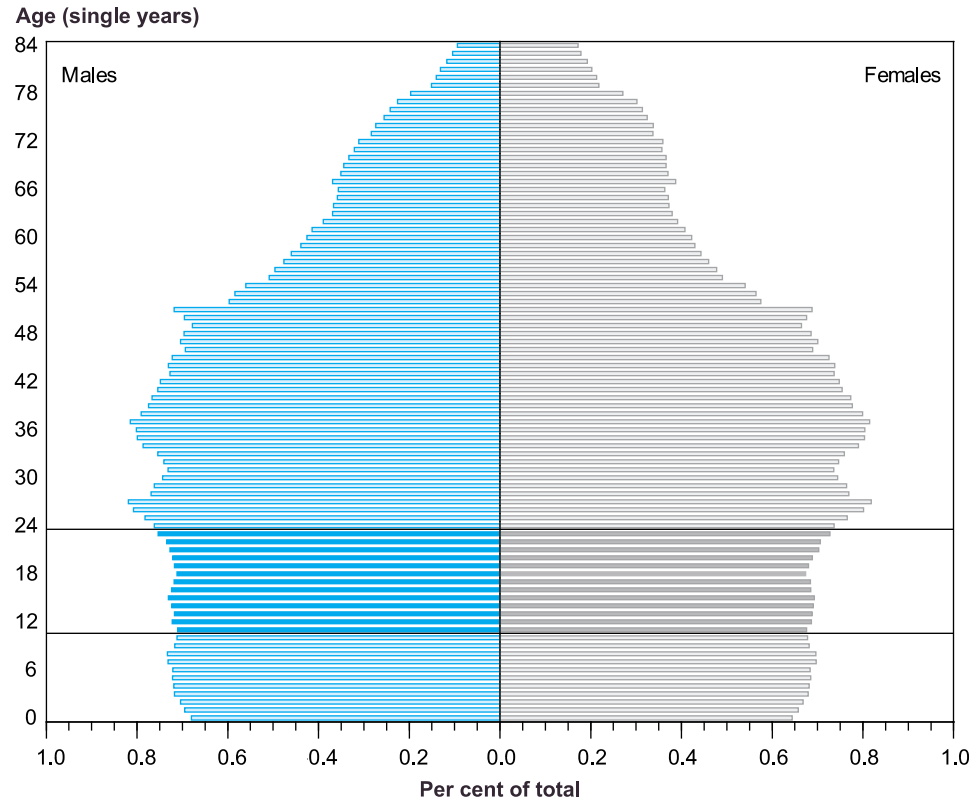
Source: ABS 1982:5,20; AIHW Population Database (from ABS estimated resident population for 1981 to 1998, and population projections to 2021, Series K).

Figure 2.2: Youth population as a percentage of total population, 1971 to 2021

- The population of young people in 1998 represented 18.5% of the total population of 18,751,000 at that time. This was a substantial decline from 1971, when 23.1% of the total population were in this group.
- Projections of the population to 2021 indicate further declines in the proportion of the total population in this age group. In 2011, when the youth population is projected to peak at 3,675,000, its share of the total population will be 17.4%. By 2021, this figure is projected to decline to 15.4%.

Age and sex structure

The youth population is highlighted in the population pyramid of the total population shown in Figure 2.3. Each bar in the pyramid represents a single-year cohort, with males on the left-hand side and females on the right-hand side.



Source: AIHW Population Database (from ABS estimated resident population 1998, preliminary).

Figure 2.3: Population of Australia by age and sex, 1998

- In 1998, the single-year cohorts of the youth population ranged in size from 260,000 (age 18) to 281,000 (age 24).
- Male cohorts in the youth population are slightly larger than corresponding female cohorts at each year of age. For example, the ratio of males per 100 females was 105 at age 12, 106 at age 18, and 103 at age 24. This reflects the sex ratio at birth, where male births outnumber female births by around 5% (ABS 1998a:8).

State/Territory of residence

Table 2.1: Youth population by State/Territory of residence, 1998

State/Territory	Population aged 12–24	Total population	Percentage of State/Territory population aged 12–24	Per cent distribution of Australian population aged 12–24	Per cent distribution of Australian population (all ages)
New South Wales	1,145,746	6,341,594	18.1	33.0	33.8
Victoria	852,479	4,660,885	18.3	24.6	24.9
Queensland	662,063	3,456,345	19.2	19.1	18.4
Western Australia	354,694	1,831,399	19.4	10.2	9.8
South Australia	262,016	1,487,294	17.6	7.6	7.9
Tasmania	86,387	471,885	18.3	2.5	2.5
Australian Capital Territory	65,579	308,411	21.3	1.9	1.6
Northern Territory	40,584	189,991	21.4	1.2	1.0
Australia	**3,470,115**	**18,750,982**	**18.5**	**100.0**	**100.0**

Note: Per cent distributions may not total to 100.0 due to rounding.

Source: AIHW Population Database (from ABS estimated resident population, June 1998 preliminary).

- The distribution of Australia's youth population between the States and Territories (Table 2.1) is similar to the distribution of the total population, with about one-third in New South Wales, one-quarter in Victoria, one-fifth in Queensland, and one-tenth in Western Australia.
- Within each jurisdiction, the proportion of the population aged 12–24 years varied from just under 18% in South Australia to over 21% in the Northern Territory and the Australian Capital Territory.

Youth in rural, remote and metropolitan areas

Data on the distribution of the population by rural, remote and metropolitan areas (RRMA) for 1997 are used in this section to examine the relative concentration of young people in certain areas and their relative absence in others. The RRMA classification was developed in 1994 jointly by the Department of Primary Industries and Energy and the then Department of Human Services and Health. The original classification recognised seven types of areas, which have been combined here into five areas (Table 2.2). The 'statistical local areas' (SLAs) used by the ABS have been grouped according to the RRMA classifications and thus the population in each type of RRMA can be estimated. Because the population numbers in some SLAs are quite small, the ABS estimates use 5-year age groups, and therefore the youth population referred to here covers the age group 15–24 years.

Table 2.2: Distribution of youth population (aged 15–24 years) and total population by area, 1997 (per cent)

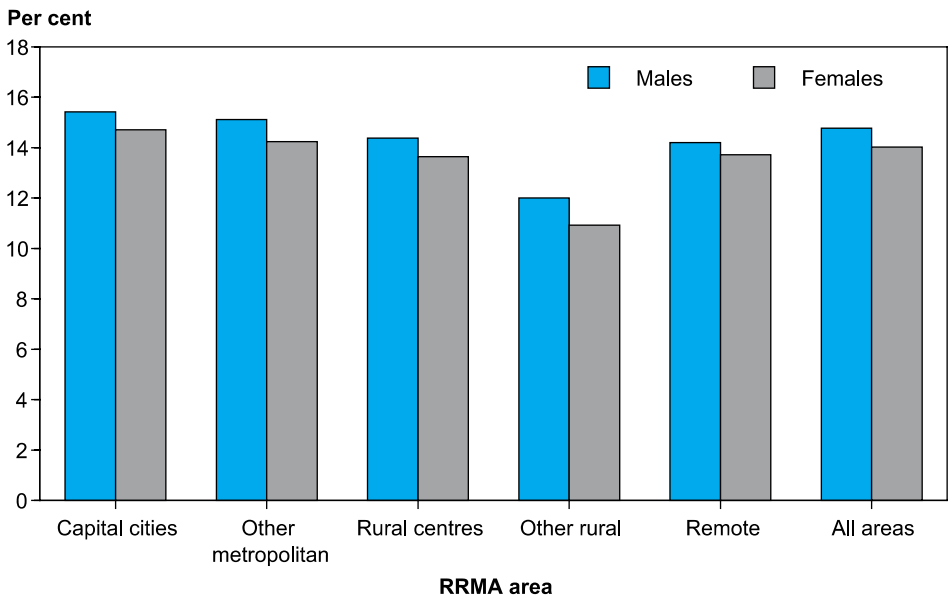
Area	Males 15–24 years	Females 15–24 years	All persons
Capital cities	66.1	67.2	63.7
Other metropolitan centres	7.7	7.7	7.6
Rural centres	12.1	12.2	12.5
Other rural areas	11.0	10.1	13.3
Remote centres and areas	3.1	2.7	3.0
Total	**100.0**	**100.0**	**100.0**
Number	1,361,342	1,305,550	18,529,112

Note: Per cent distributions may not total to 100.0 due to rounding.

Source: AIHW Population Database (from ABS estimates of the resident population by SLA, 1997).

- The youth population (aged 15–24 years) is somewhat over-represented in the capital cities (66% of young males and 67% of young females, compared with 64% of the total population) and underrepresented in 'other rural areas' (11% of young males and 10% of young females, compared with 13% of the total population).
- The proportion of youth in 'other metropolitan centres', 'rural centres', and 'remote centres and areas' is comparable to the proportion of the total population living in those areas.

The under-representation of young people in 'other rural areas' is even more evident when analysing the representation of the youth population in each of the areas (Figure 2.4).



Source: AIHW Population Database (from ABS estimates of the resident population by SLA, 1997).

Figure 2.4: Youth population (ages 15–24 years) as a proportion of total population of each area, 1997

- Although males in the age group 15–24 years make up about 15% of all Australian males, they represent only about 12% of the male population in 'other rural areas'.
- About 14% of all Australian females are in this age group, compared with only 11% of females in 'other rural areas'.
- An AIHW analysis of age distributions by RRMA also found that young adults (aged 15–29 years) were underrepresented in 'other rural areas', and ascribed this finding to 'the established pattern of young adults leaving country areas and migrating to cities and large towns' (AIHW 1998:7). The other age groups used in that analysis (0–14, 50–54 and 55 years and over), however, were not underrepresented in 'other rural areas'.

Aboriginal and Torres Strait Islander youth

Indigenous status is widely used in analysing differences in health and wellbeing in Australia. The identification and enumeration of the Aboriginal or Torres Strait Islander population, however, is incomplete in most data collections. The ABS has used information collected in the population censuses to estimate the number and distribution (by 5-year age groups) of Indigenous people, the latest being for 1996 (Table 2.3).

Table 2.3: Aboriginal and Torres Strait Islander youth (ages 15–24), 1996

Age group	Aboriginal and Torres Strait Islander youth (number)	All youth (number)	Aboriginal and Torres Strait Islander youth as percentage of Australian population	Age group as percentage of total: Aboriginal and Torres Strait Islander youth	Age group as percentage of total: all youth
15–19	38,014	1,279,119	3.0	9.8	7.0
20–24	36,637	1,396,866	2.6	9.5	7.6
15–24	74,651	2,675,985	2.8	19.3	14.6
All ages	**386,049**	**18,310,714**	**2.1**	. .	. .

Source: AIHW Population Database (from ABS estimates of Indigenous population, 1996).

- In 1996, the ABS estimated that there were 386,000 Aboriginal and Torres Strait Islander youth, representing about 2.1% of the total population of Australia.
- Nearly 75,000 of those identifying as Indigenous were young people aged 15–24 years. Using the ABS age groups, 2.8% of the total youth population were Aboriginal and Torres Strait Islander.
- Youth constituted 19% of the total Aboriginal and Torres Strait Islander population. By comparison, less than 15% of the total Australian population were aged 15–24 years.
- The Aboriginal and Torres Strait Islander population has a younger age structure (higher proportions in the younger age groups) than the non-Indigenous population due to higher levels of fertility and premature mortality.

Country of birth of youth

Nearly a quarter of all Australian residents in 1998 were born overseas. The proportion born overseas among the youth aged 12–24 years is less (15%), partly because migrants tend to be concentrated in the working ages, and partly because people in this age group have, by definition, lived fewer years and therefore have had fewer opportunities to migrate. Even so, the youth population includes many migrants (Table 2.4).

Table 2.4: Country of birth of youth population, 1998

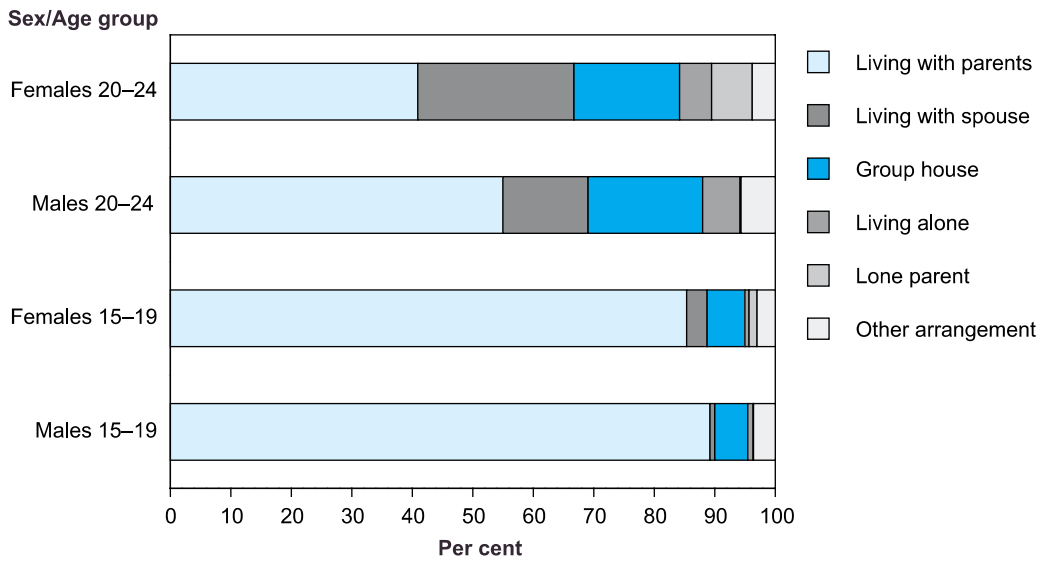
Place of birth	Youth (ages 12–24)	Total population	Youth as percentage of total population	Per cent distribution of youth by birthplace	Per cent distribution of total population by birthplace
Australia	2,940,218	14,356,612	20.5	84.7	76.6
New Zealand	59,864	339,323	17.6	1.7	1.8
UK and Ireland	72,093	1,230,394	5.9	2.1	6.6
Other Europe	56,907	1,197,684	4.8	1.6	6.4
Asia	261,801	1,178,723	22.2	7.5	6.3
All other	79,232	448,246	17.8	2.3	2.4
Total	**3,470,115**	**18,750,982**	**18.5**	**100.0**	**100.0**

Source: AIHW Population Database (from ABS estimates of country of birth, 1998 preliminary).

- Nearly 85% of the youth population (ages 12–24) in 1998 were born in Australia, compared with 77% of the total population.
- About half (262,000) of the 531,000 youth born overseas were born in Asia, with 72,000 born in the United Kingdom and Ireland, 57,000 in other European countries, and 60,000 in New Zealand.
- Youth constituted a relatively small proportion, about 5%, of those born in Europe, compared with 18% of those born in New Zealand, 22% of those born in Asia, and 21% of those born in Australia.

Living arrangements

Where youth live—with their parents, with a spouse or partner, on their own, or in a group house—may have an important bearing on their health and wellbeing. The ABS collects such information as part of the Monthly Population Survey, and these data for the youth population are shown in Figure 2.5.



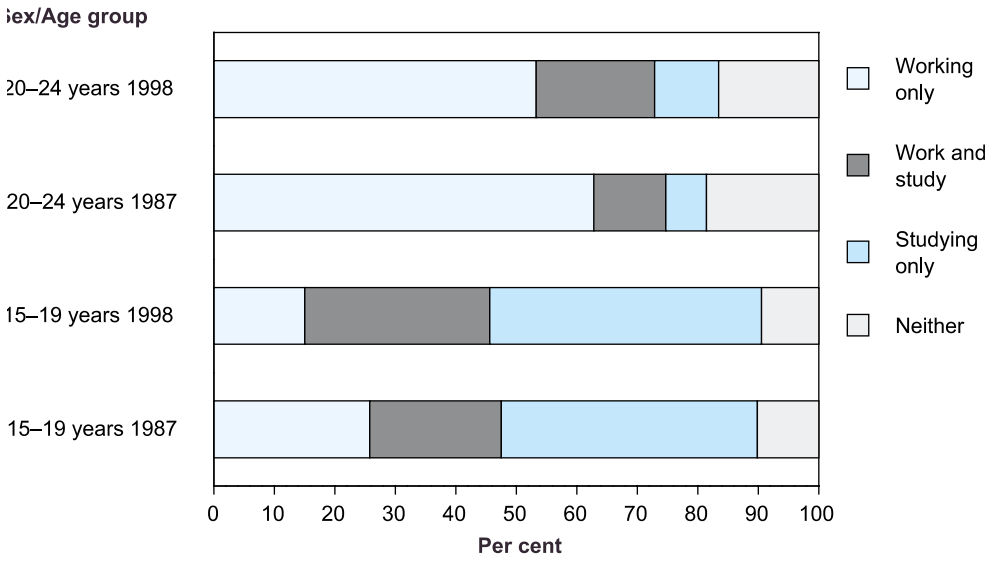
Source: ABS 1998b:27.

Figure 2.5: Living arrangements of youth (15–24 years) by sex and age group, 1998

- Of those aged 15–19 years, a large proportion lived with their parents—85% of females and 90% of males. About 5% lived in group houses, and about 3% of the females were living with a spouse or partner.
- Of those aged 20–24 years, 55% of males and 41% of females lived with their parents.
- The proportion of females aged 20–24 years living with a spouse or partner was 26% compared with 14% for males.
- A substantial proportion (20%) of males and females aged 20–24 years lived in group houses, and 5% lived alone. In addition, 7% of the females in this age group were lone parents.

Activity status

Information on the major 'activity' of individuals—whether they are working or studying, or doing both or neither—is collected by the ABS annually in May as part of the Monthly Population Survey. Significant differences between the older and younger halves of the youth population are evident in these data (Figure 2.6), an indication of the change in the life course that occurs at this age, as young people make the transition from school to work. More detailed information on education and labour force participation is presented in Chapters 20 and 21.



Source: ABS 1988:9; ABS 1998c:9.

Figure 2.6: Activity status of youth by age group, 1987 and 1998

- The main activity for the age group 15–19 years is studying, whereas for the age group 20–24 years it is working. In 1998, over three-quarters of 15–19 year olds were in some form of study ('studying only' or 'work and study'), and nearly the same proportion of 20–24 year olds were working (either 'working only' or 'working and studying').
- Significant proportions of both age groups are in the 'work and study' category). These proportions increased between 1987 and 1998, from 22% to 31% for the age group 15–19 years, and from 12% to 20% for the age group 20–24 years.
- The proportions of both age groups in some form of studying ('studying only' plus 'work and study') increased between 1987 and 1998, but the proportions in work ('working only' plus 'work and study') declined slightly.
- In both years, about 10% of those in the age group 15–19 years were neither studying nor working. For those aged 20–24 years, the proportions in this category were 19% in 1987 and 17% in 1998. For the younger age group, two-thirds of this category in 1998 were unemployed, and the remainder were classified as 'not in the labour force' (data not shown). The older group was split evenly, half of those neither working nor studying being unemployed and half 'not in the labour force'.

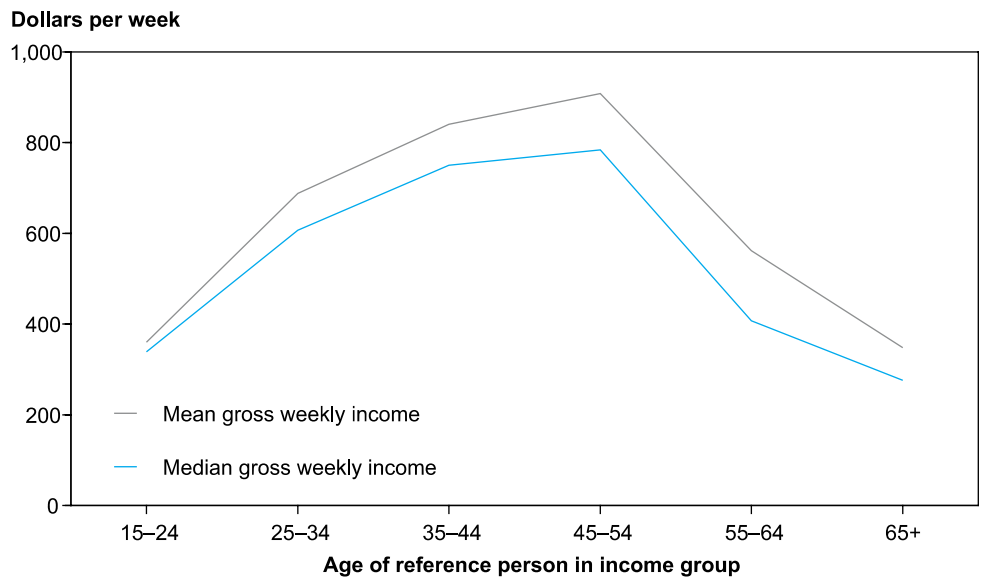
Income

It is difficult to analyse information on the income levels of young people because of the various types of living arrangements they have. The ABS examines income on the basis of 'income units', which are defined as follows (ABS 1998d:61):

> One person or a group of related persons within a household, whose command over income is assumed to be shared. Income sharing is assumed to take place within married (registered or de facto) couples, and between parents and dependent children.

The most recent data on income units is from the ABS Survey of Income and Housing Costs for the period 1996–97. At that time there were 9.1 million income units in Australia. In 1.5 million (16%) of these, the 'reference person' (the male partner in a couple income unit, the parent in a one-parent income unit, and the person in a one-person income unit) was aged 15–24 years. Most (91%) of these were one-person income units, either a young person living on his or her own or with unrelated people, or non-dependent children in their parents' household (ABS 1998d:17).

The principal source of income for 70% of the income units where the reference person was aged 15–24 years was wages, for 21% it was from government pensions or allowances, for 4% it was other sources (most likely scholarships for this age group), and most of the remaining units (5%) had no income (ABS 1998d:17). The ABS believes that most of this latter group were probably still financially dependent on their parents, even though they were classified otherwise in the income survey (ABS 1998d:7).



Source: ABS 1998d:17.

Figure 2.7: Mean and median weekly incomes of income units by age of reference person, 1996–97

- The mean gross weekly income for income units where the age of the reference person was 15–24 years was $360, and the median (a more appropriate statistic, as the distribution of income is highly skewed) was $339 (Figure 2.7).
- These were well below the comparable figures for all income units of $625 and $477, and were lower than the figures for other groups based on age of the reference person, except for those where the reference person was aged 65 years or older.

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Australian Bureau of Statistics (ABS) 1988. Transition from education to work, Australia, May 1987. Cat. No. 6227.0. ABS: Canberra.

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Part II Health status

3 Health and wellbeing

This chapter provides an overview of the health and wellbeing of young people, using data collected as part of the ABS National Health Survey. Unlike the other chapters in this part of the report which measure departures from health (such as mortality and morbidity), information in this chapter covers both positive and negative aspects of health, based on an individual's own assessment of their health. Data are available only for people aged 15 years and over, but data for those aged 15–17 years are limited.

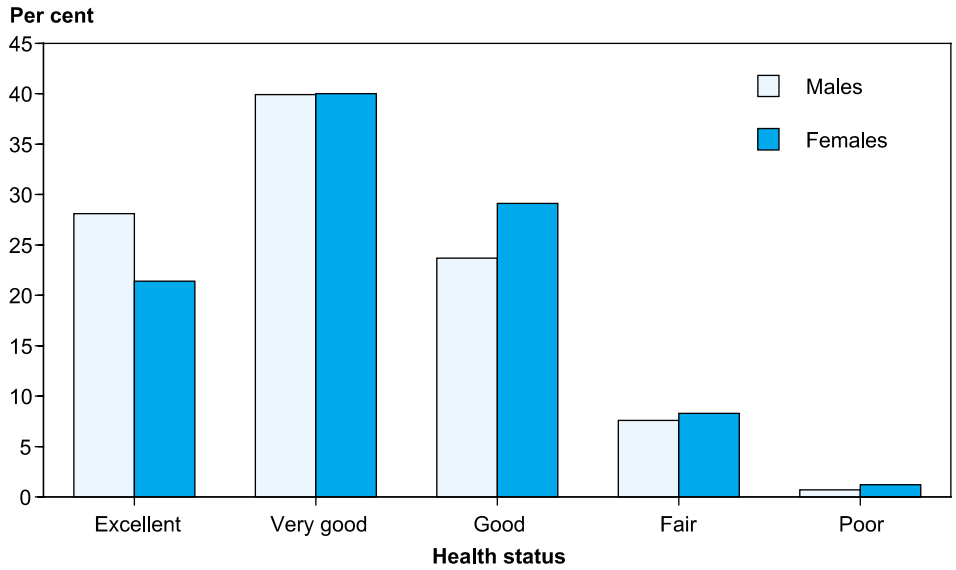
Two measures of health status are included in this chapter: general health status (for 15–24 year olds), and measures based on the Medical Outcomes Study 36-item Short-Form Health Survey (SF-36) questionnaire (for 18–24 year olds). More information on each of these measures is included in the relevant sections below. As well as analysis of these measures for young people, comparisons are also made with other age groups. Comparisons with data collected in earlier National Health Surveys are not possible due to changes in the questions included in the surveys (ABS 1996:33).

General health

Information for this section comes from the data collected in the National Health Survey on 'self-assessed health status' (ABS 1996:33), which is defined as the 'respondent's perception of their general health status'. The scale used in the 1995 survey has five levels: excellent, very good, good, fair and poor. The question is also one of the 36 questions included in the SF-36 survey (further details on the survey included are in the next section of this chapter). This item is used in many studies, and has been validated elsewhere (Ware et al. 1993:9.1–9.32).

Another measure of health status available from the National Health Survey is reported recent and/or long-term illnesses. Results based on this data item are included along with other measures of ill-health in Chapter 6: Morbidity overview.

Figure 3.1 shows the percentage of young people aged 15–24 years reporting different levels of self-assessed health status, by sex.

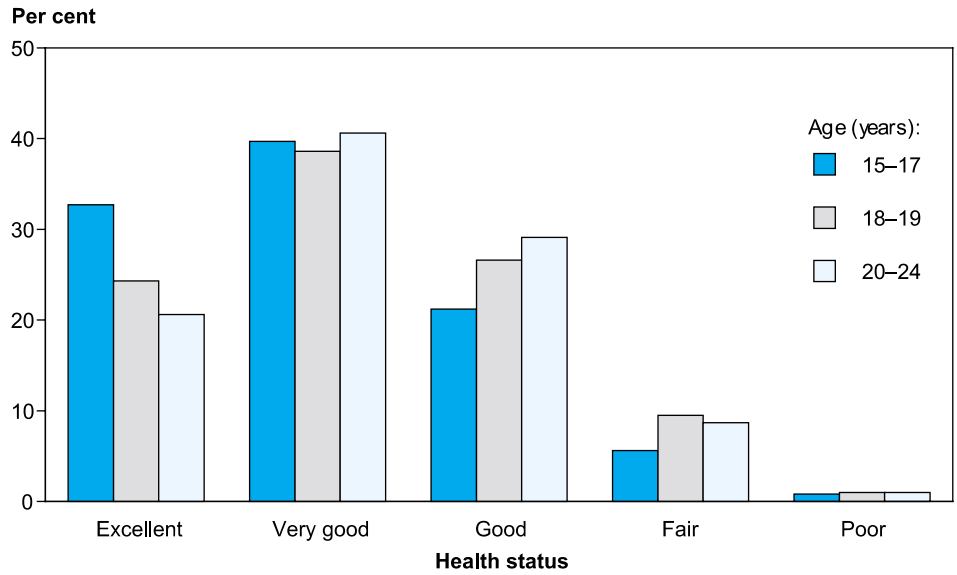


Source: AIHW, from ABS NHS data, 1995.

Figure 3.1: Self-assessed health status by sex, 15–24 year olds, 1995

- Around two-thirds of young people reported their health as 'excellent' or 'very good'—68% of males and 61.4% of females.
- Approximately one-quarter of people in this age group reported their health to be 'good' in 1995—23% of males and 29% of females.
- For this age group, more males (28%) reported their health as 'excellent' than females (21%). This difference was largely offset in the proportions reporting their health as 'good' (24% of males and 29% of females).
- However, more females than males reported their health as 'fair' or 'poor' (males 8%; females 10%).
- A higher proportion of young people aged 15–17 years (33%) reported their health as 'excellent' compared with those aged 20–24 years (21%).
- This difference was reflected in the proportion of these two age groups reporting their health as 'good' (21% of 15–17 year olds compared with 29% of 20–24 year olds) and in the proportion reporting their health as 'fair' (6% compared with 9%)

Figure 3.2 shows patterns in self-assessed health status for three age groups of young people.

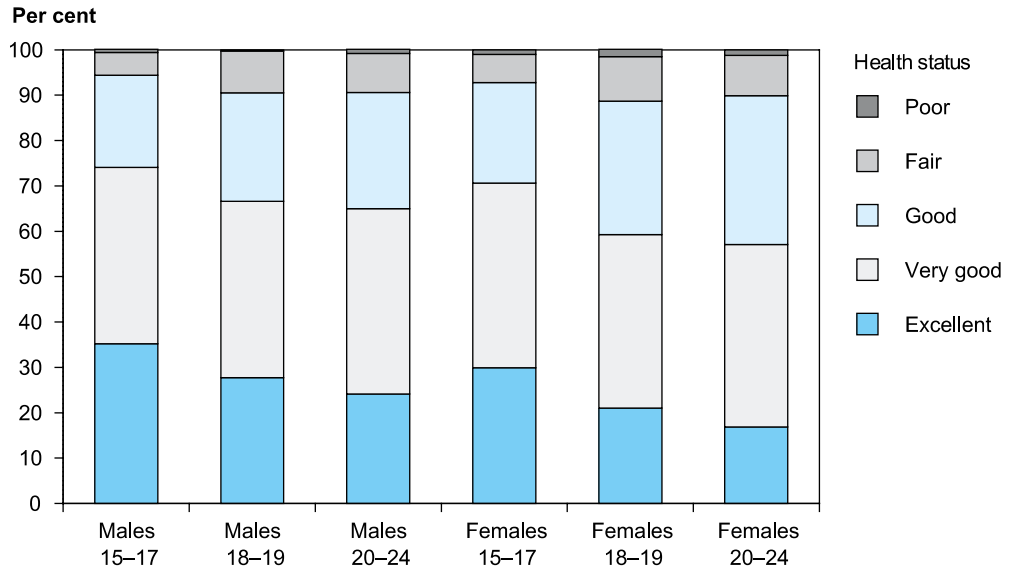


Source: AIHW, from ABS NHS data, 1995.

Figure 3.2: Self-assessed health status by age group, 15–24 year olds, 1995

- A higher proportion of young people aged 15–17 years (33%) reported their health as 'excellent' compared with those aged 20–24 years (21%).
- This difference was reflected in the proportion of these two age groups reporting their health as 'good' (21% of 15–17 year olds compared to 29% of 20–24 year olds) and in the proportion reporting their health as 'fair' (6% compared to 9%).

Figure 3.3 shows further details of self-assessed health status by sex and age group, and thus widens the results shown in Figures 3.1 and 3.2.



Source: AIHW, from ABS NHS data, 1995.

Figure 3.3: Self-assessed health status by sex and age group, 15–24 year olds, 1995

- The difference in the proportions of young people reporting their health as 'excellent' between the youngest and oldest age groups occur in both males and females (males 35% to 24%; females 30% to 17%).
- Similarly, both males and females had higher proportions of 20–24 year olds reporting their health as 'good' or 'fair' compared with 15–17 year olds.

SF-36 Health Survey

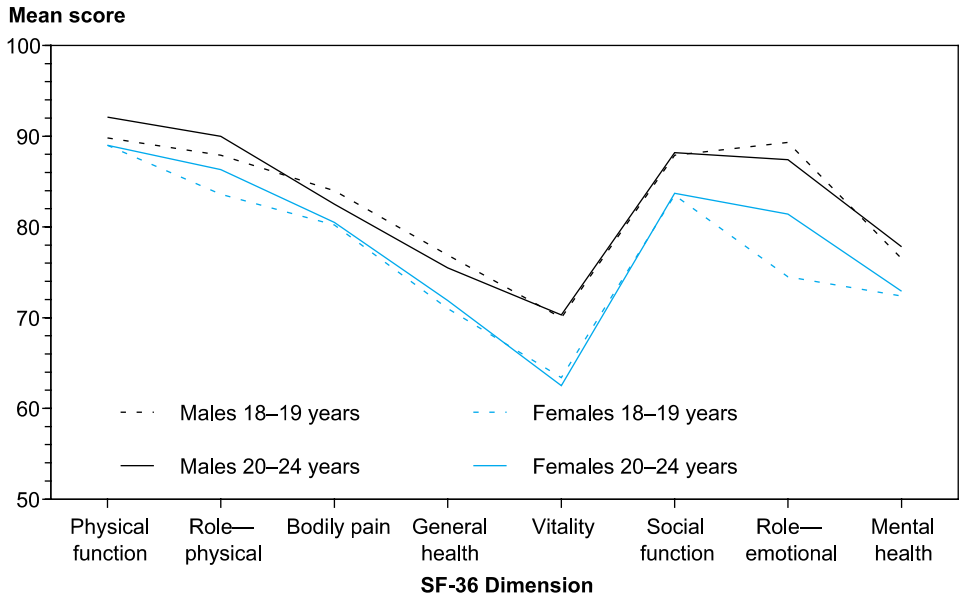
In 1995, a subset of the National Health Survey sample were asked to complete the SF-36 Health Survey, a well-established questionnaire used to measure health and wellbeing. Data were collected only from people aged 18 years or over. These data provide indicators of eight dimensions of health and wellbeing: physical functioning; role—physical; bodily pain; general health; vitality; social functioning; role—emotional; and mental health. These all relate to current health status, and are outlined in Table 3.1. An indication of changes in health status ('reported health transition') is also included in the survey (ABS 1996:33–35).

Table 3.1: Summary of information about SF-36 scores

		Validity[(a)]		Definitions of lowest and highest scores	
Scale	**Items**	**P**	**M**	**Lowest possible (floor)**	**Highest possible (ceiling)**
Physical functioning	10	●	○	Limited a lot in performing all physical activities including bathing or dressing due to health	Performs all types of physical activities including the most vigorous without limitations due to health
Role—physical	4	●	○	Problems with work or other daily activities as a result of physical health	No problems with work or other daily activities as a result of physical health
Bodily pain	2	●	○	Very severe and extremely limiting pain	No pain or limitations due to pain
General health	5	◑	◑	Evaluates personal health as poor and believes it is likely to get worse	Evaluates personal health as excellent
Vitality	4	◑	◑	Feels tired and worn out all of the time	Feels full of pep and energy all of the time
Social functioning	2	◑	●	Extreme and frequent interference with normal social activities due to physical or emotional problems	Performs normal social activities without interference due to physical or emotional problems
Role—emotional	3	○	●	Problems with work or other daily activities as a result of emotional problems	No problems with work or other daily activities as a result of emotional problems
Mental health	5	○	●	Feelings of nervousness and depression all of the time	Feels peaceful, happy, and calm all of the time

(a) P = physical health, M = mental health, ● = substantial, ◑ = moderate, and ○ = weak validity

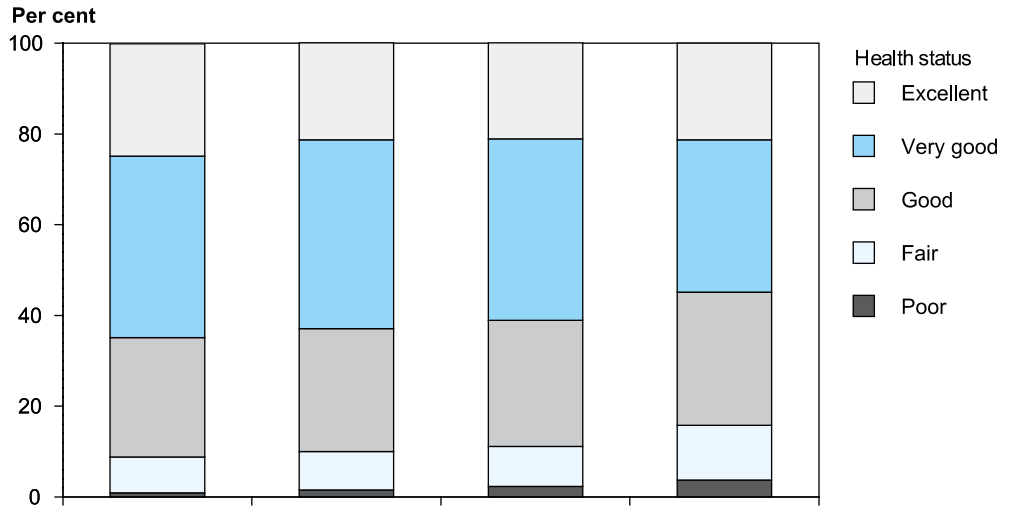
Source: Ware et al. 1993:8.6.



Source: AIHW, from ABS NHS data, 1995.

Figure 3.4: Mean SF-36 scores, 18–24 year olds, 1995

- The pattern of the mean scores for the eight dimensions of the SF-36 survey follows that of the Australian population (ABS 1997: 13), that is, with higher mean scores for the physical dimensions (the left of the graph), a dip in the middle for the general health and vitality scores, and then a rise and fall again for the mental health scores. This pattern is also similar to the general pattern seen in other countries' population scores, and reflects the measurement used in each scale (Ware et al. 1993:11.2). For example, to record a high vitality score, a respondent would have to report feeling full of pep and energy all of the time.
- Figure 3.4 shows that females in this age group have lower mean scores than their male counterparts in all eight dimensions. This generally follows the pattern for the overall population, for which the age-standardised mean rates for females are lower than for males in all dimensions except 'general health' (ABS 1997:12).
- There is not a great deal of variability in the mean scores between the two age groups included in Figure 3.4. The exception is for the 'role—emotional' dimension, where females aged 18–19 years have a mean score substantially lower than for females aged 20–24 years.
- The above data can be used as 'normative data'—the average score for a population can be used to compare the scores of individuals (or sub-population groups) against those of the corresponding population (Ware et al. 1993:10.1). Population 'norms' are often calculated by age and sex, as in the above figure.



Note: Refer to Figure 3.4 for full labels.

Source: AIHW, from ABS NHS data, 1995.

Figure 3.5: Distribution of SF-36 scores by sex, 18–24 year olds, 1995

- Whereas Figure 3.4 shows the mean scores for each dimension of the SF-36 survey, Figure 3.5 shows the distribution of the scores using boxplots, for males and females separately. The square dots in each boxplot indicate the mean score, while the horizontal line within each box indicates the median (or 50th percentile) score. The top and bottom of the boxes indicate the 75th and 25th percentile scores respectively. The ends of the tails indicate the 10th and 90th percentile scores.
- In nearly all of the eight dimensions, there are substantially more females in the lower ends of the distribution of scores, compared with males. This is also reflected in the lower mean scores, as shown in Figure 3.4.
- Note that some of the boxes in Figure 3.5 have appear to have no median (50th) or upper (90th) percentiles, or boxes indicating 75th and 25th percentiles. In these cases, the corresponding percentiles are equal to a score of 100.

As mentioned above, as well as measures on the eight dimensions of current health status, information is also collected on 'reported health transition' (rating of health compared with one year earlier) as part of the SF-36. Summary results are shown in Table 3.2.

Table 3.2: Reported health transitions by self-assessed health status, 18–24 year olds, 1995

	Reported health transition				
Self-assessed health status	Much better now	Somewhat better now	About the same	Somewhat worse now	Much worse now
Excellent	2	3	13	0	0
Very good	6	8	26	2	0
Good	3	5	17	4	0
Fair	1	2	5	3	0
Poor	0	0	0	1	0
Total	**11**	**18**	**61**	**9**	**1**

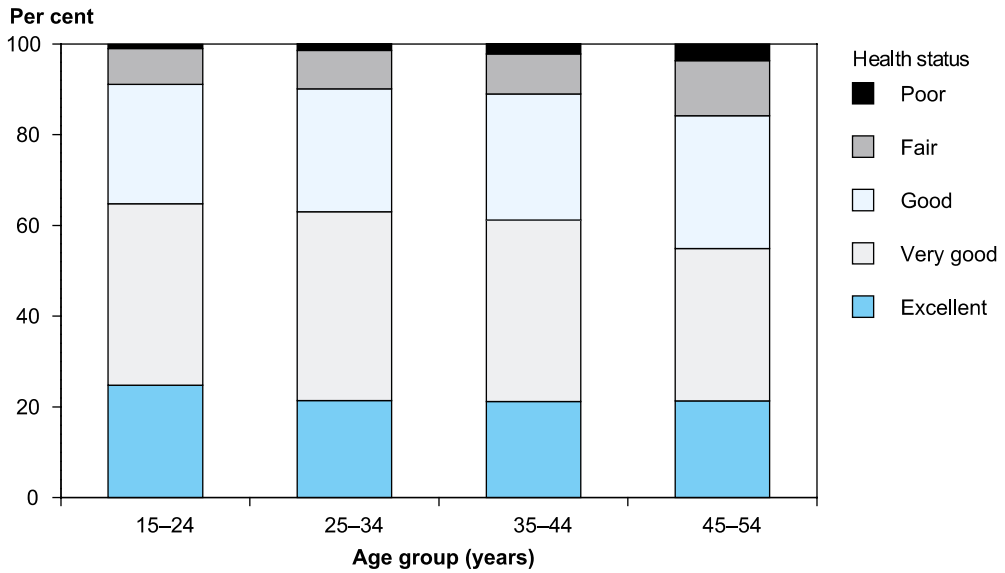
Source: AIHW, from ABS NHS data, 1995.

- The majority (over 60%) of young people aged 18–24 years reported that their health was 'about the same' as 1 year ago. Only 10% reported that their health was worse than 1 year ago.
- The vast majority of young people reporting their health as better than 1 year ago assessed their current health status in the range 'good' to 'excellent'.

Comparisons with other ages

This section presents some comparisons between the health and wellbeing of young people compared with older age groups.

General health

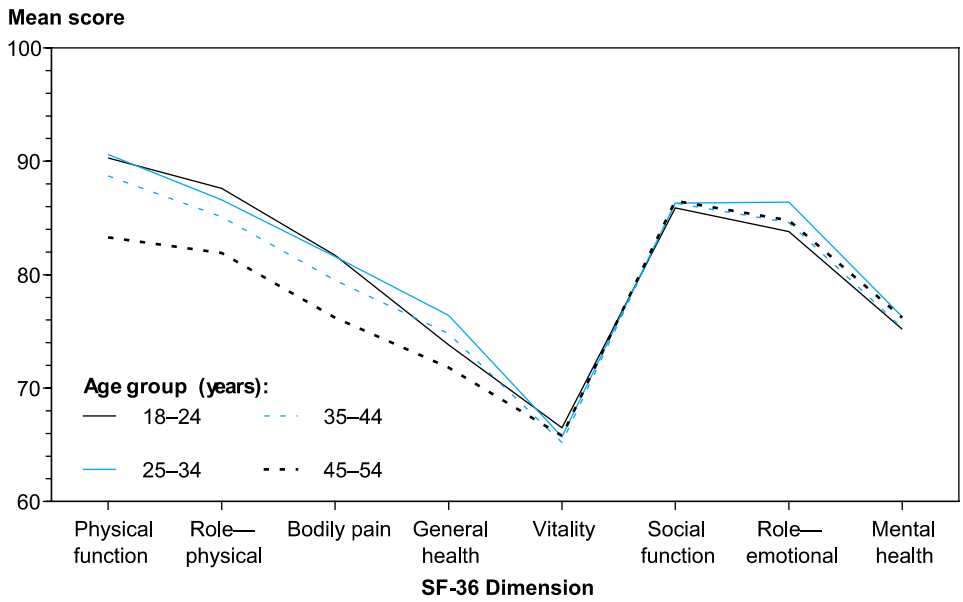


Source: AIHW, from ABS NHS data, 1995.

Figure 3.6: Self-assessed health status by age group, 1995

- Figure 3.6 shows some relationship between age and self-assessed health status. Higher proportions of young people aged 15–24 years reported their health as 'excellent' (25%) compared with the next three older age groups (all 21%).
- The proportion in each age group reporting their health as 'good', 'very good' or 'excellent' varies by age—91% of 15–24 year olds, 90% of people aged 25–34 years, 89% in the 35–44 year age group, and then a fall to 84% of 45–54 year olds.

SF-36



Source: AIHW, from ABS NHS data, 1995.

Figure 3.7 : Mean SF-36 scores by age group, 1995

- While Figure 3.6 shows only the mean scores in the eight dimensions of the SF-36, but some relationship can still be seen when comparing across age groups.
- Young people aged 18–24 years generally had better mean scores for the physical health dimensions of the SF-36 Health Survey (on the left of the graph), particularly compared with the two older age groups included on the graph.
- However, the younger peoples' mean scores for the mental health related dimensions (on the right of the graph) were lower than for the other age groups included in the comparison.
- The combination of these factors is reflected in the mean score for 'general health',[1] where the mean score for young people ranks third out of the four age groups included. Only the 45–54 year age group had a lower mean score for 'general health'.

Reported health transition

Compared to some other age groups, relatively high proportions of young people report their health as getting worse (the lower two categories in Figure 3.6). For young males, 10% reported their health as getting worse, compared with 7% of 25–34 year olds and 9% of 35–44 year olds. For young females, 10% reported their health as worsening, compared with 9% of 25–34 year olds, 8% of 35–44 year olds and 10% of 45–54 year olds (ABS 1997:24).

1. 'General health' includes questions on self-assessed health status, as well as questions relating to health compared with others, and whether health is expected to get worse.

References

Australian Bureau of Statistics (ABS) 1996. 1995 National Health Survey users' guide. ABS Cat. No. 4363.0. Canberra: ABS.

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Ware JE, Snow KK, Kosinski M and Gandek B 1993. SF-36 Health Survey: manual and interpretation guide. Boston, Massachusetts: The Health Institute, New England Medical Center.

4 Burden of disease

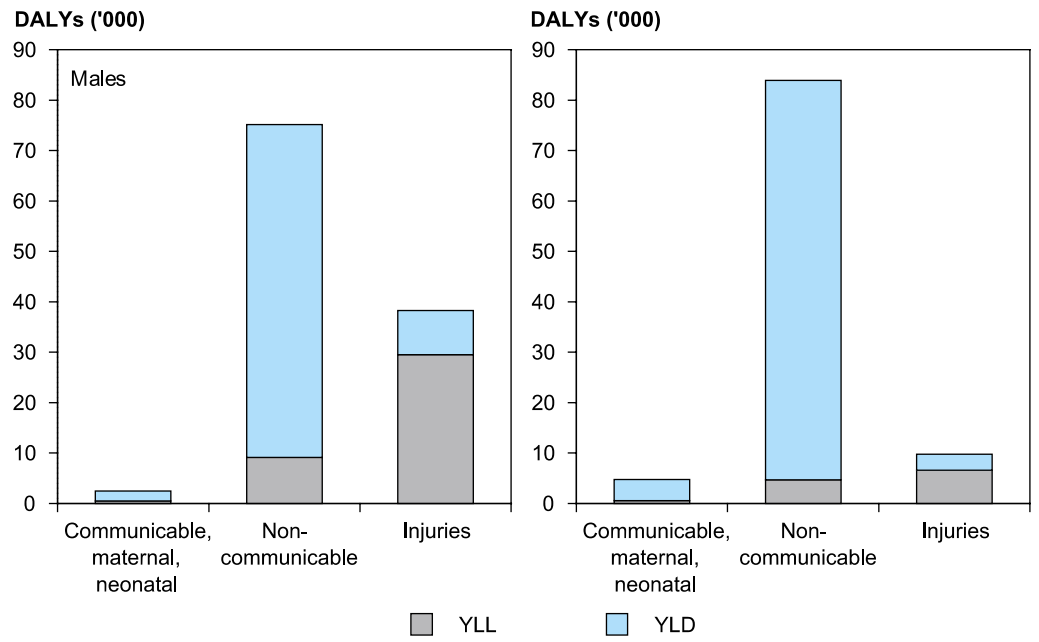
This chapter summarises the relevant subset of the Australian Burden of Disease and Injury Study on young people (Mathers et al. 1999). The study assessed the total 'burden' of disease/injury, by using a measure that included both mortality and disability components. This provided a means of combining information included in the next three chapters of this report on mortality, morbidity and disability. It also introduced the concept of premature death/disability, which is particularly relevant when making comparisons with other age groups.

The measure used in the Australian Burden of Disease and Injury Study is the disability-adjusted life year (DALY). It extends the commonly used measure of potential years of life lost due to premature death to also include years of healthy life lost due to disability in a population. Therefore, DALYs are calculated as the sum of years of life lost due to premature death (YLL) and years of life lost due to disability (YLD). One DALY is equal to one lost year of 'healthy' life. The methodology used in the Australian study is based on that used in the Global Burden of Disease Study (Murray & Lopez 1996). Detail on the methodology used in the Australian study can be found in Mathers et al. (1999). The results presented in this chapter relate to the relevant incident cases of disease/injury; that is, it provides a measure of the lifetime burden of new cases of disease and injury occurring among 15–24 year olds.

The information in this chapter provides a rich set of results that can be used to assess the main diseases/injuries affecting young people. Care needs to be taken when comparing results in this chapter with those in other parts of this report for two reasons: results in this chapter relate to 15–24 year olds (many results in other parts of this report relate to 12–24 year olds), and are based on 1996 (whereas other results in this report may relate to different years).

Burden of disease for young people

This section includes information on the burden of disease in 1996 in young people aged 15–24 years. Information is presented on premature mortality (years of life lost due to premature mortality: YLL) and the impact of disability (years of healthy life lost due to disability: YLD). As described above, the sum of YLL and YLD equals the total disability-adjusted life year (DALY).



Source: Mathers et al. 1999.

Figure 4.1: Disease burden by main category, 15–24 year olds, 1996

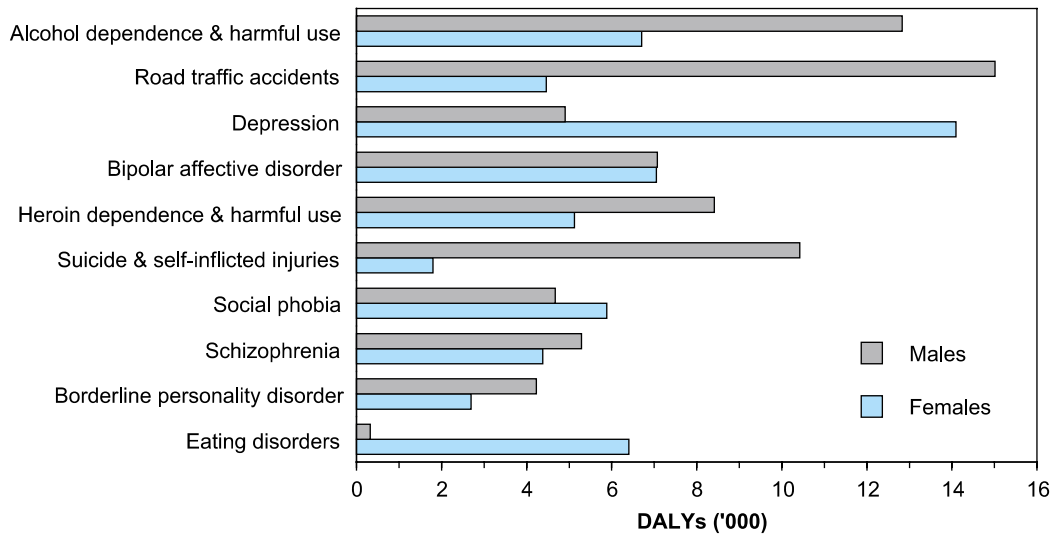
- The major burden of disease for young people aged 15–24 years in 1996 was from non-communicable diseases, accounting for 65% of the burden in males and 85% of the burden in females. The majority of this burden is in the form of years lost due to disability (YLD), rather than years lost due to premature death (YLL).
- The category with the highest years of life lost is injury, representing 75% of YLL in 15-24 year old males and 56% of YLL in young females.
- The category 'communicable diseases, maternal and neonatal conditions' accounted only for a small component of the disease burden in young people.

Table 4.1: Burden of disease by category, 15–24 year olds, 1996

	Males			Females			Persons		
Category	**YLL**	**YLD**	**DALY**	**YLL**	**YLD**	**DALY**	**YLL**	**YLD**	**DALY**
Communicable, maternal, neontal									
Infectious and parasitic diseases	430	1,022	1,452	391	1,634	2,026	821	2,656	3,478
Acute respiratory infections	58	804	862	120	760	880	178	1,564	1,742
Maternal conditions	. .	. .	. .	30	985	1,015	30	985	1,015
Neonatal causes	. .	. .	. .	—	—	—	—	—	—
Non-communicable									
Nutritional deficiencies	—	131	131	30	773	803	30	904	934
Malignant neoplasms	2,222	414	2,637	1,293	353	1,645	3,515	767	4,282
Other neoplasms	87	17	104	60	30	90	147	47	194
Diabetes mellitus	115	696	812	30	1,137	1,167	146	1,833	1,978
Endocrine and metabolic	404	256	660	451	207	658	856	462	1,318
Mental disorders	2,607	54,066	56,672	693	60,791	61,484	3,299	114,857	118,156
Nervous system/ sense disorders	1,466	1,862	3,329	631	1,729	2,360	2,097	3,591	5,688
Cardiovascular disease	1,093	507	1,600	542	452	994	1,635	959	2,594
Chronic respiratory disease	461	912	1,373	361	5,320	5,681	822	6,232	7,054
Digestive diseases	115	1,645	1,760	120	1,922	2,042	234	3,567	3,802
Genitourinary diseases	28	1,337	1,366	—	2,718	2,718	28	4,055	4,083
Skin diseases	—	1,349	1,349	—	1,475	1,475	—	2,824	2,824
Musculoskeletal diseases	—	1,324	1,324	60	1,032	1,092	60	2,356	2,416
Congenital abnormalities	548	—	548	420	—	420	968	—	968
Oral health	—	1,465	1,465	—	1,408	1,408	—	2,873	2,873
Ill-defined conditions	—	184	184	—	654	654	—	838	838
Injuries									
Unintentional injuries	18,095	7,716	25,811	4,366	2,942	7,308	22,461	10,659	33,119
Intentional injuries	11,393	1,032	12,426	2,188	233	2,421	13,582	1,266	14,847
Total	**39,122**	**76,739**	**115,861**	**11,786**	**86,555**	**98,341**	**50,908**	**163,294**	**214,202**

Source: Mathers et al. 1999.

- Mental disorders dominate the burden of disease in young people, and account for most of the non-communicable disease burden shown in Figure 4.1. This is the case for both males and females. Mental disorders account for 74% of the non-communicable disease burden (males 75%, females 73%), and 55% of the total burden in young people (males 49%, females 63%).
- Injury was the next largest burden of disease/injury category in young people in 1996. In contrast to mental disorders, a higher component of the burden is from premature death than from disability. For males, injury accounted for 33.0% of the burden (22.3% from unintentional injury and 10.7% from intentional injury). For females, injury made up 9.9% of the total burden (unintentional 7.4%, intentional 2.5%).



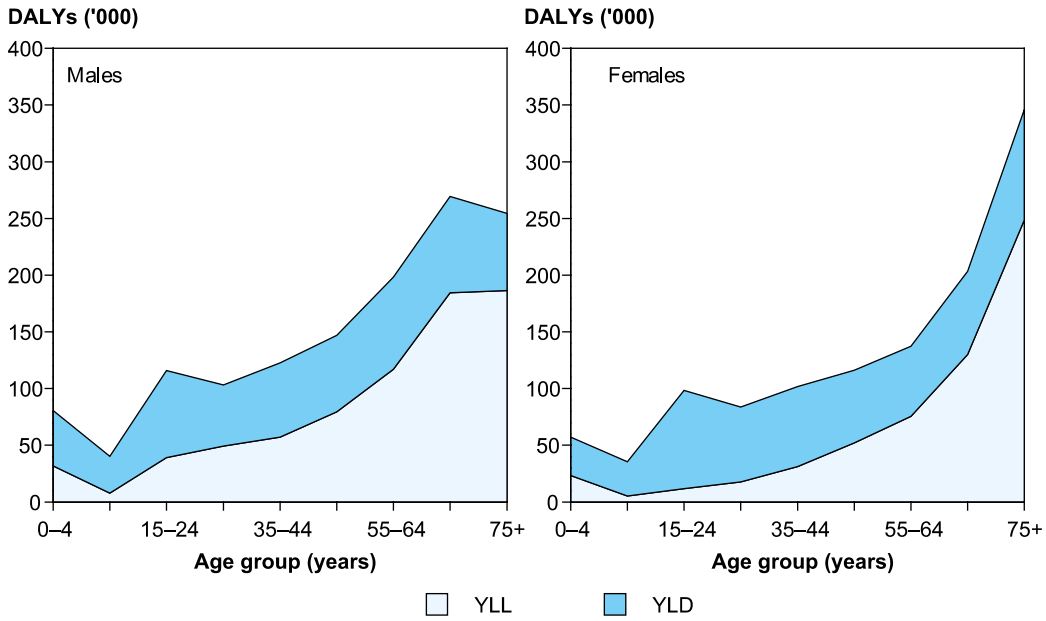
Source: Mathers et al. 1999.

Figure 4.2: Leading causes of burden of disease, 15–24 year olds, 1996

- Figure 4.2 shows the ten leading causes of disease burden in 15–24 year olds. The majority of these fall into the mental disorders category (see Table 4.1) which includes drug dependence/harmful use. The remainder comes from either the unintentional injury (road traffic accidents) or intentional injury (suicide/self-inflicted injury) category.
- Alcohol dependence and harmful use was the leading cause of overall burden accounting for 11% of the burden in males and 7% of the burden in females. The second highest cause of burden was from road traffic accidents (13% of the burden for males, 5% for females).
- Depression was the third leading cause of burden overall, but by far the largest burden among females (15% of the burden). The other cause with a substantially larger burden in females than in males was from eating disorders.
- Suicide and self-inflicted injuries was the sixth highest cause of disease burden in young people, with a substantially larger burden in males than in females (9% of the male burden, 2% of the female burden).

Comparison with other age groups

Patterns of disease burden differ across age groups and between males and females. Information is provided on the total burden across age groups to allow comparisons in the burden between young people and other age groups.



Source: Mathers et al. 1999.

Figure 4.3: Burden of disease by age and sex, 1996

- Total burden of disease varies by age group. For both males and females, the lowest burden occurred in the two youngest age groups, followed by the 25–34 year age group. Young people aged 15–24 years had the next lowest burden.
- Young people had one of the highest proportions of total burden coming from years lost due to disability (YLD) rather than from premature death (YLL). For young males, 66% of the burden was from YLD (second after 5–14 year olds with 81%). Young females had the highest proportion of total burden coming from YLD (88%) across age groups.

References

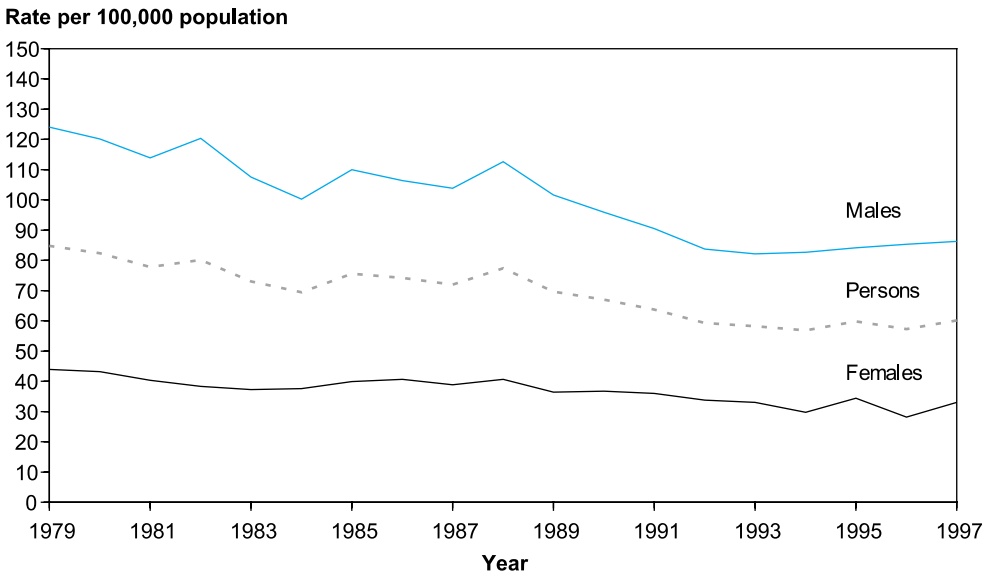
Mathers C, Vos T & Stevenson C 1999. Burden of disease and injury in Australia. AIHW Cat. No. PHE 17. Canberra: AIHW.

Murray CJ & Lopez AD 1996. The global burden of disease: a comprehensive assessment of mortality and disability from diseases, injuries and risk factors in 1990 and projected to 2020. Harvard: Harvard School of Public Health.

5 Mortality

A population's experience of mortality provides a key set of indicators of its health and wellbeing. This is true even for the youth population, which normally experiences lower levels of mortality than other ages. Although death rates for Australia's youth are quite low, the trends and differences provide important insights for policies to further improve the health of this group. Information on the main causes of death further enhances the understanding of these issues.

