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HEADLINE INDICATORS

FOR CHILDREN'S HEALTH, DEVELOPMENT AND WELLBEING 2011

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Canberra

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Summary

This report on the Children's Headline Indicators provides the latest available information on how Australia's children, aged 0–12 years, are faring according to 19 priority areas covering health status, risk and protective factors, early learning and care, and family and community environments. The report includes information on 12 priority areas with available data, and a further seven priority areas for which data are either not available at all or available but not suitable for reporting against the Headline Indicator.

Key findings

Australian children are generally faring well according to the 12 Children's Headline Indicators that have available data. There is, however, considerable variation in results between states and territories, and between certain population groups, such as Aboriginal and Torres Strait Islander children, and those living in remote or socioeconomically disadvantaged areas. It is clear, therefore, that there is scope for further gains across these indicators.

The table on page viii presents key statistics on the Children's Headline Indicators, and highlights important data gaps.

States and territories

New South Wales, Victoria, Western Australia, South Australia and the Australian Capital Territory had results better than, or similar to, the national average across either all or the vast majority of the 12 Headline Indicators with available data.

Queensland, Tasmania and the Northern Territory had poorer results than the national average on several indicators. Queensland and the Northern Territory's results on all education-related indicators were less favourable than the national average. Tasmania and the Northern Territory had higher injury death rates and all three jurisdictions had higher teenage birth rates.

The poorer performance of the Northern Territory is influenced by the relatively high proportion of Indigenous children, and the poorer health, education, social and economic outcomes experienced by these children.

Aboriginal and Torres Strait Islander children

Aboriginal and Torres Strait Islander children are more likely than non-Indigenous children to be disadvantaged across a broad range of health, development and wellbeing indicators. Indigenous children were:

- 2–3 times as likely to die as infants or due to injury, to be born with low birthweight, or to be developmentally vulnerable at school entry
- 5 times as likely to be born to a teenage mother
- 8 times as likely to be the subject of a child protection substantiation
- between 20–30% less likely to meet national minimum standards for reading and numeracy.

Children living in remote areas

Children living in more remote areas, compared to those in *Major cities*, were:

- 2–3 times as likely to die as infants or due to injury
- 30% more likely to be born with low birthweight or to be overweight or obese
- more likely to be developmentally vulnerable at school entry, and around 40–50% less likely to meet national minimum standards for reading and numeracy.

Children living in socioeconomically disadvantaged areas

Children living in the lowest socioeconomic status areas, compared to those in the highest socioeconomic status areas, were:

- almost twice as likely to die as infants and nearly 3 times as likely to die due to injury
- 30% more likely to be born with low birthweight
- 60% more likely to have dental decay
- 70% more likely to be overweight or obese
- more likely to be developmentally vulnerable at school entry.

Australia compared to other OECD countries

Internationally comparable data for OECD countries are available for only 5 of the 12 Headline Indicators with available data for Australia—infant mortality, low birthweight, dental health, injury deaths and teenage births. Australia ranked ahead of the OECD average on all these indicator areas; however, in relation to other countries, Australia ranked in the:

- top third of OECD countries for dental health (8th out of 22 countries)
- middle third for birthweight (12th out of 31), injury deaths (17th out of 32) and teenage births (22nd out of 34)
- bottom third for infant mortality (23rd out of 33).

This suggests there is still room for improvement on these areas in Australia.

Key statistics for Children's Headline Indicators

Priority area	Headline Indicator	Australia	First ranked state/territory	Indigenous ^(a)	First ranked OECD country ^(b)
Health	Smoking in pregnancy	Proportion of women who smoked during the first 20 weeks of pregnancy	n.a.	n.a.	n.a.
	Infant mortality	Mortality rate for infants less than 1 year of age, 2007 (deaths per 1,000 live births)	4.2	2.4	10.3
	Birthweight	Proportion of live born infants of low birthweight, 2008 (per cent)	6.1	5.2	12.3
	Breastfeeding	Proportion of infants exclusively breastfed at 4 months of age	n.a.	n.a.	n.a.
	Immunisation	Proportion of children on the Australian Childhood Immunisation Register who are fully immunised at 2 years of age, 30 September 2010 (per cent)	92.6	94.9	90.2
	Overweight and obesity	Proportion of children whose body mass index (BMI) score is above the international cut-off points for 'overweight' and 'obese' for their age and sex, 2007–08 (per cent)	23.1	18.6	n.a.
	Dental health	Mean number of decayed, missing or filled teeth (DMFT) among children aged 12 years, 2003–2004	1.0	0.8	n.a.
	Social and emotional wellbeing	Proportion of children scoring 'of concern' on the Strengths and Difficulties Questionnaire	n.a.	n.a.	n.a.
	Injuries	Age-specific death rates from all injuries for children aged 0–14 years, 2005–2007 (deaths per 100,000)	5.8	3.2	16.9
Early learning and care	Attending early childhood education programs	Proportion of children attending an early education program in the year before beginning primary school	n.a.	n.a.	n.a.
	Transition to primary school	Proportion of children developmentally vulnerable on one or more domains of the Australian Early Development Index (AEDI), 2009	23.5	20.3	47.5
	Attendance at primary school	Attendance rate of children at primary school	n.a.	n.a.	n.a.
	Literacy	Proportion of children in Year 5 achieving the national minimum standards for reading, 2009 (per cent)	91.7	94.2	66.7
	Numeracy	Proportion of children in Year 5 achieving the national minimum standards for numeracy, 2009 (per cent)	94.2	95.5	74.2
Family and community	Teenage births	Age-specific birth rate for 15 to 19 year old women, 2008 (births per 1,000 females 15–19 years)	16.8	10.4	77.5
	Family economic situation	Average real equivalised disposable household income for households with children in the 2nd and 3rd income deciles, 2007–08 (\$ per week)	412	429	n.a.
	Child abuse and neglect	Rate of children aged 0–12 who were the subject of child protection substantiation in a given year, 2009–10 (number per 1,000 children)	6.9	3.4	41.0
	Shelter	Proportion of children aged 0–12 years living in households experiencing at least one of the specified aspects of housing disadvantage: homelessness, overcrowding, housing stress, forced residential mobility	n.a.	n.a.	n.a.
	Family social network	Proportion of children aged 0–12 years whose parent or guardian was usually able to get help when needed	n.a.	n.a.	n.a.

(a) For data quality reasons, in some cases data for Indigenous status excludes some states and territories of Australia, or is aggregated across multiple years due to small numbers. Refer to individual chapters of this report for details on a specific indicator.

(b) Internationally comparable data is only reported in this table if data are available as per the Headline Indicator. Data for the best-performing OECD country is for the most recent year available which may not be the same year as data for Australia.

Part 1

BACKGROUND

1 Introduction

The importance of the early years of childhood development is well established, with evidence from neuroscience, molecular biology, genomics and the behavioural and social sciences suggesting that experiences early in life affect lifelong health and wellbeing in a number of ways (Center on the Developing Child at Harvard University 2010).

Evidence suggests that policies which strengthen the foundations of health in the prenatal and early childhood periods may have long-lasting positive effects. Children who have the best possible start in life are more likely to become healthy, resilient and productive adults who, in turn, contribute to the whole of society through increased human capital, social cohesion and economic productivity (COAG 2009a).

This potential gain to individuals and society has led to increased policy interest in childhood and, in particular, early childhood in recent years. There is good evidence to suggest that early intervention and prevention programs in the areas of maternal, child and family health; early childhood education and care; and family support programs can improve outcomes for children, particularly those from disadvantaged backgrounds (COAG 2009a).

Despite a policy focus on children's health and wellbeing, Australia has lacked a set of national, jurisdictionally agreed indicators of child health, development and wellbeing that can be used for comparison and monitoring (Vic DHS 2008). Moreover, while it appears that most Australian children are doing well, there are concerns about:

- worsening outcomes for children in key areas of physical, social and emotional development
- widening inequality in outcomes for some groups of children
- increasing reliance on early childhood support services (COAG 2009a).

Given this, in 2005 the Australian Health Ministers' Conference (AHMC) and the Community and

Disability Services Ministers' Conference (CDSMC) approved a project to develop a set of Headline Indicators to monitor the health, development and wellbeing of Australian children. A review of national and international work in this area and two rounds of consultation resulted in the identification of 19 priority areas for children aged 0–12 years (Table 1.1). These were selected based on the following criteria:

- a high-level summary indicator for a health, development or wellbeing issue
- relevant to state/territory and Australian Government policies and agendas
- sensitive to intervention strategies that are evidence based
- unambiguous in meaning, interpretation and based on sound empirical evidence
- data collection is methodologically rigorous
- data is capable of reflecting differences in diversity (Vic DHS 2008).

The 19 priority areas were endorsed by the health, and community and disability Ministerial Councils (AHMC and CDSMC) and the then Australian Education Systems Officials Committee (AESOC) in 2006.

What are the Children's Headline Indicators?

The Children's Headline Indicators are a set of 19 indicators designed to focus policy attention on priorities for children's health, development and wellbeing. They are a mechanism to help guide and evaluate policy development by measuring progress on a set of indicators that are potentially amenable to change over time through prevention and early intervention.

The Children's Headline Indicators cover a number of developmental phases including the prenatal period, infancy, early childhood and school-age childhood. These are crucial periods in life, as

child development and experiences early in life determine the biological pathways that affect cognition, behaviour, capacity to learn, memory and physical and mental health throughout life (Mustard 2006). Early childhood is a period when many children face their first major transition in life, from the family home to other environments such as child care, early education and full-time schooling. This provides both opportunities and potential risks. Childhood is also a critical time for learning, social and emotional development and the acquisition of literacy and numeracy skills. While experiences at the individual and family level are highly influential on development, the society and environment in which children grow up also play an important role in shaping their health, development and wellbeing.

The Children's Headline Indicators take into account these wider social and environmental factors and are consistent with a theoretical framework grounded in an ecological model of human development developed by Bronfenbrenner (Bronfenbrenner 1979; 1995). The model highlights the importance of inter-relationships within and across the social environments or systems surrounding a child. The model places the child at the centre of the framework; however, family and wider social, community and economic influences are also taken into account. This provides a basis for understanding how a child's health, development and wellbeing is influenced through both their immediate (proximal) and wider (distal) environments (Wise 2003). Based on Bronfenbrenner's model and supported by a large body of research, the family and early learning and care settings are the immediate environments identified as particularly important to children's health, development and wellbeing.

Hence, the Children's Headline Indicators are grouped into three broad topic areas that are discussed in more detail below:

- health
- early learning and care
- family and community.

The age range for children in the Headline Indicators is 0–12 years unless otherwise stated.

Health

It is well recognised that the foundations for lifelong health are established in childhood. Health is influenced by the interaction of many factors, including human biology, health

behaviours, socioeconomic and environmental factors and health interventions. Consideration of these determinants is key to the prevention of disease and injury. Childhood is a period of rapid development during which it is critical to establish good health, positive health behaviours and overall wellbeing, and to reduce the factors that adversely affect health (Mustard 2006). Many of the factors influencing health and wellbeing are either preventable or modifiable, meaning that it is possible to influence outcomes for all children including those who are most disadvantaged.

Ensuring that all children have the best possible start in life begins in the antenatal period. High-quality antenatal care, education and support to mothers during pregnancy are important to ensure a healthy start to life for infants (Panareto et al. 2007; Yakoob et al. 2009). Smoking during pregnancy (*Chapter 4*) and low birthweight (*Chapter 6*) are risk factors both for infant mortality and ill health later in life, while breastfeeding (*Chapter 7*) and immunisation (*Chapter 8*) are protective factors that promote positive health and development.

A child's risk of death is greatest around the time of birth and in the first year of life. Infant mortality (*Chapter 5*) is used internationally as a key indicator of hygiene and health conditions in a country and of the effectiveness of the maternal and perinatal health system.

Childhood is an important time for establishing and reinforcing positive health behaviours. Key influences on health include nutrition and physical activity, which are critical factors in determining a person's body weight. Being overweight or obese (*Chapter 9*) is a risk factor for morbidity and mortality throughout life. Good dental health (*Chapter 10*) is another factor that impacts positively on wellbeing, while untreated dental disease is a risk factor for infection and chronic disease throughout life.

As children grow, injury is one of the most serious risks to their health. Many causes of injuries can, however, be prevented (*Chapter 12*).

There are a range of individual, relational and environmental factors which affect a child's social and emotional wellbeing (*Chapter 11*). Children with high levels of social and emotional wellbeing are more likely to successfully negotiate the physical, intellectual and social changes that take place through childhood and adolescence (Bernard et al. 2007).

Early learning and care

The early years are a period of rapid brain development, and the provision of a stable, nurturing environment provides a strong base for learning. A child's learning and development is integral to their health and wellbeing and the future productivity of society (Elliott 2006; Moore et al. 2008). Attendance at early childhood education programs (*Chapter 13*) has been found to have beneficial effects on a child's readiness for school and their ability to make a successful transition to full-time schooling, particularly among disadvantaged children. Children who attend quality early childhood education programs show better performance and progress in their early school years in intellectual, cognitive and social domains (Barnett 1995; Burchinal et al. 2009; Campbell et al. 2002).

Successful educational outcomes during the primary school years and beyond are affected by a number of factors including effective transition to primary school (*Chapter 14*), regular school attendance (*Chapter 15*) and the successful acquisition of literacy and numeracy skills (*Chapter 16*). Children who enter school with the basic skills for life and learning are more likely to experience a successful transition to primary school, and subsequently enjoy higher levels of social competence and academic achievement compared with those who don't settle well into school (Farrar et al. 2007). Regular attendance at school helps children develop the basic building blocks for learning and educational attainment and social skills such as friendship building, teamwork, communication skills and healthy self-esteem (Vic DHS 2007). The successful acquisition of literacy and numeracy skills are fundamental to further educational attainment, social development, future employment and the management of day-to-day life (DEEWR 2010).

Family and community

The family and community environment sets the foundations for children's learning, behaviour and health over the course of their life. Families play a critical role in protecting children from harm, and providing them with physical, emotional and economic support. Strong family relationships are therefore extremely important for children's development and psychological wellbeing.

Teenage parenthood (*Chapter 17*) presents potential risks to children's development. Parenthood during this time can result in financial stress and a lack of

social networks, which affects the educational and economic futures of both parent and child (Sleebos 2003).

Children in families without adequate economic resources are at greater risk of poor social, health and educational outcomes due to increased levels of stress in the family environment, exclusion from activities that other children take for granted or inadequate nutrition, medical care or housing (*Chapter 18*) (Barnett 2008).

The physical and emotional safety of a child's environment can be affected by factors such as the adequacy of the shelter or housing, and exposure to abuse and violence. Having access to stable and adequate shelter (*Chapter 19*) is a basic human need and enables adults and children to engage with the wider community—socially, recreationally and economically (Wise 2003). Children who are raised in unstable or unsafe environments, or who have been abused or neglected emotionally or physically, often have poorer social, behavioural and health outcomes (*Chapter 20*) (Chartier et al. 2007).

Communities play a further role in shaping children's health and wellbeing, with strongly connected communities associated with positive outcomes for children. In particular, families with rich social networks have greater resilience and more resources to assist them in their daily lives, which promotes the healthy development and wellbeing of children (*Chapter 21*) (Zwi & Henry 2005).

Reporting on the Children's Headline Indicators

In 2006, Headline Indicators were only defined for 16 out of the 19 priority areas. Data for 10 of the priority areas with defined Headline Indicators were published for the first time in June 2009 in the AIHW report, *A picture of Australia's children 2009* (AIHW 2009d). Data are also available online for those indicators with available data, and are updated annually (see <http://www.aihw.gov.au/chi/index.cfm>).

Six priority areas with defined Headline Indicators could not be reported on initially because of a lack of available data. For three priority areas—*Social and emotional wellbeing*, *Shelter* and *Family social network*—further work was required to conceptualise and define Headline Indicators. The AIHW has since defined suitable indicators and identified appropriate data collection methods, as

well as producing an information paper, for each of these three priority areas (see AIHW 2010d, 2010e, 2011b).

This report, *Headline Indicators for children's health, development and wellbeing 2011*, is the first stand-alone report on the Children's Headline Indicators. It provides the latest available information on how Australia's children are faring and has information on all 19 priority areas, including:

- 12 priority areas with available data
- 4 priority areas with no data currently available or with data that is not currently suitable to report against the specified Headline Indicator—*Smoking in pregnancy*, *Breastfeeding*, *Attending early childhood education programs* and *Attendance at primary school*. Data for these priority areas are at various stages of data development.

- 3 priority areas with no national data currently available for reporting—*Social and emotional wellbeing*, *Shelter* and *Family social network*.

Reporting on the Children's Headline Indicators complements other reporting on child health, development and wellbeing undertaken by the AIHW by presenting jurisdictional and subpopulation data on a set of identified priority indicators. Where possible, data are presented by state and territory and for specific populations, including Aboriginal and Torres Strait Islander children, children living in remote and socioeconomically disadvantaged areas and children from culturally and linguistically diverse backgrounds. The level of disaggregation presented for the indicators is dependent on the availability of reliable data.

Table 1.1: Headline Indicators for children's health, development and wellbeing

Priority areas	Headline Indicators	Data source
Health		
Smoking in pregnancy	Proportion of women who smoked during the first 20 weeks of pregnancy	National Perinatal Data Collection (data expected to be available for reporting in 2013)
Infant mortality	Mortality rate for infants less than 1 year of age	AIHW National Mortality Database
Birthweight	Proportion of live born infants of low birthweight	National Perinatal Data Collection
Breastfeeding	Proportion of infants exclusively breastfed at 4 months of age	Australian National Infant Feeding Survey (data expected to be available in 2011 but will require assessment of suitability)
Immunisation	Proportion of children on the Australian Childhood Immunisation Register who are fully immunised at 2 years of age	Australian Childhood Immunisation Register
Overweight and obesity	Proportion of children whose body mass index (BMI) score is above the international cut-off points for 'overweight' and 'obese' for their age and sex	ABS National Health Survey
Dental health	Mean number of decayed, missing or filled teeth (DMFT) among primary school children aged 12 years	Child Dental Health Survey
Social and emotional wellbeing	Proportion of children scoring 'of concern' on the Strengths and Difficulties Questionnaire	No national data currently available
Injuries	Age-specific death rates from all injuries for children aged 0–14 years	AIHW National Mortality Database
Early learning and care		
Attending early childhood education programs	Proportion of children attending an early education program in the year before beginning primary school	National Early Childhood Education and Care Data Collection (data expected to be available in 2013)
Transition to primary school	Proportion of children developmentally vulnerable on one or more domains of the AEDI	Australian Early Development Index (AEDI)
Attendance at primary school	Attendance rate of children at primary school	Ministerial Council for Education, Early Childhood Development and Youth Affairs (MCEETYA) National Report on Schooling in Australia (data not currently nationally comparable)
Literacy	Proportion of children in Year 5 achieving at or above the national minimum standards for reading	National Assessment Program—Literacy and Numeracy
Numeracy	Proportion of children in Year 5 achieving at or above the national minimum standards for numeracy	National Assessment Program—Literacy and Numeracy
Family and community		
Teenage births	Age-specific birth rate for 15 to 19 year old women	National Perinatal Data Collection
Family economic situation	Average real equivalised disposable household income for households with children in the 2nd and 3rd income deciles	ABS Survey of Income and Housing
Shelter	Proportion of children aged 0–12 years living in households experiencing at least one of the specified aspects of housing disadvantage: homelessness, overcrowding, housing stress, forced residential mobility	No national data currently available
Child abuse and neglect	Rate of children aged 0–12 who were the subject of child protection substantiation in a given year	AIHW Child Protection Data Collection
Family social network	Proportion of children aged 0–12 years whose parent or guardian was usually able to get help when needed	No national data currently available

Structure of this report

This report is presented in seven parts. *Part I* provides an introduction to the report and background to the Children's Headline Indicators, and presents information on demographic and family characteristics to provide a context for exploring issues influencing children's health, development and wellbeing.

Part II gives an overview of children's health, development and wellbeing by providing a summary of how children in individual states and territories are tracking across multiple Headline Indicators, compared with Australian children nationally. The report is then structured around the three broad topic areas:

- health (*Part III*)
- early learning and care (*Part IV*)
- family and community (*Part V*).

Part III Health priority areas includes chapters on smoking in pregnancy (*Chapter 4*), infant mortality (*Chapter 5*), birthweight (*Chapter 6*), breastfeeding (*Chapter 7*), immunisation (*Chapter 8*), overweight and obesity (*Chapter 9*), dental health (*Chapter 10*), social and emotional wellbeing (*Chapter 11*) and injuries (*Chapter 12*).

Part IV Early learning and care priority areas includes chapters on attendance at early childhood education programs (*Chapter 13*), transition to primary school (*Chapter 14*), attendance at primary school (*Chapter 15*) and literacy and numeracy (*Chapter 16*).

Part V Family and community priority areas includes chapters on teenage births (*Chapter 17*), family economic situation (*Chapter 18*), shelter (*Chapter 19*), child abuse and neglect (*Chapter 20*) and family social network (*Chapter 21*).

Detailed data tables for each of the Headline Indicators with available data, and information on methods and data sources, are included in the appendixes.

2 Demographic overview of children in Australia

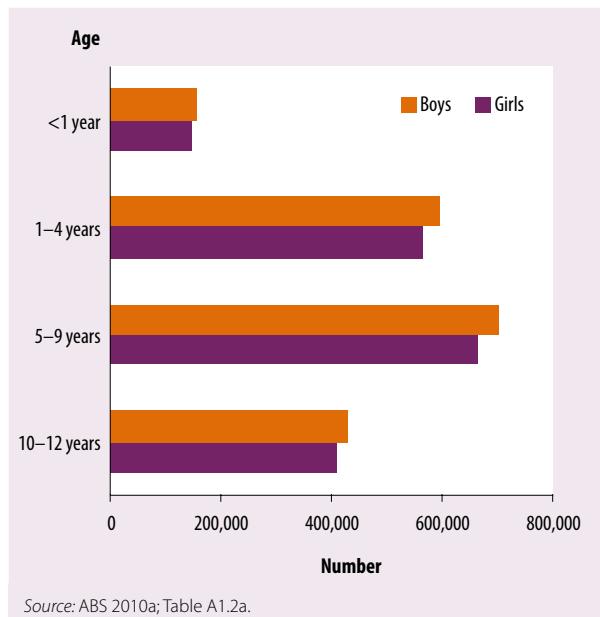
This chapter describes the child population of Australia in terms of size, composition and growth, as well as regional distribution and cultural diversity. It provides a context for exploring many issues influencing children's health, development and wellbeing. The size and composition of the child population, including changing demographic trends, is important for policy development and planning for the provision, delivery and accessibility of the range of services required by children, including child care, schools, and health and welfare services.

Reporting on indicators at the national or state and territory level can mask important inequalities for particular subpopulations of children, as well as any progress made in these areas. Therefore, the Children's Headline Indicators are reported for subpopulations of children wherever suitable data are available. The Children's Headline Indicators are reported for Aboriginal and Torres Strait Islander children, children from culturally and linguistically diverse backgrounds and children living in socioeconomically disadvantaged or remote areas of Australia.

There are a number of ways to define 'children', depending on particular data collections or legal requirements. In this report, children are defined as aged 0–12 years, data permitting. Data for children aged 0–14 years have been presented where data is unavailable for children aged 0–12 years.

How many children live in Australia?

At 30 June 2010, there were an estimated 3.7 million children aged 0–12 years in Australia (1.9 million boys and 1.8 million girls), representing 16% of the total Australian population (Figure 2.1). In each childhood age category, there were around 5% more boys than girls. This reflects the greater number of male births to female births; however, differences in life expectancy between males and females mean this gap narrows through adolescence and early adulthood, closes in the mid-thirties age range and reverses in favour of females. In Australia, a female born between 2007 and 2009 could expect to live an average of 83.9 years, compared with 79.3 for males (ABS 2010c).



Source: ABS 2010a; Table A1.2a.

Figure 2.1: Children aged 0–12 years in Australia, June 2010

The number of children aged 0–14 years in Australia has increased by 33% in the past 50 years, at an average rate of 0.7% per year (ABS 2008a, unpublished data). However, the child population as a proportion of the total population over the same period has been steadily declining, from 30% in 1960 to 19% in 2010, due to lower fertility rates and increased life expectancy. This trend is expected to continue, with projections estimating that in 2040 children will make up just 17% of the population (5.3 million children) (ABS 2008e). Recent increases in the fertility rate—the rate in 2008 was the highest since 1977, and declined only slightly in 2009 (ABS 2010b)—may result in this declining trend slowing or even reversing.

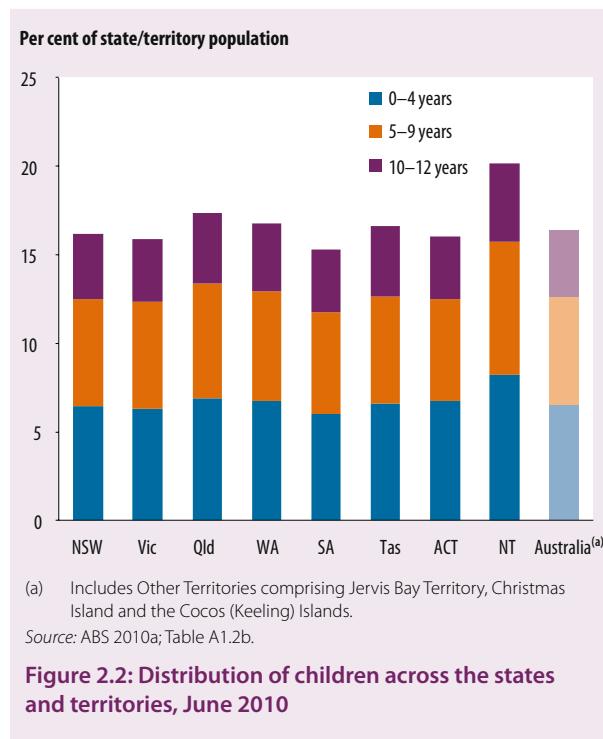
Where do Australian children live?

State and territory

The distribution of children across the states and territories is similar to that of the population overall, with around one-third of children living in New South Wales, one-quarter in Victoria and one-fifth in Queensland (Table A1.2b).

The proportion of children aged 0–12 years within the states and territories' populations is highest in the Northern Territory (20%), reflecting the younger age profile of the large Indigenous Australian

population resident there (Figure 2.2). South Australia recorded the lowest proportion of children in the population (15%).



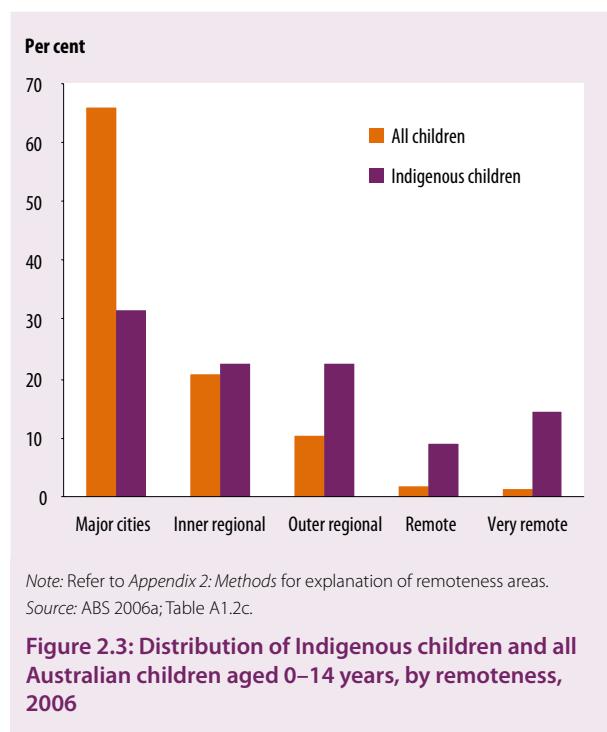
Remoteness

Where a child grows up can make a difference to his or her health and wellbeing. In the overall population, those living in rural and remote areas of Australia tend to have poorer general health than those in the cities. There can be many reasons for this, including the higher socioeconomic disadvantages of many rural communities (lower levels of education, income and employment), greater levels of smoking and alcohol abuse, less access to health services and staff, and the hazards of driving over long road distances (AIHW 2008a, 2008b). Further, Indigenous children, who are known to experience poorer health outcomes, make up a large proportion of all children in remote areas (around one-quarter of children in remote areas and around two-thirds of children in very remote areas). All of these factors filter down to the health of children in these areas.

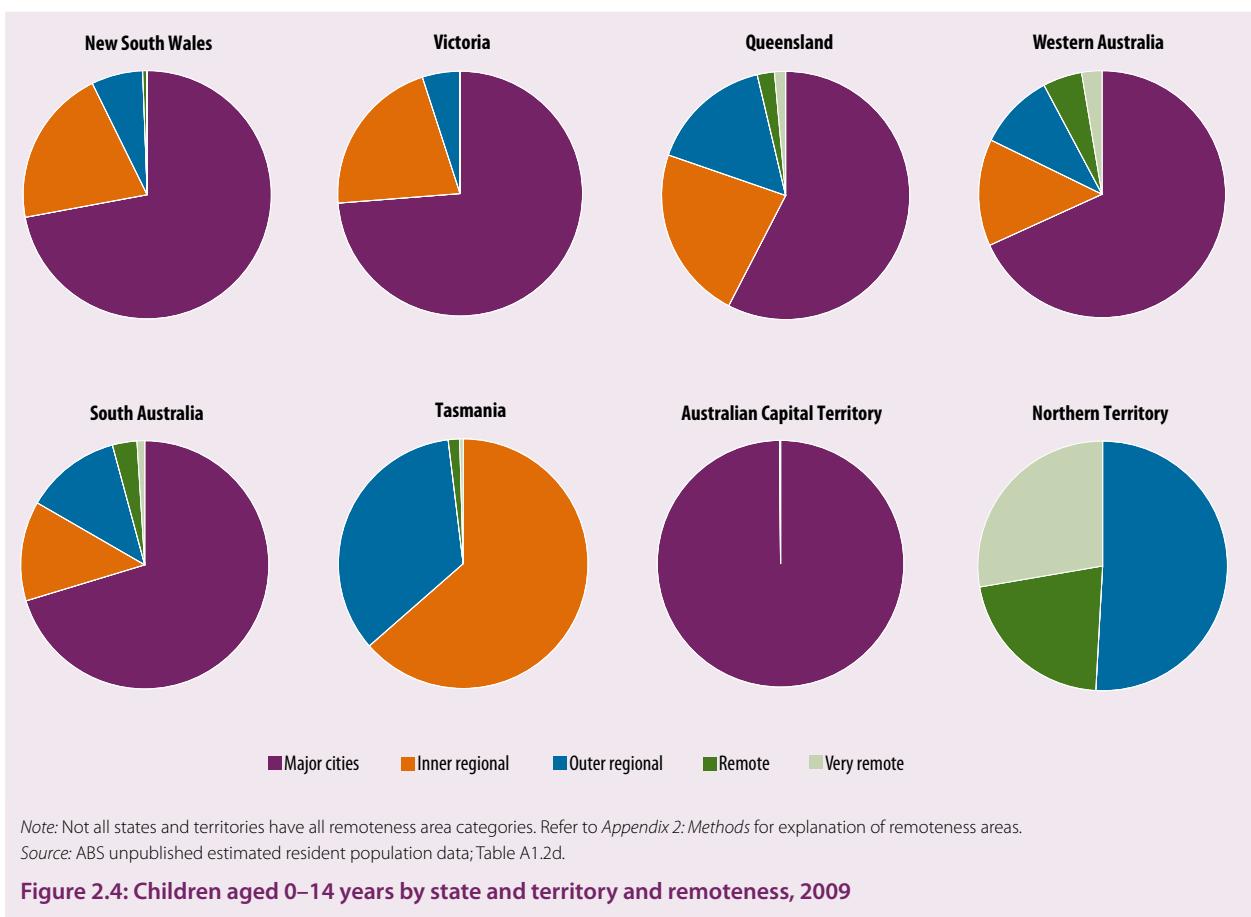
This report uses the ABS Australian Standard Geographical Classification Remoteness Structure to describe an area's relative remoteness (see *Appendix 2: Methods*). Remoteness categories are allocated depending on an area's distance from different-sized urban centres and, as a result, not all states and territories have all remoteness categories.

Two-thirds of Australian children aged 0–14 years (2.7 million children) lived in *Major cities* in 2006, and a further one-fifth (842,500) lived in *Inner regional* areas. Three per cent of children (116,600) lived in *Remote and very remote* areas (Figure 2.3).

