

Health is often defined as the presence or absence of diseases, disabilities and deficits (Pollard & Lee 2003) but such a narrow definition overlooks the way in which health, particularly child health, is the product of a complex web of prenatal, social, cultural, demographic, family, neighbourhood, and economic and political factors. This interconnectedness is better represented by the definition of health favoured by the World Health Organization (WHO 1978): ‘a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity’.

There are no nationally representative datasets to show how all of these domains influence child health, development and wellbeing outcomes. However, evidence from research indicates that many childhood experiences translate into long-term consequences often spanning into adulthood (Graham & Power 2004). In the sections that follow, relevant research findings describing the link between childhood exposures and outcomes are given. With available Australian data, Part II of this report describes:

- how healthy Australian children are (the level of mortality, morbidity and disability);
- how well healthy child development is promoted in Australia through breastfeeding, immunisation;
- what influences are affecting children’s health and wellbeing (e.g. birthweight and prematurity, alcohol and tobacco use and exposure to environmental tobacco smoke);
- whether Australian children are growing up in a safe and secure environment (accidental injuries, children needing accommodation, children facing abuse and neglect, and children as victims of violence); and
- whether Australian children have opportunities for early learning, and how well they are performing at school.

This section is largely focused on individual-level factors that indicate or influence health, development and wellbeing in children. However, a sole focus on individual-level influences provides only a partial picture. In order to fully understand the scope for promoting healthy development and the factors that put children at risk of risk (Link & Phelan 1995), we also need to track the social and environmental context in which children grow up. This requires an understanding of the relationship between the child and their immediate social context of family, schools and neighbourhoods as well as broader social changes. These too, are important predictors of children’s health, development and wellbeing and are the focus of Part III of this report.

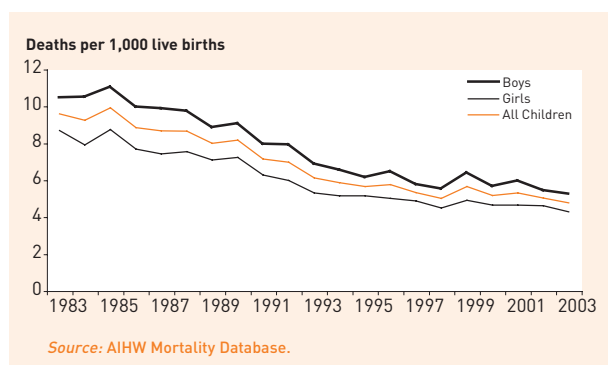
3 Mortality

Death rates, life expectancy at birth and causes of death are key indicators of the health of a population (OECD 2003). They not only reflect circumstances around the time of death but also provide some insight into changes in social and environmental conditions, medical interventions, lifestyles and trends in underlying risk factors. This section describes the patterns of mortality in the Australian child population including information on age and sex patterns and trends.

Infant mortality

The infant mortality rate is the number of deaths among infants less than 1 year of age in a given year, expressed per 1,000 live births in the same year (Figure 3.1).

Figure 3.1: Infant mortality rate, 1983–2003



- The infant mortality rate for Australia in 2003 was 4.8 per 1,000 live births. In total, 1,199 infants died, representing less than 1% of all deaths in that year. However, infant deaths represent 67% of all deaths among children aged 0–14 years. Slightly more than half the infant deaths were of boys (56%).
- In the last two decades, the male infant death rate has been consistently higher than that of female infants. However, the infant mortality rate declined for both boys and girls between 1983 and 2003. In 1983, the rate for boys was 10.5 deaths per 1,000 live births. By 2003, this had halved to 5.2 per 1,000 live births. Similarly, the rate for girls dropped by 51% from 8.7 in 1983 to 4.3 per 1,000 live births in 2003.

‘Death rates are one of the most widely used measures of health in a population. They provide insight into changes in social and environmental conditions, medical interventions, lifestyles and trends in underlying risk factors’

In 2000, Australia’s infant mortality rate ranked 16th, which placed Australia in the middle third, among 30 other OECD countries, falling behind countries such as the Netherlands, France, Italy, Germany, Spain and Japan (OECD 2003).

The average life expectancy at birth for boys born in 2001–03 was 77.8 years and for girls it was 82.8 years (ABS 2003d).

Age pattern

Infant mortality can be divided into two major groups according to the age of death. Deaths which occur during the first 4 weeks after birth (28 days) are called neonatal deaths, while deaths after 28 days and before 365 days of age are termed post-neonatal deaths.

As infants grow older their risk of dying decreases significantly. In 2003, 69% of the infant deaths occurred in the neonatal period, with 42% occurring on the day of birth and a further 17% occurring in the first week.

Indicators

- **Infant mortality rate.**
- **Sudden infant death syndrome (SIDS) rate.**
- **Death rate for children aged 1–14 years.**

Major causes

In recent years, the top three causes of infant mortality remained the same: conditions originating in the perinatal period, congenital malformations and other symptoms and abnormal findings. According to the International Classification of Diseases, 10th Revision (ICD-10), the major causes of infant mortality in 2003 were:

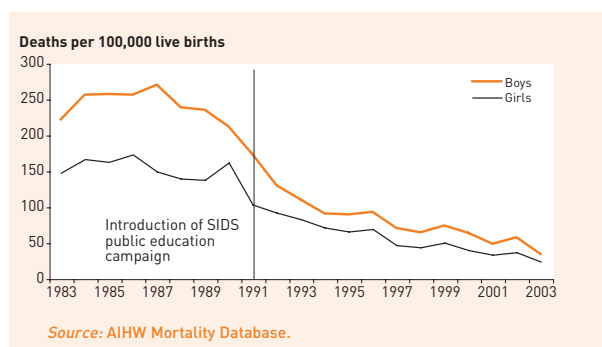
- certain conditions originating in the perinatal period (see Glossary for definition) (50% of total infant deaths);
- congenital malformations, deformations and chromosomal abnormalities (23%);
- symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (including SIDS) (10%);
- injury and poisoning (4%); and
- diseases of the nervous system (2%).