Mortality levels and trends



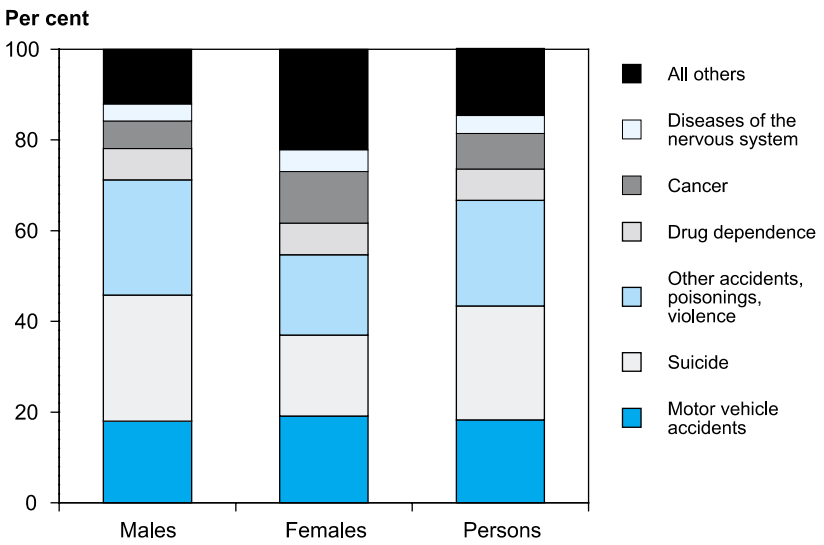
Source: Table A5.1 (from AIHW Mortality Database).

Figure 5.1: Death rates for 12–24 year olds, 1979 to 1997

- In 1997 there were 2,082 deaths of Australians aged 12–24 years, a rate of 60 deaths per 100,000 population. Eighteen years earlier, in 1979, there were 2,795 deaths in this age group, a rate of 85 per 100,000. Thus the youth death rate declined by 29% in this period.
- Death rates for males exceed those for females at nearly all ages in Australia (as in most countries), and this is particularly true for the youth population (AIHW 1998: 7). In 1982, the rate for males was 124 per 100,000 compared with 44 for females.
- The death rate for young males declined to 82 per 100,000 in 1993, but since then has increased slightly to 86 in 1997. For young females, the rate fluctuated between 37 and 41 from 1982 to 1988, then declined slightly and has fluctuated between 28 and 34 since 1992.
- The ratio of male to female deaths has been about 3 to 1 for most of these years, indicating that 75% of all deaths in this age group were males.

Main causes of death

In 1997, there were 2,082 deaths among the youth population (aged 12–24 years), 1,523 males and 559 females. The main causes of these deaths were motor vehicle accidents, suicide, drug dependence, cancer, and diseases of the nervous system (mainly epilepsy, cerebral palsy, and muscular dystrophies and other myopathies). The following analysis examines for each sex the percentage distribution of these causes of death and death rates for each cause.



Source: AIHW Mortality Database.

Figure 5.2: Main causes of death, 12–24 year olds, 1997

- Two-thirds of all deaths in the youth population (71% of males and 55% of females) were attributed to some form of 'accidents, poisonings, or violence', including road accidents and suicide. Since many of these deaths could be prevented, the scope for improving youth mortality, and thereby their health and wellbeing, is considerable.
- Motor vehicle accidents alone were the cause of 18% of male deaths and 19% of female deaths among the youth population.
- A much higher proportion of male deaths were from suicide compared with females (28% and 18% respectively).
- Cancer in its various forms was the next leading cause of death with nearly 8% of all deaths, about 6% of male deaths and 11% of female deaths.
- Drug dependence also directly accounted for about 7% of deaths for both males and females and may have contributed to deaths from other causes (see Chapter 12).

Table 5.1: Youth death rates by cause of death and sex, 1988 and 1997 (deaths per 100,000 persons aged 12–24 years)

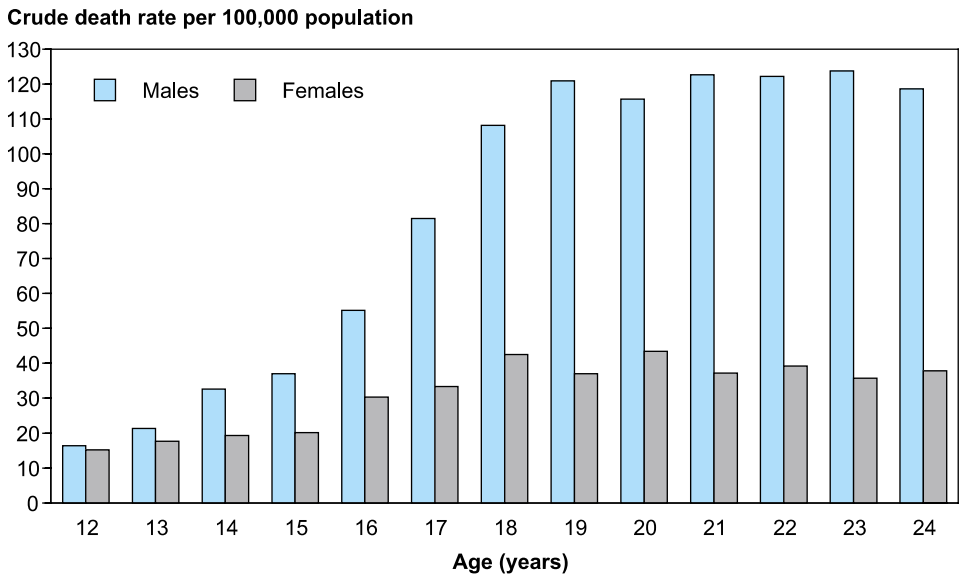
	1988			1997		
Cause of death	**Males**	**Females**	**Persons**	**Males**	**Females**	**Persons**
Motor vehicle accidents	27	13	20	16	6	11
Suicide	22	4	13	24	6	15
Other accidents, poisonings, violence	38	8	23	22	6	14
All accidents, poisonings, violence	*87*	*24*	*57*	*61*	*18*	*40*
Drug dependence	3	2	3	6	2	4
Cancer	7	3	5	5	4	5
Diseases of the nervous system	4	1	2	3	2	2
All other causes	11	9	10	10	7	9
All causes	**113**	**41**	**77**	**86**	**33**	**60**

Source: AIHW Mortality Database.

- The decline in the overall death rate for youths (ages 12–24) from 1988 to 1997 (77 to 60 per 100,000) is mainly due to declines in the rates of deaths due to motor vehicle accidents. For males, this rate declined from 27 to 16 deaths per 100,000, and for females from 13 to 6. The rate for males continues to be more than double that for females.
- The suicide death rate increased both for males (22 to 24 per 100,000) and for females (4 to 6 per 100,000). The rate for males in 1997 was four times that for females.
- The rate of deaths due to drug dependence doubled for males (from 3 to 6 per 100,000), but was stable for females (2 per 100,000).
- The rates for the other two major causes of deaths among youth, cancer and diseases of the nervous system, changed little over the period 1988 to 1997.

Death rates by age and sex

Because the number of youth deaths by single year of age for each sex in a given year is small, the following analysis uses the deaths for the most recent available 5-year period, 1993–97. The rate is calculated using the relevant midpoint population for that period, 30 June 1995.



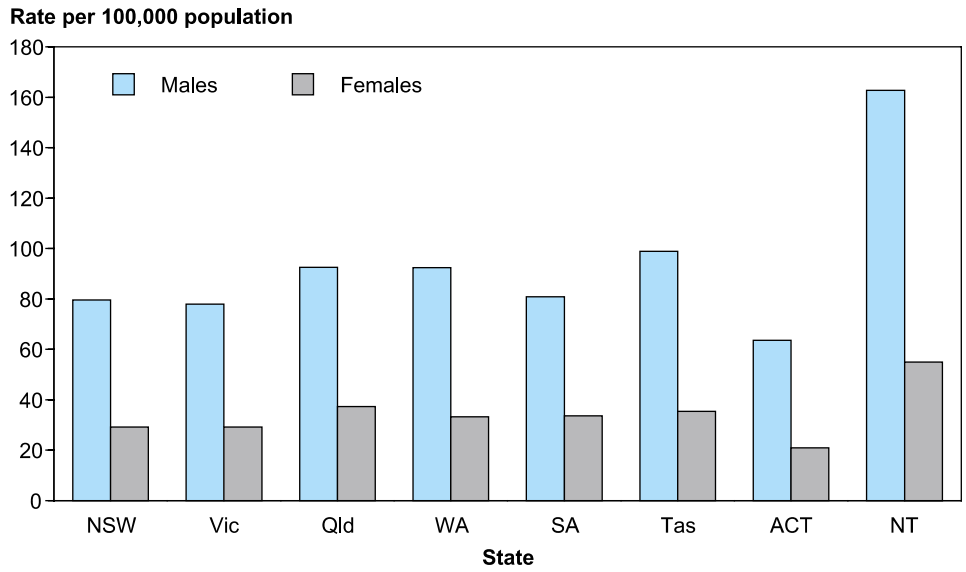
Source: AIHW Mortality Database.

Figure 5.3: Youth death rates by age and sex, 1993–97

- Death rates for both sexes are very low at ages 12 and 13 (15 to 21 per 100,000). Male death rates increase sharply at age 14 onwards, and female rates at age 16 onwards.
- The rates level off at around 120 per 100,000 for males from age 19, and around 40 for females from age 18.
- The male–female differences in death rates are small in the youngest ages of the youth population, but increase dramatically from age 14. The higher male rate of death from accidents, poisoning and violence (including suicide) is the main reason for this gap.
- These rates indicate that around 200 males die annually at each age from 19 to 24 years, compared with around 60 females, a ratio of more than 3 to 1.

State/Territory differences

Because some jurisdiction have small populations, it is necessary to examine death rates for youths over a 5-year period (as with death rates by single year of age).



Source: AIHW Mortality Database.

Figure 5.4: Youth death rates by sex and State/Territory, 1993–97

- The death rates for the youth population in the Northern Territory, 163 per 100,000 for males and 55 for females, are much higher than the rates in other jurisdictions, which range from 64 for males and 21 for females in the Australian Capital Territory to 99 for males in Tasmania and 37 for females in Queensland. These rates can be compared with the Australian rates for 1995 of 84 for males and 34 for females.
- The higher rates in the Northern Territory are due in part to the higher proportion there of Indigenous people, who have much higher death rates at all ages than non-Indigenous people.
- A portion of the differences between jurisdictions may also be due to urban–rural differences. This is because the death rates from motor vehicle accidents are much higher in rural and remote areas than in capital cities and other metropolitan areas (AIHW 1998: 21).

References

Australian Institute of Health and Welfare (AIHW) 1998a. Australia's health 1998. AIHW Cat. No. AUS 10. Canberra: AIHW.

Australian Institute of Health and Welfare (AIHW) 1998b. Health in rural and remote Australia. AIHW Cat. No. PHE 6. Canberra: AIHW.

6 Morbidity

Morbidity is the level of disease or illness in people of a particular age—in this case, illnesses in young people. Morbidity can be defined as 'any departure, subjective or objective, from a state of physiological or psychological well-being' (Last 1995).

This chapter summarises morbidity covering all types of illness. More detail on selected specific conditions is given in later chapters of this report. Disability levels, though related to morbidity, are summarised in Chapter 7.

A prominent finding of this chapter is that, for young people, asthma and hay fever are common long-term conditions among young people, whereas headaches, common colds and dental problems are commonly reported recent illnesses. Hospitalisations are dominated by obstetrical conditions for females, and injury/poisoning for males.

National information on morbidity includes data on current conditions, hospitalisations visits to general practitioners, and notifiable communicable diseases. The reports of current conditions include both minor and more serious conditions, whereas the hospitalisation and notifiable disease data generally relate to more serious conditions. Visits to general practitioners tend to be dominated by relatively minor conditions.

The data sources used for this chapter are the National Health Survey, the National Hospital Morbidity Database, the BEACH survey of general practice activity and the National Notifiable Disease Surveillance System. These data sources are outlined in more detail in Appendix 3 of this report. Issues particularly relevant to this section include:

- *National Health Survey*

  This Australian Bureau of Statistics (ABS) survey, last conducted in 1995, can be used to estimate the level of illness in the Australian population at the time of the survey. It includes self-reported information on both minor and serious illnesses. In this section the illnesses have been divided into recent or long-term conditions. No attempt has been made, however, to report on minor conditions separately from more serious conditions.
- *National Hospital Morbidity Database*

  This information compiled by AIHW provides an indicator of the population level of more serious illnesses that require hospitalisation. Note, however, that admission to hospital is also related to factors other than health status, including service availability, access for different groups, differing admission practices and treatment. The data are collected for each hospital episode. Currently it is not possible to determine whether one person has been admitted a number of times in 1 year. Therefore measures relate to the number of *hospitalisations*, rather than the number of *individuals* hospitalised.
- *BEACH survey of general practice activity*

  This survey, collected by the General Practice Statistics and Classification Unit at the University of Sydney, provides information on the services provided by general practitioners. Information on the problems treated by general practitioners is included in this chapter.
- *National Notifiable Diseases Surveillance System*

  This system coordinates the notification of communicable disease as a public health activity that prompts interventions to control their spread. Notifications by general

practitioners, hospitals and laboratories are collected by States and Territories under their public health legislation and compiled by the National Centre for Disease Control in the Commonwealth Department of Health and Aged Care. An important caveat with these data is that notifications measure new *diagnoses* of infection rather than new *infections*.

Self-reported conditions

Information in this section comes from the National Health Survey conducted in 1995, which includes information on current conditions at the time of the survey. These include many minor and temporary conditions and others that are well controlled, as well as chronic or more serious conditions. Recent illnesses (experienced in the 2 weeks before interview) and long-term conditions (current conditions having lasted, or expected to last, for 6 months or more) are separately reported below. Further details on data collected in the National Health Survey are published by the ABS (ABS 1996).

Prevalence of conditions

This section includes information on the proportion of young people with reported conditions at the time of the survey.

Table 6.1: Proportion of young people aged 10–24 years with reported conditions, 1995 (per cent)

	Recent conditions		Long-term conditions		Recent or long-term conditions	
Age (years)	Males	Females	Males	Females	Males	Females
10–14	51	54	52	53	68	71
15–17	56	65	56	62	75	81
18–19	58	71	61	71	78	86
20–24	57	72	64	75	78	88
Total	**55**	**65**	**58**	**65**	**74**	**81**

Source: AIHW, from ABS NHS data, 1995.

- Table 6.1 shows the proportion of 10–24 year olds who reported having recent conditions and the proportion reporting long-term conditions. The last two columns show the proportion of this age group reporting any condition, regardless of whether it was a recent or long-term condition.
- An estimated 55% of males and 65% of females aged 10–24 years had experienced a 'recent condition' in the 2 weeks prior to the survey. A similar proportion reported they had a long-term condition. Around three-quarters of this age group had either a recent condition or a long-term condition.
- The proportion of young people with recent conditions tended to increase with age. This was also the case for long-term conditions, which increased to 64% of males aged 20–24 years and 75% of females in the same age group.
- For both recent and long-term conditions, more females than males reported conditions.

Across the whole population, the prevalence of reported recent and long-term conditions tends to increase with age (AIHW, from ABS NHS data, 1995). The reported prevalence of recent and long-term conditions for young people aged 10–24 years follows this pattern, with higher rates compared with younger age groups, but lower rates than for older age groups.

Type of conditions

This section provides information on the leading recent and long-term conditions reported by young people aged 10–24 years.

Table 6.2: Ten most frequently reported recent conditions, 1995 (per cent)

Reported condition[(a)]	Age group (years)				
	10–14	15–17	18–19	20–24	Total
Headache—unspecified/trivial cause	9.1	14.5	18.1	16.7	14.0
Asthma	10.0	8.8	7.9	7.8	8.7
Common cold	6.4	7.1	7.3	5.6	6.4
Dental problems	6.9	6.3	2.5	4.2	5.3
Other diseases of musculoskeletal system/connective tissue[(a)]	2.2	4.5	3.2	4.7	3.7
Influenza	2.9	3.5	4.7	3.5	3.4
Other diseases of skin/subcutaneous tissue[(a)]	2.4	4.5	3.4	3.6	3.4
Hay fever	2.3	3.2	3.3	4.2	3.3
Cough/sore throat	3.3	3.8	4.0	2.0	3.0
Eczema/dermatitis	1.8	5.0	3.9	2.1	2.8

(a) See list of coded conditions in Appendix 2 to assist in interpreting these most frequent reported conditions in relation to other coded conditions.

Source: AIHW, from ABS NHS data, 1995.

- For young people aged 10–24 years, headache of unspecified or trivial cause was the most frequently reported recent illness. The reported prevalence of these headaches was higher in the older age groups.
- Respiratory illnesses were also commonly reported recent illnesses, including asthma, colds, influenza, and coughs/sore throats.
- Dental problems were the fourth most common recent condition with around 5% of 10–24 year olds reporting problems in the 2-week period prior to the interview.

Table 6.3: Ten most frequently reported long-term conditions, 1995 (per cent)

Long-term condition[(a)]	Age group (years)				
	10–14	15–17	1–19	20–24	Total
Asthma	18.7	16.0	15.5	13.9	16.0
Hay fever	10.8	15.5	18.0	20.0	15.9
Short-sighted	7.0	11.1	16.8	19.3	13.4
Far-sighted	6.6	7.0	11.0	9.1	8.1
Sinusitis	5.9	7.9	7.6	9.9	7.9
Allergy not elsewhere classified[(a)]	6.0	6.2	5.1	7.3	6.4
Other diseases of musculoskeletal system/connective tissue[(a)]	2.0	4.2	4.1	6.3	4.2
Astigmatism	2.5	3.3	3.1	3.6	3.1
Bronchitis/emphysema	2.2	2.3	3.7	3.7	3.0
Other diseases of eye/adnexa[(a)]	2.1	2.5	3.5	3.2	2.8

(a) See list of coded conditions in Appendix 2 to assist in interpreting these most frequent reported conditions in relation to other coded conditions.

Source: AIHW, from ABS NHS data, 1995.

- Asthma was the most commonly reported long-term condition for young people aged 10–24 years. The proportion of this age group reporting asthma as a long-term condition decreased with age, from nearly 19% of 10–14 year olds to around 14% of 20–24 year olds.

- A similar proportion of this age group reported having hay fever as a long-term condition. The prevalence of this condition increased with age from nearly 11% of 10–14 year olds to 20% of 20–24 year olds.
- Disorders of vision feature prominently in this list (short-sighted, far-sighted, astigmatism).
- Other common conditions include some further respiratory conditions, allergies, and musculoskeletal conditions.

Relationship to health and wellbeing

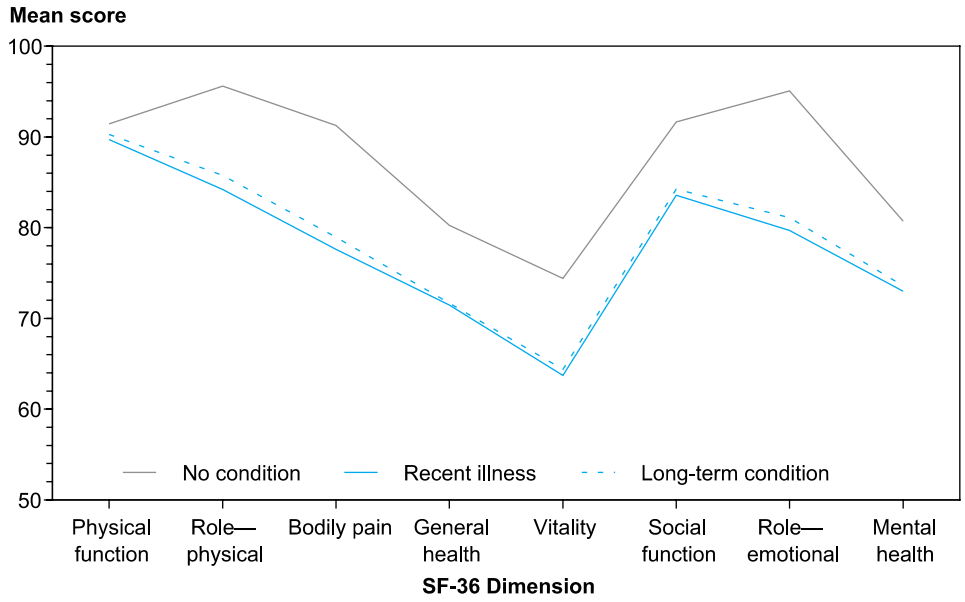
This section includes information on the relationship between the presence of reported illnesses and health and wellbeing measures. Information for this section is not available for all age groups. Figure 6.1 includes only 15–24 year olds, and Figure 6.2 only 18–24 year olds.

Source: AIHW, from ABS NHS data, 1995.

Figure 6.1: Distribution of self-assessed health status by presence of reported conditions, 15–24 year olds, 1995

- As expected, there is a relationship between self-assessed health status and the presence of recent or long-term conditions.
- Substantially lower proportions of young people aged 15–24 years who reported a recent or long-term condition rated their health as 'excellent', compared with young people with no conditions.
- There was a higher proportion of young people with a recent or long-term condition in the categories of self-assessed health status: 'good', 'fair' and 'poor' compared with young people with no reported conditions.
- There is little difference evident in the distribution of self-assessed health status between young people with a reported recent illness and those with a reported long-term condition. This relationship is likely to be affected at least to some extent by the overlap between the two groups—that is, the group of young people with both a recent and long-term condition.

Figure 6.2 shows the relationship between SF-36 scores and reported recent or long-term conditions. The SF-36 scores provide a well-established measure of health and wellbeing by scoring indicators of eight dimensions of health and wellbeing, shown on the horizontal axis. Further details on the SF-36 measure are given in Chapter 3.



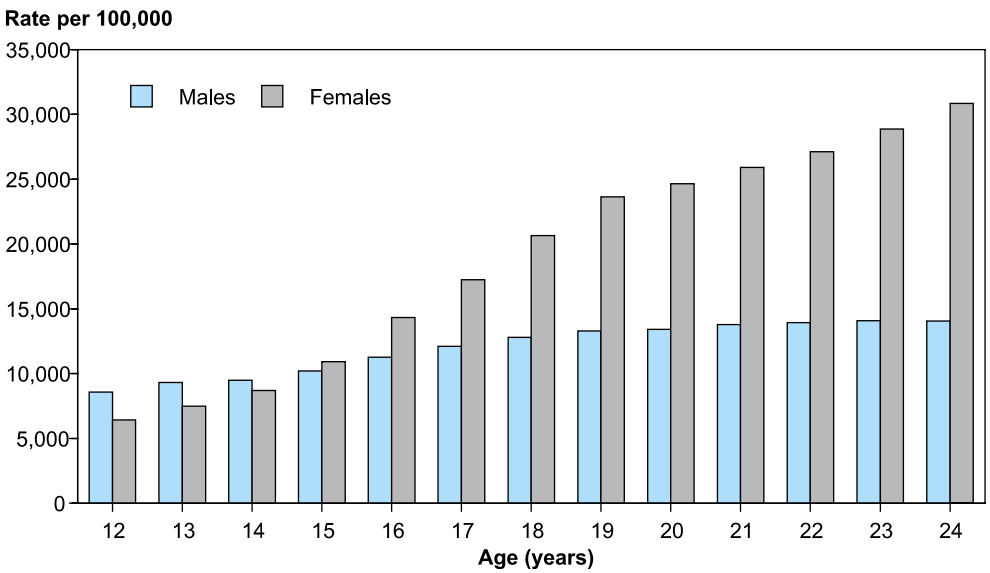
Source: AIHW, from ABS NHS data, 1995.

Figure 6.2: SF-36 scores by presence of reported conditions, 18–24 year olds, 1995

- As with self-assessed health status (Figure 6.1), there is a difference in the SF-36 scores between young people with a recent or long-term condition and young people with no reported condition. Again there was very little difference between the scores for young people with recent conditions and young people with long-term conditions.
- The smallest differences in the mean SF-36 scores between those with and without reported conditions was in the physical functioning score, with a mean score around 2% lower for the group with reported conditions. For the other dimensions the difference ranged between 8% and 15%.

Hospitalisations

As outlined in the introduction to this chapter, data on hospitalisations can be used as a crude indicator of the level of more serious illness in the community, though hospitalisation rates may also be affected by access and admission practices. It is also important to remember that the rates relate to the number of hospital separations, not the number of individuals hospitalised, as outlined in the appendix to this report.



Source: AIHW National Hospital Morbidity Database.

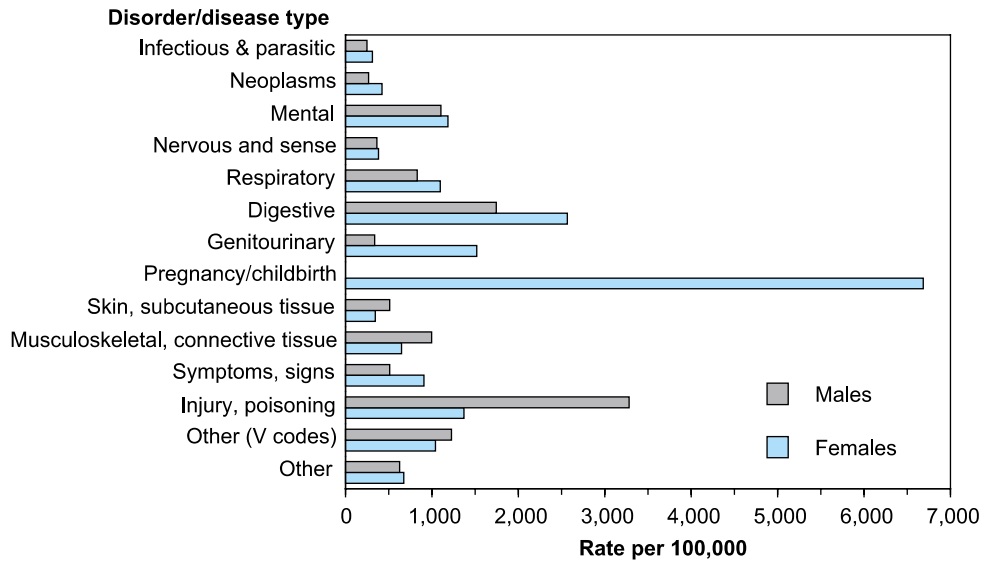
Figure 6.3: Total hospitalisations for 12–24 year olds, 1997–98

- Among young people, hospitalisation rates increased with age, particularly for females. For females, the rate increased from around 6,000 per 100,000 at age 12, to just over 30,000 per 100,000 at age 24. This increase is largely due to obstetric admissions in the older end of this age group.
- There was a steady increase in the hospitalisation rate amongst males, from around 8,500 per 100,000 at age 12, to 14,000 per 100,000 at age 24.
- At the younger ages (12–14 years), the hospitalisation rate for males was higher than for females. Female rates exceed males rates from age 15, and by age 24 the hospitalisation rate for females was twice the male rate.

Diagnoses

The information presented here relates to the principal diagnosis for each hospital episode. This is defined as the diagnosis chiefly responsible for the hospitalisation (NHDC 1997). Additional diagnoses may also be listed for each hospital episode, although information relating to these other diagnoses has not been included in this overview section.

Figure 6.4 shows the hospitalisation rate for each of the diagnosis 'chapters'. The chapters based on body systems, are the highest grouping of diagnoses of the International Classification of Diseases, 9th revision, clinical modification (ICD-9-CM) (National Coding Centre 1996).



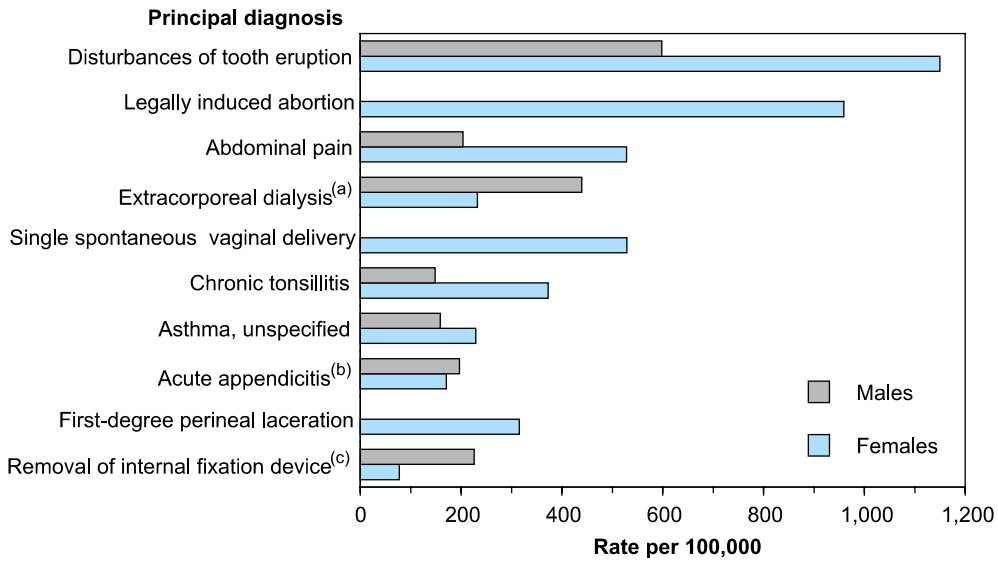
Note: Diagnosis chapters group diagnoses mainly based on body system. In this figure, hospitalisations have been grouped to chapters based on the principal diagnosis.

Source: AIHW National Hospital Morbidity Database.

Figure 6.4: Total hospitalisations of 12–24 year olds by diagnosis chapter, 1997–98

- The most common reason for hospitalisation of young females was for diagnoses related to pregnancy and childbirth, with nearly 7,000 hospitalisations per 100,000. The next highest hospitalisation rates for young females were for diagnoses related to the digestive system and the genitourinary system.
- For young males, injury/poisoning was the leading reason for hospitalisation, with a rate of nearly 3,300 per 100,000. The second highest rate among males was for diseases of the digestive system.

Figure 6.5 shows the 10 most frequent principal diagnoses (at the 'three-digit' level using ICD-9-CM codes) for which young people were hospitalised in 1997–98.



(a) Renal (kidney) dialysis undertaken outside the body, including haemodialysis.
(b) Without peritonitis.
(c) Following bone fractures.
Note: Diagnoses at time of discharge.
Source: AIHW National Hospital Morbidity Database.

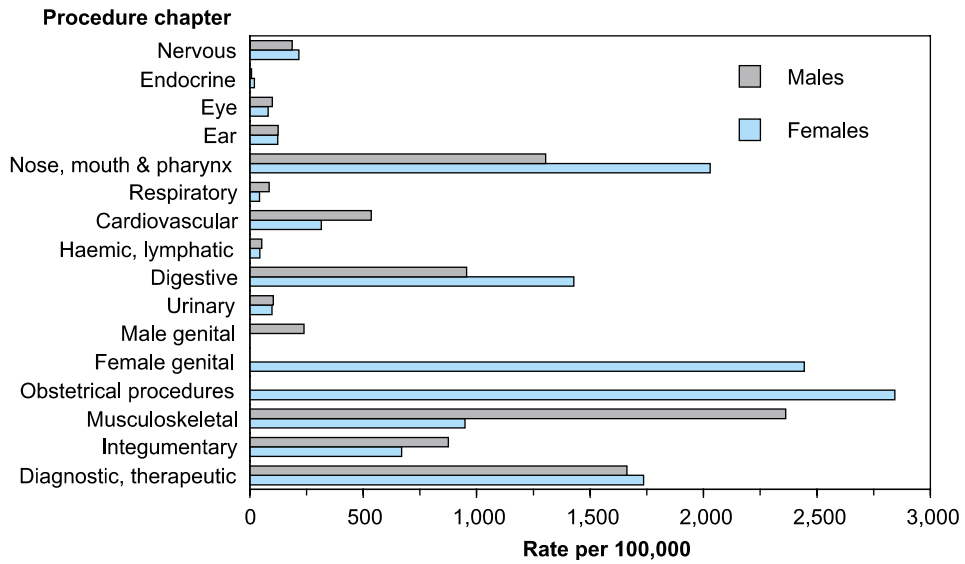
Figure 6.5: Hospitalisations of 12–24 year olds: 10 most frequent principal diagnoses, 1997–98

- The most common primary diagnosis for young people hospitalised in 1997–98 was for disturbances of tooth eruption. For this diagnosis, the hospitalisation rate for females (nearly 1,200 per 100,000) was nearly twice the male rate (600 per 100,000), although it was still the most common reason for males being hospitalised.
- The second most common reason for hospitalisation among young people was for legally induced abortions (without complications), with nearly 960 per 100,000 young females being hospitalised.
- Abdominal pain and dialysis were also common reasons for hospitalisation among young people. Note that young people receiving dialysis will have multiple hospitalisations for this reason, and will be counted in these rates for each occasion they are hospitalised.
- Other diagnoses included in the 10 most frequent diagnoses related to childbirth, respiratory conditions, appendicitis, and aftercare following fracture repairs (removal of internal fixation device).

Procedures

This section presents information on principal procedures recorded for hospital episodes. The principal procedure is defined as the most significant procedure performed for the treatment of the principal diagnosis, or another procedure if there is not a procedure to treat a principal diagnosis. (NCC 1996). It includes operations and non-operative procedures. A number of other procedures may also be recorded for each hospitalisation, although this information has not been included here.

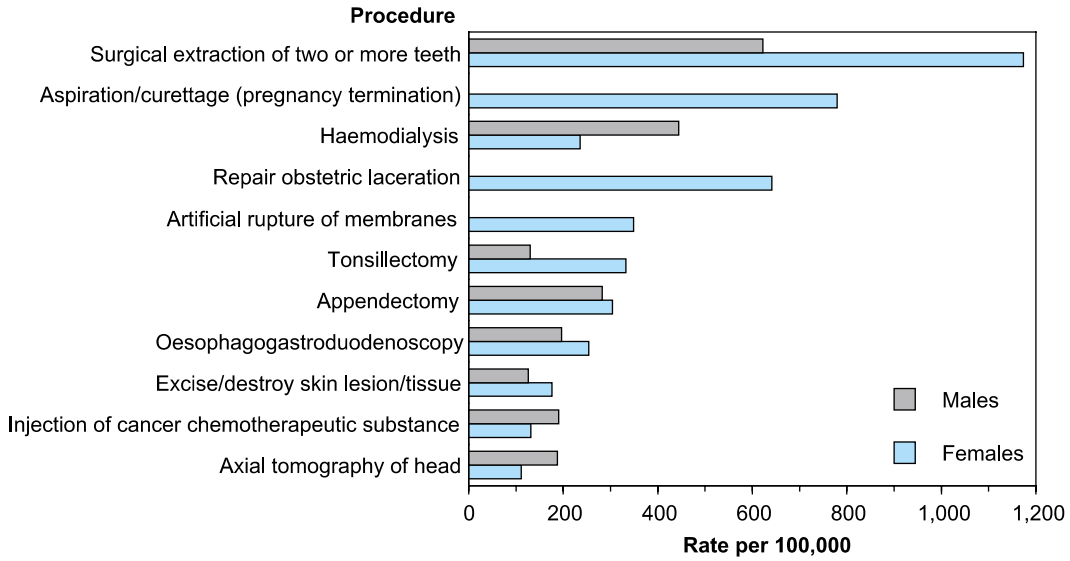
Not all hospitalisations have an associated procedure. At least one procedure was undertaken in 69% of hospitalisations for 12–24 year olds in 1997–98. Information on the primary procedures for these hospitalisations is given below.



Source: AIHW National Hospital Morbidity Database.

Figure 6.6: Hospitalisations of 12–24 year olds by procedure chapter, 1997–98

- The two most common primary procedure groups for females aged 12–24 years hospitalised in 1997–98 were obstetrical procedures and operations on the female genital organs. Operations on the nose, mouth and pharynx were also relatively common.
- For young males, the most common primary procedure groups were for operations on the musculoskeletal system, followed by diagnostic and therapeutic procedures.



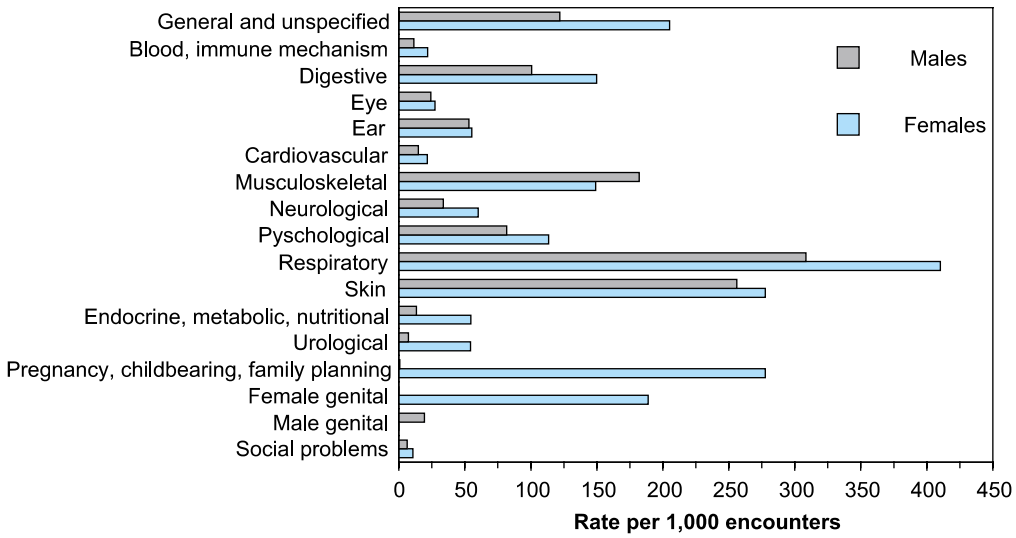
Source: AIHW National Hospital Morbidity Database.

Figure 6.7: Ten most frequent principal procedures for hospitalisations of 12–24 year olds, 1997–98

- The most common single primary procedure for young people hospitalised in 1997–98 was for the extraction of two or more teeth. The next most common primary procedures was for aspiration termination of pregnancy, followed by haemodialysis.
- Other common primary procedures included childbirth-related procedures, tonsillectomies, appendectomies, injection of cancer chemotherapy treatment, and a number of diagnostic procedures.

Problems managed in general practice

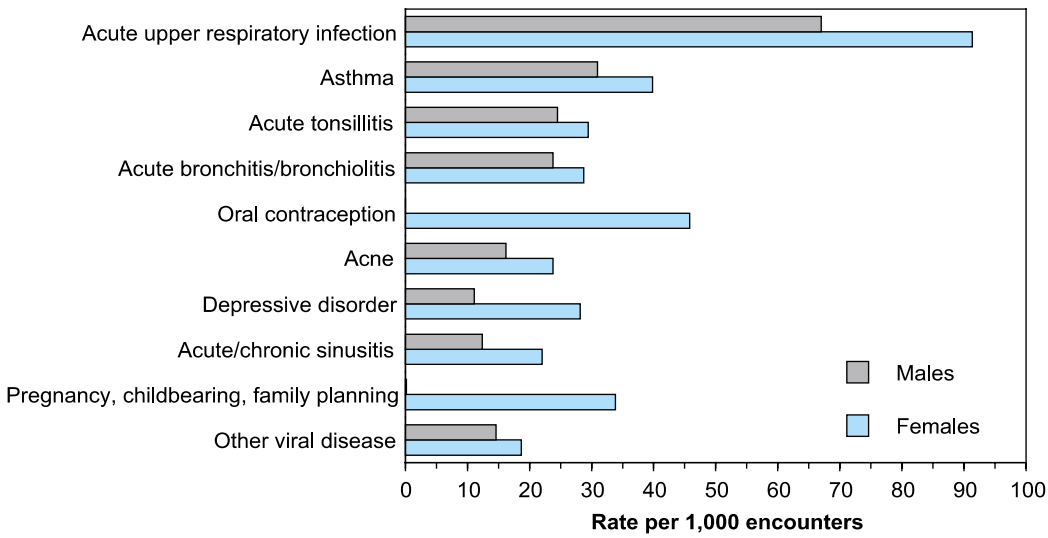
Data regarding the problems managed for young people by general practitioners is available from the BEACH survey of general practice activity. This survey collects data each year from about 1,000 randomly selected general practitioners. Each of these general practitioners provides data on 100 consecutive encounters on the demographics of their patients, the problems managed, and other data (Britt et al. 1999).



Source: BEACH survey of general practice activity.

Figure 6.8: Problems managed in general practice, 12–24 year olds, by ICPC-2, 1998–99

- The problems most frequently managed by general practitioners in encounters with 12–24 year olds were respiratory conditions, skin conditions, musculoskeletal conditions and general/unspecified conditions.
- For young women, consultations relating to pregnancy/childbearing/family planning and conditions relating to the female genital system were also important.



Source: BEACH survey of general practice activity.

Figure 6.9: Top 10 problems managed in general practice, 12–24 year olds, 1998–99

- The individual problems most commonly managed by general practitioners for 12–24 year olds in 1998–99 were upper respiratory tract infection, followed by asthma, acute tonsillitis and acute bronchitis/bronchiolitis.

Notifiable communicable diseases

More than 40 communicable diseases or disease categories are included in the National Notifiable Diseases Surveillance System; the common cold and influenza are not included in the system. This section focuses on those communicable diseases of importance to the youth population: hepatitis A, hepatitis B, hepatitis C, and HIV. Information on other notifiable communicable diseases which have the potential to cause serious illnesses among the youth population is also included below. Communicable diseases that are transmitted almost exclusively through sexual contact—chlamydia, gonococcal infection, and syphilis—are discussed in Chapter 11.

Hepatitis A infection is transmitted most often by food or by person-to-person contact. Age-specific notification rates are highest in young adult males (O'Brien et al. 1999:10). Hepatitis B, hepatitis C, and HIV are transmitted mainly by an infected person's blood or sexual fluids, or from an infected woman to her baby. Notification rates for hepatitis B and hepatitis C have been highest in young adults (O'Brien et al. 1999:8).

For HIV, transmission continues to occur primarily through sexual contact between men. There is no evidence of recent change in rates of transmission via this route, nor any increase in the very low rates of transmission through the injecting of illicit drugs, or heterosexual contact. It is difficult to estimate when people diagnosed with HIV antibody acquired their infection. HIV infection from the re-use of drug injecting equipment occurs infrequently in Australia, but transmission of hepatitis C virus occurs often in people who inject drugs (National Centre in HIV Epidemiology and Clinical Research 1999:5).

The incidence of new diagnoses of these diseases among the youth population (ages 12–24) are shown in Table 6.4. In this table, different measures are reported for hepatitis

B and hepatitis C. While there are limitations with notifications of Hepatitis B and Hepatitis C, these are considered to be the most appropriate available (Kaldor et al. 1996, Crofts et al. 1999:99).

Table 6.4: Notifications of hepatitis A, hepatitis B, hepatitis C and HIV infection in the youth population (ages 12–24), 1991–1998 (rate per 100,000)

	Hepatitis A		Hepatitis B (incident)		Hepatitis C (unspecified)[a]		HIV	
Year	Males	Females	Males	Females	Males	Females	Males	Females
1991	19.6	7.5	n.a.	n.a.	15.1	43.1	11.0	1.0
1992	17.5	10.3	n.a.	n.a.	31.2	29.2	7.8	0.9
1993	16.0	14.0	3.5	1.9	29.3	24.0	8.4	1.1
1994	14.3	11.3	3.2	3.7	29.4	33.7	6.6	1.1
1995	14.3	16.9	4.0	3.5	39.4	33.4	5.5	1.4
1996	18.4	10.3	2.3	2.0	45.0	33.5	5.0	0.9
1997	25.3	21.6	2.3	2.8	102.1	75.1	3.5	1.0
1998	22.5	15.4	2.9	2.4	108.1	82.5	2.7	1.1

(a) Unspecified as to whether or not it is an incident case.

Note: n.a. = not available.

Source: National Centre for Disease Control and National Centre in HIV Epidemiology and Clinical Research, unpublished data.

- Notifications of hepatitis A among males were approximately 1.5 times that among females, although this has varied over recent years.
- The increases in hepatitis A in 1991, 1996 and 1997 were associated with outbreaks reported in Sydney gay men (NSW Health 1997:234) and with eating contaminated oysters from Wallis Lake (O'Brien et al. 1999:10).
- Notifications of hepatitis B have been low and have not varied greatly during this period, with no consistent differences between males and females.
- Hepatitis C notifications have been more common in males than females in most years. The apparent increase in notification rates may be due to expansion of testing (first introduced in 1990) for the virus, rather than identified outbreaks. Notifications of hepatitis C do not distinguish between persons acutely infected and those infected some time in the past (Crofts et al. 1999:99).
- Notifications of HIV infection among young females has been very low, around 1 per 100,000 annually. As for hepatitis C, notifications of HIV infection do not distinguish between persons acutely infected and those infected some time in the past.
- Among young males, notifications of HIV infection have declined from 11 per 100,000 in 1991 to under 3 per 100,000 in 1998. This has been attributed to community education involving safe sex practices, avoiding contaminated blood products, contact tracing, and early case identification and treatment (NSW Health 1997:233).

Vaccine-preventable diseases includes *diphtheria, tetanus, pertussis, polio, measles, mumps, rubella, Hepatitis B* and *Haemophilus influenzae type b (Hib)*. Immunisations to prevent these diseases are scheduled for childhood and adolescence, and notifications generally are low among young people. Exceptions are pertussis and rubella. Notification rates of pertussis among people under age 20 were high in 1997, an epidemic year for this disease (O'Brien et al. 1999:18–19). Rubella is a particular problem for the youth population, as it can cause serious complications for unborn children of pregnant women. Outbreaks were common among young males, who previously were not vaccinated for rubella. Changes to the childhood immunisation schedule should prevent

future outbreaks in young males, as vaccination of boys at school entry began recently (O'Brien et al. 1999:16).

The main vector-borne diseases for youth are *Ross River virus* and *Barmah Forest virus*. Both are transmitted by mosquitoes and are more common outside major cities. Notifications in the 12–24 year old age group are low compared to most other age groups (O'Brien et al. 1999).

A final notifiable disease affecting youth is *meningococcal infection*. Meningococcal bacteria often cause a mild throat infection, but sometimes the infected person may not have any symptoms at all. Occasionally the infection may spread to the blood (called septicaemia) and/or coverings of the brain (called meningitis). Both manifestations are serious and require urgent treatment. Peak age groups in 1997 for the diseases were 0–4 and 15–24 years, and notifications for young males were 1.3 times that for young females (Australian Meningococcal Surveillance Programme 1998:206).

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7 Disability

Disability affects an individual's participation in society, and thus is an important aspect of health and wellbeing. The measurement of disability has undergone changes recently to take into account the level and type of activity restrictions that are experienced by an individual, a concept formerly known as 'handicap'.

This chapter begins with a discussion of the prevalence of disability among young people, and then discusses the levels and types of activity restriction, and the main conditions causing their disabilities. The source of the data is the 1998 ABS Survey of Disability, Ageing and Carers. The size of the sample restricts analysis to 5-year age groups, and thus this chapter is limited to examining the age groups 15–19 years and 20–24 years. Information on services for people with a disability is reported in Chapter 24.

Prevalence of disability

The ABS survey defined a person with a disability as someone who had one or more limitations, restrictions or impairments, that had lasted or was likely to last for 6 months or more. The list of limitations, restrictions or impairments, included loss of sight (not corrected by glasses); loss of hearing; loss of speech; chronic pain restricting everyday activities; blackouts or fits; learning difficulties; incomplete use of arms, fingers, feet, or legs; a nervous or emotional condition restricting everyday activities; restriction in physical activities or work; disfigurement or deformity; needing help due to mental illness; brain damage restricting everyday activities; any other long-term condition restricting everyday activities (ABS 1999:4).

Table 7.1: Prevalence of disability by sex and age group, 1998 (per cent)

Age (years)	Males	Females	Persons
0–9	8.1	5.2	6.7
10–14	12.6	6.0	9.4
15–19	9.2	7.0	8.1
20–24	9.8	8.5	9.2
25–29	10.4	9.1	9.7
30–49	15.6	14.9	15.2
50–69	34.4	31.9	33.2
70+	59.5	59.9	59.7
All ages	**19.6**	**19.1**	**19.3**

Source: AIHW, from ABS Survey of Disability, Ageing and Carers, 1998.

- The 1998 survey found that 8% of the population aged 15–19 years and 9% of those aged 20–24 years had a disability (Table 7.1). The total number of persons in these age groups with a disability was 230,900 (ABS 1999:14).
- Because disability increases with age, these rates were among the lowest of all age groups. The rate for 10–14 year old males was 13%, for those aged 70 years and over the figure was 60%, and for those aged 50–69 it was 33%. Just under 20% of the whole population had a disability.
- The rates for males were slightly higher than for females in the age groups 15–19 and 20–24 years, as was the case for most other age groups.

Activity restriction

The ABS survey attempted to measure the extent of disability, particularly if the disability restricted a person's 'core activities' and/or schooling or employment opportunities. 'Core activities' were defined as *self care* (bathing, dressing, eating, using toilet), *mobility* (moving around at home and away from home, getting into or out of bed or chair, using public transport), and *communication* (understanding and being understood by others) (ABS 1999:4). Most people reporting a disability were restricted in these specific activities (core or schooling/employment): 87% of all people with a disability, and 80% of those aged 15–24 years. The prevalence of disability with activity restriction is shown in Table 7.2. Since this group is a subset of all people with a disability, the patterns in Table 7.2 are similar to those in Table 7.1.

Table 7.2: Prevalence of specific restrictions (core activities and/or schooling/employment), by sex and age group, 1998 (per cent)

Age (years)	Males	Females	Persons
0–9	7.1	4.2	5.7
10–14	10.8	5.1	8.0
15–19	7.7	5.4	6.6
20–24	7.9	6.4	7.2
25–29	8.8	7.9	8.3
30–49	13.1	13.1	13.1
50–69	29.7	27.9	28.8
70+	53.3	56.6	55.2
Total	**16.9**	**16.9**	**16.9**

Source: AIHW, from ABS Survey of Disability, Ageing and Carers, 1998.

- About 7% of the youth population (183,900 persons aged 15–24 years) reported having a disability which led to a restriction in their core activities or in schooling or employment. The figure for the total population was 17%.
- Males in the youth population were more likely to have such restrictions than were females, about 8% compared with 6%.

The measurement of schooling or employment restrictions is limited to the population aged 5–64 years, those usually at school or in the labour force, and the prevalence data for this type of restriction are shown in Table 7.3. Again, these data are a subset of those in Tables 7.1 and 7.2, and thus the patterns will be similar.

Table 7.3: Prevalence of schooling/employment restrictions, by sex and age group, 1998 (per cent)

Age (years)	Males	Females	Persons
5–9	8.6	5.5	7.1
10–14	9.5	4.4	7.0
15–19	6.3	4.4	5.3
20–24	6.4	5.1	5.8
25–29	7.5	6.1	6.8
30–49	11.2	11.0	11.1
50–64	23.8	20.1	22.0
5–64	**11.9**	**10.1**	**11.0**

Source: AIHW, from ABS Survey of Disability, Ageing and Carers, 1998.

- Overall, 11% of the population aged 5–64 years, and nearly 6% of the youth (148,400 persons aged 15–24 years), reported such a restriction.
- As with Tables 7.1 and 7.2, the prevalence of schooling/employment restrictions is slightly higher among males than females.

There is some overlap between the populations of disabled people with core activity restrictions and those with schooling and/or employment restrictions. (Many, but not all, of those with schooling and/or employment restrictions also have core activity restrictions; and many, but not all, of those with a core activity restriction have a schooling/employment restriction.) Those with a core activity restriction (self care, mobility, communication) were assessed in the ABS survey for the severity of the restriction. Table 7.4 reports the prevalence of 'profound' or 'severe' core activity restrictions. A person with a profound restriction is unable to perform a core activity, or always needs assistance for that activity, and a person with a severe restriction sometimes needs assistance to perform the activity.

Table 7.4: Prevalence of profound/severe core activity restrictions, by sex and age group, 1998 (per cent)

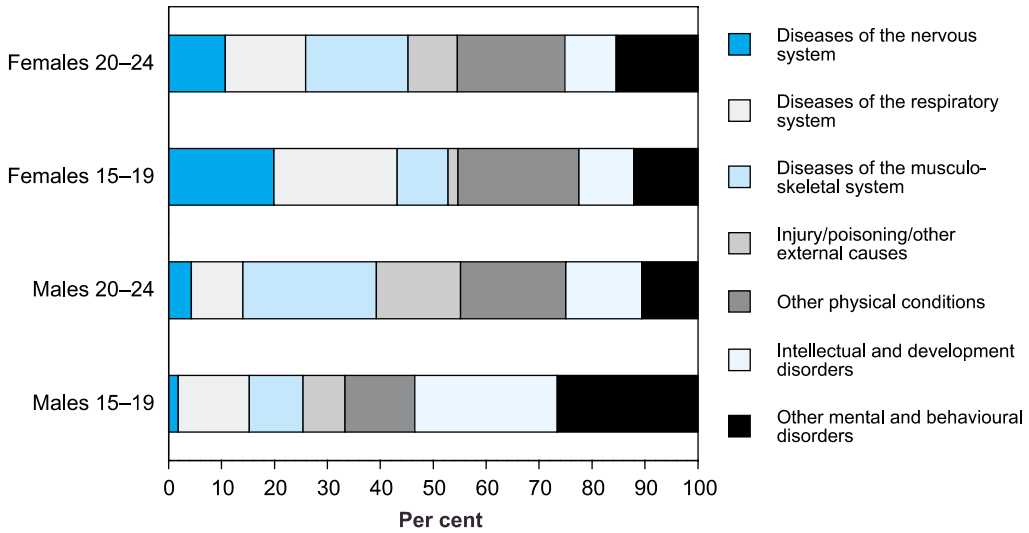
Age (years)	Males	Females	Persons
0–9	4.8	2.6	3.7
10–14	4.9	2.3	3.6
15–19	2.6	2.0	2.3
20–24	1.6	1.4	1.5
25–29	2.0	2.2	2.1
30–49	3.5	4.3	3.9
50–69	7.5	8.1	7.8
70+	20.6	30.9	26.6
Total	**5.4**	**6.7**	**6.1**

Source: AIHW, from ABS Survey of Disability, Ageing and Carers, 1998.

- About 2% of males and 1% of females in the youth population (51,400 persons aged 15–24 years) reported having a profound or severe core activity restriction.

Main disabling conditions

Disability usually arises from a disease, disorder or injury (ABS 1999:7). For the youth population, the main disabling conditions can be divided into physical conditions (diseases of the nervous, respiratory, or musculoskeletal systems, or external causes such as injury or poisoning) and mental/behavioural disorders, including intellectual and developmental disorders. Figure 7.2 shows the main disabling condition reported by people with a disability, many of whom may have had more than one of these conditions.



Source: AIHW, from ABS Survey of Disability, Ageing and Carers, 1998.

Figure 7.1: Main disabling condition in youth population (aged 15–24 years), by sex and age group, 1998

- Over half of the disabling conditions of males aged 15–19 years with a disability were 'mental and behavioural disorders'. Half of these were 'intellectual and developmental disorders'.
- 'Mental and behavioural disorders' as the main disabling condition was much less among males aged 20–24 and among females in both age groups, being around 25%.
- 'Diseases of the musculoskeletal system' were a major disabling condition among males and females aged 20–24 years, and 'diseases of the respiratory system' were substantial for those aged 15–19 years .
- Diseases or injuries affecting the sensory system, such as those which cause loss of sight or hearing, were infrequently stated as the main disabling condition, and thus are included with 'other physical conditions' in Figure 7.1. For males aged 15–24 years with a disability, 2% gave eye conditions and 4% ear conditions as the main disabling condition for females aged 15–24 with a disability, the figures were 3% each for eye and ear conditions.

Reference

Australian Bureau of Statistics (ABS) 1999. Disability, ageing and carers: summary of findings 1998. Australia. Cat. No. 4430.0. Canberra: ABS.

8 Injury

Injury is the leading cause of death for young people aged 12–24 years (see Chapter 5). It is also the most common reason for admission to hospital for young males (see Chapter 6). Many more injuries are treated in hospital accident and emergency departments and by private medical practitioners. Most recover well from their injuries, but a proportion of non-fatal injuries result in long-term disability. The possibility of prevention makes injury an area where there is potential for improvement in the health of young people.

Injury prevention and control is one of the six National Health Priority Areas recognising that this is one area 'where a concerted effort could achieve significant gains in health status' (AIHW & DHFS 1997). A report on this priority area was released in 1998 (DHFS & AIHW 1998). Two relevant documents, compiled by the National Injury Prevention Advisory Council, detail the important issues in injury prevention (NIPAC 1999a; NIPAC 1999b).

Injuries occur in many different circumstances and result in diverse conditions. Injuries can be classified as conditions directly resulting from a physical or chemical object or substance external to the body of the person concerned (AIHW & DHFS 1997). Under this definition, poisoning and suicide are also classified as an injuries.

Most of the currently available national information on injury relates to more serious injuries: deaths and hospitalisations. For the analysis of hospitalisations presented in this chapter, data were included where the principal diagnosis was an injury or poisoning (ICD-9-CM codes 800–999). The diagnosis relates to the type of injury, rather than the cause of the injury. Despite this initial selection based on diagnosis, many of the results are grouped using external cause codes of the cause of the injury. A large number of injuries are also likely to be treated in accident and emergency departments of hospitals, although national information on injuries not requiring admission to hospital is not currently available. Some information was also collected in the last National Health Survey (1995) on injuries. These data allow estimation of the prevalence of all childhood injuries including minor and more serious injuries.

There are a number of major themes underlying discussions of the causes of high injury rates in young people, particularly young males (DHFS & AIHW 1998; Moller 1995). For this age group, these include the tendency for risk taking, inexperience (for example, in driving a car), high participation in sports, and perhaps mental health problems that may increase the risk of suicide. Suicide is a major issue for young people, and is covered in more detail in Chapter 10.

All injuries

This section provides information on injury rates from all causes, including accidental injuries, self-inflicted injuries, and injuries inflicted by other persons.

Table 8.1 shows injury rates for all age groups, to allow comparison between injury rates for young people and injury rates for other age groups. Note that these data have come from published sources, and hence the age group 15–24 years is used. However, information in the rest of this chapter generally uses the age group 12–24 years.

Table 8.1: Deaths (1997) and hospitalisations (1997–98) due to injuries, and injury prevalence

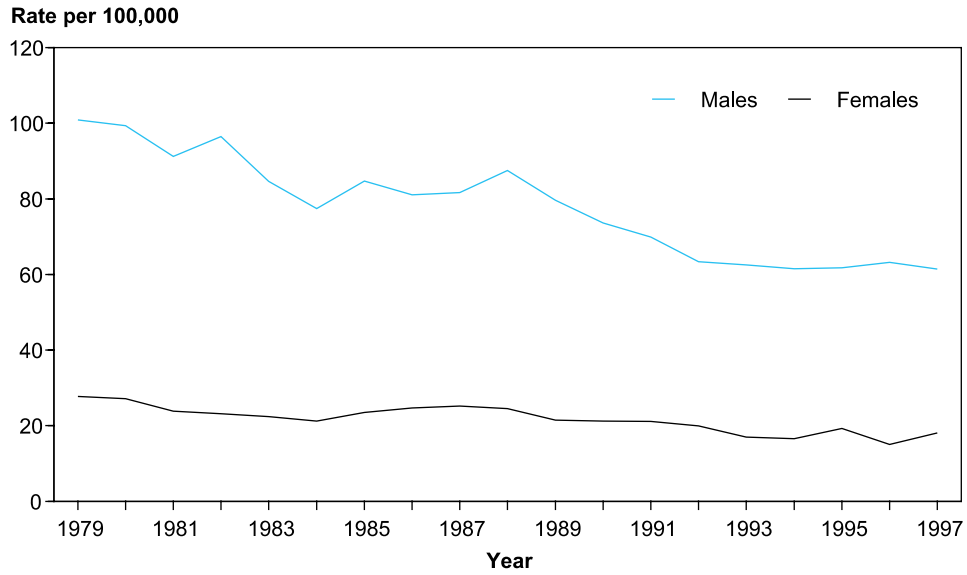
	Males		Females		All persons		
Age group (years)	Deaths 1997	Hospitalisations 1997–98	Deaths 1997	Hospitalisations 1997–98	Deaths 1997	Hospitalisations 1997–98	Injury prevalence[(a)] 1995
< 5	19	2,129	10	1,573	15	1,851	5,957
5–14	8	2,127	4	1,224	6	1,676	
15–24	76	3,475	22	1,447	49	2,4861	8,619
25–34	78	2,762	21	1,312	50	2,037	6,398
35–44	63	2,047	20	1,273	41	1,660	4,592
45–54	54	1,782	20	1,318	37	1,550	4,247
55–64	51	2,065	21	1,636	36	1,850	3,635
65–74	68	2,777	30	2,697	49	2,737	3,034
75+	176	5,059	131	6,927	154	5,993	3,333

(a) Reported prevalence of current conditions caused by an injury.

Sources: AIHW Mortality Database; AIHW 1999; ABS 1997.