Indigenous children were 8 times as likely to live in *Remote and very remote* areas than children overall (23% compared with 3%), although the majority (149,400 or 77% of Indigenous children) lived in *Major cities*, *Inner regional* and *Outer regional* areas.



In New South Wales, Victoria, Queensland, Western Australia and South Australia, more than three-quarters of children aged 0–14 years lived in *Major cities* or *Inner regional* areas, with all but Western Australia recording less than 5% of children living in *Remote* or *Very remote* areas in 2009 (Figure 2.4). In Tasmania, most children (98%) lived in *Inner regional* or *Outer regional* areas. The Northern Territory had the highest proportion of children living in *Remote* or *Very remote* areas (49%), reflecting the lack of *Major cities* and *Inner regional* areas within the territory, as well as the larger proportion of Indigenous people in the Northern Territory and the fact that they are more likely to live in *Remote* or *Very remote* areas. Virtually all (99.9%) of the Australian Capital Territory is classified as *Major city*.



Socioeconomic status of areas

Health and wellbeing in the general population is influenced by socioeconomic factors such as education, occupation and income. These factors help to explain many of the health inequalities in Australia today. In general, relatively disadvantaged members of the community live shorter lives and have higher rates of illness, disability and death than those who are relatively advantaged. In most cases, children share the socioeconomic status of their parents or guardians. For children, the effects of low socioeconomic status can result in less satisfactory early development before and after birth, fewer opportunities for education and later employment, less opportunity to learn about healthy nutrition and lifestyles, and a greater influence of family and friends towards unhealthy behaviours such as smoking and heavy alcohol use (AIHW 2010a).

The Socio-Economic Index for Areas (SEIFA) provides a summary measure of socioeconomic status (SES). Unless otherwise stated, the SEIFA index used in this report is the 2006 SEIFA Index of Relative Socioeconomic Disadvantage (IRSD)

developed by the ABS for use at the statistical local area level (see *Appendix 2: Methods* for further information).

Aboriginal and Torres Strait Islander children

There were an estimated 168,500 Aboriginal and Torres Strait Islander children aged 0–12 years in Australia, according to estimates based on the 2006 Census of Population and Housing, comprising 4.8% of the total child population (Table A1.2e). The gender distribution of Indigenous children was the same as for all Australian children (51% boys, 49% girls). The measurement of the Indigenous population is complex due to issues of undercount of Indigenous people in the Census on which population estimates are based, and underestimates of Indigenous births and deaths. The ABS therefore produces experimental estimates of the Indigenous population, which are presented here.

In contrast to the non-Indigenous population, the Indigenous population has a much younger age structure. Among Indigenous Australians, children make up a larger proportion of the population

than in Australia overall—33% of the Indigenous population are aged 0–12 years compared with 17% overall. This reflects the higher birth rate among Indigenous women (2.1 births, compared with 1.8 for all women in 2006) and the shorter life expectancy among Indigenous Australians (an average of 67 and 73 years for Indigenous men and women born between 2005 and 2007, respectively—11.5 and 9.7 years less than for non-Indigenous men and women) (ABS 2007a, 2009d).

The number of Indigenous children in the states and territories is highest in New South Wales and Queensland, and lowest in the Australian Capital Territory and Tasmania (Figure 2.5). In most states and territories, the proportion of all children who are Indigenous is low, ranging from 1.3% in Victoria to 7.0% in Tasmania. The exception is the Northern Territory, where almost half of all children aged 0–12 years (44%) are Indigenous.

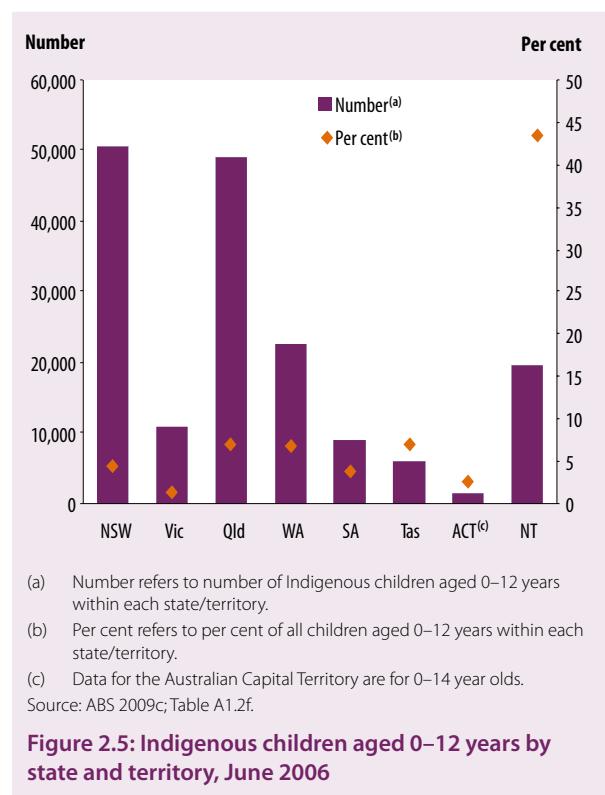


Figure 2.5: Indigenous children aged 0–12 years by state and territory, June 2006

Cultural and linguistic diversity

Australia is one of the most culturally diverse countries in the world—in 2009, around one-quarter (27%) of the Australian population had been born overseas (ABS 2010e). Such a wide-ranging mix of cultures and languages has implications for the provision of culturally sensitive and accessible services for children and their families.

Most children aged 0–14 years in Australia were born in Australia (92% or 3.8 million at 30 June 2009) and the proportion of children born overseas is lower than for the general population—8% or around 345,000 children, compared with 27% in the general population. Children in Australia who were born overseas came from 183 different countries, with the 10 most common countries accounting for 63% of child migrants (Figure 2.6).

Around 191,900 children (56% of those born overseas) came from mainly non-English speaking countries. The most common non-English speaking countries of birth were India (6% of those born overseas), Philippines and China (excluding Special Administrative Regions and Taiwan) (both 4%) and the Republic of South Korea (3%).

Around 153,100 children (44% of those born overseas) were born in other English-speaking countries, mainly the United Kingdom (17% of those born overseas), New Zealand (16%), South Africa (6%) and the United States of America (4%).

Australia's estimated resident population by country of birth at the state and territory level is only available for Census years. In 2006, the proportion of children aged 0–14 years born in Australia was at least 90% of the children in each state and territory. Western Australia had the highest proportion of children born overseas (10%), while Tasmania had the lowest (3%).



Figure 2.6: Leading countries of birth for children aged 0–14 years born overseas, June 2009

What kind of families do Australian children live in?

Families play a crucial role in the lives of Australian children, as they provide the environment in which children are cared for. Research has shown that children brought up in stimulating and nurturing environments have better outcomes throughout life (McCain & Mustard 2002; Zubrick et al. 2000).

The structure and composition of Australian families has become increasingly fluid, and many families now experience a number of changes, such as family breakdown, re-partnership to form a stepfamily and, if children are born to the new couple, a blended family. It is estimated that around one-quarter of children experience multiple family living arrangements before the age of 15 years (De Vaus 2004). These transitions in living arrangements can have significant effects on children (DPMC 2008).

With family dissolution or the re-partnering of parents, children need to adjust to new relationships. Children may encounter difficulties adjusting to consequent changes in parenting styles and disruption to family cohesion, which may lead to increased stress (Deater-Deckard & Dunn 1999 cited in Wise 2003), or place them at increased risk of poor mental health and overall wellbeing (Sawyer et al. 2000; Silburn et al. 1996; Vimpani et al. 2002). Children from non-intact families, particularly one-parent families, may also experience adverse developmental outcomes such as low educational attainment, increased likelihood of engaging in antisocial behaviour and substance misuse in adulthood (De Vaus 2004; DeLeire & Kalil 2002).

Changes in family structures do not always have negative outcomes for children. There are many intervening factors, such as the quality of parent-child relationships, parenting style and supervision, parental care and levels of family discord, that affect children's vulnerability or resilience to the effects of change.

Family structure

Between 1976 and 2006, the proportion of couple families with dependent children has declined, while the proportions of one-parent families and couples without children (including couples who have no children and those whose children have left home) have increased (DPMC 2008).

However, the types of families that children live in have changed little over the decade 1997 to 2007.

Most children aged 0–14 years lived in couple families (83% in 2007) and, of these children, the vast majority lived in intact families (90%), with small proportions living in blended families and stepfamilies (6% and 3%, respectively). Less than 1% of children in couple families lived in other arrangements, such as grandparent families or in families with foster children. Around one in six children lived in one-parent families (17%)—most (87%) of whom lived with their mother (Table A1.2h; ABS unpublished data).

A higher proportion of infants and young children (1–4 years) lived in couple families in 2007 (88%) compared with 5–9- and 10–14-year-olds (82% and 79%, respectively). Conversely, in one-parent families a considerably higher proportion of children were aged 10–14 years than 0–4 years (21% and 12%, respectively).

Indigenous families

Indigenous Australians have more extensive and complex family relationships than most non-Indigenous Australians. These important relationships may be difficult to translate into Anglo-Celtic terms, which are built around the nuclear family; and in some cases this can result in a loss of complexity or miscategorisation of the relationships in Indigenous families (Morphy 2006). Indigenous households differ from non-Indigenous households in that they tend to be larger, non-nuclear and more fluid in composition (ABS & AIHW 2008).

Extended family structures are important for Indigenous Australians living in remote, traditionally orientated communities, as well as for those living in more densely populated and urbanised areas, and such relationships may form an important safety net for many children (Daly & Smith 2005; Morphy 2006).

The ABS has acknowledged that the household and family structures used in the 2006 Census of Population and Housing may not 'fully reflect the richness and complexity of household and family relationships relevant to the Indigenous population' (ABS 2008d). This is particularly the case in remote communities, where extensive and fluid family structures are more common, although they are also found in urban areas (Smith 2000). Despite these limitations, the Census is still the preferred source of information on the composition of Indigenous households. An 'Indigenous household' was defined in the Census as any household that had at least one person of any age as a resident at the time of

the Census who identified as Aboriginal and/or Torres Strait Islander.

According to the 2006 Census, Indigenous households were, on average, larger than other Australian households (3.3 people compared with 2.5, respectively), and there were more children aged under 15 years per household (1.1 compared with 0.5). One-third of Indigenous households with dependent children had three or more children and 15% had four or more children, compared with one-fifth and 5% of other Australian households, respectively (ABS 2008d).

Compared with other Australian households, Indigenous households were also:

- more than 3 times as likely to be one-parent families with dependent children (23% compared with 7%), and more than 4 times as likely to be multi-family households (5% compared with 1%)

- less likely to be one-family households without dependent children (25% compared with 37%) or lone person households (14% compared with 25%) (Table A1.2i).

The structure of Indigenous households varied with remoteness in 2006:

- One-parent families, families without dependent children and group households were more common in *Major cities* than in *Very remote* areas. For example, one-parent families with dependent children comprised 24% of Indigenous households in *Major cities* compared with 14% in *Very remote* areas.
- Couples with dependent children and multi-family households were more common in *Very remote* areas than in *Major cities*—20% of Indigenous households in *Very remote* areas were multi-family households compared with 4% in *Major cities*.

Part II

PRIORITY AREAS

3 Overview of children's health, development and wellbeing

This chapter presents a summary of how states and territories are tracking across multiple Children's Headline Indicators, and also how children in different population groups are faring at the national level. A summary of Australia's results compared with other Organisation for Economic Co-operation and Development (OECD) countries is also presented where available.

The priority areas discussed in this chapter are those for which there are available data (12 of the 19 Headline Indicators). Table 3.1 summarises the data presented in this chapter for the states and territories, and Table 3.2 summarises data on the differences between selected population groups within Australia (Indigenous children, children living in *Remote and very remote* areas and children living in the lowest socioeconomic status areas).

Please refer to chapters 4 to 21 for detailed information on each Headline Indicator.

How do states and territories vary?

New South Wales

Rates of infant mortality, low birthweight, immunisation, overweight and obesity, and injury death in New South Wales were similar to those for Australia overall. There is currently no reliable information on the dental health of children in New South Wales, due to the lack of representativeness of the New South Wales sample in the Child Dental Health Survey.

In New South Wales, 21% of children were developmentally vulnerable on one or more domains of the Australian Early Development Index (AEDI) at school entry, compared to 24% nationally. Students in Year 5 in New South Wales were slightly more likely than students nationally to achieve national minimum standards for reading and numeracy (94% and 92%, respectively, for reading; 96% and 94%, respectively, for numeracy).

The teenage birth rate in New South Wales was lower than the national rate (15 births per 1,000 females compared with 17). Conversely, the rate of child protection substantiations in New South Wales was higher than for Australia overall (9 substantiations per 1,000 children compared with 7)—there are a number of possible reasons for this, and it does not necessarily indicate a higher rate of child abuse and neglect in New South Wales (refer to *Chapter 20: Child abuse and neglect* for further detail).

The family economic situation of low-income households with children aged 0 to 12 years in New South Wales was comparable to Australia overall.

Victoria

Rates of infant mortality, low birthweight, immunisation and overweight and obesity were similar for Victoria and Australia overall. Likewise, dental health was comparable based on mean number of decayed, missing or filled permanent teeth (DMFT) among 12-year-olds. Death rates due to injury were lower in Victoria than nationally (4.4 deaths per 100,000 children compared with 5.8).

For transition to primary school, proportionately fewer children in Victoria were developmentally vulnerable on one or more domains of the AEDI at school entry (20%) compared to Australia overall (24%), and Year 5 students in Victoria were somewhat more likely to achieve the national minimum standards in reading (94%) and numeracy (96%) compared to the national rates (92% and 94%, respectively).

The teenage birth rate in Victoria was considerably lower than the national rate (10 births per 1,000 females compared with 17 nationally), while the child protection substantiation rate was similar to that of Australia as a whole.

Table 3.1: Children's Headline Indicator priority areas with available data, by state and territory

Priority area	Headline Indicator		Year of data	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Infant mortality	Mortality rate for infants less than 1 year of age (deaths per 1,000 live births)		2007	4.3	3.8	5.0	2.4	4.5	4.2	3.8	8.5	4.2
Birthweight	Proportion of live born infants of low birthweight (<2,500 grams) (per cent)		2008	5.9	6.2	6.2	6.2	6.9	5.2	8.4	6.1	
Immunisation	Proportion of children on the ACIR fully immunised at 2 years of age (per cent)	30 September 2010	92.4	93.3	92.8	90.3	92.4	93.8	94.9	91.9	92.6	
Overweight and obesity	Proportion of children whose body mass index (BMI) score is above the international cut-off points for 'overweight' and 'obese' for their age and sex (per cent)	2007–08	21.2	23.1	25.4	25.0	25.1	18.6	21.7	n.a.	23.1	
Dental health	Mean number of decayed, missing or filled teeth (DMFT) among primary school children aged 12 years	2003–2004	n.a.	1.1	1.2	0.9	0.8	1.2	1.1	0.9	1.0	
Injuries	Age-specific death rates from all injuries for children aged 0–14 years (deaths per 100,000 population)	2005–2007	5.2	4.4	6.5	6.3	7.5	10.0	3.2	20.0	5.8	
Transition to primary school	Proportion of children developmentally vulnerable on one or more domains of the AEDI (per cent)	2009	21.3	20.3	29.6	24.7	22.9	21.8	22.2	39.1	23.5	
Literacy	Proportion of Year 5 school children achieving at or above national minimum standards for reading (per cent)	2009	93.7	94.2	88.9	88.9	91.0	90.3	94.0	65.4	91.7	
Numeracy	Proportion of Year 5 school children achieving at or above national minimum standards for numeracy (per cent)	2009	95.5	95.5	92.6	92.8	93.3	93.2	95.5	73.5	94.2	
Teenage births	Age-specific birth rate for 15–19 year old women (births per 1,000 females)	2008	14.9	10.4	23.4	20.6	16.6	26.5	7.8	51.4	16.8	
Family economic situation	Average real equivalised disposable household income for households with children aged 0–12 years in the 2nd and 3rd income deciles (\$ per week)	2007–08	405	412	420	429	404	419	423	404	412	
Child abuse and neglect ^(a)	Rate of children aged 0–12 years who were the subject of a child protection substantiation of a notification received in a given year (number per 1,000 children)	2009–10	8.8	5.9	6.6	3.4	5.2	8.8	7.7	18.7	6.9	

(a) A higher rate does not necessarily indicate a higher rate of child abuse and neglect (refer to Chapter 20: *Child abuse and neglect* for further detail).

Sources: Refer to chapters 4 to 21 for information on the data source used for each Children's Headline Indicator.

The family economic situation of low-income households with children aged 0 to 12 years in Victoria was similar to Australia overall.

Queensland

Rates of low birthweight, overweight and obesity, immunisation and child injury deaths in Queensland were similar to those for Australia overall; however, the infant mortality rate in Queensland was slightly higher than the national rate (5.0 deaths per 1,000 infants compared with 4.2) as were average levels of dental decay among 12-year-olds (mean DMFT of 1.2 compared with 1.0 nationally).

In Queensland, 30% of children were developmentally vulnerable on one or more domains of the AEDI at school entry compared with the national average of 24%. A somewhat lower proportion of Year 5 Queensland students met the national minimum standards for reading (89%) and numeracy (93%) than nationally (92% and 94%). The teenage birth rate in Queensland was around 30% higher than the national rate (23 births per 1,000 females compared with 17) and the child protection substantiation rate was comparable to the overall Australian rate.

The family economic situation of low-income households with children aged 0 to 12 years in Queensland was similar to that of Australia overall.

Queensland has a somewhat higher proportion of Indigenous children in the child population aged 0–12 years (7%) than Australia overall (5%), as well as a higher proportion of children living in *Inner and outer regional* areas (39% compared with 31%). These factors may in part influence Queensland's results on several of the Headline Indicators, as both are associated with poorer health and wellbeing outcomes.

Western Australia

The infant mortality rate in Western Australia was considerably lower than for Australia overall (2.4 deaths per 1,000 infants compared with 4.2) and the average level of dental decay among 12-year-olds was slightly lower according to mean DMFT (0.9 compared with 1.0 nationally). Rates of low birthweight, overweight and obesity, and deaths due to injury were similar to national rates. The immunisation rate was lower in Western Australia, with 90% of children fully immunised at 2 years compared with 93% nationally.

For transition to primary school, Western Australia had a similar proportion of children developmentally vulnerable on one or more domains of the AEDI to Australia overall (25% compared with 24% of all Australian children), but Year 5 Western Australian students were less likely than Australian children overall to achieve national minimum standards for reading (89% compared with 92%). Results for numeracy were more comparable (93% in Western Australia compared with 94% nationally).

The child protection substantiation rate in Western Australia was half the rate for Australia overall (3.4 substantiations per 1,000 children aged 0–12 years compared with 6.9), and the teenage birth rate was higher (21 births per 1,000 females compared with 17 nationally).

The family economic situation of low-income households with children aged 0 to 12 years in Western Australia was similar to Australia overall.

Western Australia has a somewhat higher proportion of Indigenous children in the child population aged 0–12 years (6%) compared with Australia overall (5%), as well as a higher proportion of children living in *Remote and very remote* areas (8% compared with 3%). These factors may in part influence Western Australia's results on several of the Headline Indicators, as both are associated with poorer health and wellbeing outcomes.

South Australia

Rates of infant mortality, low birthweight, immunisation, overweight and obesity, and child injury deaths in South Australia were all comparable to national rates. South Australia had lower average levels of dental decay among 12-year-olds according to mean DMFT (0.8 compared with 1.0 nationally).

For transition to primary school, South Australia had a similar proportion of children developmentally vulnerable at school entry on one or more domains of the AEDI to Australia overall. Similar proportions of South Australian and all Australian children met the national minimum standards for reading and numeracy in Year 5.

The teenage birth rate was similar to that of Australia, and the rate of child protection substantiations was lower than the national rate (5 substantiations per 1,000 children aged 0–12 years compared with 7).

The family economic situation of low-income households with children aged 0 to 12 years in South Australia was similar to Australia overall.

Tasmania

Rates of infant mortality, immunisation and overweight and obesity were similar to those nationally; however, the proportion of low birthweight infants was somewhat higher in Tasmania (6.9%) than Australia overall (6.1%). The dental health of Tasmanian children was comparable to Australian children overall; however, the rate of death due to injury was higher in Tasmania (10 deaths per 100,000 children aged 0–14 years compared with 6 nationally).

Tasmania had a slightly lower proportion of children developmentally vulnerable in their first year of school than Australia overall (22% compared with 24% nationally). The proportion of Year 5 Tasmanian students achieving national minimum standards in reading and numeracy was similar to Australia overall.

The teenage birth rate was more than 50% higher in Tasmania compared with Australia overall (27 births per 1,000 females compared with 17) and the child protection substantiation rate was also higher (9 substantiations per 1,000 children compared with 7)—there are a number of possible reasons for this, and it does not necessarily indicate a higher rate of child abuse and neglect in Tasmania (refer to *Chapter 20: Child abuse and neglect* for further detail).

The family economic situation of low-income households with children aged 0 to 12 years in Tasmania was similar to all Australian households with children.

Australian Capital Territory

Immunisation rates were slightly higher in the Australian Capital Territory compared with Australia overall (95% and 93%, respectively). Rates of infant mortality, overweight and obesity, and injury deaths were all similar to national rates. The proportion of low birthweight infants was slightly lower in the Australian Capital Territory (5.2%) compared with nationally (6.1%). The dental health of children in the Australian Capital Territory was similar to Australian children overall.

The Australian Capital Territory had similar results to Australia overall for transition to primary school and for students meeting national minimum standards for numeracy, but a higher proportion

of students met the national minimum standards for reading (94% compared with 92% for Australia overall).

The rate of teenage births in the Australian Capital Territory was lower than the national rate (8 births per 1,000 females compared with 17) and the child protection substantiation rate was similar to that of Australia as a whole.

The family economic situation of low-income households with children aged 0 to 12 years in the Australian Capital Territory was similar to Australia overall.

Northern Territory

The infant mortality rate in the Northern Territory was twice that of Australia overall (8.5 deaths per 1,000 infants compared with 4.2), and the rate of injury death was more than three times as high (20 deaths per 100,000 children compared with 6). However, the Northern Territory had slightly lower average dental decay levels than Australia overall with a mean DMFT of 0.9 compared with 1.0 nationally. The rate of low birthweight was somewhat higher in the Northern Territory (8% compared with 6% nationally), while immunisation rates were comparable. Data on overweight and obesity are not available for the Northern Territory children due to small sample size in the ABS 2007–08 National Health Survey.

Northern Territory children were more likely to be developmentally vulnerable on one or more domains of the AEDI at school entry (39% compared with 24% nationally). A lower proportion of Northern Territory Year 5 students met the national minimum standards for reading (65% compared with 92% nationally) and numeracy (74% compared with 94%).

The child protection substantiation rate and teenage birth rate were more than 2 and 3 times the national rates, respectively. There are a number of possible reasons for higher child protection substantiation rates, and it does not necessarily indicate a higher rate of child abuse and neglect in the Northern Territory (refer to *Chapter 20: Child abuse and neglect* for further detail).

The family economic situation of low-income households with children aged 0–12 years in the Northern Territory was similar to Australia overall, although it should be noted that this measure does not include households in *Very remote* areas. About one-quarter of children aged 0–14 years in the Northern Territory live in *Very remote* areas.

In the Northern Territory, 44% of all children aged 0–12 years are Indigenous (refer to *Chapter 2: Demographic overview of children in Australia*), and these children experience poorer health, education, social and economic outcomes. This, and the high proportion of children living in *Remote and very remote* areas in the Northern Territory (nearly 50%) influences results on the Headline Indicators (see also Tables 3.2 and A1.3).

How do population groups vary?

The health and wellbeing of children varies considerably among population groups, due to the influence of broad but closely related socioeconomic factors, such as education, occupation and income. These factors help to explain many of the inequalities in outcomes for children in Australia today, particularly for Indigenous children, who are more likely to come from families with lower incomes, higher rates of unemployment and lower educational attainment than other Australians (AIHW 2010a). Indigenous Australians generally have significantly more ill health than other Australians.

Children living in rural and remote areas also tend to have higher levels of disease risk factors and illness than those in urban areas. This is related to socioeconomic factors (lower levels of education, income and employment in many rural communities), less access to health services and the hazards of driving over long road distances (AIHW 2008a, 2008b).

The poorer results of a number of states and territories on the Children's Headline Indicators may, therefore, be explained by a relatively higher proportion of children in the population who are Indigenous, who live in rural and remote areas or who live in socioeconomically disadvantaged areas.

Table 3.2 summarises the differences, at the national level among selected population groups, for Indigenous children, children in remote areas and children from the lowest socioeconomic status areas.

Indigenous children, compared with non-Indigenous children, were:

- 2–3 times as likely to die as infants or due to injury, be born with low birthweight or to be developmentally vulnerable at school entry
- 5 times as likely to be born to a teenage mother
- 8 times as likely to be the subject of a child protection substantiation

- between 20–30% less likely to meet national minimum standards for reading and numeracy.

Children living in more remote areas, compared to those in *Major cities*, were:

- 2–3 times as likely to die as infants or due to injury (*Other* areas compared with *Major cities*)
- 30% more likely to be of low birthweight
- 30% more likely to be overweight or obese (*Other* areas compared with *Major cities*)
- more likely to be developmentally vulnerable at school entry (*Very remote* compared with *Major cities*) and around 40–50% less likely to meet national minimum standards for reading and numeracy (*Very remote* areas compared with *Metropolitan* areas)
- 5 times as likely to be born to a teenage mother.

Children living in the lowest socioeconomic status areas, compared to those in the highest socioeconomic status areas, were:

- almost twice as likely to die as infants and nearly 3 times as likely to die due to injury
- 30% more likely to be born with low birthweight
- 60% more likely to have dental decay
- 70% more likely to be overweight or obese
- more likely to be developmentally vulnerable at school entry.

How does Australia compare internationally?

Internationally comparable data for OECD countries are available for only 5 of the 12 Headline Indicators with available data for Australia—*infant mortality, low birthweight, dental health, injury deaths* and *teenage births*. Australia ranked ahead of the OECD average on all these indicator areas; however, in relation to other countries, Australia ranked in the:

- top third of OECD countries for dental health (8th out of 22 countries)
- middle third for birthweight (12th out of 31), injury deaths (17th out of 32) and teenage births (22nd out of 34)
- bottom third for infant mortality (23rd out of 33).

Table 3.2: Children's Headline Indicator priority areas with available data, by selected population groups

Priority area	Headline Indicator	Indigenous status			Remoteness			Socioeconomic status		
		Indigenous	Non-Indigenous/ Other	Rate ratio	Remote and very remote ^(a)	Major cities	Rate ratio	Lowest SES areas	Highest SES areas	Rate ratio
Infant mortality	Mortality rate for infants less than 1 year of age (deaths per 1,000 live births)	10.3	4.2	2.4	8.3	4.2	2.0	5.4	3.0	1.8
Birthweight	Proportion of live born infants of low birthweight (<2500 grams) (per cent)	12.3	5.9	2.1	7.8	6.0	1.3	7.0	5.5	1.3
Immunisation	Proportion of children on the ACIR fully immunised at 2 years of age (per cent)	90.2	92.8	1.0	92.9	92.3	1.0	92.5	91.8	1.0
Overweight and obesity	Proportion of children whose body mass index (BMI) score is above the international cut-off points for 'overweight' and 'obese' for their age and sex (per cent)	n.a.	n.a.	n.a.	26.6	21.0	1.3	30.6	17.5	1.7
Dental health	Mean number of decayed, missing or filled teeth (DMFT) among primary school children aged 12 years	n.a.	n.a.	n.a.	1.1	0.9	1.2	1.1	0.7	1.6
Injuries	Age-specific death rates from all injuries for children aged 0–14 years (deaths per 100,000 population)	16.9	5.8	2.9	13.2	4.1	3.2	3.9	1.4	2.7
Transition to primary school	Proportion of children developmentally vulnerable on one or more domains of the AEI (per cent)	47.5	22.4	2.1	36.2	22.5	1.6	32.3	16.3	2.0
Literacy	Proportion of Year 5 school children achieving at or above national minimum standards for reading (per cent)	66.7	93.1	0.7	49.1	93.0	0.5	n.a.	n.a.	n.a.
Numeracy	Proportion of Year 5 school children achieving at or above national minimum standards for numeracy (per cent)	74.2	95.3	0.8	59.5	95.2	0.6	n.a.	n.a.	n.a.
Teenage births	Age-specific birth rate for 15–19 year old women (births per 1,000 females)	77.5	14.2	5.5	62.2	12.3	5.1	30.9	4.3	7.2
Family economic situation	Average real equivalised disposable household income for households with children aged 0–12 years in the 2nd and 3rd income deciles (\$ per week)	n.a.	n.a.	n.a.	416	409	1.0
Child abuse and neglect	Rate of children aged 0–12 years who were the subject of a child protection substantiation of a notification received in a given year (number per 1,000 children)	41.0	5.2	7.8	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

(a) The comparison categories vary for some indicators as follows.

Overweight and obesity: Other areas (*Inner regional, Outer regional and Remote areas combined*) are compared to *Major cities*. *Very remote areas* were excluded from the National Health Survey.

Immunisation and injuries: Other areas (*Outer regional, Remote and Very remote areas combined*) are compared to *Major cities*.

Family economic situation: Other areas (*Outer regional and Remote areas combined*) are compared to *Major cities*. *Very remote areas* were excluded from the Survey of Income and Housing.

Notes

1. For data quality reasons, in some cases data for Indigenous status, remoteness and socioeconomic status are aggregated across multiple years due to small numbers. For Indigenous status, in some cases data excludes some states and territories of Australia. Refer to individual chapters for details on a specific indicator.

2. Refer to *Appendix 2: Methods* for explanation of rate ratios.

Sources: Refer to chapters 4 to 21 for information on the data source used for each Children's Headline Indicator.

Part III

HEALTH PRIORITY AREAS

The foundations for lifelong health and wellbeing are established in childhood, particularly in early childhood. Children acquire a vast range of skills and behaviours during this time and, together with biological and environmental factors, early experiences have a considerable influence on their physical and psychological health, behaviour and life achievements.

Both risk and protective factors influence the health and overall social and emotional wellbeing of children. During the antenatal period and early life, it is paramount that children receive the best start they can. Smoking during pregnancy and low birthweight are risk factors for infant mortality and ill health later in life, while breastfeeding and immunisation are protective factors for young children, promoting positive health and development.

As children grow and start to test their physical and mental capacities, injury is one of the most serious risks to their health. Many causes of injury can, however, be controlled or prevented. Childhood is an important time for establishing and reinforcing positive health behaviours, such as being physically active and consuming a healthy diet. An imbalance between the amount of energy children consume and the amount of energy they expend over an extended period can lead to overweight and obesity—a risk factor for morbidity and mortality throughout life. Good dental health is another

factor which can positively influence quality of life, while untreated dental disease can have serious health consequences.

Risk factors are often either preventable or modifiable, meaning that it is possible to influence the outcomes for all children, including the most disadvantaged. Information on child health and its determinants, including the disparities between subpopulations within Australia, is essential to assess the health and wellbeing of Australia's children, to shape health policy and to plan effective health service delivery.

The aim of *Part III* is to provide a picture of the health and wellbeing of Australia's children by reporting on the Headline Indicator priority areas relating to health status and risk and protective factors:

- smoking in pregnancy
- infant mortality
- birthweight
- breastfeeding
- immunisation
- overweight and obesity
- dental health
- social and emotional wellbeing
- injury.

4 Smoking in pregnancy

Smoking during pregnancy is an important modifiable risk factor for low birthweight, preterm birth, placental complications, birth defects, respiratory problems and perinatal mortality.

Data on smoking during the first 20 weeks of pregnancy are expected to be available for reporting for the 2011 calendar year.

Smoking during pregnancy is a significant risk factor for the mother and her unborn baby. Tobacco smoke reduces oxygen flow to the placenta and exposes the developing fetus to numerous toxins. This increases the risk of spontaneous abortion and ectopic pregnancy. It can also result in health problems for the newborn, including low birthweight, intrauterine growth restriction, prematurity, placental complications, birth defects, lung function abnormalities and respiratory symptoms and perinatal mortality (Jauniaux & Burton 2007; Julvez et al. 2007; Milner et al. 2007).