Other remaining conditions accounted for approximately 11% of infant deaths. The infant death rate was higher for male infants than for female infants for almost all leading causes of death.

Sudden infant death syndrome (SIDS)

- Following the introduction in 1991 of the National SIDS Council of Australia public education campaign on the sleeping position of infants¹, the death rate from SIDS decreased to a third of the rate in 1991 (Figure 3.2). A major contributor to the continuing fall in post-neonatal mortality has been the decline in deaths from sudden infant death syndrome.
- SIDS (which is included under the classification of symptoms and abnormal findings in the ICD-10) was the main leading cause of death in the post-neonatal period. In 2003, SIDS deaths comprised 17% of total post-neonatal deaths.

Figure 3.2: Infant deaths from SIDS, 1983–2003



Infant mortality differentials

Infant mortality in Australia is low and declining. However, the low level of infant mortality is not consistent for all population groups. The infant mortality rate for Indigenous Australian infants was nearly three times higher than that for other Australian infants between 2001 and 2003. Nevertheless, between 1993 and 2003, Indigenous infant mortality decreased by approximately 3.3% per year. Death rates for infants in rural and remote areas are higher than for those infants in metropolitan areas.

Aboriginal and Torres Strait Islander infants

During the period 2001–03, there were 280 deaths (13 deaths per 1,000 live births) among Indigenous infants in Queensland, Western Australia, South Australia and the Northern Territory (the coverage of Indigenous people in deaths data in these jurisdictions is considered of sufficient completeness for statistical reporting). Deaths for Indigenous infants in these jurisdictions represented 6.3% of total Indigenous deaths and 72% of total deaths of all Indigenous children aged 0–14 years in the same jurisdictions. The life expectancy at birth for Indigenous Australians for the period 1996–2001 was 59.4 years for males and 64.8 for females, approximately 18–20 years behind the average life expectancy at birth for all Australians.

Of Indigenous Australian infant deaths, 56% were boys. The rate of deaths for Indigenous infants (13.0 per 1,000 live births) was nearly three times that of other Australian infants (4.5 per 1,000 live births).

¹ NHMRC advised that babies should be placed on their back or on their side in such a way that they cannot roll onto their stomach.

Geographical location

The health of people living in geographically isolated areas of Australia is often poorer compared to those living in Major Cities and other urban locations. The reasons for their poorer health status include limited availability and access to health services and exposure to different health and environmental risks (AIHW 2003a).

- Infant deaths classified by the ABS ASGC remoteness categories indicate that during the period 2000–02, 2,303 infants died in Major Cities, 1,297 in Regional areas, and 246 in Remote and Very Remote areas. The rate of infant mortality by these categories varied from 4.6 deaths per 1,000 live births in Major Cities to 13.6 per 1,000 in Very Remote areas.
- The high rate of infant mortality in Very Remote areas is a reflection of very high rates of infant mortality occurring among the Indigenous people who make up a large part of the population in these areas.

Socioeconomic status

Socioeconomic status is an important risk factor for poor health outcomes in a population with those people of lower socioeconomic status tending to have higher rates of mortality (AIHW 2004b; AIHW: Dunn et al. 2002). Low socioeconomic status also has a highly adverse effect on the health and wellbeing of children. Wilkinson & Marmot (2003) showed that the effect of socioeconomic disadvantage is not limited to the extreme poor but that even those at the middle levels of society exhibit poorer health than do the wealthy. Children born into disadvantaged families are more likely to experience serious health problems and to die at an earlier age (Blakely et al. 2003).

Socioeconomic disadvantage was measured using the Socioeconomic Index for Areas (SEIFA)—Index of Relative Socioeconomic Disadvantage developed by the Australian Bureau of Statistics for use at the Statistical Local Area level (ABS 2001a). This index is derived from selected attributes including low income, low educational attainment, high unemployment, and jobs in relatively unskilled occupations. Low scores on the index reflect geographical areas with many low income families and

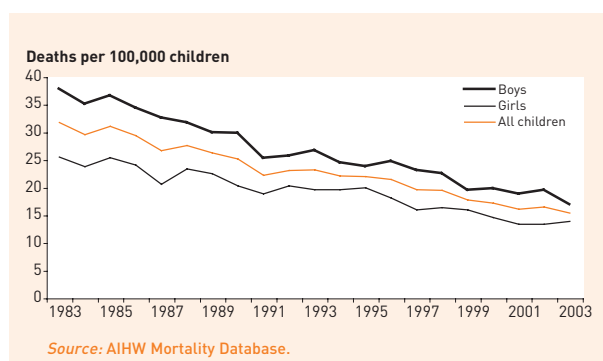
people with little training and unskilled occupations. High index scores indicate that the area has few families with low income, little training and unskilled occupations (ABS 2001a).

- The average infant mortality rates for each disadvantage group between 2000 and 2002 show higher rates in areas characterised by higher levels of disadvantage. Infants from the most disadvantaged areas are twice as likely as those from least disadvantaged areas to die before they reach their first birthday (7.8 deaths per 1,000 live births compared with 3.9 per 1,000).
- Male infants of all levels of disadvantage generally exhibit higher mortality rates than female infants. However, compared to female infant mortality rates, male infant mortality rates increased at a higher rate with the increasing level of disadvantage.
- Among the specific causes, conditions originating in the perinatal period, congenital malformations and other symptoms and abnormal findings were the major causes of infant death for all SEIFA quintiles. Deaths from injury for both male and female infants increased with increasing level of disadvantage.

Child mortality

The child mortality indicator is defined as the number of deaths of children aged 1–14 years of age per 100,000 children of the same age group (Figure 3.3).