- Injury rates for the age group 15–24 years are high compared with other age groups. The only group with higher death and hospitalisation rates are those aged 75 years or more (mostly falls). The lowest injury death rates are amongst children aged under 15 years. Young people aged 15–24 years have the highest prevalence of injuries of all the age groups included in Table 8.1.
- Males aged 15–24 years have a similar death rate to those aged 25–34 years, although both of these age groups have death rates substantially lower than for the oldest age group. The hospitalisation rate for young males is second only to the oldest age group.
- Death rates among females do not vary greatly over the ages 15–64 years, but these are substantially higher than for children.
- The difference in the injury rates between males and females varies by age, with the ratio of male to female injury death and hospitalisation rates being high for the age group 15–24 years. For deaths, this ratio is highest for those aged 25–34 years (3.7), followed closely by the age group 15–24 years (3.5). For hospitalisations, the ratio is highest for the age group 15–24 years (2.4). The ratio is lowest for the oldest age group (1.3 for deaths, and 0.7 for injury-related hospitalisations indicating a higher hospitalisation rate among older women than men).

There has been a concerted effort by many groups over the last few decades to reduce the injury death rates across all ages (DHFS & AIHW 1998). These initiatives have had an impact on the injury death rate among 12–24 year olds. A recent NHMRC report has examined the issue of injury in young males, and includes a number of recommendations aimed at further reducing injuries in this age group (NHMRC 1997).

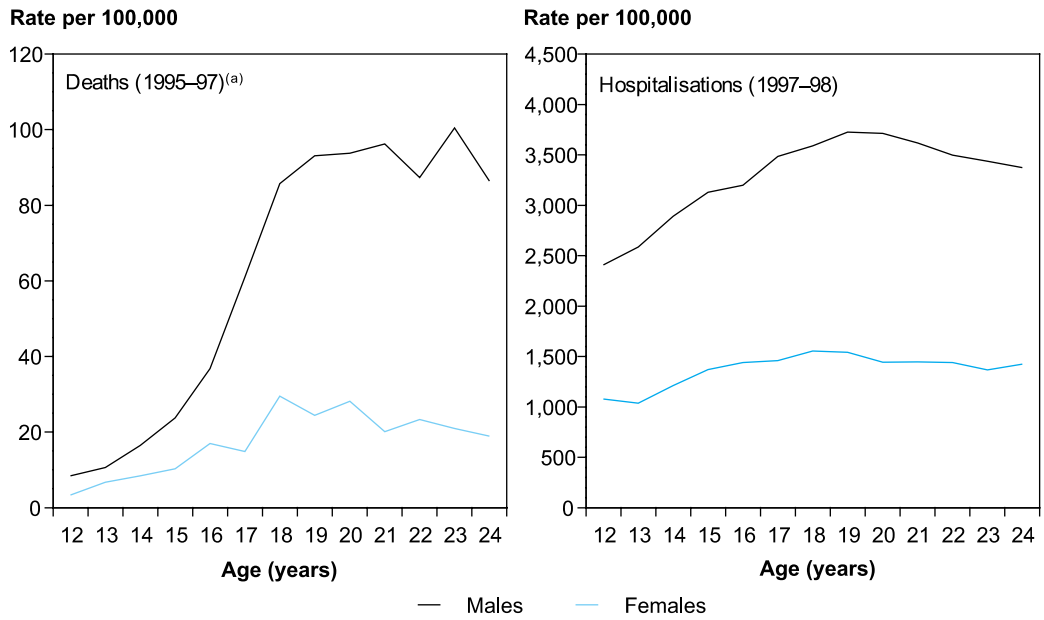


Source: AIHW Mortality Database.

Figure 8.1: Injury death rates, 12–24 year olds, 1979 to 1997

- The injury death rate for young males aged 12–24 years has decreased substantially since 1979 when the rate was just over 100 per 100,000. The death rate fell to around 80 per 100,000 by the mid 1980s, then plateaued until around 1988. It then fell to just over 60 per 100,000 by 1992, and has remained at around that level since then.
- The injury death rate for young females has also fallen over the period 1979 to 1997, from 28 per 100,000 to 18 per 100,000. The rate remained over 20 per 100,000 until the early 1990s, and has ranged between 19 and 15 per 100,000 since then.
- The decline in the injury death rate over this period has been largely due to the reduction in the death rates from motor vehicle accidents. Trends in the death rates for different causes of injury is examined in more detail later in this chapter.
- The sex differential in the injury death rates for young people has not changed greatly over the period 1979 to 1997, ranging between 3.2 and 4.2 (that is, young males are 3 to 4 time more likely to die from injury than young females).

Injury rates among young people vary by age. Figure 8.2 includes information on the age-specific death and hospitalisation injury rates.



(a) Three years of data have been pooled due to the small number of deaths in some cases.

Sources: AIHW Mortality Database, AIHW National Hospital Morbidity Database.

Figure 8.2: Injury death and hospitalisation rates by age and sex, 12–24 year olds

- For the age group 12–24 years, death rates are highest for the ages 18–24 years, and lowest at the youngest ages. This pattern occurs in both males and females.
- However, the difference between the rates for males and females is large, and increases with age. From age 12 until around the mid-teens, males are about twice as likely as females to die from injuries. The differential then increases, and remains at around 4–5 times over the age range 21–24 years.
- Among young people, the hospitalisation rates for injury also vary by single year of age. The highest rates occur from around age 17 up to 24 years, for both males (around 3,500 per 100,000) and females (approximately 1,500 per 100,000).
- As for injury death rates, a large sex differential is also apparent in the age-specific hospitalisation rates, with the rates being between 2.2 and 2.6 times higher for males than females.
- For both deaths and hospitalisations, the age-specific rates increase across the younger ages (12–17 years), and then remain at the higher levels for the older ages (18–24 years). However, the difference between the rates for the younger ages and those for the older age group is greater for injury deaths than for injury hospitalisations.)

Table 8.2: Injury deaths (1995–1997) and hospitalisations (1997–98) by State and Territory, 12–24 year olds (rate per 100,000)

	Deaths 1995–1997		Hospitalisations[(a)] (1997–98)	
State/Territory	**Males**	**Females**	**Males**	**Females**
New South Wales	58	15	3,725	1,666
Victoria	54	16	2,725	1,234
Queensland	76	22	3,696	1,536
Western Australia	68	19	3,756	1,953
South Australia	58	17	4,293	2,136
Tasmania	63	20	3,352	1,607
Australian Capital Territory	49	16	2,623	1,243
Northern Territory	124	32	3,651	2,245
Australia	**62**	**18**	**3,489**	**1,596**

(a) With an external cause code.

Sources: AIHW Mortality Database, AIHW National Hospital Morbidity Database.

- Table 8.2 shows that there is variation in injury death and hospitalisation rates across the States and Territories.
- Injury death rates for males in 1995–1997 ranged between 49 per 100,000 in the Australian Capital Territory to 124 per 100,000 in the Northern Territory. The majority of States and Territories had rates between 50 and 70 per 100,000.
- For females in 1995–1997, the injury death rate ranged between 15 per 100,000 in New South Wales to 32 per 100,000 in the Northern Territory.
- Injury hospitalisation rates also varied by State and Territory, with the highest rates in Western Australia and South Australia for males and Northern Territory and South Australia for females.
- In general, the highest injury death and hospitalisation rates occurred in the Northern Territory, Western Australia and Queensland, and the lowest were in the Australian Capital Territory. Without more detailed analysis on the causes of these injuries in the different States and Territories, it is not possible to explain the differences. However, some of the difference may be due to the higher injury rates in rural/remote areas compared with metropolitan areas (AIHW 1998) and/or among Aboriginal and Torres Strait Islander youth compared with other Australian youth (see Chapter 25 for more detail).

Causes of injury

The preceding section presented information on total injury rates. This section provides detail on the external causes of these injuries.

Table 8.3: Deaths (1997), hospitalisations (1997–98) and injury prevalence (1995) by cause of injury, 12–24 year olds (rate per 100,000)

	Males			Females		
External cause[a]	Deaths 1997	Hospitalisations 1997–98	Prevalence[b] 1995	Deaths 1997	Hospitalisations 1997–98	Prevalence[b] 1995
Motor vehicle accident	15.5	219	1,450	6.3	136	1,400
Motor cycle accident	3.5	190	n.a.	0.4	17	n.a.
Pedal cycle accident	0.8	138	n.a.	0.1	22	n.a.
Pedestrian accident	3.5	43	n.a.	1.1	25	n.a.
Other transport accident	2.2	110	n.a.	0.5	74	n.a.
All transport accidents	*25.5*	*699*	*n.a.*	*8.5*	*273*	*n.a.*
Drowning	2.2	5	n.a.	0.2	1	n.a.
Accidental poisoning	1.9	90	n.a.	0.8	111	n.a.
Falls	1.1	716	3,390	0.1	199	3,580
Fire/flames	0.2	27	n.a.	0.2	5	n.a.
Other unintentional[c]	3.3	1,036	3,140	0.5	287	1,220
Suicide and self-inflicted	24.0	116	n.a.	5.9	215	n.a.
Violence related	2.3	289	990	1.6	74	170
Undetermined intent	1.0	7	n.a.	0.4	6	n.a.
Medical misadventure	0.0	156	n.a.	0.0	144	n.a.
Other	—	—	3,360	—	—	2,730
Not reported	0.0	139	2,800	0.0	54	2,350
Total	**61.4**	**3,281**	**15,130**	**18.1**	**1,370**	**11,450**

(a) ICD-9 codes used for each group are detailed in Appendix IV.

(b) Self-reported prevalence of current conditions caused by an injury. If more than one current injury, the most recent is reported.

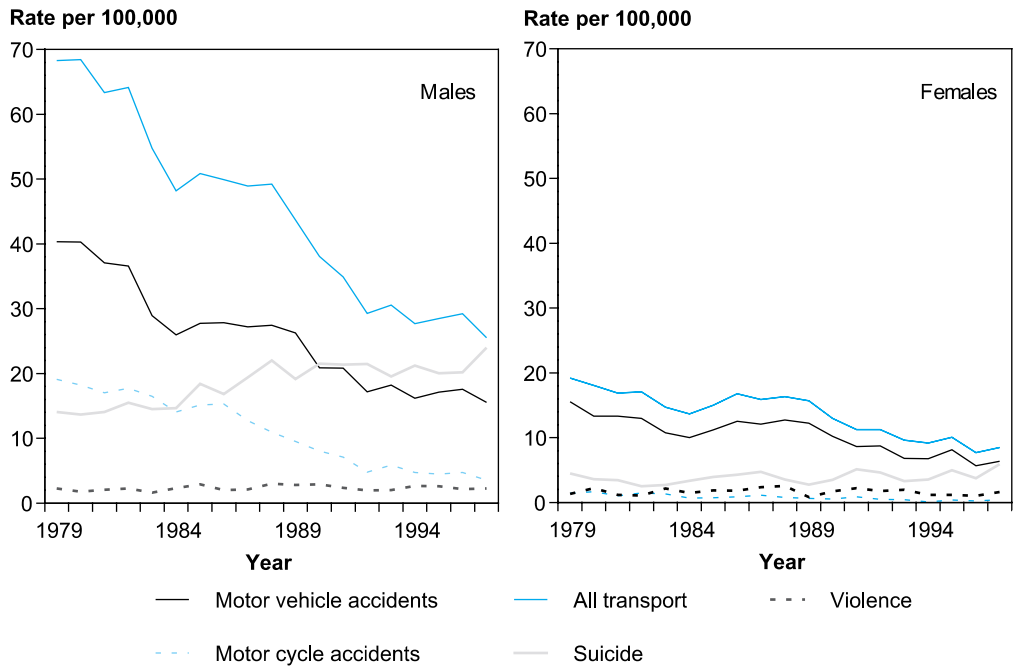
(c) The hospitalisations included in this category are quite varied; relatively large numbers of injuries caused by being accidentally struck, or from cutting/piercing are included. Also, there appear to be substantial numbers of sports injuries in this group. For prevalence data, includes only injuries caused by being accidentally struck.

n.a. not available.

Sources: AIHW Mortality Database, AIHW National Hospital Morbidity Database, AIHW from ABS NHS data, 1995.

- In 1997, the largest cause of injury deaths in this age group was from transport accidents (mostly motor vehicle accidents). This was followed by suicide, with the suicide rate amongst males being higher than that from motor vehicle accidents.
- Transport accidents were also a major cause of hospitalisation for injuries in 1997–98, as were self-inflicted injuries among females. Falls were also a common reason for being hospitalised for an injury. The 'other unintentional' group was also high for males, for example sports injuries (see Table 8.3 footnote).
- The National Health Survey data on the prevalence of injuries regardless of severity indicates that falls, motor vehicle accidents and other unintentional injuries were the most common types of injuries in this age group in 1995.

Figure 8.3 shows death rates over time for the main causes of injury deaths in this age group. Note that the category 'all transport' is included, as well as two of the major components of this group: motor vehicle and motor cycle accidents.

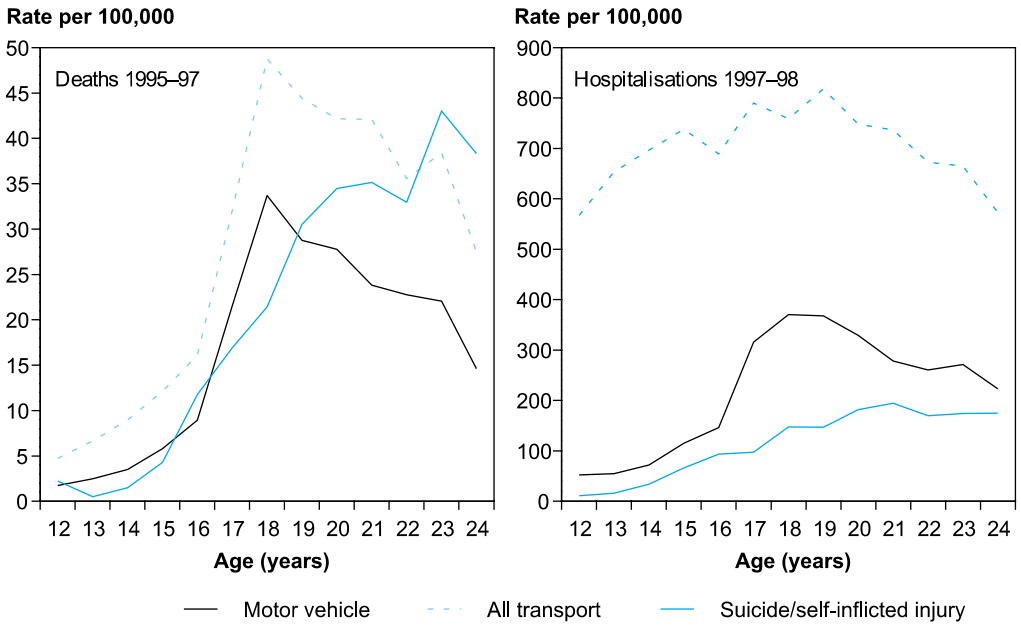


Source: AIHW Mortality Database.

Figure 8.3: Death rates for main causes of injury, 12–24 year olds, 1979 to 1997

- Over the period 1979 to 1997, there have been large declines in the injury death rates, particularly for males, reflecting the results shown in Figure 8.1.
- Overall, the decline is dominated by the fall in the death rate from transport accidents, largely from a decline in motor vehicle accident deaths. There has also been a decline in the death rate from motor cycle accidents.
- However, despite the overall decline in the injury death rate, there has been an increase in the suicide rate (discussed further in Chapter 10). The male suicide rate has been higher than the motor vehicle accident rate since 1990. In 1997, the rate was almost as high as the all-transport death rate.

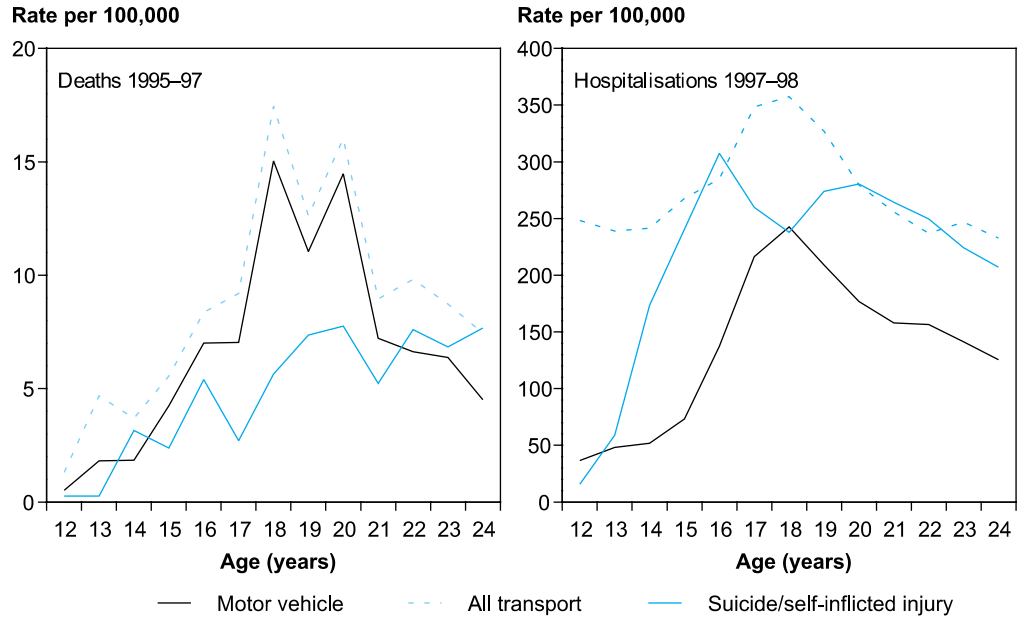
The following two figures show patterns in the age-specific injury rates (deaths and hospitalisations) for the major causes of injury for this age group. These graphs extend the information shown in Figure 8.2 by showing the cause-specific rates. Figure 8.4 shows the results for males, and Figure 8.5 shows the results for females.



Sources: AIHW Mortality Database, AIHW National Hospital Morbidity Database.

Figure 8.4: Male injury death (1995–97) and hospitalisation rates (1997–98) for males for main cause of injury by age

- For males, the death rate from transport accidents rises steadily from age 12, then sharply from age 16 (the age that driving licences may first be obtained in some States and Territories). This death rate peaks at age 18, then declines over the next few ages. Motor vehicle accidents form a fairly large proportion of these deaths.
- The suicide rate starts to rise at around 15 years of age, and is highest at the older ages within this group, and is higher than the all-transport rate for ages 23 and 24 years.
- The age pattern for hospitalisations among young males is less dramatic than for deaths. Further, motor vehicle accidents account for a smaller proportion of the transport injuries.



Sources: AIHW Mortality Database, AIHW National Hospital Morbidity Database.

Figure 8.5: Female injury death (1995–97) and hospitalisation rates (1997–98) for females for main cause of injury by age

- When comparing Figures 8.4 (males) and 8.5 (females), it is important to remember that the females rates are substantially lower than the male rates (see Figure 8.2).
- The highest death rates for this group are from transport accidents, which peaks at ages 18–20 years. These deaths are nearly all due to motor vehicle accidents. Suicide rates slowly rise with age.
- For injury hospitalisations among females aged 12–24 years, transport accidents again are highest, peaking at around 18 years. Self-inflicted injury hospitalisations rise sharply at around the mid-teen years, and have similar hospitalisation rates from about age 20.

Place of occurrence

Information on the place of occurrence of injuries is important in determining possible preventive measures for particular causes. Such information for injury deaths is not readily available at the national level. However, information on the place of occurrence of hospitalised injuries is partly available (based on ICD-9-CM codes). Data were also collected on the place of injury in the National Health Survey. Information from both these sources is summarised below.

Table 8.4: Place of occurrence of injuries resulting in hospitalisation, 12–24 year olds, 1997–98 (per cent)

	Proportion of injury hospitalisations	
Place of occurrence	**Males**	**Females**
Home	9	21
Farm	1	1
Quarry or mine	0	0
Industrial place	5	1
Place of recreation or sport	16	7
Street or highway	13	13
Public building	4	3
Residential institution	2	3
Other specified places	5	4
Unspecified and not reported	46	47
Total	**100**	**100**

Source: AIHW National Hospital Morbidity Database.

- The place of occurrence of injuries requiring hospitalisation is not well reported—46% of male and 47% of females injury hospitalisations did not have the place of injury recorded.
- For those injury hospitalisations with a recorded place of occurrence, there were different patterns for males and females. For males, the location with the most recorded injuries (16%) was recreation/sporting locations. For females, the home was the most often recorded (21%).
- For both males and females, the second most common place of injury was a street or highway (13% for both), reflecting the large number of transport hospitalisations.

Table 8.5: Place of occurrence for injuries[(a)] to 10–24 year olds, 1995 (per cent)

	Proportion of all injuries	
Place of occurrence	**Males**	**Females**
At work	14	10
At school/college/university	15	12
Inside house	6	10
Outside house	14	13
While travelling	8	12
Other	25	22
Not stated	19	21
Total	**100**	**100**

(a) As reported in the National Health Survey.

Source: AIHW, from ABS NHS data, 1995.

- Place of occurrence information is also recorded as part of the National Health Survey, thus providing information relating to prevalence, regardless of severity. There is a relatively high proportion of injuries with a recorded place of occurrence of 'not stated' or 'other' (44% for males, 43% for females).
- Of the other places where injuries occurred, among males higher proportions occurred at work, educational facilities and outside a house. For females, the top three locations were at educational facilities, outside a house and while travelling.

Type of injury

For injuries which resulted in hospitalisation and for injuries as reported in the National Health Survey, information is presented below on the type of injury sustained.

Table 8.6: Type of injury to young people: hospitalisations (1997–98) and prevalence (1995) (per cent)

	Hospitalisations 1997–98[a] (12–24 year olds)		Prevalence 1995[b] (10–24 year olds)	
	Males	Females	Males	Females
Fractures	39	23	15	13
Dislocations/sprains/strains	8	7	35	33
Internal injuries	11	9	5	4
Open wounds	18	12	19	15
Bruising and crushing	3	3	16	16
Foreign bodies	1	1	2	2
Burns and scalds	2	1	6	10
Poisoning	7	25	1	2
Other	12	19	17	21

(a) Principal diagnosis of hospitalisation.

(b) Reported prevalence of current conditions caused by an injury. If more than one current injury the most recent injury is reported.

Note: More than one type of injury from the current injury may be reported.

Sources: AIHW National Hospital Morbidity Database; AIHW, from ABS NHS data, 1995.

- For males, the most common type of injury requiring hospitalisation was fractures (39%), followed by open wounds (18%).
- A different distribution occurred for females, with poisoning (25%) being the most common injury resulting in hospitalisation followed by fractures (23%).
- Information on prevalence shows that dislocations/sprains/strains were the most common injury, most of which do not require hospitalisation.

Specific injuries

This section presents more detailed information on two specific causes of injury to young people—motor vehicle accidents and injuries purposely inflicted by others.

Other important causes of injury to this age group include suicide, sports injuries and work-related injuries. Suicide is covered in more detail in Chapter 10. There is only very limited information available for the other two causes, so detailed information on these areas has not been included.

Sports injuries are believed to be common in this age group, and are usually of moderate severity with unknown short- and long-term disability (Moller 1995). Deaths from sports injuries are likely to be small in number. However, a large load is put on hospitals because of these injuries, both in outpatient and inpatient areas. These injuries occur at all levels of sport, not just among elite athletes.

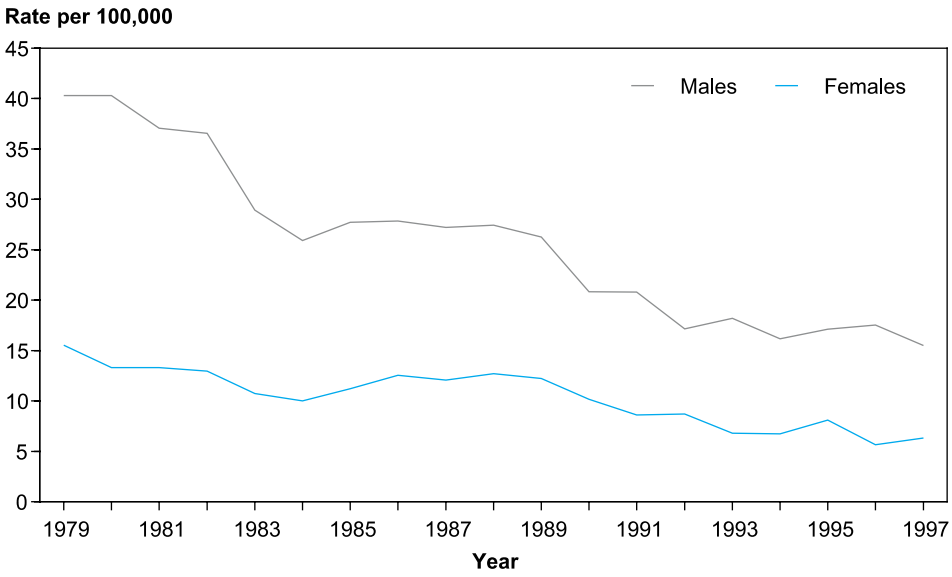
Work-related injuries are also important—emergency department data suggests that these injuries are a major issue for young males (Moller 1995). It is currently not possible to identify these injuries in the deaths and hospital data. There are a number of reasons that the risk of incurring work-related injuries may be higher in this age group: entry

level jobs may have a higher risk, lack of experience in the job, and risk taking by young people.

There is potential for the information gap on sports and work-related injuries to be plugged to some degree with the introduction of ICD-10. The classification includes a code that indicates the activity being undertaken at the time of the injury. If this activity information is collected well, data will then be available for deaths and hospitalisations resulting from sports injuries and work-related injuries.

Motor vehicle accidents

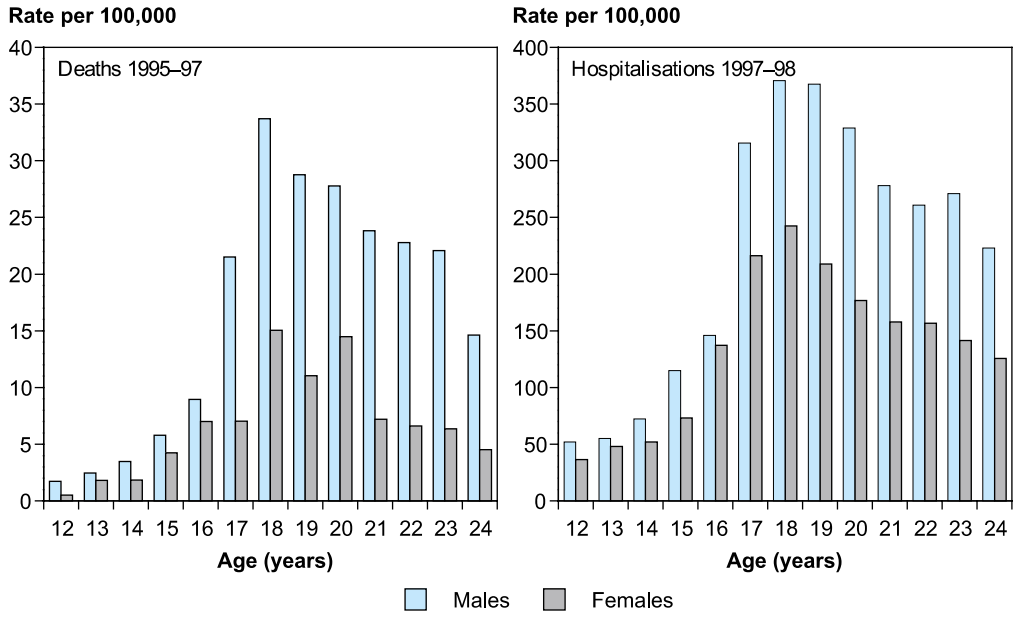
In 1997, death in motor vehicle accidents was the most common injury death in young females, with 107 deaths. It was also the second most common injury deaths (after suicide) in young males, with 274 deaths. Motor vehicle accident injuries to young people also results in a high number of hospitalisations—nearly 6,200 in 1997–98.



Source: AIHW Mortality Database.

Figure 8.6: Motor vehicle accident deaths, 12–24 year olds, 1979 to 1997

- There has been a large decline in the death rate from motor vehicle accidents among young people, as discussed under Figure 8.3. For males, the rate fell from 40 to 16 per 100,000 between 1979 and 1997. The corresponding fall in the female rate was from 16 to 6 per 100,000. Despite this fall, motor vehicle accidents account for one-quarter of injury deaths in young people in 1997.
- The ratio of the male rate to the female rate has not changed greatly during this period, ranging between 2.0 and 3.1 at different times between 1979 and 1997.
- The decline shown above is part of an all ages decline and coincided with the introduction of a number of injury prevention and control measures Examples include programs to reduce drink driving and speeding, improvements in road conditions, improvements in the safety of cars, and improvements in trauma care (AIHW & DHFS 1997).



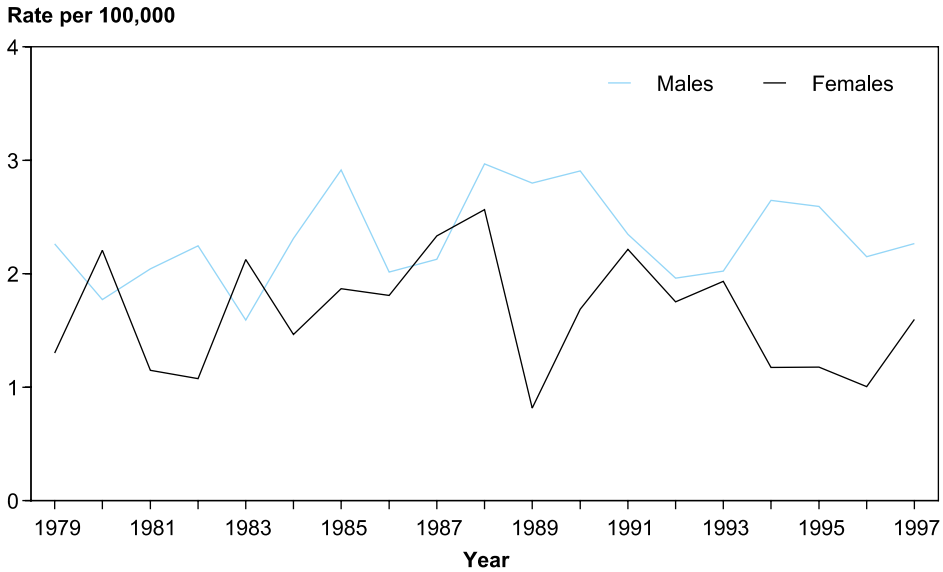
Sources: AIHW Mortality Database, AIHW National Hospital Morbidity Database.

Figure 8.7: Motor vehicle accident deaths (1995–97) and hospitalisations (1997–98) by age and sex, 12–24 year olds

- As discussed under Figures 8.4 and 8.5, there is an age and sex pattern in the injury rates from motor vehicle accidents.
- Using the latest available data, the rates for males were greater than for females, both for injuries resulting in death and injuries requiring hospitalisation. In 1995–97, there were close to 900 male deaths and 350 females deaths.
- There were peaks in both the death and hospitalisation rates at about age 18 years, which is around the age that many young people first begin driving or are passengers of young drivers.

Injuries purposely inflicted by others

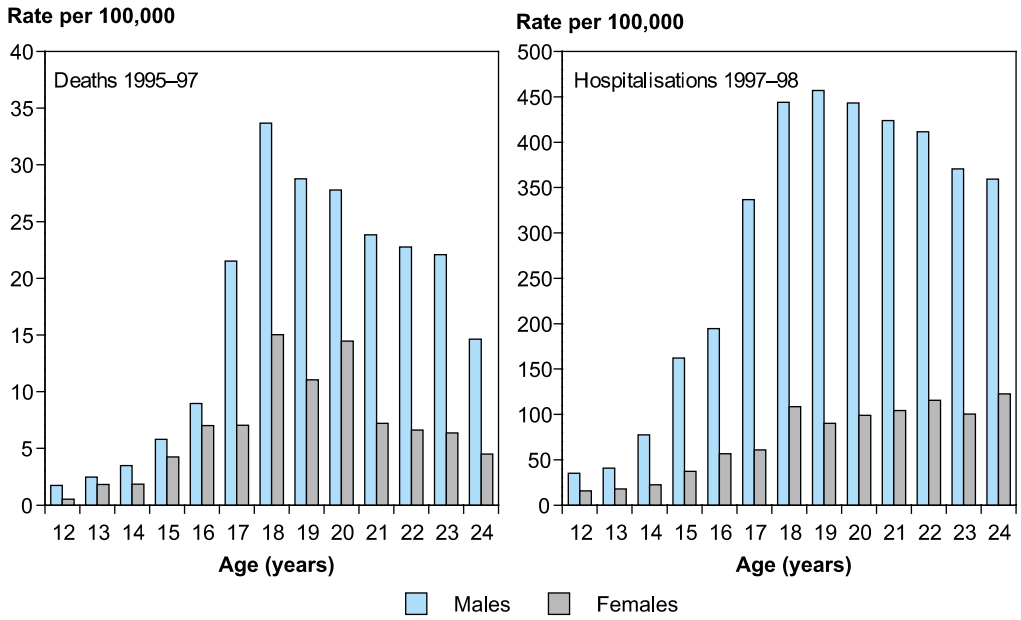
Injuries to young people caused by violence are a relatively common reason for hospitalisation (5,100 hospitalisation for males, and nearly 1,250 hospitalisations for females in 1997–98). There were also a number of deaths in this age group from violence—67 deaths in 1997. Young people as victims of crime is also discussed in Chapter 22.



Sources: AIHW Mortality Database, AIHW National Hospital Morbidity Database.

Figure 8.8: Deaths from violence, 12–24 year olds, 1979 to 1997

- There is no apparent time trend in the death rates for 12–24 year olds from violence over the period 1979 to 1997, with the overall rate generally around 2 per 100,000.
- The male rate (ranging between 1.8 and 3.0 per 100,000) was generally slightly higher than the female rate (between 0.8 and 2.2 per 100,000).



*Sources:*AIHW Mortality Database, AIHW National Hospital Morbidity Database.

Figure 8.9: Deaths (1995–97) and hospitalisations (1997–98) from injuries purposely inflicted by others, by age and sex, 12–24 year olds

- In recent years, there were higher death rates from violence in the older end of this age group, particularly for males. The rates for males were higher than for females at all ages.
- There were substantially higher hospitalisation rates for males than females in 1997–98. The highest hospitalisation rates occurred for ages 18 years and over.

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9 Mental health

This chapter presents available data on mental health problems experienced by young people. These problems may manifest as disturbances of feelings, behaviours and thoughts. If these disturbances are distressing to the young person or to others, or if social functioning (including coping, competency and mastery) are affected, a mental health problem may be identified (AIHW 1998a, Zubrick et al. 1995). More severe forms of mental health problems (in terms of duration of the problem and/or impact on daily activities) are often termed 'mental disorders' (see Glossary) (Disley 1997).

Mental health is one of the six National Health Priority Areas in 'recognition of its enormous social and public health importance' (AIHW & DHFS 1997). Reference is also made to the pain and suffering experienced by families of those with mental illness, as well as that experienced by the individual with the illness.

Adolescence and young adulthood is an important life phase in relation to mental health. Mental disorders increase greatly in frequency during this time, many (including abuse, depression, suicide, eating disorders) reaching their peak in prevalence between the ages of 15 and 25 years (Leffert & Petersen 1995). This age group is also the peak age of first onset for many types of mental disorders (Robins et al. 1991).

There appears to be evidence that the mental health problems among young people are increasing. A comprehensive study conducted in Europe suggests that over the last 50 years there has been an increase in many mental disorders occurring in young people (Rutter & Smith 1995). Studies in New Zealand have also shown increases in mental health problems among young people (Fergusson et al. 1997). It seems likely that a similar situation exists in Australia. Certainly the youth suicide rate has increased substantially over the last few decades (see Chapter 10) and clear relationships between suicide and mental health problems have been demonstrated (Skegg 1997).

Information included in this chapter comes from three main data sources:

- population-level prevalence data from the National Survey of Mental Health and Wellbeing of Adults conducted in 1997 (ABS 1998)
- hospitalisation data from the AIHW National Hospital Morbidity Database
- mortality data from the AIHW Mortality Database.

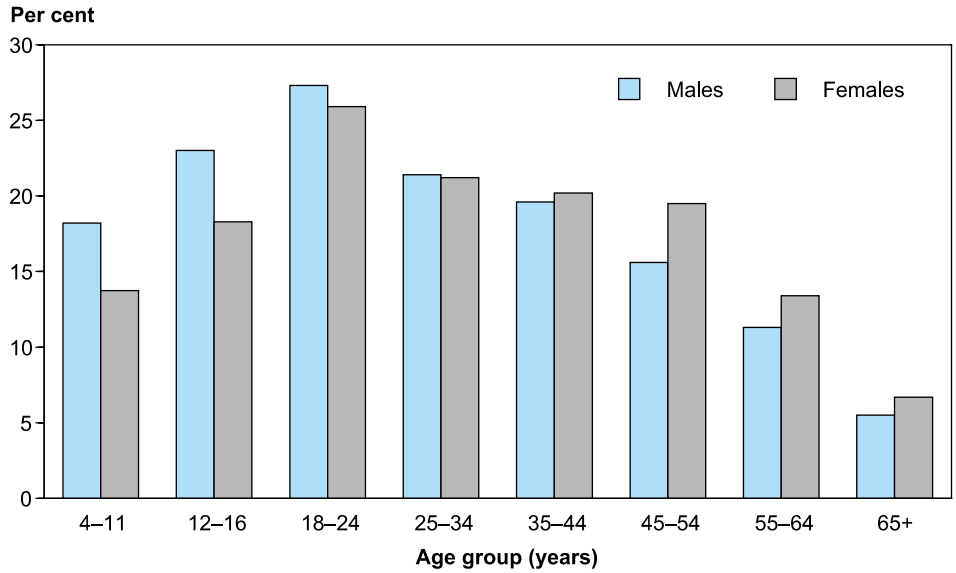
The second and third of these data sources include information on the entire range of young people—12–24 years. However, the first listed data source covers only adults, which limits the data on young people to those aged 18–24 years. Thus the obvious gap in data for this chapter is on the prevalence of mental health problems and disorders in young people aged 12–17 years. This gap will be reduced, at least somewhat, when results of the child and adolescent component of the National Survey of Mental Health and Wellbeing (conducted in 1998) are released.

The data sources used in this chapter do not all use the same version of the International Classification of Diseases. The National Survey of Mental Health and Wellbeing uses ICD-10, whereas the hospitalisation and mortality data are classified using ICD-9-CM and ICD-9 (respectively). This results in some differences in the terminology used. The glossary at the end of this report provides some descriptions of the disorders as described in the relevant versions of the classification.

Substance use is included in this chapter when it is considered to be a mental disorder. There is therefore overlap with Chapters 12 and 13, which includes information on all substance use, not just the subset associated with mental disorders.

Prevalence

This section presents information on the proportion of young people with mental health problems/disorders compared with other age groups.



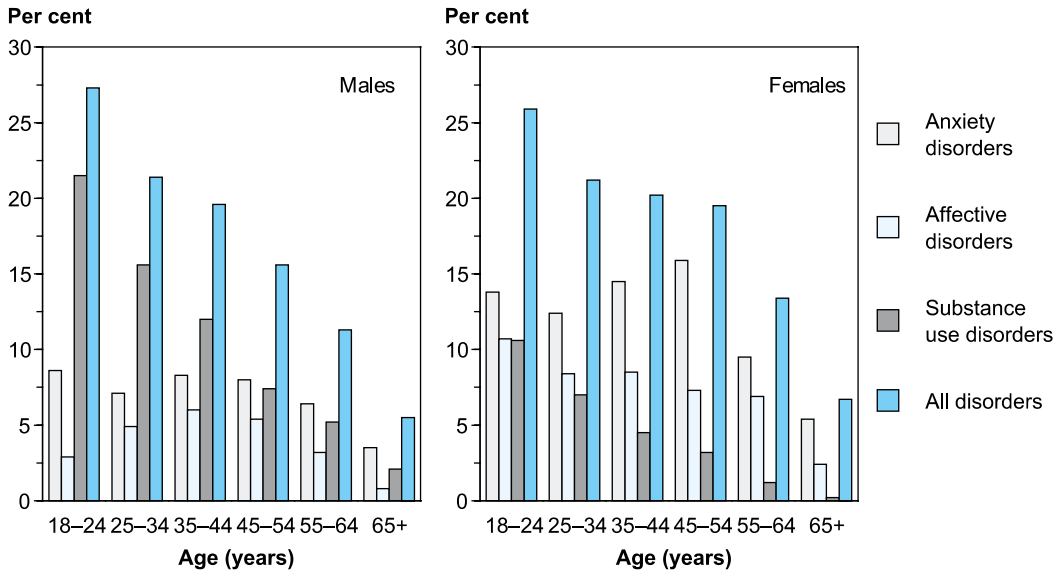
Note: Results for 4–16 year olds represents the proportion of children identified as having a 'mental health problem', while results for adults 18 years and over represents the proportion identified as having a 'mental health disorder'.

Sources: Ages 18+ years from 1997 National Survey of Mental Health and Wellbeing (ABS 1998); and ages 4–16 years from 1993 Western Australia Child Health Survey (unpublished data).

Figure 9.1: Prevalence of mental health problems/disorders by age group and sex, 1993 and 1997

- Results presented above for adults aged 18 and over:
  - relate to the whole of Australia
  - relate to 1997
  - represent the proportion of people with mental health 'disorders'.
- In contrast, results for children aged 4–16 years:
  - relate only to Western Australia
  - relate to 1993
  - represent the proportion of people with mental health 'problems'.

  Due to the different scope, timing and definitions used, care needs to be taken in comparing results for children and adults. However, the information for children has been included to give a broad indication of patterns in mental health problems over the life course.
- The results above show that just over 20% of young people aged 12–16 years were found to have a mental health problem (23% of males and 18% of females), and 27% of 18–24 year olds had a mental disorder (27% of males and 26% of females).
- The peak in the proportion of people with a mental health disorder occurred at 18–24 years for both males and females. The prevalence of disorders declined steadily over older ages, to 6% for people aged 65 year and over (excluding dementia).



Source: 1997 National Survey of Mental Health and Wellbeing: Adult component (ABS 1998).

Figure 9.2: Prevalence of mental disorders by type, 1997

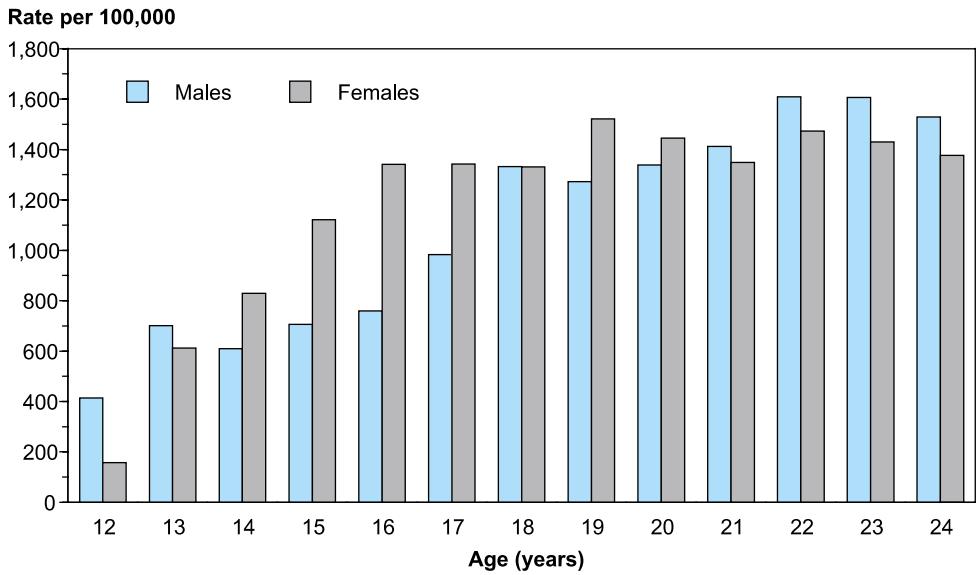
- For both males and females, the presence of disorders shows a declining rate between age 18–24 years and 65 years and over. For males, the prevalence declined from 27% to 6%, and for females the rate declined from 26% to 7%.
- However, patterns in the types of mental disorders differ by sex. For males, substance use disorders dominate the younger ages (22% of 18–24 year olds).
- For 18–24 year old females, there was a more even distribution of disorders, with nearly 14% having anxiety disorders, and approximately equal proportions having affective disorders (mood disturbances, including depression) or substance use disorders (11% for each).

Hospitalisation

Data for this section come from the AIHW National Hospital Morbidity Database. The scope of the database is all public and private hospitals including public psychiatric hospitals. The database includes information about each hospital episode. However, it is not possible to determine whether individuals have been hospitalised a number of times—from the data we can determine the number of *hospitalisations* for particular conditions, but not the number of *individuals* hospitalised for the condition. The source does not include information on outpatients, only on admitted patients. Further details on the database can be found in Appendix 3.

The ICD-9-CM codes used to identify hospitalisations of interest included codes for all conditions listed in the mental disorders chapter, except for the mental retardation codes. Therefore the codes included are '290' to '316'.

In 1997–98, there were close to 40,000 hospitalisations of young people aged between 12 and 24 years with a principal diagnosis of a mental disorder, and just over 60,000 hospitalisations with an additional diagnosis (a complication or comorbidity) of a mental disorder.



Source: AIHW National Hospital Morbidity Database.

Figure 9.3: Hospitalisations with a principal diagnosis of mental disorder, 12–24 year olds, 1997–98

- In 1997–98, hospitalisation rates for mental disorders increased steadily by age for those aged between 12 and 24 years. For 12 year olds, the hospitalisation rates were 410 per 100,000 for males, and 160 per 100,000 for females. For 24 year olds, the difference between the male and female rates was less (1,530 per 100,000 and 1,380 per 100,000 respectively).
- The female rate was substantially higher than the male rate over the ages 14 to 17 years. For females, the rate exceeded 1,000 per 100,000 for 15 year olds (and all older ages). For males, this rate was observed for 18 year olds and older. For ages 18 and over the male and female rates were closer.

Table 9.1: Mental disorder hospitalisations by diagnosis group[(a)], 12–24 year olds, 1997–98

	Per cent of mental disorder hospitalisations	
Main diagnosis groups	**Males**	**Females**
Organic psychotic conditions	6.6	3.4
Schizophrenic psychoses	28.1	10.2
Affective psychoses	14.5	18.5
Other psychoses	5.5	3.4
Neurotic disorders	5.7	10.0
Drug dependence	7.7	5.0
Non-dependent drug use disorder	6.6	4.3
Special symptoms or syndromes, nec	1.5	18.2
Adjustment reaction	6.9	9.5
Other neurotic, personality and non-psychotic disorders	17.1	17.6
Total	**100.0**	**100.0**

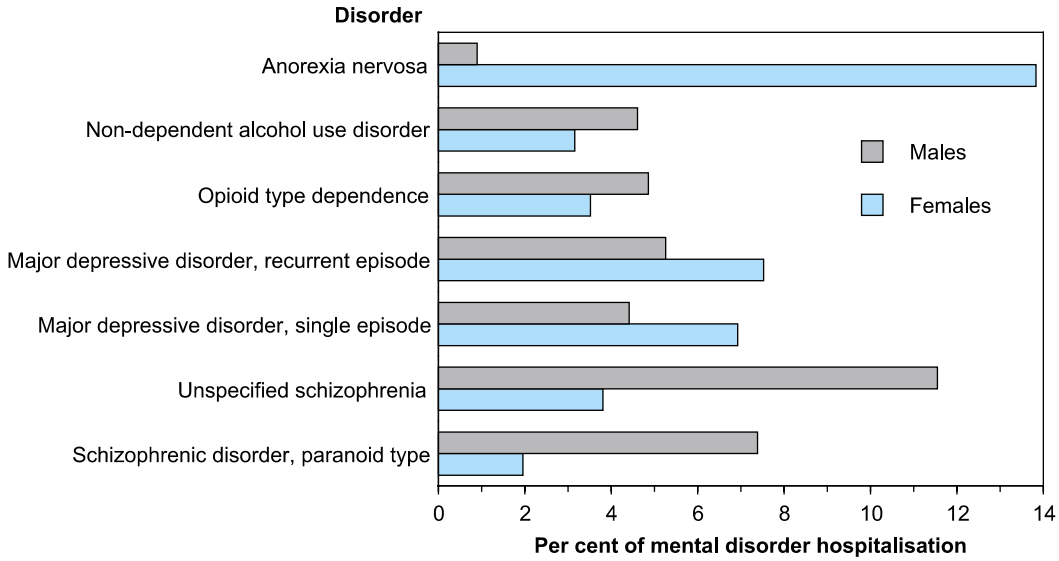
(a) Based on the principal diagnosis.

Notes

1. nec = not elsewhere classified.
2. Components may not add exactly to 100.0 due to rounding.

Source: AIHW National Hospital Morbidity Database.

- For males, the largest number of mental disorder hospitalisations were for schizophrenic psychoses (28%). Other large groups of hospitalisations included 'other neurotic, personality and non-psychotic disorders' (17%) and affective psychoses (15%).
- The pattern for females was markedly different. The largest proportion of mental disorder hospitalisations were for affective psychoses (19%), followed by 'special symptoms and syndromes' (18%). This second group was mostly made up of eating disorders. 'Other neurotic, personality and non-psychotic disorders' also accounted for a relatively large number of female hospitalisations for mental disorders (18%).



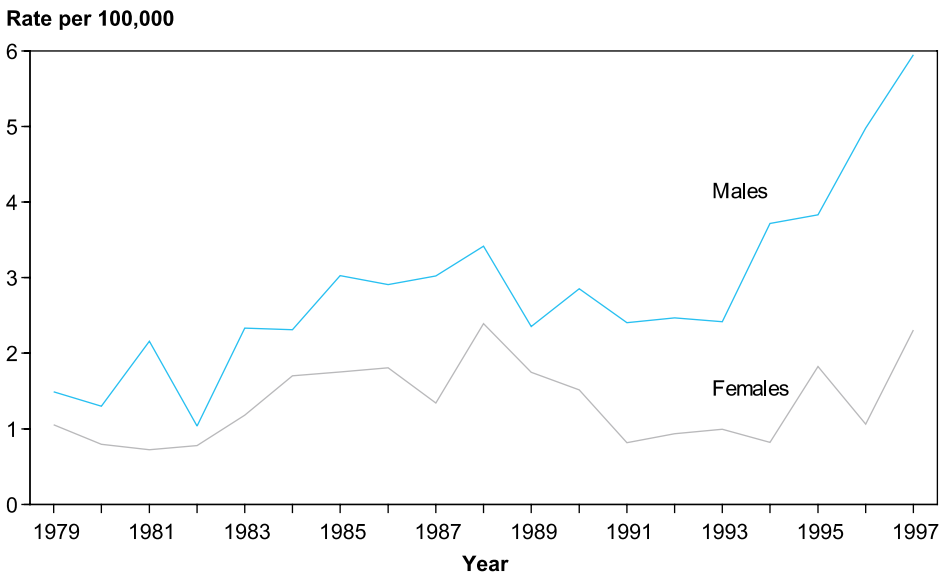
Source: AIHW National Hospital Morbidity Database.

Figure 9.4: Mental disorder hospitalisations by principal diagnosis subgroups, 12–24 year olds, 1997–98

- Figure 9.4 further breaks down the mental disorder hospitalisations to fine-level diagnoses. The disorders included in this figure are the most common and account for 39% of male mental disorder hospitalisations, and 41% of female mental disorder hospitalisations.
- For females, anorexia nervosa accounted for nearly 14% of mental disorder hospitalisations. Depressive disorders were also common reasons for hospitalisation among young women.
- For males, diagnoses related to schizophrenia accounted for the largest number of mental disorder hospitalisations. Drug and alcohol use disorders and depressive disorders also ranked highly.
- High proportions for particular diagnoses may reflect the disabling impact of the disorder and/or the chronic nature of the condition (and therefore the likelihood of repeat hospitalisations).

Deaths

For 12–24 year olds, nearly all deaths in the mental disorder section of the ICD-9 classification were classified as 'drug dependence' (95% of mental disorders deaths in 1997). Most of these are linked to opioid type dependence or opioids in combination with other drugs. More detail on drug-related mortality is presented in Chapter 12 of this report.



Source: AIHW Mortality Database.

Figure 9.5: Death rate from drug dependence disorders, 12–24 year olds, 1979–97

- The death rate from drug dependence disorders has increased over the period 1979 to 1997. The majority of this increase has occurred in the male death rate, particularly in the last 4 years.
- Over this period, the male death rate has remained higher than the female rate. In 1997, the male rate was 2.6 times higher than the female rate (5.9 per 100,000 compared with 2.3 per 100,000).
- The rates presented above are based on 144 deaths in 1997 for young people aged 12–24 years. There were many more deaths in other age groups—in 1997 there were almost 600 deaths from drug dependence across all ages, 266 of these in the age group 25–34 years.

Specific conditions

This section presents information on three mental disorders that are important for 12–24 year olds—depression, eating disorders and substance use disorders. These conditions increase greatly in frequency among this age group, each generally reaching their peak sometime between the ages of 15 and 25 (Leffert & Petersen 1995).

Depression

Episodes of depression vary both in severity and duration, ranging from mild to severe, and lasting from a matter of hours to many years. Depressed moods may last only a matter of hours, but depressive episodes (by definition) last for at least 2 weeks (NCCH 1998). Some people may experience only one episode of depression, whereas others may have recurrent episodes. Episodes may be relatively mild and self-limiting, and others will be more significant, having a large impact on the person's ability to undertake normal activities. This section concentrates on the more serious cases of depression—those that are serious enough to be determined to be a mental disorder[1].

The definition of depressive disorder used here comes from the ICD-10 (NCCH 1998). Under this definition, episodes of depression are characterised by a lowering of mood, reduction of energy, decrease in activity, and reduced capacity for enjoyment, interest and concentration. Sleep may also be disturbed. This classification includes two broad classes of depression: a depressive episode, and a recurrent depressive disorder (repeated episodes of depression).

The causes of depression are understood only to a limited degree, but it is likely that there are several potential environmental risk factors, and some unspecified genetic risk factors (Sullivan & Bulik 1997). Some of the potential environmental and social risk factors relevant to young people include poverty, unemployment, family/relationship conflict, parental mental illness, child abuse and exposure to adverse life events. Some of the protective factors include good interpersonal relationships, family cohesion, social connectedness, academic/sporting achievements, and effective coping skills (DHAC & AIHW 1999).

Severe depression is likely to have an adverse impact in a number of areas including decreased work productivity, days off work, educational failure, poor family/social functioning and a diminished sense of wellbeing (DHAC & AIHW 1999). There have also been links demonstrated between depression and suicide (Fombonne 1995a:571). Depression is the strongest single risk factor for attempted or completed suicides (Beautrais et al. 1996).

The incidence of depression increases during adolescence, and large differences in rates between males and females appear (Fombonne 1995a:568). Figure 6.9 (page 54) shows that depression was a common reason for young people to visit a general practitioner, particularly for young women.

1. A medically diagnosable disorder, resulting in significant impairment of cognitive, social or emotional abilities.

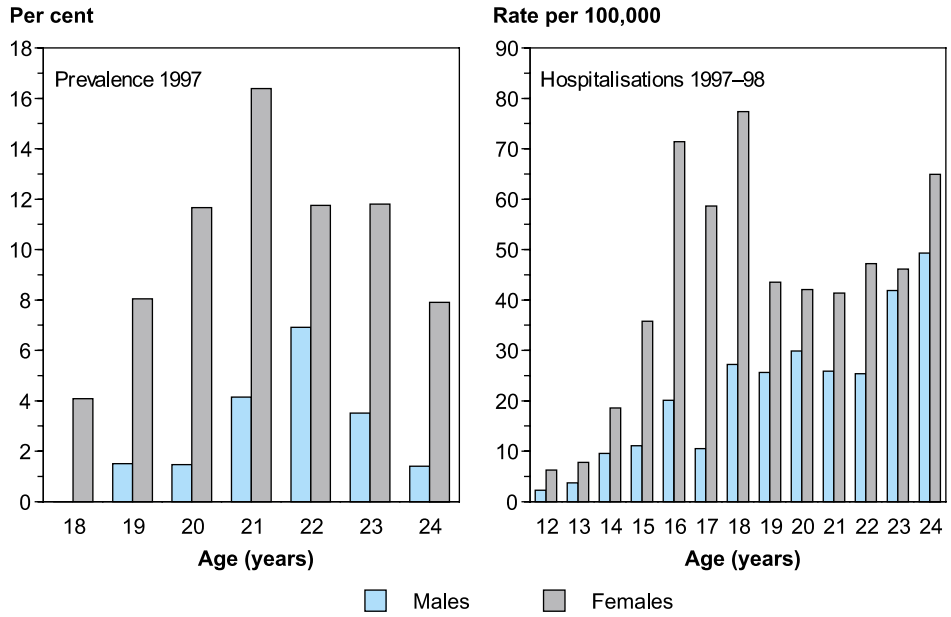
Table 9.2: Prevalence of depression by type, 18–24 year olds, 1997 (per cent)

	Males	Females
Depressive episode		
Mild	1.6	4.1
Moderate	1.0	3.6
Severe[(a)]	0.1	1.7
Total depressive episode	2.7	9.4
Recurrent depressive disorder		
Mild	0.0	0.8
Moderate	0.4	0.3
Severe[(a)]	0.0	0.8
Total recurrent depressive disorder	0.4	1.1
Total depressive disorder	**2.7**	**10.2**

(a) Without psychotic symptoms.

Source: AIHW, from ABS Survey of Mental Health and Wellbeing, 1997

- Over a 12-month period ending in 1997, 10% of females and 3% of males aged 18–24 years had a depressive disorder. The majority of these depressions were defined as a single depressive episode rather than recurrent.
- For both diagnoses of depression episode and recurrent depressive disorder, females aged 18–24 years had prevalence rates around 3 times higher than their male counterparts.
- The female rate for depressive disorders amongst 18–24 year olds (10%) is higher than the overall female rate of 7% (DHAC & AIHW 1999:10). However, the rate for young males of 3% was about the same as the overall male rate of 3%.



Source: AIHW, from ABS Survey of Mental Health and Wellbeing 1997, and AIHW National Hospital Morbidity Database.

Figure 9.6: Depression: prevalence (1997) and hospitalisations (1997–98) by age and sex, 12–24 year olds

- The prevalence of depression and hospitalisation rates for depression among females was higher than among males at all ages. This was particularly the case for hospitalisations in the mid to late teens, where the hospitalisation rate for females was between 3 and 6 times higher than the male rate.
- For females, the peak in the prevalence rate for depression was at age 21; just over 16% were classified as having depression in a 12-month period. However, the hospitalisation rate for females peaked at age 18.
- For males, the highest prevalence was at age 22, and the highest hospitalisation rate occurred at age 24 years.

Eating disorders

The severity and impact of unhealthy eating, including excessive dieting, range from mild to very severe, including death in extreme cases. However, only a small proportion of young people who diet develop an eating disorder (Wilhelm & Clarke 1998). This section presents information on the more severe cases—those with medically diagnosable eating disorders, which are a type of mental disorder.

The highest prevalence of eating disorders occurs among young females. There is believed to be a genetic predisposition for some types of eating disorders. Other risk factors include higher socioeconomic status, and possibly some other psychosocial and family characteristics (Fombonne 1995b:657–8).

The two main types of eating disorders covered in this section are anorexia nervosa and bulimia nervosa. In both of these disorders, the patient has an overconcern with body shape and weight. Anorexia nervosa is characterised by excessive weight loss that is deliberate and sustained by the patient. Bulimia nervosa has a pattern of deliberate bouts of overeating followed by vomiting or use of purgatives (NCCH 1998, Gilchrist et al. 1998, Hay et al. 1998).

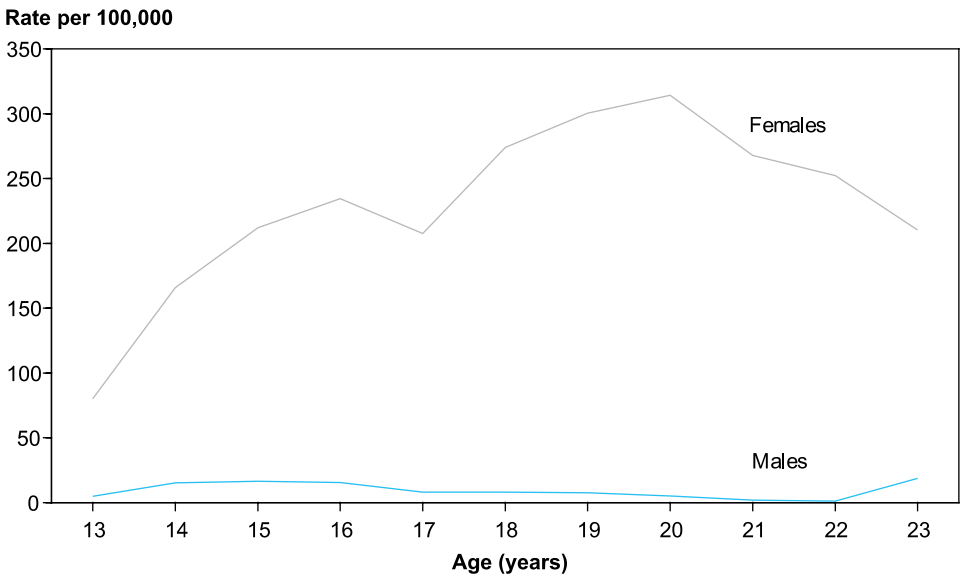
Over the 5 years 1992 to 1997, there were 8 deaths amongst 12–24 year olds due to eating disorders. All of these deaths were of young women. The prevalence of anorexia nervosa and bulimia nervosa in Australia has been estimated to be no more than 0.5% and 0.5–1% respectively (Gilchrist et al. 1998, Hay et al. 1998). More detail relating to hospitalisations for eating disorders is presented below.