The effects of smoking during pregnancy persist into infancy and childhood. Smoking during pregnancy has been found to be associated with Sudden Infant Death Syndrome (SIDS) and conditions such as childhood cancers, high blood pressure, asthma, obesity, lowered cognitive development and psychological problems (Jauniaux & Burton 2007; Julvez et al. 2007; Kyrklund-Blomberg et al. 2006; Ng & Zelikoff 2006).

There is evidence that the more cigarettes a mother smokes, the higher the risk of poor birth outcomes

(Aliyu et al. 2007; Chan & Sullivan 2008). Stopping smoking during pregnancy is associated with improved health outcomes for infants. Quitting smoking within the first 20 weeks of pregnancy may result in birthweight similar to that of infants of non-smoking mothers (Chan & Sullivan 2008).

Rates of smoking in pregnancy are higher among Indigenous women, teenagers, single mothers and mothers with lower levels of educational attainment and socioeconomic status (Laws et al. 2006b). Of particular concern is the low quitting rate during pregnancy—only one in 15 teenagers and one in 12 mothers aged 20–34 years stopped/quit smoking during pregnancy (Chan & Sullivan 2008).

Data on smoking during the first 20 weeks of pregnancy are expected to be available for reporting for the 2011 calendar year (see Box 4.1).

Headline Indicator: Proportion of women who smoked during the first 20 weeks of pregnancy

Box 4.1: Measuring smoking in the first 20 weeks of pregnancy

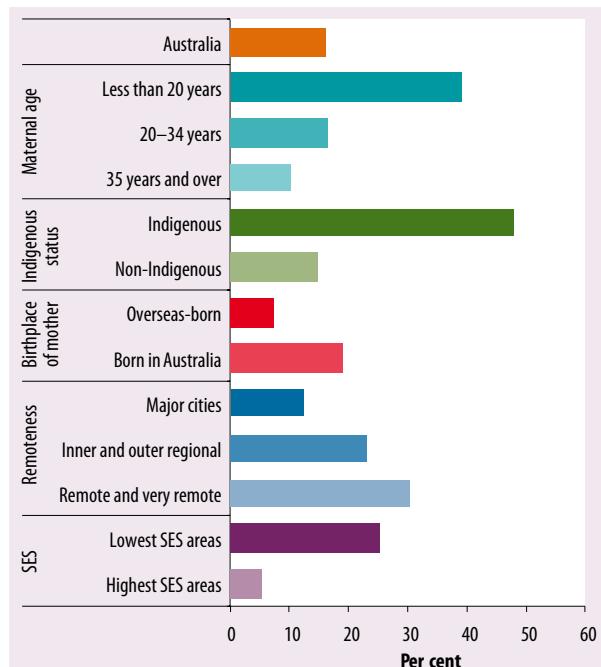
There are currently no nationally consistent data available for smoking in the **first 20 weeks of pregnancy**; however, a new data element for the **AIHW National Perinatal Data Collection (NPDC)** on smoking in the first 20 weeks of pregnancy has been developed and included in the National Minimum Data Set from 1 January 2010 (see *Appendix 3: Data sources* for more information on the NPDC).

All **states and territories** have included the new data items in their collections in 2010. Complete **national data** for the 2011 calendar year are expected to be available for reporting in late 2013.

New data items have also been included for smoking after 20 weeks of pregnancy and number of cigarettes smoked (per day after 20 weeks of pregnancy).

Data on smoking **at any time during pregnancy** has been collected in some states and territories since 2001. This chapter presents national data (excluding Victoria) on smoking at any time in pregnancy, in the absence of data on smoking in the first 20 weeks of pregnancy.

How many pregnant women smoke in Australia?



Notes

1. Data excludes Victoria.
2. Refer to Appendix 2: Methods for explanation of remoteness areas and socioeconomic status (SES).
3. Indigenous and non-Indigenous proportions are age-standardised.

Source: AIHW National Perinatal Data Collection; Table A1.4.

Figure 4.1: Women who smoked at any time during pregnancy, by selected population groups, Australia, 2008

Nationally, 16% (35,700) of the 220,500 women who gave birth in 2008 reported that they smoked at any time during their pregnancy (Figure 4.1):

- Smoking in pregnancy was most common among teenage mothers (39% of teenage mothers) and least common among mothers aged 35 years and over (10%).
- The highest rate of smoking in pregnancy was among Indigenous mothers, of whom just under half (48%) had smoked in pregnancy—more than 3 times the rate of non-Indigenous mothers (15%). These proportions have been age-standardised to take into account the younger age structure of the Indigenous population. Indigenous mothers are more likely to have children at younger ages than non-Indigenous mothers, and the likelihood of smoking in pregnancy varies according to maternal age. While it is difficult to separate the effects of interrelated risk factors, it is likely that the high rates of smoking among Indigenous women during pregnancy are associated with

a combination of relative socioeconomic disadvantage and younger maternal age.

- Mothers in *Remote and very remote* areas were more than twice as likely to have smoked during pregnancy compared with those in *Major cities* (30% and 12%, respectively). This varied according to Indigenous status—the proportion of Indigenous mothers who smoked in pregnancy did not differ in *Major cities* (49%) compared with *Remote and very remote* areas (50%). Conversely, non-Indigenous mothers in *Remote and very remote* areas were 60% more likely to smoke in pregnancy than their counterparts in *Major cities* (19% compared with 12% of mothers), although they were still less likely to smoke than Indigenous mothers.
- The higher rates of smoking in pregnancy in *Remote and very remote* areas are therefore likely to be due to the high proportion of Indigenous women in remote areas (Indigenous women comprise 30% of all women living in *Remote* and *Very remote* areas of Australia), the higher rates of smoking in pregnancy among Indigenous women generally and a higher rate of non-Indigenous mothers smoking in pregnancy in these areas.
- Mothers living in the lowest socioeconomic status (SES) areas were over 4 times as likely as those in the highest SES areas to report that they had smoked during pregnancy (25% compared with 6%).
- Between 2007 and 2008, the proportion of teenage mothers who smoked during pregnancy decreased slightly from 41% to 39%. It will be important to monitor whether this trend continues in the longer term.

5 Infant mortality

Infant mortality is a key indicator of the hygiene and health conditions prevailing in a country, and the effectiveness of the health system in maternal and perinatal health.

In 2007, infant mortality rates were twice as high among Indigenous infants and infants in *Remote and very remote areas*, compared with the national rate, and the Australian rate was twice that of the best performing OECD country.

The infant mortality rate is used internationally as a key indicator of the hygiene and health conditions in a country, and the effectiveness of the health system in maternal and perinatal health. The infant mortality rate and causes of death not only reflect circumstances around the time of death, but also provide insight into changes in social and environmental conditions, medical interventions, lifestyles and trends in underlying risk factors.

Social and economic factors are powerful determinants of infant and child mortality in both developed and developing countries (Collison et al. 2007; Marmot 2006). Infant and child mortality have been shown to be significantly associated with indicators of parental disadvantage, such as low income, long duration of income support, teenage motherhood, mother's education, number of siblings and living in socioeconomically disadvantaged areas (Yu 2008). One explanation for these patterns is the strong association between infant mortality and the accessibility and effectiveness of health services for mothers and babies, which are also affected by the economic resources of families (Freemantle et al. 2006). Infant survival can also be affected by maternal factors (such as age, number of prior pregnancies resulting in birth, birth interval), environmental

contamination, nutritional deficiency, injury, health-seeking behaviours and access to medical treatment (Mosley & Chen 2003).

Australia has shown significant progress in reducing infant and child deaths, particularly through the work of neonatal intensive care units, increased community awareness of the risk factors for sudden infant death syndrome (SIDS) and reductions in vaccine-preventable diseases through national childhood immunisation programs.

Improvements in both access to quality antenatal healthcare and maternal health through improved nutrition and reduction in risk behaviours during pregnancy (such as alcohol and tobacco use) may serve to reduce the infant mortality rate in Australia further, particularly among Indigenous infants (AHMAC 2008; AIHW 2009a; CDC 2006; Drenstedt et al. 2008).

Headline Indicator: Mortality rate for infants less than 1 year of age

Box 5.1: Measuring infant mortality

The **infant mortality rate** is measured as the number of deaths of infants less than 1 year of age in a given year, expressed per 1,000 live births in the same year.

Data on infant mortality is available from the **AIHW National Mortality Database** (see Appendix 3: Data sources for more information).

The **causes of infant deaths** for 2007 and subsequent years are subject to revision as a result of changes to the processing of coroner certified deaths. It is unlikely that these changes will alter the leading causes of death for infants (Figure 4.4). For further details see *Causes of death, Australia, 2007* (ABS 2009a).

Indigenous status data are of sufficient quality to report for 5 jurisdictions only: New South Wales, Queensland, Western Australia, South Australia and the Northern Territory. Data are not necessarily representative of excluded jurisdictions. Indigenous status data presented for 'Australia' is a combined rate for these 5 jurisdictions only.

How many Australian infants die in their first year of life?

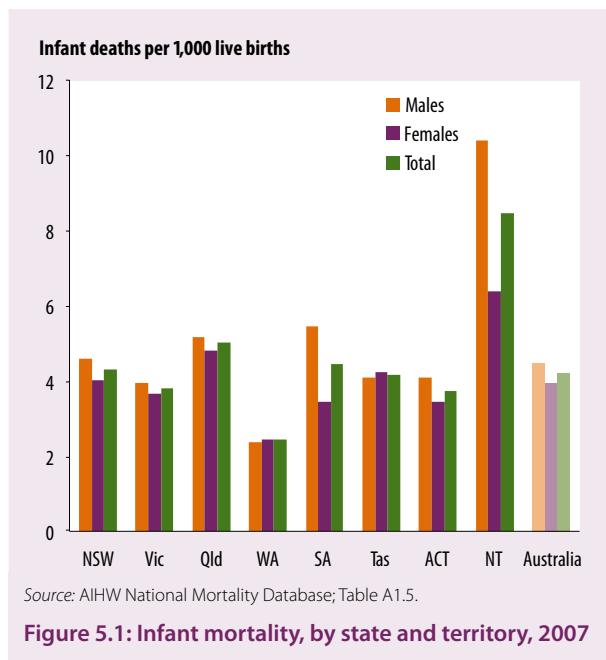


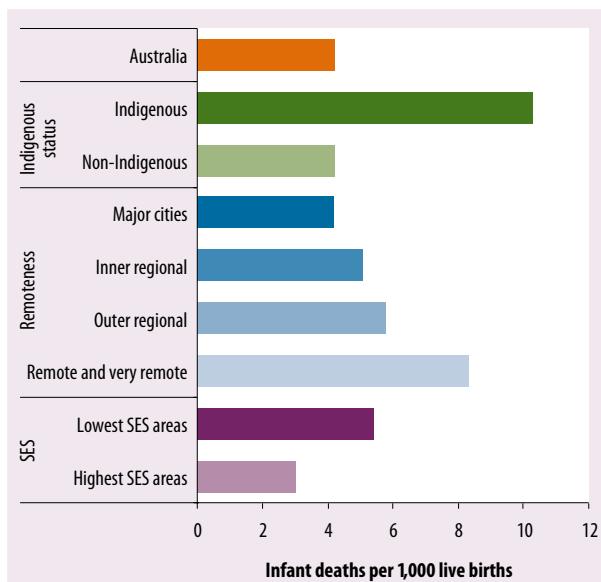
Figure 5.1: Infant mortality, by state and territory, 2007

In 2007, there were 1,203 infant deaths in Australia—a rate of 4.2 deaths per 1,000 live births. The infant mortality rate was lowest in Western Australia (2.4 deaths per 1,000 live births) and highest in the Northern Territory (8.5) and Queensland (5.0) (Figure 5.1). The remaining states and territory were similar to the national rate.

At the national level, male infants were slightly more likely to die in infancy than female infants—4.5 and 3.9 deaths per 1,000 live births, respectively. The predominance of male deaths is related to the greater number of male births—there were 106 male live births for every 100 female live births in 2007—but also reflects the greater vulnerability of male infants to infections and conditions related to prematurity and development (Drevenstedt et al. 2008).

Australia's infant mortality rate remained relatively stable between 2001 to 2007, declining from 5.3 to 4.2 deaths per 1,000 live births. This is in contrast to the rapid decline in the infant mortality rate between 1986 and 2000, from 8.8 to 5.2 infant deaths per 1,000 live births.

How do infant mortality rates vary across population groups?



Notes

- For data quality reasons, data for Indigenous status are for NSW, Qld, WA, SA and the NT only. The data are not necessarily representative of the jurisdictions excluded.
- Data for Indigenous status refer to 2003–2007; data for remoteness area refer to 2005–2007; data for socioeconomic status refer to 2006–2007.
- Refer to Appendix 2: Methods for explanation of remoteness areas and socioeconomic status (SES).

Source: AIHW National Mortality Database; Table A1.5.

Figure 5.2: Infant mortality, by selected population groups, Australia, 2007

The national infant mortality rate masks disparities among subpopulations of children, in particular, the large differences between Indigenous and non-Indigenous infants:

- During 2003–2007, around 13% of infant deaths were identified as Indigenous (576 out of 4,305) (based on combined data from 5 jurisdictions with reliable data on Indigenous mortality—New South Wales, Queensland, Western Australia, South Australia and the Northern Territory). For Indigenous infants, the infant mortality rate was more than twice that of non-Indigenous infants—10.3 and 4.2 infant deaths per 1,000 live births, respectively (Figure 5.2).
- The Indigenous infant mortality rate varied considerably across the 5 jurisdictions with reliable mortality data for Indigenous infants, from 8.0 infant deaths per 1,000 live births in South Australia to 15.5 in the Northern Territory. The infant mortality rates for non-Indigenous infants ranged from 3.2 to 4.6 deaths per 1,000 live births in Western Australia and Queensland,

respectively (Figure 5.3). Among the states and territories, the difference between Indigenous and non-Indigenous infant mortality rates ranged from twice as high to almost 4 times as high.

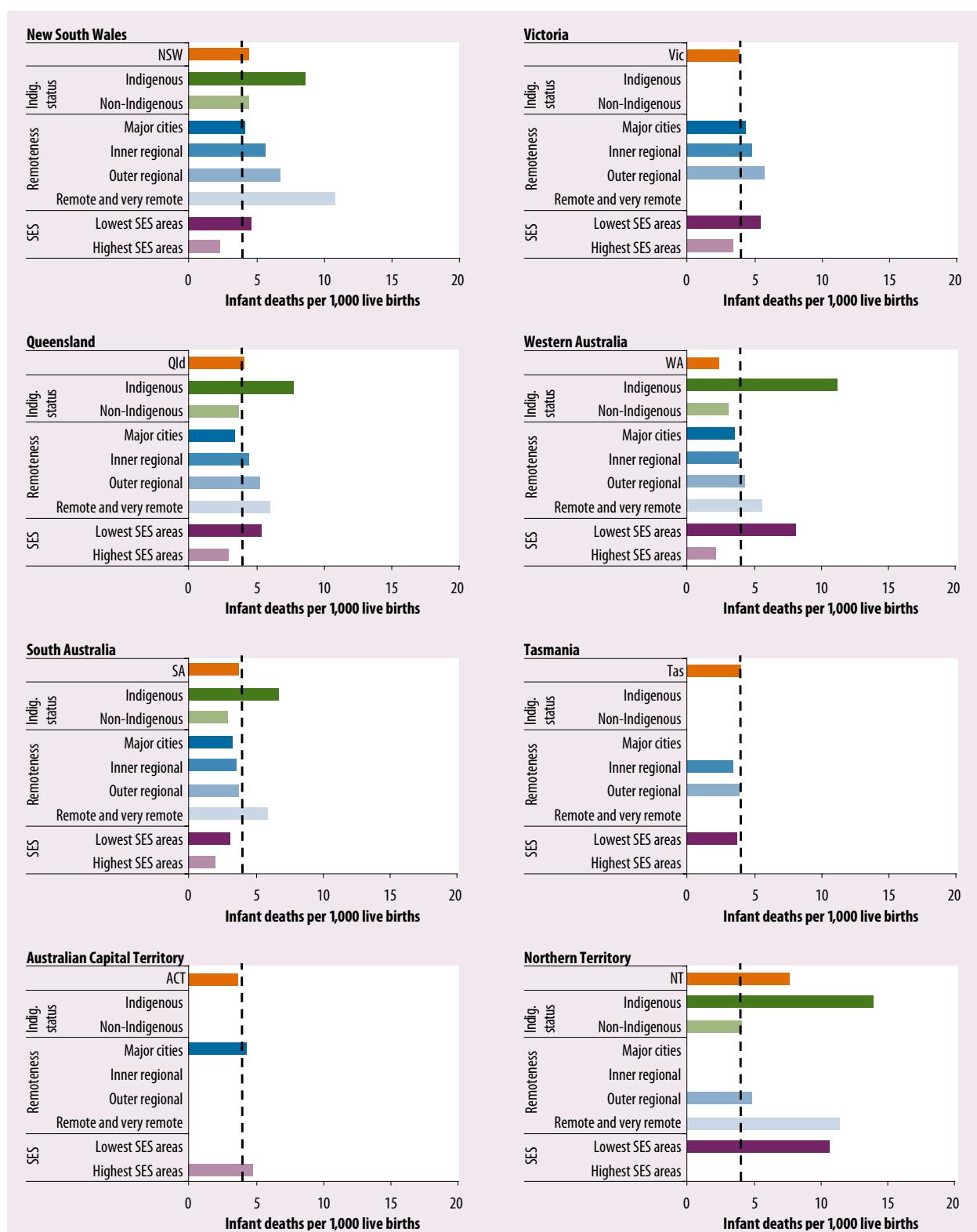
Infants living in remote areas of Australia are at greater risk of death than infants living in urban areas:

- During 2005–2007, infants living in *Remote and very remote* areas of Australia were twice as likely to die as infants living in *Major cities*—8.3 and 4.2 infant deaths per 1,000 live births, respectively (Figure 5.2). The increase in infant mortality rates with increasing remoteness is a pattern observed across all states and territories with data, and may be partly explained by the high proportion of infants in *Remote and very remote* areas who are Indigenous, and the higher death rates among this group (Figure 5.3).
- For states and territories with *Remote and very remote* areas, the infant mortality rate was lowest in Western Australia (5.7) and highest in the

Northern Territory (12.7) and New South Wales (10.6). For *Major cities*, the rate ranged from 3.7 to 4.5 infant deaths per 1,000 live births in Western Australia and the Australian Capital Territory, respectively.

Living in low socioeconomic status areas also places infants at greater risk of death in their first year of life:

- In 2006–2007, the mortality rate for infants living in the lowest SES areas (5.4 per 1,000) was nearly twice as high as for infants in the highest SES areas (3.0 per 1,000).
- A similar pattern was seen among the states and territories with sufficient numbers to report reliable rates, with the difference ranging from 1.5 to 3.5 times as high in the lowest SES areas compared with the highest SES areas.

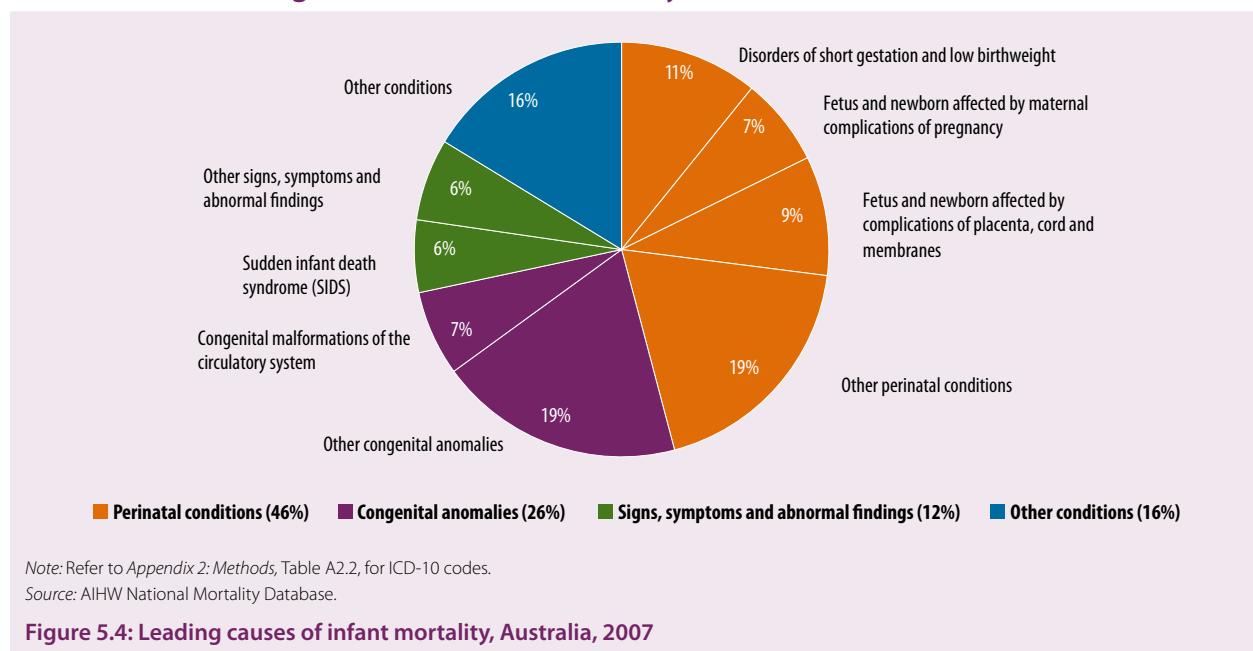
**Notes**

- Vertical dotted line indicates the rate for Australia (4.2 per 1,000).
- For data quality reasons, data for Indigenous status are for NSW, Qld, WA, SA and the NT only. The data are not necessarily representative of the jurisdictions excluded.
- Data for Indigenous status refer to 2003–2007; data for remoteness area refer to 2005–2007; data for socioeconomic status refer to 2006–2007.
- Refer to Appendix 2: Methods for explanation of remoteness areas and socioeconomic status (SES). Not all states and territories have all remoteness area categories.

Source: AIHW National Mortality Database; Table A1.5.

Figure 5.3: Infant mortality, by state and territory and population group, 2007

What are the leading causes of infant mortality?



In 2007, the leading causes of infant deaths in Australia were *Perinatal conditions*, such as disorders of short gestation and low birthweight and complications of the placenta, cord and membranes—these accounted for almost half of all infant deaths (46%) (Figure 5.4). Around one-quarter of infant deaths were due to *Congenital anomalies*, such as malformations of the circulatory system, while *Signs, symptoms and abnormal findings* was the third leading cause of death (12%)—half of which were due to sudden infant death syndrome (SIDS). These patterns were observed across all states and territories.

During 2003–2007, the leading causes of death for Indigenous infants in the 5 jurisdictions with reliable data were similar to those for non-Indigenous infants; however, the ordering of the leading causes differed slightly. *Perinatal conditions* was the leading cause accounting for 42% of Indigenous deaths, followed by *Signs, symptoms and abnormal findings* (21%) and *Congenital anomalies* (13%). Among non-Indigenous infants the leading causes were *Perinatal conditions* (47%), *Congenital anomalies* (24%) and *Signs, symptoms and abnormal findings* (11%).

How does Australia compare internationally?

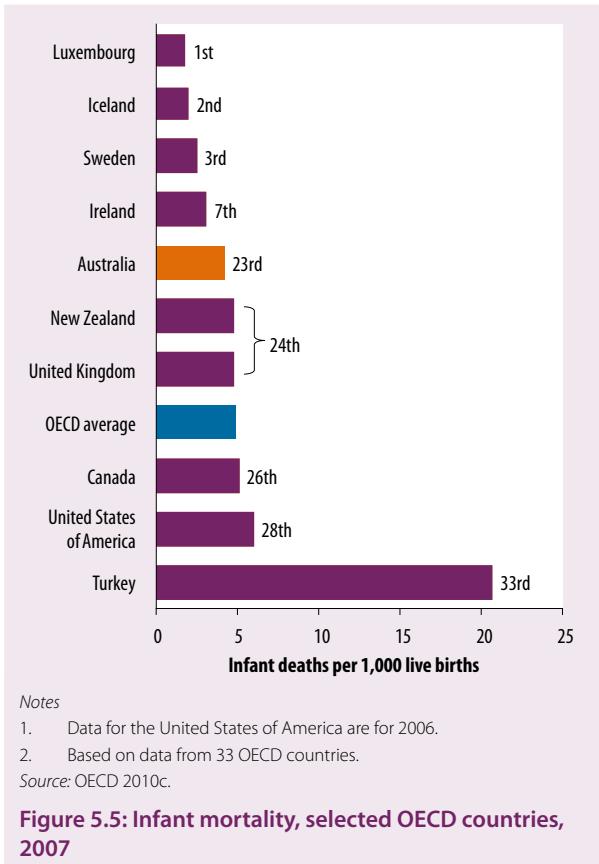
Australia's infant mortality rate ranked in the lowest third of OECD countries in 2007 (23rd out of 33 countries with available data). With a rate of 4.2

infant deaths per 1,000 live births in 2007, Australia was slightly ahead of the OECD average (4.9), but had a rate double that of the countries with the lowest rates, Luxembourg and Iceland (1.8 and 2.0, respectively) (OECD 2010c).

International statistics on infant mortality show that Indigenous infants in the United States, Canada and New Zealand have higher mortality rates than infants in the general population, but that gap is not as great as for Australia's Indigenous infants (AIHW 2011a). For the five-year period 2004–2008, the infant mortality rate for Aboriginal and Torres Strait Islander infants was around twice that for non-Indigenous infants (9.6 per 1,000 live births compared with 4.3 per 1,000 live births). The latest available data from the United States, Canada and New Zealand are outlined below:

- For the period 2001–2005, the infant mortality rate of babies born to American Indian or Alaskan Native mothers was 8.7 per 1,000 live births, compared with 6.9 per 1,000 live births for babies born to all mothers in the United States (United States Department of Health and Human Services unpublished data).
- For the period 2003–2007 in New Zealand, the mortality rate of Maori infants was 7.1 per 1,000 live births, compared with 4.5 per 1,000 live births for non-Indigenous infants (Statistics New Zealand unpublished data).

- In 2000, the mortality rate of Canadian First Nations infants was 6.4 per 1,000 live births, compared with the 2001 Canadian rate of 5.2 per 1,000 live births (Health Canada 2005).



6 Birthweight

Infants who are born with low birthweight are at greater risk of poor health, disability and death than other infants.

In 2008, 6.1% of live born infants in Australia were of low birthweight, with this proportion twice as high among babies of Indigenous mothers.

Birthweight is a key indicator of infant health and a principal determinant of a baby's chance of survival and good health. For newborns, low birthweight poses a greater risk of lengthy hospitalisation after birth, the need for resuscitation and death. Low birthweight is a risk factor for neurological and physical disabilities, with the risk of adverse outcomes increasing with decreasing birthweight (Ford et al. 2003). Children with extremely low birthweight (less than 1,000 grams) are more likely to have psycho-social problems and are at an increased risk of difficulties at school. Teenagers who had extremely low birthweight have been found to be less likely to achieve well on intellectual measures, particularly arithmetic, than their peers (Saigal 2000).

The health effects of low birthweight are not only restricted to infancy and childhood, but continue into adulthood. Research has found an increased risk of Type 2 diabetes, high blood pressure, metabolic and cardiovascular diseases and, possibly, obesity in later life among adults who were of low birthweight (Hovi et al. 2007; Phillips 2006; Tappy 2006). Behavioural interventions can be effective in addressing these disorders and the early

identification of those at increased risk provides an opportunity for disease prevention (Hovi et al. 2007).

A baby may be small due to being born early (preterm) or may be small for its gestational age (suggesting possible intrauterine growth restriction). Factors that contribute to low birthweight include maternal age, illness during pregnancy, low socioeconomic status, multiple pregnancy, maternal history of spontaneous abortion, harmful behaviours such as smoking or excessive alcohol consumption, poor nutrition during pregnancy and poor antenatal care (Laws et al. 2007; Laws et al. 2006a). Many of these risk factors are modifiable and susceptible to intervention. The increasing number of infants born to older mothers in Australia, and the disproportionate risk faced by certain population groups, makes this an important indicator of antenatal and neonatal health.

Headline Indicator: Proportion of live born infants of low birthweight

Box 6.1: Measuring low birthweight

Low birthweight is defined as a **birthweight of less than 2,500 grams**. Within this category, weights of less than 1,500 grams are defined as 'very low birthweight' and less than 1,000 grams as 'extremely low birthweight'.

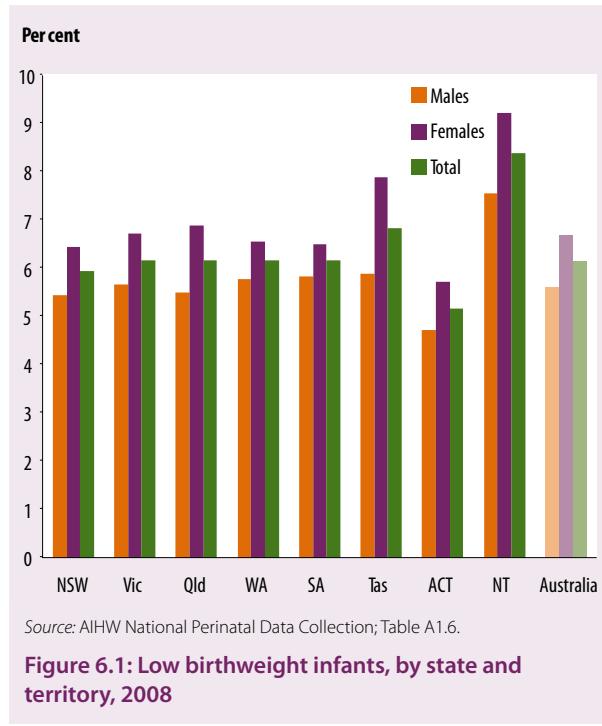
Low birthweight is reported against this indicator for **live born singleton** infants only.

Data on birthweight is available from the **AIHW National Perinatal Data Collection (NPDC)** (see Appendix 3: *Data sources* for more information on this data collection).

State and territory reporting is based on the state/territory of usual residence of the mother.

Reporting of **Indigenous status** is based on the Indigenous status of the mother. As many Indigenous babies have only one Indigenous parent, this is likely to underestimate the number of Indigenous babies since babies with an Indigenous father and non-Indigenous mother would not be captured (ABS 2007a). Work is underway to improve the identification of Indigenous babies by adding a new data element—*Indigenous status of baby*—to the Perinatal National Minimum Data Set (NMDS). The data element is anticipated to be added to the Perinatal NMDS from July 2011.

How many Australian infants are of low birthweight?



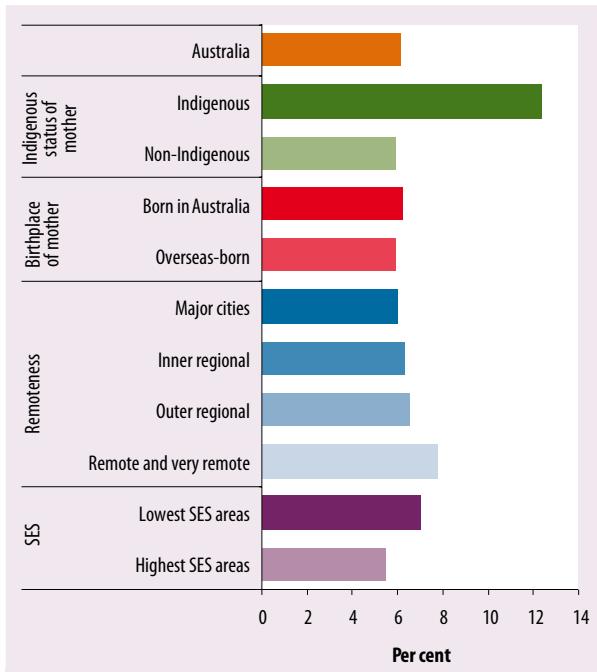
In 2008, 6.1% of live born infants (around 18,100 infants) were of low birthweight (Figure 6.1). This comprised 1.0% of infants weighing less than 1,500 grams (0.6% very low birthweight and 0.4% extremely low birthweight) and 5.2% weighing between 1,500 and 2,499 grams.

The proportion of low birthweight infants was lowest in the Australian Capital Territory (5.2%) and highest in the Northern Territory (8.4%).

At the national level, female infants were slightly more likely to be of low birthweight than male infants (6.7% and 5.6%, respectively). This is a recognised pattern documented in the literature, although the reasons for this are not clear (Kramer 1987; Ohlsson & Shah 2008). This pattern was also seen across the states and territories.