Figure 3.3: Death rate for children aged 1–14 years, 1983–2003

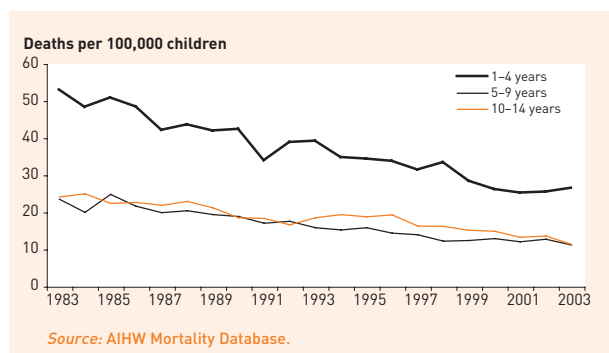


- Between 1983 and 2003 the death rate for all children aged 1–14 years in Australia declined by 52%, from 31.8 deaths in 1983 to 15.4 deaths per 100,000 children in 2003.
- The death rate for boys aged 1–14 years has remained consistently higher than that for girls but the gap between boys and girls has narrowed since the late 1980s.
- In 2003, among children aged 1–14 years, there were 576 deaths or 15.4 deaths per 100,000 children. Fifty-six per cent of these deaths were of boys.

The age pattern of mortality among children shows that many deaths occur during the early childhood period, that is 1–4 years of age (Figure 3.4). In 2003, 47% of the deaths of children aged 1–14 were in the early childhood years. However, this is still much lower than the number of deaths occurring in infancy.

Between 1983 and 2003, the rate of deaths occurring in early childhood (1–4 years of age) declined by 45% (48% for girls and 42% for boys).

Figure 3.4: Age-specific death rate for children aged 1–14 years, 1983–2003



Major causes

In 1983, the major causes of death among children aged 1–14 were external causes of injury and poisoning (e.g. transport accidents, drowning), neoplasms (including cancer), congenital malformations, and diseases of the nervous system. These conditions still remain the major causes of mortality among children (Table 3.1). However, between 1983 and 2003, the number of deaths from all these causes declined. The biggest single cause of death in children was injury and poisoning, which accounted for 40% of all child deaths in 2003. However, while they are still major causes of childhood mortality, deaths from injury and poisoning declined by almost 60% between 1983 and 2003. In addition to the decline in deaths from external causes, reduced death rates from congenital malformations and neoplasms over the last two decades have contributed to lower levels of child mortality in Australia.

Table 3.1: Major causes of death of children aged 1–14 years, 2003

Cause of death	Number			Rate per 100,000 children		
	Boys	Girls	All children	Boys	Girls	All children
Injury and poisoning	121	110	231	3.2	2.9	6.2
Neoplasms	60	39	99	1.6	1.0	2.7
Diseases of the nervous system	39	27	66	1.0	0.7	1.8
Congenital malformations	23	19	42	0.6	0.5	1.1
Diseases of the circulatory system	14	11	25	0.4	0.3	0.7
Endocrine, nutritional and metabolic diseases	13	9	22	0.3	0.2	0.6
Diseases of the respiratory system	18	17	35	0.5	0.5	0.9
Other symptoms, signs and abnormal findings	15	9	24	0.4	0.2	0.6
Infectious and parasitic diseases	5	6	11	0.1	0.2	0.3

Source: AIHW Mortality Database.

Child mortality differentials

- According to data from Queensland, Western Australia, South Australia and the Northern Territory, Indigenous Australian children aged 1–14 years died in 2001–03 at a rate of 36.9 per 100,000 children, compared with 16.2 deaths per 100,000 among other Australian children.
- In general, Indigenous children of all age groups experienced higher rates of mortality than other Australian children. However, the difference was highest in the age groups 1–4 and 10–14 where the Indigenous mortality rate was around three times that of other Australian children.
- The age-standardised rate of child deaths increased in 2000–02 with increasing remoteness: 14.6 deaths per 100,000 children in Major Cities and 41.7 per 100,000 in Very Remote areas. This pattern was most pronounced for children aged 1–4 years, where the rate of mortality in Major Cities was 22.2 deaths per 100,000 children compared with a rate of 59.5 deaths per 100,000 children in Remote and Very Remote areas combined.
- The average death rate for children aged 1–14 years for the period 2000–02 increased significantly with increasing disadvantage, as measured by the SEIFA Index of Socioeconomic Disadvantage. As socioeconomic disadvantage increased from lowest to highest, the rate of mortality for both males and females increased by about 64% from 12.8 per 100,000 children to 20.8 per 100,000.
- The mortality rate for boys increased in 2000–02 by 76% as the socioeconomic status moved from least disadvantaged to most disadvantaged. Compared to boys, girls experienced lower mortality across all socioeconomic groups. However, the excess mortality experienced by girls from the most disadvantaged areas was 48% compared to girls from the least disadvantaged groups.

4 Morbidity

Most childhood illnesses are mild and are usually treated successfully by parents or general practitioners. Hospital use accounts for a small part of health services provided to children and are usually for more severe health conditions.

This section presents statistics on the number and rate of child hospitalisations in 2002–03. Data on three of the major chronic diseases which affect children—asthma, diabetes and cancer—are also presented. Mental illness and injuries, which can also be significant chronic conditions among children are discussed in Chapters 6 and 16 respectively. The data presented in this section have been extracted from sources including the AIHW National Hospital Morbidity Database, the ABS 2001 National Health Survey, the National Diabetes Register and the National Cancer Statistics Clearing House.

Hospitalisations

Although affected by access and admission practices, hospitalisations can be used as a proxy indicator of the level of serious illness in the Australian community. In 2002–03, 544,325 hospitalisations for children aged 0–14 years were recorded on the AIHW National Hospital Morbidity database. Of these, 314,576 (57.8%) were for boys and 229,749 (42.2%) were for girls. Hospitalisation rates were higher for boys than for girls in all age groups. Overall, the rate for boys in 2002–03 was 15,398 per 100,000 compared with 11,835 per 100,000 hospitalisations for girls. Hospitalisation rates decreased with age. The rate for infants in 2002–03 was 57,217 per 100,000 infants, and that for children aged 10–14 was 7,712 per 100,000 children.