Table 9.3: Hospitalisations for eating disorders by type, 12–24 year olds, 1997–98 (rate per 100,000)

	Males	Females
Anorexia nervosa	9.9	163.4
Bulimia	0.2	26.3
Other eating disorders	1.0	20.0
Total	**11.1**	**209.7**

Source: AIHW National Hospital Morbidity Database.

- In 1997–98, there were 210 per 100,000 hospitalisations for eating disorders among young females aged 12–24 years. The majority (78%) of these were for anorexia nervosa.
- The hospitalisation rate among young males was much lower, with 11 hospitalisations for every 100,000 males.



Note: The rates presented here are moving averages across 3-year age groups.

Source: AIHW National Hospital Morbidity Database.

Figure 9.7: Hospitalisations for eating disorders by age and sex, 1997–98

- For young females, the hospitalisation rate increased over the teen years and into the early twenties, peaking at age 20 with a rate of 314 per 100,000.
- The hospitalisation rate for eating disorders among young males remained low over the ages 12–24 years.

Substance use disorders

This section includes information about substance use disorders—mental disorders attributable to the use of one or more substances (excluding tobacco). The focus of this chapter is on the mental health component of substance use, whereas the focus of Chapter 12 on substance use mortality and morbidity is wider and not limited to specific mental disorders.

Substance use can have harmful effects on the mental health of individuals, their families and community, including substance dependence and other mental disorders. There is also a tendency for individuals to use substances to lessen the symptoms of other mental disorders (Chetwynd 1997, Silbereisen et al. 1995, Stewart 1997).

Over the 5 years 1992–1997, there were 507 deaths among 12–24 year olds from substance use disorders (382 males, 122 females). Further details on mortality related to substance use is presented earlier in this chapter and in Chapter 12.

Table 9.4: Substance use disorders: prevalence (1997) and hospitalisations (1997–98) by type, 18–24 year olds

	Prevalence 1997 (per cent)			Hospitalisations 1997–98 (rate per 100,000)	
ICD-10 subgroup	**Males**	**Females**	**ICD-9 subgroup**	**Males**	**Females**
Harmful use[(a)]			*Non-dependent drug use disorder*		
Alcohol	4.4	4.0	Alcohol	52.5	28.0
Opioids	0.0	0.0	Opioids	7.8	4.2
Cannabis	0.2	0.1	Cannabis	5.0	2.3
Total harmful use	*4.9*	*4.2*	*Total drug use disorder*	*84.4*	*47.7*
Dependence disorder			*Drug dependence*		
Alcohol	12.0	4.3	Alcohol	41.1	25.8
Opioids	0.1	0.3	Opioid	89.3	65.2
Cannabis	8.8	2.8	Cannabis	14.0	3.6
Total dependence disorder	*18.0*	*6.9*	*Total drug dependence*	*175.0*	*110.0*
Total substance use disorder[(b)]	**21.2**	**10.5**	**Total substance use disorder**	**259.5**	**157.7**

(a) As defined in ICD-10, and not as indicated by the NHMRC Guidelines for Responsible Drinking.

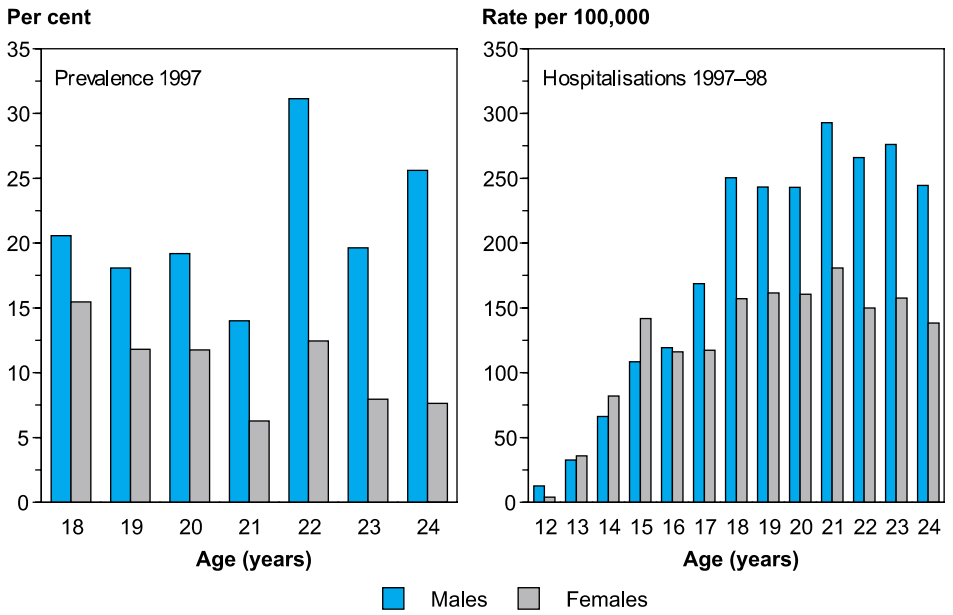
(b) Individuals can have more than one type of substance use disorder, therefore components may not sum to total.

Source: Prevalence estimates from AIHW, from ABS Survey of Mental Health and Wellbeing 1997, and hospitalisations data from AIHW National Hospital Morbidity Database.

- During a 12-month period ending in 1997, just over 1 in 5 males and 1 in 10 females aged 18–24 years were found to have a substance use disorder. A higher proportion of these individuals were categorised as having a dependence disorder, rather than categorised as 'harmful use', particularly for males.
- For both sexes, alcohol-related disorders were the most common. Around 4% of male and female 18–24 year olds were classified as having used alcohol to a harmful level. A similar proportion of young females was found to have an alcohol dependence disorder. However, among young males, 12% were found to have an alcohol dependence disorder.
- Nearly 9% of males aged 18–24 years were classified as having a cannabis dependence disorder.
- Hospitalisations for substance use disorders occurred at a higher rate among 18–24 year old males than 18–24 year old females. In total there were some 260 per

100,000 of these hospitalisations for males in 1997–98, and nearly 160 per 100,000 for young females.

- These hospitalisation rates are influenced by both the physical and mental health problems associated with substance use disorders. The physical harm associated with opioid use is potentially very serious and acute, including overdoses. In contrast, direct harmful effects from alcohol use are likely to be long-term (for example, liver damage).
- This is reflected in the hospitalisations for opioid dependence disorders. Although the prevalence of these disorders is substantially lower than that for alcohol dependence disorders, hospitalisations related to opioid dependence were 2–2.5 times higher than the corresponding alcohol-related hospitalisation for this age group in 1997–98.
- There were, however, relatively high hospitalisation rates for non-dependent alcohol use disorders (53 per 100,000 for males, 28 per 100,000 for females).



Source: AIHW, from ABS Survey of Mental Health and Wellbeing 1997 and AIHW National Hospital Morbidity Database.

Figure 9.8: Substance use disorders: prevalence (1997) and hospitalisations (1997–98) by age and sex, 12–24 year olds

- Age-specific patterns in substance use disorders are shown in Figure 9.8. The prevalence of substance use disorders among 18–24 year olds is quite variable for young males but appears to be highest in the early 20s, with just over 30% of 22 year olds having a substance use disorder. For females, the prevalence of substance use disorders appears to be highest among the younger end of this age group.
- For hospitalisations across the age range 12–24 years, highest rates occurred at the older ages (between 18 and 24 years).

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10 Suicide and self-inflicted injury

The causes of suicide are multifactorial but suicide is strongly associated with psychological distress and disorders, particularly depression (DHAC & AIHW 1999, Skegg 1997). It has also been noted that suicide is one of the main causes of death attributed to mental illness (AIHW & DHFS 1997). Deliberate self-harm not ending in death is often termed 'attempted suicide'. However, these individuals may not have intended to end their life, but only to harm themselves. Therefore, a better term for self-inflicted injury that is survived is 'parasuicide', because it does not imply intention (Skegg 1997). Even though intention is not recorded in cases of parasuicide, it has been shown that individuals who have had a hospital admission due to parasuicide are at higher risk of committing suicide at a later date (Nordentoft et al. 1993).

This chapter presents results on both suicides and parasuicides. The section on parasuicides includes data on the proportion of the population who report that they have attempted suicide, and hospitalisations for self-inflicted injury.

Suicide

Information below comes from the AIHW Mortality Database, which includes a cause of death code that can be used to determine the number of deaths due to suicide. Suicides recorded in the national data are likely to be underestimates of the true level of suicide in the community (Ruzicka & Choi 1999; Ministry of Health 1998), but the extent of this underestimation is believed to be small. This is due mainly to the possible difficulty in determining whether the death was intentional or unintentional. It has also been suggested that there may be pressures (social, financial or religious) in some cases not to record the death as a suicide.

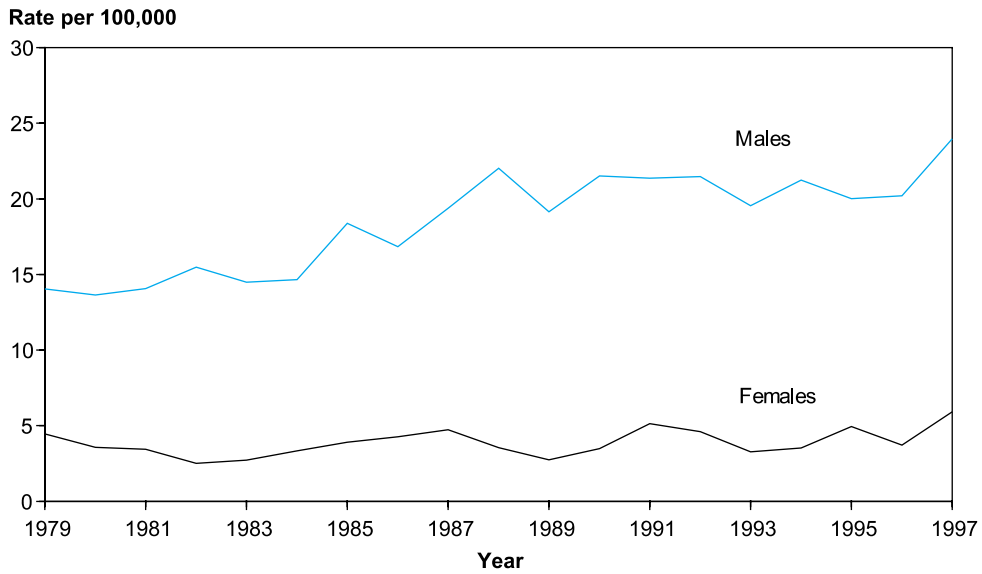
In comparison to other Western countries, the reported Australian youth suicide rate for males is relatively high, ranking fifth behind Finland, New Zealand, Switzerland and Austria (Ruzicka & Choi 1999). The Australian female rate for youth suicide is well down the ranking compared with other Western countries, ranking eleventh. Methods of recording suicide deaths may account for some of these differences.

Youth suicide rates in Australia, particularly for males, have increased substantially over the last three decades (Cantor et al. 1999). Many other Western countries have also experienced rising youth suicide rates in recent years. There have been a number of suggested reasons for the increase, which also may apply in Australia. These include an increasing prevalence of depression in recent generations of young people, increased use of alcohol and other drugs, a possible increase in family conflict, a decrease in family and social support, and a changing society as a whole (Skegg 1997).

Over time

In 1997, 523 people aged between 12 and 24 years committed suicide (423 males and 100 females). Over the period 1979 to 1997, a total of 7,463 young people were recorded as committing suicide—an average of 393 per year.

Suicide rates for young people were lower than those for all ages for most of this century. However, since approximately the mid to late 1970s, the suicide rate for young males has climbed above the rate for all males (Harrison et al. 1997). The increase in the male rate has been steady from around 1950, with some plateauing-off in recent years.

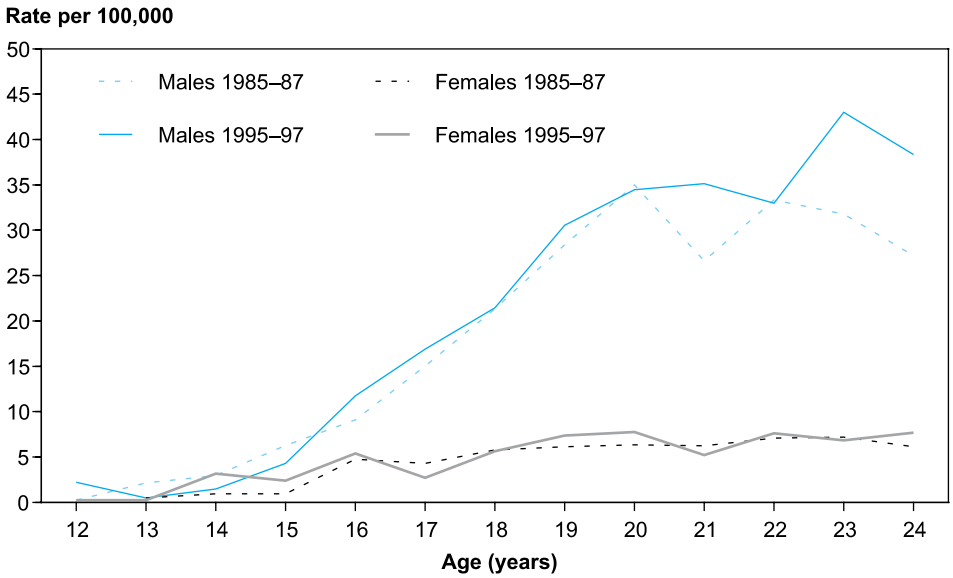


Source: AIHW Mortality Database.

Figure 10.1: Death rate from suicide and self-inflicted injury, 12–24 year olds, 1979 to 1997

- The suicide rate for young people aged 12–24 years increased over the period 1979 to 1997. For males, the rate increased by 71%, from 14 per 100,000 to 24 per 100,000. The female rate has increased from 4.5 per 100,000 in 1979 to 5.9 per 100,000 in 1997. However, this increase in the female rate has been shown to be not statistically significant (Cantor et al. 1999).
- Over the period 1979 to 1997, the male suicide rate for this age group was substantially higher than the female rate. The male rate ranged between 3.2 and 7.0 times higher (in 1979 and 1989 respectively) than the female rate.

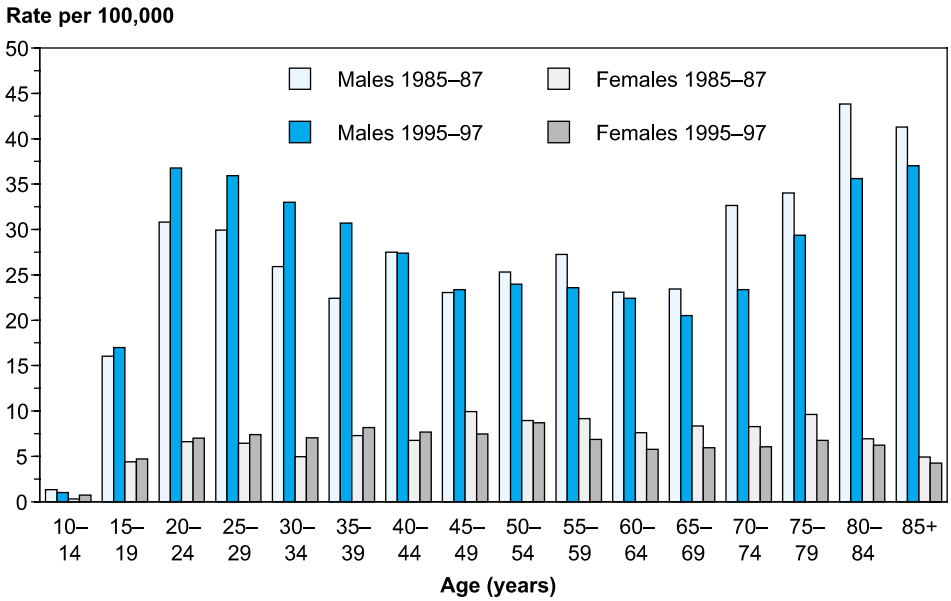
Age specific rates



Source: AIHW Mortality Database.

Figure 10.2: Death rates from suicide and self-inflicted injury by sex and age, 12–24 year olds, 1985–87 and 1995–97

- In recent years (1995–97) the differences between the male and female suicide rates around ages 12–15 was not large. However, from about 15 years of age the difference between the male and female rate increased substantially across age groups. For the older ages (23–24 years), the male rate was between 5 and 6 times the female rate.
- Between 1985–87 and 1995–97, the overall suicide rate for 12–24 year old males increased by 18%. Figure 10.2 shows that the majority of this increase occurred in the age group 20–24 years, from around 31 per 100,000 to nearly 37 per 100,000.
- Over the same 10-year period, the female rate increased by 14%, with this increase distributed unevenly across the whole age range 12–24 years.



Source: AIHW Mortality Database.

Figure 10.3: Death rates from suicide and self-inflicted injury by sex and ages 10–85+, 1985–87 and 1995–97

- Figure 10.3 extends the information presented in Figure 10.2 to cover all ages.
- For males, the suicide rate for the period 1985–87 was highest in the older ages (over 70 years of age). Also, the suicide rates for young men aged in their late teens and early twenties were only slightly higher than those for some other ages (early to mid forties and late fifties).
- In contrast, for the period 1995–97, the highest male suicide rates occurred at two ages: 20–24 years and 85+ years. This change in the peak rates occurred due to increases in suicide rates in the younger ages, and decreases in the rate at older ages over the 10-year period.
- As well as having a higher suicide rate compared with older males, the number of cases of suicide occurring among younger males is very much larger than for other age groups. In 1995–97, 19% of all male suicides registered were for males aged 12–24 years. Another 25% of male suicide cases occurred in the age range 25–34 years. Only 3% occurred in men aged 80 years or over.
- The increase in the suicide rate between 1985–87 and 1995–97 at younger ages extends from the late teens to the late thirties.
- The changes in the female rate between 1985–87 and 1995–97 were less dramatic than those observed for the male rate. However, there was still a decrease in the suicide rate in the older age groups, and some increase at younger ages (particularly for women aged in their late twenties and thirties).

Methods of suicide

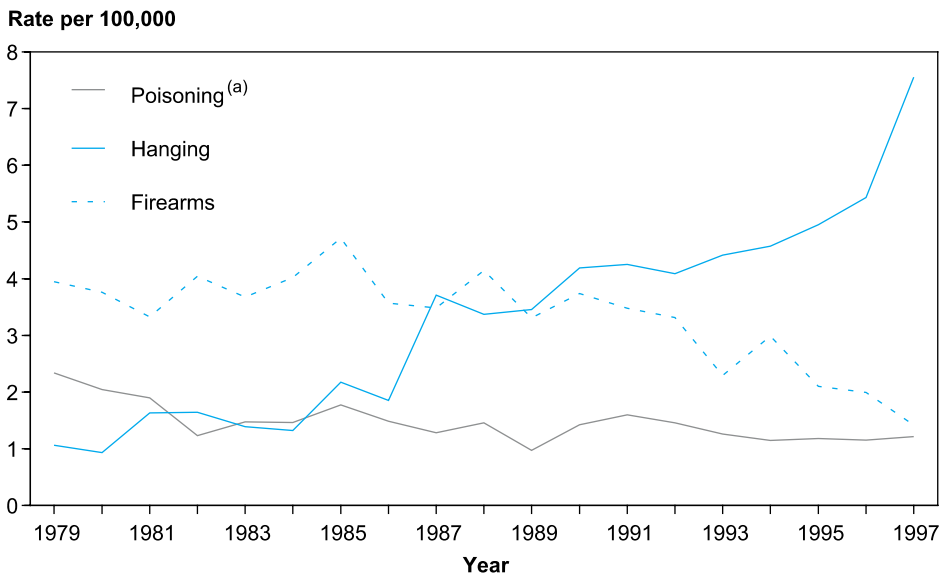
This section outlines the trends in the method used for suicide amongst young people, including trends over time. Gaps remain in the understanding of environmental risk factors for suicide, outlined in a recent report by the National Injury Prevention Advisory Council (NIPAC 1999).

Table 10.1: Methods of suicide, 12–24 year olds, 1997 (per cent)

	Males	Females
Poisoning by solids/liquids	5	20
Gases and vapours	16	14
Hanging	51	47
Drowning	1	2
Firearms	11	3
Cutting/piercing	1	3
Jumping from height	6	6
Other/unspecified	9	5
Total	**100**	**100**

Source: AIHW Mortality Database.

- In 1997, around half of all suicides in the age range 12–24 years were from hanging (51% of male suicides, and 47% of female suicides).
- For males, the next most common method of suicide was from gases/vapours (16%) followed by firearm-caused deaths (11%).
- For females, poisoning was the second most common method of suicide (20%), followed by deaths from gases/vapours (14%).



(a) By solids or liquids.

Source: AIHW Mortality Database.

Figure 10.4: Method of suicide, 12–24 year olds, 1979 to 1997

- The method of suicide for 12–24 year olds has changed dramatically over the period 1979 to 1997.
- Over this period, the suicide rate from firearms has decreased by 64%, from 3.9 per 100,000 to 1.4 per 100,000.
- However, over the same period, the suicide rate from hanging has increased substantially (by more than 6 times), from 1.1 per 100,000 to 7.6 per 100,000.
- The death rate from poisoning has remained relatively constant over this period.

Parasuicide

This section includes information on episodes of deliberate self-harm that are survived at least until hospital admission. As outlined in the introduction to this chapter, the individuals involved in these instances of self-harm may or may not have intended to end their life when deliberately injuring themselves.

Some estimates are available on the reported incidence of parasuicide, presented in the next section. More detail is available on hospitalisations for self-inflicted injury, results of which are also given below.

Reported incidence

Estimates are available from different sources on the incidence of parasuicide in young people. Two sets of results are given below (12–16 year olds, followed by 18–24 year olds). However, the results of these two sources are not directly comparable, due to differences in methodology as outlined under Figure 9.1 in Chapter 9.

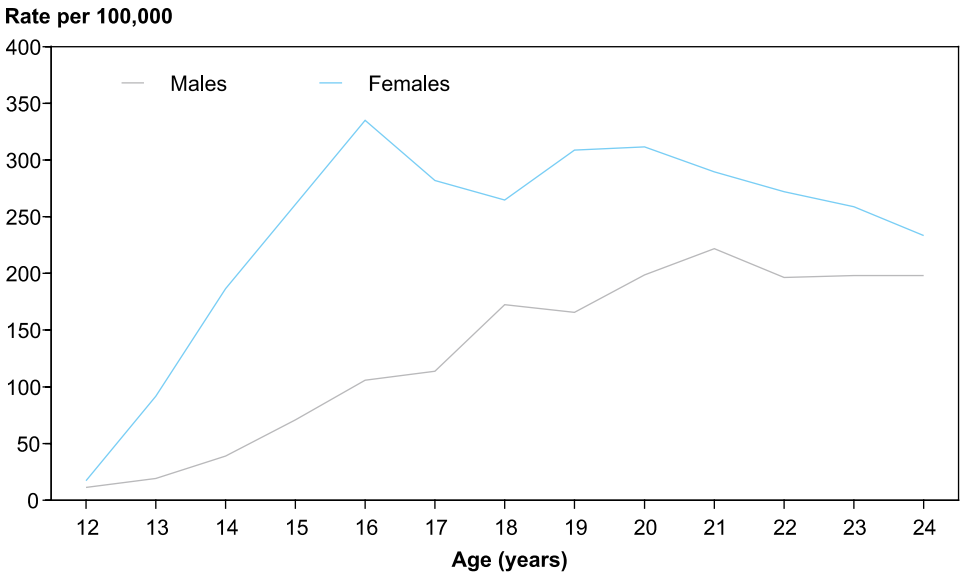
In Western Australia, 8% of 12–16 year olds reported deliberate self-harm in the 6 months prior to the Western Australian Child Health Survey conducted in 1993 (Zubrick et al. 1995). The rates were very similar for boys and girls (7% of males and 8% of females).

For the older age group (18–24 years), just under 3% of both males and females in 1997 reported that they had attempted suicide in the past (AIHW, from ABS Survey of Mental Health and Wellbeing, 1997).

Hospitalisations

Hospital morbidity data (AIHW National Hospital Morbidity Database) can be used as a source of the number of hospitalisations resulting from self-inflicted injury (using ICD-9-CM 'external cause' codes). There were nearly 6,400 hospitalisations of 12–24 year olds for self-inflicted injury in 1997–98.

As with all hospitalisation data included in this report, the results indicate the number of episodes of hospital care, not the number of individuals hospitalised. Therefore, if an individual is hospitalised more than once for an injury, they will be counted on each occasion.



Source: AIHW National Hospital Morbidity Database.

Figure 10.5: Hospitalisations for parasuicide, 12–24 year olds, 1997–98

- Over the age range 12–24 years, females had higher hospitalisation rates for self-inflicted injuries than males in 1997–98. Similar patterns have been observed over a number of years (AIHW National Hospital Morbidity Database).
- For females, the highest hospitalisation rate in 1997–98 was for 16 year olds (335 per 100,000). Hospitalisation rates for older females were relatively constant.
- For males, the rate peaked at 21 years (222 per 100,000), following a steady increase over the younger ages.
- The hospitalisation rates for males and females were almost identical at age 12. The rate then diverged until the mid to late teens, before converging again. At age 16, the female rate was three times higher than the male rate. The rates began to converge from age 20.

As shown in Figure 10.2, the male suicide rate is considerably higher than the female rate. However, as shown in Figure 10.5, the hospitalisation rate for self-inflicted injury is higher for females than for males. Harrison et al. (1997) suggest that reflects the greater use among males (shown in Table 10.1 and Table 10.2) of more lethal methods of suicide. The method of parasuicide most used by young women is poisoning, in many cases of which death can be avoided if medical treatment is received quickly. In contrast, young males tend to choose methods that are more likely to be immediately lethal (such as use of firearms or hanging).

Table 10.2: Cause of self-inflicted hospitalised injuries, 12–24 year olds, 1997–98 (per cent)

External cause	Males	Females
Poisoning with solids/liquids	69	87
Gases and vapours	2	1
Hanging	5	1
Drowning	0	0
Firearms	1	0
Cutting/piercing	15	10
Jumping from height	2	0
Other/unspecified	5	1
Total	**100**	**100**

Source: AIHW National Hospital Morbidity Database.

- The majority of hospitalisations for self-inflicted injuries for 12–24 year olds in 1997–98 was for overdoses with solid/liquid poisons (69% of male hospitalisations and 87% of female hospitalisations).
- Cutting/piercing injuries were the next most common (15% of male hospitalisations, 10% of female hospitalisations).

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11 Reproductive and sexual health issues

Reproductive health issues are particularly prominent in the youth population in comparison to other age groups, in part because this is the life stage when most people become sexually active and some have children. This chapter covers two main issues: pregnancy and sexually transmissible diseases. Issues concerned with sexual behaviour, such as sexual activity and contraceptive use, are discussed in Chapter 18.

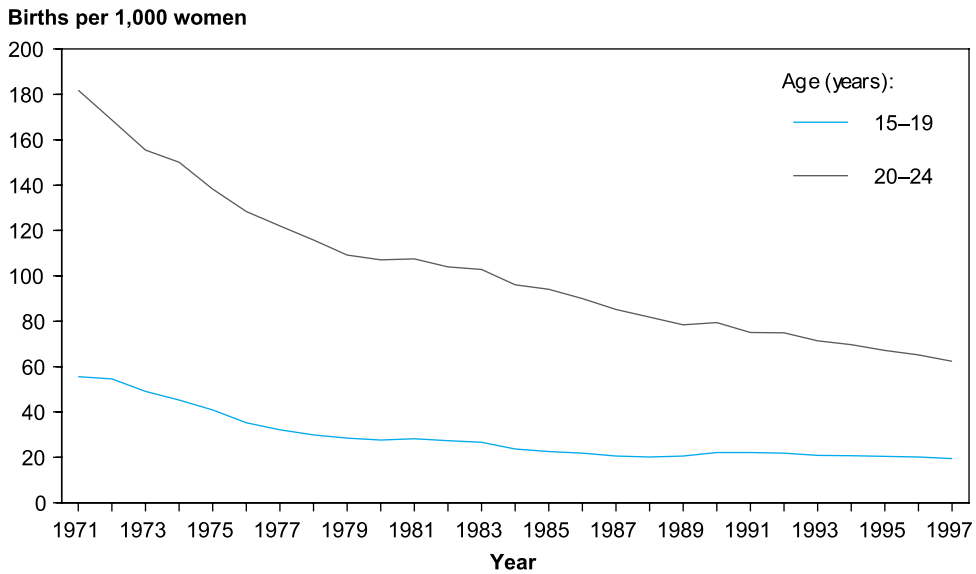
Pregnancy

Pregnancy and its outcomes are major concerns for women of reproductive age. The Australian Bureau of Statistics (1998a:10–12) estimates that, among the 4.8 million women of reproductive age (15–49 years) in 1997, approximately 500,000 conceptions occurred, with three possible outcomes: miscarriage (150,000 estimated cases); 'viable' (after 20 weeks gestation) pregnancy (250,000) and abortion (95,000). Of the 250,000 viable pregnancies, 248,246 resulted in a live birth (244,689 single births and 3,557 multiple births), and 1,800 pregnancies ended in a stillbirth. This section examines the data on each of these possible outcomes for women in the youth population.

Fertility

Information on the fertility of Australian women—their number of live births—is published annually by the ABS, from birth registrations data. In 1997, there were just under 252,000 registered live births in Australia, of which 5% were to teenage women and 9% were to women aged 20–24 years, a total of 35,754 births (ABS 1998a:28). Fertility in Australia has been declining since the 'baby boom' after World War II, which peaked in 1961. Teenage fertility, however, continued to increase until 1971. The subsequent decline in teenage fertility has been attributed partly to the reinterpretation of abortion laws and a greater willingness of medical practitioners to prescribe contraceptives (particularly the contraceptive pill) to unmarried women (ABS 1998a:19, ABS 1998b:30).

A common measure of fertility by age of the mothers is the age-specific birth rate, expressed as the number of births per 1,000 women. These rates for women aged 15–19 and 20–24 years, from 1971 to 1997, are shown in Figure 11.1.



Sources: ABS 1977, 1982, 1984, 1989, 1994, 1998a.

Figure 11.1: Birth rates for women aged 15–19 and 20–24 years, 1971 to 1997

- The birth rate for women aged 20–24 years decreased nearly 70% over this period, from 182 to 62 births per 1,000 women.

- For teenage women, the birth rate decreased from 55 per 1,000 in 1971 to 20 in 1988 (a decline of 55%), and has been stable at that level since then.
- In addition to improved methods of and greater access to contraception and abortion, a number of social and economic factors are responsible for the decline in fertility, including the rising cost of raising children and women's educational and career aspirations (ABS 1998a:20).

Stillbirths

A possible outcome of a 'viable' pregnancy (after 20 weeks gestation) is the birth of a dead child. The likelihood of having a stillbirth or 'foetal death' is greater for older (40+ years) and younger (below age 20) women. As noted above, in 1997 there were a total of 1,800 stillbirths, 0.7% of all viable pregnancies.

The AIHW National Perinatal Statistics Unit (NPSU) publishes detailed statistics on 'foetal deaths' (foetuses of at least 20 weeks gestation or 400 g birthweight), the most recent being for 1996. These data indicate that 145 of the 1,818 foetal deaths in that year were to women aged less than 20 years, and 366 to women aged 20–24 years. These figures translate to foetal death rates (foetal deaths per 1,000 live births) of 10.8 and 7.9 respectively, compared with the rate of 7.1 for all maternal ages (Day et al. 1999: 110).

Pregnancy complications

Another outcome of pregnancy is miscarriage or spontaneous abortion. Based on an estimate of 30% of all conceptions ending in this way, the ABS believes there are 150,000 miscarriages annually in Australia. Accurate information on this outcome is very difficult to collect, as miscarriages very early in pregnancy may not even be noticed by the woman. One indicator of miscarriages, and one which is available by the age of the woman, is the number of hospitalisations for spontaneous abortions (Table 11.1).

Table 11.1: Hospitalisations[(a)] for spontaneous abortion by age of woman, 1997–98

Age (years)	Number	Rate per 100,000 women	Rate per 1,000 births
12	—	—	—
13	2	2	179[(b)]
14	15	12	
15	62	48	
16	164	129	155
17	265	210	119
18	334	266	94
19	411	325	82
20	476	371	80
21	553	424	82
22	534	400	65
23	648	475	67
24	733	523	64
12–24	**4,197**	**248**	**77**

(a) By principal diagnosis.

(b) For ages 13–15.

Source: AIHW National Hospital Morbidity Database.

- In 1997–98, there were just under 4,200 hospitalisations of women aged 12–24 years with a principal diagnosis of spontaneous abortion. This was 248 hospitalisations per 100,000 women in that age group.
- The rate per 100,000 women increased with age, as would be expected, with women aged 20 and over being more likely to experience pregnancy and thus at greater risk of spontaneous abortion.
- A more appropriate rate may be hospitalisations per 1,000 live births. This rate was much higher for the youngest cohorts—179 per 1,000 births for women aged 13–15 years, 155 for women aged 16 years, and 119 for women aged 17 years. For women aged 22 and older, this rate was around 65 per 1,000 births.

Abortions

Induced abortion, or 'elective pregnancy termination', is another outcome of pregnancy. This outcome may be considered to be in part an indicator of lack of access to, or knowledge of, reproductive health facilities that would enable women to better control their fertility and avoid unwanted pregnancy. Complete national information on induced abortions is not available, however, because only South Australia and the Northern Territory collect such data. In South Australia in 1996, there were 5,535 induced abortions and 18,784 confinements for all ages. Therefore, about 30% of all pregnancies (excluding miscarriages) ended in abortion. The proportion among teenagers was 51% (AIHW 1998:52).

Duration of pregnancy

The duration of a woman's pregnancy, when the outcome is a live birth, is a major determinant of the subsequent health of the child, but may also be used as an indicator of the health status of the mother. The normal gestation period is from 37 to 41 weeks, and durations of less than 37 weeks may indicate poor health in the mother. Data on duration of pregnancy is published by the NPSU, the latest being for 1996 (Table 11.2).

Table 11.2: Duration of pregnancy by maternal age, all confinements, 1996 (per cent)

	Maternal age (years)		
Duration (weeks)	**Less than 20**	**20–24**	**All ages**
Less than 32	2.1	1.5	1.4
32–36	6.6	5.3	5.3
37–41	88.8	90.6	91.0
42 and over	2.5	2.7	2.3
Total	**100.0**	**100.0**	**100.0**
Number of confinements	*13,373*	*45,863*	*253,413*

Note: These data include live births and stillbirths.

Source: Day et al. 1999:66.

- For 91% of all mothers, the duration of pregnancy was within the 'normal' range, 37 to 41 weeks. The figure for women aged 20–24 years was also 91%, but for teenage mothers it was lower, 89%.
- Nearly 9% of teenage mothers had pregnancies lasting less than 37 weeks, compared with 7% of all mothers.

Birthweight

Birthweight and duration of pregnancy are positively correlated, with a longer duration of pregnancy resulting in higher birthweight. Low birthweight is a risk factor for poorer health for the infant, and, as with duration of pregnancy, also indicates poor health in the mother.

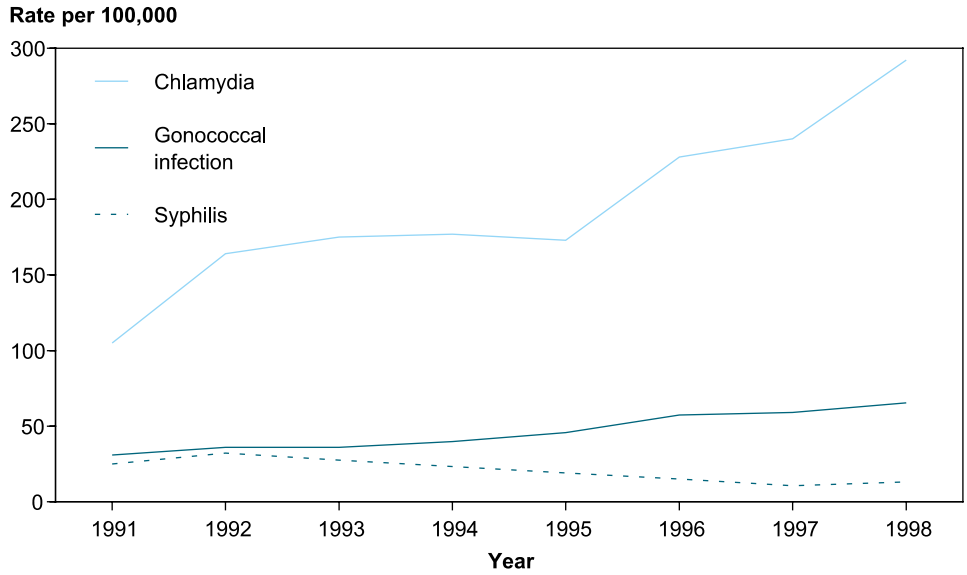
The NPSU data on birthweight by age of mother for 1996 (Day et al. 1999: 90) indicate that teenage mothers were more likely to have lower birthweight babies: 9% of the births to teenage mothers and 7% of those to mothers aged 20–24 years weighed less than 2,500 g, and thus were classified as 'low' birthweight. For all births, the figure was 6%.

Sexually-transmissible diseases

Another issue regarding the sexual health of the youth population is their exposure to communicable diseases which may be contracted through sexual activity. Of the main sexually transmissible diseases, gonococcal infection, syphilis, and chlamydial infection are transmitted solely or mainly through sexual contact, whereas HIV/AIDS and hepatitis B and C may also be transmitted by other means, such as blood or saliva; hepatitis A is mainly transmitted through food contamination, but may also be spread through sexual contact.

Notifications

As discussed in Chapter 6, many communicable diseases are notifiable on a national basis, which means that any diagnosis of the disease must be reported to the relevant State/Territory health authorities. These reports are compiled by the Commonwealth Department of Health and Aged Care, so that national incidence levels for specific age and sex groups, such as the youth population, are available. The trends in the annual number of notifications for those diseases transmitted mainly through sexual contact—chlamydia, gonococcal infection and syphilis—for the youth population from 1991 to 1998 are shown in Figure 11.2. The incidence of the other diseases that are transmitted in part (but not exclusively) through sexual contact is covered in the discussion of morbidity in Chapter 6.



Note: The rates for chlamyidia have been calculated using the population aged 12–24 years in all States and Territories except New South Wales.

Source: National Centre for Disease Control (unpublished data).

Figure 11.2: Incidence of chlamydia, gonococcal infection and syphilis notifications, youth population (ages 12–24 years), 1991 to 1998

- Chlamydia is one of the more common communicable diseases in Australia, although it is not notifiable in New South Wales (O'Brien et al. 1999:13). Therefore the rates used here are based on the youth population in the rest of Australia.
- The incidence of chlamydia has been increasing over time for the total population and especially for the youth population since 1995. This increase may be related to increased rates of testing and notification, rather than to actual increases in the prevalence. In 1998, nearly 60% of all cases reported were among the youth population, with a rate of 292 per 100,000 (compared with 173 in 1995 and 105 in 1991).
- Notifications of chlamydia were 2.4 times greater for females than for males among the youth population in 1998 (compared with 1.6 times for the total population).
- Notifications of gonococcal infection among the youth population have also increased in this period, although less dramatically than for chlamydia. From 1991 to 1998, the rate for the youth population doubled, from 31 to 65 per 100,000.
- A high proportion, 42%, of all notifications of gonococcal infection were among the youth population.
- In the total population, notifications of gonococcal infection were 1.9 times greater for males than for females in 1998. In the youth population there was little difference between males and females.
- In contrast, notifications for syphilis among the youth population declined from 32 per 100,000 in 1992 to 11 in 1997. During this period, the proportion of youth among all notifications declined from 42% to 28%.
- For the whole population, notifications for syphilis were 1.1 times greater among males than females in 1998. Among the youth population, however, notifications were 1.3 times greater for females than males.

Knowledge

Some information on the knowledge young people have about sexually transmissible diseases (STDs) is available from a nationally representative sample survey of 3,550 Year 10 and Year 12 students in 1997 by the Australian Research Centre in Sex, Health and Society at La Trobe University. Similar information was collected in a 1992 survey of 1,741 students in Year 10 and Year 12 conducted by the National Centre in HIV Social Research, allowing for comparability on some data items over time.

A question in the 1997 survey asked the students to identify from a list of various diseases the ones which could be sexually transmitted, and the responses are compiled here in Table 11.3.

Table 11.3: Students' correct identification of whether a disease is sexually transmitted, 1997 (per cent)

	Year 10		Year 12	
Disease (correct answer)	**Males**	**Females**	**Males**	**Females**
Gonorrhoea (yes)	44.2	47.5	69.5	69.5
Glandular fever (no)	62.1	72.5	72.8	83.2
Genital herpes (yes)	77.0	87.0	93.7	95.3
Flu (no)	81.8	87.2	87.1	93.5
Venereal disease (yes)	35.9	34.3	54.9	52.6
Measles (no)	77.9	82.9	83.2	91.4
Syphilis (yes)	40.1	39.4	69.8	69.0
Chicken pox (no)	81.3	84.3	85.4	93.3
HIV/AIDS (yes)	98.2	99.2	99.6	99.3
Chlamydia (yes)	30.6	37.3	53.7	66.1
Mumps (no)	69.1	75.6	81.3	87.9
Tuberculosis (no)	36.8	37.9	56.7	62.2
Genital warts (yes)	70.7	84.8	88.4	93.2
Impetigo (no)	45.1	53.2	45.1	56.7
Pelvic inflammatory disease (yes)	41.5	46.7	38.2	49.9

Source: Lindsay et al. 1997:20.

The report on the survey made the following comments on these results (Lindsay et al. 1997:17–19):

- Nearly all students were aware that HIV/AIDS could be transmitted sexually, but knowledge about other STDs was poorer than knowledge about HIV/AIDS.
- Year 12 students, as expected, had better knowledge about STDs than did Year 10 students.
- Female students had better knowledge than males on most diseases.
- The proportion of students correctly identifying chlamydia (one of the most common STDs) and pelvic inflammatory disease was quite low.
- Over two-thirds of the Year 12 students, but fewer than half of the Year 10 students, knew that gonorrhoea and syphilis are STDs. Recognition of the term 'venereal disease' was low.
- Most students correctly indicated that common illnesses such as flu, measles, chicken pox and mumps are not transmitted sexually. However, recognition was lower with glandular fever, tuberculosis and impetigo.

Perceptions

The surveys in 1992 and 1997 measured students' perceptions of their exposure to the risk of these diseases by asking if they believed they might become infected with such a disease (Table 11.4).

Table 11.4: Students believing they were likely or very likely to become infected with HIV or to get an STD or hepatitis, 1992 and 1997 (per cent)

	Year 10		Year 12	
Sex	**1992**	**1997**	**1992**	**1997**
To become infected with HIV				
Males	8.1	3.9	4.7	4.7
Females	11.7	7.7	9.5	6.9
To get an STD				
Males	11.5	10.0	11.4	8.9
Females	15.3	11.4	14.9	14.1
To get any form of hepatitis				
Males	n.a.	10.8	n.a.	9.9
Females	n.a.	12.2	n.a.	15.5

Source: Lindsay et al. 1997:42–6; question on hepatitis not asked in 1992.

- Not many students see themselves as being at risk of HIV infection; about 4% of males and 7% of females in the 1997 survey expressed this concern. Some of the more common reasons given by students for this were that they did not inject drugs, or at least did not share needles, and that they had not had sexual relations, or at least used condoms (Lindsay et al. 1997:43).
- The proportions who believed they were likely or very likely to get an STD or hepatitis were slightly higher, but still less than 16%.
- Students who engaged in risk-taking behaviour, such as injecting drugs, were more likely to see themselves at risk of contracting one of these diseases (Lindsay et al. 1997:44).

Health status

The health status of students concerning STDs was examined in the surveys in a variety of ways, including asking students if they have had an HIV antibody test, been diagnosed with an STD, and been diagnosed with hepatitis (Table 11.5).

Table 11.5: Students who have had an HIV antibody test, been diagnosed with and STD, and been diagnosed with hepatitis, 1992 and 1997 (per cent)

	Year 10		Year 12	
Sex	**1992**	**1997**	**1992**	**1997**
Had an HIV antibody test				
Males	2.2	3.0	5.5	5.1
Females	1.9	2.5	3.2	5.8
Been diagnosed with an STD				
Males	n.a.	1.3	n.a.	2.4
Females	n.a.	0.8	n.a.	2.2
Been diagnosed with hepatitis				
Males				
Hepatitis A	n.a.	1.1	n.a.	0.8
Hepatitis B	n.a.	1.2	n.a.	0.6
Hepatitis C	n.a.	0.5	n.a.	0.3
Not sure which type	n.a.	0.9	n.a.	0.4
Females				
Hepatitis A	n.a.	0.1	n.a.	0.1
Hepatitis B	n.a.	0.5	n.a.	0.4
Hepatitis C	n.a.	0.3	n.a.	0.1
Not sure which type	n.a.	0.9	n.a.	0.9

Note: For sample sizes see Table 11.3; sample sizes may vary slightly due to exclusion of non-responses.

Source: Lindsay et al. 1997:50, 51; questions on STD and hepatitis not asked in 1992.

- Low proportions of students have had an HIV antibody test—around 5% of Year 12 students and 2% of Year 10 students. There were small increases in the proportions for Year 10 males and females and Year 12 females, but these were not statistically significant.
- In 1997, the students were asked if they had ever been diagnosed with an STD or with any of the various types of hepatitis. Very low proportions reported having a positive STD diagnosis—2% of Year 12 students and 1% of Year 10 students. The most common diagnoses were thrush, genital warts and pubic lice (Lindsay et al. 1997:49).
- Even lower proportions of students had ever had a positive diagnosis for any of the forms of hepatitis—1% or lower in most cases.

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12 Substance use morbidity and mortality

This chapter presents information on the impact of substance use on the health of young people. The increase in substance use amongst young people (see Chapter 13) has been accompanied by increases in substance use morbidity and mortality related to substance use. Various health ill-effects stem from the use of alcohol, tobacco, 'other' drugs and medicinal substances (including illicit drugs, and prescription drugs used for non-medical purposes) and combinations of these. Harmful substance use increases exposure to illness and disease, injury, violence, crime and social alienation. Some examples of the many causes of disease and death related to the use of these substances are:

- The ill-effects of tobacco use can include coronary heart disease, several cancers including lung, mouth and cervical, stroke, chronic lung disease, peptic ulcer, low birthweight and perinatal death (AIHW 1998:142; English et al. 1995:404, 441, 462).
- Excess alcohol consumption is associated with coronary heart disease, liver and pancreatic disease, stroke, high blood pressure, cancers of the digestive system, other cancers, road traffic and other accidents, mental illness and violence (AIHW 1998: 142; English et al. 1995:78, 82, 102).
- There are many health ill-effects associated with the non-medical use of prescription drugs (such as steroids and analgesics) and illicit substances. English et al. (1995:504) highlight three contributing factors. Firstly, there is the morbidity and mortality due to the toxicity of the drugs or their pharmaceutical actions. Secondly, the mode of drug administration can be a cause of morbidity and mortality; for example, HIV, hepatitis, septicaemia, and tetanus infection can result from non-sterile equipment. Thirdly, environmental factors such as exposure to crime, violence and poor standards of living are cited.

The all-cause morbidity rate for 12–24 year olds was 15,520 per 100,00 whereas the total drug-related morbidity rate was only 14 per 100,000. The all-cause mortality rate for 12–24 year olds was 60 per 100,000 whereas the total drug-related death rate was 14 per 100,000. A prominent finding of this chapter is that the rate of alcohol-related hospitalisations (77 per 100,000) for 14 to 24 year olds was similar to the rate of hospitalisations due to drug dependency (72.1 per 100,000). In addition, alcohol-related mortality (6 per 100,000 when attributable estimates of alcohol-related road traffic accidents are calculated from the 1997 mortality database and added to recorded alcohol-related deaths) was similar to mortality due to drug dependency (5 per 100,000). It should be noted, however, that although these rates were similar, the prevalence of use of these drugs differs greatly (as is shown in Chapter 13). The morbidity rate for parasuicide and self-inflicted poisoning by drugs and medicinal substances was high for 12 to 24 year olds (142 per 100,000), but the mortality rate was low (1 per 100,000).

Most data in this chapter come from the AIHW Mortality Database and the AIHW National Hospital Morbidity Database. Aetiological fractions from the Federal Office of Road Safety and English et al. (1995) are also included in relation to alcohol-related and tobacco related mortality. These aetiological fractions estimate the proportion of morbidity or mortality in the youth population that is causally attributable to exposure to substance use. The AIHW is currently updating English et al. (1995) aetiological fractions of drug caused morbidity and mortality in Australia (this report is scheduled to be released in early 2000).

Drug-related hospitalisations

This section presents an overview of drug-related morbidity of young people. Data were extracted from the AIHW National Hospital Morbidity Database using ICD-9-CM (see Appendix 3 for further details). Information is presented on hospital admissions where the principal reason for hospitalisation was drug-related, as well as other admissions with additional diagnoses associated with drugs. It is important to remember that the figures relate to the number of hospital episodes, not to the number of individuals hospitalised.

Principal diagnosis and external cause

Presented in this section is information on hospitalisations of young people aged between 12 and 24 years where the principal diagnosis was drug-related, or the external cause of injury/poisoning was drug-related.

Table 12.1: Drug-related principal reason[(a)] for hospitalisation, 1997–98

	Age (years)					
	Number			Rate per 100,000		
Principal diagnosis/external cause	**12–19**	**20–24**	**Total**	**12–19**	**20–24**	**Total**
Drug dependence (304)	*906*	*1,585*	*2,491*	*43.3*	*116.5*	*72.1*
Morphine type (304.0)	539	1,109	1,648	25.8	81.5	47.7
Combinations of morphine-type drug with any other (304.7)	57	149	206	2.7	10.9	6.0
Non-dependent abuse of drugs (305)	*250*	*353*	*603*	*11.9*	*25.9*	*17.5*
Morphine type (305.5)	66	63	129	3.2	4.6	3.7
Other, mixed or unspecified (305.9)	64	161	225	3.1	11.8	6.5
Accidental poisoning by drugs and medicinal substances (E850.0–E858.9)	*1,561*	*1,532*	*3,093*	*74.6*	*112.6*	*89.5*
Analgesics, antipyretics and antirheumatics (E850)	609	578	1187	29.1	42.5	34.4
Other psychotropic agents (E854)	333	350	683	15.9	25.7	19.8
Tranquillisers (E853)	262	349	611	12.5	25.6	17.7
Suicide and self-inflicted poisoning by drugs and medicinal substances (E950.0–E950.5)	*2,489*	*2,418*	*4,907*	*118.9*	*177.7*	*142.1*
Analgesics, antipyretics and antirheumatics (E950.0)	1,077	727	1,804	51.5	53.4	52.2
Other specified drugs and medicaments (E950.4)	462	374	836	22.1	27.5	24.2
Poisoning by drugs or medicinal substances undetermined whether accidentally or purposely (E980.0–E980.5)	*57*	*62*	*119*	*2.7*	*4.6*	*3.4*
Total (drugs and medicinal substances)	**5,263**	**5,950**	**11,213**	**251.5**	**437.2**	**324.6**
Alcohol-related[(a)]	1,477	1,166	2,643	70.6	85.7	76.5

(a) ICD-9-CM codes 305 Alcohol abuse, 571.0–571.3 Alcoholic liver cirrhosis, 291 Alcoholic psychosis, 303 Alcohol dependence, 357.5 Alcoholic poly neuropathy, 425.5 Alcoholic cardiomyopathy, 535.5 Alcoholic gastritis, 980.0 Ethanol toxicity, 980.1 Methanol toxicity, E860.0 Alcoholic beverage poisoning, E860.1 and E860.2 Other ethanol and methanol poisoning.

Source: AIHW National Hospital Morbidity Database.

- Parasuicide and self-inflicted poisoning by drugs and medicinal substances was the most common drug-related reason for hospitalisation. The hospitalisation rate for parasuicide and self-inflicted poisoning by drugs and medicinal substances was

higher for 20 to 24 year olds (178 per 100,000) than for 12 to 19 year olds (119 per 100,000).

- Accidental poisoning by drugs and medicinal substances caused the second highest number of hospitalisations with a drug-related principal diagnosis. The hospitalisation rate for young people aged 20 to 24 years (113 per 100,000) was 1.5 times higher than the rate for 12 to 19 year olds (75 per 100,000).
- The greatest difference in hospitalisation rates between the age groups was recorded for drug dependency. Whereas, the rate for young people aged 20 to 24 years was 117 per 100,000, the rate for those aged 12 to 19 years was 43 per 100,000. Morphine-type drug dependence and combinations of morphine with other drugs accounted for more than half of these hospitalisations.
- The alcohol-related hospitalisation rate for young people was 77 per 100,000. The morbidity rate for 20 to 24 year olds (86 per 100,000) was higher than for 12 to 19 year olds (71 per 100,000). These figures are underestimates of true alcohol-related morbidity. For example, they would not include the hospital admission of a passenger involved in a motor vehicle accident where the driver had high blood alcohol concentration level.
- Hospitalisations of young people due to cigarette smoking were not significant (seven episodes). This could be because history of cigarette smoking was not recorded or because the health ill-effects appear later in life.

Additional diagnosis

This section explores hospitalisations where the principal reason was not drug-related, but contributing factors were drug-related. Therefore, all hospitalisations are included except those with a drug-related principal diagnosis and external cause. As one hospitalisation can have more than one additional diagnosis, a hospital admission may be included in more than one group in Table 12.2.

Table 12.2: Hospitalisations with drug-related additional diagnoses[(a)], 12 to 24 years, 1997–98

Additional diagnosis	Number
Poisoning by drugs (960.0–979.9)	3,376
Accidental poisoning by drugs (E850.0–E858.9)	834
Non-dependent abuse of drugs (305.0–305.9)	0
Drug dependence (304.0–304.9)	0
Poisoning by drugs undetermined whether accidentally or purposely (E980.0–E980.5)	20
Total [(b)]	**4,230**

(a) Excludes cases with a drug-related principal diagnosis or external cause.

(b) Hospitalisations may be included in more than one group.

Source: AIHW National Hospital Morbidity Database.

- Poisoning by drugs and medicinal substances was the most frequent drug-related additional diagnosis. In 1997–98, there were 3,376 poisonings by drugs and medicinal substances as a contributing cause of hospitalisation when the principal diagnosis or external cause was not drug-related, a rate of 98 per 100,000 young people.
- Drug dependence, non-dependent abuse of drugs and parasuicide and self-inflicted poisoning by drugs were not recorded as contributing to any hospitalisations when the principal diagnosis was not drug-related.

All drug-related hospitalisations

Table 12.3: Drug-related hospitalisations, 12–24 year olds, 1997–98

Sub-group	Number	Rate per 100,000
Principal diagnosis/external cause related to drug and medicinal substances	11,213	324.6
Other admissions with drugs and medicinal substances as a contributing cause	4,230	122.4
Total drug-related hospitalisations	**15,443**	**446.8**

Source: AIHW National Hospital Morbidity Database.

- Hospitalisations with a drug-related principal diagnosis or external cause totalled 11,213 for young people (see also Table 12.1). There were 4,230 hospitalisations with drug-related additional diagnoses (in cases where the principal diagnosis or external cause was not drug-related; see also Table 12.2). Together, these figures provide the total number of drug-related hospitalisations of young people.
- The drug-related hospitalisation rate for young people was 447 per 100,000 in 1997–98, 3% of the all cause hospitalisation rate for this age group, which was 15,505 per 100,000.

Mortality

This section presents an overview of drug-related youth mortality. Data on deaths from 'other' drugs and medicaments were extracted from the AIHW Mortality Database using ICD-9 (see Appendix 3 for details). Previously, information on the underlying cause of death only was available, but, the recent inclusion of multiple causes of death in the database has enabled a wider picture of drug-related deaths to be seen. In this analysis, the underlying cause of death ('the disease or injury which initiated the train of morbid events leading directly to death') is presented separately. Data are also presented on other deaths where 'drug-related morbid conditions, diseases and injuries contributed to the death' (excluding deaths with a drug-related underlying cause). Total drug-related deaths excluding alcohol and tobacco is calculated from these components. An estimate of tobacco-related mortality is obtained from aetiological fractions (providing an estimate of relative risk) and alcohol-related mortality is obtained from other sources.

Drug dependence was the most common underlying cause of death amongst young people, however, there were many more deaths in other age groups. For example, from a total of 600 deaths across all ages, 266 were in the age group 25 to 34 years (see Chapter 9 for details).

Alcohol and tobacco

Deaths of young people by alcohol-related causes[1] are underestimated in the deaths database. According to these data, in 1997 there were seven deaths of young people aged between 12 and 24 years with an alcohol-related underlying cause of death. There were 119 deaths with alcohol-related causes of death listed on the death certificate (as either an underlying or contributing cause). Only a few of these deaths were associated with motor vehicle accidents. Data held by the Federal Office of Road Safety (FORS) suggest that non-inclusion of motor vehicle accidents results in an underunderestimate of the true alcohol-related mortality.

According to the Federal Office of Road Safety (FORS, unpublished data), 28% of driver/rider motor vehicle accident deaths in 1996 amongst males aged 16 to 19 years had a blood alcohol concentration greater than or equal to 0.10 g/100ml. In comparison, the figure for females was 8%. Greater proportions of driver/rider motor vehicle accident deaths amongst those aged 20 to 29 years had blood alcohol concentrations greater or equal to 0.10 g/100 ml. For males the figure was 37% and for females it was 16% (FORS unpublished data). These figures do not include deaths of passengers or occupants of other vehicles involved in alcohol-related accidents.

Alcohol is highly associated with pedestrian accident deaths amongst young people, however, the number of pedestrian deaths is lower than deaths from motor vehicle accidents. In 1996, 69% of male and 50% of female pedestrian accident deaths amongst young people aged between 16 and 19 years had a blood alcohol concentration of greater than or equal to 0.10 g/100 ml. For those aged 20 to 29 years, the proportion of alcohol-related pedestrian accident deaths amongst females dropped to 11%, but for males it remained high at 58% (FORS, unpublished data).

The aetiological fractions estimating relative risk (English et al 1995) show that cigarette smoking is not a significant cause of death amongst young people. Deaths associated with cigarette smoking usually occur at older ages.

Other drugs

Information on 'other' drugs presented in this section includes illicit drugs and prescription drugs used for non-medical purposes.

Underlying cause of death

The underlying cause of death is coded using the International Classification of Diseases (ICD-9), including codes which pertain to 'other' drug-related underlying cause of death for young people or external causes (the circumstances of the accident or violence which produced the fatal injury).

1. ICD-9 codes 305 Alcohol abuse, 571.0–571.3 Alcoholic liver cirrhosis, 291 Alcoholic psychosis, 303 Alcohol dependence, 357.5 Alcoholic poly neuropathy, 425.5 Alcoholic cardiomyopathy, 535.5 Alcoholic gastritis, 980.0 Ethanol toxicity, 980.1 Methanol toxicity, E860.0 Alcoholic beverage poisoning, E860.1 and E860.2 Other ethanol and methanol poisoning.

Table 12.4: Underlying causes of drug-related deaths by age group, 1997

Cause of death	Number			Rate per 100,000		
	12–19 years	20–24 years	Total	12–19 years	20–24 years	Total
Drug dependence (304.0–304.9)	38	106	144	1.8	7.7	4.2
Morphine type (304.0)	22	82	104	1.1	6.0	3.0
Combinations of morphine type drug with any other (304.7)	10	18	28	0.5	1.3	0.8
Non-dependent abuse of drugs (305.0–305.9)	0	1	1	0.0	0.1	0.0
Accidental poisoning by drugs and medicinal substances (E850.0–E858.9)	12	26	38	0.6	1.9	1.1
Opiates and related narcotics (850.0)	6	13	19	0.3	0.9	0.5
Suicide and self-inflicted poisoning by drugs and medicinal substances (E950.0–E950.5)	12	25	37	0.6	1.8	1.1
Analgesics, antipyretics and antirheumatics (E950.0)	5	4	9	0.2	0.3	0.3
Tranquillisers and other psychotropic agents (E950.3)	1	9	10	0.0	0.7	0.3
Other specified drugs and medicaments (E950.4)	5	9	14	0.2	0.7	0.4
Poisoning by drugs and medicinal substances undetermined whether accidentally or purposely (E980.0–E980.5)	9	10	19	0.4	0.7	0.5
Analgesics, antipyretics and antirheumatics (E980.0)	5	4	9	0.2	0.3	0.3
Other specified drugs and medicaments (E980.4)	3	3	6	0.1	0.2	0.2
Total	**71**	**168**	**239**	**3.4**	**12.2**	**6.9**

Source: AIHW Mortality Database.