Between 2006 and 2008, the proportion of low birthweight infants was similar (6.4% and 6.1%, respectively). There was very little change in the proportion of low birthweight infants over the ten years to 2008 (AIHW 2010a; National Perinatal Data Collection, unpublished data).

How do rates of low birthweight vary across population groups?



Note: Refer to Appendix 2: Methods for explanation of remoteness areas and socioeconomic status (SES).

Source: AIHW National Perinatal Data Collection; Table A1.6.

Figure 6.2: Low birthweight infants, by selected population groups, Australia, 2008

Babies of Indigenous mothers were overrepresented among low birthweight infants, making up 8% of all liveborn low birthweight infants but only 5% of the total infant population in 2008:

- Babies of Indigenous mothers were twice as likely as those of non-Indigenous mothers to be of low birthweight (12.3% compared with 5.9%) (Figure 6.2).
- The proportion of Indigenous infants of low birthweight was highest in Western Australia (15.0%) and lowest in Queensland (10.3%) (Figure 6.3). The number of babies born to Indigenous mothers in 2008 in Tasmania and the Australian Capital Territory was not sufficient to calculate a reliable rate of low birthweight infants.
- During the period 1991–2004, there was a small widening in the gap between babies of low birthweight of Indigenous and non-Indigenous mothers at the national level (Leeds et al. 2007).

In 2008, rates of low birthweight were similar among infants of mothers born overseas and those born in Australia (5.9% and 6.2%, respectively) (Figure 6.2), and of mothers from mainly English-speaking countries and those from mainly

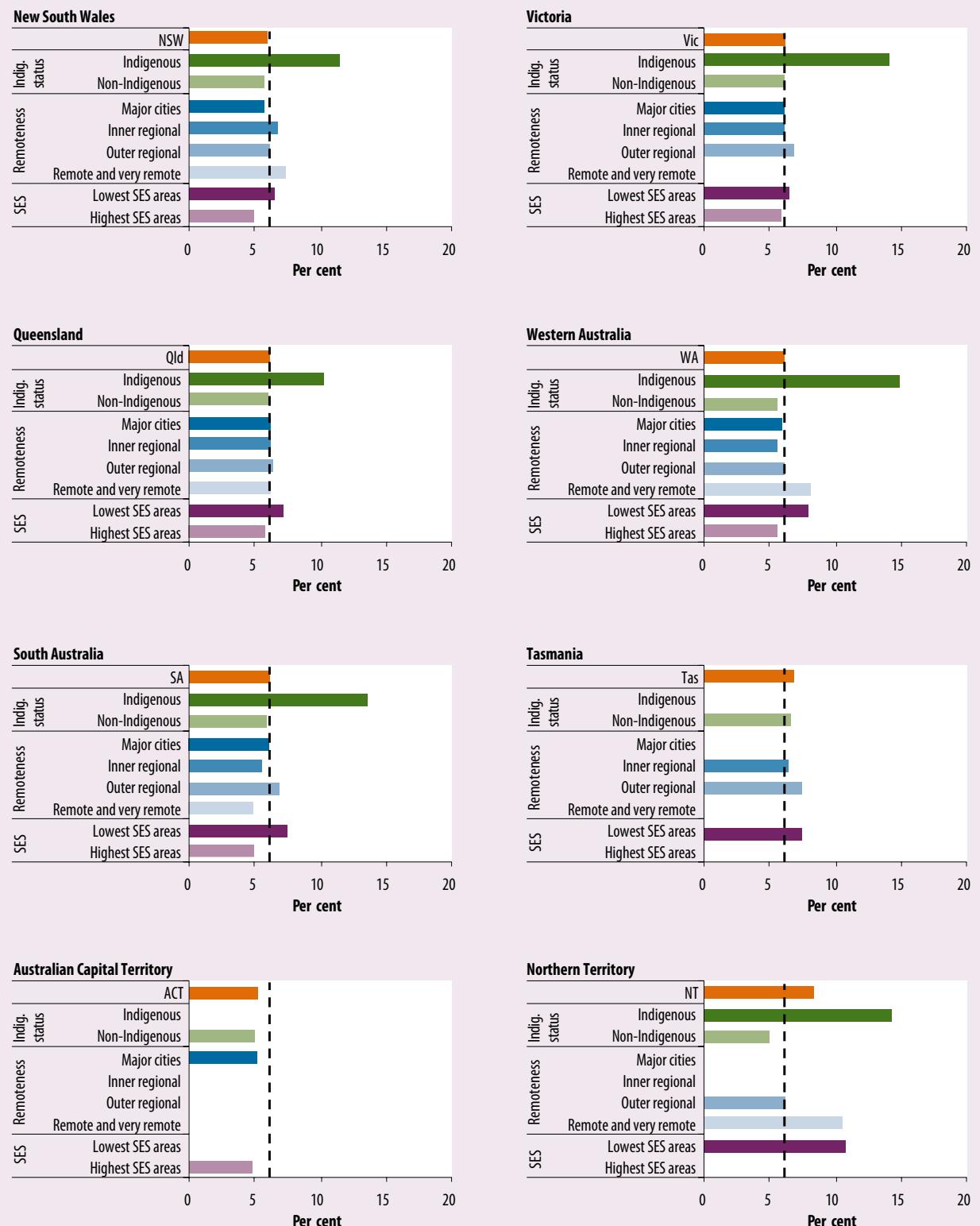
non-English-speaking countries (6.2% and 6.1%, respectively).

Infants in *Remote and very remote* areas were more likely to be of low birthweight than infants in *Major cities*, which may be due in part to the higher proportion of Indigenous infants in *Remote and very remote* areas and the higher rates of low birthweight among this group. In 2008:

- The proportion of low birthweight infants in *Remote and very remote* areas was 30% higher than for infants in *Major cities* (7.8% compared with 6.0%) (Figure 6.2).
- A similar pattern was observed in New South Wales and Western Australia; however, there was little or no difference by remoteness in Queensland or South Australia and the remaining states and territories either did not have sufficient numbers to report reliable rates or the relevant remoteness categories did not apply (Figure 6.3).
- There was a slight decrease in the proportion of low birthweight babies in *Remote and very remote* areas between 2006 and 2008 at the national level, from 9.0% to 7.8%.

Living in the lowest socioeconomic status areas also placed infants at increased risk of being born with low birthweight. In 2008:

- The proportion of low birthweight infants living in the lowest SES areas was 30% higher than for infants in the highest SES areas (7.0% compared with 5.5%) (Figure 6.2).
- This pattern was similar in New South Wales, Queensland, Western Australia and South Australia, with the rates ranging from 20–50% higher among infants in the lowest SES areas. However, there was little difference in Victoria and the remaining states and territories did not have sufficient numbers to report reliable rates (Figure 6.3).

**Notes**

- Vertical dotted line indicates the rate for Australia (6.1%).
- Not all states and territories have all remoteness area categories.
- Refer to Appendix 2: Methods for explanation of remoteness areas and socioeconomic status (SES).

Source: AIHW National Perinatal Data Collection; Table A1.6.

Figure 6.3: Low birthweight infants, by state and territory and selected population groups, 2008

How does Australia compare internationally?

Australia was slightly ahead of the OECD average for the proportion of live born infants of low birthweight. Australia ranked 12th out of the 31 OECD countries in 2007, with a rate of 6.2%, compared with an OECD average of 6.7% (Figure 6.4). The proportion of low birthweight infants was lowest in Iceland (3.8%) and Sweden (4.1%), and highest in Japan (9.7%) and Turkey (11.3%).



7 Breastfeeding

Breastmilk provides the best nutritional start for infants and promotes their healthy growth and development.

There are currently no national data available on 'exclusive' breastfeeding of infants up to 4–6 months of age; however, data are expected to be available from the Australian National Infant Feeding Survey in 2011.

Breastfeeding is important in promoting the healthy growth and development of infants and young children. Infants are born with an immune system that is not fully developed and breastmilk (containing mothers' antibodies) provides the best nutritional start. The World Health Organization (WHO) and the National Health and Medical Research Council (NHMRC) recommend that all infants should be exclusively breastfed up to 6 months of age to achieve optimal growth, development and health (NHMRC 2003; WHO 2003).

It has been difficult to establish a causal relationship between breastfeeding and health benefits for the infant, but there is convincing evidence that breastfeeding protects infants against infectious diseases. Other possible benefits include a reduced risk of SIDS, Type 1 diabetes and some childhood cancers; however, further research is required. There is conflicting evidence as to whether breastfeeding has a protective effect against asthma and other allergies in childhood (Kramer et al. 2008) although breastfeeding has been found to be protective of wheezing in infancy (AIHW 2009b). There is some evidence that being breastfed may reduce the incidence of high cholesterol, high blood pressure, obesity and diabetes later in life, as well as improving cognitive development (Horta et al. 2007).

Most Australian mothers initiate breastfeeding but many stop after several weeks or months. This may be because they have experienced difficulties, indicating that the availability of professional and peer support may be crucial factors in prolonging breastfeeding (House of Representatives Standing Committee on Health and Ageing 2007; NHMRC 2003).

The benefits of breastfeeding extend to the mother. These include quicker recovery after childbirth, reduced risk of post-menopausal hip fractures,

Type II diabetes, and maternal depression, reduced risk of ovarian cancer and possible reduced risk of breast cancer; however, further research is required (Ip et al. 2007; Productivity Commission 2009). There is also growing evidence that breastfeeding improves mother–infant bonding and secure attachment between mother and child (Allen & Hector 2005).

Social factors also play a key role. Mothers who choose to initiate and persist in breastfeeding tend to be older, better educated, living in couple families, be non-smokers in pregnancy and of above average incomes and living standards (Binns et al. 2004; Horwood & Fergusson 1998; NHMRC 2003). A mother's employment status may also influence the initiation and duration of breastfeeding, with mothers who return to work sooner less likely to initiate or continue breastfeeding than those who delay or do not return to work after the birth of their child (Cooklin et al. 2008).

Headline Indicator: Proportion of infants exclusively breastfed at 4 months of age

Box 7.1: Measuring and defining breastfeeding

Measurement of breastfeeding

Australia has had no reliable national data collection system to effectively monitor infant feeding practices, and the different definitions and terms used in existing collections make it difficult to compare studies of breastfeeding rates. The AIHW is currently developing a set of national breastfeeding indicators which are expected to be complete later in 2011. The indicators will increase the availability of more comprehensive information for reporting on and monitoring infant feeding practices.

One of the measurement difficulties in collecting breastfeeding information relates to the WHO recommendation of exclusive breastfeeding to around 6 months of age, as solids are often introduced to the infant around this time. As such, the age of infants and mothers' long-term recollection of feeding practices need to be considered in order to collect robust information on exclusive breastfeeding. For this reason, a decision was taken for the Children's Headline Indicators to restrict the age for exclusive breastfeeding to 4 months of age.

The **Australian National Infant Feeding Survey** was conducted for the first time from November 2010 to January 2011, with survey results expected to be available in mid-2011. The survey was developed to collect information from mothers and carers on infant feeding, which will provide national baseline data on a range of infant feeding practices, including prevalence data on the initiation, duration and intensity of breastfeeding. When available, the survey results will be assessed to determine whether they meet the reporting requirements for this Headline Indicator.

Defining breastfeeding

There are internationally recommended terms defining breastfeeding practices which are used to guide breastfeeding data collection and reporting (WHO 2008). These can be summarised as:

- *Exclusive breastfeeding* means that the infant receives only breast milk (including expressed milk) and medicines (including oral rehydration solutions, vitamins and minerals), but no infant formula or non-human milk.
- *Predominant or 'full' breastfeeding* means that, in addition to breast milk (including expressed milk) and medicines, the infant may receive water, or water-based drinks, tea or fruit juice (which are not recommended for infants), but no infant formula or non-human milk.
- *Complementary feeding or partial breastfeeding* means that, in addition to breast milk (including expressed milk), the infant receives solid or semi-solid food. This may include any food or liquid, including infant formula and non-human milk.
- *Breastfeeding or 'any' breastfeeding* includes all of the above definitions.
- *Ever breastfed* means that the infant has been breastfed, or received expressed breast milk or colostrum, at least once (AHMC 2009).

How many Australian babies are breastfed?

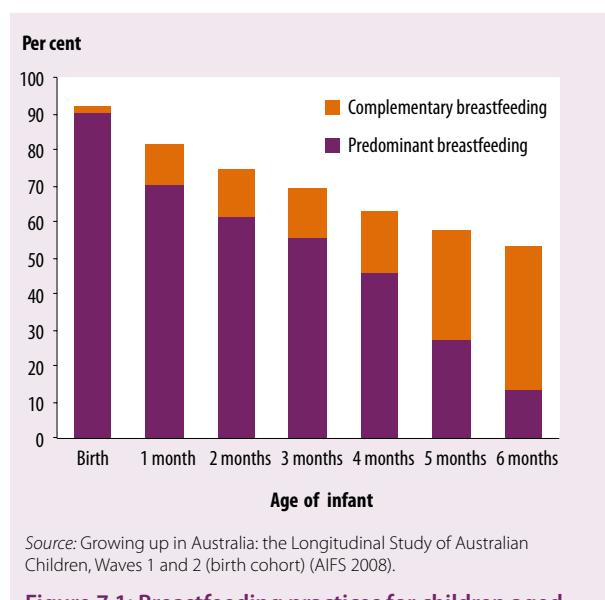


Figure 7.1: Breastfeeding practices for children aged 0–1 years, by month of age, 2004

Data that are currently available on breastfeeding in Australia include national breastfeeding data at 4 months of age from the Growing up in Australia: the Longitudinal Study of Australia's Children (LSAC) and the ABS 2004–05 National Health Survey; however, neither of these collects data for 'exclusively' breastfed infants (see Box 7.1 for definitions of breastfeeding practices).

Four Australian states—New South Wales, Victoria, Queensland and Western Australia—have collected information on exclusive breastfeeding; however, none collected this information at 4 months of age and results are not directly comparable due to different survey methods.

Despite the limitations, existing data collections show that exclusive breastfeeding practices are much less common than predominant or complementary practices, and that a rapid decline in all breastfeeding practices occurs in the first 6 months of life:

- In a cohort of 5,000 infants aged 0–1 year in 2004, the proportion of infants predominantly breastfed decreased from 91% at birth to 46% at 4 months and 14% at 6 months of age (AIFS 2008; Figure 7.1).
- Nationally in 2004–05, of children aged 1 year at the time of the survey, 86% were reported to have been breastfed (any breastfeeding) at less than 1 month of age, but only 57% were still being breastfed at 4 months and half (51%) at 6 months of age (AIHW analysis of ABS 2004–05 National Health Survey confidentialised unit record file).

There are limited available data to examine breastfeeding practices among different population groups and existing data tend not to be readily comparable:

- According to the 2000–2002 Western Australian Aboriginal Child Health Survey, over half (53%) of Indigenous infants aged less than 6 months were reported as being exclusively breastfed at the time of the survey, dropping to 7% for children aged 6 to 11 months (Zubrick et al. 2004).
- According to the ABS 2004–05 National Aboriginal and Torres Strait Islander Health Survey, an estimated 80% of Indigenous children aged 1 year in non-remote areas were breastfed (either

exclusive or complementary) at less than 1 month of age, declining to 62% at 4 months of age and 48% at 6 months of age. This compared with 88%, 58% and 52% for non-Indigenous infants respectively.

- The 2008 National Aboriginal and Torres Strait Islander Social Survey found that 51% of Indigenous infants aged under 6 months were being breastfed (any breastfeeding) at the time of the survey. Indigenous infants under six months living in remote areas were more likely to be breastfed than those living in non-remote areas (77% and 45%, respectively) (ABS 2010d). Comparative data for non-Indigenous children are not available.
- According to the 2007–2008 New South Wales Population Health Survey, exclusive breastfeeding of children at 6 months of age was statistically significantly lower for infants with mothers without tertiary qualifications (12% compared with 23% of mothers with tertiary qualifications), living in the lowest socioeconomic status areas (10% compared with 17% for the overall population) and aged younger than 25 years (8% compared with 17% for mothers aged 25 years and over) (Centre for Epidemiology and Research, NSW Department of Health 2010).

8 Immunisation

Timely and complete immunisation is essential to protect children against communicable diseases that can have serious health consequences.

As at 30 September 2010, 93% of two-year old children on the Australian Childhood Immunisation Register were fully immunised, which is above the 90% required to maintain community protection. There was little variation across population groups or between jurisdictions.

A large part of the reduction in mortality and morbidity among children over the last century was due to an increase in immunisation against infectious diseases. Immunisation has resulted in the worldwide eradication of smallpox, the widespread elimination of poliomyelitis and has the potential to protect children against a multitude of other communicable diseases, such as measles, mumps, rubella, *Haemophilus influenzae* type b (Hib) and whooping cough. Children who do not receive complete and timely immunisations remain at risk of contracting these illnesses, resulting in short- and long-term health consequences. In some cases, the long-term complications of the disease can be even more severe than the disease itself, such as permanent brain damage arising from complications of the measles virus and Hib bacteria (Andre et al. 2008; Australian Technical Advisory Group on Immunisation 2008).

Timeliness of immunisation is particularly important. Australian studies have shown that although immunisation coverage has increased over time, it decreases with the age of the child. Studies have also shown that the timeliness of childhood vaccination has not improved and that Indigenous children are most at risk of delayed vaccination (NCIRS 2008).

The Australian Childhood Immunisation Register (ACIR) was established in 1996 in response to a decline in childhood immunisation in Australia and an increase in vaccine-preventable childhood diseases. The Australian Government offers financial incentives to parents to encourage them to immunise their children and to general practices for monitoring, promoting and providing appropriate immunisation services. These initiatives have been very successful—immunisation coverage in Australia is now the highest on record and, as a result, notification rates of vaccine-preventable diseases are low.

Immunisation coverage needs to exceed 90% in order to achieve and maintain the level of community immunity required to interrupt the ongoing transmission of vaccine-preventable disease in the population (Lister et al. 1999). Coverage goals for Australia, recommended by the NHRMC in 2000, call for higher than 90% coverage of children at two years of age and near 100% coverage of children at school entry age. However, due to a small percentage of parents who choose not to immunise their children and children with medical conditions that preclude immunisation, a 100% immunisation rate is not considered to be achievable. Nationally, the percentage of children on the ACIR with no vaccines recorded was about 3% in 2007 (Hull et al. 2009).

Headline Indicator: Proportion of children on the Australian Childhood Immunisation Register who are fully immunised at 2 years of age

Box 8.1: Immunisation coverage data

The **Australian Childhood Immunisation Register (ACIR)** records information on the immunisation status of children aged less than 7 years who are enrolled in Medicare (estimated to be over 99% of children by the age of 12 months), while children not eligible to enrol in Medicare can also be added (Medicare Australia 2010; NCIRS 2007) (see *Appendix 3: Data sources* for more information on the ACIR).

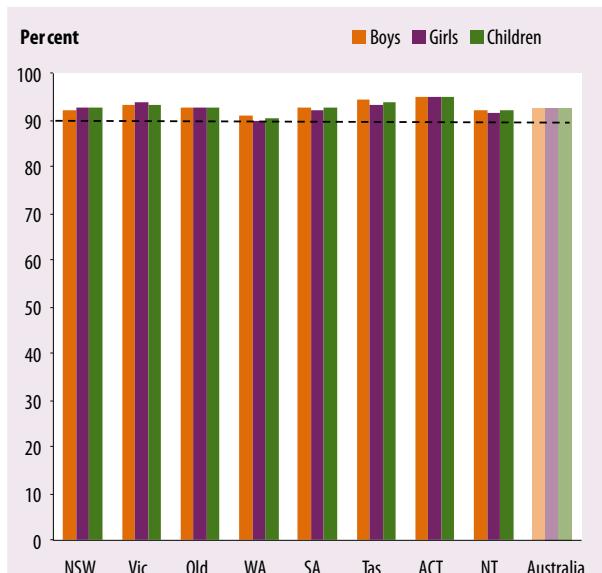
The data in this chapter are reported as at 30 September 2010 and are for children on the ACIR who are:

- **aged from 24 months up to 27 months as at 30 June 2010**
- **fully immunised for coverage reporting purposes**, that is, have received the specified number of doses of diphtheria, tetanus and pertussis (DTP); measles, mumps and rubella (MMR); poliomyelitis; hepatitis B; and Hib.

The National Immunisation Program Schedule includes vaccines for rotavirus, varicella, meningococcal C and pneumococcal conjugate in addition to the vaccines listed above, for children up to 2 years of age. In time, the ACIR coverage definition of 'fully immunised' may be expanded to cover all childhood vaccines included on the National Immunisation Program Schedule.

Records for children whose **Indigenous status** was not reported (approximately 3%) are excluded from the analysis of immunisation coverage by Indigenous status.

How many Australian children are immunised?



Note: Horizontal line shows the 90% minimum target line for community protection from communicable diseases.

Source: Australian Childhood Immunisation Register unpublished data; Table A1.8.

Figure 8.1: Two-year-old children on the ACIR who are fully immunised, by state and territory, 30 September 2010

The vast majority (93%) of 2-year-olds on the ACIR were fully immunised as at 30 September 2010 (Figure 8.1). Slightly higher rates were recorded in the Australian Capital Territory (95%) and Tasmania (94%), while rates in New South Wales, South Australia and the Northern Territory (all 92%) and Western Australia (90%) were slightly lower. Coverage of over 90% is recommended in

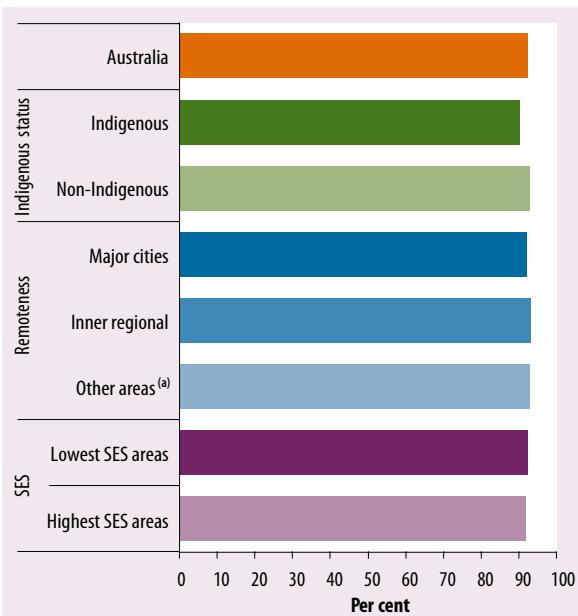
order to protect the community against ongoing transmission of vaccine-preventable diseases, and all states and territories were above this level.

Within states and territories, coverage can vary considerably by region. An analysis by statistical sub-division (SSD) showed that some SSDs had recorded coverage below the level required to provide full community protection (Hull et al. 2009). However, in some cases the differences may be due to reporting issues rather than a real difference in coverage (Hull & McIntyre 2003).

There were minimal differences in coverage for boys and girls, both nationally and within the states and territories.

Between 30 September 2008 and 30 September 2010, there was very little change in coverage rates across Australia. Longer term trends for the period 1997–2007 show increases in reported immunisation coverage from 64% in 1997 to 92% in 2003 for 2-year-olds nationally, with coverage rates subsequently remaining relatively stable. Coverage for 2-year-old children exceeded that of 1-year-olds in 2003 for the first time, and remained higher. The coverage rate for 1-year-olds fluctuated around the 91% mark for the period 2003–2007 (Hull et al. 2009).

How does immunisation coverage vary across population groups?



(a) Other areas include Outer regional, Remote and Very remote areas.

Note: Refer to Appendix 2: Methods for explanation of remoteness areas and socioeconomic status (SES).

Source: Australian Childhood Immunisation Register unpublished data; Table A1.8.

Figure 8.2: Two-year-old children on the ACIR who are fully immunised, by selected population groups, Australia, 30 September 2010

Indigenous children can be at risk of delayed immunisation (NCIRS 2008). By two years of age, many but not all Indigenous children have caught up to their non-Indigenous counterparts:

- Nationally, at 30 September 2010, immunisation coverage was lower for Indigenous than non-Indigenous 2-year-olds (90% and 93%, respectively) (Figure 8.2).
- This pattern varied across the states and territories. Immunisation coverage for Indigenous children ranged from 78% in Western Australia to 95% in the Northern Territory (Figure 8.3).
- The coverage rates for Indigenous children in Western Australia (78%) were lower than for non-Indigenous children in that state (91%). The rates also differed in the Northern Territory; however, the pattern there was reversed with the rate for Indigenous children (95%) higher than for non-Indigenous children (90%).
- Nationally, and for most states and territories, immunisation coverage for Indigenous children remained much the same between 2008 and 2010. In Western Australia, coverage for Indigenous

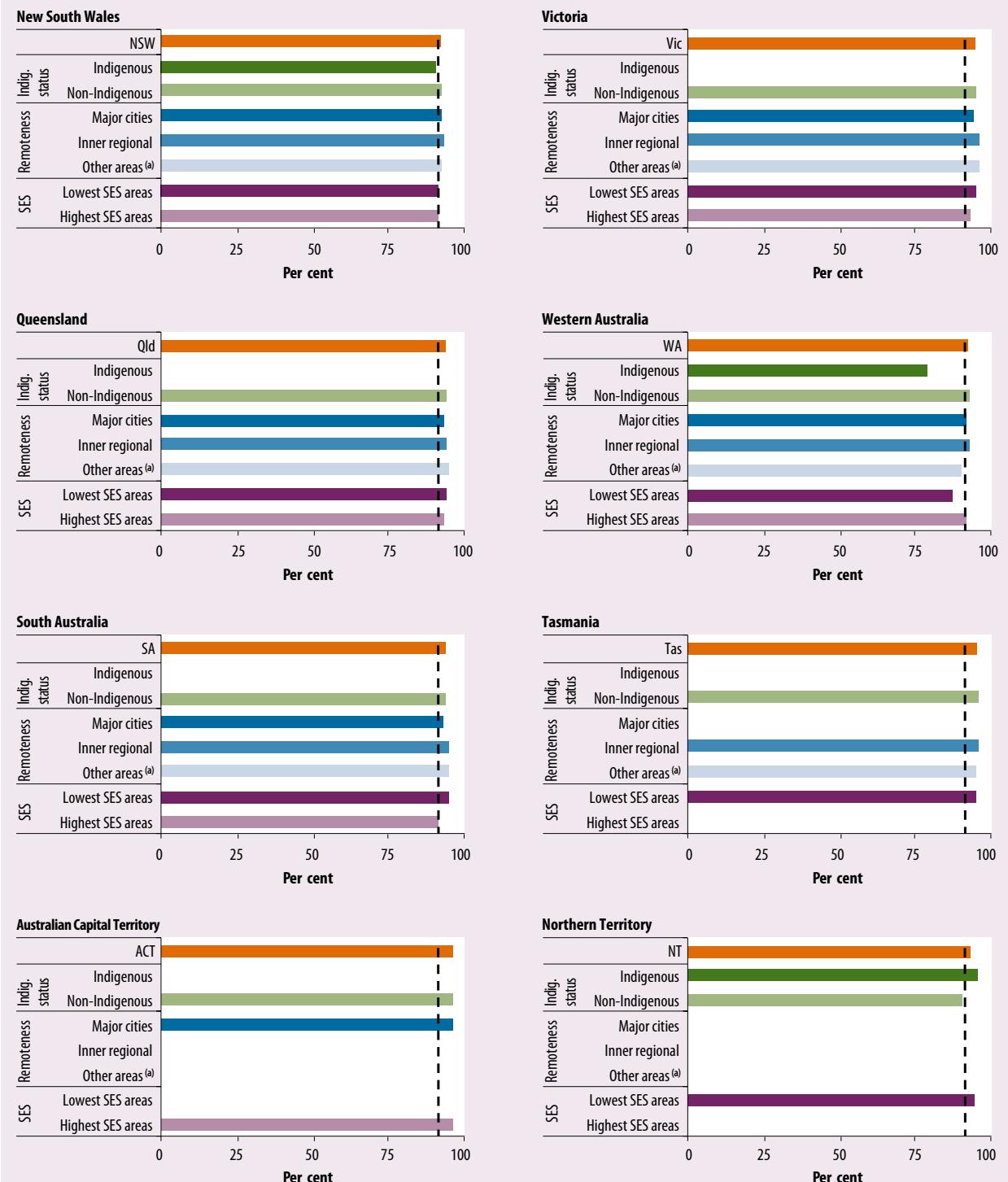
children decreased from 86% in 2008 to 78% in 2010 after an increase to 91% in 2009. In the Northern Territory, coverage for non-Indigenous children decreased from 95% to 90%.

Children living in regional and remote areas of Australia have similar immunisation coverage rates to children living in the major cities:

- Nationally, at 30 September 2010, 92% of 2-year-old children living in *Major cities* and 93% of children living in *Other* areas were fully immunised (Figure 8.2).
- Coverage was slightly higher in *Other* areas compared with *Major cities* in Victoria (95% and 93%, respectively), Queensland (94% and 92%) and South Australia (94% and 92%); however, in Western Australia, coverage was slightly higher in *Major cities* (91%) compared with *Other* areas (89%) (Figure 8.3).
- Between 2008 and 2010, there was little change in immunisation coverage rates across remoteness areas in the jurisdictions.

Children aged 2 years living in the lowest socioeconomic status (SES) areas were not generally disadvantaged in terms of immunisation coverage. Rather, children living in the highest SES areas were generally slightly less likely to be fully immunised:

- Nationally, at 30 September 2010, 93% of children living in the lowest SES areas were fully immunised, compared with 92% of children living in the highest SES areas (Figure 8.2).
- Mirroring the national picture, there were small differences in immunisation coverage between children living in the lowest and highest SES areas in Victoria (93% and 92%, respectively) and South Australia (93% and 91%). However, Western Australia had lower levels of coverage in the lowest SES areas (86%) rather than in the highest SES areas (90%). There were no differences in the other states and territories (Figure 8.3).



(a) Other areas include Outer regional, Remote and Very remote areas.

Notes

- Vertical dotted line indicates the rate for Australia (93%).
- Indigenous rates for Victoria, South Australia, Tasmania and the Australian Capital Territory, and rates for high SES areas in Tasmania and the Northern Territory are suppressed due to small cell sizes.
- Not all states and territories have all remoteness area categories.
- Refer to Appendix 2: Methods for explanation of remoteness areas and socioeconomic status (SES).

Source: Australian Childhood Immunisation Register unpublished data; Table A1.8.

Figure 8.3: Two-year-old children on the ACIR who are fully immunised, by state and territory and selected population groups, 30 September 2010

How does Australia compare internationally?

Internationally comparable data are only available for children aged 1 year, rather than 2 years as reported in the rest of this chapter.

Although Australia's immunisation coverage was high for 1-year-old children (93%) in 2008, it was slightly below the OECD average of 94% and ranked in the bottom third of OECD countries (21st out of 30 countries) (Figure 8.4). Canada (93%), United Kingdom (91%) and New Zealand (88%) also fell short of the OECD average. Hungary and Slovakia were ranked equal first with coverage of 99%, while Denmark ranks 30th with coverage of 79%.



Note: Based on an average of the proportions of children immunised at 1 year of age against diphtheria, tetanus, and pertussis (DTP) (3 doses); measles; *Haemophilus influenzae* type b (Hib) (3 doses); and polio (3 doses). Excludes Hepatitis B. Different measurement techniques for coverage may affect comparability of the data, and the results will be affected by the policies of different countries, such as compulsory vaccination.

Source: UNICEF 2009b.

Figure 8.4: Immunisation coverage for children aged 1 year, selected OECD countries, 2008

9 Overweight and obesity

Overweight and obese children are at risk of serious health conditions, such as asthma, cardiovascular conditions and Type 2 diabetes, in both the short and long term.

Over one-fifth (23%) of Australian children aged 5–14 years were estimated to be overweight or obese in 2007–08—17% overweight but not obese, and 6% obese.

Overweight and obesity increase a child's risk of poor physical health and are risk factors for morbidity and mortality in adulthood. Obese children have a greater risk of developing a range of short- and long-term conditions such as asthma, Type 2 diabetes, cardiovascular conditions and certain cancers, than non-obese children (Guo et al. 2002; Summerbell et al. 2005; Whitlock et al. 2005). In addition to physical health problems, overweight and obese children frequently experience discrimination, victimisation and teasing by their peers. This may contribute to poor peer relationships, school experiences and psychological wellbeing, particularly among older overweight or obese children (Griffiths et al. 2006; Hayden-Wade et al. 2005; Sawyer et al. 2006).