‘Chronic conditions such as diabetes, asthma and cancer often need to be managed on a daily basis by both children and their carers’

The most common reasons for hospitalisations are classified according to the chapters of the International Classification of Diseases, 10th Revision, Australian Modification (ICD-10-AM). For infants, in 2002–03, the most common reasons for hospitalisations were conditions originating in the perinatal period (including conditions such as birth trauma, disorders related to length of gestation and foetal growth and respiratory and cardiovascular disorders specific to the perinatal period). These accounted for 36.1% of all hospitalisations for infants. Diseases of the respiratory system were the most common reasons for children aged 1–14 years, accounting for 19.1% of hospitalisations.

Hospitalisation rates for Indigenous Australian children were higher than those for other Australian children (16,251 per 100,000 compared with 13,168 per 100,000). The extent to which Indigenous patients are identified in hospital statistics has been improving, however, these numbers are still likely to be affected by under-identification of Indigenous people (ABS & AIHW 2003). Indigenous children also show differences in the reasons for hospitalisation. For example, they are much more likely to be admitted to hospital for assault (with rates more than six times those for other Australian children), and for burns and scalds (with a rate more than double that for other Australian children).

This chapter focuses on the major chronic diseases among Australian children which have the potential to cause significant illness and disability within the child population.

Although there are no data to describe the level of morbidity caused by specific chronic conditions among Indigenous children, it is important to note that, in general, the overall level of ill-health is much greater for Indigenous Australian children than for other Australian children. For example, the rate of otitis media (middle ear infection) among Indigenous children has been described as a major public health problem (ABS & AIHW 2003). In addition, some Indigenous children suffer from diseases such as rheumatic fever, which are almost unheard among most other Australian children.

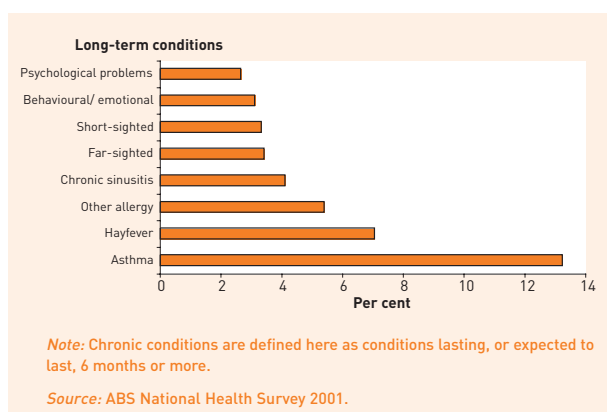
Chronic conditions

Children experience a wide variety of long-term conditions that either develop during childhood or are present at birth. Chronic conditions vary in severity and include cerebral palsy, asthma, cancer, diabetes, spina bifida and cystic fibrosis. In severe cases, chronic conditions may affect children's development by restricting play and other activities and may be a significant cause of stress for both children and their families (Isaacs & Sewell 2003; Jessop & Stein 1989). Unlike intermittent illnesses, such as colds, chronic conditions are ongoing and often need to be managed on a daily basis by both children and their carers. Managing these conditions may require substantial amounts of time and resources which, over an extended period, have a cumulative effect on children and their families in terms of social, psychological and economic pressures. There is evidence that chronically ill children and their families are twice as likely to experience psychological or emotional difficulties as other children and families (Swanston et al. 2000; Cadman et al. 1987). However, if a condition is properly managed, many chronically ill children are able to function well and live fulfilling lives.

Prevalence

Analysis of data from the 2001 ABS National Health Survey on conditions lasting, or expected to last, for more than 6 months provides a measure of the prevalence of long-term illness among Australian children (Figure 4.1).

Figure 4.1: Most frequently reported chronic conditions in children aged 0–14 years, 2001



- Long-term conditions were reported in 2001 for 44% of children aged 0–14 years. Of these children, 25% had two long-term conditions and 18% had three or more long-term conditions.
- Asthma was the most frequently reported long-term condition in children aged 0–14 years, reported for 13% of all children. Asthma was followed by hayfever, reported for 7% of children, and other allergies reported for 5% of children.
- Diseases related to allergic reactions including asthma, hayfever, eczema and other allergies made up more than one-third of all reported conditions.

Specific chronic conditions

Asthma, diabetes and cancer contribute significantly to the burden of illness in Australia. For this reason, each of these chronic conditions (as well as mental health) has been made a National Health Priority Area, with health policy focused on reducing the burden of these conditions and raising public awareness.

Indicators

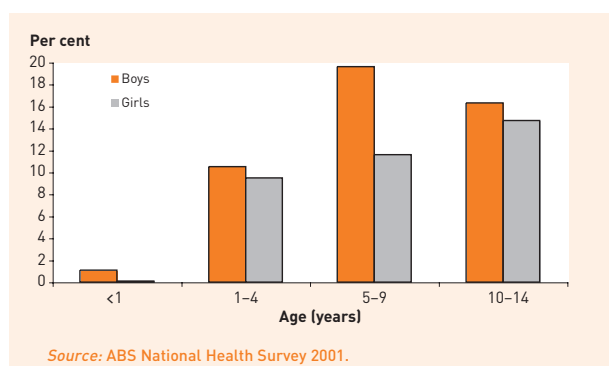
- **Proportion of children aged 0–14 years with asthma as a long-term condition.**
- **New cases of cancer per 100,000 children aged 0–14 years.**
- **Five-year relative survival rate for leukaemia in children aged 0–14 years.**
- **New cases of children aged 0–14 years receiving insulin on the National Diabetes Register as a rate per 100,000 children.**

Asthma

Asthma is the most common long-term condition among children. The disease is characterised by recurrent episodes of wheeze, shortness of breath and sometimes a cough. Among people with asthma, symptoms may occur spontaneously or in response to one of a wide range of triggers, such as pollen, physical activity, cold weather or tobacco smoke. In some children with severe asthma or in those cases where effective disease management has not been implemented, asthma can result in poor quality of life, interfere with leisure, school or other activities, create a need for urgent medical care including hospitalisation, and may cause premature death.