- Drug-related underlying causes of death represent 11% of all deaths of young people. Further, those aged between 20 and 24 years account for 70% of these deaths.
- In 1997, drug dependency was the most common underlying cause of drug-related mortality for young people (60% of drug-related deaths). Morphine-type drugs (which include heroin) and combinations of morphine-type drugs with any other caused 92% of drug dependency deaths. The mortality rate due to drug dependency for young people aged 20 to 24 years (7.7 per 100,000) was four times higher than the rate for 12 to 19 year olds (1.8 per 100,000).
- Accidental poisoning by drugs accounted for 16% of drug-related underlying causes of mortality for young people. Half of the accidental poisonings by drugs were caused by opiates and related narcotics. The mortality rate for young people aged 20–24 (1.9 per 100,000) was three times higher than the rate for 12 to 19 year olds (0.6 per 100,000).
- Suicide and self-inflicted injury accounted for 15% of drug-related underlying cause of death among young people. Almost half (47%) of suicides due to self-inflicted poisoning were caused by analgesics, antipyretics and antirheumatics. The mortality rate for young people aged 20-24 was 1.8 deaths per 100,000, compared with 0.6 deaths per 100,000 for 12 to 19 year olds.
- In 1997, the youngest person with a drug-related underlying cause of death was aged 14 years.

Additional deaths with drugs as contributing factors

This section gives information on the deaths of young people where drugs contributed to the death but were not the underlying cause. Table 12.5 shows the number of times drug-related causes of death (which were not the underlying cause) have been listed on the death certificates of young people aged between 12 and 24 years. One death may have several different drug-related causes, for example an accidental or violent death may be classified according to the external cause as well as to the injury.

Table 12.5: Drug-related causes listed on death certificates where the underlying cause was not drug-related, 12–24 year olds, 1997

Cause of death	Number
Drug dependence (304.0–304.9)	25
Non-dependent abuse of drugs (305.0–305.9)	33
Poisoning drugs and medicinal substances (960.0–979.9)	225
Accidental poisoning by drugs and medicinal substances (E850.0–E858.9)	128
Poisoning by drugs and medicinal substances undetermined whether accidentally or purposely (E980.0–E980.5)	2
Total[(a)]	**252**

(a) Total number of additional drug-related deaths excluding those with an underlying drug-related cause of death (included in Table 12.4).

Source: AIHW National Mortality database.

- Numbers do not add to total deaths as death certificates mention one or more drug-related contributing causes. For example, all of the 128 death certificates that listed accidental poisoning by drugs and medicinal substances as a contributing cause also listed poisoning by drugs and medicinal substances as a contributing cause.
- Poisoning by drugs and medicinal substances was the most frequent drug-related contributing factor in deaths with non drug-related underlying causes, occuring in 225 deaths of 12 to 24 year olds in 1997.
- Accidental poisoning by drugs and medicinal substances was the second most frequent drug-related contributing factor in deaths with non drug-related underlying causes (128 deaths).
- Suicide and self-inflicted injury does not feature as a multiple cause of death—in all such cases it was listed as the underlying cause of death.

All drug-related deaths

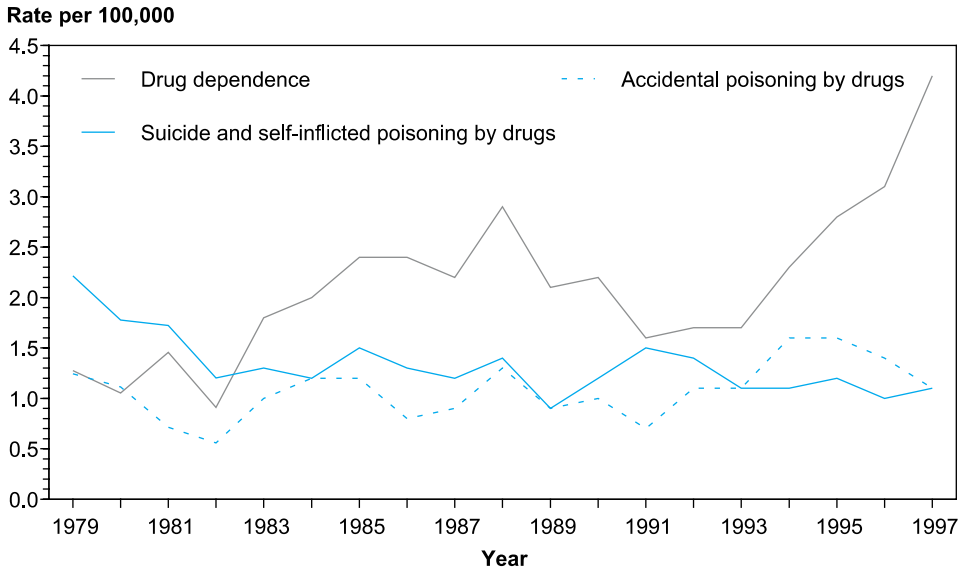
Table 12.6: Drug-related mortality summary statistics, 12–24 year olds, 1997

Cause of death	Number of deaths	Rate per 100,000 population
Underlying cause of death related to drug and medicinal substances	239	6.9
Other deaths with drugs as a contributing cause	252	7.3
Total drug-related deaths	**491**	**14.2**

Source: AIHW National Mortality database.

- Drug-related underlying causes of death were responsible for 239 deaths of young people (see Table 12.4). There were 252 additional deaths where drug-related causes contributed to death (in cases where the underlying cause was not drug-related, see Table 12.5). Together, these figures provide the total number of youth deaths associated with drugs.
- The mortality rate for young people associated with drugs and medicinal substances was 15 per 100,000, and all-cause mortality was 60 per 100,000. Thus mortality associated with drugs represented 24% of all deaths of young people.

As mentioned above, the wider range of drug-related mortality information has become available only for 1997 data. From this it was found that drug dependency (ICD-9 code 304) accounted for 60% of drug-related underlying cause mortality and 10% of other deaths with drugs as a contributing cause. Trends in drug-related mortality prior to 1997 can be estimated by using the drug dependency cause of death, accidental poisoning by drugs and suicide and self-inflicted poisoning by drugs as indicators of drug-related deaths.



(a) Drug dependency, accidental poisoning and suicide and self-inflicted poisoning by drugs are ICD-9 codes 304, E850–858 and E950.0–950.5 respectively

Source: AIHW Mortality Database.

Figure 12.1 : Death rates from drug-related causes: drug dependency, accidental poisoning and suicide and self-inflicted harm, 12–24 year olds, 1979 to 1997

- The mortality rates for drug dependence, suicide and self-inflicted poisoning by drugs and accidental poisoning by drugs have fluctuated over the period 1979 to 1997. Drug dependence recorded the greatest rise in mortality rate and also the greatest fluctuations in yearly rates. The mortality rate for drug dependence reached an initial peak of almost 3 deaths per 100,000 in 1988 before falling to 1.6 per 100,000 in 1991. Since 1993 it has been rising rapidly to 4.2 deaths per 100,000 in 1997.
- In the late 1970s and early 1980s, the mortality rate for drug dependence was similar to those of suicide and self-inflicted poisoning by drugs and accidental poisoning. In recent years, however, the mortality rate for drug dependence was almost four times higher than for the other two causes of death.
- Over the period, the mortality rate for suicide and self-infliced poisoning by drugs ranged from 0.9 to 2.2 per 100,000 population and the mortality rate for accidental poisoning by drugs ranged between 0.7 per 100,000 and 1.6 per 100,000.

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Part III Biological and behavioural determinants

13 Substance use

This chapter includes sections on the use of tobacco, alcohol and 'other' drugs which includes illicit drugs and prescription drugs used for non-medical purposes. Information on mortality and morbidity from substance use is included in Chapter 12.

Future patterns of drug use and long-term health ill-effects often result from drug exposure and use while young. Peer group pressure, inexperience and curiosity could be determining factors of underage drinking, binge drinking, tobacco smoking and other drug use.

Drug use by young people is common. When compared with the Australian population, young people aged 14–19 years and 20–29 years reported the greatest quantity of standard drinks consumed on a drinking day and the highest proportions currently using any illicit drug. Those aged between 20 and 29 years also demonstrate the highest proportion of current tobacco smokers (AIHW 1999).

Most data presented in this chapter are from the National Drug Strategy Household Surveys (NDS), a series of six surveys collecting information on drug consumption, attitudes, knowledge and behaviour. All data are self-reported, and the use of 'other' drugs is expected to be under-reported (AIHW 1999). Additional data come from the Australian School Students' Alcohol and Drugs Survey on the use of other drugs by 12–17 year olds.

Tobacco use

Tobacco use is a major contributing factor for a number of diseases. Over 25 diseases are known or strongly suspected to be causally associated with tobacco smoking. Tobacco use increases the risk of premature death from coronary heart disease, several cancers including lung, mouth and cervical cancer, as well as chronic lung disease. Passive smoking also increases the risk of lung cancer and a number of other diseases (AIHW 1998a:142; WHO 1998: viii, 2).

Table 13.1: Tobacco use, 1995 and 1998 (per cent)

	1995		1998	
Tobacco use	**14–19 years**	**20–24 years**	**14–19 years**	**20–24 years**
Males				
Never smoked a full cigarette	53.0	37.5	48.1	32.5
Ex-smoker	27.7	20.7	27.3	27.2
Occasional smoker[(a)]	4.8	6.7	8.4	8.1
Regular smoker[(b)]	14.5	35.1	16.3	32.1
Females				
Never smoked a full cigarette	49.5	25.3	45.0	32.9
Ex-smoker	30.9	30.6	29.1	29.3
Occasional smoker [a)]	6.4	5.8	10.1	7.6
Regular smoker[(b)]	13.2	38.3	15.8	30.2
Persons				
Never smoked a full cigarette	51.4	30.9	46.5	32.7
Ex-smoker	29.2	26.1	28.2	28.2
Occasional smoker[(a)]	5.5	6.2	9.2	7.9
Regular smoker[(b)]	13.9	36.9	16.1	31.2

(a) Smokes less often than daily/most days.

(b) Smokes daily/most days.

Source: National Drug Strategy Household Survey, 1995, 1998.

- Males and females aged 14–19 years exhibited similar changes in tobacco use between 1995 and 1998. There were decreases in the proportions of males and females who had never smoked. There was a corresponding rise in the proportions of recent (regular and occasional) smokers.
- In contrast, males and females aged 20–24 years showed differing patterns of change in tobacco use. The proportion of females aged 20–24 who had never smoked increased from one in four in 1995 to one in three in 1998, bringing the proportion in line with that of males of the same age. Although the proportion of female recent regular smokers declined from 38% in 1995 to 30% in 1998, the proportion of occasional smokers increased slightly from 6% in 1995 to 8% in 1998. The proportion of ex smokers remained fairly stable.
- Males aged 20–24 years in 1998 were less likely to have never smoked than males of the same age in 1995. Interestingly, this group showed the only increase in the proportion of ex-smokers, from 21% in 1995 to 27% in 1998. Athough the proportion of recent occasional smokers rose from 7% in 1995 to 8% in 1998, the proportion of recent regular smokers declined from 35% in 1995 to 32% in 1998.

Additional data on the use of tobacco by school students in 1996 are available from the Australian School Students' Alcohol and Drugs Survey. Due to the differences in survey population, age range, definitions and methodology, the data are not comparable with results from the NDS. The school student survey found that 8% of boys and 7% of girls aged 12 years had smoked on at least one of the 7 days prior to the survey (Hill et al. 1999:252). Among 17 year old students this proportion rose to 28% of young males and 34% of young females (Hill et al. 1999:252).

Alcohol

Like tobacco, alcohol is associated with mortality and morbidity. Unlike tobacco, regular moderate use of alcohol is not necessarily harmful. In fact, light to moderate alcohol consumption may reduce the risk of coronary heart disease. However, when alcohol consumption is heavy, it becomes a risk factor for coronary heart disease, cancer (e.g. stomach, colon, breast, pancreas, liver), blood disorders and loss of memory. Long-term heavy alcohol consumption leads to cirrhosis of the liver and may lead to brain damage. Motor vehicle accidents, crime and social problems are also associated with alcohol consumption. Alcohol is the leading cause of road traffic accidents and is associated with mental problems, especially depression (AIHW 1998b: 62; AIHW 1998b:142–145).

Table 13.2: Alcohol use, 14–24 year olds, 1995 and 1998 (per cent)

	1995		1998	
Alcohol use	**Males**	**Females**	**Males**	**Females**
Never consumed a full glass	8.6	15.6	13.4	15.9
Past drinker	8.1	10.7	6.7	5.9
Occasional, less than weekly	28.2	40.3	31.2	44.1
Regular, at least weekly	55.1	33.3	48.7	34.1

Source: National Drug Strategy Household Survey 1995, 1998.

- In both 1995 and 1998, a higher proportion of males aged 14–24 years had consumed a full glass of alcohol at least once in their lives than females.
- Although the proportions of young males who consumed alcohol on an occasional basis rose between 1995 and 1998, the proportions of regular drinkers dropped. For females, the proportion of occasional drinkers and the proportion of regualr drinkers increased slightly between 1995 and 1998.
- In 1998, regular use of alcohol peaked at ages 30–39 years, for both males and females. Occasional use by males was greatest amongst 14–19 year olds (37%) and 20–29 year olds (26%). Occasional use of alcohol by females was greatest amongst 20–29 year olds and 14–19 year olds, about 44% in each age group (AIHW 1999:17).

Table 13.3: Quantity of alcohol consumed by frequency of consumption, proportion of recent alcohol drinkers aged 14–24 years, Australia, 1998 (per cent)

	Quantity (standard drinks)				
Frequency	**1–2**	**3–4**	**5–6**	**7+**	**Total**
Males					
Every day	0.5	0.5	0.4	0.5	1.9
4–6 days/week	1.3	1.4	1.5	6.7	10.8
2–3 days/week	5.1	4.6	2.6	13.5	25.8
1 day/week	2.9	4.6	4.6	11.1	23.3
Less often	12.6	7.5	6.5	11.6	38.2
Total	**22.5**	**18.6**	**15.6**	**43.4**	**100**
Females					
Every day	0.3	0.3	—	0.1	0.6
4–6 days/week	1.6	0.7	0.3	0.3	2.9
2–3 days/week	4.1	3.9	2.2	5.9	16.1
1 day/week	4.7	5.3	6.3	8.4	24.7
Less often	25.8	14.5	8.6	6.8	55.7
Total	**36.4**	**24.7**	**17.4**	**21.4**	**100**

Note: Base equals recent alcohol drinkers.

Source: National Drug Strategy Household Survey 1998.

- Of those who reported recent alcohol consumption (87% of 16–24 year olds), young females tended to drink less often than young males. Whereas, 62% of males reported drinking one day or less per week, the corresponding figure for females was 80%.
- In addition to drinking alcohol more frequently than females, young males also tended to drink a larger quantity. On a day when alcoholic drinks are consumed, 60% of males reported usually having five or more drinks compared with 39% of females. Note, however, that the National Health and Medical Research Council guidelines for responsible drinking recommend that men should not exceed fourstandard drinks and women should not exceed two standard drinks per day on a regular basis. Five or six standard drinks for males and three or four standard drinks for females is considered hazardous, and more than six standard drinks for males and more than four for females is considered harmful (NHMRC 1992).[1]
- There are no guidelines in consumption levels or frequency, for measuring binge drinking.

1. Some examples of standard drinks are: a middy of full-strength beer, a 100 ml glass of wine, a 60 ml glass of port, a nip of spirits and a schooner of light beer (AIHW 1999).

Other drugs

The harmful use of illicit drugs is associated with considerable social problems, crime, morbidity and mortality (AIHW 1998a, ABCI 1997). Illicit drug use refers to the use of illegal drugs, volatile substances used illicitly, and pharmaceuticals used for nonmedical purposes.

Table 13.4: Recent[a] opportunity to use illicit drugs and recent[a] illicit drug use by young people aged 14–24 years, 1995 and 1998 (per cent)

	Opportunity to use		Recent use	
Drug	**1995**	**1998**	**1995**	**1998**
Marijuana/cannabis	45.6	51.6	32.8	37.9
Pain killers/analgesics[b]	34.8	45.7	3.8	7.3
Tranquillisers/sleeping pills[b]	5.0	7.4	1.5	4.1
Steroids[c]	1.4	2.9	—	0.4
Barbiturates[b]	2.3	1.6	0.1	0.5
Inhalants	6.0	7.3	1.4	2.3
Heroin	4.0	4.8	0.6	1.3
Amphetamines	12.1	15.3	5.6	9.8
Cocaine	6.8	5.3	1.8	1.9
Naturally occurring hallucinogens	6.2	8.5	1.6	—
LSD/synthetic hallucinogens	13.1	16.8	6.3	—
Hallucinogens	—	—	—	9.6
Ecstasy	6.2	12.5	2.0	6.5

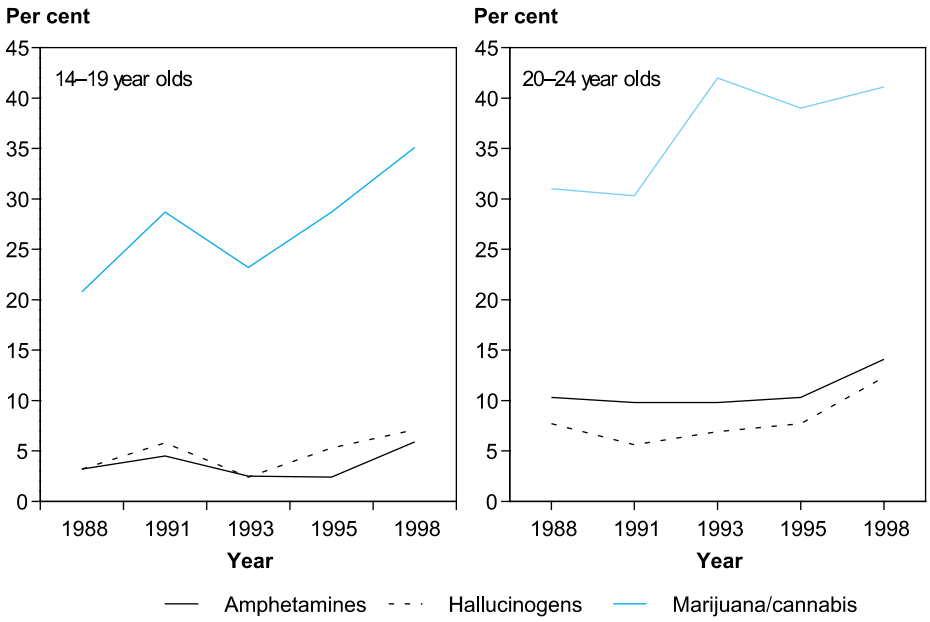
(a) Opportunity to use in the last 12 months.

(b) Used in the last 12 months.

(c) For non-medical purposes.

Source: National Drug Strategy Household Survey 1995, 1998.

- The proportions of young people reporting using illicit drugs in the last 12 months increased between 1995 and 1998, for all the drugs listed in Table 13.4.
- A higher proportion of young persons aged 14–24 years had used marijuana (38% in 1998) than any other illicit drug. Amphetamine use and hallucinogen use were both reported by about 10% of young people. In 1995, as in 1998, the highest proportions of young people reported using marijuana followed by amphetamines and hallucinogens.
- The reported opportunity to use illicit drugs increased between 1995 and 1998 for all illicit drugs other than cocaine and barbiturates.
- Although there was an increase between 1995 and 1998 in the proportions of young people reporting recent heroin use, the proportions remained low in comparison with other drugs (0.6% in 1995 and 1.3% in 1998).
- While 38% of young people aged 14–19 years reported recent use of any illicit drug, those aged 20–29 years recorded the greatest proportion of recent users (40%). There was a steady decline in the proportion of recent users from ages 30–39 (24%) to ages 60+ (6%) (AIHW 1999:19).



Notes:

1. Results for 1988 and 1991 were based on unweighted data, results for 1993 to 1998 were based on weighted data.
2. 'Recent use' means used in the last 12 months.

Source: National Drug Strategy Household Survey 1988–1998.

Figure 13.1 : Recent use of amphetamines, marijuana and hallucinogens by 14–19 year olds (left) and 20–24 year olds (right), 1988 to 1998

- Over the decade, marijuana/cannabis remained the most commonly used illicit drug. The proportions of young people who had used marijuana/cannabis in the last 12 months increased from 21% in 1988 to 35% in 1998 for those aged 14–19 years and 31% in 1988 to 41% in 1998 for 20–24 year olds.
- Amphetamines were the second most commonly used drug for 20–24 year olds. Amphetamine use for this age group remained steady between 1988 and 1995 with about 10% reporting recent use. However, in 1998 the proportion rose to 14%. Amphetamine use fluctuated throughout the decade for 14–19 year olds. The proportion reporting recent use in 1988 (about 3%) was approximately half that of 1998 (almost 6%).
- The proportions of young people aged 14–19 years who reported using hallucinogens in the last 12 months were similar to the proportions reporting amphetamine use. The proportion of this age group reporting recent hallucinogen use rose from 3% in 1995 to 7% in 1998. The proportions of 20–24 year olds reporting recent hallucinogen use rose by 4 percentage points from almost 8% in 1995 to 12% in 1998.
- Throughout the decade the proportion of young people aged 20–24 years who reported recent use of marijuana/cannabis, amphetamines and hallucinogens was higher than the proportion aged 14–19 years.

Figure 13.1 shows the proportion of young people aged 14–19 years reporting recent use of marijuana/cannabis, amphetamines and hallucinogens from the NDS. Self-reported data are also available from the Australian School Students' Alcohol and Drugs Survey

on the use of illicit drugs by school students aged 12–17 years (Lynskey et al. 1999). The prevalence of use of illicit drugs was found to be similar in both sources. Marijuana/cannabis was the most common recently used substance with 35% of the NDS respondents aged 14–19 years, and, similarly, 35% of male students and 29% of female students aged 12–17 years reporting recent use in the survey of school students. Both surveys found that hallucinogens were the second most common recently used drug among this age group, with 7% of 14–19 year olds reporting recent use and 7% of male and 6% of female school students. The third most common recently used substance was amphetamines with 6% of 14–19 year olds reporting recent use and 5% of male and 4% of female school students.

The slightly higher proportions of 14 to 19 year olds compared with 12–17 year olds reporting recent substance use may be explained by the tendency of recent use to increase with age (as shown in Figure 13.1).

Perceptions

Drug problem

This section presents information on young peoples perceptions of which drugs can be associated with a drug problem. Data from 1995 and 1998 are used to explore changes in perceptions.

Table 13.5: Proportion of the population aged 14–24 years who associate specific drugs with a drug 'problem', 1995 and 1998 (per cent)

	Males		Females		Persons	
Drug first nominated[a]	**1995**	**1998**	**1995**	**1998**	**1995**	**1998**
Tobacco	3.6	4.4	5.4	2.9	4.5	3.7
Alcohol	16.0	15.7	12.9	9.1	14.5	12.5
Marijuana/cannabis	37.9	26.8	33.8	31.0	35.9	28.9
Pain killers/analgesics[b]	0.6	0.3	1.4	0.5	1.0	0.4
Tranquillisers/sleeping pills[b]	0.4	0.2	0.7	0.6	0.6	0.4
Steroids[c]	n.a.	0.5	n.a.	0.1	n.a.	0.3
Barbiturates[b]	—	—	0.3	0.3	0.1	0.1
Inhalants	0.6	0.1	0.7	0.1	0.7	0.1
Heroin	20.8	34.2	21.1	34.4	20.9	34.3
Amphetamines	3.3	9.3	8.3	10.0	5.7	9.6
Cocaine	7.5	4.7	8.9	4.8	8.2	4.7
Naturally occurring hallucinogens	—	0.1	—	0.7	—	0.4
LSD/synthetic hallucinogens	1.6	0.7	2.5	3.2	2.0	1.9
Ecstasy/designer drugs	—	2.0	0.1	1.9	0.1	1.9
Drugs other than listed	6.6	0.1	2.5	0.2	4.6	0.2
None/can't think of any	1.1	0.6	1.2	0.1	1.2	0.3

(a) Respondents were asked to nominate drugs they first associated with a drug problem. In 1995 the question was open-ended; in 1998 the drugs were presented as a fixed list.

(b) For non-medical use.

(c) For non-medical use, not asked in 1995.

Source: National Drug Strategy Household Survey 1995, 1998.

- Between 1995 and 1998 there was a shift in young peoples perceptions of which drugs were associated with a drug 'problem' from the so-called soft drugs to the so-called hard drugs (AIHW 1999). For young people, there were increases in the association of heroin and amphetamines with a drug 'problem'. In contrast, the proportions of young persons nominating marijuana/cannabis, alcohol and tobacco decreased.
- In 1998, heroin replaced marijuana/cannabis as the drug most commonly associated with a drug 'problem'. The proportion of young males and females nominating heroin increased from 21% in 1995 to 34% in 1998.
- Despite the decrease in the proportions of young people associating marijuana/cannabis with a drug 'problem', in 1998 it was the second most nominated drug. The reduction in the proportion of young people associating marijuana/cannabis with a drug 'problem' was substantially different for males and females. Males recorded a decline of 11 percentage points compared with only 3 percentage points for females.
- Although the proportion of young people associating alcohol with a drug 'problem' decreased from 1995 to 1998, alcohol was the third most nominated drug. Although

the proportion of young males nominating alcohol remained at around 16% over the period, the proportion of young females nominating alcohol decreased from 13% in 1995 to 9% in 1998.

- The trend in associating tobacco with a drug 'problem' differed for males and females in 1995 and 1998. Over the period the proportion of young males nominating tobacco increased slightly (from 3.6% in 1995 to 4.4% in 1998), whereas the proportion of females decreased from 5.4% in 1995 to 2.9% in 1998.

Support for policies/treatments

This section presents information on young people's support for measures to reduce the harm associated with tobacco, alcohol and heroin.

Table 13.6: Support[(a)] for tobacco-related policies, 14–24 year olds, 1998 (per cent)

Tobacco related policies	Males	Females	Persons
Stricter enforcement of law against selling to minors	74.6	82.5	78.5
Banning tobacco advertising at sporting events	41.8	50.4	46.0
Banning smoking in the workplace	65.0	74.1	69.5
Banning smoking in shopping centres	74.8	78.6	76.7
Banning smoking in restaurants	66.4	68.1	67.2
Banning smoking in pubs/clubs	32.4	35.2	33.8
Increase tax on tobacco products to pay for health messages	55.1	56.9	56.0
Increase tax on tobacco products to contribute to treatment costs	59.4	62.8	61.0
Increase tax on tobacco products to discourage smoking	55.6	57.8	56.7

(a) Support and strongly support.

Source: National Drug Strategy Household Survey 1998.

- Young females recorded a higher level of support for each of the tobacco policies than their male counterparts.
- 'Stricter enforcement of law against selling to minors' attracted the highest level of support from young people. Approximately three in four males (75%) and four in five females (83%) supported this policy.
- 'Banning smoking in pubs/clubs' attracted the least support from young people. Only 32% of young males and 35% of young females supported this policy.

Table 13.7: Support[(a)] for alcohol-related policies, 14–24 year olds, 1998 (per cent)

Policy	Males	Females	Persons
Increasing the price of alcohol	15.7	22.7	19.1
Reducing the number of outlets	16.3	22.8	19.5
Reducing trading hours	15.5	19.0	17.2
Raising the legal drinking age	17.8	23.9	20.8
Increasing the number of alcohol-free events	39.8	53.4	46.5
Increasing the number of alcohol-free dry zones	45.3	58.0	51.6
Stricter enforcement of law against serving minors	65.7	81.7	73.6
Serving only low-alcohol beverages at sporting events	44.6	60.5	52.4
Limiting TV advertising until after 9.30 p.m.	47.1	59.6	53.2
Banning alcohol sponsorship of sporting events	21.0	33.4	27.1
More severe penalties for drunk drivers	84.5	89.7	87.0

(a) Support and strongly support.

Source: National Drug Strategy Household Survey 1998.

- As was the case with tobacco-related policies, the level of support for alcohol-related policies was higher among females than males.
- An increase in the price of alcohol was the policy which attracted the least support from young people. Only 16% of males and 23% of females supported an increase in the price of alcohol.
- 'More severe penalties for drunk drivers' attracted the highest level of support from both young males (85%) and young females (90%).

Table 13.8: Support[(a)] for heroin-related policies and treatments, 14–24 year olds, 1998 (per cent)

Policy/treatment	Males	Females	Persons
Free needle/syringe exchanges	46.1	53.4	49.7
Methadone maintenance programs	54.9	60.3	57.6
Treatment with drugs other than methadone	54.0	53.8	53.9
Regulated injecting rooms	33.1	31.8	32.5
Rapid detoxification therapy	61.7	56.9	59.3

(a) Support and strongly support.

Note: These measures were not explained in detail to survey respondents.

Source: National Drug Strategy Household Survey 1998.

- Unlike Tables 13.6 and 13.7 which show higher female support for all tobacco and alcohol policies than males, Table 13.8 shows that whereas female support is higher for some heroin-related policies and treatments, male support is higher for others. Young females were more likely than males to support 'free needle/syringe exchanges' and 'methadone maintenance programs'. Young males were more likely than females to support 'regulated injecting rooms' and 'rapid detoxification therapy'.
- The measure receiving the highest level of support from young people was 'Rapid detoxification therapy'. There was a slightly higher proportion of young males supporting this policy (62%) than females (57%).
- The measure attracting the lowest level of support from young people at 33% was 'Regulated injecting rooms'.
- Young people's level of support for heroin-related policies was almost the same as that of the Australian population aged 14 years and over.

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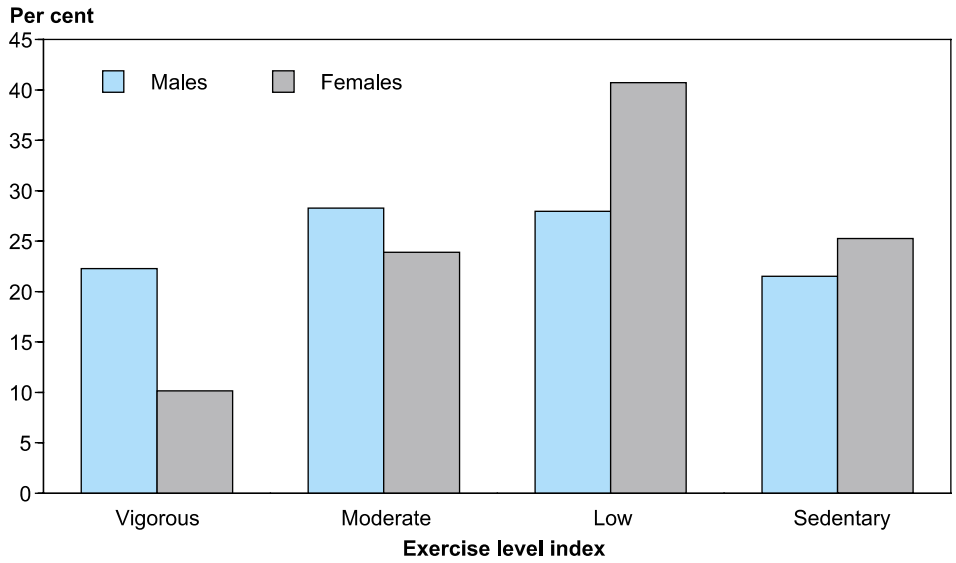
14 Physical activity

The health benefits of physical activity are well documented and it has long been regarded as a necessary part of a healthy lifestyle. Physical activity (which may be planned/structured or incidental) has been shown to reduce the risk of many diseases including cardiovascular disease, diabetes, colon cancer, bone diseases, mental illness and obesity (AIHW 1998).

The data on *exercise levels* presented in this chapter come from the 1995 National Health Survey (NHS). Additional information on young people's participation in *organised sport and physical activities* is also collected by the ABS.

Exercise level

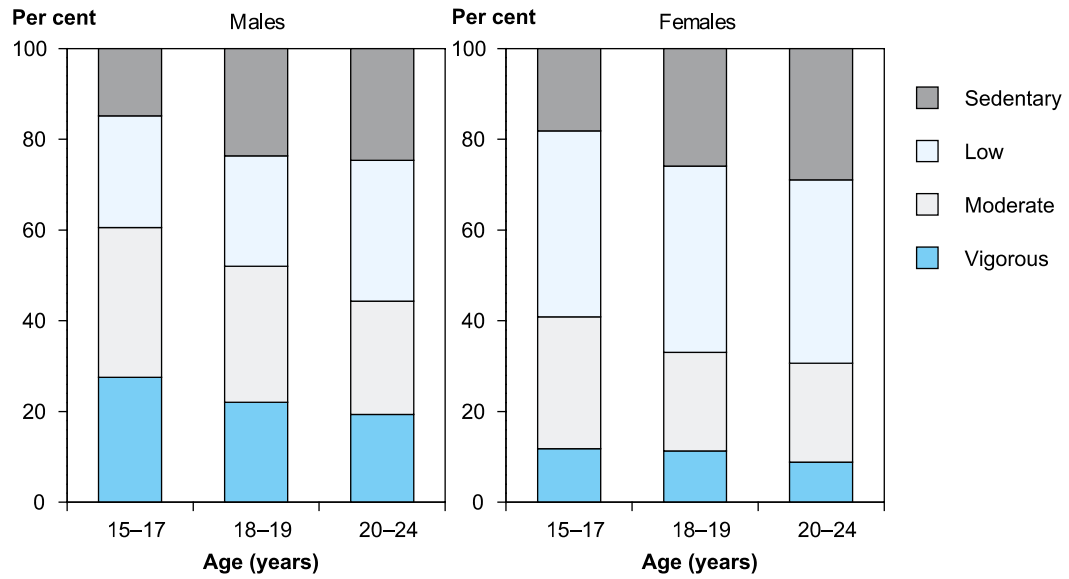
The NHS collects information on exercise for sport and recreation and health fitness purposes only; other activities (such as physical activity at work) are not included. Respondents were asked how many times and for how long in the last 2 weeks they walked or undertook moderate or vigorous exercise. The respondent's exercise level was calculated from this information. The NHS defined 'vigorous' as 'causing perspiration or large increase in heart rate or breathing' and 'moderate' as 'a moderate increase in heart rate or breathing'.



Source: AIHW, from ABS NHS data, 1995.

Figure 14.1: Reported exercise levels, 15–24 year olds, 1995

- Figure 14.1 shows that young males were more likely to exercise at higher levels (vigorous and moderate levels) than young females. Young males were more than twice as likely than females to report exercising at vigorous levels. The proportion of males who reported exercising at moderate levels was slightly higher than for females.
- Young females were much more likely to report exercising at low levels than young males. The proportion of females who were classified as 'sedentary' was slightly higher than for males.



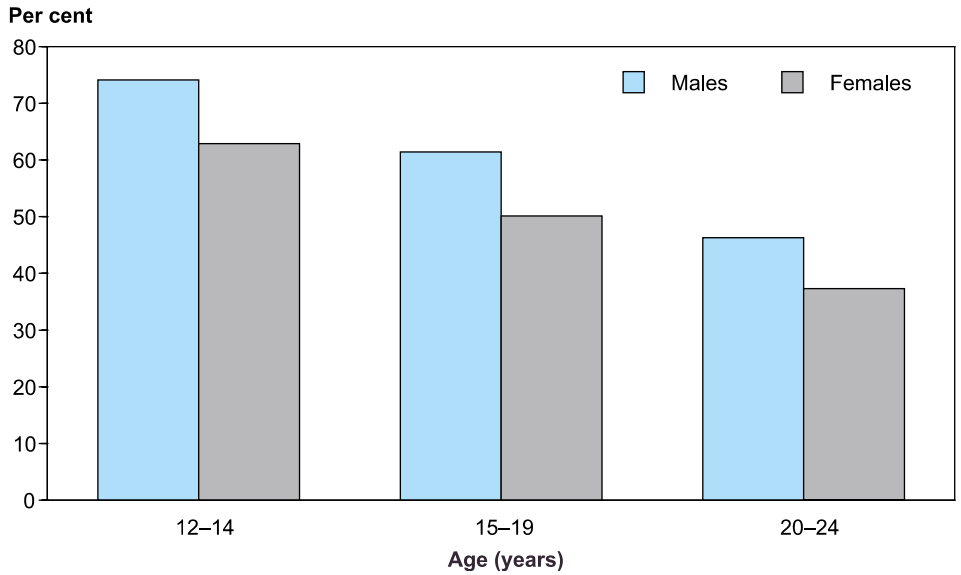
Source: AIHW, from ABS NHS data, 1995.

Figure 14.2: Exercise level of males and females aged 15–24 years, 1995 (per cent)

- The proportion of youth who reported exercising for sport or recreational purposes at a vigorous level decreased with age for both males and females. The drop was more marked among males, but the proportion of males exercising at vigorous levels were higher at all ages. For males the proportion declined from 28% of males aged 15–17 years to 19% of males aged 20–24 years. The proportion of females exercising at vigorous levels decreased from 12% of 15–19 year olds to 9% of 20–24 year olds.
- Similarly, the proportion of young people who reported exercising at a moderate level also decreased with age, except for females aged 18–24 years.
- Conversely, the proportion of young people reporting no exercise increased with age, from 15% of males aged 15–17 years to 25% of those aged 20–24 years, and 18% of females aged 15–17 years to 29% of those aged 20–24 years.
- The proportions of young people who reported exercising at low levels were similar across the age groups for each sex, with the exception of an increase among the older males.

Organised activities

The information presented in this section comes from a survey conducted by the ABS in 1995–96, as part of the Population Survey Monitor. Respondents were asked whether they had participated in a sport or physical activity organised by a school, club, organisation or association in the last 12 months. The survey is limited to measuring participation in organised sport and physical activities; other types of sport and physical activities which might have been undertaken outside club environments, such as jogging or walking, are not included. Physical activity during school hours including physical education classes is also excluded.



Source: ABS 1997.

Figure 14.3: Participation in organised sport and physical activities, 1995–96

- In 1995–96, youth participation rates in organised activities declined with age for both males and females. Around 56% of youth aged 15–19 years participated in organised sport and physical activities, compared with 42% of youth aged 20–24 years.
- Young males recorded higher participation rates in organised activities than young females at all ages.

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15 Diet and nutrition

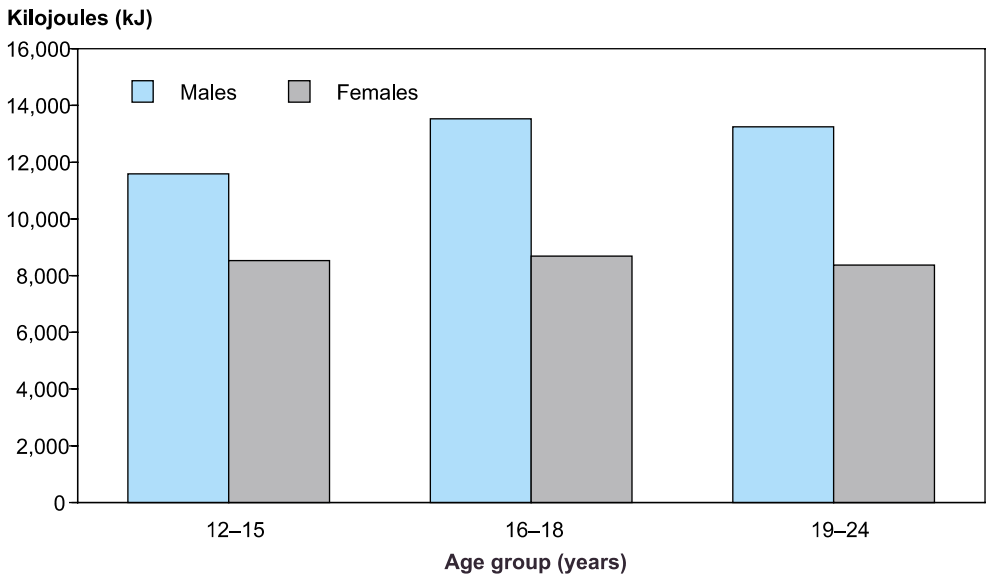
Appropriate nutrition is necessary for maintaining growth through adolescence and good health in the year following adolescence. Several health ill-effects have been linked to inappropriate or inadequate diet, including obesity, coronary heart disease, stroke, breast and digestive system cancers, non-insulin-dependent diabetes mellitus, gallstones, osteoporosis, malnutrition and dental conditions. (AIHW 1998b:142).

Adolescence is seen as a transitional stage for diet and eating patterns. The diets of young people often undergo substantial change as a result of body growth and development and as newly developed independence and diminished family influence gives young people more control over their eating habits. Young people are more likely to suffer from binge eating, restrained eating, fear of fatness and purging than the adult population (NHMRC 1995:30, 40).

This chapter presents information on the total energy intake of youth aged between 12 and 24 years, consumption from major food groups, nutrient contribution to energy intake, desired change in consumption patterns, and the percentage of youth aged 16–24 years who ran out of food and had no money to buy more. All data are obtained from the ABS National Nutrition Survey (ABS & DHFS 1997).

Diet of Australian youth

Information on the food intake of Australian young people included in this section is drawn from the National Nutrition Survey conducted in 1995. In that survey, respondents were interviewed by nutritionists and asked to recall details of all food and beverages consumed during the day before the interview (midnight to midnight) The nutrient composition was determined from the details supplied.



Source: ABS & DHFS 1997.

Figure 15.1: Mean total daily energy intake, 1995

- The mean total energy intake of young males was consistently higher than that of young females. This, of course, reflects higher mean height and weight for males compared with females (see Chapter 16).
- The energy intake for females aged between 12 and 24 years was relatively constant across the three age groups shown, at just over 8,000 kJ.
- Within this age group, energy intake for males peaked at 16–18 years (at almost 14,000kJ) before experiencing a small decline at the older ages.

Table 15.1: Consumption from major food groups, 1995 (per cent)

	Male age group (years)			Female age group (years)		
Major food groups	**12–15**	**16–18**	**19–24**	**12–15**	**16–18**	**19–24**
Cereals and cereal-based products						
Cereals and cereal products	98.1	93.9	91.4	95.1	93.0	90.2
Cereal-based products and dishes	73.6	64.7	71.3	70.0	71.2	62.0
Fruit products and dishes	49.9	39.9	31.9	58.0	41.1	41.4
Vegetables and legumes						
Vegetable products and dishes	78.8	83.1	84.7	85.9	85.8	86.5
Legume and pulse products and dishes	7.1	5.8	5.6	5.8	8.3	8.2
Milk products and dishes	92.8	94.2	89.1	90.8	87.3	90.1
Meat, poultry and game products and dishes	78.8	80.9	84.1	80.2	74.5	74.0
Fish and seafood products and dishes	12.8	8.8	16.0	11.2	16.7	15.8
Egg products and dishes	12.3	18.1	15.7	8.7	8.5	12.8
Snack foods, sugar and confectionery						
Snack foods	28.7	24.4	18.9	38.4	24.1	17.7
Sugar products and dishes	58.1	56.8	60.5	53.2	44.9	59.4
Confectionery	46.7	37.2	26.8	51.3	39.9	32.4
Other foods						
Seed and nut products and dishes	10.9	7.7	10.3	8.3	9.8	10.8
Fats and oils	76.5	65.7	72.9	73.2	66.9	63.7
Soup	5.7	3.6	6.4	5.8	4.5	10.8
Savoury sauces and condiments	56.9	61.8	61.6	52.8	63.0	51.7
Beverages						
Non-alcoholic beverages[(a)]	99.6	99.7	99.8	100.0	100.0	99.7
Alcoholic beverages[(b)]	0.5	16.0	28.8	1.3	12.0	17.6
Total[(c)]	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(a) Includes plain drinking water.

(b) Includes all alcoholic beverages containing alcohol (eg. whisky, reduced alcoholic beer) and does not indicate amount of pure alcohol consumed.

(c) Total includes infant formulae and food, special dietary foods and miscellaneous foods.

Source: ABS & DHFS 1997.

- Nearly all young people reported eating some sort of cereals or cereal products in 1995. However, as was the trend with children (AIHW 1998a:157), the proportion of young people eating these products declined with age.
- Consumption of fruit was highest in the younger ages, and higher among females Although half of males and nearly 60% of females aged 12–15 years consumed fruit products and dishes, this decreased to less than one-third of males and about 40% of females aged 19–24 years.
- In contrast to the decline of consumption of fruit with age, the proportion of young people consuming vegetable products and dishes increased to some extent with age. Although 20% of males aged 12–15 years were not eating vegetables, this declined to 15% at ages 19–24. Throughout this age range, the proportion of females eating vegetables remained almost constant.
- Consumption trends of meat, poultry and similar foods differed between males and females. Whereas consumption of meat increased with age for males, the opposite trend was reported by young females. At ages 19–24, only 15% of males did not eat meat, compared with 25% of females.

- The proportion of young people reporting consumption of alcohol increased with age and thus was highest amongst those aged 19 to 24 years. Consumption of alcohol by males was higher for ages 16–24 compared with females.
- For both male and females, the consumption of snack foods and confectionery declined with age.

Table 15.2: Mean contribution to energy intake, 1995 (per cent)

	Males age group (years)			Female age group (years)		
Type of nutrients	**12–15**	**16–18**	**19–24**	**12–15**	**16–18**	**19–24**
Protein	15.1	15.4	16.6	14.9	16.1	16.1
Total fat	33.5	32.9	32.9	33.1	32.1	32.8
Saturated fat	14.6	13.7	13.3	13.9	13.5	13.1
Monounsaturated fat	11.9	11.9	12.1	11.8	11.4	11.7
Polyunsaturated fat	4.5	4.5	4.7	4.7	4.4	5.1
Carbohydrate	50.9	49.6	46.9	51.1	50.1	48.4
Total sugar	24.7	24.5	21.5	25.6	24.0	22.7
Total starch	26.2	25.2	25.5	25.5	26.1	25.8
Alcohol[(a)]	—	1.6	3.1	0.2	0.9	2.0
Total energy[(b)]	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Mean energy (kJ)	**11,589.4**	**13,525.5**	**13,275.5**	**8,533.6**	**8,690.4**	**8,369.6**

(a) Represents pure alcohol.

(b) Components do not add to total, see published source for details.

Source: ABS & DHFS 1997.

- The NHMRC recommended targets for fat intake for youth are the same as for the general population of healthy adults (NHMRC 1995:74). It is suggested that energy intake as fat be limited to approximately 30% of total energy intake, with no more than 10% from saturated fat.
- Around one-third of youth total energy intake was reported to come from fats. Both males and females recorded a total energy intake from total fat approximately 3 percentage points higher than that recommended by the NHMRC. The per cent contribution of saturated fat was also over 3 percentage points higher than the recommended level. However, these figures were similar to those of the population aged 19 and over (ABS 1997:24).
- Around half of total energy intake was from carbohydrates. The majority of the remainder was from protein, with a small amount from alcohol. These proportions were relatively constant both across age groups, and for males and females.

Desired change in consumption

The National Health and Medical Research Council (NHMRC 1995) dietary guidelines emphasise the importance of eating relatively large amounts of breads and cereals, and fruit and vegetables. In Table 15.1 however, it can be seen that the proportion of young people consuming these foods decreased with age. Also, Table 15.2 shows that the mean contribution of fat to total energy intake exceeded the NHMRC guidelines. Table 15.3 below explores young people's desire for change in consumption of these food groups.

Table 15.3: Desired change in consumption patterns, 16–24 year olds, 1995 (per cent)

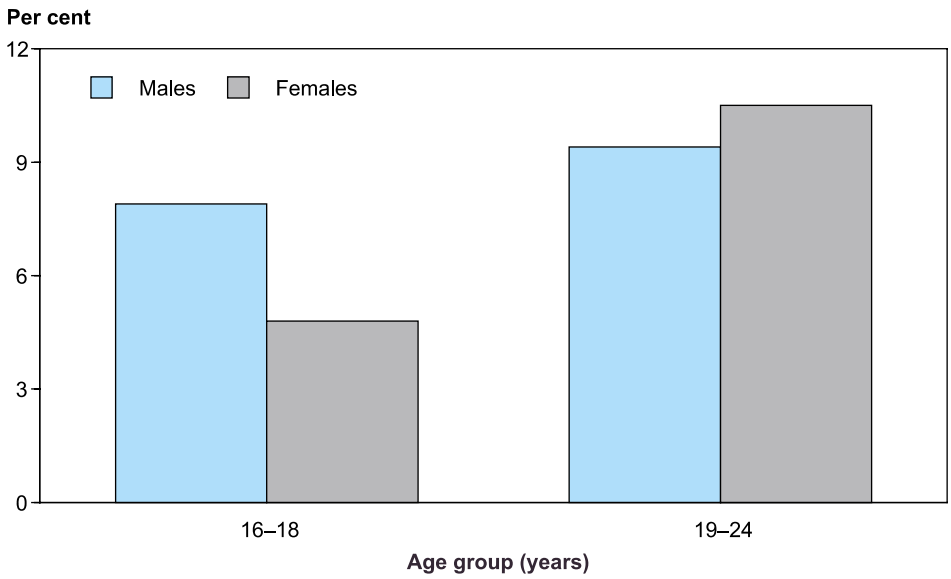
	Males		Females	
	16–18	19–24	16–18	19–24
Desire to consume less fat	24.8	33.3	45.8	45.2
Desire to consume more bread and cereals	9.1	15.0	8.6	14.3
Desire to consume more fruit and vegetables	30.5	45.3	39.9	45.0

Source: ABS & DHFS 1997.

- Around 45% of females aged 16–24 years desired to consume less fat, compared with about one-quarter of males aged 16–18 years and one third of males aged 19–24 years.
- The desire to consume more bread/cereals and fruit/vegetables increased with age. Whereas, only 9% of persons aged 16–18 years desired to consume more bread and cereals, the proportion increased to around 15% of persons aged 19–24 years.
- Approximately 45% of males and females aged 19–24 years desired to consume more fruit and vegetables.

Food supply

As part of the National Nutrition Survey, respondents were asked whether they had run out of food and had no money to buy more at any time within the last 12 months. In the post-secondary school period, young people are more likely to have financial independence. Food shortages were more likely to be reported by persons aged 19–24 years.



Source: ABS & DHFS 1997.

Figure 15.2: Persons aged 16–24 years who ran out of food and had no money to buy more, 1995

- Almost 10% of persons aged 19–24 years ran out of food and had no money to buy more, at some time during the 12-month period. There was a slightly higher proportion of females in this age group in need of food than males.
- Males aged 16–18 years were more likely than females in the same age group to run out of food and not have the funds to buy more.

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16 Weight

Healthy weight is a protective factor for many diseases. Conversely, being overweight is a risk factor for many diseases, including cardiovascular disease, diabetes, breast cancer and degenerative joint disease (AIHW 1998). A link has been demonstrated between obesity while young and obesity in adulthood. The NHMRC (1997) has stressed the need for family and peer support, in addition to a more energetic lifestyle and encouragement in maintaining an appropriate level of energy intake, as the means to effectively treat obesity in young people.

Young people are also exposed to the dangers of being underweight, which can have serious or even fatal consequences. Disordered eating, restrained eating, binge eating, fear of fatness, purging and distortion of body image are common among young people (NHMRC 1995, 1997).

Data in this chapter include the distribution of weight and body mass index by age from the ABS 1995 National Nutrition Survey (NNS). The final section gives some information on the proportion of young people who are overweight or underweight.

Weight

This section presents information on the distribution of young people's weight in Australia. The first set of results do not take account of the height of the individual, but only present information on the weight of 12–24 year olds by their weight.

Table 16.1 : Weight of Australian young people, 1995 (per cent)

	Males age group (years)			Females age group (years)		
Weight	**12–15**	**16–18**	**19–24**	**12–15**	**16–18**	**19–24**
Less than 15 kg	—	—	—	—	—	—
15–19 kg	—	—	—	—	—	—
20–24 kg	*0.4	—	—	—	—	—
25–29 kg	—	—	—	**0.3	—	—
30–34 kg	2.9	—	—	**0.2	—	—
35–39 kg	7.9	—	—	4.1	*0.7	*0.7
40–44 kg	10.4	*1.2	—	9.7	*1.8	1.9
45–49 kg	9.9	**0.4	**0.2	21.1	10.7	8.7
50–59 kg	32.5	12.6	5.8	38.3	38.8	34.2
60–69 kg	23.0	33.4	26.1	18.1	30.8	28.0
70–79 kg	6.7	30.0	30.7	5.1	9.1	12.9
80–89 kg	2.4	12.6	17.3	2.2	4.3	5.6
90–99 kg	2.2	4.5	11.1	**0.3	*2.3	*1.3
100–109 kg	*1.1	*1.6	5.1	—	**0.1	1.9
110–129 kg	**0.3	*1.9	2.9	—	**0.5	*0.8
130 kg and over	—	**0.2	*0.7	—	—	*0.5
Total[(a)]	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Mean weight (kg)	**56.5**	**72.3**	**78.3**	**54.5**	**61.4**	**63.4**

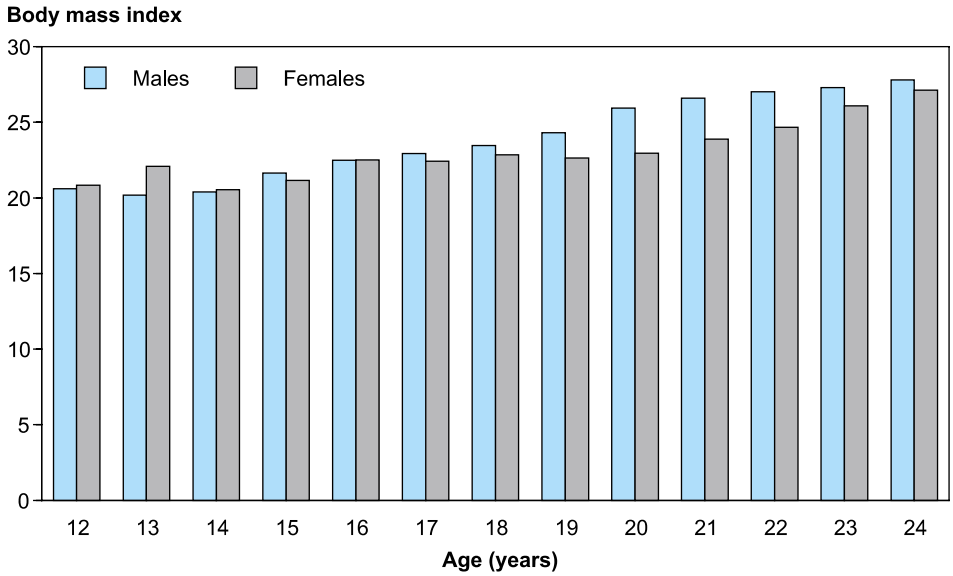
(a) Total includes persons for whom a weight measurement was not obtained.

Note: * relative standard error of 25% to 50%; ** relative standard error of over 50%.

Source: ABS & DHFS 1997.

- Not surprisingly, the mean weight of young males was constantly higher than that of young females across all age groups.
- The increase in mean weight between the age groups 12–15 years and 16–18 years shows a major adolescent growth phase. Between these age groups males experienced a 28% increase in mean weight, and females experienced a 13% increase. The increase in mean weight between ages 16–18 and 19–24 was much lower than the previous increase, only 8% for males and 3% for females.

Weight needs to be compared in terms of corresponding height, thus Figure 16.1 presents the mean body mass index (BMI) derived from the National Nutrition Survey conducted in 1995. BMI, a measure of weight in relation to height, is defined as the weight (in kilograms) of the individual divided by the square of their height (in metres).



Source: AIHW from NNS 1995.

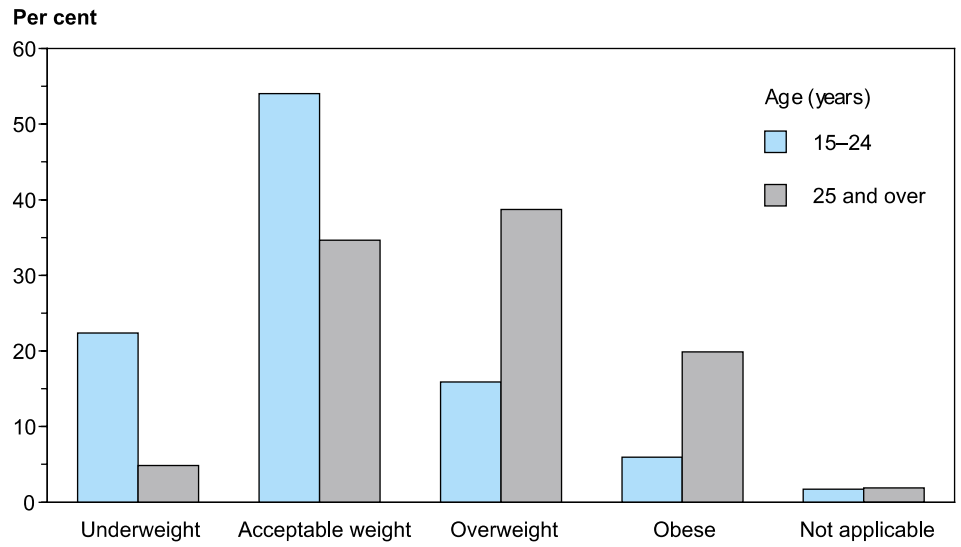
Figure 16.1 : Mean body mass index, 1995

- Mean BMI increased with age from almost 21 for males and females aged 12 years to approximately 27 for those aged 24 years.
- At the younger ages, mean BMI for females was slightly higher than for males. However, over the ages 15 and 16 years the pattern changed and mean BMI for young males became higher than that for young females.

Overweight and underweight

In the following analysis, young people aged from 15 years are classified according to the NHMRC BMI classifications of acceptable weight, overweight and obesity in adults. A body mass index of less than 20 is considered underweight, an index of between 20 and less than 25 is an acceptable weight, whereas a score of between 25 and less than 30 is overweight and 30 or more is obese (NHMRC 1997:203). For example, a person 150 cm tall with a weight of 65 kg would be classified as overweight (BMI 29), whereas a weight of 55 kg would be in the acceptable range (BMI 24).

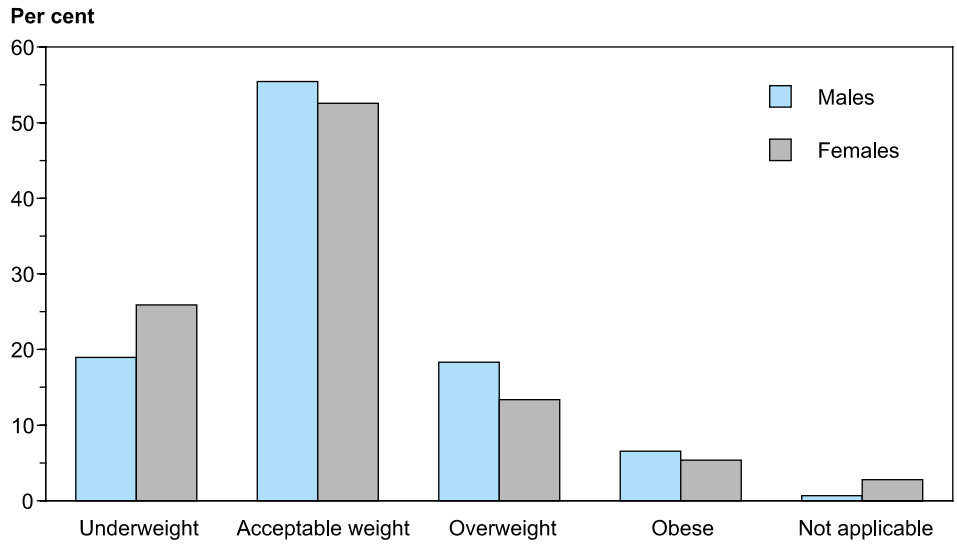
Eating disorders and weight control problems are common among young people. Underweight is not considered a healthy weight and can result in immediate health ill-effects. The immediate ill-effects of obesity amongst young people are social and emotional, and other ill-effects such as hypertension, cardiovascular disease and non-insulin-dependent diabetes mellitus can surface later in life. The main risk factors for obesity are inherited characteristics, a sedentary lifestyle and excessive energy intake (NHMRC 1995).



Source: AIHW from NNS 1995.

Figure 16.2: Weight type, youth and adults, 1995

- More than half (54%) of young people aged 15–24 years were of an acceptable weight, compared with approximately one-third (35%) of adults aged 25 years and over.
- Young people were less likely than adults to be overweight. The proportion of overweight adults (39%) was slightly more than double that of overweight youth (16%).
- Young people were also less likely than adults to be obese. The proportion of obese adults (20%) was more than three times the proportion of young people (6%).
- However, approximately one in five young people were classified as underweight. The proportion of underweight young people (22%) was about four times greater than the proportion of underweight adults (5%).



Source: AIHW from NNS 1995.

Figure 16.3: Weight type for 15–24 year olds by sex, 1995

- Underweight was more common than obesity among young females. The proportion of underweight females aged 15–24 years (26%) was higher than that of overweight and obese females (19%).
- The reverse was true for males, they were more likely to be overweight and obese (25%) than underweight (19%).
- A slightly higher proportion of young males (55%) had an acceptable weight than had young females (53%).
- The proportion of underweight young females (26%) was higher than the proportion of underweight young males (19%).
- Both sexes had similar low levels of obesity, but males were more likely to be overweight than were females.

References

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National Health and Medical Research Centre (NHMRC) 1995. Dietary guidelines for children and adolescents. Canberra: NHMRC.

National Health and Medical Research Centre (NHMRC) 1997. Acting on Australia's weight: a strategic plan for the prevention of overweight and obesity. Canberra: NHMRC.