All children naturally gain body weight as they grow and develop; however, for excess weight gain to occur, an imbalance must exist between the amount of energy children are consuming and the energy they expend over an extended period of time. Additionally, the interplay between an individual's genetic makeup and their environment are thought to be important factors in excess weight gain (Chan & Woo 2010).

Social and economic determinants can also help to create an environment that promotes overweight and obesity among children and adults. Changing dietary habits and health behaviours, together with the availability of inexpensive, high-energy, low-nutrition food and drink, mean that individuals may find it difficult to expend through physical activity the energy that they consume in their diet. This, combined with other factors such as the increasing popularity of sedentary activities (for example, playing computer games or watching television), increased marketing of sedentary consumer products, availability of child-friendly green spaces and lack of engagement in recreational activities, presents barriers to children and adults developing

and maintaining healthy lifestyles and body weight (Anderson & Butcher 2006).

Early childhood is an ideal period for intervention, particularly as childhood obesity is closely linked to food preferences and dietary habits, which are firmly established in the early years of life (Benton 2004; Daniels et al. 2009). Family environment and parental behaviour in early feeding practices have a strong modifying effect on children's eating behaviour and, therefore, on patterns of childhood obesity (Benton 2004). Prevention of overweight and obesity is preferable (Summerbell et al. 2005), and while interventions that combine dietary, physical activity and behavioural components appear to be effective in reducing weight in children once they are overweight, further research is necessary (Oude Luttikhuis et al. 2009).

Headline Indicator: Proportion of children whose body mass index (BMI) score is above the international cut-off points for 'overweight' and 'obese' for their age and sex

Box 9.1: Measuring overweight and obesity

Body mass index (BMI) is used to indirectly measure overweight and obesity in the child population. It is calculated as the ratio of weight in kilograms divided by height in metres squared (kg/m^2).

At the population level, **international cut-off points** are used to determine the number of children either overweight or obese based on their age and sex (Cole et al. 2000). In children, BMI changes substantially with age and can differ between boys and girls, rising steeply in infancy, falling during the preschool years and increasing during adolescence and adulthood (DoH 2009).

Many surveys that collect information on overweight and obesity are based on child- or parent-reported height and weight. However, self-reported data may differ from that obtained by direct measurement—previous studies have indicated that people tend to underestimate their weight and overestimate their height (ABS 1995).

There are currently three national surveys that collect information on measured height and weight:

- ABS 1995 National Nutrition Survey
- ABS 2007–08 National Health Survey
- 2007 Australian National Children's Nutrition and Physical Activity Survey.

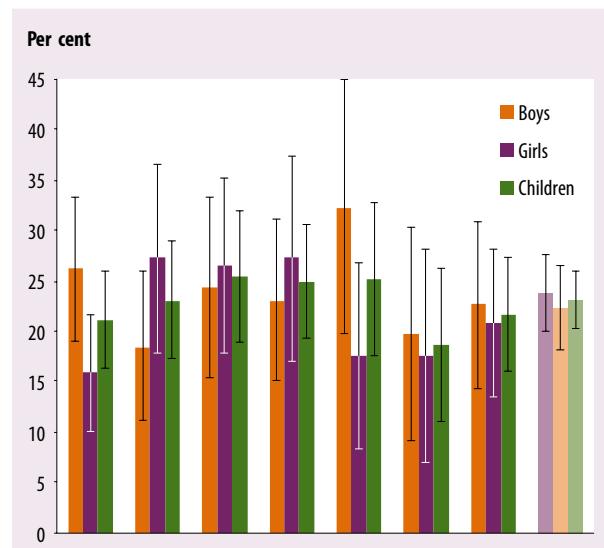
The ABS 2011–12 Australian Health Survey will collect physical measurements (height and weight) of children, and will help to clarify overweight and obesity trends among children.

The **ABS 2007–08 National Health Survey** collected **physical measurements** of the height and weight of children aged 5–14 years in all states and territories of Australia (excluding Very remote areas; see Appendix 3: *Data sources* for further information on this survey). **Northern Territory** data are not published separately due to the small sample size, but contribute to the total for Australia. For further information, see *National health survey: summary of results, 2007–08* (ABS 2009h).

Small sample sizes when disaggregated by **socioeconomic status and remoteness area** may mean that a real difference may exist between groups, even though the data may not show statistically significant differences.

Comparable data are not available for Indigenous children.

How many Australian children are overweight or obese?



Note: Data not presented for the Northern Territory due to small sample size, but estimates for the Northern Territory are included in data for Australia.
Source: ABS 2007–08 National Health Survey, unpublished data; Table A1.9b.

Figure 9.1: Overweight or obese children aged 5–14 years, by state and territory, 2007–08

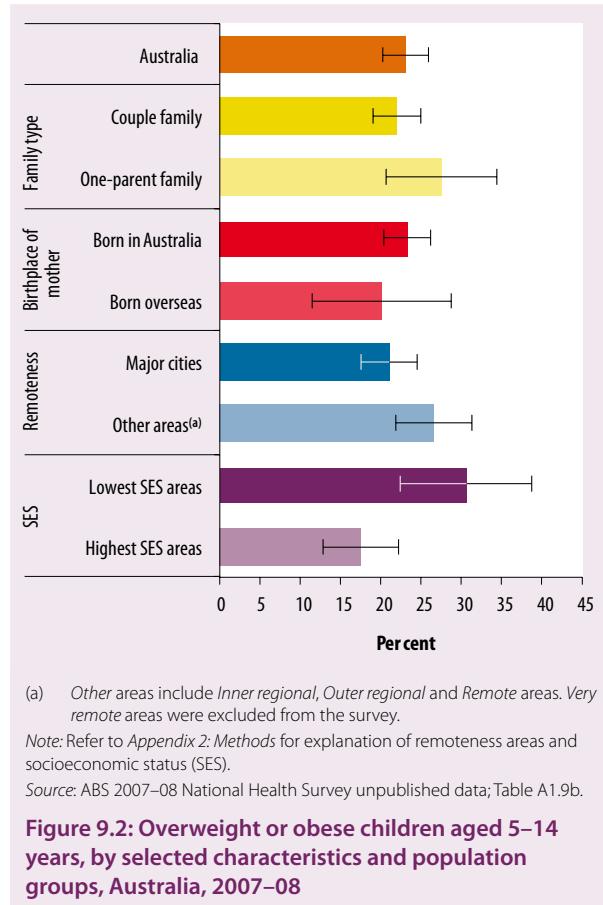
In 2007–08, an estimated 430,000 children aged 5–14 years, or over one-fifth (23%) of the child population, were overweight or obese. This was made up of 17% of children who were overweight but not obese, and 6% who were obese. The proportion of children who were overweight or obese ranged from 19% in Tasmania to 25% in Queensland, South Australia and Western Australia. The difference between boys (24%) and girls (22%) was not statistically significant (Figure 9.1).

The prevalence of overweight and obesity was similar for children living in couple families (22%) and for those living in one-parent families (28%) (Figure 9.2). Prevalence also did not vary significantly for children living in households where the survey reference person was born overseas (20%) compared with those born in Australia (23%).

Among Australian children, estimates from large-scale national surveys for children aged 5–12 years show only a slight increase in measured overweight and obesity, from 21% in 1995 to 22% in 2007–08 (ABS 2009h). A meta-analysis by Olds et al. (2010), based on data on measured BMI from localised, state and territory and national surveys, suggests that the prevalence of overweight and obesity

among those aged 2–18 years has plateaued or only slightly increased over the past ten years (at 21–25% for overweight and obesity and 5–6% for obesity alone). However, further research is necessary in this area. The Australian Health Survey (see Box 9.1) will help to clarify trends.

How does overweight and obesity vary across population groups?



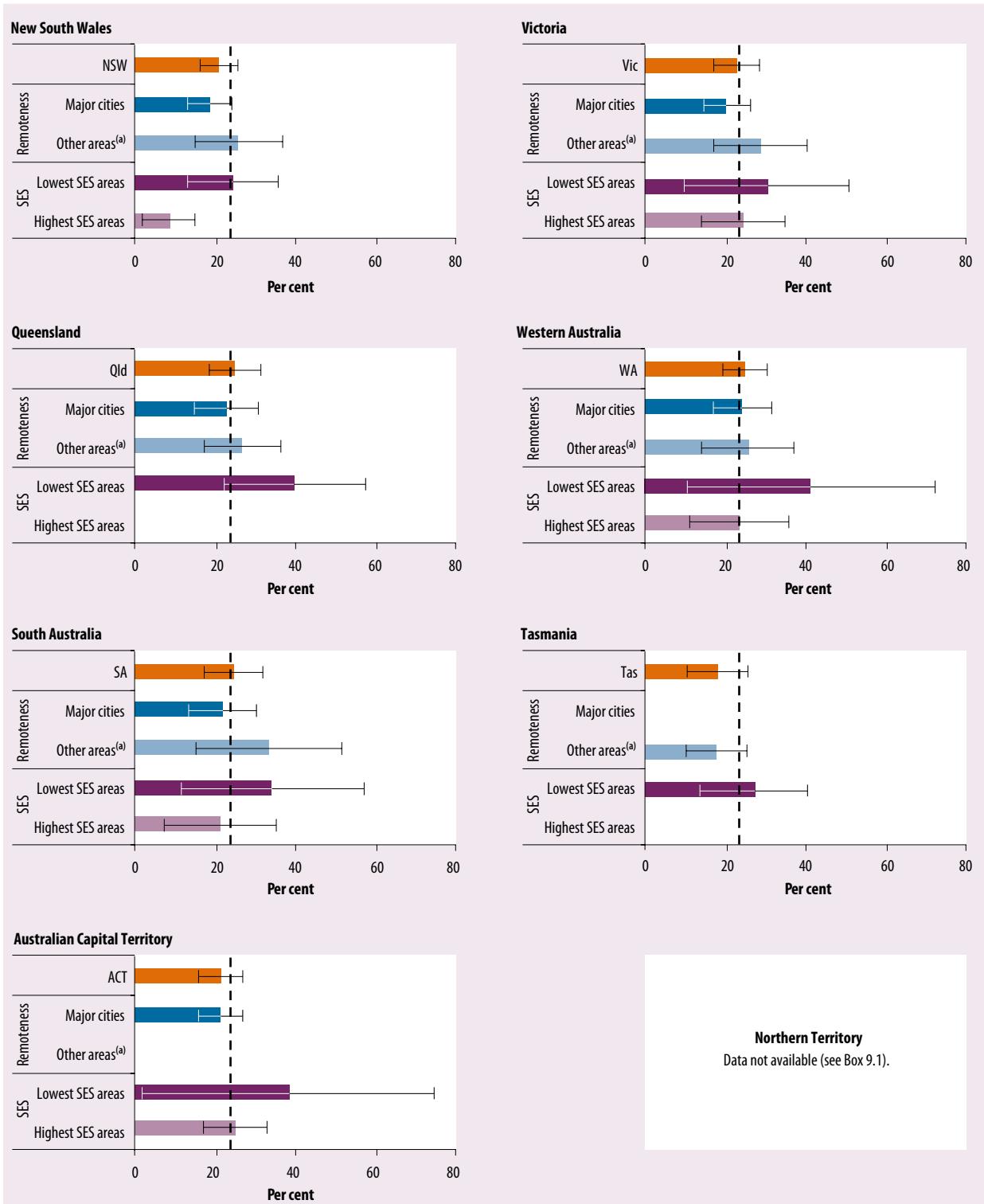
The disparities seen among population groups for other health indicators presented in this report (and in reports on the health of the whole population, for example, AIHW 2010a) were not always reflected in the available overweight and obesity data. The lack of statistically significant differences between population groups may be due to the small sample size of the survey:

- For children aged 5–14 years living in areas outside of the major cities, 27% were overweight or obese, compared with 21% for those living in *Major cities* at the national level. The survey excluded those living in *Very remote* areas of Australia. The differences at national and state and territory levels were not statistically significant (Figure 9.3).

- Children living in the lowest socioeconomic (SES) areas were more likely to be overweight or obese (31%) than those living in the highest SES areas (18%), at the national level. This pattern was also evident in New South Wales (25% and 9%, respectively).

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

There are no internationally comparable data available for overweight and obesity among children, and limited data for young people. Measured overweight and obesity data are currently available between 2003 and 2007 for 11 OECD countries for 15-year-olds. With a rate of 24%, Australia is ranked 7th, similar to the OECD average (23%), but considerably higher than the countries with the lowest rates of overweight and obesity—Czech Republic (13%), Korea (14%), the Netherlands (16%) and France (17%). The highest rates were in New Zealand and Mexico (both 33%) (OECD 2009).



(a) Other areas include *Inner regional*, *Outer regional* and *Remote* areas. Very remote areas were excluded from the survey.

Notes

1. Vertical dotted line indicates the value for Australia (23%).
2. Not all states and territories have all remoteness area categories.
3. Refer to Appendix 2: Methods for explanation of remoteness areas and socioeconomic status (SES).

Source: ABS 2007–08 National Health Survey unpublished data; Table A1.9b.

Figure 9.3: Overweight or obese children aged 5–14 years, by state and territory and selected population groups, 2007–08

10 Dental health

The dental health of children affects their wellbeing and self-esteem. Untreated dental decay is a risk factor for infection, and chronic disease in adult life. Most dental diseases are, however, preventable.

In 2003–2004, 12-year-olds had, on average, one decayed, missing or filled tooth. Dental decay was nearly 60% higher among children in the lowest SES areas compared with those in the highest SES areas.

Good oral health can have positive effects on quality of life, social interactions and self-esteem (Petersen 2003; Watt 2005). Conversely, dental disease can cause pain, discomfort, difficulty sleeping and difficulties in eating which can lead to poor nutrition (Low et al. 1999; Watt 2005). Poor oral health may also be associated with increased incidence of chronic disease in later life (Petersen 2003; Watt 2005).

Dental caries (tooth decay) results from a complex interplay of genetic and biological factors, the social and physical environment, health behaviours and dental and medical care (Fisher-Owens et al. 2007). Untreated dental decay can adversely affect children's growth, facilitating infection and the systemic spread of disease (Berg & Coniglio 2006; Low et al. 1999). A risk factor for decay in permanent teeth is early childhood caries (Low et al. 1999).

Most dental diseases are largely preventable (Petersen 2003; Watt 2005), but although the prevalence of caries in Australian children over the past 20 years has decreased, risk factors associated with diet, hygiene and oral care remain (Kruger et al. 2005). Early preventive strategies include parental counselling about diet, establishing sound oral hygiene practices, appropriate use of fluorides and the avoidance of transmission of bacteria from parents to children (Berg & Coniglio 2006).

Young children do not always receive adequate dental care and most Australian children do not attend an oral examination until they enrol in School Dental Services at age 5 (Kruger et al. 2005). Cost, access and parental awareness may be contributing factors (Kruger et al. 2005). Children with poor oral health may demonstrate problems in behaviour, peer interaction and school absences, which in turn can negatively affect academic

performance (Berg & Coniglio 2006; Low et al. 1999; Petersen 2003).

Poor dental health is associated with low socioeconomic status, one-parent families, younger or less-educated mothers, ethnicity and living in rural/remote areas (Gilbert et al. 2003; Hallett & O'Rourke 2003; Kruger et al. 2005; Watt 2005). This association is likely to be due to low education levels, lack of access to services and poorer food choice and availability (Kruger et al. 2005; Roberts-Thomson et al. 2008). Aboriginal and Torres Strait Islander children are particularly at risk, and have twice as much untreated decay as other children (Kruger et al. 2005).

Community water fluoridation is an effective way to prevent dental caries (Armfield et al. 2007). However, not all parts of Australia have naturally occurring or added fluoride in the public water supply, and this may result in higher dental decay in these areas.

Headline Indicator: Mean number of decayed, missing or filled teeth (DMFT) among primary school children aged 12 years

Box 10.1: Measuring dental health

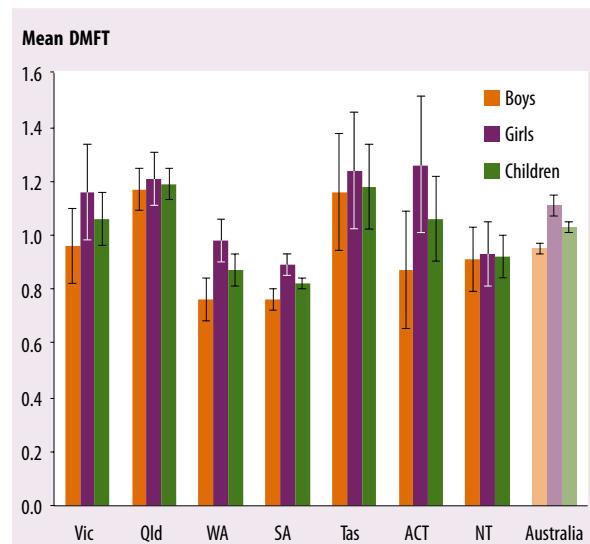
The number of teeth decayed, missing or extracted due to decay or teeth with fillings, is an important indicator of dental health. The **number of decayed, missing or filled teeth** is expressed as the **dmft** (for deciduous or baby teeth) or the **DMFT** (for permanent teeth). This chapter reports on the mean (average) DMFT, the appropriate measure for 12-year-old children. The **mean DMFT score includes children with no decay**.

Data on the dental health of Australian children is available from the **Child Dental Health Survey** (see Appendix 3: Data sources for more information on this survey). Data in this chapter are for 2002 and 2003–2004 (combined).

There are a number of **limitations** with the information that can be reported from the Child Dental Health Survey:

- Data for **New South Wales** are not reported for 2002 or 2003–2004 due to non-representativeness of the sample (see Armfield et al. 2009a for further details). This could have a considerable impact on the overall picture of children's dental health and on trend data, as around one-third of Australia's children live in New South Wales.
- Data on **Indigenous status** are only available for South Australian children in 2003–2004 due to the increasingly limited recording of this item by state and territory school dental services (Armfield et al. 2009a). For 2002, data on Indigenous status were available for Victoria, Queensland, South Australia and the Northern Territory only.
- Differences in **state and territory data** may reflect several factors and may not necessarily be representative of the oral health of all children in a particular jurisdiction. Apparent differences in oral health may be the result of differences between states and territories in overall coverage, level of enrolment, dental fees, targeting of services, access to services in rural or remote areas or data recording practices between jurisdictions (Armfield et al. 2009a).
- Any reported **changes between 2002 and 2003–2004** should be treated with caution as real change in dental health needs to be monitored over a longer period of time.

How much tooth decay do Australian children experience?



Note: Data not available for New South Wales (see Box 10.1).

Source: Armfield et al. 2009a; 2003–2004 Child Dental Health Survey unpublished data; Table A1.10.

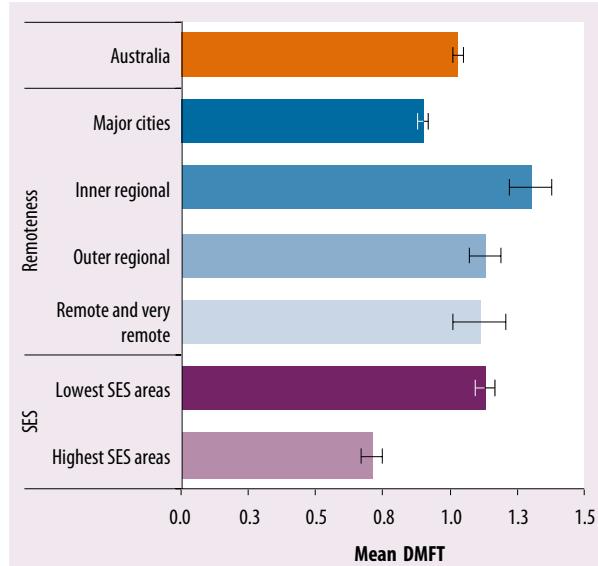
Figure 10.1: Mean DMFT among 12-year-olds, by state and territory, 2003–2004

In 2003–2004, the majority (58%) of Australian 12-year-olds had no dental decay. The mean number of decayed, missing and filled teeth (DMFT) was 1.0 (including children with no decay) (Figure 10.1). Dental decay was lowest in South Australia (0.8) and highest in Queensland and Tasmania (1.2).

Girls had a slightly higher mean DMFT score than boys at the national level (1.1 compared with 1.0). This pattern was also observed in South Australia, Western Australia and the Australian Capital Territory. The higher decay experience among girls is a recognised pattern, which may be explained by the earlier eruption of teeth among girls compared with boys and, consequently, a longer period of exposure to decay-causing factors (Lukacs & Largaespada 2006).

Nationally, the mean DMFT score remained steady between 2002 and 2003–2004, and the changes in the jurisdictions were too small to be of note. However, trend data over a longer period from 1990 to 2003–2004 indicate that dental decay among 12-year-olds declined from 1.4 in 1990 to 0.9 in 1997, but has remained relatively stable through to 2003–2004 (Armfield et al. 2009b).

How does children's tooth decay vary across population groups?



Note: Refer to Appendix 2: Methods for explanation of remoteness areas and socioeconomic status (SES). Socioeconomic status is based on the ABS 2001 SEIFA Index of Relative Disadvantage.

Source: Armfield et al. 2009a; 2003–2004 Child Dental Health Survey unpublished data; Table A1.10.

Figure 10.2: Mean DMFT among 12-year-olds, by selected population groups, Australia, 2003–2004

Children living in regional and remote areas are at increased risk of dental decay compared with those living in *Major cities*:

- In 2003–2004, the mean DMFT for children living in *Inner regional*, *Outer regional* or *Remote and very remote* areas (1.3, 1.1, and 1.1 respectively) was higher than for those living in *Major cities* (0.9) (Figure 10.2).
- Higher decay levels were also generally experienced in regional and remote areas of the jurisdictions, when compared with urban areas. Queensland was an exception, with dental decay highest in *Inner regional* areas (1.6), compared with *Major cities* (1.1), *Outer regional* (1.0) and *Remote and very remote* areas (0.9) (Figure 10.3).

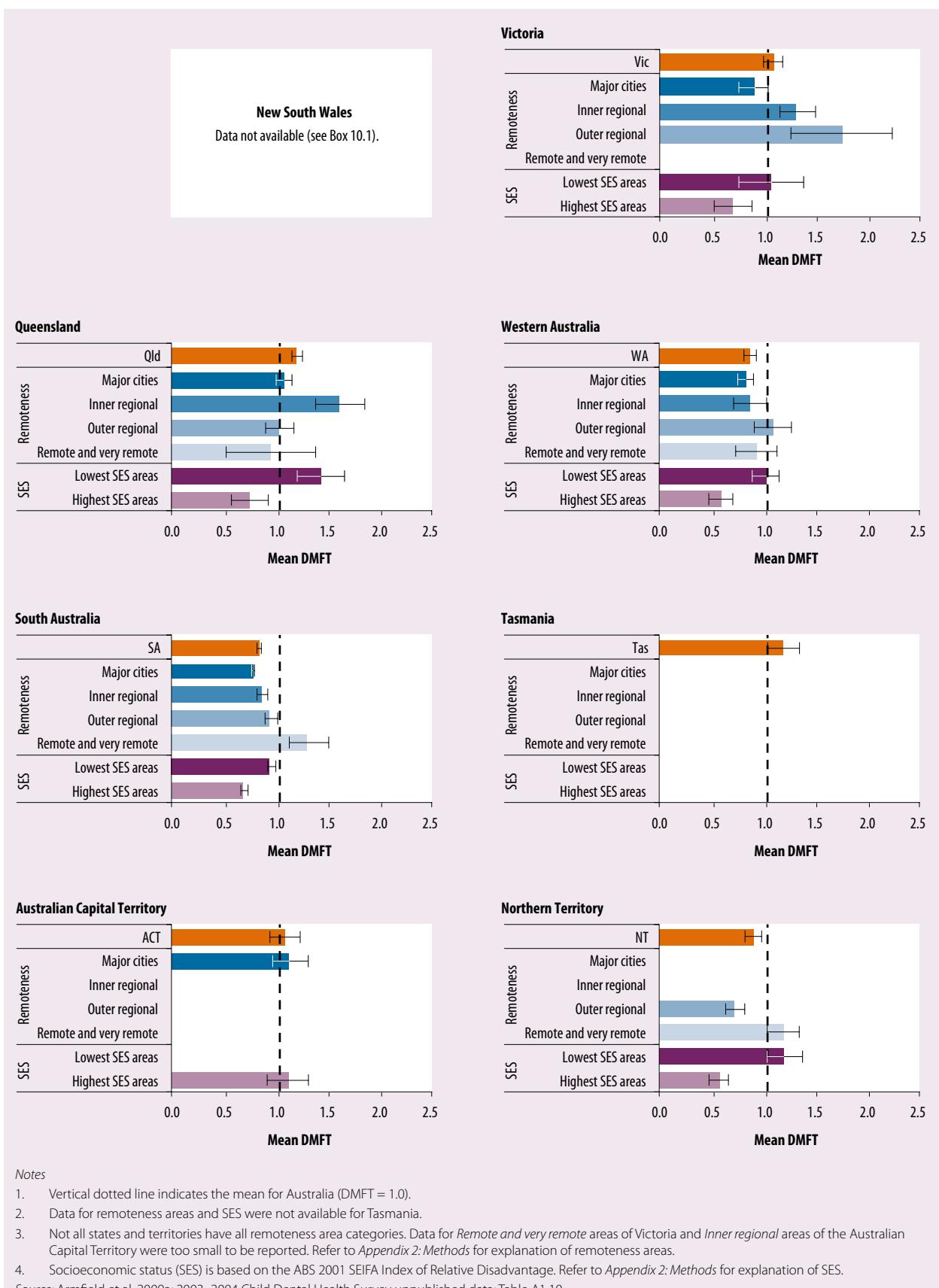
- Between 2002 and 2003–2004, dental decay levels were relatively stable across remoteness areas at the national level and within states and territories. Differences were observed in Queensland, where the mean DMFT in *Remote and very remote* areas in 2003–2004 (0.9) was lower than in 2002 (2.0), and in the Northern Territory, where the mean DMFT was higher in *Remote and very remote* areas in 2003–2004 (1.2) than in 2002 (1.0). As noted in Box 10.1, these data should be interpreted with caution.

Children living in lower socioeconomic status (SES) areas are at greater risk of dental decay than those living in the highest SES areas:

- In 2003–2004, the mean DMFT score of children living in the lowest SES areas (1.1) was about 60% higher than that of children in the highest SES areas (0.7).
- This pattern was evident across all states and territories with available data, with the difference ranging from 40% higher in South Australia to twice as high in the Northern Territory (Figure 10.3).

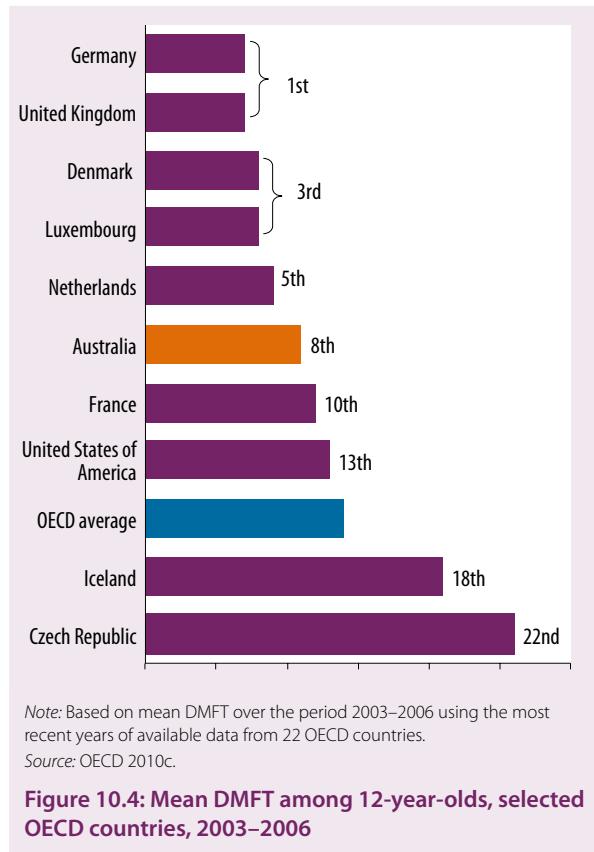
Indigenous children are at greater risk of dental decay than other children. Indigenous children are more likely to experience socioeconomic disadvantage and to live in remote areas than other children. Nearly one-quarter of Indigenous children aged 0–14 years lived in *Remote and very remote* areas according to the 2006 Census, compared with less than 2% of non-Indigenous children:

- While data on Indigenous children are only available for South Australia in 2003–2004, it shows that Indigenous children in that state had almost twice as much dental decay as other children (mean DMFT of 1.4 and 0.8, respectively).
- Data from 2002 show a similar pattern, with Indigenous children in Victoria, Queensland, South Australia and the Northern Territory (combined) having a mean DMFT score almost twice that of other children (1.8 and 1.0, respectively).



How does Australia compare internationally?

The dental health of Australian 12-year-olds compares favourably with that of other OECD countries. Australia ranked eighth out of 22 OECD countries, with a mean DMFT score of 1.1, and was ahead of the OECD average (1.4). Germany and the United Kingdom were the highest ranked countries, both with a mean DMFT of 0.7, while the Czech Republic was ranked lowest with a DMFT of 2.6 (Figure 10.4).



Access to fluoridated water

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

Most children aged 0–14 years (80%) live in areas with access to fluoridated water, but there are some parts of Australia without fluoride in the public water supply. In 2008, the Australian Capital Territory had the highest proportion of children with access to optimally fluoridated water (99%), and Queensland the lowest (59%) (Table 10.1). In Queensland, children's access to fluoridated water has increased markedly, from 5% of children in 2001 to 59% in 2008. In December 2007, the Queensland Government announced the mandatory fluoridation of eligible public water supplies by 2013 (Queensland Health 2008).

Table 10.1: Proportion of children aged 0–14 years residing in areas with optimum^(a) fluoride concentration in the mains water, 2008

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Per cent	91	76	59	89	90	93	99	80	80

(a) Optimum levels are between 0.7 and 1.2 ppm (parts per million), depending on climatic conditions. In the Northern Territory water is optimally fluoridated if the level is more than 0.6 ppm.

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

11 Social and emotional wellbeing

Social and emotional wellbeing refers to the way a person thinks and feels about themselves and others and includes being able to deal with day-to-day stress (through resilience and coping skills) while leading a fulfilling life.

Data are not currently available to report on this Children's Headline Indicator.

As a holistic concept, the study of social and emotional wellbeing in childhood is still in its early stages. While the absence of childhood mental health disorders is one feature of children's positive social and emotional wellbeing, the concept of social and emotional wellbeing encompasses much more than just mental ill health. Social and emotional wellbeing focuses on the individual social and emotional strengths of children, as well as the strengths of families, schools and communities and the influence that these environments have on children's social and emotional wellbeing (Hamilton & Redmond 2010).

While social and emotional wellbeing is a relatively new term, child development research has been examining many of its more narrowly defined concepts for decades. Broadly, social and emotional wellbeing refers to the way a person thinks and feels about themselves and others and includes being able to deal with day-to-day stress (through resilience and coping skills) while leading a fulfilling life. There is an emphasis on how individuals experience positive behaviours and emotions, as well as how they adapt and cope with daily challenges. The research literature examining children's social and emotional wellbeing therefore considers multiple constructs and characteristics, and there is a wide range of terminology used by researchers to identify factors that help children thrive and prosper (Humphrey et al. 2010; Weare & Gray 2003).

While the evaluation of social and emotional wellbeing in Australian children has not been widely examined, international evidence suggests that children with high levels of social and emotional wellbeing are likely to successfully negotiate the physical, intellectual and social changes required through childhood and adolescence. Children who are socially and emotionally well-adjusted display resilience in stressful circumstances, do well at school, have confidence, develop good relationships, take on

and persist at challenging tasks, communicate well and achieve their potential. Such children are more likely to be cooperative and to exhibit pro-social behaviour, to initiate and maintain peer friendships and adult relationships, to appropriately manage aggression and conflict, to develop a sense of mastery and self-worth and to experience more positive emotional regulation and less negative reactivity (Blandon et al. 2010; Denham et al. 2009; Pahl & Barrett 2007).

However, when the developmental milestones of social and emotional competence are not successfully negotiated then children are at risk of a range of problems. Children with low levels of social and emotional wellbeing may be at risk of behaviour problems, poor school performance or mental health problems (Bernard et al. 2007).