Assessing time trends in asthma is difficult due to inconsistent definitions of asthma. There is, however, evidence suggesting that asthma prevalence among children has been rising since the early 1980s into the early 1990s when this rise peaked. Since then there has been no evidence to suggest an increase in the prevalence of asthma (ACAM 2003). The most recent national prevalence estimates for asthma are from the 2001 ABS National Health Survey (Figure 4.2).

Figure 4.2: Parent-reported prevalence rates for asthma in children aged 0–14 years, 2001



- Data from the 2001 ABS National Health Survey estimate that 527,479 children aged 0–14 years had asthma as a long-term condition, a prevalence rate of 13.2%. This compares with a prevalence rate of 11.5% for adults aged 15 years and over.

- Asthma prevalence was higher for boys (15.0%) than for girls (11.4%). This difference was most noticeable in the 5–9 years age group where the prevalence rate for boys was 1.8 times the rate for girls.
- Prevalence rates were lowest among infants less than 1 year old (0.6%) and highest among children in the 5–9 years age group (15.7%).

Although data on asthma prevalence rates for children were also collected in the 1995 National Health Survey, the results are not directly comparable due to changes in methodology which may have resulted in an increase in reporting rates.

Diabetes

Diabetes mellitus is a group of diseases characterised by high levels of glucose in the blood resulting from defects in insulin secretion, insulin action or both. High blood sugar levels are known to damage important body organs and lead to heart disease, stroke, blindness, neurological problems, and premature death (AIHW 2004b).

Type 2 diabetes is caused by reduced insulin production or the inability of the body to use insulin properly and is associated with being overweight or obese. The disease is managed through diet, exercise, oral medication and, as necessary, with insulin. Type 2 diabetes is uncommon in children, usually developing in people aged over 40. However, there is evidence that as obesity is increasing in children and young people, the incidence of Type 2 diabetes is also increasing (McMahon et al. 2004).

Type 1 diabetes, sometimes known as juvenile diabetes, usually arises in childhood and lasts throughout life. The disease is believed to be caused by an autoimmune condition that destroys the pancreatic cells that produce insulin. Daily injections of insulin are necessary to manage the disease. Again, some studies have indicated an increased incidence of Type 1 diabetes, though national data to confirm this trend are not yet available (AIHW 2004b; Craig et al. 2000). The incidence of Type 1 diabetes collected through the AIHW National Diabetes Register is shown in Table 4.1.

Table 4.1: New cases of Type 1 diabetes among children aged 0–14 years, 2000–2001

Age group	Boys		Girls	
	Number	Average annual rate per 100,000	Number	Average annual rate per 100,000
0–4	187	14.2	143	11.4
5–9	279	20.1	280	21.2
10–14	365	26.4	311	23.6
Total	831	20.3	734	18.9

Source: AIHW National Diabetes Register.

- In 2000 and 2001, the National Diabetes Register recorded 831 boys and 734 girls aged 0–14 years with Type 1 diabetes. Of these 1,565 children, 676 (43%) were aged 10–14 years, 559 (36%) were aged 5–9 years and 330 (21%) were aged 0–4 years.
- Incidence rates increased with age for both boys and girls. Among boys, the incidence rate increased from 14.2 cases per 100,000 boys aged 0–4 to 26.4 cases per 100,000 boys aged 10–14 years. Among girls, the incidence rate increased from 11.4 cases per 100,000 girls aged 0–4 to 23.6 cases per 100,000 girls aged 10–14 years.

Cancer

Cancer is a group of diseases in which cells become abnormal, grow in an uncontrolled way and spread to other parts of the body in a process known as metastasis. The risk of cancer increases with age and most types of cancer are relatively uncommon in children. Cancers in children tend to differ from those observed in adults in appearance, site of origin and response to treatment.

In 2001, 603 children aged 0–14 years were diagnosed with cancer. Between 1982 and 2001, the age standardised incidence rate for all cancers combined (excluding non-melanoma skin cancers) increased by an average of 0.6% per year for children aged 0–14 years. The cancer incidence rates in 2001 were 15.8 new cases per 100,000 for boys and 14.4 per 100,000 for girls. Incidence was highest for children aged 0–4 years (22.1 per 100,000 children).

The most common types of new cases of cancer among children aged 0–14 years in 2001 were leukaemia (6.0 per 100,000 boys, 5.3 per 100,000 girls) and brain cancer (3.3 per 100,000 boys, 2.5 per 100,000 girls). These accounted for 57% of cancers diagnosed in children in 2001.

In 2001, 113 children died from cancer and, of these deaths, 35% were from brain cancer and 32% from leukaemia (AIHW & AACR 2004).

Table 4.2: Age-specific relative 5-year survival rates for brain cancer and leukaemia diagnosed at ages 0–14, by age group, 1982–86 and 1992–97

Age at diagnosis	1982–86		1992–97	
	Rate (%)	95% confidence interval	Rate (%)	95% confidence interval
Leukaemia				
0–4	67.5	63.0–71.6	73.9	70.1–77.7
5–9	71.4	64.7–77.1	72.0	66.5–77.5
10–14	46.2	38.4–53.5	60.8	53.1–68.5
0–14^(a)	62.4	59.0–65.7	69.7	66.5–72.7
Brain cancer				
0–4	57.3	49.7–64.1	53.0	46.7–59.2
5–9	57.7	49.6–64.9	62.3	55.1–69.5
10–14	67.1	58.2–74.5	76.3	70.0–82.6
0–14^(a)	60.1	55.5–64.5	61.9	57.9–65.6

(a) Age-standardised to the 2001 Australian population.
Source: AIHW & AACR 2001.