17 Sun protection

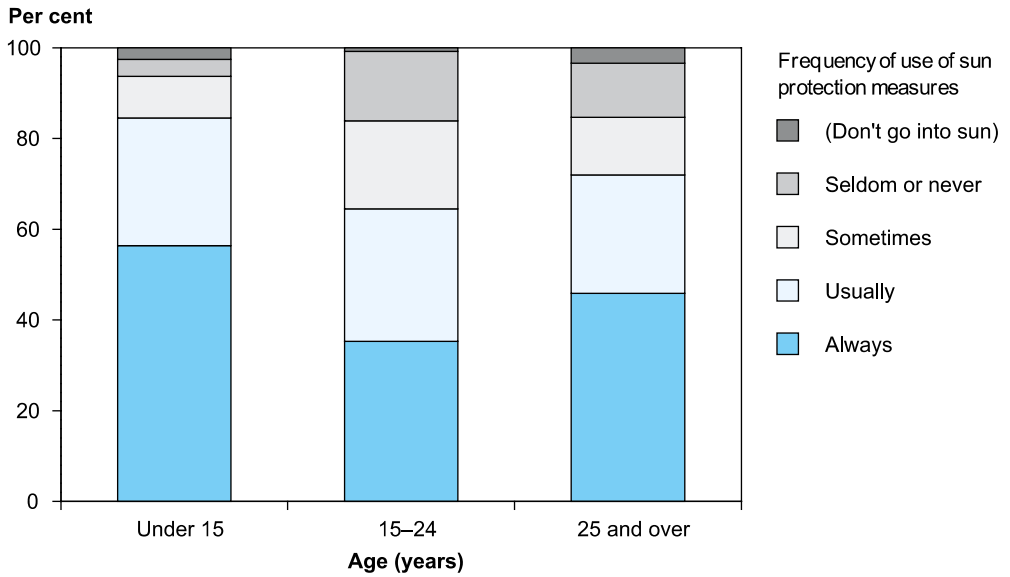
Australia has the highest incidence of melanoma in the world. Melanoma and non-melanocystic skin cancers also constitute the most common form of cancer within Australia and cause significant mortality and morbidity. Early detection of cancerous leisons and their treatment help reduce both mortality and morbidity (NCCI 1997; AIHW 1998).

Exposure to ultra-violet radiation is a primary risk factor for melanoma and other skin cancers (NHMRC 1996). To reduce the risk, over-exposure to sunlight should be minimised. Hats, sunscreen, clothing and other protective measures are also helpful.

The 1995 ABS National Health Survey collected information on exposure to sunlight, use of sun protection measures and examination of freckles or moles by respondents or their doctors. This section compares data on youth aged 15–24 years with children (under 15) and adults (aged 24 years and over).

Frequency of use

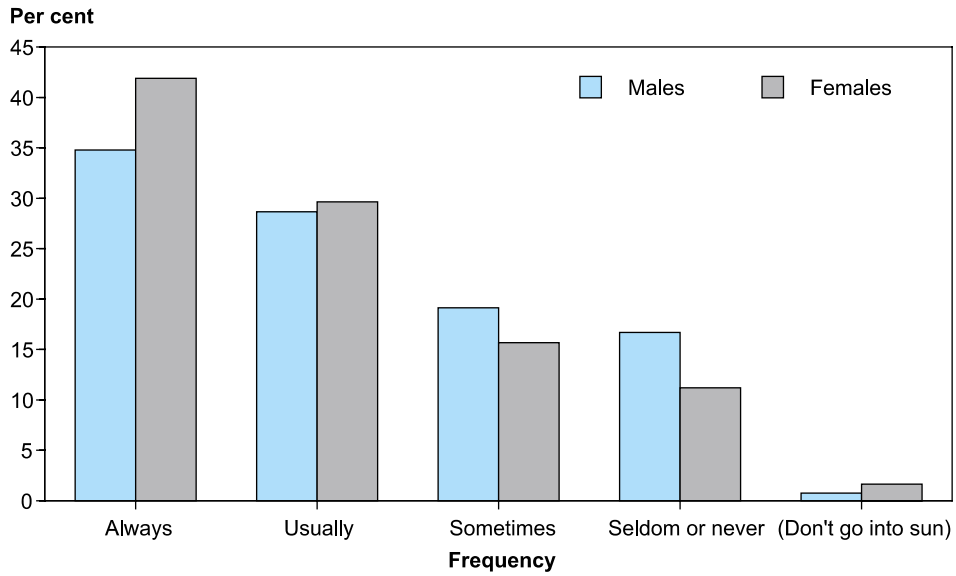
This section presents information on the frequency of use of sun protection measures. Respondents were asked whether they had taken measures to protect themselves from the sun in the past month.



Source: AIHW, from ABS NHS data, 1995.

Figure 17.1 : Frequency of use of sun protection measures, 1995

- Australian youth aged 15–24 years used sun protection measures less frequently than both children (based on caregiver's reports) and adults. Approximately 15% of youth seldom or never used sun protection measures, representing a higher proportion than children and adults.
- Only 35% of youth always used sun protection measures, a lower proportion than both children and adults.
- Although the proportions who usually used sun protection measures were similar for the three age groups, a greater proportion of youth only used sun protection measures sometimes.



Source: AIHW, from ABS NHS data, 1995.

Figure 17.2: Frequency of use of sun protection measures, 15–24 year olds, 1995

- Young females were more likely than young males to always use sun protection measures.
- A higher proportion of young males seldom or never used sun protection measures, compared with young females.
- For both males and females, those aged 18–19 years were more likely than 15–17 year olds and 20–24 year olds to seldom or never use sun protection measures, and less likely to always use sun protection (data not shown).

Type of protection

The previous section showed that Australian youth used sun protection measures less frequently than children aged under 15 years and adults. This section examines the types of protection used.

Table 17.1: Type of sun protection used[(a)], 1995

Age (years)	Hat	Sunscreen	Clothing	Avoid sun	Umbrella	Other
Under 15	79.5	63.5	49.3	24.7	4.5	0.8
15–24	47.5	46.1	42.1	20.9	2.1	0.4
25 and over	54.7	38.3	30.7	23.4	5.3	0.5

(a) For persons who were reported to have used at least one of these sun protection measures. Persons may be recorded as using more than one type of protection.

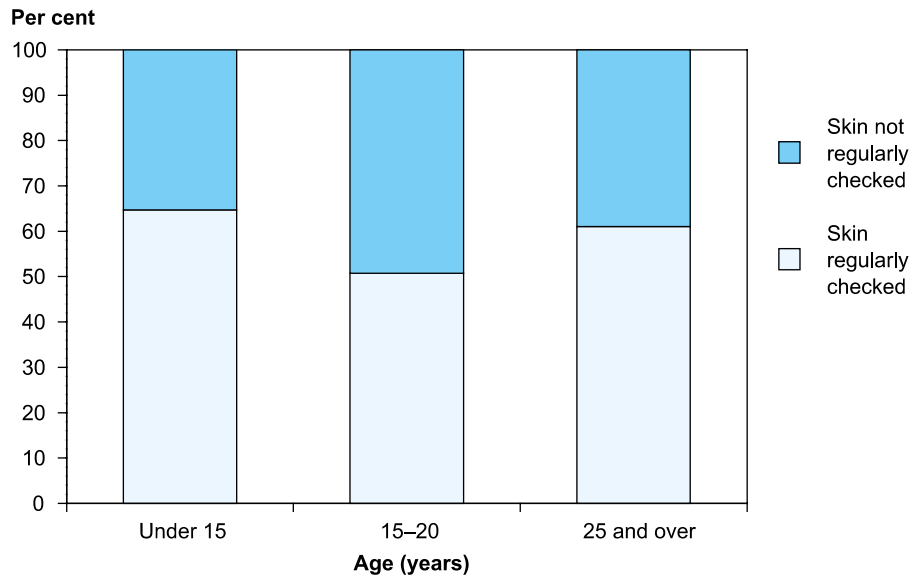
Source: AIHW, from ABS NHS data, 1995.

- For each of the age groups, the types of sun protection measures used were ranked in the same order. Hats followed by sunscreen, and clothing were the most frequently used types of protection.
- Young people aged 15–24 years used a hat, an umbrella or avoided the sun less commonly than children and adults.

- The use of sunscreen and clothing as sun protection measures decreased with age.

Skin examination

This section presents information on the proportions of youth reporting that they regularly checked their skin (for changes in freckles and moles) or had it checked by a doctor. Comparison is made with children and adults.



Source: AIHW, from ABS NHS data, 1995.

Figure 17.3: Whether skin checked regularly by self or doctor, 1995

- In addition to using sun protection measures less frequently than children and adults, Australian youth were also less likely to regularly check their skin themselves or have it checked by a doctor.

References

National Health and Medical Research Council (NHMRC) 1996. Primary prevention of skin cancer in Australia: report of the sun protection programs working party. Canberra: NHMRC.

National Cancer Control Initiative (NCCI) 1997. Cancer control towards 2002—the first stage of a nationally coordinated plan for cancer control. Canberra: DHFS.

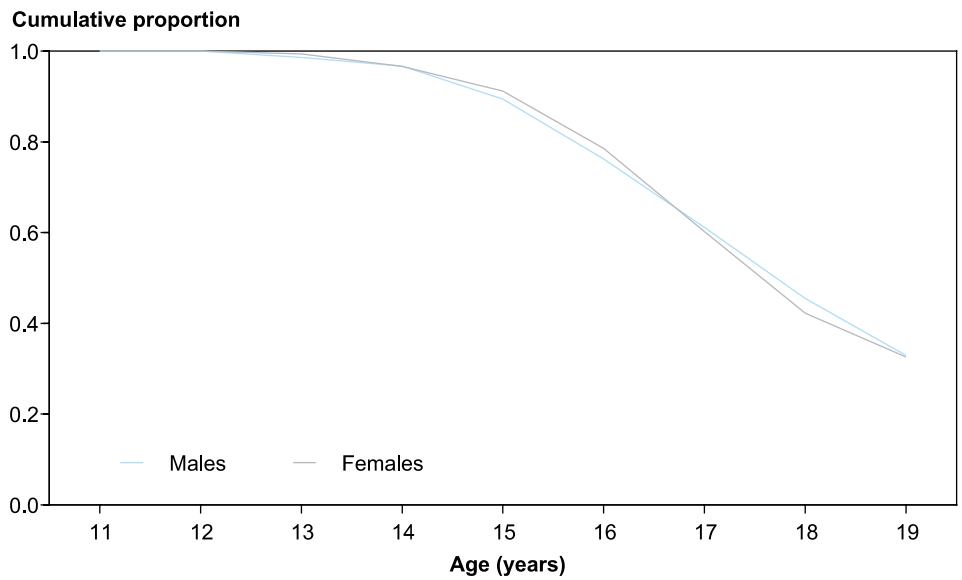
Australian Institute of Health and Welfare (AIHW) 1998. Health in rural and remote Australia. AIHW Cat. No. PHE 6. Canberra: AIHW.

18 Sexual behaviour

Reproductive or sexual health issues, such as pregnancy outcomes and incidence of sexually transmissible diseases, were discussed in Chapter 11. This chapter examines the behavioural aspects of sexuality among young people. The topics covered here include sexual activity, use of contraception and sexual attraction.

Sexual activity

National data on sexual activity are difficult to obtain, although the Australian Bureau of Statistics (ABS) has reported the proportions of women at various ages who stated in the 1995 National Health Survey that they were not sexually active (ABS 1998a:11; 1998b:31). The Australian Research Centre in Sex, Health and Society at La Trobe University collected data on sexual activity from a nationally representative survey of students in Years 10 and 12 in 1997 (n = 3,550). This data set has been analysed to produce 'survival curves' indicating the proportions of young people at each age who have not initiated sexual activity (Figure 18.1).



Source: Evans 1999.

Figure 18.1: Cumulative proportion who have not had sexual intercourse at each age, 1997

The 'survival curves' may be interpreted as follows:

- In 1997, relatively few young people—11% of males and 9% of females—had initiated sexual activity before age 15.
- By age 16, the proportions more than doubled, to 24% for males and 21% for females.
- By age 17, about 40% of both males and females had initiated sexual activity.
- By age 18, over half of both sexes, 55% of males and 58% of females, had initiated sexual activity.
- By age 19, over two-thirds of both males and females had initiated sex.

Use of contraception

Contraception is recognised as a preventive health measure, because it offers protection against unwanted pregnancy. Some forms of contraception, notably the condom, also provide protection from sexually transmissible diseases. In addition, some methods (pill, IUD, sterilisation) require consultation with health professionals, which may then lead to other health issues being considered. The 1995 National Health Survey collected information from women in the age groups most likely to conceive (18–49 years) on their use of contraception and the type they (or their partners, if appropriate) used (Table 18.1).

Table 18.1: Type of contraception used by women aged 18–49 years, 1995 (per cent)

	Age (years)		
Method	**18–19**	**20–24**	**18–49**
Contraceptive pill	66.3	71.1	40.0
Condom	32.2	21.6	17.6
IUD	—	2.1	3.0
Periodic abstinence	—	—	3.0
Other temporary method	—	2.6	2.6
Female sterilisation	—	—	19.2
Male sterilisation	—	—	14.5
Total	**100.0**	**100.0**	**100.0**
Number using contraception	*111,300*	*441,100*	*2,757,900*
Users as a proportion of all women	*49.7*	*65.7*	*66.7*

Source: ABS 1998b:31.

- In 1995, two-thirds of all women aged 18–49 years used some type of contraception. Nearly the same proportion (66%) of women aged 20–24 years reported using contraception, as well as half of women aged 18–19 years.
- The type of contraception used was related to age. Younger women relied heavily on the contraceptive pill, whereas older women were more likely to use sterilisation.
- Nearly one-third of those aged 18–19 years and 22% of those aged 20–24 years reported using condoms as their main method of contraception, compared with 18% of all women. The ABS notes that this 'may also be related to the additional function of condoms in controlling the spread of infections, and the emphasis given to this in information campaigns'.

The La Trobe study of students in Years 10 and 12, noted above, also obtained some information on whether or not the students used a condom when having sex (Table 18.2).

Table 18.2: Students who report ever having sexual intercourse with or without using a condom, 1992 and 1997 (per cent)

	Year 10		Year 12	
Sex	**1992**	**1997**	**1992**	**1997**
Sex without a condom				
Males	12.2	7.4	26.9	26.2
Females	14.1	8.4	35.4	30.8
Sex using a condom				
Males	22.7	20.5	43.1	44.1
Females	16.4	15.1	42.2	45.7

Source: Lindsay et al. 1997:26.

- In general, students of both sexes were more likely than not to use a condom during sexual intercourse. For example, in 1997, 44% of males and 46% of females in Year 12 reported ever having sex using a condom, compared with 26% of males and 31% of females reporting ever having sex without a condom.
- In 1997, the proportions of Year 10 students ever having sex without a condom had decreased to 8% for females and 7% for males, compared with 14% and 27% respectively in 1992.
- The two categories (ever having sex with and without a condom) are not mutually exclusive, thus some students would be in both groups.
- Other information in the La Trobe study indicates that among the sexually active, 'The young women were less likely than young men to report *always* using condoms regardless of whether they had steady or casual partners' (Lindsay et al. 1997:30) (italics added).

Sexual attraction

Sexual attraction or orientation refers to whether a person is attracted to persons of the same sex, the opposite sex, or both. People who are same-sex attracted or attracted to both sexes are considered to be at greater risk of ill-health, particularly HIV/AIDS for men. Because of prevailing social norms, such people (of both sexes) may also be subject to greater risks of being socially ostracised, which can also lead to health problems.

The La Trobe study of Year 10 and Year 12 students asked in 1997 about the students' current feelings of sexual attraction (Table 18.3).

Table 18.3: Students' current feelings of sexual attraction, 1997 (per cent)

	Males		Females	
Sexual attraction	**Year 10**	**Year 12**	**Year 10**	**Year 12**
I am attracted only to people of my own sex	3.4	2.9	2.5	3.7
I am attracted only to people of the opposite sex	93.0	93.6	91.4	89.2
I am attracted to people of both sexes	1.9	2.5	2.8	4.6
Not sure	1.7	1.1	3.4	2.5
Total	**100.0**	**100.0**	**100.0**	**100.0**
Sample size	*788*	*749*	*962*	*1,001*

Source: Lindsay et al. 1997:28.

- About 93% of males and 90% of females reported that they were attracted only to people of the opposite sex.
- The remainder (7% of males and 10% of females) was divided in fairly equal proportions between being attracted only to people of the same sex, to people of both sexes, or 'not sure'.

References

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Evans A 1999. Unpublished analysis of the National Survey of Australian Secondary Students, HIV/AIDS and Sexual Health, 1997.

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Part IV Social determinants

19 Relationships and social participation

Social participation and close relationships have important effects on the health and wellbeing of individuals. This includes interaction with family, friends, and other individuals at school/other educational establishment or employment. It is also important to recognise that the interaction between the quality of social interactions is two-way: poor relationships or social participation can adversely affect health and wellbeing as well as physical or emotional health problems having a negative impact on social participation.

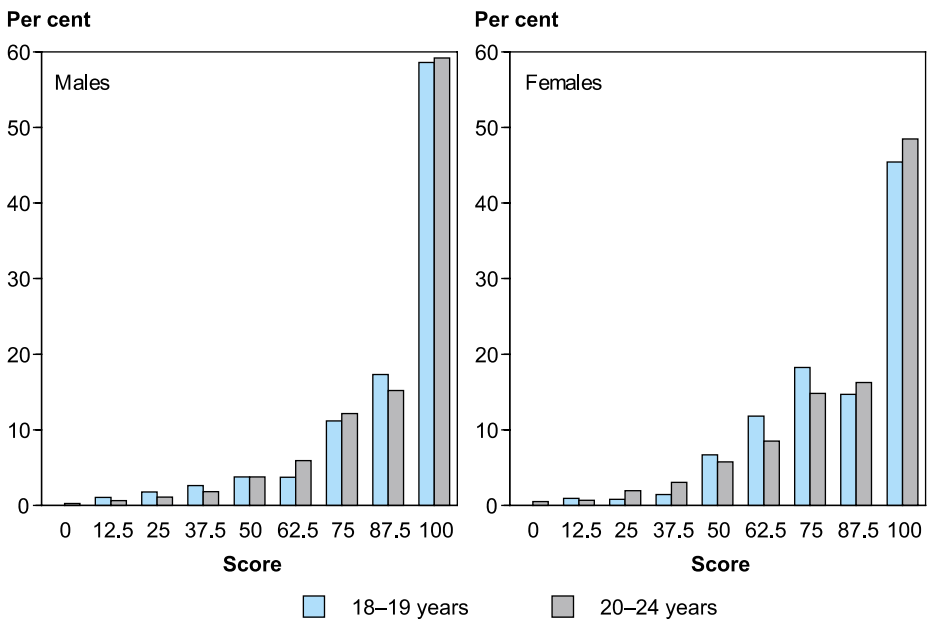
Despite the importance of relationships and social participation on the health and wellbeing of young people, there is only limited national data available for inclusion in this chapter. This deficiency in the availability of data will be an important area for future data development (see Chapter 29 for more discussion). Information presented below includes young people's assessment of the effect of their health and wellbeing on social functioning, and how young people used their time. Some summary results on young people's perceptions of school attachment and peer attachment are also included.

Self-assessed social functioning

Information included in this section is part of the SF-36 survey conducted in conjunction with the ABS 1995 National Health Survey (see Chapter 3 for more details). One of the eight dimensions of the SF-36 survey is 'social functioning', which measures the impact on both the quantity and quality of social activities of the individual's health and wellbeing (Ware et al. 1993:3.9). Two questions were asked:

- During the past 4 weeks, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbours, or groups? (possible responses: not at all, slightly, moderately, quite a bit, extremely)
- During the past 4 weeks, how much of your time has your physical health or emotional problems interfered with your normal social activities like visiting with friends, relatives, etc.? (possible responses: all of the time, most of the time, some of the time, a little of the time, none at all).

From the responses, a score was assigned reflecting social functioning. The lowest score (0) indicates 'extreme and frequent interference with normal social activities due to physical or emotional problems' (Ware et al. 1993:8.6). The highest score (100) signifies that the individual 'performs normal social activities without interference due to physical or emotional problems'.



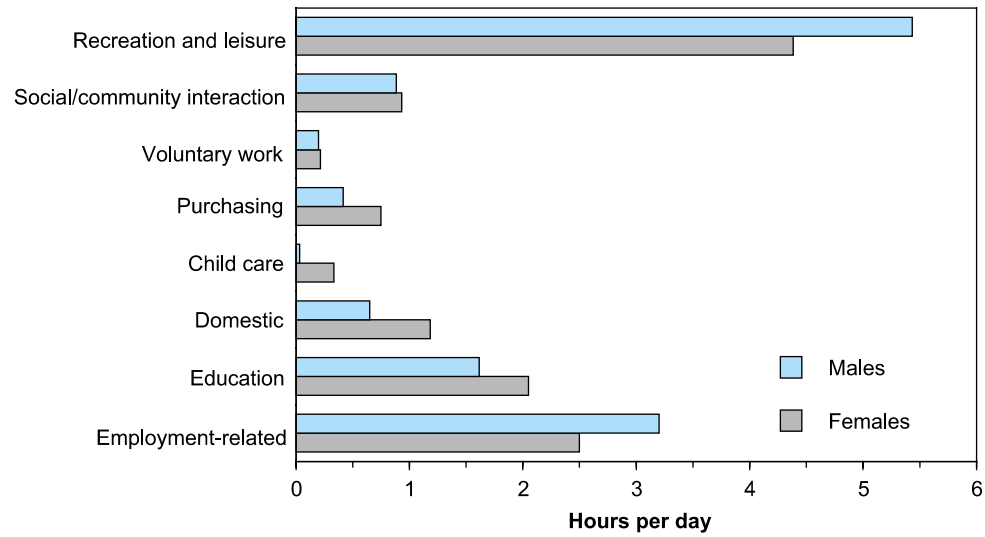
Source: AIHW, from ABS NHS, 1995.

Figure 19.1: Scores from social functioning component of SF-36 survey, 1995

- Nearly 60% of young males aged 18–24 years scored the highest possible score for social functioning, while only a small proportion reported very low scores. There was very little difference between the scores for the two age groups included in the figure.
- As was found to be the norm for the Australian population, young women reported lower SF-36 scores than young males. Nevertheless, the majority of young women still recorded high scores for this dimension of the SF-36 survey—45% of 18–19 year olds and 48% of 20–24 year olds scored the highest possible score of 100.

Time use

Information presented below gives an indication of the amount of time young people spend on different activities. This information comes from the ABS Time Use Survey, last conducted in 1997.



Source: ABS 1998.

Figure 19.2: Average time spent on major activities, 15–24 year olds, 1997

- The activity group accounting for the largest proportion of young people's time use was recreation and leisure. On average, young men spent 5.4 hours on this activity, and young women spent 4.4 hours.
- The next largest activity groups in terms of young people's time use were employment-related (males 3.2 hours, females 2.5 hours), and education (males 1.6 hours, females 2.1 hours).
- Young females spent more time on domestic activities than young men (1.2 hours compared with 0.7 hours), on purchasing (0.8 compared with 0.4), and on childcare (0.3 compared with just over 0).

Other issues

Feelings of belonging to family and communities have been shown to be beneficial to the health and wellbeing of young people. A large survey of school students in grades 7–12 in the United States (aged approximately 12–18 years) investigated the effect of 'connectedness' on a range of health status and risk factor measures (Resnick et al. 1997). Connectedness was measured in terms of both family and school. Parent/family connectedness was described as 'closeness to mother and/or father, perceived caring by mother and/or father, satisfaction with relationship to mother and/or father, feeling loved and wanted by family members'. School connectedness was described as 'felt that teachers treat students fairly, close to people at school, feel part of your school'. Results of the survey demonstrated a strong protective effect from both family connectedness and school connectedness against nearly every risk behaviour measure studied

(including use of a range of substances and sexual activity/pregnancy). Connectedness also had a strong protective effect against emotional distress, suicidal tendencies and violence. Peer and family relationships is also an important component of the health behaviour in school-aged children cross-national survey (King et al. 1996).

In the Australian context, a study conducted by the Centre for Adolescent Health in Melbourne highlights the importance of school social environments in relation to the emotional wellbeing of young people (Glover et al. 1998). A survey of Year 8 students in 26 schools showed that more than 40% of students felt that they did not have anyone who knows them well. Also, nearly a quarter of students had no one to talk to if they were upset, had no one to trust, and had no one to depend on.

References

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20 Education

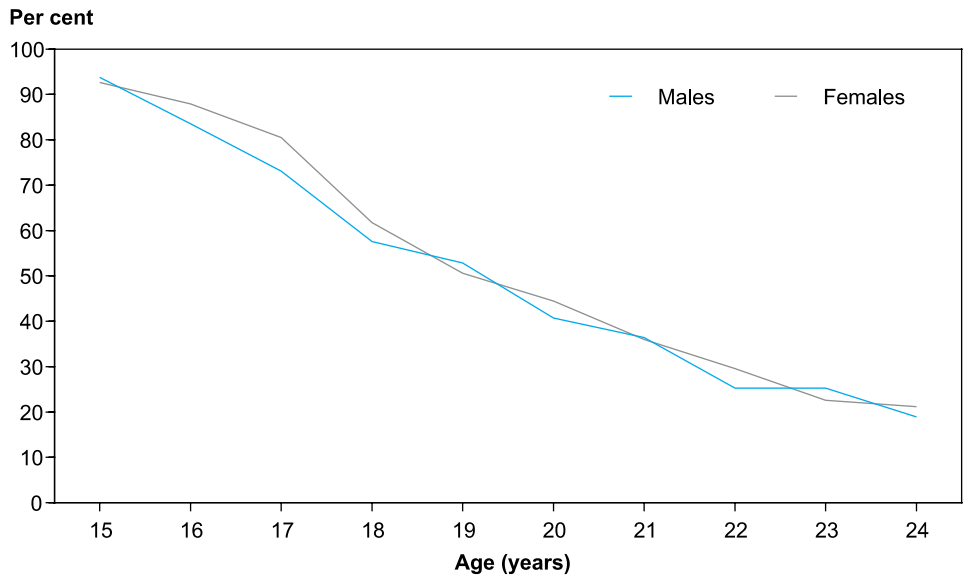
Access to and use of educational opportunities are important for young people, because they are at the ages when compulsory education is finishing and much of the further education and training for the workforce occurs. Completion of secondary education, usually Year 12, is considered important preparation for full participation in many aspects of adult life, including the workforce. Increasingly, some education or training beyond Year 12 is also required for many jobs. People without these levels of educational attainment are considerably disadvantaged. Education is therefore an important component of the overall wellbeing of this age group.

Subjects covered in this chapter include participation in education, apparent retention rates, educational attainment, and literacy levels of the youth population. Data for participation and retention rates are from the National Schools Statistics Collection, which is maintained by the Australian Bureau of Statistics. Educational attainment is measured annually by the ABS in a supplementary survey as part of the Monthly Population Survey. Literacy was measured by the ABS in 1996 in a special national survey of the population aged 15–74 years.

Participation rates

The ABS undertakes an annual survey, usually in September, of participation in education as part of the Monthly Population Survey. The scope for this supplementary survey of education participation is the population aged 15–24 years. Attendance at school is compulsory for children up to age 15 in most States and Territories.

The education participation rate is 'the number of persons attending an educational institution in any group expressed as a percentage of the civilian population in the same group' (ABS 1999a:26). Figure 20.1 charts the rates for males and females at each single year of age, from 15 to 24 years. The rates used here include both full- and part-time participation, and cover attendance at any institution with a primary role of education (schools, secondary colleges, colleges of technical and further education, higher education establishments).



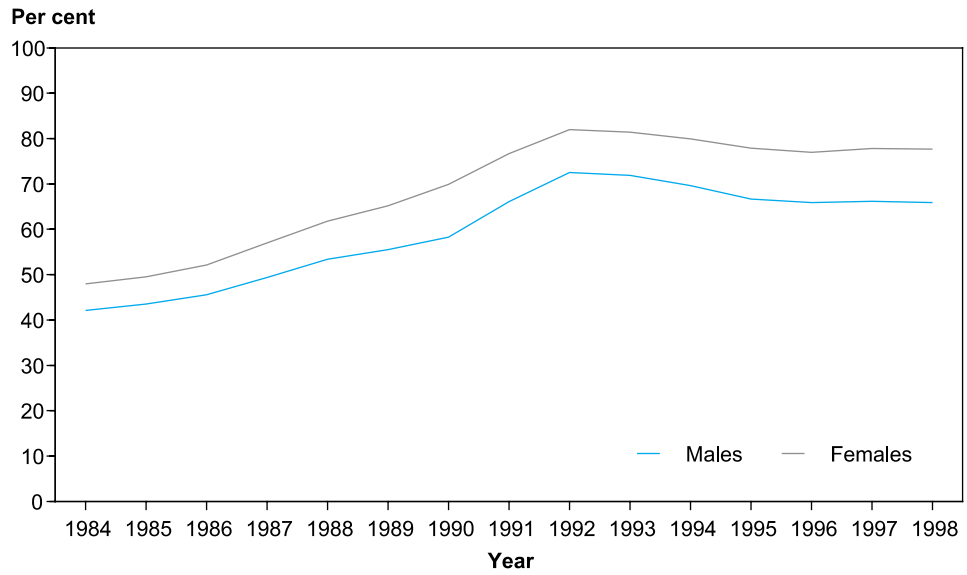
Source: ABS 1999a:7.

Figure 20.1: Education participation rates by age and sex, 1998

- Participation rates at age 15 were around 93% for both males and females in 1998.
- The rates begin to decline after age 15, when schooling is no longer compulsory. The decline is more marked among males than females. At age 17, for example, the rates were 73% for males and 81% for females.
- By age 19, when most young people have completed secondary schooling, participation rates were around 50%.
- About 25% of those aged 23 years were still participating in some form of education, and about 20% of those aged 24.

Apparent retention rates

An indication of the proportion of young people continuing through secondary school is the 'apparent retention rate' to Year 12. This is the percentage of students of a given cohort group who continue from the beginning of secondary school (Year 7 in some jurisdictions, Year 8 in others) to Year 12. The trends in apparent retention rates to Year 12, from 1984 to 1998, are shown in Figure 20.2.



Source: ABS 1990:52; 1992:55; 1998a:69; 1999b:69.

Figure 20.2: Apparent retention rates of secondary students to Year 12, 1984 to 1998

- Retention rates rose steadily from 1984 to 1992 for both males and females, from 42% for males and 48% for females in 1984 to 73% for males and 82% for females in 1992.
- Retention rates have declined since 1992, and in 1998 were 66% for males and 78% for females.
- Female rates have been about 10% greater than male rates each year since 1989.

Educational attainment

The term 'educational attainment' refers to 'the highest post-school educational qualification attained by the respondent' (ABS 1998b:29). The ABS has established a classification for these qualifications with seven categories. In Table 20.1, these have been collapsed into three categories, and are shown together with a breakdown of those without post-school qualifications. For the youth population, there are major differences between the two age groups, 15–19 years and 20–24 years, because many of the former are still 'at school' ('school' referring to a secondary school, not a tertiary institution), and thus the two groups are shown separately. The ABS, however, does not publish these data separately for males and females.

Table 20.1: Educational attainment, 15–24 year olds, May 1998 (per cent)

	Age (years)	
Educational attainment	**15–19**	**20–24**
With post-school qualifications	*4.7*	*38.9*
Bachelor or higher	0.0	11.8
Undergraduate or associate diploma	0.8	7.8
Vocational qualification: skilled or basic	3.9	19.3
Without post-school qualifications	*44.5*	*60.8*
Completed highest level of school	24.7	40.5
Attending tertiary	18.1	20.3
Not attending tertiary	6.7	20.2
Did not complete highest level of school	*19.8*	*20.3*
Attending tertiary	6.5	2.8
Not attending tertiary	13.3	17.6
Still at school	*50.8*	*0.3*
Total	**100.0**	**100.0**
Number ('000)	*1,296.8*	*1,343.0*

Source: ABS 1998b:11.

- Just over half (51%) of the 15–19 years age group were still at school in 1998.
- Nearly 5% of this age group had completed some post-school qualification, and a further 25% had completed the highest level of school. For most, this would be Year 12.
- About one-fifth of the 15–19 year olds reported that they did not complete the highest level of school, but about one-third of these (7% overall) were attending a tertiary institution (defined as any institution offering a post-school qualification).
- For the age group 20–24 years, 39% in 1998 had achieved a post-school qualification, and a further 41% (thus 80% in total) had completed the highest level of schooling. One-fifth (20%) of this age group were attending a tertiary institution.

Literacy levels

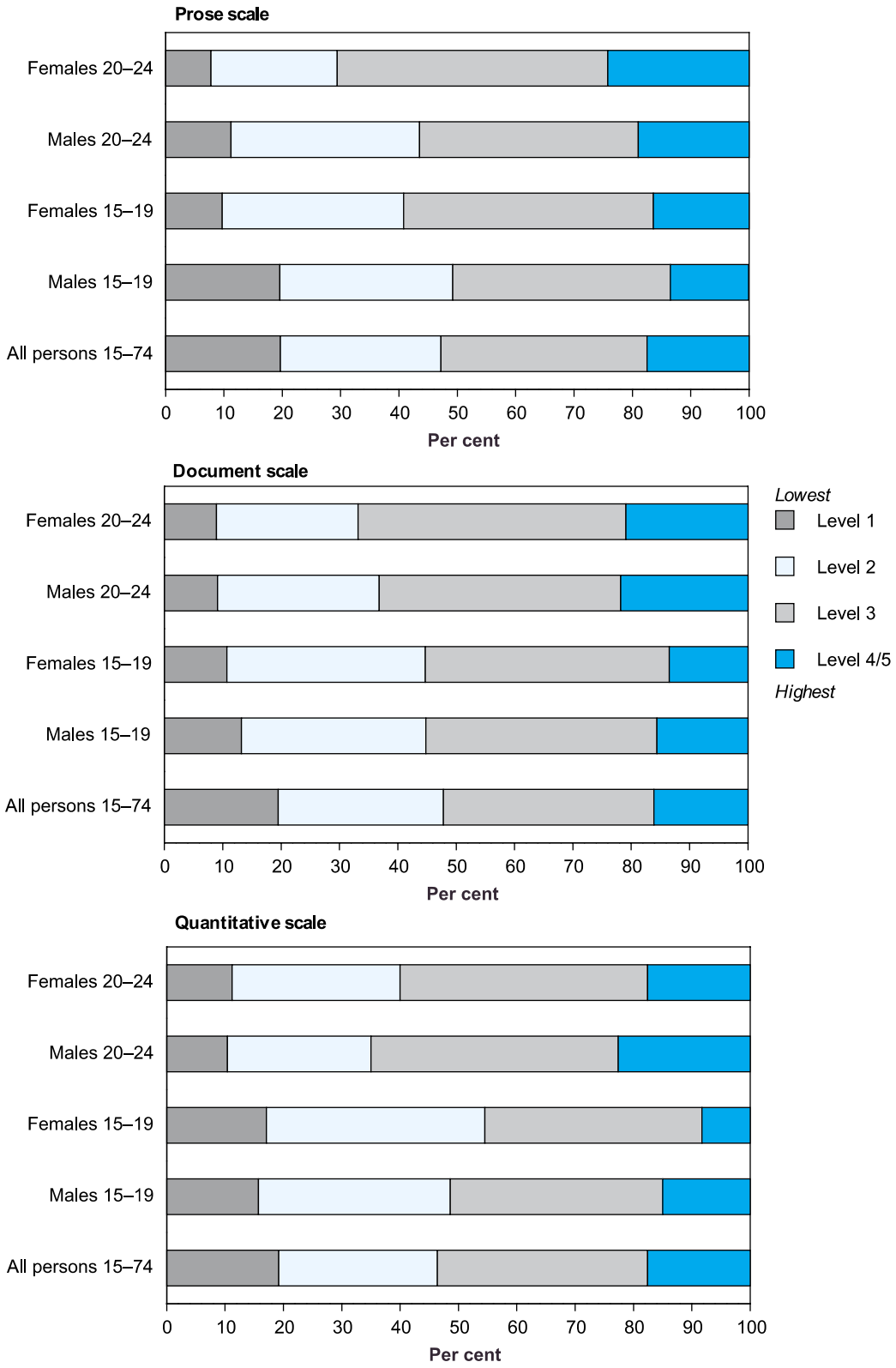
Attendance in courses can be considered to be 'educational input' measures. Although these are useful indicators of the levels of skills a group may have acquired, actual skill levels have been measured through the Aspects of Literacy Survey in 1996. This survey objectively assessed three types of literacy (ABS 1997:ix):

- prose literacy—the ability to understand and use information from various kinds of prose texts, including texts from newspapers, magazines and brochures;
- document literacy—the ability to locate and use information contained in materials such as tables, schedules, charts, graphs and maps; and
- quantitative literacy—the ability to perform arithmetic operations using numbers contained in printed texts or documents.

Literacy is defined as a continuum (as opposed to a dichotomy—'literate' and 'illiterate') denoting how well people use printed material. Progression along this continuum is characterised by increased ability to 'process' (locate, integrate, match and generate) information and to draw correct inferences based on the information being used (ABS 1997:x). For analytical purposes, scores on the continuum for each of the three types of literacy are divided into five levels:

- level 1—would experience considerable difficulties in using many of the printed materials encountered in daily life;
- level 2—can use printed materials that are simple, short and clearly structured, or that require simple arithmetic operations on numbers easily determined from the source text;
- level 3—can use longer, more complex printed material, take conditional information into account, make inferences, compare and contrast information, and extract numbers embedded in complex displays and perform more varied arithmetic operations;
- level 4—can use higher order skills associated with (a) matching and integration of information, (b) making higher order inferences, and (c) performing arithmetic operations where either the quantities or the operation to be performed are not easily determined;
- level 5—can make high-level inferences, use complex displays of information, process conditional information, and perform multiple operations sequentially.

Figure 20.4 illustrates the proportions in the youth population, by sex and age group, at each skill level for each of the three types of literacy. Level 5 was a relatively small level group (about 2% of the total population for each type), and therefore is combined with 4 for the purposes of this analysis.



Source: ABS 1997:13–14.

Figure 20.3: Skill levels of 15–24 year olds for prose, document and quantitative literacy, 1996

- The age group 15–19 years, both males and females, have lower literacy skills (as measured by the lower proportions at level 4/5—'good' and 'very good') than the general population. According to the ABS (1997:5), many in this age group 'will not yet have completed their education and will have little work experience, and therefore their literacy skills may develop further'.
- In contrast, the literacy skills of the age group 20–24 years, both males and females, were well above the population average, with higher proportions at level 4/5, and lower proportions at level 1 in all three types of literacy.
- For document literacy, differences between males and females for both age groups were minimal.
- Males in both age groups had higher skill level than females for quantitative literacy.
- Conversely, females had higher skills for prose literacy than males. In particular, 20% of males in the 15–19 years group had weak (level 1) prose literacy skills, compared with 10% of females in that age group.

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21 Employment

Employment is a socioeconomic contributor to good health. Youth suicide has been associated with unemployment as have a range of other health conditions, including mental health and blood pressure. Unemployed youth also experience higher lifestyle risk factors, (such as cannabis use, tobacco use and alcohol consumption) than employed youth (Morrell et al. 1998).

This chapter provides information on the employment status of young people and the relationship with health and wellbeing. Data presented include the reported health status of students, employed youth, unemployed youth and other youth aged between 18 and 24 years. Average scores from the Medical Outcomes Study 36-item Short-Form Health Survey (SF-36) by labour force status from the National Health Survey (NHS) are also included. The ABS Labour Force Survey is used to provide detail on the distribution of youth by labour force status. Finally information from the NHS is presented on young people's access to a constant supply of food.

Throughout this chapter ABS categories for the 'usual major activity' of young people are combined as follows:

- 'students' include full-time students and part-time students who are not employed (ABS 1996:88)
- 'employed' young people had, during the preceding week, worked in a job, business or farm for 1 hour or more or who had a job but were absent during that week (ABS 1996:88).
- 'unemployed' young people were not employed during the reference week and actively looked for work at some time during the previous 4 weeks and were available to start, or waiting to start within the following 4 weeks(ABS 1996:88).
- 'other' includes all young people who were not in the three previous categories. For example this category would include young people undertaking home duties, those on sickness benefits, pregnant young women or new mothers not on maternity leave and unemployed young people who were not actively seeking employment.

Self-assessed health status

In the 1995 NHS, respondents were asked to rate their health status as either excellent, very good, good, fair or poor. Information on usual major activity was derived from employment and education details.

Table 21.1: Self-assessed health status by usual major activity, 18–24 year olds, 1995 (per cent)

	Self-assessed health status					Proportion of youth
Usual major activity	Excellent	Very good	Good	Fair	Poor	population
Student	26.0	41.7	24.3	7.5	0.6	30.7
Employed	20.2	42.0	28.8	8.2	0.7	52.4
Unemployed	20.4	26.7	33.0	17.2	2.8	6.9
Other	15.6	34.6	36.4	10.7	2.8	10.0

Source: AIHW, from ABS NHS, 1995.

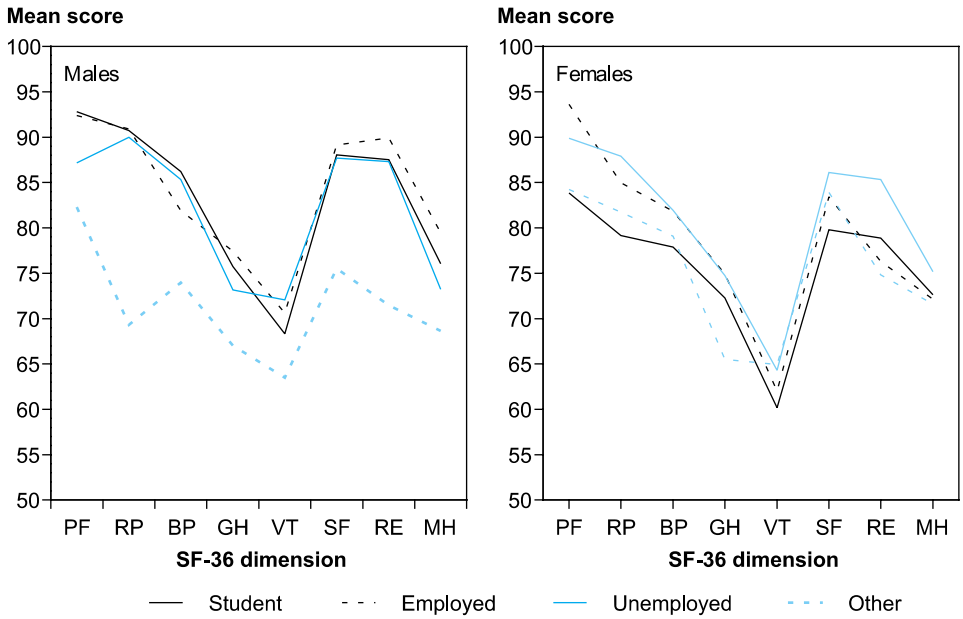
- Higher proportions of unemployed youth reported health status in the lower groups than did students, employed youth and other. In 1995, 20% of unemployed youth assessed their health as being fair or poor, compared with 9% of employed youth and 8% of students.
- Unemployed youth were least likely to report health status in the excellent or very good categories. Whereas 68% of students and 62% of employed youth reported excellent or very good health, the corresponding figure for unemployed youth was only 47%. However 80% of unemployed youth still reported good to excellent health.

The relative health status of the groups is examined further in the next section.

SF-36 Health Survey

The SF-36 (Short-Form, 36 questions) is a survey designed to provide information on general health and wellbeing (see Chapter 3 for more detail). In 1995, the SF-36 questionnaire was administered to approximately half of the NHS respondents aged 18 years and over. The SF-36 provides indicators across eight dimensions of health and wellbeing: physical functioning (PF), role limitations due to physical problems (RP), bodily pain (BP), general health perceptions (GH), vitality (VT), social functioning (SF), role limitations due to emotional problems (RE), and mental health (MH). A score is derived for each of the eight dimensions and is expressed as a value between zero and 100 (ABS 1995).

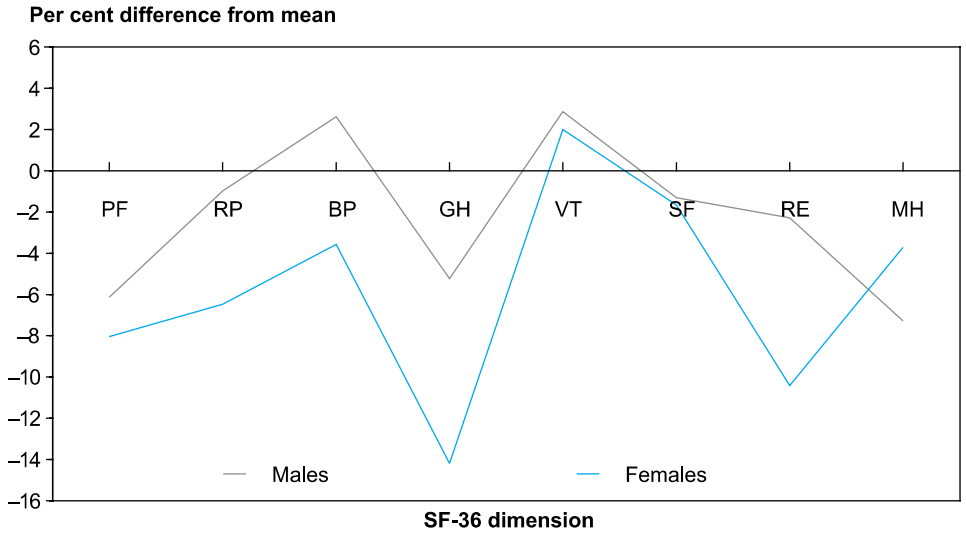
The lower scores experienced by youth for GH, VT and MH (Figure 21.1) follow the normal SF-36 pattern as mid-range scores reflect no unfavourable evaluations of health in general— not feeling tired or worn out and no symptoms of psychological distress. To record high scores for VT, a respondent would have to report feeling full of pep and energy all of the time, and for MH report frequently feeling happy, calm and peaceful. High scores for the remaining five variables indicate the absence of limitations or disabilities (ABS 1995).



Source: AIHW, from ABS NHS, 1995.

Figure 21.1: SF-36 scores by usual major activity by sex, 18–24 year olds, 1995

- Male mean scores for each of the groups of usual major activity, except 'other', were higher than the corresponding mean scores of young females.
- For males, the mean scores for 'other' (those who are neither in the labour force nor studying) were the lowest on all of the health and wellbeing indicators. Similarly, for females, 'other' scored the lowest on the majority of the health and wellbeing indicators. Therefore, this group exhibited the poorest state of health and wellbeing. An analysis of the distribution of scores shows that 'other' was frequently the most diverse. Some young people within the 'other' group scored very high while others scored very low.
- For young males the mean scores for employed, unemployed and students varied as the top ranking three, whereas employed scored the highest for females on most dimensions, followed by students and then unemployed.
- For both males and females, unemployed mean scores for 'physical functioning' were lower than employed persons and students. Unemployed young people's performance of physical activities was more limited due to health than students and employed persons.
- On average, unemployed females' evaluation of their personal health was significantly lower than employed females, students and 'other'. Unemployed females also reported a significantly greater interference with daily activities resulting from emotional problems than employed females.
- Young unemployed males reported a significantly lower level of mental health than their employed counterparts, but for females, all groups recorded similar levels of mental health.



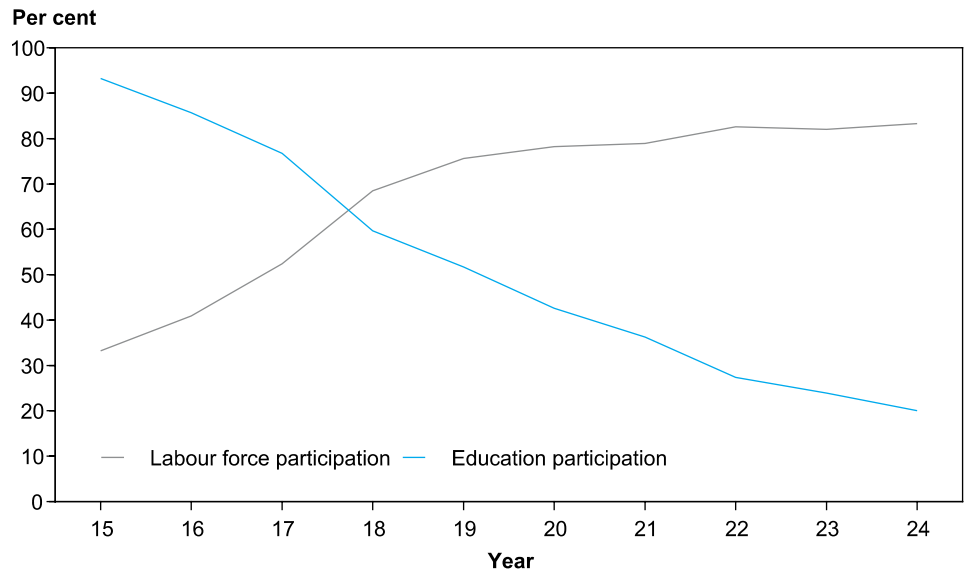
Source: AIHW, from ABS NHS, 1995.

Figure 21.2: Differences from employed and student SF-36 mean scores for unemployed males and females, 18–24 year olds, 1995 (per cent)

- Figure 21.2 shows the per cent difference between unemployed mean scores and with employed persons and students combined, for young males and young females.
- Unemployed males were closer to the mean of students and employed males than unemployed females were to the mean of students and employed females. The health and wellbeing of unemployed females were generally poorer than that of employed females and students. In comparison, the health and wellbeing of unemployed males was better than employed males and students on two dimensions and worse on the others.

Labour force and education participation rates

The labour force participation rate for each age in Figure 21.3 below is the number of people in the labour force expressed as a percentage of the civilian population of that age. To be included in the labour force, individuals must be either employed (worked at least 1 hour during the reference week) or unemployed and have actively looked for work in the 4 weeks prior to the reference week and be available to start work during the reference week. The graph also shows the proportion of young people who are attending an educational institution. This education participation rate is the number of full-time students at each age expressed as a percentage of the estimated resident population of that age. The labour force and education participation rates are not mutually exclusive; for example, a full-time student with a casual job would be counted in the education participation rate as well as the labour force participation rate.



Source: ABS 1998a; ABS 1998b.

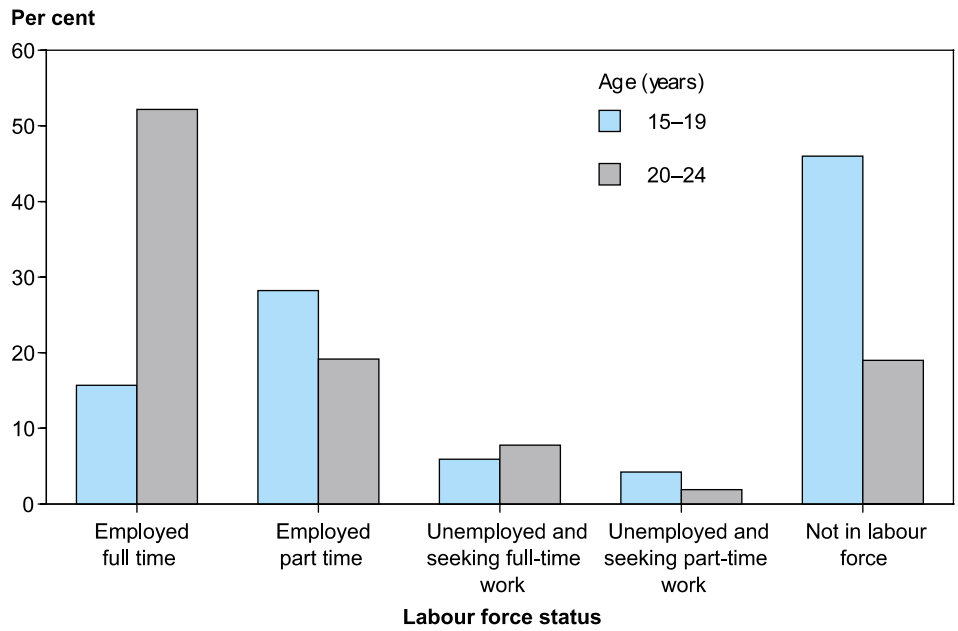
Figure 21.3: Labour force participation rates 15–24 year olds, August 1998, and education participation rates September 1998 (per cent)

- As age increases, the proportion of young people in the labour force increases to a plateau of approximately 80% from age 20. Conversely, the proportion of young people attending educational institutions decreases with age.
- Some young people partake in some kind of paid employment (this could be merely 1 hour of work per week) while still attending educational institutions. The labour force participation rate for 15 year olds is 33% and the education participation rate is 93%. At the other end of the scale, the labour force participation rate for persons aged 24 years is 83% and the education participation rate is 20%.

Labour force status

This section presents information on the number of 15–19 year olds and 20–24 year olds employed full time and part time, unemployed and actively seeking part-time and full-time work, as well as those not in the labour force. The data are from the ABS Labour Force Survey.

The ABS defines a part-time worker as a person who usually works less than 35 hours per week and did so during the reference week, and an unemployed person as someone who must be aged 15 and over, not employed during the reference week and actively seeking work (ABS 1998a).



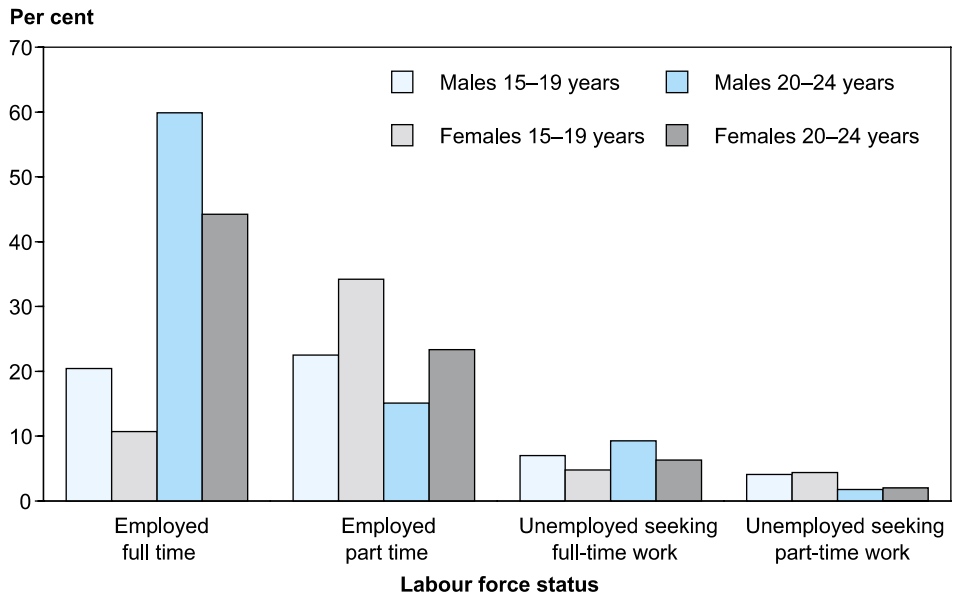
Source: ABS 1998a.

Figure 21.4: Labour force status by age, August 1998 (per cent)

- As shown in Figure 21.3, the proportion of young people still studying decreases with age, whereas the proportion in the labour force increases with age. Figure 21.4 above gives more information on the labour force status of 15–19 year olds compared with 20–24 year olds.
- Young people aged 15–19 years were more likely to work or seek part-time employment whereas those aged 20–24 were more likely to undertake or seek full-time work.
- A far greater proportion of 20–24 year olds were in full-time employment compared to 15–19 year olds (52% and 16% respectively).
- While 28% of 15–19 year olds were in part-time employment, the corresponding figure for young people aged 20–24 years was 19%.
- A greater proportion of young people aged 20–24 years were unemployed and actively seeking full-time employment compared with those aged 15–19 years. In contrast, a greater proportion of young people aged 15–19 years were unemployed and actively seeking part-time work.
- The proportion of young people aged 15–19 years who were not in the labour force was more than double that of 20–24 year olds.

Sex and labour force status

Labour force status is influenced not only by age, but also by sex. Whereas the previous section presented the differences in labour force status between young people aged 15–19 and 20–24 years, this section presents differences between the sexes within these age groups.



Source: ABS 1998a.

Figure 21.5: Labour force status by age and sex, August 1998 (per cent)

- Males aged 15–19 and 20–24 years were more likely than their female counterparts to be in full-time employment. At ages 15–19 years, the proportion of males in full-time employment was almost double that of females (20% and 11% respectively). At ages 20–24 years, 60% of males were employed full-time compared with 44% of females.
- Females aged 15–19 and 20–24 years were more likely to work part-time than males of the same ages.
- For each age group, the proportions of unemployed males seeking full-time work were slightly greater than the proportions of females. The proportions of unemployed males and females aged 15–19 and 20–24 years seeking part-time work were similar.

Youth unemployment and underemployment

Table 21.2: Unemployment rates, 15–24 years old, August 1998 (per cent)

	Sex and age (years)					
	Males		Females		Persons	
	15–19	20–24	15–19	20–24	15–19	20–24
Participation rate	54.0	86.0	54.0	75.9	54.0	81.0
Unemployment rate	20.6	12.8	16.9	10.9	18.8	11.9
Long-term unemployment rate (unemployed for 52 weeks or more)	3.5	3.6	3.0	3.1	3.2	3.4

Source: ABS 1998a.

- Participation rates measure the percentage of the civilian population who are in the labour force (employed or unemployed).
- The lower participation rates for females compared with males aged 20–24 years might be explained by females not entering the labour force due to pregnancy and child rearing.
- The unemployment rate is the percentage of the labour force that is not employed and actively seeking work (it does not include those who are unemployed and have given up searching for work or those who might have taken part-time employment while waiting for a full-time opportunity).
- Males aged 15–24 have higher unemployment rates than females at the same ages.
- Young males experienced a higher unemployment rate than females. They also had slightly higher long-term unemployment rates (around 3.5% compared to 3.0%).

A further measure of youth labour force status is the proportion of part-time workers who desired to work more hours. This can be measured as the percentage of workers who worked less than 35 hours (part-time workers) but wished to work more hours, or the percentage of part time workers who actively sought full-time work in the 4 weeks to the end of the reference week. Part-time workers aged 20–24 years were more likely to prefer to work more hours (40% compared with 26% of 15–19 year olds) and to have actively sought full-time work (18% compared with 9% of 15–19 year olds). Males aged 20–24 years were more likely than females to prefer to work more hours (45% of males and 37% of females), and to actively seek full-time work (21% of males and 15% of females). The proportions for those aged 15–19 years were similar for males and females (ABS 1998a).

Access to food supply

The 1995 National Nutrition Survey asked if respondents had ran out of food and had no money to buy more at any time in the last 12 months. Table 19.3 presents this information by usual major activity. Figure 15.2 in Chapter 15 shows the proportion of young people who ran out of food and had no money to buy more by age group and sex.

Table 21.3: Persons who ran out of food, by usual major activity, 16–24 year olds, 1995 (per cent)

Usual major activity	Ran out of food and had no money to buy more	Did not run out of food	Not applicable
Student	8.5	91.5	0.0
Employed	6.3	93.4	0.2
Unemployed	31.1	68.0	1.0
Other	10.2	84.5	5.4

Source: AIHW from NNS 1995.

- Unemployed young people were the most likely to run out of food and have no money to buy more. About 31% of unemployed people reported being in this situation, compared with 9% of students and 6% of employed young people.

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22 Legal and justice issues

There are interrelationships between the health and wellbeing of young people and crime. Being the victim of crime—whether as the direct impact on the victim, an observer, or even feeling threatened—can have negative impacts on health and wellbeing. Also, the level of youth criminal activity can be seen as an indication of lack of support by society for young people (Federal Interagency Forum on Child and Family Statistics 1998). There are currently a number of strategies being used by governments to respond to perceived increases in the level of crime in the community, particularly among juveniles (National Crime Prevention 1999). These strategies include increased expenditure on the criminal justice system, including harsher penalties for offenders (National Crime Prevention 1999). There is also increasing emphasis being placed on interventions aimed at preventing crime, as well as the introduction of aspects of restorative justice (for example, conferencing), and alternatives to incarceration for juveniles.

This chapter contains information both on young people as victims of crime, and on young people as offenders. There remain limitations in the information available for the section on young offenders, with no national data on juveniles involved in crime currently available. Development of a national juvenile justice data collection is currently being initiated by the National Community Services Information Management Group and the Australasian Juvenile Justice Administrators. Background information is also included in a recently conducted scoping study (AIHW 1998). Also scarce is information on young people who are not imprisoned for committing a crime. As a result, information included in this chapter on offenders is limited to 17/18–24 year olds in prison.

Young people as victims of crime

This section includes information on young people as victims of crime, collected by the ABS from police records. These data do not include victims for which the crime was not reported to police, the number of which may be substantial. It also excludes witnesses of crimes if they are not the direct victim of the offence.