Headline Indicator: Proportion of children scoring 'of concern' on the Strengths and Difficulties Questionnaire

Headline Indicator development

Social and emotional wellbeing is a broad and multidimensional priority area. It is a holistic concept that is difficult to define, as it is inextricably linked with all aspects of children's health, development and wellbeing. It is therefore challenging to identify a single Headline Indicator that represents the social and emotional wellbeing of children.

The AIHW undertook work in 2009–2010 to progress indicator development for the *Social and emotional wellbeing* priority area. This process of defining and selecting a Children's Headline Indicator for social and emotional wellbeing involved:

- conceptualising the area of social and emotional wellbeing; that is, defining the scope, theoretical basis and main elements of the area

- reviewing the literature associated with social and emotional wellbeing and children's outcomes
- identifying possible indicators through a review of indicator frameworks and reports
- consulting with key experts and stakeholders.

The AIHW has published an information paper describing this process in detail (AIHW 2011b).

Definition and conceptualisation

The literature review highlighted the difficulty with defining and conceptualising a holistic concept such as social and emotional wellbeing. While there is no widely agreed-upon definition, there are qualities or characteristics that are thought to indicate levels of social and emotional wellbeing.

Taking an ecological approach, the literature review identified individual internal and relational characteristics of social and emotional wellbeing, which are influenced by proximal environments (such as the home, early childhood education and care settings and school), as well as more distal environments (such as the wider community and society at large). Social and emotional wellbeing involves interactions between these multiple environments (home, school and community), as well as the individual and relational characteristics of the child.

Some of the individual characteristics influencing children's social and emotional wellbeing relate to their temperament, attitudes and values, such as:

- emotional regulation—that is, the ability to experience, manage and express emotion
- behavioural regulation, resilience and coping skills
- self-esteem and confidence
- persistence in learning.

Individual characteristics involving relations with others (that is, social/interpersonal characteristics of the child) include the:

- ability to identify emotions in others
- capacity to form and maintain relationships
- development of social skills including empathy, trust, cooperation and conflict resolution.

It should be noted that the level to which a child displays these characteristics will depend on their developmental stage/age, as well as a number of other factors such as temperament and the presence/absence of disability or health conditions.

Characteristics of the wider community influencing children's social and emotional wellbeing include a caring neighbourhood where children are valued, as well as social capital and networks (see also AIHW 2010d). Beyond this, broader societal influences (such as culture, social values, technology and media) and government policies affect children's environments, and ultimately their social and emotional wellbeing.

Selecting a *Social and emotional wellbeing* Headline Indicator

Based on reviews of the literature, indicator frameworks and screening tools relevant to social and emotional wellbeing, as well as an extensive consultation process, 22 potential indicators were identified for the *Social and emotional wellbeing* priority area.

The potential indicators identified were based on:

- administrative data
- self-report data (single and multiple data items)
- screening and other tools.

Potential indicators derived from administrative data or self-report data were considered unable to capture the multidimensional concept of social and emotional wellbeing, although they may have indirect links with single aspects of the priority area.

The Australian Council for Educational Research (ACER) student social and emotional wellbeing survey, a self-report survey, was assessed to have a strong conceptual basis for social and emotional wellbeing; however, this survey has been designed for use in educational settings and its appropriateness for use as a population measure in other settings and for a different purpose is unknown.

Of the screening tools assessed, the Strengths and Difficulties Questionnaire (SDQ) emerged as having the strongest conceptual basis for an indicator of social and emotional wellbeing. Other screening tools were not considered to be appropriate, due to the lack of a clear conceptual basis, a focus on negative attributes, the unsuitability of the age range or the fact that the instrument measures a different construct.

Therefore, based on the research and consultation process, the SDQ was strongly supported as the most appropriate tool for measuring social and emotional wellbeing in children. This instrument

has been extensively validated and is used widely as a population measure, both internationally and in Australia. Modified versions of the instrument have also been developed for Indigenous children.

The Children's Headline Indicator for social and emotional wellbeing has therefore been defined as the proportion of children scoring 'of concern' on the SDQ.

Data issues and availability

There is currently no national data source in Australia suitable for reporting on the recommended Headline Indicator for social and emotional wellbeing.

The indicator development process identified a number of issues for the collection of data for the *Social and emotional wellbeing* Headline Indicator:

- the counting unit should be children aged 8–12 years (although the SDQ has been validated for use with children outside of this age range)
- the collection of demographic information alongside any measure of social and emotional wellbeing is essential, in order to report on population groups and identify differences between groups

- any measure of social and emotional wellbeing must be suitable for use among different population groups, such as Aboriginal and Torres Strait Islander children and children from culturally and linguistically diverse backgrounds, or modified versions should be developed and tested
- information should be obtained from multiple sources, such as the child and the primary parent where possible.

Further work is needed to determine the most appropriate data collection methodology and vehicle for this Headline Indicator. A large-scale national survey that uses children as the counting unit, captures demographic information and allows disaggregation by state and territory for subpopulations of children is considered preferable.

12 Injuries

Injury is a leading cause of death among Australian children; however, the vast majority of injuries are preventable and occur as a result of hazards in the child's environment which can be controlled.

In 2005–2007, over 700 children died as a result of injury, a rate of 6 per 100,000. Rates were 3 times as high among Indigenous children and those living in rural and remote and the most disadvantaged areas.

Injuries are a major cause of death and hospitalisation and can have profound effects on children's health and development through permanent physical and psychological disability.

Infants and preschoolers are more prone to injury than school-aged children, partly due to their natural curiosity, impulsiveness and immature reasoning skills (Garzon 2005; WHO 2006). Physiological factors such as the absence of fine motor development and physical vulnerability make injury more likely.

Younger children also suffer greater rates of mortality and disability as a result of an injury than school-aged children (Garzon 2005). This is due largely to the physical characteristics of young children, such as smaller airways, softer bones and higher metabolic rates (which lead to more severe and lasting damage being caused by a lack of oxygen) (Garzon 2005).

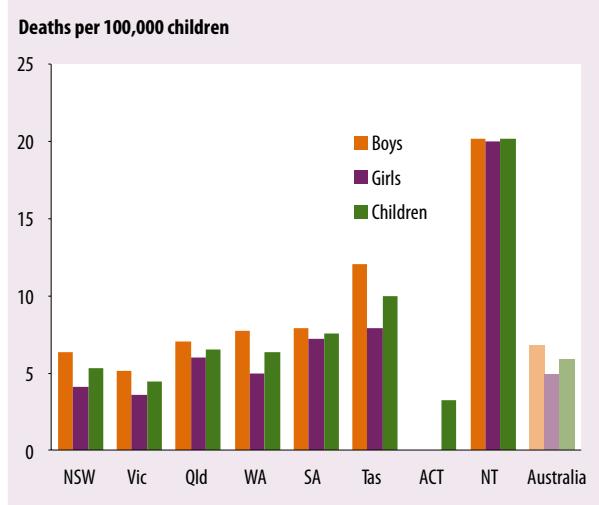
In older children (5–14 years), the ability to assess environments and make decisions about safety increases, as does their exposure to a broad range of potentially hazardous settings, such as schools, sporting environments, streets and neighbourhoods.

About 90% of childhood injuries are said to be preventable, as many causes of injury can be controlled (Howard 2006). Causes of injury may relate to neighbourhood factors (such as traffic, play areas, access to emergency care), the home (unguarded staircases, dim lighting, lead contamination, unsecured chemicals and medications, fire prevention equipment, unfenced swimming pools or dams) or the family (parents' work and hobbies, levels of supervision and other parenting practices) (Garzon 2005).

Low socioeconomic status is a significant risk factor for unintentional injury among children (Birken et al. 2006; Garzon 2005; Towner 2005; WHO 2006). There is also increased risk of poor outcomes following injury in conditions of social deprivation (Hawley et al. 2004). In particular, risk of death increases significantly with declining socioeconomic status, particularly from injuries relating to falls, suffocation or pedestrian-vehicle collisions (Birken et al. 2006).

Headline Indicator: Age-specific death rates from all injuries for children aged 0–14 years

How many deaths of Australian children are due to injury?



Note: Data for the ACT should be treated with caution due to the small number of injury deaths registered during 2005–2007.

Source: AIHW National Mortality Database; Table A1.12.

Figure 12.1: Injury deaths for children aged 0–14 years, by state and territory, 2005–2007

Box 12.1: Measuring injury mortality

The **injury mortality rate** is measured as the number of deaths of children aged 0–14 years due to injury (including poisoning), expressed per 100,000 children according to the estimated resident population at 30 June of the same year.

Data on injury mortality is available from the **AIHW National Mortality Database** (see *Appendix 3: Data sources* for more information) and is analysed according to methods used by the AIHW National Injury Surveillance Unit.

Deaths reported in this chapter may be the result of **intentional or unintentional injury**. Deaths are based on an ICD-10 **multiple cause of death** code in the range S00–T75 or T79, or an **underlying cause of death** code in the range V01–Y36, Y85–Y87 or Y89, in order to provide a more complete and reliable picture of the burden of injury mortality.

The **causes of deaths** for 2007 and subsequent years are subject to revision as a result of changes to the processing of coroner certified deaths. This will have an impact on the number and rate of deaths due to injury. For further details, see *Causes of death, Australia, 2007* (ABS 2009a).

Data are combined for three years (2005, 2006 and 2007) due to the small numbers of deaths each year and the resulting volatility (five years of data, 2003–2007, are combined for reporting by Indigenous status).

Indigenous status data are of sufficient quality to report for 5 jurisdictions only: New South Wales, Queensland, Western Australia, South Australia and the Northern Territory. Data are not necessarily representative of excluded jurisdictions. Indigenous status data presented for 'Australia' is a combined rate for these 5 jurisdictions only.

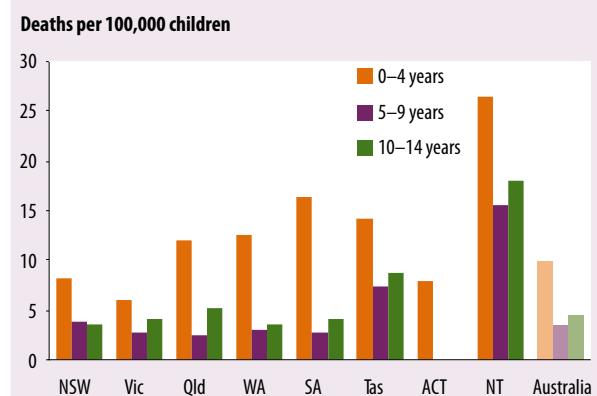
In 2005–2007, there were 708 deaths of children aged 0–14 years due to injury, a rate of 6 per 100,000 children (Figure 12.1). This represented 13% of all deaths of children aged 0–14 years and 37% of deaths of children aged 1–14 years, confirming injury as the leading cause of death among Australian children after the first 12 months of life.

The injury death rate varied considerably across the states and territories. The Northern Territory and Tasmania recorded the highest child injury death rates (20 and 10 per 100,000, respectively) while the lowest rates of 3 and 4 deaths per 100,000 were recorded in the Australian Capital Territory (total of 6 deaths in 2005–2007) and Victoria, respectively.

The injury death rate was higher for boys than for girls (7 per 100,000 compared with 5), which is consistent with injury being highly associated with gender, as boys are more likely to engage in risk-taking and impulsive behaviour (Blakemore 2007). Higher rates for boys were also recorded in all jurisdictions except the Northern Territory (data for the Australian Capital Territory are suppressed due to small numbers).

Injury is also strongly associated with age and stage of development. In 2005–2007, children aged 0–4 years died from injury at a rate of 10 per 100,000 children, three times the rate for children aged 5–9 years and more than twice the rate for those aged 10–14 years (3 and 4 per 100,000, respectively) (Figure 12.2). A higher rate for children aged 0–4 years compared with those aged 5–9 years, was evident across all states and territories.

There has been little change in rates since 2004–2006; however, trend data over a longer period show that injury death rates among children decreased considerably between 1997 and 2006. Over this time, the death rate decreased by almost 40% from 10 to 6 deaths per 100,000 children nationally (AIHW 2009d).

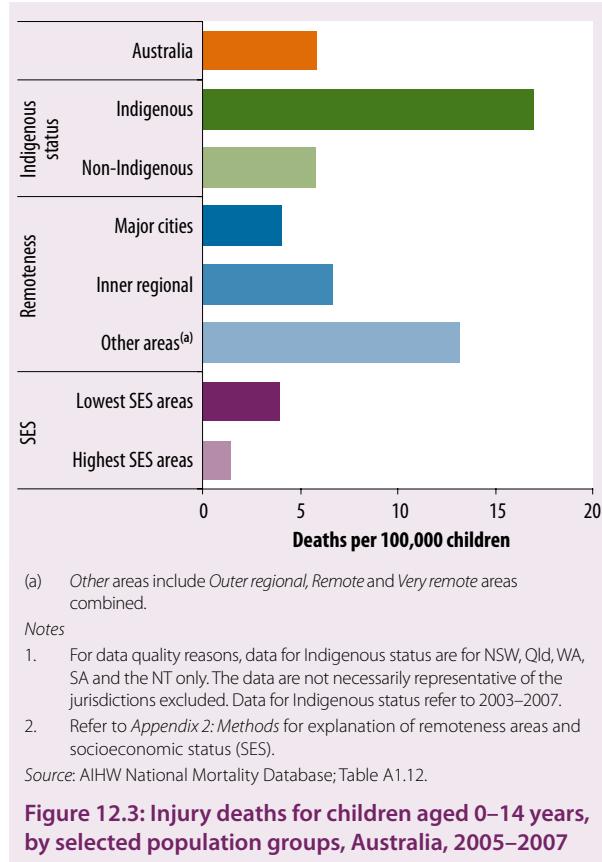


Note: Data for the ACT should be treated with caution due to the small number of injury deaths registered during 2005–2007.

Source: AIHW National Mortality Database; Table A1.12b.

Figure 12.2: Injury deaths for children aged 0–14 years, by age group, 2005–2007

How do children's injury death rates vary across population groups?



Indigenous children are over-represented in injury mortality statistics. Indigenous children in New South Wales, Queensland, Western Australia, South Australia and the Northern Territory accounted for 15% of injury deaths in these jurisdictions but only 6% of the corresponding population of children aged 0–14 years:

- In 2003–2007, the injury death rate for Indigenous children in New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (17 per 100,000) was nearly three times the rate for non-Indigenous children (6 per 100,000) (Figure 12.3).
- This pattern of higher rates among Indigenous children was observed in all jurisdictions with data of sufficient quality, with the difference ranging from about twice as high in New South Wales to nearly four times as high in Western Australia (Figure 12.4).
- There was no change in the injury death rates for Indigenous children between 2002–2006 and 2003–2007 nationally or in the states and territories.

Children living in *Outer regional*, *Remote* and *Very remote* areas combined (*Other areas*) were also over-represented in terms of injury mortality, accounting for 30% of all child injury deaths in these areas but representing only 13% of the corresponding population. The high proportion of children living in these areas who are Indigenous (17%), and the higher injury death rate among Indigenous children compared with non-Indigenous children, contribute to these higher death rates. Distance from services and greater social disadvantage are also likely contributing factors to the higher death rates in these areas:

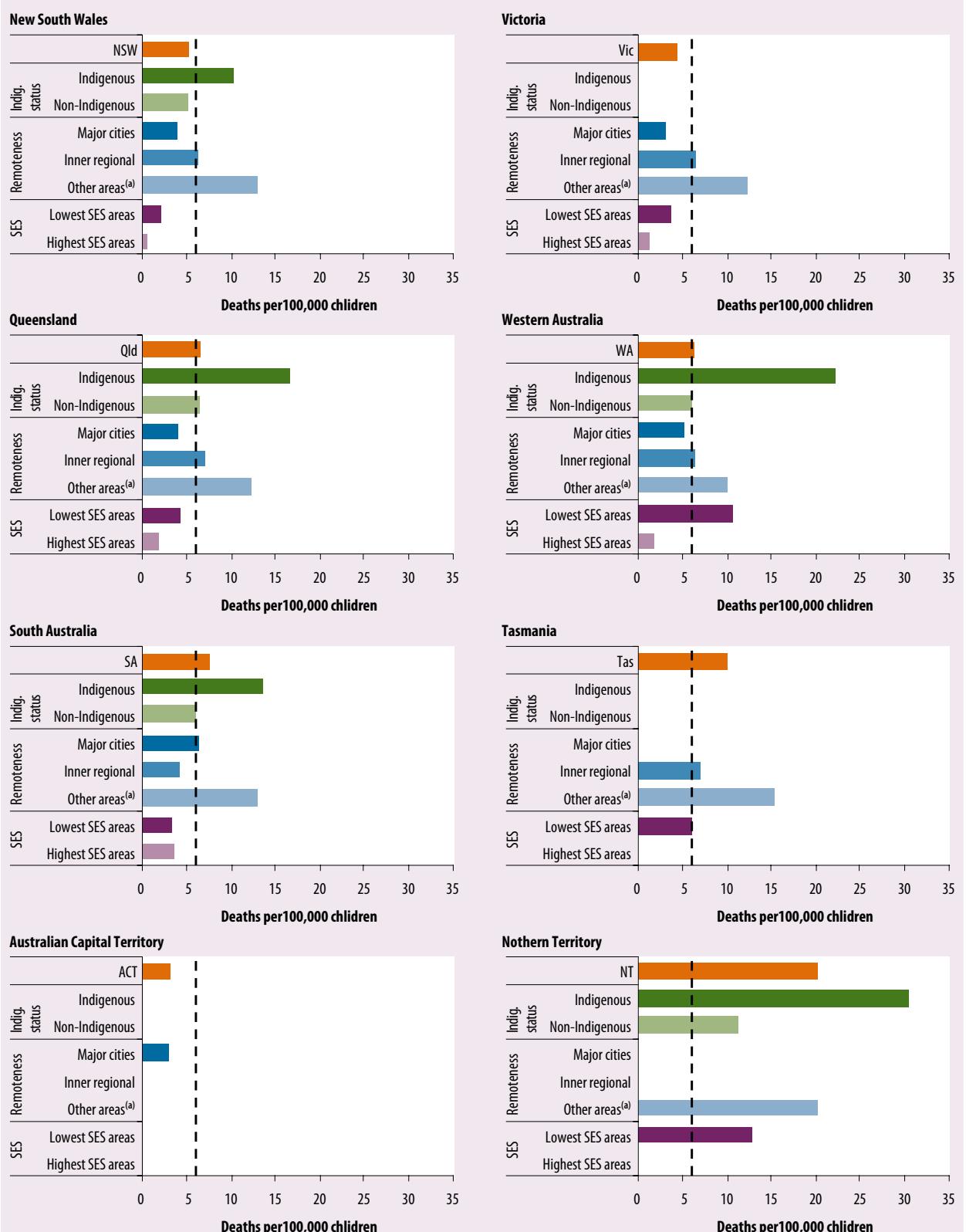
- In 2005–2007, the injury death rate for children living in *Other areas* was 13 per 100,000, more than three times the rate for children living in *Major cities* (4 per 100,000) (Figure 12.3).
- Rates in *Other areas* were 2–4 times as high as in *Major cities* in all states (in Tasmania, *Inner regional* areas which include Hobart, are compared with *Other areas*). In the Northern Territory, the rate for *Remote and very remote* areas combined (32 per 100,000) was 4 times as high as the rate for *Outer regional* areas (mainly Darwin) (8 per 100,000) (Figure 12.4).
- Between 2004–2006 and 2005–2007, there was little change in injury death rates across remoteness areas nationally or in states and territories.

Lower socioeconomic status (SES) is also a risk factor for injury:

- In 2005–2007, the injury death rate for children living in the lowest SES areas (3.9 per 100,000) was about three times as high as for children living in the highest SES areas (1.4 per 100,000).
- The same pattern can be observed in the larger jurisdictions. Differences between the injury death rates for the lowest and highest SES areas are evident in New South Wales (2 and 1 per 100,000, respectively), Victoria (4 and 1 per 100,000), Queensland (4 and 2 per 100,000) and Western Australia (11 and 2 per 100,000).

What are the leading causes of injury deaths among children?

In 2005–2007, *Road transport accidents* were the leading cause of injury deaths among children aged 0–14 years, accounting for 209 or 31% of all child injury deaths (2 deaths per 100,000 children). *Accidental drowning* was the second most common cause of injury death accounting for 18% of all injury deaths among children (1 per 100,000).



(a) Other areas include children living in Outer regional, Remote and Very remote areas combined.

Notes

1. Vertical dotted line indicates the rate for Australia (6 per 100,000).
2. For data quality reasons, data for Indigenous status are for NSW, Qld, WA, SA and the NT only. The data are not necessarily representative of the jurisdictions excluded. Data for Indigenous status refer to 2003–2007.
3. Refer to Appendix 2: Methods for explanation of remoteness areas and socioeconomic status (SES). Not all states and territories have all remoteness area categories.
4. Data for the ACT should be treated with caution due to the small number of injury deaths registered during 2005–2007. Data for the highest SES areas in Tasmania and the NT have been suppressed due to small numbers. In the ACT, there were no deaths recorded for the lowest SES areas.

Source: AIHW National Mortality Database; Table A1.12.

Figure 12.4: Injury deaths for children aged 0–14 years, by state and territory and selected population groups, 2005–2007

The leading cause of injury death among children varied with age. While *Road transport accidents* were the major cause of injury death among children aged 1–14 years, infants were most likely to die from injuries due to *Other accidental threats to breathing* which included accidental suffocation and obstructions of the respiratory tract (5 deaths per 100,000). Deaths in this category accounted for nearly 40% of infant deaths due to injury.

How does Australia compare internationally?

In 2004, Australia's injury death rate for children aged 0–14 years ranked in the lowest third of OECD countries (17th out of 32 countries). With a rate of 6.7 child injury deaths per 100,000, Australia had a lower rate than the OECD average (7.1). Australia's rate was, however, over twice as high as Sweden, the country with the lowest child injury death rate (2.9), and almost twice as high as the United Kingdom (3.5) and Denmark (3.6) (Figure 12.5).



Note: Based on WHO 2004 estimates from the Global Burden of Disease study. This uses a standardised method that enables cross-national comparability and estimates may not match official estimates from OECD countries. Emphasis should be placed on relative rankings rather than individual numbers.

Source: WHO 2009.

Figure 12.5: Injury deaths for children aged 0–14 years, selected OECD countries, 2004

Part IV

EARLY LEARNING AND CARE PRIORITY AREAS

A child's learning and development is integral to their overall health and wellbeing, as well as being important for the future productive capacity of society. Current government priorities are geared towards ensuring that all 4-year-old children have access to early childhood education programs in the year before full-time schooling. Such programs have been found to have beneficial effects on a child's readiness for school and their ability to make a successful transition to full-time schooling, particularly for disadvantaged children. Attendance at early childhood education programs has the potential to help close academic performance gaps between children of different socioeconomic backgrounds (Burchinal et al. 2009).

Successful educational outcomes during the primary school years and beyond are affected by a number of factors, including school attendance and the successful acquisition of literacy and numeracy skills. Literacy and numeracy skills are central to lifelong learning, problem-solving and management of day-to-day life. Regular school attendance will

improve educational and employment opportunities and, hence, the life choices available to individuals, regardless of background. School attendance also assists with the development of social skills such as communication, as well as building self-esteem—factors which affect the overall social and emotional wellbeing of children.

The aim of *Part IV* is to provide a picture of children's development with regards to early learning, school readiness and the primary school years. Specifically, *Part IV* provides information on:

- attendance at early childhood education programs
- transition to primary school
- attendance at primary school
- literacy and numeracy.

13 Attending early childhood education programs

Children who attend early childhood educational programs show better performance and progress in their early school years in both intellectual and social domains.

There is currently no data source available to reliably report on this Headline Indicator. A National Early Childhood Education and Care Data Collection has been established, which will provide improved data in the future.

The early years of a child's life is a period of intense learning that provides the foundation for later academic and social success (Elliott 2006; Moore 2008). Studies have repeatedly demonstrated that children who attended early education programs or interventions showed better performance and progress in their early school years in almost all intellectual, cognitive and school domains, and many socialisation domains (Barnett 1995; Burchinal et al. 2009; Campbell et al. 2002). The benefits include enhanced school readiness and transition to school and improved student motivation (Entwistle 1995). Studies have also shown improvements, sometimes of smaller magnitude, for socio-emotional/social adjustment outcomes such as self-esteem and social behaviour (Barnett 1995; Burchinal et al. 2009; Moore 2008; Yoshikawa 1995).

Recent research has focused on the role that the quality of the education setting has in determining children's outcomes. While a high-quality education program can provide an important head start for children as they make the transition to school, poor-quality education programs can provide no benefit or even cause children to perform less well (Elliott 2006). Quality is often defined by elements such as group size, adult-to-child ratio, supervision level, teacher sensitivity, richness/quality of staff interactions, learning/emotional climate, curriculum content and teacher/caregiver qualifications (Braverman et al. 2008; Burchinal et al. 2009; Elliott 2006).

Participation in high-quality early childhood education programs may be particularly beneficial for children from disadvantaged backgrounds. Children from socially disadvantaged backgrounds—who may experience low family

incomes, lone parenting, young maternal age, low parental education and overcrowded households—have been shown to be at risk of attaining poorer cognitive and other school outcomes (Biedinger 2010; Elliott 2006; Rosenberg et al. 2008). Children from low socioeconomic backgrounds are particularly at risk of poor language skills, which can impact considerably on school achievement (Reilly et al. 2010). Targeted early education interventions have been shown to be effective at overcoming the effects of many of these disadvantages (Burchinal et al. 2009; Elliott 2006) and have the potential to close the gap in academic achievement among disadvantaged populations.

Access to quality early education programs is a factor in ensuring that all children benefit equally from early education interventions. Access is not just about availability, but also involves factors that can affect whether people take up available opportunities. Examples of factors that can affect access are a lack of culturally appropriate services, inappropriate structures, lack of funding and support, and lack of knowledge among parents and communities about the benefits of early education programs (Kronemann 2007).

Headline Indicator: Proportion of children attending an early educational program in the year prior to beginning primary school

Box 13.1: Measurement of attendance at early educational programs

Preschool is used to refer to early childhood education programs. Preschool consists of non-compulsory educational and developmental programs for children in the year prior to commencing full-time primary education, and may be delivered in government or privately funded stand-alone facilities, or within schools or child care centres.

There is currently **no data source** available to reliably report on this Headline Indicator.

A **National Early Childhood Education and Care (ECEC) Data Collection** has been established, which will be able to provide information on enrolment and attendance at preschool programs. The first collection was conducted in August 2010 and limited experimental estimates were released in April 2011 (see ABS 2011). However, there are a number of data quality issues still to be resolved and it may not be possible to report against this Headline Indicator before 2013 at the earliest. When available, the National ECEC Data Collection will be the preferred data source for this Headline Indicator.

In the interim, data from two sources are presented in this chapter to give an indication of participation in preschool:

- **ABS 2008 Childhood Education and Care Survey** (CEaCS), which provides information on attendance (see Appendix 3: *Data sources* for more information)
- **2011 Report on Government Services** (RoGS) (SCRGSP 2011), which provides information on enrolment.

It should be noted that the two data sources are not comparable. Data on Indigenous children's attendance are not available from the CEaCS. Some data on enrolment for Indigenous children are available in the RoGS, but comparable enrolment statistics for this population are not presented.

The major benefit of the triennial CEaCS, compared with currently available administrative data, is that it captures both government and privately funded preschool services. Data from CEaCS are reported for children aged 4 to 8 years who were attending school at the time of the survey and who attended an early childhood educational program (preschool) in the year prior to starting primary school.

Limitations of the CEaCS include:

- data are retrospective and hence do not reflect current attendance at early childhood educational programs
- data are collected from parents/guardians who may not accurately recall or know whether their children attended such a program, particularly if the program was part of a long day care centre or part of pre-compulsory school programs based in schools which parents may not consider to be 'preschool'
- reliable estimates for states and territories with smaller populations, and for subpopulations of children, can be difficult to obtain from a sample survey such as the CEaCS. In addition, *Very remote* areas of Australia are excluded.

The annual RoGS draws on jurisdictional administrative data to report on the proportion of children enrolled in preschool in the year before the commencement of full-time schooling. These data relate to enrolment rather than attendance.

Limitations with this data source include:

- data are only available for state and territory government-funded and/or provided preschools
- possible overestimation of the proportion enrolled due to some double-counting of children—as some children may attend sessions at more than one service, or for more than one year of preschool.

How many children attend an early childhood education program?

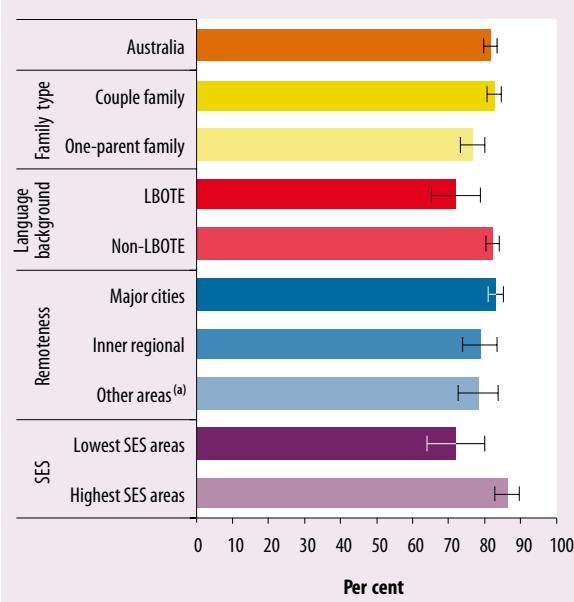
Nationally in 2008, the CEaCS reported that 82% of children aged 4–8 years who were attending school at the time of the survey attended preschool (including preschool programs in long day care) in the year prior to starting primary school (Figure 13.1). Attendance rates were similar for girls (83%) and boys (81%).

The RoGS reported that in 2009–10, 68% of four-year-old children were enrolled in state and territory government-funded and/or provided preschools in the year before full-time school. This is similar to the rate over the previous two years; however, data for years prior to 2007–08

are not comparable due to the introduction of a preparatory year of schooling in Queensland in 2007, which had a considerable impact on preschool enrolment rates in that state.

As noted in Box 13.1, these two data sources should not be compared.

How do preschool attendance rates vary across population groups?



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

Notes

1. The question about prior attendance at an early education program was asked of the parents of children aged 4–8 years who were attending school at the time of the survey.
2. LBOTE refers to language background other than English.
3. Refer to *Appendix 2: Methods* for explanation of remoteness areas and socioeconomic status (SES).

Source: AIHW analysis of ABS 2008 Childhood Education and Care Survey confidentialised unit record file; Table A1.13.

Figure 13.1: Children aged 4–8 years who attended an early educational program (preschool) in the year prior to primary school, by selected characteristics and population groups, Australia, 2008

Attendance at preschool varies with family type, language background and socioeconomic status (SES):

- Nationally in 2008, as reported in the ABS CEaCS, children aged 4–8 years attending school at the time of the survey and living in couple families were more likely (83%) to have attended preschool in the year prior to starting primary school than children in one-parent families (77%) (Figure 13.1).
- Children from English-speaking backgrounds were more likely to have attended preschool in the year prior to starting primary school than those from non-English speaking backgrounds (82% compared with 72%).
- Children living in the highest SES areas were more likely (86%) than those living in the lowest SES areas (72%) to have attended preschool in the year prior to starting school.
- Rates did not vary significantly by remoteness categories, although it should be noted that the CEaCS excluded those living in *Very remote* areas.

14 Transition to primary school

Children entering school with basic skills for life and learning have higher levels of social competence and academic achievement, increasing their likelihood of achieving their full potential.

In 2009, almost one-quarter of Australian children were developmentally vulnerable on one or more domains of the Australian Early Development Index (AEDI), with the proportion considerably higher among Indigenous children.

A child's transition to primary school presents an opportunity to consider the environments (including families and communities) that have affected their early childhood development, as well as thinking about the skills they will need to succeed at school. There are a number of factors that influence early childhood development and, hence, school transition. These include factors at the individual, family and community levels, such as socioeconomic status; child health; family characteristics such as family type, parental education and mental health; the home and community environment; and participation in a quality preschool program (Farrar et al. 2007). A number of studies, including the Effective Provision of Pre-School Education study in the United Kingdom and the High/Scope Perry Preschool Program in the United States, have demonstrated the effectiveness of high-quality, targeted preschool programs in preparing children for a successful transition to formal schooling (Boyd et al. 2005; Sylva et al. 2003) (refer to *Chapter 13: Attending early childhood education programs* for further detail).