Medical treatment is often successful if cancer is detected early. The risk of death due to certain cancers can be reduced through intensive monitoring and early detection and treatment. Significant increases in survival rates have been reported for many types of cancers over the last two decades in association with clinical trials and the development of new treatments (AIHW & AACR 2001). Survival after diagnosis can be used to assess the effectiveness of early cancer detection and treatment (Table 4.2).

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

- Five-year relative survival of children aged 0–14 years diagnosed with leukaemia in 1992–97 was 70%, a significant increase in survival compared with children with leukaemia diagnosed in 1982–86, for whom the relative survival rate was 62%.
- Five-year relative survival for children diagnosed with leukaemia was lower for children aged 10–14 than for younger children. This difference was statistically significant for children diagnosed in 1982–86 but not for those diagnosed in 1992–97.
- For brain cancer in children there was no significant improvement in five-year relative survival between 1982–86 and 1992–97.
- Five-year relative survival rates for children diagnosed with brain cancer in 1982–86 showed a small but statistically significant increase with age. The corresponding rates for children aged 10–14 diagnosed in 1992–97 was statistically significantly higher than those for younger children diagnosed in this period.

5 Disability

Children with a disability are not an easily identifiable group because whether or not a child is described as having a disability may vary across different contexts (AIHW 2004c). Disability is a multidimensional concept which involves an interaction between health conditions, personal factors and the environment. Combinations of these different factors determine a person's ability to function and participate in society (AIHW 2004b). Children with severe disabilities may be in good health, but may have long-term limitations on their activities and ability to participate. For these children full participation in society can be more difficult than for other Australian children, limiting educational and recreational/leisure opportunities (AIHW 2004b, 2004c).

In addition to the experiences of the individual affected, childhood disability also makes a significant impact on families and family life. The added strain of caring for a child with a disability for families and siblings can sometimes lead to social and financial disadvantage. Full-time parental/carer employment may be more difficult due to the intensive care needs of a child, and can lead to financial stress as well as relationship strain (AIHW 2004c). Financial pressure may also compound a family's ability to cope with a child's disability through lack of resources to acquire essential services and aids which may help the child to attain a better quality of life (AIHW 2004c).

The ABS 2003 Survey of Disability, Ageing and Carers defined 'disability' as the presence of one or more of 17 limitations, restrictions or impairments which has lasted, or is likely to last, for at least six months and restrict everyday activities (e.g. loss of sight, incomplete use of arms or fingers, difficulty learning or understanding, etc.) (ABS 2004c).

Children with a disability as described in this report mostly refer to those children with a severe or profound core activity limitation. Core activity limitation includes limitations on the ability to perform tasks in relation to self-care, mobility, communication. There are four levels of core activity limitation: profound, severe, moderate and mild. Children with a profound limitation are not able to

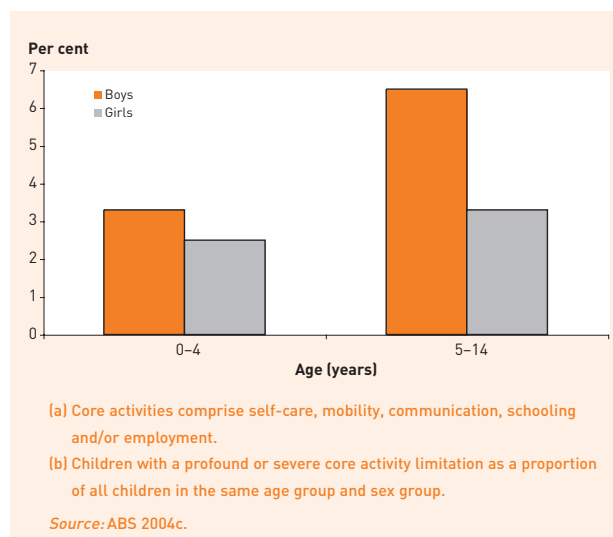
do, or always need help with, a core activity. Those with a severe limitation may sometimes need help with a core activity, may have difficulty understanding or being understood by others, or may use sign language more easily than spoken communication (ABS 2004c).

Prevalence

The information on disability prevalence is derived from the 2003 ABS Survey of Disability, Ageing and Carers. Broad prevalence estimates of childhood disability are presented, followed by more detailed estimates of children with severe disability (i.e. those children with a severe or profound core activity limitation).

In 2003, there were approximately 320,000 children aged 0–14 years with a disability in Australia, accounting for 8% of the total child population aged 0–14 years (ABS 2004c). Of those children with a disability, approximately 52% had a severe or profound core activity restriction. This equates to approximately 4% (or 167,000) of the total Australian child population. The age and sex distribution of severe and profound core activity limitation among children in 2003, is shown in Figure 5.1.

Figure 5.1: Profound or severe core activity^(a) limitation rates^(b) by sex and age, 2003



‘Children with severe disabilities may be in poor health and may have long-term activity limitations and participation restrictions’

- Among children with profound or severe core activity restrictions in 2003, boys aged 5–14 years had the highest rate (6.5%), followed by boys aged 0–4 years and girls aged 5–14 years (3.3%).

Between 1998 and 2003 the overall rate of profound or severe core activity limitation among children aged 0–14 remained relatively constant.

The proportion of children with profound or severe core activity limitation was highest among those from low income households (Table 5.1).

Aboriginal and Torres Strait Islander children

Little is known about the level of disability among Indigenous Australian children. It has long been suggested that the rate of disability among Indigenous people is high (AIHW 1997). In particular, Indigenous children have a documented high rate of hearing problems due to the high prevalence of otitis media, or middle ear infection (Couzos et al. 2001; Zubrick et al. 2004). However, more data are needed to assess the level of disability among Indigenous children.