Table 22.1: Number of victims of crime for selected offences recorded by police, 1996

	Age (years)		
Offence	**15–19**	**20–24**	**All ages**
Murder	22	34	311
Attempted murder	39	34	331
Manslaughter	1	2	37
Driving causing death	16	24	339
Assault	16,420	18,797	113,535
Sexual assault	2,859	1,615	14,394
Kidnapping/abduction	73	68	479
Armed robbery[(a)]	510	564	3,646
Unarmed robbery[(a)]	1,694	1,342	9,192
Blackmail/extortion[(a)]	26	20	214

(a) Victims refers to individual persons.

Source: ABS 1997a.

- The most common offence experienced by victims of crime is assault, accounting for more than three-quarters of offences included in Table 22.1. For 15–19 year olds, the 16,420 assaults accounted for 76% of offences, and for 20–24 year olds the 18,797 assaults made up 84% of the offences.
- Sexual assault was the next most common offence experienced in all age groups: 13% of offences for 15–19 year olds, 7% for 20–24 year olds, and 10% for the whole population.
- Unarmed robbery and armed robbery were the next most frequent offences experienced. Other offences experienced by victims of crime were relatively uncommon.

Table 22.2: Victimisation rate, 1996 (rate per 100,000)

	Males			Females		
	15–19 years	20–24 years	All ages	15–19 years	20–24 years	All ages
Murder	2	4	2	1	1	1
Attempted murder	4	3	3	2	2	1
Driving causing death	1	3	1	1	0	1
Assault	1,465	1,498	702	1,082	1,172	488
Sexual assault	61	30	30	392	203	125
Kidnapping/abduction	2	2	2	10	8	4
Armed robbery[(a)]	61	57	27	18	23	12
Unarmed robbery[(a)]	207	129	60	53	62	38
Blackmail/extortion[(a)]	4	1	2	1	2	0

(a) Victims refers to individual persons.

Source: ABS 1997a.

- Table 22.2 translates the number of victims (shown in Table 22.1) into a victimisation rate—the number of victims per 100,000 population.
- A higher proportion of young people were victims of assault than for the whole population in 1996. For young males, the rate was a little under 1,500 per 100,000, compared with 700 per 100,000 for all males. For young females, the rate was around 1,100 per 100,000 compared with a little under 500 per 100,000 for all females.
- The recorded victimisation rate for sexual assault among young women was nearly 400 per 100,000 for 15–19 year olds, and just over 200 per 100,000 for 20–24 year olds. This compares with 125 per 100,000 for all females, and 30 per 100,000 for all males.
- Young people also have higher victimisation rates for robbery compared with all ages. For young males, the victimisation rate for armed robbery is around twice that for all males, and the rate for unarmed robbery is 2–3 times higher. For young females, the victimisation rates for armed and unarmed robbery were around 2 and 1.5 times higher than the rate for all females respectively.

Young offenders

This section includes information about young adults in prison—those aged 17/18 (depending on the jurisdiction) to 24 years. It does not cover juvenile offenders (those aged under 17/18 years), nor does it include any information about offences not resulting in imprisonment (for example those not reported, no arrest as a result, police cautioning used, conferencing, youth detention, home detention).

Table 22.3: Prisoners in Australia, June 1995

	Males			Females		
Age (years)	Number	Per cent	Imprisonment rate[a]	Number	Per cent	Imprisonment rate[a]
Under 18[b]	58	0.4	44.8	—	—	—
18–19	903	5.4	341.0	32	3.8	12.7
20–24	3,875	23.4	526.4	156	18.7	22.0
Total youth	7,836	29.1	427.8	188	22.5	17.4
25 and over	11,757	70.9	209.3	647	77.5	11.1
All prisoners	**16,593**	**100.0**	**245.9**	**835**	**100.0**	**12.0**

(a) Rate per 100,000 population.

(b) The minimum age for imprisonment varies between States and Territories from 17 to 18 years.

Source: ABS 1996.

- In June 1995 there were 7,836 young males and 188 young females in Australian prisons. This corresponds to 29% of the male prisoner population, and 23% of the female prison population. In 1998, males aged 18–24 years accounted for 14% of the Australian adult population; the corresponding figure for females was 13% (AIHW Population Database).
- Young people have higher imprisonment rates than persons aged 25 years or more. For males, the youth rate was 428 per 100,000 compared with 209 per 100,000 for males aged 25 or more. For young females the rate was 17 per 100,000 compared with 11 per 100,000 for older women.

The type of offence for which people are imprisoned varies by age, grouped here by most serious offence for each prisoner (ABS 1997b). For prisoners under 25 years of age, 'break and enter' was the most common offence, followed by 'robbery' and 'assault' in 1995. For prisoners aged 25 years or more, 'sex offences' was the most common offence, followed by 'robbery' and 'assault'. Less than 5% of prisoners under 25 years had 'deal/traffic drugs' as their most serious offence, compared with just over 10% of prisoners aged 25 years or more.

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Part V Health and community services

23 Health services

The State and Territory Governments are responsible for providing most public sector health services in Australia. A portion of the funding for these services, however, comes from the Commonwealth Government. Local governments also provide some public health services. These public services include hospital services, community services and school-based services. The Commonwealth also provides partial funding for private health services, including primary care, through the Medicare national health insurance scheme (AIHW 1998).

This chapter provides an overview of health services using currently available national data. The first section deals with costs, and the second section provides information on health service use including hospital use and visits to private medical practitioners. Information on reasons for hospitalisation and reasons for visiting general practitioners is included in Chapter 6. Due to a lack of data (AIHW 1998), no information on quality of care is able to be included here.

As many health services are administered or overseen by the State and Territory Governments, information provided is on a States and Territories basis where possible.

Costs

This section provides information on the amount of direct expenditure on health care services provided for young people aged 15–24 years. These results are sourced from work undertaken at AIHW to estimate the proportion of total health system costs that is spent on particular diseases/injuries, as well as how these costs are distributed to different age groups (Mathers et al. 1998).

Table 23.1: Health system costs, 15–24 year olds, 1993–94 ($ million)

	Males	Females	Total
Hospital			
Inpatient	359.4	552.3	911.7
Non-Inpatient	220.8	186.3	407.1
Nursing home	1.4	4.0	5.4
Medical services	202.1	369.8	571.9
Pharmaceuticals	133.2	229.8	363
Dental and allied	211.7	302.9	514.6
Other	70.0	103.4	173.4
Total	**1,198.6**	**1,748.4**	**2,947.0**
Per capita	864.0	1,309.0	1,083.0

Source: Mathers et al. 1988.

- In 1993–94, the total direct health system costs for young people aged 15–24 years was $2,947 million. Of this, 59% was for young females. The per capita direct costs for this age group were $1,083 in 1993–94.
- The largest component of these costs were for inpatient hospital services (31%), followed by medical services (19%) and dental/allied services (17%).
- These costs are low compared with other age groups. For males, 15–24 year olds had the second lowest per capita costs among the age groups examined, and young females had the third lowest (Mathers et al. 1998). Overall, 9.4% of total health expenditure in 1993–94 was for 15–24 year olds who accounted for 15.3% of the population (AIHW Population Database).

Use

This section includes information on the total number of health services provided to young people in two areas: admitted patients in hospitals and the number of services provided under Medicare.

Hospital use

In 1997–98, 8.4% of hospitalisations in Australia were for 15–24 year olds (AIHW 1999), whereas this age group was estimated at 14.3% of the total Australian population (AIHW Population Database).

Table 23.2: Hospitalisations for 15-24 year olds[(a)], 1997–98

Sector and sex	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total[(b)]
Public hospitals									
Males	41,599	27,943	29,459	11,190	10,458	2,569	2,436	1,652	**127,306**
Females	69,650	51,273	46,758	21,280	21,431	4,892	3,147	4,146	**222,577**
Total public	*111,249*	*79,216*	*76,217*	*32,470*	*31,889*	*7,461*	*5,583*	*5,799*	***349,884***
Private hospitals									
Males	14,500	13,340	9,048	5,155	4,403	1,197	671	n.a.	**48,314**
Females	24,133	17,774	12,912	8,546	5,096	2,403	744	n.a.	**71,608**
Total private	*38,643*	*31,114*	*21,960*	*13,701*	*9,499*	*3,600*	*1,415*	*n.a.*	***119,932***
Total	**149,892**	**110,330**	**98,177**	**46,171**	**41,388**	**11,061**	**6,998**	**5,799**	**469,816**

(a) Excludes a small number of hospitalisations where sex was not reported.

(b) Doesn't include the private hospital in the Northern Territory.

n.a. not available

Source: AIHW 1999.

- In 1997–98, there were nearly 470,000 hospitalisations for young people aged 15–24 years in Australia. The majority (74%) of these were in the public sector.
- There were more hospitalisations for females than for males: 168 female hospitalisations for every 100 male hospitalisations.

Private medical services

These services are those provided to 15–24 year olds by general practitioners and specialist practitioners including those provided for private patients in hospitals for which reimbursement has been sought under the Medicare health insurance arrangements.

Table 23.3: Number of medicare services[(a)], 1997–98

	Males		Females		Total
State/Territory	15–19 years	20–24 years	15–19 years	20–24 years	15–24 years
New South Wales	1,136,999	1,279,017	1,802,086	2,672,821	6,890,923
Victoria	754,254	901,920	1,200,705	1,841,475	4,698,354
Queensland	631,875	658,026	1,089,670	1,498,141	3,877,712
Western Australia	231,488	255,444	363,282	500,704	1,350,918
South Australia	289,058	295,469	517,611	712,985	1,815,123
Tasmania	70,862	71,076	137,511	172,702	452,151
Australian Capital Territory	55,181	60,377	89,362	129,819	334,739
Northern Territory	17,201	20,995	34,863	59,289	132,348
Australia	**3,186,918**	**3,542,324**	**5,235,090**	**7,587,936**	**19,552,268**

(a) Processed in 1997–98.

Source: HIC 1999, Table 10.

- Medicare items include services provided both outside hospitals by medical practitioners, and services provided for private patients in hospitals (both public and private hospitals).
- In total, there were 19.6 million Medicare services for 15–24 year olds in 1997–98. Of these, 66% were for females.
- There were 45% more services provided for 20–24 year old females than 15–19 year old females. This is likely to reflect in part a higher fertility rate in the older age group.

Other health services

There are a number of other services provided to young people, although data on these services is limited. Family Planning of Australia clinics are one service frequently used by young women. In 1996–97, there were 72,303 visits made to these clinics by young women aged 25 years or less (FPA 1998). This accounted for 39% of visits to these clinics.

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24 Community services

Community services are part of a wide range of social programs—including health, education, and income security—designed to enhance individual or community wellbeing and to provide opportunities for full participation by all citizens in social and economic life (AIHW 1993:11–12). Most community services are targeted to meet specific needs, and some are specifically designed to assist young people with particular needs.

This chapter presents information on the availability and use of those community services which the Australian Institute of Health and Welfare is required to report on every 2 years. These include services for families and children (divided here into counselling services and child protection services); services for people with disabilities; housing assistance services; and services for homeless people.

Counselling services for youth

The Commonwealth Government and State/Territory Governments fund a variety of 'family support services', of which counselling services are a part. Some counselling services are targeted specifically for young people. The Commonwealth's Adolescent Mediation and Family Therapy program (formerly in the Attorney-General's Department, but now part of the Department of Family and Community Services) is aimed primarily at preventing youth homelessness, using mediation to resolve conflicts between young people and their caregivers. In 1995–96, twelve organisations were funded under this program (a total of $1.8 million), and served 2,881 clients (AIHW 1997: 133).

State/Territory Governments also fund non-government agencies to provide counselling services, including telephone counselling, some of which (such as Youthline) are targeted at young people.

A wide range of organisations, many funded under the Commonwealth's National Youth Suicide Prevention Strategy, provide counselling and other services to young people (Mitchell 1999:2–7).

Child protection services

Community services departments in each State and Territory are responsible for protecting children (mainly persons under 18 years of age) who have been abused or neglected, children who have been abandoned, or children for whom there is no adequate provision for their care (for example, the child's parent is ill or in gaol) (AIHW 1997:189). The AIHW compiles annually the data on child protection services from community services departments in each jurisdiction. Table 24.1 presents these data from 1997–98 for children aged 12–16 or 12–17 years for three specific types of services:

- children who were the subject of a notification to the community services department of abuse or neglect, and an investigation has resulted in the case being classified as substantiated, that is, there is reasonable cause to believe that the child has been, or is being, abused, neglected or otherwise harmed (*substantiation of abuse/neglect*);
- children who have been placed on a *care and protection order* by the relevant court, often because the child has been abused or neglected, but in some cases because adequate provision has not been made for the child's care, or there has been an irretrievable breakdown in the relationship between the child and his or her parents;
- children who have been placed by the community services department in *out of home care*, that is, in an institution or with a family other than their parents, and the State/Territory Government makes a payment for the child's care.

The analysis is limited to ages 12–16 years for children who were the subject of a substantiation, because very few individuals aged 17 years were recorded in the data. Furthermore, due to differences between the States and Territories in what is counted as a substantiation, the data for the first group have not been aggregated to produce national rates.

Table 24.1: Youth in the child welfare system, by age group and State/Territory, 1997–98 (rate per 1,000)

Age group (years)	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Children who were the subject of a substantiation of abuse/neglect									
12–14	5.7	6.2	5.5	2.2	3.5	1.2	4.5	6.0	. .
15–16	3.8	4.2	2.7	1.3	2.1	0.6	2.8	3.2	. .
Children on care and protection orders at 30 June 1998									
12–14	4.7	4.1	4.8	2.1	4.5	5.1	3.6	2.5	4.3
15–17	4.1	3.8	5.0	1.6	5.0	5.8	3.1	2.3	4.0
Children in out of home care at 30 June 1998									
12–14	4.4	3.5	3.6	2.6	4.2	5.4	2.8	2.5	3.8
15–17	3.6	5.7	2.5	2.2	2.7	3.2	2.4	2.3	3.7

Notes

1. Numbers for 'children who were subject of a substantiation of abuse/neglect' have not been combined to produce rates for all Australia, due to differences between States and Territories in the definitions of 'abuse and neglect' and in the way 'substantiations' are made.
2. Figures for children in Western Australia who were the subject of a substantiation of abuse/neglect do not include 14 children for whom age details are not known.
3. Most children in out of home care were also on a care and protection order.

Source: AIHW Child Welfare and Population Databases.

- The highest rates of substantiations of abuse/neglect were recorded in the Northern Territory, Victoria, New South Wales, and Queensland, all above 5 per 1000 for children aged 12–14 years. However, these figures should be interpreted with care because the procedures for reporting and definitions of substantiations differ considerably between jurisdictions.
- For all of Australia, just over four children per 1,000 aged 12–17 years were on care and protection orders.
- Just under four children per 1,000 aged 12–17 years were in out of home care.

Disability services

The prevalence of disability among the youth population is covered in Chapter 7, where it is stated that about 9% of this age group reported having some form of a disability. There are a variety of services to meet the needs of people with a disability: formal services, equipment and environmental modifications; and informal support. Formal services include income support, specialist disability support services, and relevant generic services (AIHW 1999a:214). This section reports on the first two of these formal services as they pertain to the youth population.

There are several types of disability-related income support services for people with a disability. The Disability Support Pension is the main form of income support for people with a disability who are aged over 15 years and less than the age of eligibility for the Age Pension. At June 1998 there were over 551,000 recipients of this pension, of whom 13,137 (2%) were aged 16–19 years and 47,905 (9%) were aged 20–29 years. The Child Disability Allowance is paid to parents of children with a disability who need a lot more care and attention than a child of the same age who does not have a disability. There were over 101,000 children being cared for by recipients of this allowance in June 1998, of whom 2,243 were aged 16–24 years. Other disability-related income support services to which some young people are eligible are the Mobility Allowance (for people aged 16 or more who cannot use public transport without substantial assistance and who are working, training or looking for work), the Sickness Allowance (for people of workforce age who must temporarily stop working in their job or studying full-time due to a medical condition), and the various carer pensions (AIHW 1999a: 229–232).

A range of specialist disability support services are provided to people with a disability (AIHW 1997: 316). These include:

- accommodation support—institutional accommodation, group homes, and in-home support;
- community support—advocacy and information service, therapy, counselling, and support groups;
- community access—continuing education, independent living training, and assistance with transition from education to work;
- respite—centre-based or home-based services;
- employment services—open employment and supported employment services.

Most of these support services are funded under the Commonwealth/State Disability Agreement (CSDA). The Agreement provides for annual collections of data on an agreed date, known as the 'snapshot day'. These data are compiled by the Australian Institute of Health and Welfare, and the results for the 1998 collection are shown in Table 24.2 in the form of rates of service use. The rates are calculated by dividing the number of recipients of a particular type of service by the number of persons under age 65 (or aged 15–64 for employment services) with a 'profound' or 'severe' core activity restriction (see Chapter 7), the ones most likely to seek assistance from disability support service providers.

Table 24.2: Use of disability support services on the 'snapshot day' in 1998 (rate per 1,000 persons with 'profound' or 'severe' core activity restriction)

Age group (years)	Accommodation	Community support	Community access	Respite	Employment
15–19	19.2	33.8	28.1	9.5	33.3
20–24	53.2	35.7	82.7	9.4	119.9
15–64	. .	. .	. .	. .	34.4
0–64	31.8	21.5	22.2	3.7	. .
Number of services provided (all ages)	*20,913*	*14,158*	*14,040*	*2,448*	*17,664*

Note: An individual may receive more than one type of service on the 'snapshot day', hence users may counted more than once.

Source: AIHW analysis of the 1998 CSDA Minimum Data Set collection (preliminary and ABS 1998Survey of Disability, Aging and Carers (population figures adjusted to June 1998).

- Relatively high usage rates were reported for people with a disability aged 20–24 years for all types of services. For example, their use of employment services was more the three times that of all working-age persons with profound or severe core activity restrictions.
- People with a disability aged 15–19 years also had relatively high rates of service use, particularly for community support and respite services.

Most of these support services are funded under the Commonwealth/State Disability Agreement (CSDA). The Agreement also provides for annual collections of data on an agreed 'snapshot day'. These data are compiled by the Australian Institute of Health and Welfare, and the results for the 1999 collection are shown in Table 24.3.

Table 24.3: Users of disability support services on 'snapshot day', 1998 (rate per 1,000 persons with 'profound' or 'severe' core activity restriction)

Age group (years)	Accommodation	Community support	Community access	Respite	Employment
11–19	19.2	33.8	28.1	9.5	33.3
20–24	53.2	82.7	82.7	9.4	119.9
15–64	. .	. .	. .	. .	34.4
0–64	31.8	21.5	22.2	3.7	. .
Number of services provided (all ages)	*20,913*	*14,138*	*14,040*	*2,448*	*17,664*

Note: An individual may receive more than one type of service on the 'snapshot day', hence users may counted more than once.

Sources: AIHW analysis of the 1999 CSDA Minimum Data Set collection (preliminary); ABS Survey of Disability, Aging and Carers (population figures adjusted to June 1998).

- Accommodation support was the most common service type provided for all users on the 'snapshot day' (20,913), followed by employment, community access, and community support services.
- The most common type of service for the youth population on the 'snapshot day', however, was employment support (3,538), about 20% of all requests for assistance in this category.
- While there were relatively few requests overall for respite assistance (2,448), 29% of these were for people aged 12–24 years.

Housing assistance services

Governments at all levels are involved in a variety of ways of assisting people to obtain adequate shelter. This section describes some of these public housing programs and highlights those which particularly serve the needs of young people: rent assistance for people in non-government housing; public rental housing; and community housing. Services for homeless people are covered in the next section.

Rent assistance generally takes the form of a non-taxable income supplement paid to individuals and families who are eligible for a payment from the former Department of Social Security (now the Department of Family and Community Services—FaCS) and who are not renting from a State housing authority and are not home owners or purchasers. In September 1998 there were 940,100 income units receiving Commonwealth Rent Assistance and receiving an average assistance of $29.82 per week; 20% these income units were headed by a person under 25 years of age. Of the income units headed by a person under 25 years, 70% were single-person units, 17% were sole parents, 9% were couples with children, and 3% were couples without children (FaCS 1999).

Public rental housing is available to households with incomes below a given threshold. Rents are charged according the household's income until payments are equal to a market rent. In 1995–96, approximately 15% of tenant households paid market rents; the remainder (85%) received a 'rent rebate'—the difference between the market rent and the rent charged (AIHW 1997:159–160). In June 1998, there were 395,000 households occupying public rental housing, of which 5,700 (1.4%) were 'single only persons under 25 years'. This figure (1.4%) does not include couples under 25 years, or single parents under 25 years with children (AIHW 1999b:1).

Community housing is provided by non-profit community and local government organisations for people on low to moderate incomes. This type of service covers a range of housing options, including rental housing cooperatives, rooming houses, and housing for people with special needs. It is estimated that there were 2,127 funded community housing organisations in Australia as at June 1998, of which 944 participated in a 'mapping project' (AIHW 1999c:5). Of these organisations, 10% named 'young people' as their primary target group, and 6% of the dwellings they operated (over 30,000 in total) had 'young people' (either homeless or low income) as one of their target groups. About 7% of the households using these services (and for which information was available) were individuals or income units headed by a person under 25 years of age (AIHW 1999c:124, 130, 154).

Services for homeless people

People who are homeless or at risk of becoming homeless may be supported in a number of ways. Some receive assistance from community services such as family support programs or programs for the mentally ill. Others may receive assistance from programs or agencies funded primarily to support those who are homeless. The two major national programs providing assistance to the homeless are the Supported Accommodation Assistance Program (SAAP) and the Crisis Accommodation Program. The latter mainly provides capital funding for community-based accommodation, whereas agencies funded by SAAP directly provide accommodation and other support to people in need. Young people form a significant component of the clients of SAAP agencies.

SAAP agencies are moving away from focusing solely on immediate needs, such as accommodation, towards addressing the underlying causes of the client's crisis. In particular, the Prime Ministerial Youth Homeless Task Force funded pilot projects to develop models of service provision that would emphasise the 're-engagement of young homeless people in family, work, education, training and the community' (AIHW 1997:225–26).

Data on SAAP providers and clients is provided by funded agencies to the SAAP National Data Collection, maintained by the Australian Institute of Health and Welfare (AIHW). In June 1998 there were 1,190 funded SAAP agencies in Australia, of which 39% had 'young people' as their primary target group. The other primary target groups were 'cross target/multiple/general' (20%), 'women escaping domestic violence' (21%), 'single men only' (8%), 'single women only' (4%), and 'families' (8%) (AIHW 1999d:20).

It is estimated that 93,600 individuals were assisted by SAAP agencies in 1997–98. The distribution of these clients by sex and age is shown in Table 24.4.

Table 24.4: SAAP clients by sex and age group, 1997–98 (per cent)

Age (years)	Males	Females	Total
Under 15	0.9	1.1	2.0
15–19	9.4	11.3	20.7
20–24	7.0	9.1	16.1
25–29	6.2	8.7	14.9
30+	23.7	22.6	46.2
Total	**47.2**	**52.8**	**100.0**
Number	*44,100*	*49,400*	*93,600*

Notes

1. Client numbers have been weighted to adjust for agency non-participation and client non-consent.
2. Components may not add to totals due to rounding.

Source: AIHW 1999a:364.

- Nearly 21% of all SAAP clients were aged 15–19 years; an additional 2% were under age 15, and 16% were aged 20–24 years, a total of 39%, or 36,500 clients.
- Female clients outnumbered male clients in the younger ages. For clients below age 25 years, there are 1.2 times as many females as males.

The SAAP data collection contains information on the types of support provided to clients for each period of support. Some clients had more than one support period, and thus the number of support periods is greater than the number of clients. Also, clients could receive several types of support in each period. The types of support are shown in Table 24.5.

Table 24.5: SAAP support periods by client's age and type of service provided, 1997–98 (per cent)

Support services provided	Under 15 years	15–19 years	20–24 years	25+ years	All ages
Housing/accommodation	67.4	76.3	79.2	83.4	81.1
Financial/employment	22.6	41.8	39.5	34.7	36.7
Counselling	55.6	40.1	38.7	37.1	38.2
General support/advocacy	72.1	76.8	74.2	73.0	73.9
Specialist services	23.5	20.5	22.8	25.3	23.9
Other support					
Meals	59.2	48.3	50.2	63.3	58.2
Laundry/shower	55.8	44.9	47.8	62.2	56.4
Recreation	43.7	33.2	24.8	26.8	28.0
Transport	50.0	48.0	35.8	29.6	34.6
Number of support periods (unweighted)	*1,773*	*22,961*	*17,852*	*72,391*	*114,977*
Number of support periods (weighted)	*2,800*	*34,100*	*26,000*	*100,600*	*163,300*

Notes

1. Clients were able to receive multiple services so percentages do not total to 100.
2. Clients could have more than one support period, and thus the number of support periods is greater than the number of clients.
3. Percentages are calculated using unweighted numbers of support periods.

Source: AIHW 1999a:364; 1999d:76.

- The 36,500 SAAP clients below age 25 years had an estimated 62,900 support periods, approximately 1.7 support periods per client.
- As expected, the most common type of service provided was assistance with housing or accommodation. Younger clients were less likely to receive this type of assistance than older clients: about two-thirds of support periods for those under 15 years involved this type of assistance, compared to 76% of those aged 15–19 years, 79% of those aged 20–24 years, and 81% of those aged above 25 years.
- Around three-quarters of support periods for younger clients (those aged under 25 years) included 'general support/advocacy' services. Specific types of assistance under this heading, in order of magnitude for younger clients (those under 25 years), were 'advice/information', 'advocacy/liaison on behalf of client', and 'living skills/personal development'.
- Over 55% of the support periods for clients under 15 years, and 40% for those aged 15–19 and 20–24 years, included at least one type of counselling. The most common types of counselling were 'emotional support' and 'family/relationship counselling and support'.
- 'Financial/employment' assistance was included in 23% of the support periods for clients under 15 years, and 40% for those aged 15–19 and 20–24 years. The main type of service in this category was 'financial assistance/material aid'.

- 'Health/medical services' was the main type of 'specialist services' provided. Over 12% of support periods for younger clients included some type of health service (data not shown).
- Practical types of assistance, such as meals, personal hygiene, recreation, and help with transport, were included in a high proportion of support periods for younger clients.

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Part VI Population groups

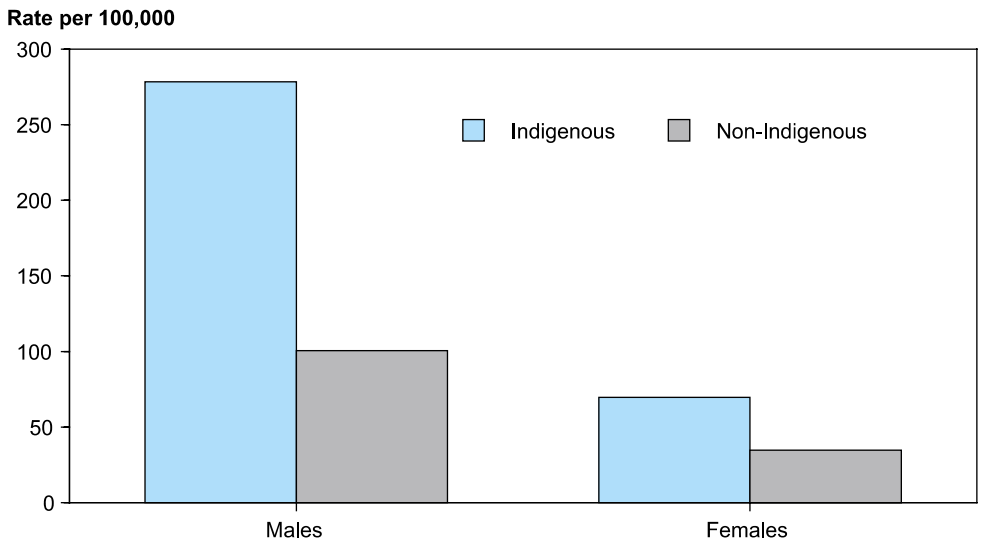
25 Aboriginal and Torres Strait Islander young people

The Aboriginal and Torres Strait Islander population of Australia continues to experience worse health than the rest of the population (AIHW 1998; ABS & AIHW 1999). Due to data limitations, particularly in the identification of Aboriginal and Torres Strait Islander people in official statistics, it is difficult to provide precise data on the level of disadvantage. However, the information available, on death rates and hospitalisation rates in particular, does indicate the extent of the disadvantage. Information from these sources is presented below in relation to Aboriginal and Torres Strait Islander young people.

Mortality

Death rates for Aboriginal and Torres Strait Islander people are higher than for other Australians in all age groups (ABS & AIHW 1999). Depending on the age group, in 1995–97, Aboriginal and Torres Strait Islander males were between 1.3 times (at age 75+) and 6.9 times (at ages 35–44) more likely to die than other males. For females, the differential ranges between 1.3 (age 75+) and 7.8 (ages 35–44).

Data presented below covers the age range 15–24 years. The identification of Indigenous status in the mortality data is believed to be reliable enough to allow adequate estimates in only three jurisdictions—Western Australia, South Australia and the Northern Territory—although there may still be some underestimation of Indigenous deaths in these jurisdictions (ABS & AIHW 1999). These data have been combined to provide a quasi-national picture, and below are compared with other young people from the same States and Territories.



Note: Death rates for Western Australia, South Australia and Northern Territory only.

Source: AIHW Mortality Database.

Figure 25.1: Death rates for Indigenous and non-Indigenous young people aged 15–24 years, 1995–97

- Death rates for young Indigenous males were 2.8 times higher than for other young males in 1995–97 (278 per 100,000 compared with 101 per 100,000). The differential for young females was smaller, with Indigenous females twice as likely to die than their counterparts (70 per 100,000 compared with 35 per 100,000).
- Within the Aboriginal and Torres Strait Islander population, young males were four times more likely to die than young females in 1995–97. The sex differential in the rest of the population was lower, at 2.9 times.

Table 25.1: Main causes of death, Indigenous and non-Indigenous young people aged 15–24 years, 1995–97

	Males					Females				
	Indigenous		Non-Indigenous			Indigenous		Non-Indigenous		
	No.	Rate per 100,000	No.	Rate per 100,000	Rate ratio	No.	Rate per 100,000	No.	Rate per 100,000	Rate ratio
All injury	71	182.9	572	78.3	2.3	13	33.5	142	20.6	1.6
Other	37	95.3	163	22.3	4.3	14	36.0	97	14.1	0.4
All causes	**108**	**278.2**	**735**	**100.6**	**2.8**	**27**	**69.5**	**239**	**34.7**	**2.0**

Source: AIHW Mortality Database.

- Among young Indigenous males, injury accounts for the largest number of deaths, as it also does for young non-Indigenous males. However, the injury death rate for young Indigenous males is 2.3 times higher than for other young males.
- For young females, injury was again the leading cause of death, both within the Indigenous and non-Indigenous communities, but the rate was 1.6 times higher for young Indigenous females.

Morbidity

Hospital statistics are one indicator of the morbidity of a population, albeit a crude one. The shortcomings of such statistics, such as differing treatment patterns and different levels of access to services, are discussed in Chapter 6 and Appendix 3 of this report. In addition, the identification of Indigenous status is known to be understated, rendering the use of these data particularly problematic for examining morbidity levels in this population.

The quality of Indigenous identification in hospital statistics has not yet been assessed nationally, but studies suggest that there is a wide range in the accuracy of the recording of Indigenous status—in one hospital it was as low as 55%. Hospitals located in areas with a high proportion of Indigenous people tended to have more complete identification. For example, in the Northern Territory 93% of Indigenous patients had their status correctly recorded. However, as most hospitals are not located in areas where a high proportion of the population is Indigenous, it is unlikely that the level of completeness found in the Northern Territory will be matched in other areas (ABS & AIHW 1999:108–9).

Since the extent of under-recording of Indigenous status is not known, it is not possible to use a correction factor to provide more accurate information. A recent publication, *The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples 1999*, has concluded that 'Based on studies to date, this correction factor would range from about 5% in the Northern Territory to 50–100% or more in some hospitals and jurisdictions' (ABS & AIHW 1999:111).

Selected reasons for hospitalisations of young people according to *recorded* status are shown in Table 25.2. Because of the incomplete identification of Indigenous status in hospital statistics, these data should be interpreted with considerable caution.

Table 25.2: Selected reasons for hospitalisations of young people (ages 15–24) according to Indigenous status, 1997–98

	Males					Females				
	Indigenous		Non-Indigenous			Indigenous		Non-Indigenous		
Selected Diagnosis	No.	Rate per 100,000	No.	Rate per 100,000	Rate ratio	No.	Rate per 100,000	No.	Rate per 100,000	Rate ratio
Mental	529	1,378	16,592	1,256	1.1	466	1,220	17,431	1,378	0.9
Respiratory	266	693	10,498	795	0.9	324	848	14,010	1,108	0.8
Obstetric	. .	. .	. .	. .	. .	5,846	15,304	106,709	8,437	1.8
Violence	353	920	4,542	344	2.7	366	958	807	64	15.0
All injuries	*1,406*	*3,663*	*45,845*	*3,470*	*1.1*	*944*	*2,471*	*17,915*	*1,417*	*1.7*
All causes	**4,449**	**11,591**	**171,174**	**12,955**	**0.9**	**10,767**	**28,186**	**283,429**	**22,411**	**1.3**

Source: AIHW National Hospital Morbidity Database.

- The hospitalisation rates for Indigenous and non-Indigenous young males, according to the *recorded* status, were similar. However, given the known high rate of incorrect identification of Indigenous status in these statistics, the *actual* hospitalisation rate for young Indigenous males is likely to be much higher than the rate for other males.
- Similarly, the difference in the hospitalisation rates for females, with young Indigenous females having a *recorded* rate 1.3 times that of Non Indigenous females, would be much higher if their identification in the statistics was more complete.
- However, it is clear that young Indigenous people have much higher rates of hospitalisation due to violence. Using the data with *recorded* Indigenous status, the rate for young Indigenous males was 2.7 times the rate for other males, and for females it was 15.0 times.
- For both Indigenous females and non-Indigenous females in this age group, a large proportion of hospitalisations were for obstetrical reasons. The *recorded* rate for Indigenous females was 1.8 times the rate for non-Indigenous females.
- Because of both the differential and the volume of these admissions, obstetric admissions more than account for the difference in the female hospitalisation rates shown in Figure 25.2. When obstetric hospitalisations are taken out of the all causes rate, the rate ratio between Indigenous females and non-Indigenous females is 0.9, the same as for males (although both figures are acknowledged to be underestimates).

Other issues

There are several other health measures for which information on the Indigenous population is available. It should be noted, however, that where this information is referenced from the National Health Survey (ABS 1999), Indigenous people are under-represented in the data set due to the exclusion from the survey of the population living in remote areas.

Births to teenage mothers

Differences exist between Indigenous and non-Indigenous young women in the age at which they have children. In 1996, 22% of Aboriginal and Torres Strait Islander births were to teenage mothers. This compares with 5% in the total Australian population (Day et al. 1999). Information is also available on the total number of births women have had. For 31% of Indigenous women under 20 years giving birth in 1996, this was at least their second birth. For all Australian women under 20 years, the comparable figure was 18%.

Self-assessed health status

Around 90% of young Australians aged 15–24 years in 1995 reported their health as 'good', 'very good' or 'excellent' (Chapter 3). There is very little difference between Indigenous and non-Indigenous young women in the proportion reporting their health as good/very good/excellent—90% and 91% respectively. For young males, 83% of Indigenous and 92% of non-Indigenous 15–24 year olds reported their health as good/very good/excellent (ABS 1999:15).

Recent and long-term conditions

Information on the proportion of all Australians with recent or long-term conditions is detailed in Chapter 6 for the age group 10–24 years, including definitions of these types of conditions. Similar information is available for Indigenous and non-Indigenous young people (ABS 1999:16), however only for the age group 15–24 years. From these published results it can be calculated that 89% of Indigenous 15–24 year olds reported having a recent or long-term conditions, compared with 82% of non-Indigenous young people of the same age.

Determinants

Weight

In 1994–1995, a higher proportion of young Indigenous males were overweight compared to all Australian young males—18% of Aboriginal and Torres Strait Islander males aged 18–24 years were found to be overweight, compared with 10% of all Australian males aged 19–24 years. A higher proportion of young Indigenous females (22%) than all Australian young females (9%) were also found to be overweight (Cunningham & Mackerras 1998).

Smoker status

Smoking rates were substantially higher for Indigenous young people compared to non-Indigenous young people in 1995 (ABS 1999). For males, 54% of Indigenous 18–24 year olds were classified as current smokers, compared with 32% of non-Indigenous young males. For females the gap was also large—47% compared with 28%.

Alcohol risk level

A higher proportion of Indigenous youth aged 18–24 years reported that they did not consume alcohol—52% compared with 46% for non-Indigenous young people (ABS 1999). There was also only a small difference between the two groups in the proportion who drank at medium to high risk levels (based on the NHMRC risk levels (NHMRC 1992))—10% of young Indigenous people compared with 9% of non-Indigenous young people.

Physical activity

Reported physical activity rates (the proportion undertaking exercise for sport, recreation and fitness only) in the 1995 National Health Survey were lower for Indigenous 18–24 year olds than for their non-Indigenous counterparts (ABS 1999). Among young Indigenous males, 36% were classified as doing no physical activity compared with 24% of young non-Indigenous males. For young females, the difference was even larger: 41% of Indigenous and 27% of non-Indigenous young women reported doing no exercise.

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26 Rural and remote residents

Australia's rural and remote population has poorer health than the metropolitan population with respect to several health outcomes (AIHW 1998). Many factors contribute to the health disadvantage in rural and remote areas, including geographic isolation and problems of access to care, socio-economic disparities, shortage of providers, greater exposure to injury (particularly among those employed in farming and mining) and Indigenous health. (AIHW 1998)

This chapter presents data on mortality and morbidity using the three zone/ seven category Rural, Remote and Metropolitan Area (RRMA) classification, detailed in Table 26.1 below.

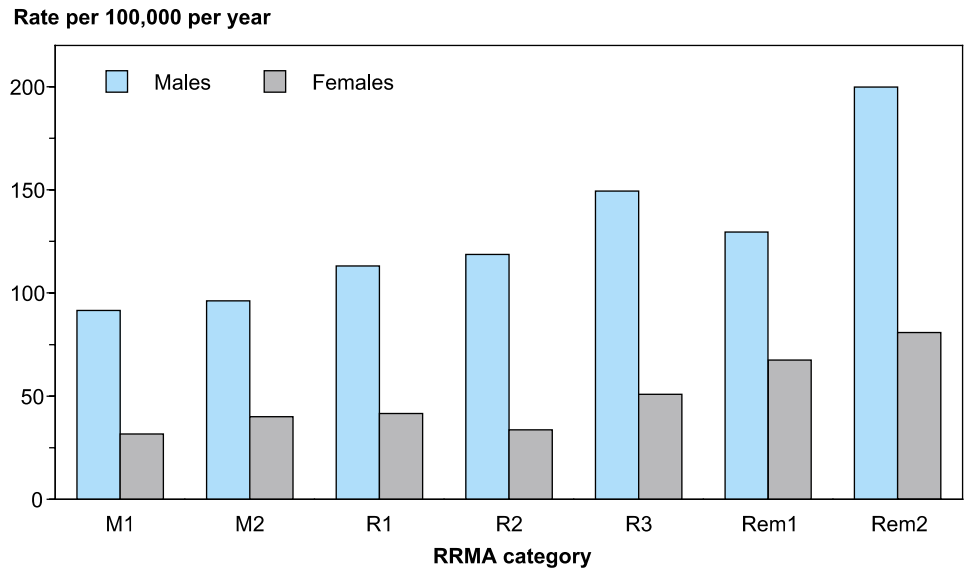
Table 26.1: Structure of the Rural, Remote and Metropolitan Areas (RRMA) classification

Zone	Category	
Metropolitan zone	M1	Capital cities
	M2	Other metropolitan centres, (urban centre population ≥ 100,000)
Rural zone	R1	Large rural centres, (urban centre population 25,000–99,999)
	R2	Small rural centres, (urban centre population 10,000–24,999)
	R3	Other rural areas, (urban centre population < 10,000)
Remote zone	Rem1	Remote centres, (urban centre population ≥ 5,000)
	Rem2	Other remote areas, (urban centre population < 5,000)

To illustrate the impact of Indigenous health on differences in health status across RRMA categories, analysis of mortality data for the period 1992–1996 was examined for the three States and Territories considered to have the most complete registration of Indigenous deaths. Western Australia, South Australia and the Northern Territory have identified more than 90% of their Indigenous deaths over this period. The resulting analysis shows that:

- the proportion of Indigenous people is not high enough in the rural zone to have an impact on differences in health status between people living in metropolitan and rural zones
- the substantially higher proportion of Indigenous people living in the remote zone means that the Indigenous population does statistically lower the health status of people in the remote zone compared to metropolitan and rural zones (AIHW 1998).

Mortality



Source: AIHW Mortality Database.

Figure 26.1: Death rates by RRMA, 15–24 year olds, 1995–97

- It was shown in Chapter 5 that the death rate for males aged 15–24 years was higher than for females of the same age. The pattern of higher death rates for young males was consistent across all RRMA categories (Figure 26.1).
- The death rates for both males and females in the most remote areas (Rem2) were more than double those experienced in capital cities (M1), with rates for both sexes tending to rise with increasing remoteness.
- Death rates for subgroups described in this chapter are all less than 200 per 100,000 per year. These rates are much smaller than for children in their first year of life, considerably greater than for 5–14 year olds, smaller than but similar to rates for 25–34 and 35–44 year olds, and much less than for those over 80 years (generally greater than 10,000 per 100,000 population per year).

Table 26.2: Selected causes of death, males aged 15–24 years, 1995–97 (rate per 100,000 population)

	RRMA Area						
Underlying cause of death/ external cause (ICD-9)	**M1**	**M2**	**R1**	**R2**	**R3**	**Rem1**	**Rem2**
Mental disorders (290.0 316.9)							
Number	219	16	7	13	15	n.p.	n.p.
Rate	8.10	5.10	2.78	5.40	3.32		
Cancer (neoplasms 140.0–239.9)							
Number	159	22	18	20	23	n.p.	n.p.
Rate	5.88	7.01	7.14	8.30	5.09		
Nervous system and sense organs (320.0–389.9)							
Number	96	17	10	12	21	n.p.	n.p.
Rate	3.55	5.42	3.97	4.98	4.65		
Motor vehicle accidents (see Appendix 4)							
Number	407	54	71	57	217	17	34
Rate	15.05	17.21	28.16	23.66	48.04	32.40	44.41
Violence (see Appendix 4)							
Number	78	7	n.p.	n.p.	13	n.p.	9
Rate	2.88	2.23			2.88		11.76
Suicide (E950.0–959.9							
Number	649	87	78	84	171	16	33
Rate	24.00	27.73	30.94	34.87	37.86	30.50	43.11
All injury (E800.0–E999.9)							
Number	*1765*	*223*	*219*	*212*	*567*	*57*	*111*
Rate	*65.26*	*71.08*	*86.86*	*88.01*	*125.53*	*108.65*	*145.00*
All causes							
Number	**2475**	**302**	**285**	**286**	**675**	**68**	**153**
Rate	**91.51**	**96.26**	**113.04**	**118.74**	**149.44**	**129.61**	**199.87**

Note: n.p. (not published) is used for cells containing numbers of 5 or less.

Source: AIHW Mortality Database.

- The male death rate due to motor vehicle accidents tended to rise with increasing remoteness to almost three times the capital city rate (Table 26.2).
- The male death rate from suicide tended to rise with increasing remoteness. The rate in 'other remote areas' (Rem2: 43 per 100,000) was almost twice as high as in capital cities (M1: 24 per 100,000).
- Male death rates due to 'all injury' also showed a general trend to rise with increasing remoteness. The death rate for 'all injury' in 'other remote centres' (Rem2: 145 per 100,000) was more than twice as high as in capital cities (M1: 65 per 100,000).

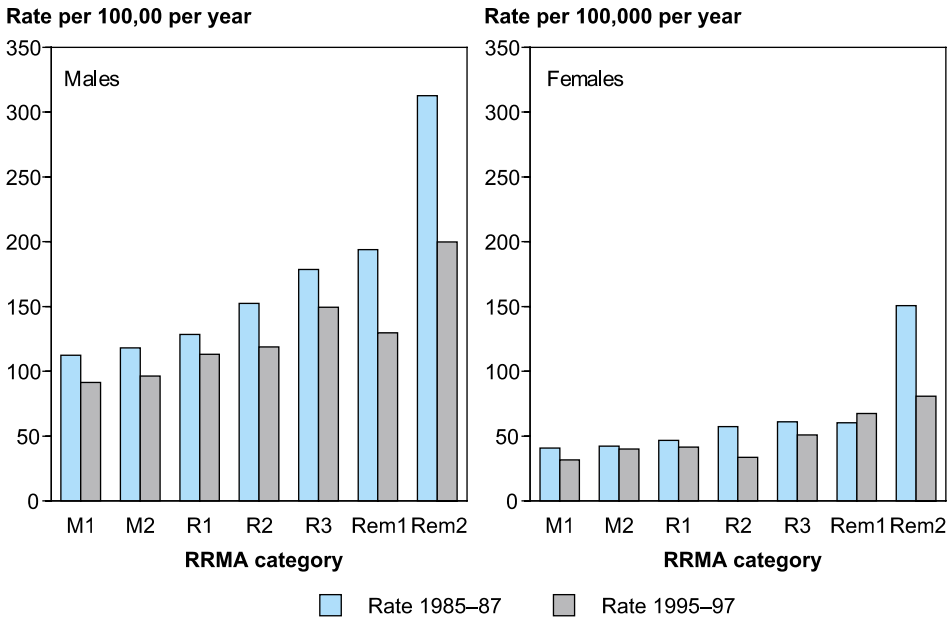
Table 26.3: Selected causes of death, females ageed 15–24 years, 1995–97 (number of deaths, and rate per 100,000 population)

	RRMA Area						
Underlying cause of death/ external cause (ICD-9)	**M1**	**M2**	**R1**	**R2**	**R3**	**Rem1**	**Rem2**
Mental disorders (290.0 316.9)							
Number	75	8	n.p.	n.p.	9	n.p.	n.p.
Rate	2.84	2.65			2.01		
Cancer (neoplasms 140.0–239.9)							
Number	100	10	9	10	19	n.p.	n.p.
Rate	3.78	3.31	3.56	4.37	4.79		
Nervous system and sense organs (320.0–389.9)							
Number	45	6	6	n.p.	8	n.p.	n.p.
Rate	1.70	1.99	2.37		2.02		
Motor vehicle accidents (see Appendix 4)							
Number	152	25	23	26	74	10	15
Rate	5.75	8.28	9.10	11.36	18.63	21.79	23.76
Suicide (E950.0–959.9)							
Number	153	17	17	9	29	n.p.	n.p.
Rate	5.78	5.63	6.73	3.93	7.30		
Violence (see Appendix 4)							
Number	35	8	n.p.	n.p.	n.p.	n.p.	n.p.
Rate	1.32	2.65					
All injury (E800.0–E999.9)							
Number	*460*	*69*	*60*	*48*	*130*	*19*	*32*
Rate	*17.39*	*22.84*	*23.74*	*20.98*	*32.74*	*41.39*	*50.70*
All causes							
Number	837	121	105	77	202	31	51
Rate	31.65	40.06	41.54	33.65	50.87	67.53	80.80

Note: n.p. (not published) is used for cells containing numbers of 5 or less.

Source: AIHW Mortality Database.

- Although lower than for males, the death rate for females due to motor vehicle accidents showed the same trend to rise with increasing remoteness.
- The female death rate from suicide was with similar accross RRMA. The female suicide rates were much lower than for males.
- Similar to the trend for males, the female death rate due to all injury, although smaller, rose to three times the capital city rate (M1: 17 per 100,000) in 'other remote areas' (Rem2: 51 per 100,000).



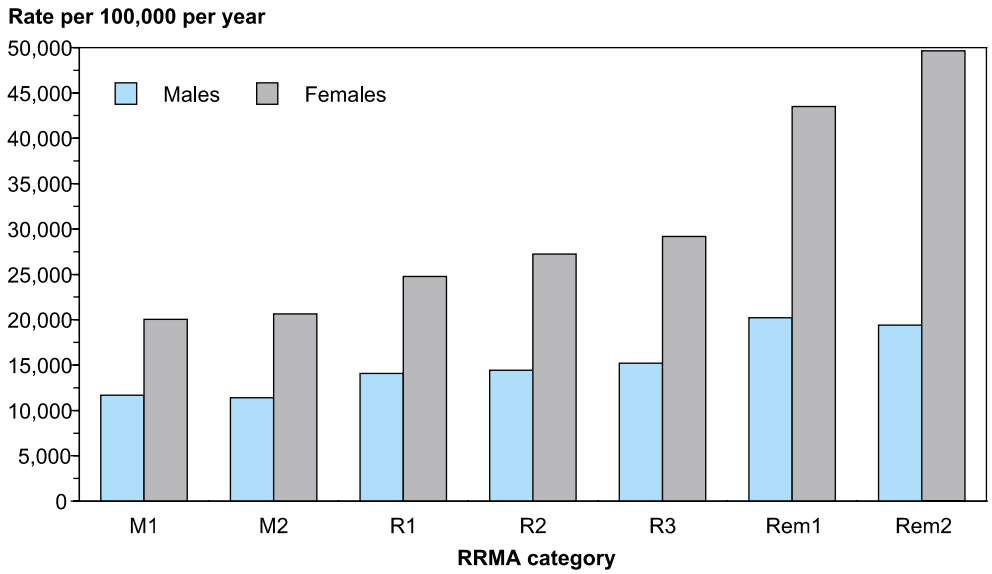
Source: AIHW Mortality Database.

Figure 26.2: Death rates by RRMA, by sex, 15–24 year olds, 1985–87 and 1995–97

- Death rates for this age group have decreased during the period from 1985–87 to 1995–97. Death rates have decreased particularly for males and for those in more remote areas (where rates for both sexes decreased to approximately 60% of the 1985–87 rate). The death rate in capital cities and for much of rural Australia appears to have decreased generally to between 90% and 60% of the corresponding 1985–87 value.
- As a general statement, the death rates of the non metropolitan areas tended to become more like those of metropolitan centres during this period. It is possible that the trend could continue until rates for these areas are indistinguishable (Figure 26.2).
- Approximately 50% of the decrease in death rates for males in remote areas are attributable to a decrease in motor vehicle (including motor cycle) accidents, while for females, significant contributors are less obvious (although reduced rates of death due to motor vehicle accidents and murder have clearly contributed in the remote zone).

Morbidity

This section presents information on hospitalisation rates by RRMA category. Due to missing data of either sex or RRMA category, 1.5% of separations are missing from the following analyses.



Source: AIHW National Hospital Morbidity Database.

Figure 26.3: Hospitalisation rates by RRMA, 15–24 year olds, 1997–98

- It was shown in Chapter 6 that the hospitalisation rate for young females exceeded that of young males from age 15 years, and that females had higher hospitalisation rates than males (see Figure 6.3)
- Hospitalisation rates increased with increasing remoteness. The rate for male hospitalisation in 'other remote areas' (Rem2: 19,415 per 100,000) was one and a half times higher than the rate in capital cities (M1: 11,668 per 100,000).
- The rate for female hospitalisations in 'other remote areas' (Rem2: 49,651 per 100,000) was two and a half times higher than the rate in capital cities (M1: 20,058 per 100,000).
- Hospitalisation rates for this age group are higher than for children (approximately 10,000 separations per 100,000 population) with rates then generally increasing with age to approximately 80,000–100,000 per 100,000 for people older than 75 years.

Table 26.4: Selected reasons for hospitalisation, males aged 15–24 years, 1997–98 (number and rate per 100,000 population)

	RRMA Area						
Principal diagnosis (ICD-9-CM)	**M1**	**M2**	**R1**	**R2**	**R3**	**Rem1**	**Rem2**
Endocrine (240.0–279.9)							
Number	1,320	161	192	129	320	52	33
Rate	146	152	227	160	212	298	133
Mental disorders (290.0 316.9)							
Number	11,614	887	806	1009	1,489	214	296
Rate	1284	840	954	1,248	985	1,225	1,190
Circulatory system (390.0–459.9)							
Number	1,428	157	132	130	262	50	65
Rate	158	149	156	161	173	286	261
Respiratory system (460.0–519.9)							
Number	6,476	721	677	708	1,551	203	303
Rate	716	683	801	876	1,026	1,162	1,218
Motor vehicle accidents (see Appendix 4)							
Number	1,900	206	227	264	755	93	177
Rate	210	195	269	327	500	532	712
All transport (E800.0–849.9)							
Number	*4,778*	*624*	*692*	*739*	*1,950*	*289*	*488*
Rate	*528*	*591*	*819*	*914*	*1,290*	*1,654*	*1,962*
Self-inflicted injuries (E950.0–E959.9)							
Number	1,193	157	145	148	216	39	58
Rate	132	149	172	183	143	223	233
Violence (E960.0–E969.9)							
Number	2,905	269	330	320	571	204	303
Rate	321	255	391	396	378	1,168	1,218
All injuries (E800.0–E999.9)							
Number	*25,380*	*3,092*	*3,546*	*3,373*	*7,484*	*1,412*	*2,028*
Rate	*2,807*	*2,927*	*4,197*	*4,172*	*4,952*	*8,081*	*8,154*
All causes							
Number	**105,515**	**12,052**	**11,886**	**11,663**	**23,006**	**3,535**	**4,829**
Rate	**11,668**	**11,410**	**14,069**	**14,424**	**15,221**	**20,231**	**19,415**

Source: AIHW National Hospital Morbidity Database.

- The hospitalisation rates due to violence were similar for the metropolitan and rural zones at approximately 250 to 400 per 100,000, however, in the remote zone, the rate rose to over 1,100 per 100,000.
- Male hospitalisation rates due to all injury showed a strong trend to rise with increasing remoteness. The rate in capital cities (M1) was 2,807 per 100,000, rising to 4,952 per 100,000 in 'other rural areas' (R3) and more than 8,000 per 100,000 population in the remote zone (Rem1 and Rem2).
- Hospitalisation rates due to motor vehicle accidents also tended to rise with increasing remoteness. Rates for young males in capital cities (M1) were 210 per 100,000, increasing to 532 per 100,000 in 'other rural centres' (R3) and 712 per 100,000 in 'other remote areas' (Rem2).
- Hospitalisation rates for males tended to rise with increasing remoteness for self-inflicted injuries, 'all transport' and 'other causes'.

Table 26.5: Selected reasons for hospitalisation, females aged 15–24 years, 1997–98 (number and rate per 100,000 population)

	RRMA Area						
Principal diagnosis (ICD-9-CM)	**M1**	**M2**	**R1**	**R2**	**R3**	**Rem1**	**Rem2**
Endocrine (240.0–279.9)							
Number	1,924	228	232	201	405	37	63
Rate	219.2	226.4	274.8	262.5	304.8	245.9	305.4
Mental disorders (290.0–316.9)							
Number	12,810	835	772	876	1,647	158	270
Rate	1,459.3	829.1	914.6	11,44.1	1,239.4	1,050.0	1,308.8
Circulatory system (390.0–459.9)							
Number	1,040	124	122	111	216	49	63
Rate	118.5	123.1	144.5	145.0	162.5	325.6	305.4
Respiratory system (460.0–519.9)							
Number	8129	986	999	1,119	2,245	293	411
Rate	926.1	979.1	1,183.5	1,461.5	1,689.4	1,947.1	1,992.2
Obstetrics (630.0–677.9)							
Number	62,790	8,595	9,395	8,896	15,492	2,763	4,044
Rate	7,153.2	8,534.5	11,129.8	11,618.9	11,658.0	18,361.2	19,602.5
Motor vehicle accidents (see Appendix 4)							
Number	1,224	105	124	126	431	38	80
Rate	139.4	104.3	146.9	164.6	324.3	252.5	387.8
All transport (E800.0–849.9)							
Number	*1,937*	*193*	*226*	*223*	*737*	*74*	*171*
Rate	*220.7*	*191.6*	*267.7*	*291.3*	*554.6*	*491.8*	*828.9*
Self-inflicted injuries (E950.0–E959.9)							
Number	2,222	267	191	208	313	40	56
Rate	253.1	265.1	226.3	271.7	235.5	265.8	271.4
Violence (E960.0–E969.9)							
Number	442	34	63	89	182	131	281
Rate	50.4	33.8	74.6	116.2	137.0	870.5	1,362.1
All injury (E800.0–E999.9)							
Number	*10,512*	*1,156*	*1,316*	*1,237*	*2,757*	*526*	*937*
Rate	*1,197.6*	*11,47.9*	*1,559.0*	*1,615.6*	*2,074.7*	*3,495.5*	*4,541.9*
All causes							
Number	**176,063**	**20,773**	**20,898**	**20,869**	**38,795**	**6,545**	**10,243**
Rate	**20,058**	**20,627**	**24,757**	**27,257**	**29,194**	**43,494**	**49,651**

Source: AIHW National Hospital Morbidity Database.

- The cause of hospitalisation with the largest difference in hospitalisation rate between capital cities and remote areas was hospitalisation for a pregnancy-related cause. Capital city (M1) and other metropolitan (M2) hospitalisation rates were 7,153 and 8,535 per 100,000 population respectively; the hospitalisation rate for rural females was higher to 11,658 per 100,000, while the rate for remote zone females was higher again to just less than 20,000 per 100,000 population.
- The female hospitalisation rate due to violence followed the same pattern as that for young males. The rates in metropolitan centres and the rural zone increased to a level of less than 140 per 100,000. The rates in the remote zone were significantly

higher at 870 per 100,000 in remote centres (Rem1) and 1,362 per 100,000 in 'other remote areas' (Rem2).

- As was the trend with males, hospitalisation rates for young females due to all injury rose with increasing remoteness. Rates in 'other remote areas' (Rem2: 4,542 per 100,000) were 3.8 times higher than the rates in capital cities (M1: 1,198 per 100,000). Rates for young females were approximately half those for young males in all RRMA categories.
- Female hospitalisation rates due to motor vehicle accidents also tended to rise with increasing remoteness. Rates for young females in capital cities (M1) were around 139 per 100,000, increasing to 324 per 100,000 in 'other rural centres' (R3) and 388 per 100,000 in 'other remote areas' (Rem2).
- Hospitalisation rates due to 'other causes' also followed the trend for rates to increase with remoteness, while hospitalisation rates for mental disorders were high in capital cities, then low in 'other metropolitan centres' rising to high rates again in 'other remote areas'.

References

Australian Institute of Health and Welfare (AIHW) 1998. Health in rural and remote Australia. AIHW Cat. No. PHE 6. Canberra: AIHW.

27 Socioeconomic status

Differences in the health status of people from different socioeconomic groups have been demonstrated in many studies (for example, Mathers 1994, Fox & Benzeval 1995; Marmot et al. 1997; Townson 1999). Information on these gradients for young Australians (aged 15–24 years) was published in 1996 (Mathers 1996), based on data relating to the late 1980s. The report indicated marked differences in the health of young people using a number of measures of health and socioeconomic status.

There are a number of ways of measuring socioeconomic status including income, occupation and education. However, none of these is perfect, and each poses particular difficulties for the age group in this report. The ages 12–24 years represent a period of transition, from dependence on parents/caregivers through to some level of independence. The age of this transition varies greatly, depending on factors such as when studies are completed and age at entering the workforce. For some individuals it would be appropriate to assign socioeconomic status based on measures relating to parents (for example, income), whereas measures more appropriate to others would be based on the individual's circumstances.

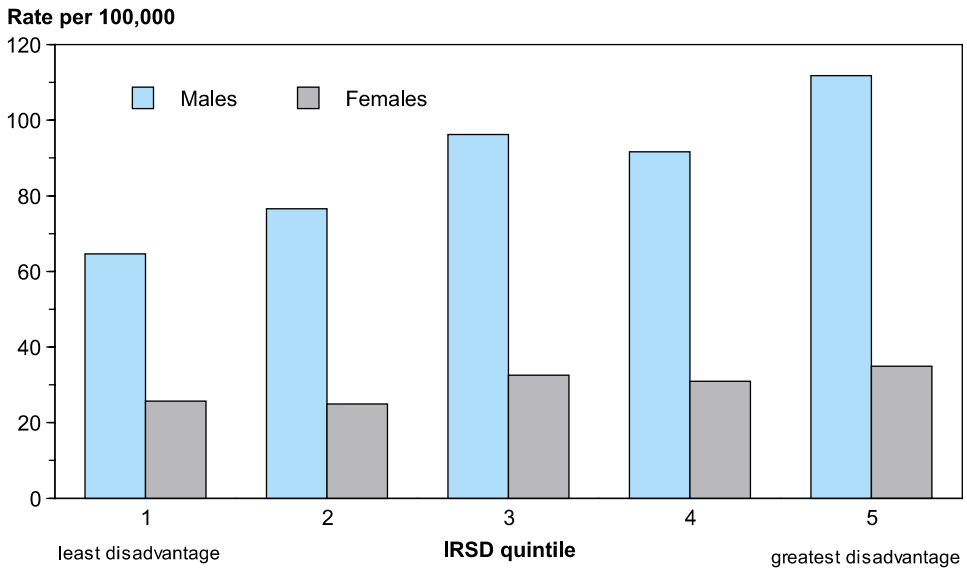
A way to measure the socioeconomic status by proxy is based on the individual's area of residence. Many sources of health information (including mortality and hospital morbidity information) collect information on the area of usual residence (for example, using statistical local area [SLA] or postcode) for each individual. These areas can then be grouped into areas with similar levels of socioeconomic disadvantage.