Children entering school with basic skills for life and learning are more likely to experience a successful transition to primary school. Schooling transition issues relate to emotional competence, capacity for engagement with others and resilience in meeting the demands of schooling. Children who make a successful transition to school have higher levels of social competence and academic achievement compared with those who experience difficulty making this transition (Shepard & Smith 1989). Conversely, children who enter school when they are not ready for school-based learning have lower levels of academic achievement and are at an increased risk of teenage parenthood, mental health problems, committing criminal activity and poorer employment outcomes (Farrar et al. 2007).

Issues around the transition to full-time primary school for children are discussed under a number of conceptual theories, including readiness for learning and readiness for school. Readiness to learn refers to the level of development at which a child is ready to undertake the learning of specific materials; readiness for school refers to the level of development at which a child can fulfil schooling requirements and understand the curriculum. School readiness can be described in terms of age, stage of development, a demonstrated set of skills, or relationships and interactions (Dockett & Perry 2007). In most countries school entry is based solely on age—in Australia some states offer school entry as early as 4 years and 7 months. Recently, the understanding of what constitutes school readiness has been broadened from focusing on child factors, such as age or specific skills and competencies, to shared responsibilities of families, schools and communities in providing the environments and experiences that support the healthy development of children (Farrar et al. 2007). Dockett and Perry (2007) discuss three dimensions of school readiness: a child's readiness for school, the school's readiness for children and family and community supports and services that contribute to the child's readiness.

Headline Indicator: Proportion of children developmentally vulnerable on one or more domains of the AEDI

Box 14.1: Measuring children's transition to primary school

The **Australian Early Development Index (AEDI)** is a population measure of children's health and development, based on the scores from a teacher-completed checklist in their first year of formal schooling (see *Appendix 3: Data sources* for more information on the AEDI). The AEDI has been endorsed by the Council of Australian Governments (COAG) as a national progress measure of early childhood development in Australia, and the Australian Government funded the national implementation of the AEDI in 2009. The Australian Government has since committed to the ongoing national implementation of the AEDI, with data to be collected every 3 years.

The **five domains** of the AEDI are considered to be crucial constructs that can affect a child's readiness to make a successful transition to primary school:

- physical health and wellbeing
- social competence
- emotional maturity
- language and cognitive skills (school-based)
- communication skills and general knowledge.

Results on the AEDI domains group children into the following categories:

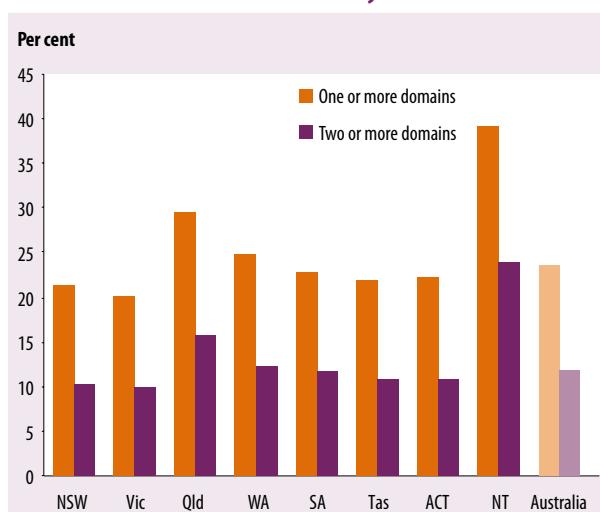
- **developmentally vulnerable** (below the 10th percentile)
- **developmentally at-risk** (between the 10th and 25th percentile)
- **on track** (between the 25th and the 50th percentile, and above the 50th percentile).

Results also describe children as **developmentally vulnerable on one or more domains and on two or more domains**. These children are considered to be at particularly high risk developmentally (Centre for Community Child Health & Telethon Institute for Child Health Research 2010).

The **average age** of children at the time the AEDI checklists were completed was **5 years and 7 months**; however, this varied by 2–3 months between the states and territories. Age-based cut-offs are used to control for differences in age in the AEDI results.

The results of the AEDI are reported according to where the child lives, rather than where they attend school.

How many children are developmentally vulnerable at school entry?



Source: Australian Early Development Index unpublished data; Table A1.14b.

Figure 14.1: Children developmentally vulnerable on one or more, and two or more, domains of the AEDI, by state and territory, 2009

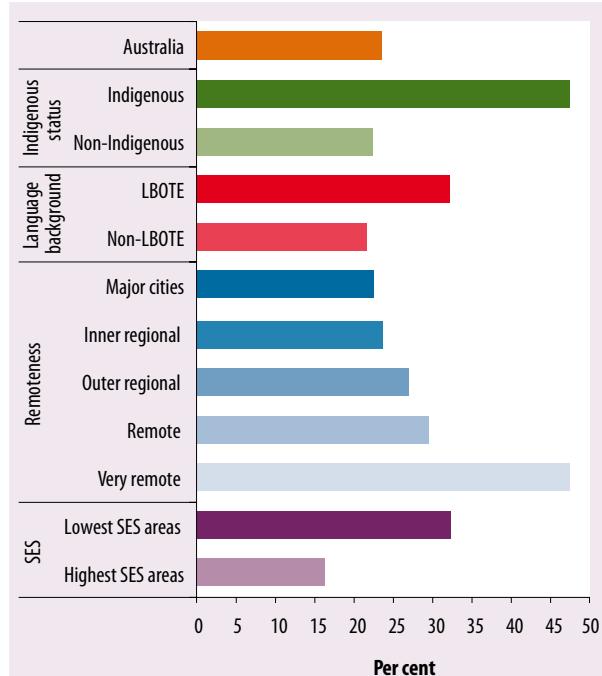
The majority of Australian children are doing well, with around three-quarters of children on track across all domains of the AEDI in 2009.

However, almost one-quarter (24%) of children are developmentally vulnerable on one or more domains at school entry, and 12% are vulnerable on two or more domains, accounting for around 58,400 and 29,400 children, respectively (Figure 14.1).

In most states and territories, the proportion of children developmentally vulnerable on one or more domains was between 20% and 25%; however, the proportion was higher in Queensland (30%) and considerably higher in the Northern Territory (39%). On two or more domains, most states and territories reported that between 10% and 12% of children were vulnerable, with Queensland and the Northern Territory again higher (16% and 24%, respectively).

Boys were more likely to be developmentally vulnerable than girls, with 30% of boys developmentally vulnerable on one or more domains, compared with 17% for girls, and on two or more domains, 16% and 7%, respectively. This is consistent with other research (Centre for Community Child Health & Telethon Institute for Child Health Research 2010).

How does developmental vulnerability vary across population groups?



Notes

1. LBOTE refers to language background other than English.
2. Refer to Appendix 2: Methods for explanation of remoteness areas and socioeconomic status (SES).

Source: Australian Early Development Index unpublished data; Table A1.14b.

Figure 14.2: Children developmentally vulnerable on one or more domains of the AEDI, by selected population groups, 2009

The proportion of children who were developmentally vulnerable on one or more domains of the AEDI at school entry varied considerably by population group and across the states and territories in 2009.

Indigenous children were more likely to be developmentally vulnerable on one or more of the AEDI domains in 2009, compared with non-Indigenous children:

- The proportion of Indigenous children who were developmentally vulnerable was twice as high as non-Indigenous children (47% compared with 22%) (Figure 14.2).
- The proportion of Indigenous children who were developmentally vulnerable was higher than non-Indigenous children in all states and territories, ranging from 2 to 3 times as high. Of those jurisdictions for which reliable rates could be calculated, New South Wales had the lowest proportion of Indigenous children who

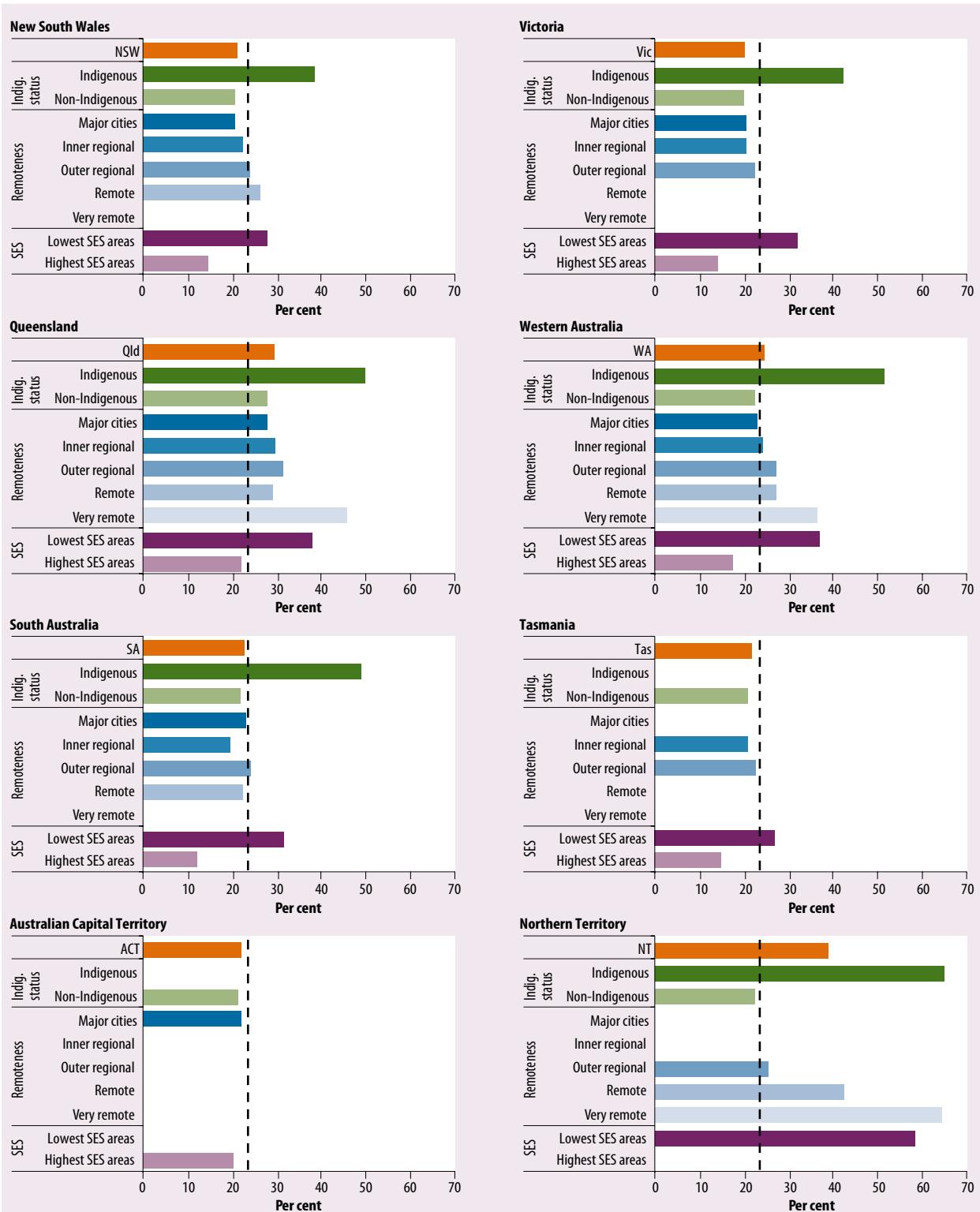
were developmentally vulnerable (39%) and the Northern Territory had the highest (66%) (Figure 14.3).

Children who speak a language other than English at home (language diverse, including children who speak Australian Aboriginal languages) and/or have a language background other than English (LBOTE) were also more likely to be developmentally vulnerable than children who spoke English only (non-LBOTE):

- The proportion of LBOTE children who were developmentally vulnerable on one or more domains of the AEDI was 50% higher compared with children who spoke English only (32% compared with 22%) (Figure 14.2).
- It is important to note that children from either LBOTE or non-LBOTE backgrounds may be considered to be proficient or not proficient in English. LBOTE children who were proficient in English were only slightly more likely to be developmentally vulnerable than children who spoke English only (and were proficient in English)—22% and 19%, respectively. For LBOTE and non-LBOTE children who were not proficient in English, the proportion of developmentally vulnerable children was above 90%. The vast majority of children not proficient in English are developmentally vulnerable on the *Communication skills and general knowledge* domain.
- The proportion of LBOTE children who were developmentally vulnerable ranged from 28% in New South Wales to 66% in the Northern Territory (Table A1.14b). The rate for LBOTE children was higher than for non-LBOTE children in all states and territories, ranging from 1.2 to 3 times as high.

The proportion of children developmentally vulnerable on the AEDI at school entry increased with increasing remoteness:

- Children living in *Very remote* areas (48%) were twice as likely to be developmentally vulnerable on one or more domains of the AEDI as children in *Major cities* (22%) (Figure 14.2).
- Of those states and territories with *Very remote* areas, the proportion of children who were developmentally vulnerable in these areas was lowest in Western Australia (37%) and highest in the Northern Territory (65%) (Figure 14.3).



Notes

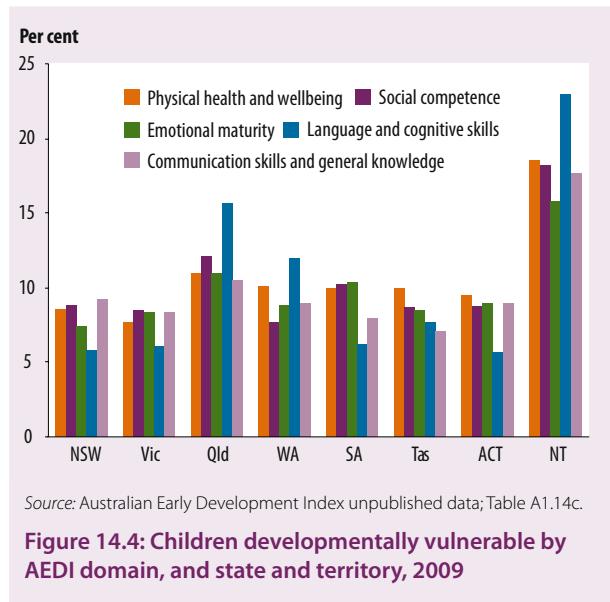
1. Vertical dotted line indicates the rate for Australia (24%).
 2. Refer to Appendix 2: Methods for explanation of remoteness areas and socioeconomic status (SES). Not all states and territories have all remoteness area categories.
- Source: Australian Early Development Index unpublished data; Table A1.14b.

Figure 14.3: Children developmentally vulnerable on one or more domains of the AEDI, by state and territory and selected population groups, 2009

Children who live in the lowest SES areas had the highest rates of developmental vulnerability, compared with those in the highest SES areas:

- The proportion of children living in the lowest SES areas who were developmentally vulnerable was twice that of those in the highest SES areas (32% compared with 16%) (Figure 14.2).
- The proportion of children in the lowest SES areas who were developmentally vulnerable was lowest in Tasmania (27%) and New South Wales (28%) and highest in the Northern Territory (59%) (Figure 14.3). The higher proportion of developmentally vulnerable children in the lowest SES areas compared with the highest SES areas was evident in all states and territories—ranging from around 2 to 4 times as high (with the exception of the Australian Capital Territory and the Northern Territory which did not have sufficient numbers of children in the lowest SES areas and highest SES areas, respectively, to calculate a reliable rate).

How does developmental vulnerability vary across AEDI domains?



The proportion of children who were developmentally vulnerable during their first year of schooling varied across domains and states and territories (Figure 14.4). Notably, the Northern Territory had a substantially higher proportion of children developmentally vulnerable across all domains, while Queensland recorded slightly higher proportions across all domains, compared with other states and territories.

The greatest variation between the states and territories was for the *Language and cognitive skills* domain. Most jurisdictions recorded around 6–8% of children developmentally vulnerable on this domain; however, this proportion was higher in Western Australia (12%), Queensland (16%) and the Northern Territory (23%).

The proportion of children developmentally vulnerable on the five domains varied across population groups (see Table A1.14c):

- Indigenous children were at least twice as likely to be developmentally vulnerable on each domain, but were almost 4 times as likely to be vulnerable on the *Language and cognitive skills* domain (29% compared with 8% of non-Indigenous children).
- The proportion of children in *Remote* and *Very remote* areas who were developmentally vulnerable was higher than those living in *Major cities* across all domains, but was particularly higher on the *Language and cognitive skills* domain (16% and 30%, respectively, compared to 8% in *Major cities*). This may be due to the large proportion of Indigenous children, particularly in *Very remote* areas, and the greater vulnerability of Indigenous children on the *Language and cognitive skills* domain.
- The proportion of developmentally vulnerable children living in the lowest and highest socioeconomic status (SES) areas was similar across the domains. For the lowest SES areas, the proportion of developmentally vulnerable children was 12–14% across the domains, and for the highest SES areas it was 5–6%.

15 Attendance at primary school

School attendance helps children develop the basic building blocks for lifelong learning and educational attainment, as well as social skills.

In 2009, school attendance rates in the states and territories varied from 81% to 95% for Year 5 students across each school sector. Indigenous students generally had lower attendance rates than non-Indigenous students.

Primary school provides the first compulsory educational experience for Australian children, and regular school attendance is critical to successful student outcomes. School attendance helps children develop the basic building blocks for learning and educational attainment, as well as social skills such as friendship building, teamwork, communication skills and healthy self-esteem. Regular attendance and participation in schooling is therefore an important factor in educational and life success. Children who are regularly absent from school are at risk of missing out on these critical stages of educational development and may experience long-term difficulties with their learning, resulting in fewer educational and employment opportunities. This is because absenteeism limits a child's opportunity to learn by reducing the time available to learn the content of the primary school curriculum. Absenteeism can also exacerbate issues of low self-esteem, social isolation and dissatisfaction (Vic DHS 2007).

Children's attendance at primary school is increasingly being recognised worldwide as a crucial factor in children's development and wellbeing. Achievement of universal primary education (that is, enrolment, attendance and completion) has been identified as one of the eight United Nations Millennium Development Goals (UNICEF 2009a).

A child's health and wellbeing affects whether or not they attend school and their ability to learn and participate in school activities (MCEETYA 2001). For example, a high proportion of Indigenous children experience chronic health problems, such as middle ear infection, hearing deficits and nutritional deficiencies, which adversely affect their school attendance and learning outcomes (ABS & AIHW 2005).

Increasing attendance at primary school for disadvantaged populations, particularly for Indigenous children, will help to reduce the considerable gap that currently exists in academic achievement between population groups within Australia. Indigenous students have higher rates of absenteeism and suspension, and lower rates of school completion than non-Indigenous students, which limit their future life choices and ability to achieve their full potential. The Western Australian Aboriginal Child Health Survey has shown a direct relationship between the number of days absent from school and academic performance (Zubrick et al. 2006).

Headline Indicator: Attendance rate of children at primary school

Box 15.1: Measuring school attendance

School attendance is commonly measured in two ways:

- **enrolments** (that is, the children who have registered with a school)
- **attendance** (the children who are actually going to school).

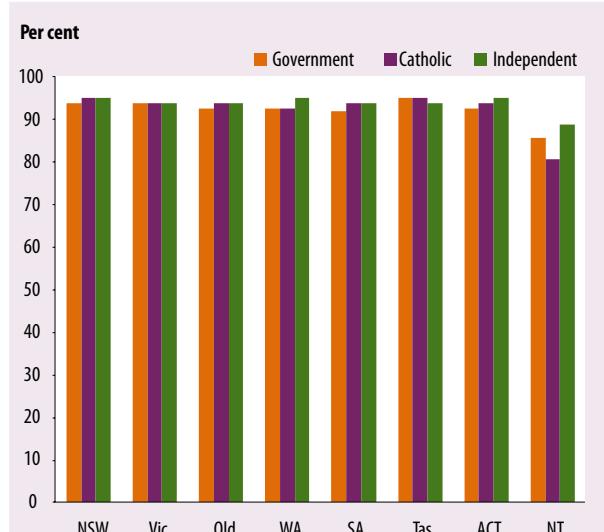
This Headline Indicator focuses on children's **attendance at school**, as distinct from those who are enrolled.

The nationally agreed **student attendance measure** is the number of actual full-time equivalent 'student days' attended as a percentage of the total number of possible student days attended over the period (MCEETYA PMRT 2008).

Student attendance data were first collected in 2007 and there is some variation in how the information is currently collected between **states and territories**, and across **school sectors** (government, Catholic and independent). As a result, data are currently **not nationally comparable** and variations by state and territory and sector may be partly explained by differences in data collection methodology (for further information see MCEECDYA 2010). Data cannot currently be aggregated across year levels, states and territories, or school sectors, due to these differences in data collection.

The **attendance rate of Year 5 students** has been selected as the focus for this chapter, in line with data reported for the literacy and numeracy Headline Indicators (see *Chapter 16: Literacy and numeracy*).

How often do children attend primary school?



Note: Data collection methodologies vary between states and territories, and school sectors. See MCEECDYA 2010 for further information.

Source: SCRGSP 2010; Table A1.15.

Figure 15.1: School attendance of Year 5 students, by state and territory and school sector, 2009

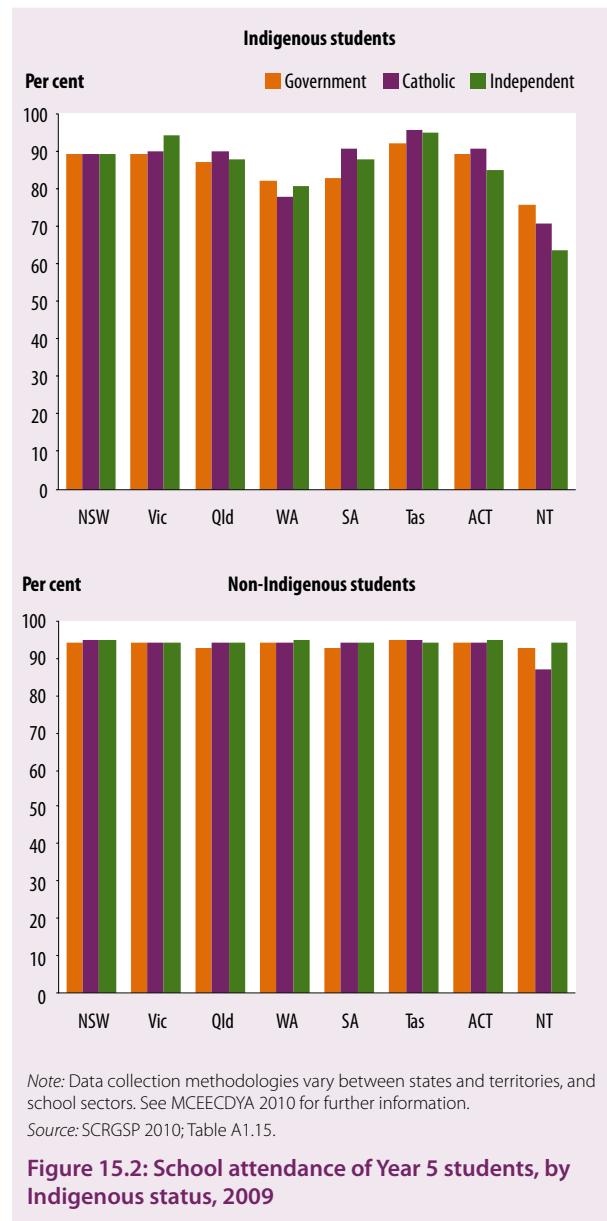
In 2009, state and territory school attendance rates were between 92% and 95% for Year 5 students across each school sector, with the exception of the Northern Territory, where rates ranged from 81% in Catholic schools to 89% in independent schools (Figure 15.1). The lower attendance rates in the Northern Territory are largely due to the higher proportion of Indigenous students in the Northern Territory and the lower attendance rates among Indigenous students (Figure 15.2).

There was little difference in attendance rates between boys and girls in the government, Catholic or independent school sectors in any state or territory (Table A1.15).

Generally, attendance rates remained steady from Year 1 through to Year 7, after which they declined slightly through to Year 10 (the final year of compulsory schooling). This pattern was consistent across all states and territories.

The majority (69%) of Year 5 students attended government schools in 2009, with the remainder attending Catholic (19%) or independent schools (12%) (ABS 2010f).

How do school attendance rates vary for Aboriginal and Torres Strait Islander children?



Attendance was generally lower among Indigenous students than among non-Indigenous students in 2009. Indigenous attendance rates varied according to school sector and state and territory, while non-Indigenous attendance rates were relatively stable:

- The Northern Territory and Western Australia had the largest differences in attendance rates between Indigenous and non-Indigenous students. In the Northern Territory, attendance among Indigenous students was between 16 to 30 percentage points lower than among non-Indigenous students in Year 5, depending on school sector, while in Western Australia the range was 12 to 16 percentage points lower (Figure 15.2). The difference in other jurisdictions was generally between 3 to 10 percentage points, with the exception of the Independent sector in Victoria and the Catholic and Independent sectors in Tasmania, where attendance rates were similar for both Indigenous and non-Indigenous students.
- There was greater variability in attendance rates of Indigenous students according to school sector and state and territory (from 64% to 96%), compared with non-Indigenous students (87% to 95%).

16 Literacy and numeracy

Literacy and numeracy skills enable children to engage in learning and ultimately to fully participate in society and lead productive lives.

In 2009, 92% of Year 5 students met the national minimum standards for reading and 94% for numeracy, with proportions substantially lower among Indigenous students and students living in remote parts of Australia.

Literacy is the ability to communicate effectively through reading, writing, speaking and listening. Numeracy (or mathematical literacy) is the competent use of basic mathematics to carry out the general demands of everyday life at home, at work and in society generally. New technologies have broadened the scope of literacy and numeracy, as children now need to use computers, the internet and calculators in addition to the more traditional reading and writing media (ACARA 2010c).

Poor literacy and numeracy skills can severely compromise children's ability to engage in school-learning, to undertake future learning, to be successfully employed, to fully participate in society and to lead happy and productive lives (Cope & Kalantzis 2000). Children are a country's most valuable resource in terms of future economic and social prosperity, and increasingly complex skills are required for the workforce as the world undergoes rapid economic, social and technological change (Caldwell 2004).

There is strong research evidence that education and social disadvantage are closely connected. People from less advantaged family backgrounds acquire significantly less education than those from more advantaged backgrounds, which in turn affects economic and social outcomes, such as poorer labour market outcomes, significantly poorer health, higher crime levels and lower level social capital (Machin 2006).

Successful educational outcomes during the school years are affected by a number of factors, such as a young person's home environment (including whether books are available at home and whether parents read aloud to their children), their engagement with the school environment, the quality of their educational experience and their attitudes to school and learning (Lamb et al. 2004;

Walsh & Black 2009). Several other factors have also been shown to have an impact, such as school resources, parental level of education and school engagement, and socioeconomic status (Walsemann et al. 2008; Zammit et al. 2002).

A national education goal is for all children to be successful learners. The 2008 Melbourne Declaration on Educational Goals for Young Australians states that the learning areas of English and mathematics are fundamental in all years of schooling (MCEETYA 2008a). In 2008, the Australian Government established the National Curriculum Board to develop a national curriculum for students from kindergarten to Year 12, initially with a focus on English, mathematics, the sciences and history. Ministers endorsed these first four learning areas of the national curriculum in December 2010 and implementation will commence in all states and territories from 2011 (ACARA 2010d). One of the aims of the board is to produce a continuum of learning in literacy and numeracy as students progress through their schooling (National Curriculum Board 2009).

Headline Indicators:

Proportion of Year 5 school children achieving at or above national minimum standards for reading

Proportion of Year 5 school children achieving at or above national minimum standards for numeracy

Box 16.1: National literacy and numeracy minimal standards

National minimum standards have been developed for reading, writing, spelling, language conventions (grammar and punctuation) and numeracy for students in years 3, 5, 7 and 9. Students who achieve the minimum standards have demonstrated at least the basic understanding required for their year level.

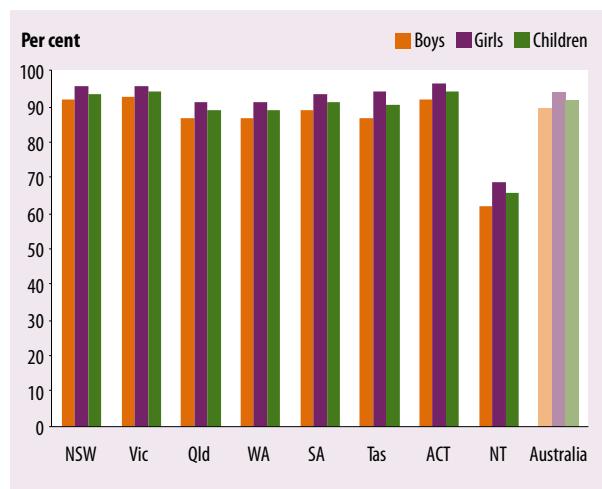
In 2008, the first **National Assessment Program—Literacy and Numeracy (NAPLAN)** tests were conducted. For the first time, students in each state and territory sat the same tests, allowing the consistent assessment of students across Australia. There is now a common and continuous reporting scale used for all students in years 3, 5, 7 and 9, which provides considerably more information about student achievement than was previously available (ACARA 2010a). Refer to *Appendix 2: Data sources* for more information.

This chapter presents **reading and numeracy results for students in Year 5**—results are expressed in terms of the percentage of students who achieved at or above the national minimum standard.

Although data are collected for children in years 3, 5, 7 and 9, the Year 5 results have been identified as the most appropriate to report for this Headline Indicator. By Year 5, students have had an opportunity to build on the outcomes achieved in Year 3 and are able to demonstrate progress across several years of schooling.

Information on parental occupation and education (proxies for socioeconomic status) are available from NAPLAN at the national level only. This is because the proportion of children for which parental occupation and education is not recorded was about 25% nationally in 2009, and varied considerably across states and territories.

How many Australian children meet the minimum standards for reading?



Source: ACARA 2010b; Table A1.16.

Figure 16.1: Year 5 students who achieved at or above the national minimum standards for reading, by state and territory, 2009

In 2009, most Australian Year 5 students met the minimum standards for reading (92%). The proportion of Year 5 students meeting the national minimum standard in reading ranged from 65% in the Northern Territory to 94% in New South Wales, Victoria and the Australian Capital Territory (Figure 16.1).

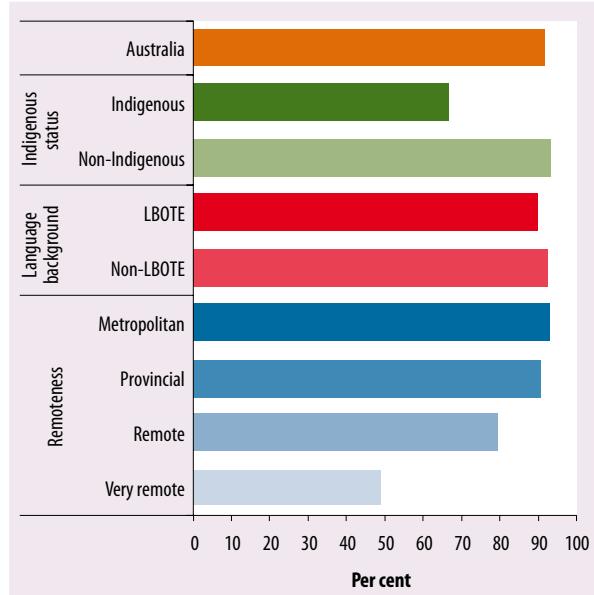
A higher proportion of girls achieved the minimum standards for reading than boys (94% and 90%, respectively) nationally, and in all jurisdictions. The poorer performance of boys in reading has been attributed to a tendency for boys to be less interested and engaged in reading activities. It is also thought that boys are less likely to be encouraged to read and more likely to experience anxiety about reading (Malloy & Botzakis 2005).

Students of parents with the lowest levels of educational attainment (Year 11 or equivalent, or below) were less likely to achieve the minimum standards for reading, compared with students of parents with the highest level of educational attainment (bachelor degree or above) (84% and 97%, respectively).

Similarly, Year 5 students whose parents had not been in paid work in the previous 12 months were less likely to meet the minimum standards for reading compared with all students (82% compared with 92%).

In 2008 and 2009, similar proportions of Year 5 students met the minimum standards for reading (91% and 92%, respectively). Comparable data are not available to monitor trends prior to 2008; however, during the period 2001 to 2007, the proportion of Year 5 students meeting the reading benchmarks remained much the same (ranging from 88% to 90%) (MCEETYA 2008b).

How do population groups vary in meeting the minimum standards for reading?