Table 5.1: Profound or severe core activity limitation rates among children aged 0–14 years, by income quintiles, 2003 (per cent)

Total weekly equivalised ^(a)	Profound core activity limitation	Severe core activity restriction cash income quintiles
Lowest 20%	32.4	26.8
Quintile 2	23.8	30.0
Quintile 3	18.8	15.7
Quintile 4	7.2	7.6
Highest 20%	7.0	6.6
Not living in a household	0.2	0.4
Not known	10.5	13.0
Total children	77,979	87,335

(a) Equivalised means that income is weighted to take account of the size and composition of the household.
 Source: AIHW analysis of the ABS 2003 Survey of Disability, Ageing and Carer's confidentialised unit record file.

Indicator

- **Proportion of children aged 0–14 years with severe or profound core activity restrictions.**

6 Mental health

Mental health is ‘a state of emotional and social wellbeing’ which allows people to undertake productive activities, experience meaningful interpersonal relationships, adapt to change and cope with adversity (WHO 1999). Mental health is important for cognitive and communication skills, learning, personal development, resilience and self-esteem.

It can be difficult to define terms such as mental health problems, mental disorders and emotional and behavioural problems as these are subjective states that can vary across cultures and among subgroups, and have no exact definitions. These terms are commonly used to describe changes in thinking, mood or behaviour that are associated with distress or impaired functioning. There are a number of different types of mental health problems and disorders, and each consists of a different combination of emotional and behavioural problems (Sawyer et al. 2000).

Mental health problems experienced by children may be manifested early on as disturbances of feelings, behaviours and thoughts. If these disturbances are distressing to the child or the parents, and if social and other functioning of the child is affected, then a mental health problem may be identified (Zubrick et al. 1995). Mental disorders are characterised by a clinically significant set of symptoms, as set out in the *Diagnostic and Statistical Manual of Mental Disorders*, 4th edition (DSM-IV). The DSM-IV includes diagnostic criteria which should be met in order for a formal diagnosis of mental disorders to be made, including that the symptoms cause clinically significant impairment in social, academic or occupational functioning (APA 1994).

‘If mental health problems are not resolved, they can lead to poorer quality of life, physical health problems and mental disorders’

If mental health problems are not resolved, they can lead to poorer quality of life, physical health problems, mental disorders, lowered academic and vocational attainment, risky behaviours, substance use, suicidal ideation and attempts, and family discord (Raphael 2000). Mental health is also interdependent with physical health (DHAC 2000a). Children with poor mental health are more likely than other children to be in poor physical health and similarly, poor physical health can also result in decreased mental functioning.

Not only can mental illness affect an individual child, it may also have a negative impact on the child’s family and social environment. For example, parents of children with a mental illness tend to spend less time on their own personal needs than do parents of other children, and often suffer from greater anxiety about their child’s wellbeing than do parents of typically developing children.

Determinants of mental health

Though the exact causes of mental illnesses are unclear, there are certain risk factors which are associated with the development of mental health problems in children. This does not mean that these factors cause mental illness, or that everyone who is exposed to them will develop a mental disorder, but children who are exposed to certain risk factors have been found to have a higher likelihood of developing a mental disorder (DHAC 2000b).

Risk factors can be individual (particular to the person), contextual (a product of the environment), or the result of the interaction between the person and the environment. In many cases, different risk factors may be closely associated with one another, for example, a child with poor social skills may also experience peer rejection and social isolation. Some of the factors that can contribute to the onset of a mental illness in children are:

- individual factors—prenatal brain damage, insecure attachment in infancy or childhood, low intelligence, difficult temperament, poor social skills, low self-esteem.

- family or social factors—having only one resident parent, marital discord between parents, parental substance misuse, parental mental disorder, social isolation.
- school context—bullying, peer rejection, inadequate behaviour management, failure to achieve academically.
- life events and situations—physical, sexual and emotional abuse and neglect, divorce and family break-up, physical illness or impairment, poverty, homelessness, abandonment or loss of family.
- community and cultural factors—socioeconomic disadvantage, social or cultural discrimination, neighbourhood violence and crime, population density and housing conditions (DHAC 2000b:16).

It is also important to note that a predisposition to some mental illnesses, such as schizophrenia, bi-polar disorder and depression can run in families (Hyman 1999). In addition, some children may have a genetic vulnerability to certain disorders, but these disorders will not develop without the interaction with non-genetic risk factors (USDHHS 2000).

Prevalence of mental health problems or disorders among Australian children

There are very few national data sources that describe the mental wellbeing of Australian children. Limited data on children's mental health problems were collected in the 2001 ABS National Health Survey. These data show that 264,000 or nearly 7% of Australia's children had long-term mental or behavioural problems (ABS 2002c).

However, the only detailed study to assess the mental wellbeing of children at a population level is the 1997 National Survey of Mental Health and Wellbeing (referred to from here on as the National Survey). The child component of this survey, which was conducted in 1998 with a sample of 4,500 children, indicates that about 14% or around half a million Australian children have mental health problems (Sawyer et al. 2000). Although these data are now somewhat out of date, they are the best available national data to describe the level of mental illness among Australia's children and are presented in detail in the following section.

Mental health problems

Mental health problems were measured in the National Survey using the Child Behaviour Checklist. The checklist asked about a number of emotional and behavioural problems. Sawyer et al. (2000) considered children to have mental health problems when they were experiencing problems in the range typically seen in children attending mental health clinics.

Mental health problems in this report are classified as either externalising problems or internalising problems. Externalising problems relate to anti-social or under-controlled behaviour such as delinquency and aggression. Internalising problems relate to inhibited or over-controlled behaviour such as anxiety and depression (Sawyer et al. 2000).

The most common specific problems identified in the National Survey were somatic complaints (chronic physical complaints without known cause or medically verified basis) and delinquent behaviour. While rates of delinquency were similar between boys and girls, boys experienced somatic complaints more than girls. Inattention and aggressiveness were also frequently noted, particularly in younger children, and social difficulties were commonly reported for young boys (Sawyer et al. 2000). A summary of the mental health problems experienced by children in 1998 are presented in Table 6.1.