The Australian Bureau of Statistics has developed socioeconomic indexes for areas (SEIFA) based on information collected in censuses. A version of the SEIFA based on the 1996 Census has been released (ABS 1998). One of five SEIFA indexes, the Index of Relative Socioeconomic Disadvantage (IRSD), is based on factors such as average household income, education levels and unemployment rates. The IRSD groups areas into quintiles of socioeconomic disadvantage: areas with scores in the highest 20% are classed as having the 'least disadvantage'; while those with scores in the lowest 20% are classed as having the 'most disadvantage'.

The method used in this chapter to measure socioeconomic status is based on the IRSD indexes of socioeconomic disadvantage. This measure avoids some of the difficulties described above in measuring socioeconomic status in this age group, and allows a consistent measure of socioeconomic status to be used when analysing information from a range of health data sources, including mortality, hospitalisations and a number of population surveys.

Mortality

This section presents information on death rates for 15–24 year olds by socioeconomic disadvantage, both using recent data and making comparisons over a 10-year period.



Source: AIHW Mortality Database.

Figure 27.1: Death rates for 15–24 year olds by IRSD, 1995–1997

- A gradient across socioeconomic disadvantage groups is apparent in the death rates for 15–24 year olds as shown in Figure 27.1. That is, death rates increase across these groups, from the lowest rates in quintile 1 (loeastdisadvantage) and, in general, progressively higher death rates in each subsequent group, ending with the highest rates in quintile 5 (greatest disadvantage).
- For males, the death rate in quintile 1 was 65 per 100,000 over the 3 years 1995–1997. The corresponding rate for quintile 5 was 1.7 times higher at 112 per 100,000.
- The overall death rate for young females is around one-third the rate for young males (discussed further in Chapter 5). However, death rates for young females also differ by socioeconomic status, with females in quintile 5 having death rates 1.4 times higher than those in quintile 1 (35 per 100,000 compared with 26 per 100,000).

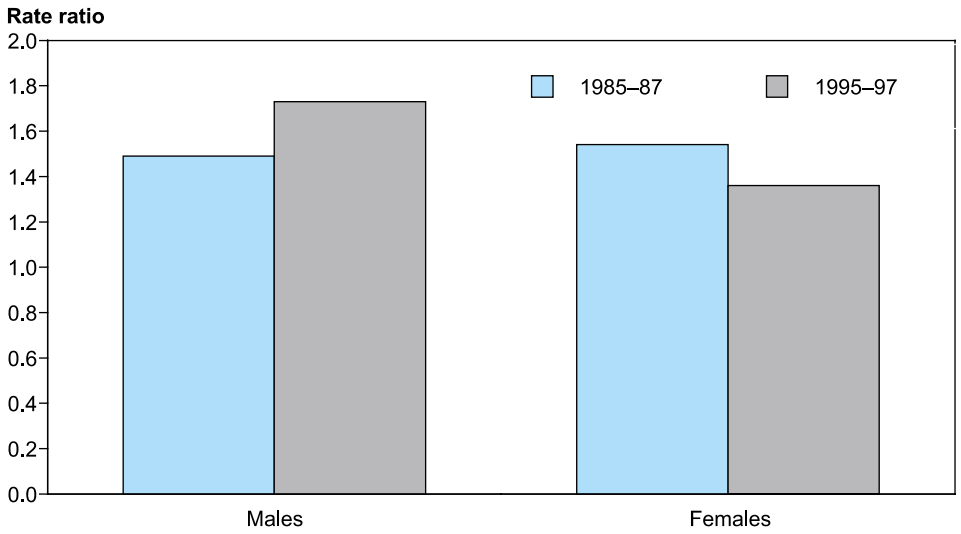
Table 27.1: Death rates for selected causes of death by IRSD, 15–24 year olds, 1995–1997

	IRSD quintile					
	(least disadvantage) 1	2	3	4	(greatest disadvantage) 5	Q5:Q1
Cause of death[(a)]	**Rate per 100,000**					**Ratio**
Motor vehicle accidents	6.8	9.6	15.4	14.6	16.2	2.4
All transport	*11.0*	*14.8*	*23.6*	*21.5*	*23.7*	*2.2*
Suicide	11.7	12.9	15.9	13.3	17.6	1.5
Violence	0.6	1.2	1.9	1.7	3.4	5.4
All injury	*29.3*	*36.0*	*47.7*	*42.8*	*53.1*	*1.8*
Infectious diseases	0.9	0.6	0.5	0.5	0.8	0.9
Endocrine	1.1	0.9	1.1	1.0	1.4	1.3
Mental disorders	4.4	3.2	3.5	4.4	4.3	1.0
Circulatory	1.3	1.5	1.4	2.1	3.1	2.3
Respiratory	0.7	0.3	1.2	1.7	1.4	1.9
Other	7.7	8.6	9.7	9.6	10.1	1.3
Total	**45.5**	**51.2**	**65.0**	**62.0**	**74.2**	**1.6**

(a) Based on ICD-9 codes.

Source: AIHW Mortality Database.

- The gradients shown in Figure 27.1 are apparent for the majority of the specific causes of death shown in Table 27.1.
- Injury, the most common cause of death in this age group, shows a marked gradient across socioeconomic disadvantage groups (except quintile 3). Further, young people in quintile 5 had injury death rates 1.8 times higher than those in quintile 1 (53 per 100,000 compared with 29 per 100,000) in 1995–1997.
- Transport accidents are the largest component of these injury deaths, for which the ratio between quintiles 5 and 1 was 2.2. For suicide, the ratio was 1.5.
- Deaths related to mental disorders are almost exclusively drug-related in this age group (see Chapter 9). For these deaths, there was only a marginal difference in the rates between quintiles 1 and 5 (Table 27.1). However, lower rates were recorded in quintiles 2 and 3.



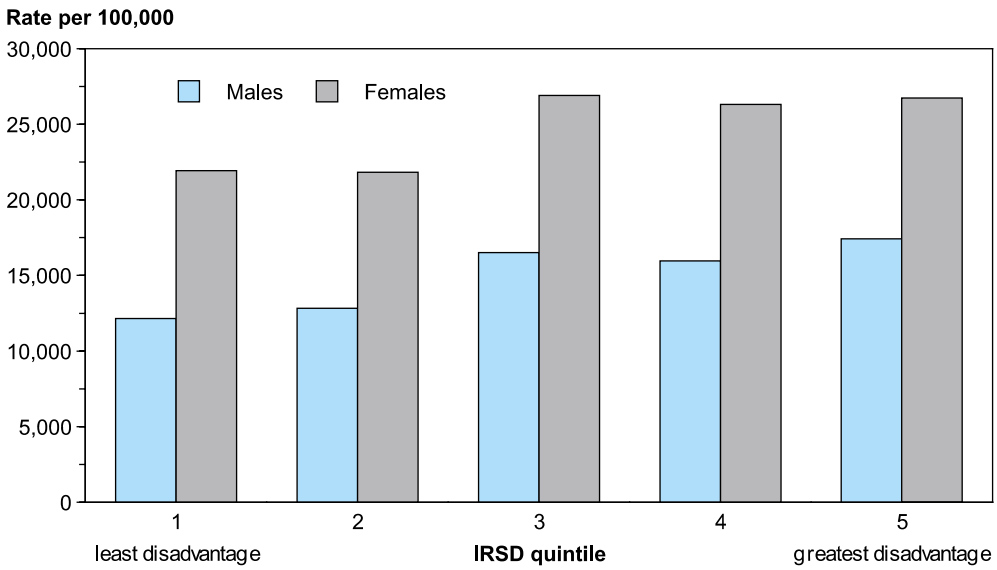
Source: Mathers 1996 and AIHW Mortality Database.

Figure 27.2: Death rate ratios between quintiles with the greatest and least disadvantage, 15–24 year olds, 1985–87 and 1995–97

- The rate ratios shown in Figure 27.2 are calculated by dividing the death rates for quintile 5 by the death rates for quintile 1 (also shown in the last column of Table 27.1). They thus provide a measure of the difference in death rates between these two groups. A rate ratio greater than 1 indicates that the death rate is higher in quintile 5 than in quintile 1. The larger the rate ratio, the greater the difference between the two groups.
- For males, the rate ratio has increased over the 10 years from 1985–87 to 1995–97, from 1.5 to 1.7. Over this period, overall death rates have declined (see Chapter 5). Therefore, the above results suggest that the gains made over the last 10 years have benefited quintile 1 to a greater extent than quintile 5.
- For females, the rate ratio decreased over the 10-year period, from 1.5 to 1.4. This indicates that there has been a greater reduction in death rates in the quintile 5 than in quintile 1.

Morbidity

Data used for this section are hospitalisation rates across socioeconomic disadvantage groups. Such information provides an indication of the level of illness in a population group. However, it is important to note that these rates may also be affected by access to services and differing admission practices. These issues are discussed further in Appendix 3. The data are based on the location of the patient's residence, not the location of the hospital.



Note: Denominator population used is the population as at 30 June 1997.

Source: AIHW National Hospital Morbidity Database.

Figure 27.3: Hospitalisation rates by IRSD, 15–24 year olds, 1997–98

- For this age group, hospitalisation rates for females are higher than for males, largely due to obstetric hospitalisations (see Chapter 6). For females, quintiles 3, 4 and 5 had higher hospitalisation rates in 1997–98 than quintiles 1 and 2. The ratio between the quintiles 5 and 1 was 1.2. Much of this is also accounted for by obstetric hospitalisations for which the rate for quintile 5 is three times the rate of quintile 1.
- A similar pattern is also observed for male hospitalisations. In this case the ratio between quintiles 5 and 1 was 1.4.

Table 27.2: Selected reasons for hospitalisation, 15–24 year olds, 1997–98

Principal diagnosis/ external cause[a]	IRSD quintile (least disadvantage) 1	2	3	4	(greatest disadvantage) 5	Q5:Q1 ratio
	Rate per 100,000					
Motor vehicle accidents	124	153	167	156	166	1.3
All transport	*295*	*332*	*379*	*365*	*351*	*1.2*
Self-inflicted injury	135	124	153	156	134	1.0
Violence	94	110	142	175	196	2.1
All injuries	*1,444*	*1,475*	*1,551*	*1,676*	*1,642*	*1.1*
Infectious	188	173	204	208	188	1.0
Endocrine	121	120	153	136	137	1.1
Mental disorders	1,201	750	823	709	782	0.7
Circulatory	104	96	113	113	106	1.0
Respiratory	631	593	727	692	680	1.1
Digestive	2,035	1,673	1,783	1,591	1,452	0.7
Obstetric[b]	2,823	4,638	6,970	7,309	8,483	3.0
Other	9,852	10,085	12,831	12,324	12,841	1.3
Total	**16,964**	**17,241**	**21,590**	**21,010**	**21,977**	**1.3**

(a) Based on ICD-9-CM codes.

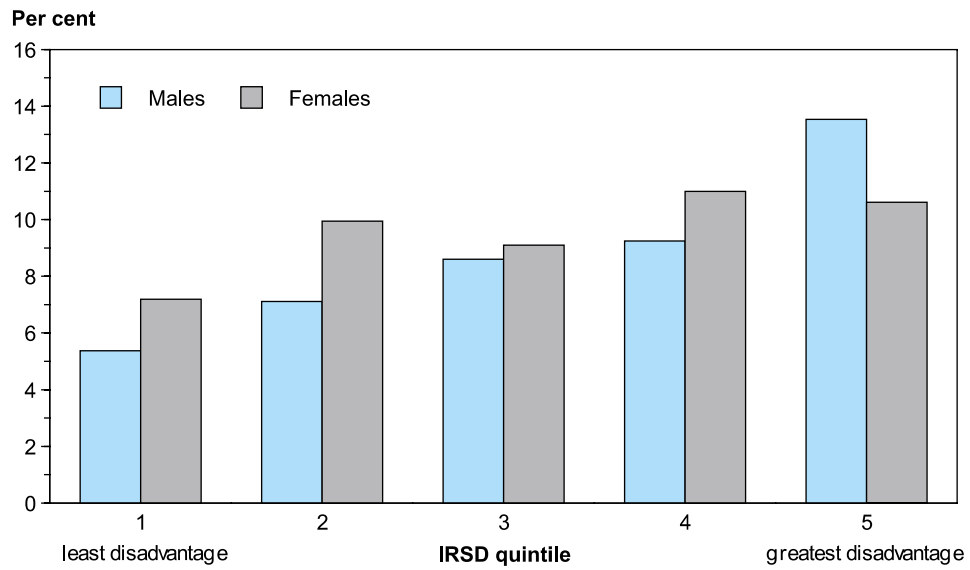
(b) Rate per 100,000 females.

Source: AIHW National Hospital Morbidity Database.

- For hospitalisations related to injury there is, to some extent, a gradient in the rates across the socioeconomic disadvantage groups. However, the ratio between the groups with the greatest and least disadvantage (quintiles 5 and 1) was only 1.1. This however, translates to nearly 200 extra hospitalisations per 100,000 population. For the specific injuries listed above, the largest differential between quintiles 5 and 1 was for violence-related injuries, with a rate ratio of 2.1.
- Mental disorders and digestive disorders have larger rates in quintile 1 than in quintile 5.
- For obstetric hospitalisations, there is a clear gradient in the rates across socioeconomic disadvantage groups. The rate in quintile 5 was three times that for quintile 1.

Health status

Information is presented here on self-assessed health status, using data from the ABS National Health Surveys. In the 1995 survey, participants were asked to rate their overall health as either excellent, very good, good, fair or poor. In the 1989–90 survey, the possible responses to the survey were excellent, good, fair or poor. Results below show the proportion of young people rating their health at the lower end of this scale; as fair or poor.



Source: AIHW from ABS NHS, 1995.

Figure 27.4: Proportion of 15–24 year olds reporting health status as fair or poor, by IRSD, 1995

- Overall, slightly more young females than young males reported their health as only fair or poor in 1995 (see Chapter 3). Quintile 5 was the only group with higher proportions of young males than females reporting their health as fair or poor (14% compared with 11%).
- For females, there was a general increase with increasing socioeconomic disadvantage in the proportion reporting their health as fair or poor (Figure 27.4). The ratio between quintile 5 and quintile 1 was 1.5.
- The gradient across IRSD groups is more marked for young males—with a rate ratio of 2.5, compared to 1.5 for females.

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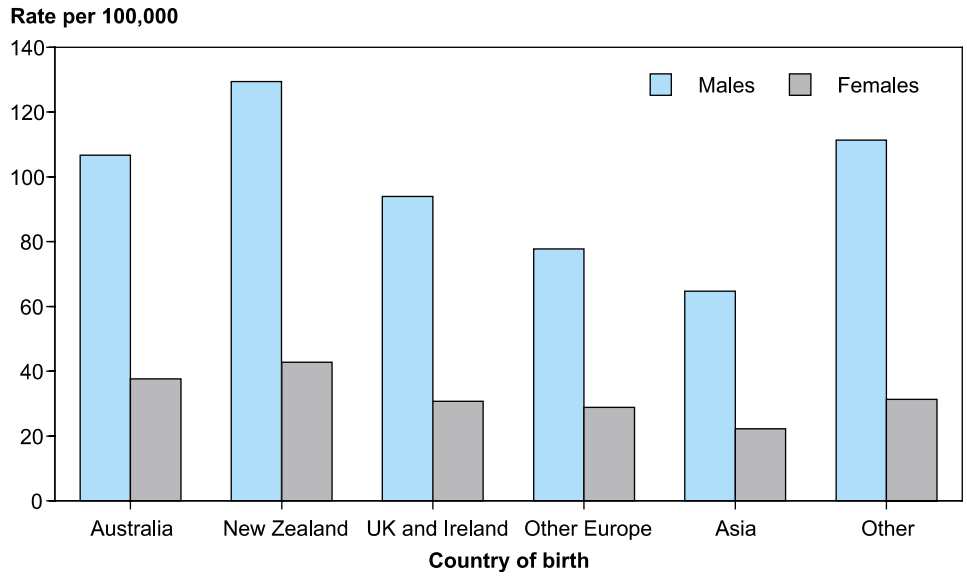
28 Overseas-born young people

This chapter provides some information on the health of young people born outside Australia compared with those born in Australia. A number of publications have shown that adults born outside Australia tend to have better health than those born in Australia (AIHW 1998; Mathers 1994). This health advantage is often termed the 'healthy migrant effect', where those in good health are more likely to meet eligibility criteria and be willing or able to migrate. Social, cultural or behavioural factors may also contribute.

Following is some information on the health status and health service use of young people born overseas. Results are shown for the death and hospitalisation rates of these young people compared with those born in Australia. The country of birth groups are: Australia, New Zealand, United Kingdom and Ireland, other Europe, Asia, and other (using the Australian Standard Classification of Countries for Social Statistics—ASCCSS).

Mortality

Mortality rates between Australian and overseas-born young people are compared below. To increase the reliability of the estimates, 3 years of data have been pooled (1995 to 1997) due to the small number of deaths in some cases.



Source: AIHW Mortality Database.

Figure 28.1: Death rates by country of birth, 15–24 year olds, 1995–97

- Young males born in New Zealand had the highest death rates for the period 1995–97, with a rate of nearly 130 per 100,000. The other two groups of males with rates over 100 per 100,000 were Australian-born, and the 'other' group (107 and 111 per 100,000 respectively). Asian-born males had the lowest death rates, at 65 per 100,000.
- There was a similar ranking between countries of birth groups for young females: New Zealand-born young females had the highest rate (43 per 100,000), followed by Australian-born young women (38 per 100,000). Asian-born young women had the lowest rate at 22 per 100,000.

Table 28.1: Selected causes of death by country of birth, 15–24 year olds, 1995–97

Cause of death[(a)]	Australian-born		Other		
	Number	Rate per 100,000	Number	Rate per 100,000	Rate ratio
Motor vehicle accidents	1,038	15.4	144	11.4	1.4
All transport	*1,569*	*23.2*	*227*	*17.9*	*1.3*
Suicide	1,172	17.3	179	14.1	1.2
Violence	136	2.0	39	3.1	0.7
All injury	*3,417*	*50.6*	*555*	*43.7*	*1.2*
Mental	325	4.8	45	3.5	1.4
Other	1,184	17.5	142	11.2	1.6
Total	**4,926**	**72.9**	**742**	**58.5**	**1.2**

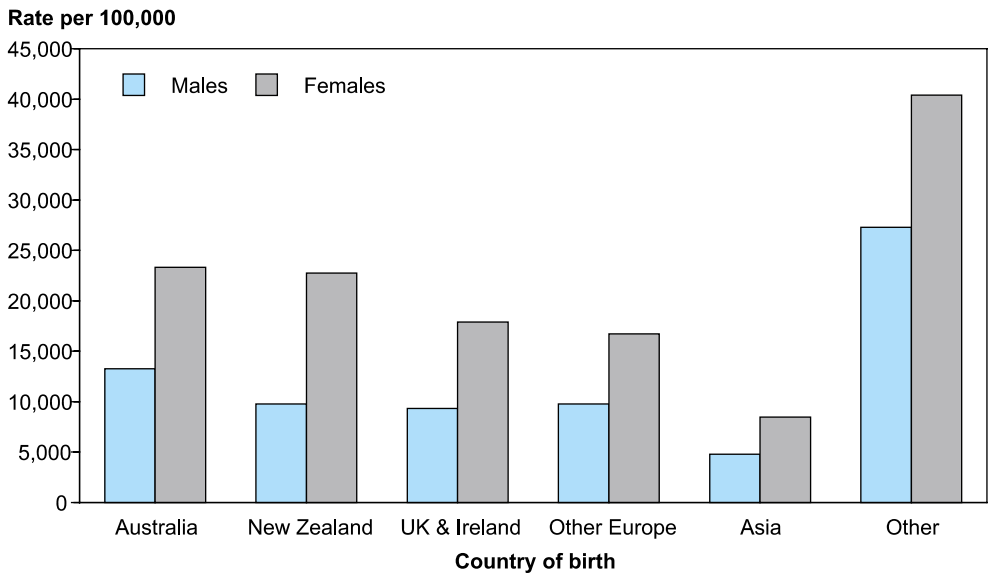
(a) Based on ICD-9 codes.

Source: AIHW Mortality Database.

- The overall death rate for young people aged 15–24 years who were born in Australia was 1.2 times higher than for those born overseas. This difference was not due to any one cause, but was due to differences in death rates for many causes of death.
- The largest cause of death for this age group—injury—also had a rate ratio of 1.2. Within injury, the rate ratio for motor vehicle accidents was 1.4. In contrast to other causes of death, the death rate from violence was lower in Australian-born young people compared to those born overseas (rate ratio 0.7).
- Australian-born young people had death rates from mental disorders 1.4 times higher than for young people born overseas. As discussed in Chapter 9, deaths from mental disorders in this age group are almost all due to drug dependence disorders.

Morbidity

This section includes results on hospitalisations for young people born in Australia compared with those born overseas. Hospitalisations can be affected by many factors, including health status and differences in treatment practices and access to services. Further details on interpretation of hospitalisations data is included in Chapter 6 and in Appendix 3.



Source: AIHW National Hospital Morbidity Database.

Figure 28.2: Hospitalisation rates by country of birth, 15–24 year olds, 1997–98

- Aside from young people born in 'Other' countries (a category that consists of countries in North and South America, Africa and the Pacific islands), the hospitalisation rates were highest for both young males and females born in Australia, closely followed by New Zealand-born in the case of young females.
- Asian-born young people had the lowest hospitalisation rates, both for males and females.

Table 28.2: Selected reasons for hospitalisation by country of birth, 15–24 year olds, 1997–98

Principal diagnosis/external cause[(a)]	Australia		Other		
	Number	Rate per 100,000	Number	Rate per 100,000	Rate ratio
Motor vehicle accidents	4,807	215	942	215	1.0
All transport	*11,596*	*519*	*1,835*	*418*	*1.2*
Self-inflicted	4,391	197	888	202	1.0
Violence	5,112	229	956	218	1.1
All injuries	*57,369*	*2,570*	*8,741*	*1,991*	*1.3*
Endocrine	4,902	220	452	103	2.1
Mental disorders	29,526	1,323	5,492	1,251	1.1
Respiratory	22,547	1,010	2,551	581	1.7
Obstetric	95,352	8,742	17,203	7,970	1.1
Other	196,166	4,316	29,518	2,673	1.6
Total	**405,862**	**18,180**	**63,957**	**14,571**	**1.2**

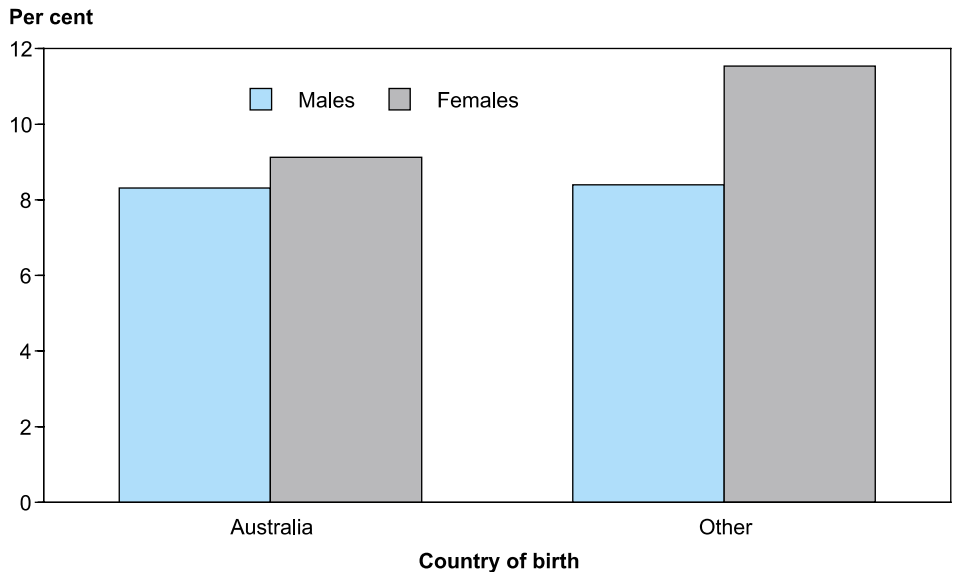
(a) Based on ICD-9 codes.

Source: AIHW National Hospital Morbidity Database.

- Overall, in 1997–98 the hospitalisation rate for young people born in Australia was 1.2 times higher than those born overseas.
- The largest subgroup of hospitalisations shown in Table 28.2 was for obstetrics. There was not a great deal of difference in the hospitalisation rates for obstetric reasons between Australian-born and overseas-born young women—the Australian-born group's rate was 1.1 times higher than that for the overseas-born group.
- For injuries, a significant group of hospitalisation for this age group, Australian-born young people had hospitalisation rates 1.3 times higher than young people born overseas.

Health status

This section compares the reported health status of young people born in Australia with those born overseas. Figure 28.3 shows the proportion of young people who classified their health at the lower end of the scale—as 'fair' or 'poor'. Further details on this measure of health status are included in Chapter 3 of this report.



Source: AIHW from ABS NHS, 1995.

Figure 28.3: Proportion of 15–24 year olds reporting health status as fair or poor, by country of birth, 1995

- Young females born overseas were more likely to report their health as 'fair' or 'poor' than young females born in Australia—11.5% of the group compared with 9.1%.
- For young males, there was very little difference in the proportion reporting their health at the lower end of the scale, with both groups having around 8% of the group reporting their health as 'fair' or 'poor'.

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Part VII Future directions

29 Future directions

29 Future directions

Good quality population health information is important to health care providers, health care consumers, policy makers and managers. It provides a reliable basis for policy and program development and also enables monitoring of the impact of those policies and programs on the population. This section does not look at the policy or program responses of the Australian community to the health issues of Australia's youth but rather at the information needed for good policy development and suggests ways of improving that information base.

In compiling this report it has become evident that there are a number of important data deficiencies that limit the coverage and the validity of the information used to describe the status of the health and wellbeing of Australian youth. This will also be apparent to the reader both from the recurrence of the phrase 'due to limited data' and because of some important issues are not adequately covered.

A number of the difficulties in currently available data are the same as or similar to, those that existed in preparing the report *Australia's Children: their health and wellbeing 1998* (Moon 1998). While there are areas of data overlap between the child and youth health reports it is not always so. Areas that overlap may do so because of the lack of an agreed definition or boundary amongst data collectors on the age groups to be used, the similarity in a number of developmental issues, and the difficulty in meeting information needs on the health of these two groups. It is important to recognise, however, that many of the health issues facing the two groups are different and collecting information on issues such as health status of the two groups raises different issues.

The need to improve the information available on the health of young Australians has been recognised by Australian governments, Commonwealth, State and Territory, in the National Health Policy for Young Australians. This report and that on children's health are early but important steps in correcting the information shortcomings. In this section some of the major data deficiencies and gaps are identified and steps are suggested to improve the situation.

Framework

In compiling the child and youth health reports the Australian Institute of Health and Welfare set up national child and youth health information advisory groups to advise the Institute on information issues. Both groups have assisted in the development of national health information frameworks which set out the information needed to monitor and report on the health of the child and youth populations. The information frameworks also provide a valuable means of identifying gaps in the data available. A copy of the National Youth Health Information Framework is included in Appendix 5.

Gaps

While a number of major gaps in the availability of information on the health of young people are evident from this report, further work is required to detail the main gaps in information on the health of young people. The main areas where data gaps have been identified include:

- an overall measure of health status and wellbeing for 12–17 year olds (analogous to the SF-36 information available for 18–24 year olds)
- information on particular determinants (for example, only limited information is available on physical activity levels)
- exposure to risk of injury and use of safety measures (for example, road safety measures including limiting speed, not driving while under the influence of alcohol or other drugs)
- information on knowledge, attitudes, perceptions and skills
- information on services and interventions including, but not limited to, youth specific services
- regular collection of data in areas with apparent rapid changes over time (such as the use of drugs)
- linking of determinants of health with health status, both over short and longer periods of time, including linking of many data items to socioeconomic status.

A number of categories of gaps have been identified using the basic elements of the information framework. The lack of overall measures of health status, particularly for children below 18 years is due in part to summary measures of health and wellbeing for this group not being well developed. Also, many current measures of morbidity rely on measures of services delivered, and it is often difficult to derive population-based measures of incidence and prevalence from these. Gaps in current knowledge of the determinants of health for this age group can also be identified.

Most of these gaps require the development of new information. However, a number can be addressed by the improving existing collections, e.g. through the incorporation of additional data items or utilising existing data more effectively such as by linking data items. For example, in the United Kingdom, there have been numerous studies, including longitudinal studies, based on data from linked databases (administrative and survey databases). Similar linking in Australia would fill a number of gaps in child and youth health information.

Deficiencies

Deficiencies identified in the quality of the data differ between the types of data collections. The main administrative by-product data source—hospital morbidity data—has the strength that national data definitions have been defined for the data items. However, while the implementation of these definitions appears broadly consistent across jurisdiction, differences still remain that affect the interpretation of the data. A major definitional difficulty is the variation in State and Territory legislative definitions of children and young people.

While the major national population level surveys provide good quality data, the lack of consistency between definitions used in those surveys and many State-based surveys results in some difficulty in interpretation and in comparing surveys. A process of ensuring use of standard national definitions in these surveys would overcome many of these problems. The use of consistent definitions would also allow the use of smaller, local surveys in the building of a national perspective on particular issues.

The measurement of health services and interventions for this age group may also need to be improved in order to understand adequately their contribution to the overall picture of the health and wellbeing of children and youth. An important issue here is the need to preserve confidentiality while at the same time recording service usage, particularly in sensitive areas such as sexual health clinics and counselling services.

Statistical (or probabilistic) data linkage would enhance the value of existing data for a small investment. The development of linkage is important in improving the understanding of the impact of health determinants or risk factors on the health of the population and groups such as youth. The lack of such linkage is clearly a deficiency in the effective management and use of available data.

Addressing gaps and deficiencies

Australia has a well developed national health information development process that provides an appropriate mechanism for addressing the identified data gaps and deficiencies. Similar processes are being developed in the public health sector.

The recently released National Public Health Information Development Plan has made a number of high priority recommendations for action at a broad national level that are relevant to health information development and will assist in addressing the gaps in youth health:

- agreed national programs of public health data collection and development (including greater coordination of health surveys between jurisdictions);
- national public health information infrastructure; and
- agreed public health national minimum data sets.

Current health surveys, particularly those conducted at the national level, often lack adequate sampling for analysis of health status and the incidence and prevalence of specific diseases and conditions for geographic areas or special populations. The irregular frequency of some population health surveys also is an issue, as it can be argued that important trends are being missed due to the time gaps between surveys. In addition such surveys should seek to meet the special information needs of child and youth health. The activity in the States and Territories, based around population health telephone surveys, to coordinate collections and develop national data consistency is a positive movement in improving the data.

There are also some more specific categories of public health information gaps identified in the National Public Health Information Development Plan (AIHW 1999) that are relevant to the development of health information specifically for children and youth. These include:

- lack of national blood sample surveys and biomedical risk factor surveys;
- little ongoing surveillance of risk factors (determinants of health);
- little data on impact of health promotive environments;
- inadequate specification of socioeconomic status, Indigenous status, and geographic identification of respondents in surveys; and
- need for summary statistics which are directly related to major aspects of health status and determinants.

Many of these gaps and deficiencies will affect the development and compilation of effective indicators of young people's health and wellbeing. These indicators are a necessary measure of the health status and provide a broad view of the impact of policies and programs. Now that the gaps and deficiences in the available youth health data are evident, there is an opportunity to integrate the need for improved youth and child health data into the broader development of health and public health information.

Inconsistent data item definitions and lack of an agreed core of data items for collection are the two major quality issues. The recommendations of the NPHIDP to develop a coordinated national collection program and to work within the National Health Information Agreement processes to develop and collect agreed public health national minimum data sets will act as important drivers to improve national and jurisdictional data.

The National Youth Health Information Advisory Committee (and the National Child Health Information Advisory Committee) together with the Australian Institute of Health and Welfare will be critical contributors in making progress in these areas.

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Moon L, Rahman N & Bhatia K 1998. Australia's children: their health and wellbeing 1998. AIHW Cat. No. PHE 7. Canberra: AIHW.

Abbreviations

ABS	Australian Bureau of Statistics
AIHW	Australian Institute of Health and Welfare
ASCCSS	Australian Standard Classification of Countries for Social Statistics
BEACH	Bettering the Evaluation and Care of Health
BMI	Body mass index
FaCS	Department of Family and Community Services
DALY	Disability-adjusted life year
DHFS	Department of Health and Family Services
HIV/AIDS	Human immunodeficiency virus/acquired immune deficiency syndrome
ICD-9	International Classification of Diseases, 9th revision
ICD-9-CM	International Classification of Diseases, 9th revision, clinical modification
ICD-10	International Classification of Diseases, 10th revision
ICPC-2	International Classification of Primary Care, version 2
IRSD	Index of relative socioeconomic disadvantage
IUD	Intra-uterine device
NDS	National Drug Strategy Household Survey
NHMD	National Hospital Morbidity Database
NHMRC	National Health and Medical Research Council
NHS	National Health Survey
NPSU	National Perinatal Statistics Unit
RRMA	Rural, Remote and Metropolitan Areas
SAAP	Supported Accommodation Assistance Program
SEIFA	Socioeconomic index for areas
SF-36	Medical Outcomes Study 36-item Short-Form Health Survey
SLA	Statistical local area
STD	Sexually transmitted disease
WHO	World Health Organization
YLD	Years of life lost due to disability
YLL	Years of life lost due to premature death

Symbols

$	Australian dollars, unless otherwise specified
. .	not applicable
–	zero
%	per cent
cm	centimetre
g	gram
kg	kilogram
kJ	kilojoule
m	metre
n.a.	not available, not asked
nec	not elsewhere classified

Abbreviations

RRMA Categories

M1	Capital cities
M2	Other metropolitan centres
R1	Large rural centres
R2	Small rural centres
R3	Other rural areas
Rem1	Remote centres
Rem2	Other remote areas

States and Territories

NSW	New South Wales
Vic	Victoria
Qld	Queensland
WA	Western Australia
SA	South Australia
Tas	Tasmania
ACT	Australian Capital Territory
NT	Northern Territory

SF-36 Dimensions

PF	Physical functioning
RP	Role limitations due to physical problems
BP	Bodily pain
GH	General health perceptions
VT	Vitality
SF	Social functioning
RE	Role limitations due to emotional problems
MH	Mental health

Glossary

Affective disorder: A mood disturbance. Includes mania, hypomania, bipolar affective disorder, depression and dysthymia.

Age-specific rate: A rate for a specific age group. The numerator and denominator relate to the same group.

Agoraphobia: Fear of being in public places from where it may be difficult to escape.

Anxiety disorder: Characterised by feelings of tension, distress or nervousness. Includes agoraphobia, social phobia, panic disorder, generalised anxiety disorder, obsessive-compulsive disorder and post-traumatic stress disorder.

Apparent retention rate: The percentage of students of a given cohort who continue from the beginning of secondary school to the highest level.

Bipolar affective disorder: Characterised by repeated episodes in which the person's mood and activity levels are significantly disturbed by occasions of both depression and mania.

Cause of death: From information reported on the medical certificate of cause of death, each death is classified by the underlying cause of death according to the rules and conventions of the ninth revision of the International Classification of Diseases. The underlying cause is defined as the disease which initiated the train of events leading directly to death. Deaths from injury or poisoning are classified according to the circumstances of the violence which produced the fatal injury, rather than the nature of the injury.

Chronic: Of lengthy duration or recurring frequently, often with progressive seriousness.

Cohort: A group of individuals who experience the same event at a specified period in time; this report refers to 'birth cohorts' (people born in the same year) and 'education cohorts' (students entering school at the same time).

Co-morbidity: The occurrence of two or more diseases or health problems at the same time.

Congenital: A condition that is recognised at birth or that is believed to have been present since birth, including conditions which are inherited or caused by an environmental factor.

Core activity restriction: The extent of a person's disability; 'core activities' are defined as self care (bathing, dressing, eating, using toilet), mobility (moving around at home and away from home, getting into or out of bed or chair, using public transport), and communication (understanding and being understood by others). A person with a *profound* restriction is unable to perform a core activity, or always needs assistance for that activity, while a person with a *severe* restriction sometimes needs assistance to perform the activity.

Dementia: Loss or impairment of intellectual faculties, reasoning power and memory due to a disease of the brain.

Depression: A state of gloom, despondency or sadness lasting at least 2 weeks.

Diagnosis: A decision based on the recognition of clinically relevant symptomatology, the consideration of causes that may exclude a diagnosis of another condition, and the application of clinical judgment.

Glossary

Disability: The presence of one or more of fifteen restrictions, limitations or impairments.

Educational attainment: The highest post-school educational qualification attained by the individual.

Education participation rate: The number of persons attending an educational institution in any group expressed as a percentage of the population in the same group.

Employed: Employed people are those aged 15 years and over who, during the reference week: worked for one hour or more for pay; worked for one hour or more without pay in a family business; or had a job but were not at work because of leave or other reasons.

External cause: Environmental event, circumstance and/or condition as the cause of injury, poisoning and /or other adverse effect.

Generalised anxiety disorder: A disorder characterised by unrealistic or excessive anxiety and worry about life circumstances over an extended period.

Handicap: A disadvantage resulting from impairment or disability that limits or prevents the fulfilment of a role that is normal.

Health outcome: A change in the health of an individual or population due to a preventive or clinical intervention.

Health status: An individual or population's overall level of health, taking account of various aspects such as life expectancy, amount of disability, levels of disease risk factors and so forth.

Hospitalisations: See *separations*.

Incidence: The number of instances of illness commencing, or of persons falling ill, during a given period.

Indigenous: A person of Aboriginal and/or Torres Strait Islander descent who identifies as an Aboriginal and/or Torres Strait Islander and is accepted as such by the community with which he or she is associated.

International Classification of Diseases: WHO's internationally accepted classification of death and disease. The Ninth Revision (ICD-9) is currently in use. In this report, causes of death classified before 1979 under previous revisions have been reclassified to ICD-9 by the AIHW.

Labour force: The labour force comprises those who are employed or unemployed.

Labour force participation rate: The percentage of the working-age population in the labour force.

Mania: A disorder in which mood is happy, elevated, expansive or irritable out of keeping with the person's circumstances lasting at least 7 days.

Mental disorder: The existence of a clinically recognisable set of symptoms or behaviour associated in most cases with distress and with interference with personal functions.

Mental health: The capacity of individuals and groups to interact with one another and the environment, in ways that promote subjective wellbeing, optimal development and use of mental abilities (cognitive, affective and relational). The achievement of individual and collective goals consistent with justice is central to a positive state of mental health.

Mental health problems: Diminished cognitive, emotional or social abilities but not to the extent that the criteria for a mental disorder are met.

Morbidity: Any departure, subjective or objective, from a state of physiological or psychological wellbeing.

National Health Priority Areas (NHPA): The NHPA initiative is a collaborative effort involving Commonwealth Government and State and Territory Governments that seeks to focus public attention and health policy on those areas that are considered to contribute significantly to the burden of illness in the community, and for which there is potential for health gain.

Obsessive-compulsive disorder: A disorder characterised by recurrent, persistent ideas, thoughts, images or impulses that intrude into the consciousness against a person's will.

Panic disorder: Characterised by panic attacks (discrete episodes of intense fear or discomfort) that occur suddenly and unpredictably.

Parasuicide: The deliberate or ambivalent act of self-destruction, or other life-threatening behaviour, not resulting in death.

Prescription drugs: Pharmaceutical drugs available only on the prescription of a registered medical practitioner and available only from pharmacies.

Prevalence: The number of instances of a given disease or other condition in a given population at a designated time.

Principal diagnosis: The diagnosis established after study to be chiefly responsible for occasioning the patient's episode of care in hospital.

Principal procedure: The most significant procedure that was performed for treatment of the principal diagnosis.

Quintile: A group derived by ranking the population according to specified criteria and dividing it into five equal parts.

Risk factor: An attribute or exposure that is associated with an increased probability of a specified outcome, such as the occurrence of a disease. Risk factors are not necessarily causes of disease.

Separation: The term used to refer to the episode of care, which can be a total hospital stay (from admission to discharge, transfer or death), or a portion of a hospital stay beginning or ending in a change of type of care (for example, from acute to rehabilitation). Separation also means the process by which an admitted patient completes an episode of care by being discharged, dying, transferring to another hospital or changing type of care.

Social phobia: A persistent, irrational fear of being the focus of attention, or fear of behaving in a way that will be embarrassing or humiliating.

Socioeconomic status: A relative position in the community as determined by occupation, income and amount of education.

Substance use disorder (ICD-9, used in hospital and mortality data): A disorder in which drugs are used to such an extent that behaviour becomes maladaptive; social and occupational functioning is impaired, and control or abstinence becomes impossible. Reliance on the drug may be psychological, as in substance misuse, or physiological, as in substance dependence.

> *Substance misuse:* The use of a drug to an extent that the person is often intoxicated throughout the day and fails in important obligations and in attempts to abstain, but where there is not necessarily physical dependence.
>
> *Substance dependence:* The misuse of a drug accompanied by a physiological dependence on it, made evident by tolerance and withdrawal symptoms.

Substance use disorder (ICD-10, used in mental health survey data): Substance use disorders are harmful use and/or dependence on drugs and/or alcohol.

Harmful use: A pattern of use of psychoactive substances that is causing damage to physical or mental health. Harmful patterns are often associated with adverse social consequences.

Dependence: A set of symptoms in which the use of drugs or alcohol takes on a much higher priority for a person than other behaviours that once had greater value. The central characteristic is the strong, sometimes overpowering, desire to take the substance.

Suicide: Suicide is a conscious act to end one's life. By conscious act, it is meant that the act undertaken was done in order to end the person's life.

Symptom: An observable physiological or psychological manifestation of a disorder or disease, often occurring in a group to constitute a syndrome.

Unemployed: Persons aged 15 years and over who were not employed during the reference week, and had actively looked for full-time or part-time work, were available for work in the reference week, or would have been available except for temporary illness or waiting to start a new job or were waiting to be called back to a job from which they had been stood down without pay for less that 4 weeks.

Appendixes

A1 State and Territory tables

A2 National Health Survey coded conditions

A3 Data sources

A4 Injury ICD-9 codes

A5 National Youth Health Information Network

A6 List of figures and tables

A1 States and Territory tables

This section provides State and Territory breakdowns of national results presented earlier in this report. In some cases, the scope of the data may vary by State or Territory, particularly in the identification of healthy newborns in the hospital data. It is recommended that individual State and Territory health authorities be contacted for advice on further interpretation of the data.

Table A1: Mortality by State and Territory, selected causes, 12–24 year olds, 1997 (rate per 100,000)

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
All causes									
Males	84.8	83.7	92.0	90.2	72.9	81.2	70.8	175.5	86.3
Females	31.6	27.7	41.8	36.6	28.9	37.2	24.7	46.8	33.1
Persons	58.7	56.2	67.5	64.2	51.4	59.5	48.3	114.0	60.2
Injury									
Males	57.2	58.5	74.2	65.7	52.1	49.6	53.1	128.0	61.8
Females	16.6	13.9	25.7	18.3	18.0	16.3	21.6	31.2	18.2
Persons	37.3	36.7	50.5	42.7	35.4	33.2	37.7	81.8	40.5
Suicide									
Males	24.4	23.1	28.8	19.5	22.3	4.5	17.7	52.2	24.0
Females	5.9	4.3	7.8	5.9	6.3	—	15.5	5.2	5.9
Persons	15.3	13.9	18.5	12.9	14.45	2.3	16.6	29.8	15.1

Source: AIHW Mortality Database.

Table A2: Hospitalisation rates by State and territory, 12–24 year olds, 1997–98 (rates per 100,000)

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Hospitalisation rates									
Males	11,820	11,481	13,672	11,018	13,515	10,425	10,730	9,308	12,050
Females	18,417	18,276	20,336	19,281	22,952	18,676	13,630	22,981	19,144
Persons	15,053	14,812	16,931	15,035	18,119	14,485	12,138	15,816	15,520
Hospitalisation rate by principal diagnosis									
Disturbances of tooth eruption	727	977	868	911	1,232	648	942	210	868
Legally induced abortion	1,225	714	94	1,357	2,261	833	94	2,657	960
Abdominal pain	375	355	422	316	332	299	205	205	363
Extracorporeal dialysis	342	382	245	197	362	354	1,095	690	338
Single vaginal delivery	625	309	669	462	442	670	519	993	529
Chronic tonsilitis	233	318	220	219	351	242	298	69	258
Asthma, unspecified	220	122	221	220	270	104	70	116	193
Acute appendicitis, without mention of peritonitis	177	189	190	201	152	188	225	183	184
First-degree perineal laceration	288	203	494	306	321	375	164	707	315
Removal of internal fixation device	154	157	158	155	118	187	215	54	154
Hospitalisation rate by principal procedure									
Surgical extraction of two or more teeth	708	1,040	923	982	1,226	577	939	183	892
Aspiration curettage of uterus for termination of pregnancy	779	657	91	1,272	2,161	794	79	2,610	780
Haemodialysis	347	384	250	199	365	355	1096	707	343
Repair of other current obstetric laceration	700	489	785	605	494	681	487	1,284	641
Artificial rupture of membranes	188	110	244	131	139	234	180	171	171
Other artificial rupture of membranes	253	276	451	303	299	370	123	411	307
Tonsillectomy without adenoidectomy	199	289	194	212	293	230	267	64	229
Appendectomy	294	303	283	317	257	286	325	230	293
Oesophagogastroduodenoscopy (EGD) with closed biopsy	225	242	263	207	152	179	174	77	225
Injection or infusion of cancer chemotherapeutic substance	160	141	147	154	174	144	105	32	151
Computerised axial tomography of head	137	185	170	125	204	126	344	79	162
Hospitalisation rate for mental disorders									
Unspecified schizophrenia	96	102	101	34	57	63	64	35	87
Anorexia nervosa	63	150	94	63	30	21	17	7	85
Major depressive disorder, recurrent episode	30	192	34	45	49	38	14	9.9	73
Major depressive disorder, single episode	58	35	100	116	70	16	29	22	65
Schizophrenic disorder, paranoid type	54	46	57	48	70	46	58	50	53
Opioid type dependence	79	37	36	51	6	1	3	0	48
Alcohol use disorder	53	34	44	51	44	46	6	7	44

Source: AIHW National Hospital Morbidity Database.

Table A3: Hospitalisation rate for injuries, 12–24 year olds, 1997–98 (per 100,000 population)

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Males	3,725	2,725	3,696	3,756	4,293	3,352	2,623	3,651	3,489
Females	1,666	1,234	1,536	1,953	2,136	1,607	1,243	2,245	1,596
Persons	2,715	1,994	2,639	2,881	3,241	2,493	1,949	2,983	2,563

Source: AIHW National Hospital Morbidity Database.

Table A4: Age-specific fertility rates (births per 1,000 women), 1987 and 1997

Age	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
1987									
15–19[(a)]	21.2	14.7	24.3	21.8	19.9	27.1	12.7	88.5	20.6
20–24	89.0	73.3	93.3	88.3	81.9	103.1	63.8	121.9	85.2
1997									
15–19	19.5	12.4	25.6	21.2	16.1	27.5	13.4	76.5	19.5
20–24	65.9	49.6	72.5	64.5	53.9	80.4	42.3	99.2	62.3

(a) Includes births to mothers aged less than 15.

Source: ABS 1988:7; ABS 1998a:9.

Table A5: Indigenous population 30 June 1996

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Males 15–24	10,243	2,040	10,165	5,411	2,033	1,456	319	5,495	37,190
Females 15–24	10,218	2,089	10,299	5,368	2,140	1,553	341	5,437	37,461
Persons 15–24	**20,461**	**4,129**	**20,464**	**10,779**	**4,173**	**3,009**	**660**	**10,932**	**74,651**

Source: ABS 1998b:10.

A2 National Health Survey coded conditions

Item description	Item code	Non-minor?	Item description	Item code	Non-minor?
Not applicable	000		Eczema, dermatitis	035	yes
Thyroid disease	001	yes	Acne	036	yes
Gout	002		Other diseases of skin/subcutaneous tissue	037	yes
Obesity	003		Sciatica	038	
Other endocrine, nutritional and metabolic diseases and immunity disorders	004		Disorders of the intervertebral disc	039	yes
Nerves, tension, nervousness	005		Back problems unspecified	040	yes
Other mental disorders	006	yes	Speech impediment, nec	041	yes
Blindness complete or partial, not corrected by glasses	007	yes	Other diseases of the musculo-skeletal system and connective tissue	042	yes
Other diseases of eye and adnexa	008	yes	Herpes	043	yes
Otitis media	009	yes	Tinea	044	yes
Deafness complete/ partial	010	yes	Other infectious and parasitic diseases	045	yes
Ear pain	011	yes	Diseases of the blood and blood forming organs	046	yes
Other diseases of the ear and mastoid process	012	yes	Complications of pregnancy, childbirth and the puerperium	047	yes
Epilepsy	013	yes	Congenital anomalies	048	yes
Other diseases of the nervous system	014		Complications of surgical and medical care, nec	050	yes
Atherosclerosis	015		Allergy nec	051	
Fluid problems, nos	016		Insomnia	052	
Varicose veins	017		Pyrexia	053	
Haemorrhoids	018	yes	Localised swelling	054	
Other diseases of circulatory system	019	yes	Difficulty breathing	055	
Bronchitis/ emphysema	020	yes	Chest pain	056	
Sinusitis	021		Abdominal pain	057	
Cough or sore throat	022		Heartburn	058	
Other diseases of the respiratory system	023	yes	Dizziness	059	
Diarrhoea, enteritis	024	yes	Headache—due to stress or tension	060	
Ulcer	025		Headache—due to unspecified or trivial cause	061	
Hernia	026	yes	Virus	062	
Constipation	027		Curvature of spine	063	
Dental problems	029	yes	Other symptoms, signs and ill-defined conditions	064	
Other diseases of digestive system	030	yes	Skin cancer	065	
Kidney diseases	031	yes	Breast cancer	066	
Other diseases of the urinary system	032	yes	Osteoporosis	067	
Other diseases of the genital system	033	yes	Rheumatoid arthritis	068	
Skin rash, nos	034		Osteoarthritis	069	

(continued)

Item description	Item Code	Non-minor?	Item description	Item Code	Non-minor?
Arthritis, nec	070	yes	High cholesterol	108	
Asthma	071	yes	Paralysis	109	yes
Hypertension	072		Other hereditary and degenerative disorders of the nervous system	110	yes
Neoplasms, nec	073	yes	Absence of limbs or parts or limbs	111	yes
Checkup/ examination	074		Musculoskeletal deformities	112	yes
Common cold	075		Missing organs, nec	113	yes
Contraceptive management	076		Psoriasis	114	yes
Counselling	077		Astigmatism	115	
Diabetes mellitus—type 1	078	yes	Hypermetropia/far-sighted	116	
Diabetes mellitus—type 2	079	yes	Myopia/short-sighted	117	
Hangover	080		Presbyopia	118	
Hay fever	081	yes	Stroke including after effects of	119	
Heart disease	082	yes	Fractures	120	yes
Immunisation	083		Dislocations, sprains and strains	121	yes
Influenza	084		Internal injuries	122	yes
Disorders of menstruation	085		Open wounds	123	yes
Migraine	086	yes	Bruising and crushing	124	yes
Pregnancy supervision/childbirth	087		Entry of foreign bodies	125	yes
Strabismus	088		Burns and scalds	126	yes
Rheumatism	089		Poisoning other than by food	127	yes
Test	090		Other injuries	128	yes
X-ray	091		Injuries, type not stated	129	yes
Donor	092		Ill-defined signs and symptoms of heart conditions	182	
Diabetes, unspecified	093	yes	Depression	205	yes
Preventive measures	097		Psychoses	206	yes
Other reasons of health	098		Emotional problems, nec	207	yes
Visual disturbances	099		Body image and eating disorders	208	
Cataracts	100	yes	Alcohol and drug dependence	209	
Glaucoma	101		Cerebrovascular disease excl. stroke	219	yes
Blackouts, fits or loss of consciousness, nec	102	yes	Mental retardation, specific delays in development	306	yes
Incomplete use of arms or fingers	103	yes	Other conditions	992	
Incomplete use of feet or legs	104		No recent conditions	996	
Disfigurement, nec	105		No chronic conditions	997	
High blood sugar	106		Unspecified conditions	998	
Other disorders of refraction and accommodation	107		No conditions	999	

Note: nec = not elsewhere classified; nos = not otherwise specified.

Source: ABS National Health Survey: user's guide. ABS Cat. No. 4363.0. Canberra: ABS.

A3 Data sources

This appendix provides some detail on the main data sources that are used in multiple chapters of this report: AIHW Mortality Database, AIHW National Hospital Morbidity Database and the National Health Survey. References which contain full descriptions of these data sources are also included. Data sources which are only used in one chapter are described within the relevant chapter.

Mortality data

Information on deaths included in this report has been sourced from the AIHW Mortality Database. This database includes a record of all deaths in Australia, as collected from registration of deaths provided by Registrars of Births, Deaths and Marriages in each State and Territory. The main information extracted from the database for this report includes the age, sex, year of registration, cause of death and age at death for young people age 12–24 years. The cause of death is classified according to the International Classification of Diseases (ICD-9) codes (WHO 1977). Further details on the AIHW Mortality Database can be found in Dunn et al. (In press).

Hospital morbidity data

Hospitalisation data included in this report have come from the AIHW National Hospital Morbidity Database. This database includes information on virtually all hospital admissions in Australia, in both public and private hospitals. Information is not available on hospitalisations in the one private hospital in the Northern Territory, and from some private same-day facilities in Tasmania and the Australian Capital Territory (AIHW 1998).

Data on hospitalisations are collated on a financial year basis—information is included in the financial year of separation (that is, at the completion of the episode of care). Therefore, separations for a particular year may include episodes of care for which the admission was in the previous financial year. It is important to note that the database includes a record for *each* hospitalisation. Therefore, hospitalisation rates may include multiple admissions for individual patients.

For each hospitalisation, the database includes demographic information, administrative information about the hospital episode and clinical information. The main data items used for this report include age, sex, diagnosis (using the Australian version of the International Classification of Diseases, 9th revision, Clinical Modification—ICD-9-CM—codes (NCC 1996)), procedure (ICD-9-CM), sector (public or private hospital), length of stay, and State and Territory of hospitalisation. Definitions for these data items are included in the *National Health Data Dictionary Version 6.0* (NHDC 1997).

National Health Survey

The National Health Survey is a large-scale population survey conducted approximately every 5 years by the Australian Bureau of Statistics (ABS 1996). Survey information is collected from face-to-face interviews. Information included in this report comes from the National Health Survey conducted in 1995. In that year, information was collected from about 23,800 households across Australia.

The main pieces of information from the survey used in the report include:

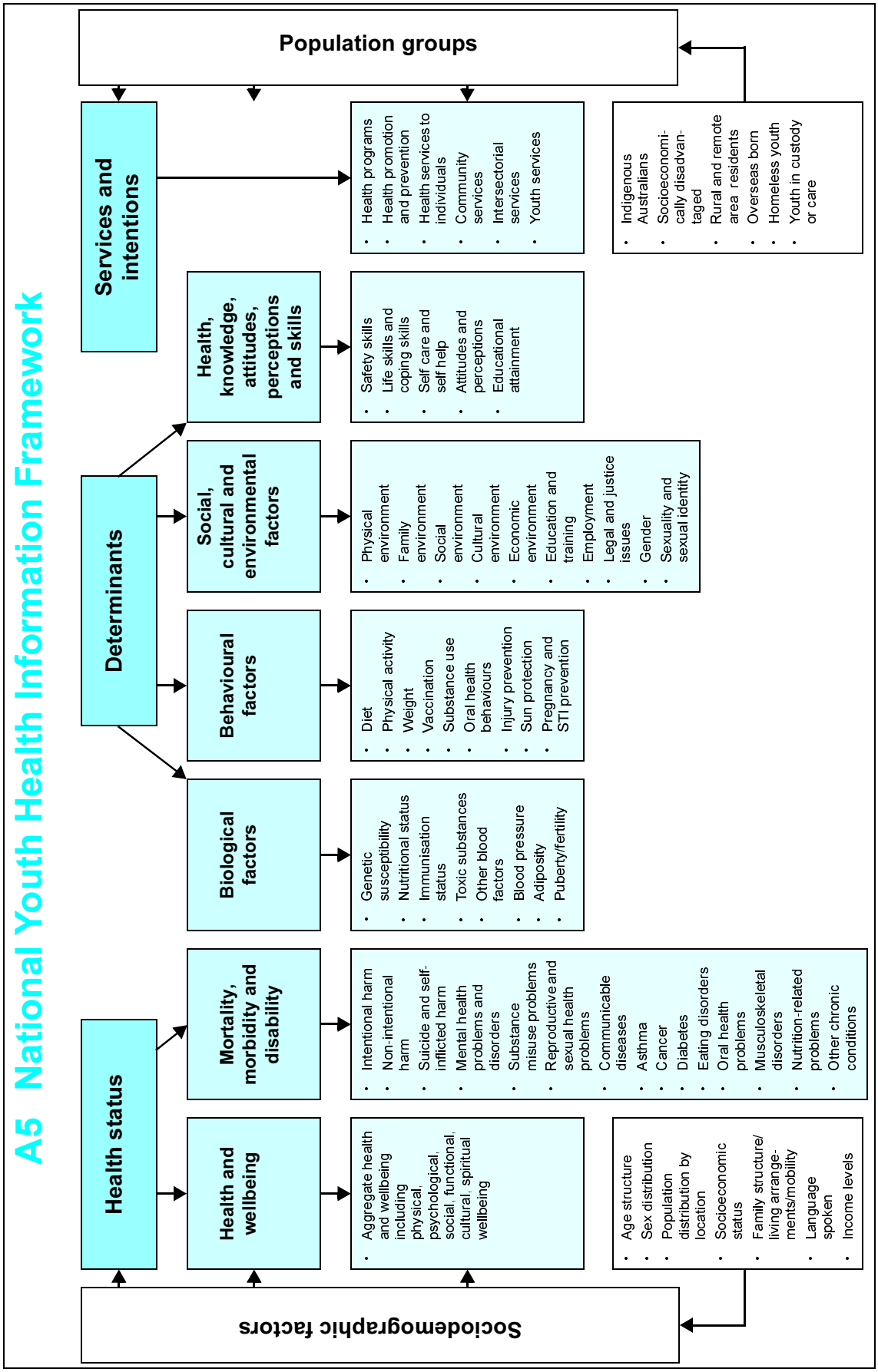
- recent illnesses (experienced in the 2 weeks prior to the interview)

- long-term conditions (illness, injury or disability present, or expected to be present, for 6 months or more)
- type of condition (using a classification developed for the survey based on ICD-9 codes (see appendix for list of these conditions); the conditions are not necessarily medically diagnosed conditions)
- some health determinants (for example, sun protection).

Further details on definitions used in the National Health Survey can be found in the *National Health Survey: User's Guide* (ABS 1996).

A4 Injury ICD-9 codes

Label	Codes	4th digit	Codes	4th digit	Codes	4th digit
Motor vehicle accidents	810–825	0,1				
Motor cycle	810–825	2,3				
Pedal cyclist	800–807	3	826–829	1	810–825	6
Pedestrian	800–807	2	810–825	7	826–829	0
Other transport	balance of 800–849					
Drowning	910					
Accidental poisoning	850–869					
Falls	880–888					
Fire and flames	890–899					
Other unintentional	900–909, 911–929					
Suicide and self-inflicted injury	950–959					
Violence related	960–978, 990–999					
Undetermined intent	980–989					
Surgical and medical care	870–879, 930–949					


A5 National Youth Health Information Framework
Population groups
Services and intentions
Health programs
Health promotion and prevention
Health services to individuals
Community services
Intersectorial services
Youth services
Indigenous Australians
Socioeconomically disadvantaged
Rural and remote area residents
Overseas born
Homeless youth
Youth in custody or care
Determinants
Health, knowledge, attitudes, perceptions and skills
Safety skills
Life skills and coping skills
Self care and self help
Attitudes and perceptions
Educational attainment
Social, cultural and environmental factors
Physical environment
Family environment
Social environment
Cultural environment
Economic environment
Education and training
Employment
Legal and justice issues
Gender
Sexuality and sexual identity
Behavioural factors
Diet
Physical activity
Weight
Vaccination
Substance use
Oral health behaviours
Injury prevention
Sun protection
Pregnancy and STI prevention
Biological factors
Genetic susceptibility
Nutritional status
Immunisation status
Toxic substances
Other blood factors
Blood pressure
Adiposity
Puberty/fertility
Health status
Mortality, morbidity and disability
Intentional harm
Non-intentional harm
Suicide and self-inflicted harm
Mental health problems and disorders
Substance misuse problems
Reproductive and sexual health problems
Communicable diseases
Asthma
Cancer
Diabetes
Eating disorders
Oral health problems
Musculoskeletal disorders
Nutrition-related problems
Other chronic conditions
Health and wellbeing
Aggregate health and wellbeing including physical, psychological, social, functional, cultural, spiritual wellbeing
Age structure
Sex distribution
Population distribution by location
Socioeconomic status
Family structure/ living arrangements/mobility
Language spoken
Income levels
Sociodemographic factors

A6 List of figures and tables

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