Indicators

- **Proportion of children aged 4–14 years with mental health problems.**
- **Proportion of children aged 6–14 years with mental health disorders (ADHD, depressive disorder, conduct disorder).**

Table 6.1: Mental health problems among children aged 4–14 years, 1998 (per cent)

	Age-group	Total problems	Externalising problems	Internalising problems
Boys	4–12	14.9	13.6	15.0
	13–14	13.8	13.2	13.5
	4–14	14.7	13.5	14.7
Girls	4–12	14.4	12.1	11.3
	13–14	11.3	12.6	9.5
	4–14	13.8	12.2	11.0
All children	4–14	14.3	12.9	12.9

Source: AIHW analysis of the 1998 Child and Adolescent component of the National Survey of Mental Health and Wellbeing, unit record file.

- The survey estimated that in 1998 around 14% of Australian children aged 4–14 years had a mental health problem. A higher proportion of boys had mental health problems than girls (14.7% compared with 13.8%).
- The types of mental health problems identified also differed by gender. Girls aged 4–14 years had a higher proportion of externalising problems than internalising problems, while for boys, internalising problems were more common.

Mental health disorders

The prevalence of three mental disorders—depressive disorder, conduct disorder and attention-deficit hyperactivity disorder (ADHD)—were also investigated in the survey using the Diagnostic Interview Schedule for Children (Version IV) (Shaffer et al. 2000, cited in Sawyer et al. 2000). This Schedule uses the diagnostic criteria described in the DSM-IV to assign mental disorder diagnoses to children. The prevalence of these three mental disorders among children in 1998 is shown in Table 6.2.

Table 6.2: Children aged 6–12 years with ADHD, depressive disorder or conduct disorder, 1998 (per cent)

	Age-group	ADHD ^(a)	Conduct disorder	Depressive disorder ^(b)
Boys	6–12	19.3	4.8	3.7
	13–14	12.6	3.0	3.7
	6–14	17.8	4.4	3.7
Girls	6–12	8.8	1.9	2.1
	13–14	5.2	1.2	4.4
	6–14	7.9	1.8	2.6
All children	6–14	13.0	3.1	3.1

(a) The high proportion of children with ADHD could be influenced by diagnostic definitions of ADHD.

(b) Includes major depressive disorder and dysthymic disorder, a chronic depressive condition.

Note: The impairment criteria required by DSM-IV could not be incorporated into the criteria for a diagnosis used in the survey. It is also possible that for some children their symptoms may be better accounted for by another mental disorder that was not assessed in the survey.

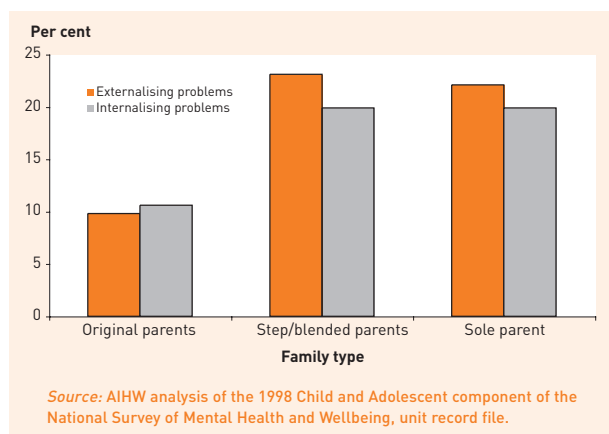
Source: AIHW analysis of the 1998 Child and Adolescent component of the National Survey of Mental Health and Wellbeing, unit record file.

- Of the specific disorders in 1998, ADHD was the most prevalent among children aged 6–14 years, reported in 17.8% of boys and 7.9% of girls. However, Sawyer et al. (2000:20) suggest that the prevalence of ADHD could have been overestimated, as some children reported to have ADHD ‘may have been more appropriately diagnosed with another disorder not included in the survey’.
- Depressive disorder was reported in 3.7% of boys and 2.6% of girls. It has been suggested that the prevalence of this disorder could have been underestimated, as the prevalence was based on parent report and parents may not always recognise subjective distress experienced by children (Sawyer et al. 2000).
- Conduct disorder was reported in 4.4% of boys, and 1.8% of girls.
- All three disorders had a higher prevalence among boys than among girls.

Mental health problems and household demographics

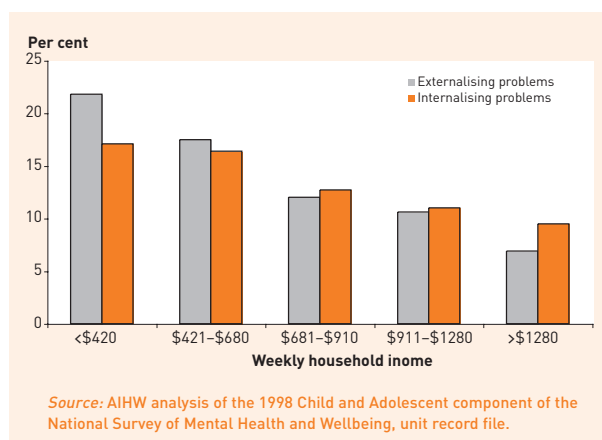
The national survey also examined the prevalence of mental health problems alongside demographic characteristics such as family type (Figure 6.1) and weekly household income (Figure 6.2). Results from the survey show that children living in one-parent, step/blended or low-income families were more likely than other children to have mental health problems.

Figure 6.1: Mental health problems among children aged 4–14 years, by family type, 1998 (per cent)



- The proportion of children with mental health problems was more than twice as high among children in step/blended families and sole parent families as compared with children living in original-parent families. This pattern was consistent for both externalising and internalising problems.

Figure 6.2: Mental health problems among children aged 4–14 years, by household income, 1998 (per cent)



- The proportion of children with mental health problems was higher among children in households with the lowest weekly income. This pattern was consistent for both externalising and internalising problems.