Notes

1. LBOTE refers to language background other than English.
2. Remoteness classified according to the MCEETYA Schools Geographic Location scale (see Jones 2004 for further information).

Source: ACARA 2010b; Table A1.16.

Figure 16.2: Year 5 students who achieved at or above the national minimum standards for reading, by selected population groups, Australia, 2009

Indigenous students are far less likely to achieve the minimum standard for reading than their non-Indigenous counterparts:

- In 2009, 67% of Indigenous students achieved the minimum standard for reading, compared with 93% of non-Indigenous students—a difference of 26 percentage points (Figure 16.2). A similar difference was found in all states and territories, with the difference ranging from 10 percentage points in Victoria to 58 in the Northern Territory (Figure 16.4).
- The proportion of Indigenous students achieving the national minimum standard for reading was lowest in the Northern Territory (31%) and highest in Victoria (85%). This pattern was the same for non-Indigenous students, with 89% achieving the minimum standards in the Northern Territory (lowest) and 95% in Victoria (highest).
- The gap between Indigenous and non-Indigenous students increased with increasing remoteness—from 17 percentage points in *Metropolitan* areas to 62 in *Very remote* areas (Figure 16.3).

According to the ABS 2008 National Aboriginal and Torres Strait Islander Social Survey, one-third (33%) of Indigenous children aged 4–14 years in *Remote and very remote* areas spoke an Indigenous language as their main language at home compared with 8% of all Indigenous children aged 4–14 years (ABS 2009f). This may have some bearing on the poorer reading performance of Indigenous children in *Very remote* areas.

- In both 2008 and 2009, similar proportions of Indigenous students achieved the minimum standards for reading at both the national and state and territory level.

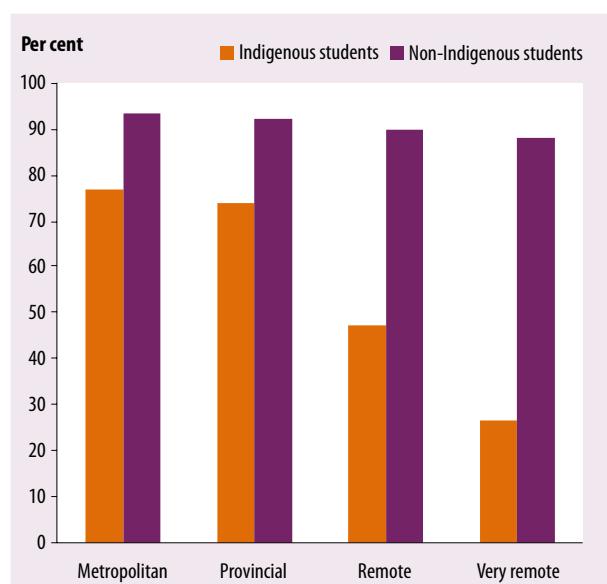
Students with a language background other than English (LBOTE) were also somewhat less likely to achieve the minimum standards for reading in Year 5:

- In 2009, LBOTE students were slightly less likely to achieve the minimum standards for reading than their non-LBOTE counterparts (90% and 92%, respectively) (Figure 16.2). A similar pattern was found in most states and territories (Table A1.16).
- The proportion of LBOTE students achieving the minimum standards was lowest in the Northern Territory (27%) and Queensland (80%). This is largely due to the relatively high proportion of Indigenous children in these jurisdictions, particularly in the Northern Territory, where 44% of Indigenous children aged 4–14 years speak an Indigenous language as their main language (ABS 2009g). New South Wales and Victoria had the highest proportion of LBOTE students achieving the minimum standards (both 93%).
- Nationally, between 2008 and 2009, the proportion of LBOTE students achieving the minimum standards for reading was similar (88% and 90%, respectively). A similar pattern was observed in the states and territories.

The proportion of Year 5 students achieving the minimum reading standards decreased with increasing remoteness:

- Students in *Very remote* and *Remote* areas were less likely to meet the minimum standards for reading than those in *Metropolitan* areas—49%, 80% and 93%, respectively. A similar pattern was found in New South Wales, Queensland, Western Australia and the Northern Territory (*Very remote* and *Remote* compared with *Provincial*) (Figure 16.4).

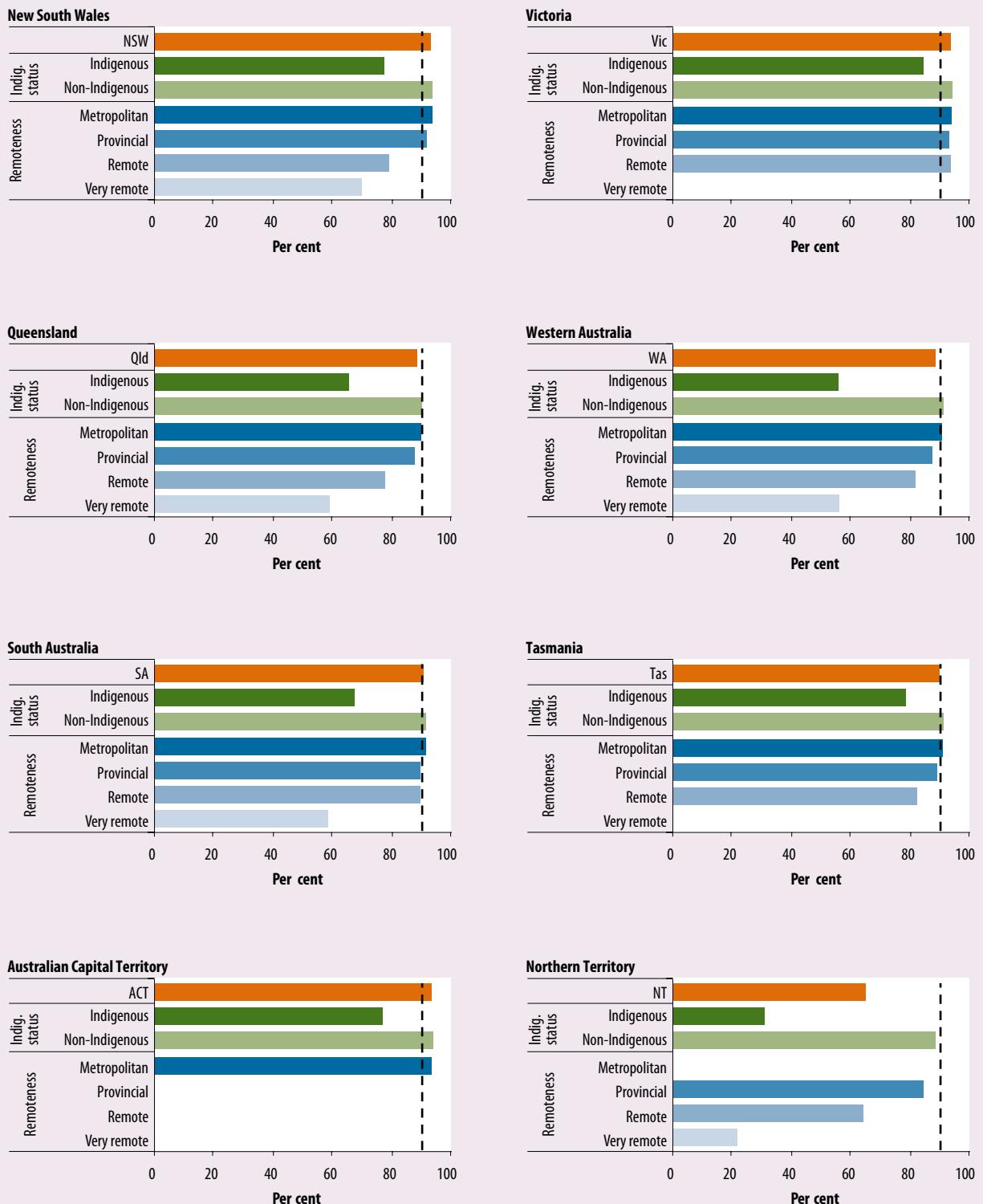
- This pattern is driven largely by the poorer performance of Indigenous students, which decreased from 77% in *Metropolitan* areas to 26% in *Very remote* areas (Figure 16.3). The proportions of non-Indigenous students meeting the minimum standards varied little across remoteness categories in comparison, from 94% in *Metropolitan* areas to 88% in *Very remote* areas. Indigenous children make up around 60% of the child population in *Very remote* areas—the lower proportion of Indigenous children achieving the minimum standards would have a significant effect on the proportion for all students in these areas.
- Rates by remoteness category were similar between 2008 and 2009 at the national and state and territory levels.



Note: Remoteness classified according to the MCEETYA Schools Geographic Location scale (see Jones 2004 for further information).

Source: ACARA 2010b.

Figure 16.3: Year 5 students who achieved at or above the national minimum standards for reading, by Indigenous status and remoteness, 2009

**Notes**

1. The vertical dotted line indicates the proportion for Australia (92%).
2. Remoteness classified according to the MCEETYA Schools Geographic Location scale (see Jones 2004 for further information). Not all states and territories have all remoteness area categories.

Source: ACARA 2010b; Table A1.16.

Figure 16.4: Year 5 students who achieved at or above the national minimum standards for reading, by state and territory and population group, 2009

How do Australian literacy rates compare internationally?

Internationally, awareness of the social and economic consequences of underachievement in literacy has highlighted the importance of monitoring this core educational outcome (OECD 2007; UN 2005). Although data are collected internationally for Year 4 students in the Progress in International Reading Literacy Study (PIRLS), internationally comparable literacy standards data are not currently collected in Australia for primary school aged students. Australia will participate in the PIRLS for the first time in 2011 (ACER 2010).

How many Australian children meet the minimum standards for numeracy?

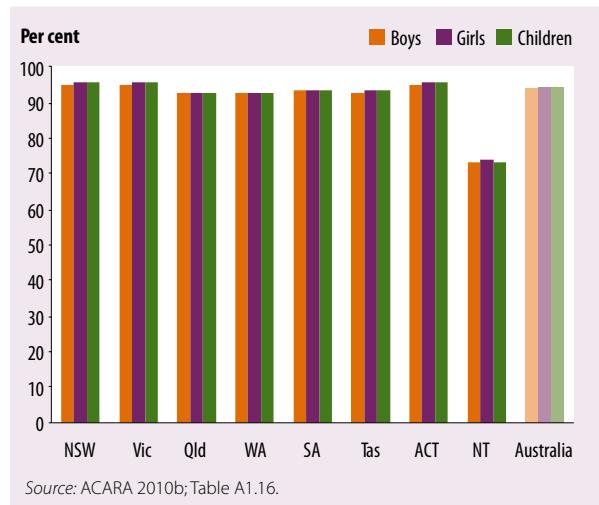


Figure 16.5: Year 5 students who achieved at or above the national minimum standards for numeracy, by state and territory, 2009

In 2009, most Australian Year 5 students met the minimum standards for numeracy (94%). The proportion of Year 5 students meeting the numeracy standards ranged from 74% in the Northern Territory to 96% in New South Wales, Victoria and the Australian Capital Territory (Figure 16.5).

At the national level and across the states and territories, there was very little difference in the proportion of girls and boys who achieved the minimum standards for numeracy (94.3% and 94.0%, respectively, at the national level).

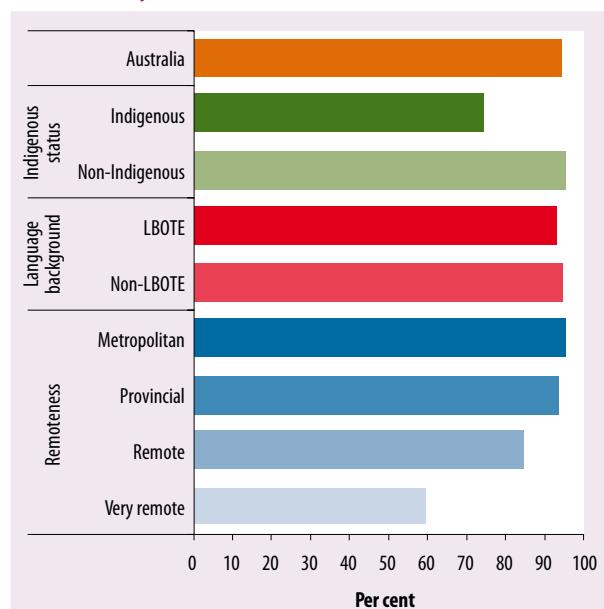
Students of parents with the lowest levels of educational attainment (Year 11 or equivalent, or below) were less likely to achieve the numeracy minimum standard, compared with students of

parents with the highest level of educational attainment (bachelor degree or above) (88% and 98%, respectively).

Similarly, Year 5 students whose parents had not been in paid work in the previous 12 months were less likely to meet the minimum standards for numeracy compared with all students (86% compared with 94%).

In 2008 and 2009, similar proportions of Year 5 students met the minimum standards for numeracy (93% and 94%, respectively). Comparable data are not available to monitor trends prior to 2008; however, during the period 2001 to 2007, the proportion of Year 5 students meeting the numeracy benchmarks remained much the same (ranging from 89% to 91%) (MCEETYA 2008b).

How do population groups vary in meeting the minimum standards for numeracy?



Notes

1. LBOTE refers to language background other than English.
2. Remoteness classified according to the MCEETYA Schools Geographic Location scale (see Jones 2004 for further information).

Source: ACARA 2010b; Table A1.16.

Figure 16.6: Year 5 students who achieved at or above the national minimum standards for numeracy, by selected population groups, Australia, 2009

Patterns across the population groups were similar to those for the literacy Headline Indicator; however, the differences between groups were smaller for numeracy than for literacy.

Indigenous students in Year 5 were less likely to achieve the minimum standard for numeracy:

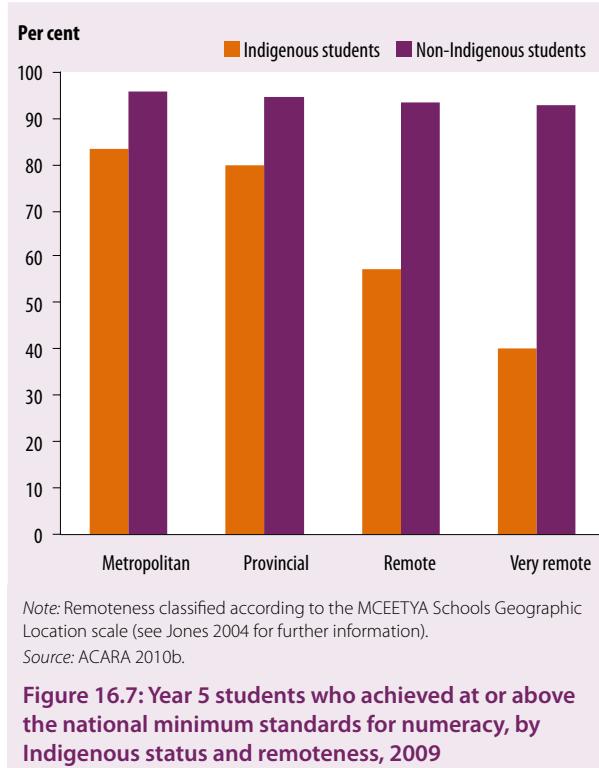
- In 2009, 74% of Indigenous students achieved the Year 5 minimum standard for numeracy, compared with 95% of non-Indigenous students—a difference of 21 percentage points (Figure 16.6). A similar pattern was found across all states and territories, with the difference ranging from 8 percentage points in Tasmania to 47 in the Northern Territory (Figure 16.8).
- The proportion of Indigenous students achieving the national minimum standard was lowest in the Northern Territory (46%) and highest in Victoria (87%). Similarly, the Northern Territory had the lowest proportion of non-Indigenous students achieving the minimum standards (93%), while Victoria, New South Wales and the Australian Capital Territory had the highest (96%).
- The gap between Indigenous and non-Indigenous students increased with increasing remoteness—from 12 percentage points in *Metropolitan* areas to 53 in *Very remote* areas (Figure 16.7).
- Between 2008 and 2009, the proportion of Indigenous students achieving the minimum standards was similar at both the national and state and territory levels.

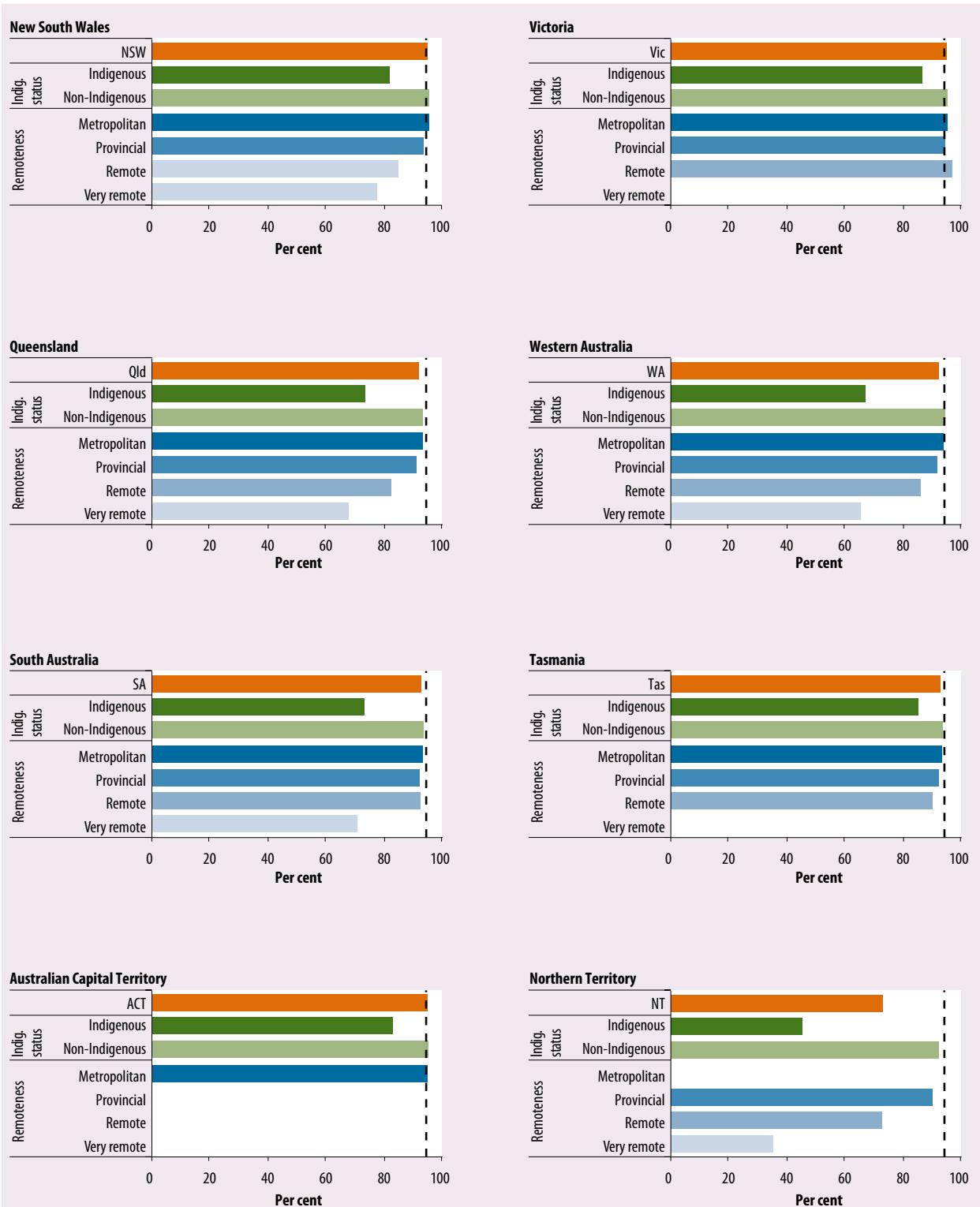
The proportion of students in Year 5 with a language background other than English (LBOTE) who met the numeracy minimum standard was similar to non-LBOTE students:

- In 2009, 93% of LBOTE and 95% of non-LBOTE students achieved the numeracy minimum standard (Figure 16.6). A similar pattern was found in most states and territories.
- The proportion of LBOTE students achieving the minimum standards for numeracy was lowest in the Northern Territory (41%) (Table A1.16). This is largely due to the relatively high proportion of Indigenous children in the Northern Territory and the fact that many of these children have a language background other than English—44% of Indigenous children aged 4–14 years in the Northern Territory spoke an Indigenous language as their main language at home in 2008 (ABS 2009g). New South Wales (96%) and Victoria (94%) had the highest proportions of LBOTE students achieving the minimum standards.
- Nationally, between 2008 and 2009, the proportions of LBOTE students achieving the numeracy minimum standards were similar (91% and 93%, respectively). A similar pattern was observed in the states and territories.

Students in *Remote* and *Very remote* areas were less likely to meet the numeracy minimum standards than those in *Metropolitan* areas:

- Just over half of students in *Very remote* areas met the minimum standards (60%), increasing to 85%, 93% and 95% in *Remote*, *Provincial* and *Metropolitan* areas, respectively. A similar pattern was found across the states and territories, with the exception of Victoria (Figure 16.8).
- This pattern is driven largely by the poorer performance of Indigenous students, which decreased from 83% in *Metropolitan* areas to 40% in *Very remote* areas (Figure 16.7). The proportions of non-Indigenous students meeting the minimum standards varied little across remoteness categories in comparison, from 96% in *Metropolitan* areas to 93% in *Very remote* areas. Indigenous children make up around 60% of the child population in *Very remote* areas—the lower proportion of Indigenous children achieving the minimum standards would have a significant effect on the proportion for all students in these areas.
- Rates by remoteness category were similar between 2008 and 2009 at both the national and state and territory levels.





Notes

- The vertical dotted line indicates the proportion for Australia (94%).
- Remoteness classified according to the MCEETYA Schools Geographic Location scale (see Jones 2004 for further information). Not all states and territories have all remoteness area categories.

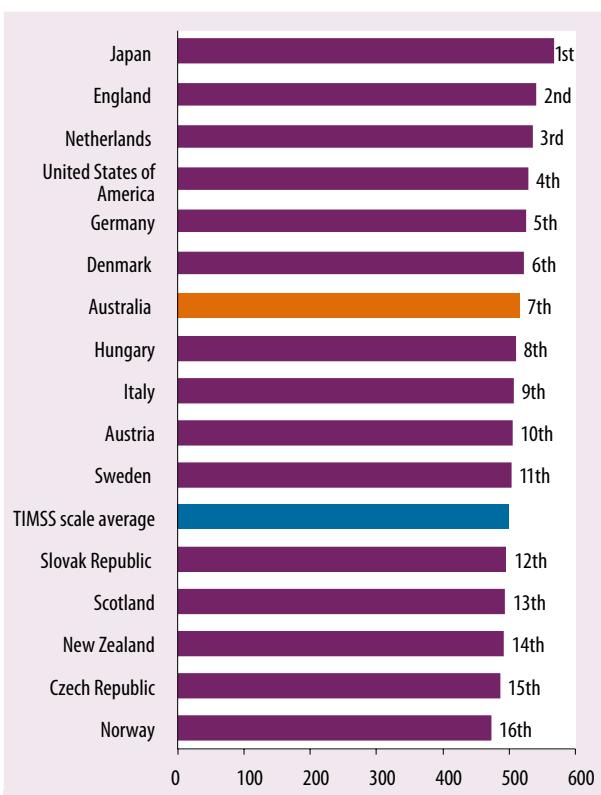
Source: ACARA 2010b; Table A1.16.

Figure 16.8: Year 5 students who achieved at or above the national minimum standards for numeracy, by state and territory and population group, 2009

How do Australian numeracy rates compare internationally?

Internationally, awareness of the social and economic consequences of underachievement in numeracy has highlighted the importance of monitoring this core educational outcome (OECD 2007; UN 2005).

Internationally comparable numeracy standards data are available from the Trends in International Mathematics and Science Study (TIMSS) for Year 4 students. In 2007, 16 OECD countries participated in TIMSS. Australia's average score for mathematics was in the top half of OECD countries (7th out of 16). With an average mathematics score of 516, Australia rated higher than the TIMSS scale average (500, including non-OECD countries), but had a considerably lower score than the two highest ranked OECD countries, Japan and England (568 and 541, respectively) (Figure 16.9).



Note: Based on data from 16 OECD countries.

Source: Gonzales et al. 2009.

Figure 16.9: Mathematics performance of Year 4 students, participating OECD countries, 2007

Part V

FAMILY AND COMMUNITY PRIORITY AREAS

The Headline Indicators discussed so far have focused on health, learning and educational outcomes for Australian children, as well as risk and protective factors that influence these outcomes. However, wider environmental determinants, such as family and community factors, also play a role in shaping children's health and wellbeing.

Families play a crucial role in the lives of children, providing them with physical, emotional and economic support. Children living in families without adequate income are at greater risk of poor health and educational outcomes. However, economic disadvantage can be mitigated by the family environment. Children who are raised in stimulating, nurturing and safe environments, as opposed to exposure to abuse and neglect, have been shown to have better outcomes throughout their lives. Families with rich social networks have greater resilience and more resources to assist them in managing their daily lives and problems, factors which promote the healthy development and wellbeing of children.

Teenage motherhood presents health risks for both mother and child. Parenthood during the teenage years often results in financial and emotional

stress, which can affect the health, educational and economic futures of both the children and their parents. Teenage parents may also lack the social networks and resources to provide the best environment for their child.

Shelter is closely linked to the social and emotional aspects of a child's health and wellbeing. The home environment, including both physical and social dimensions, provides a sense of identity and security that is fundamental to children's development.

Part V provides information on the physical, social and economic environments in which children grow up, with the aim of improving our understanding of these contexts and the way they influence outcomes for children. Specifically, *Part V* provides information on the Headline Indicator priority areas:

- teenage births
- family economic situation
- shelter
- child abuse and neglect
- family social network.

17 Teenage births

Teenage motherhood poses significant long-term risks for both mother and child, including poorer health, educational and economic outcomes.

Births to teenage mothers accounted for around 4% of all births in Australia in 2008, with rates 5 times as high among Indigenous mothers and those in *Remote and very remote areas*.

Teenage motherhood is associated with significant health and social problems for the infant and the mother. Teenage mothers face increased risk of miscarriage, preterm delivery, low birthweight and other complications of pregnancy and birth, which lead to increased incidence of neonatal mortality (Chen et al. 2007; Conde-Agudelo et al. 2005; Malamitsi-Puchner & Boutsikou 2006). Congenital anomalies affecting the central nervous system, the gastrointestinal and musculoskeletal systems are more prevalent among babies of teenage mothers (Chen et al. 2007) and infants may also be at greater risk of infection, SIDS, chemical dependence (due to maternal substance misuse), low birthweight and general increased morbidity during their first year of life (Malamitsi-Puchner & Boutsikou 2006). Evidence shows that the younger the teenager, the higher the risks of poor outcomes for the baby (Chen et al. 2007).

There is also a higher risk of immediate complications for the mother, including anaemia, uterine infection, episiotomy, postpartum haemorrhage and maternal death (Conde-Agudelo et al. 2005; Malamitsi-Puchner & Boutsikou 2006; Raatikainen et al. 2006). Teenage motherhood may also have long-term effects on the ability of the mother to care for her infant, due to interrupted schooling, greater problems entering the labour market and high likelihood of economic hardship (Sleebos 2003). As a result, many young mothers are unable to meet the financial and emotional needs of their babies. These negative consequences can affect the health, educational and economic futures of the child, as well as the parents themselves (Sleebos 2003). Children born to teenage mothers develop more behavioural problems, tend to be more impulsive than children of older mothers and are more likely to be born into and continue to live in social and economic disadvantage (Ambert 2006).

A number of factors are associated with teenage birth, including family history of teenage

pregnancy, sexual abuse in childhood, unstable housing arrangements, poor school attendance and performance, socioeconomic disadvantage, absence of a father figure, living in rural and remote areas and being Indigenous (Slowinski 2001). Risk factors for poorer birth outcomes for infants of teenage mothers include inadequate antenatal care, inadequate weight gain in pregnancy, tobacco and alcohol use during pregnancy, emotional stress and lack of family support (Chan & Sullivan 2008; Chen et al. 2007; Raatikainen et al. 2006). While not all teenage births result in negative outcomes for mother and child, the circumstances that often contribute to teenage birth mean that many young mothers do not receive the support they need during and after the birth.

Headline Indicator: Age-specific birth rate for 15–19 year old women

Box 17.1: Measuring teenage births

The **teenage birth rate** is measured as the number of babies born to teenage mothers expressed as the number of live births per 1,000 female population aged 15–19 years.

There are few births to mothers under the age of 15 years in Australia—these births are included in the numerator unless otherwise specified.

The teenage birth rate is distinct from the teenage pregnancy rate. The birth rate includes only **live births** and is therefore lower than the pregnancy rate, which would include stillbirths and terminations.

The teenage birth rate (rather than the teenage pregnancy rate) is reported to emphasise the relationship between early life experiences and the longer term effects on child health and wellbeing.

Data on teenage births is available from the **AIHW National Perinatal Data Collection (NPDC)** (see Appendix 3: *Data sources* for more information on this data collection).

How many children are born to teenage mothers?

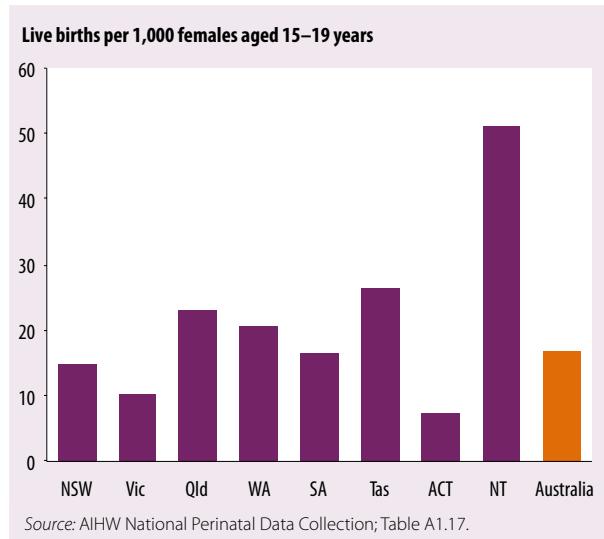


Figure 17.1: Teenage births, by state and territory, 2008

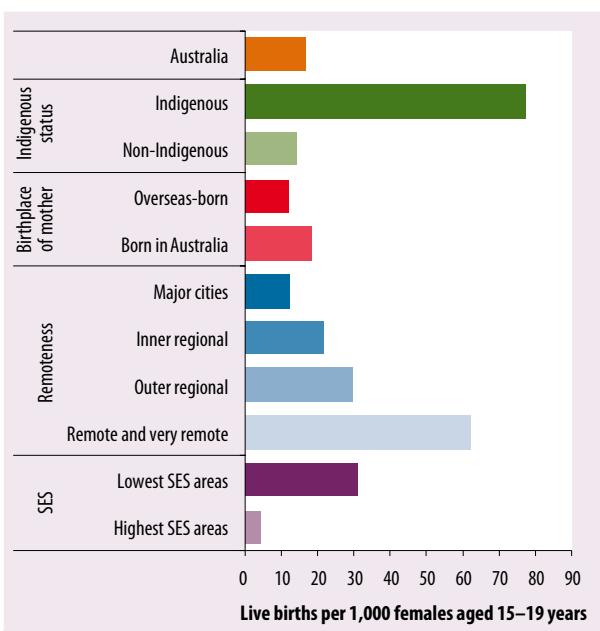
In 2008, there were around 12,100 infants born to teenage mothers in Australia—a rate of 17 live births per 1,000 females aged 15–19 years (Figure 17.1). Teenage mothers accounted for around 4% of all women who gave birth in Australia (Laws & Sullivan 2010).

The teenage birth rate was lowest in the Australian Capital Territory (8 per 1,000) and Victoria (10 per 1,000), and highest in the Northern Territory (51 per 1,000). The high proportion of Indigenous mothers in the Northern Territory and the younger average age of mothers among this group contribute to this higher rate.

The teenage birth rate was similar between 2006 and 2008, at both the national and state and territory levels. National trend data over a longer period show a declining teenage birth rate from the mid-1990s (22 per 1,000) to 2003, when the rate stabilised at 17 per 1,000 females aged 15–19 years.

How does the teenage birth rate vary across population groups?

Indigenous women were more likely to be teenage mothers than their non-Indigenous counterparts. One in five (20.5%) Indigenous mothers were teenagers, compared with 3.5% of non-Indigenous mothers in 2008 (Laws & Sullivan 2010):



Note: Refer to Appendix 2: Methods for explanation of remoteness areas.

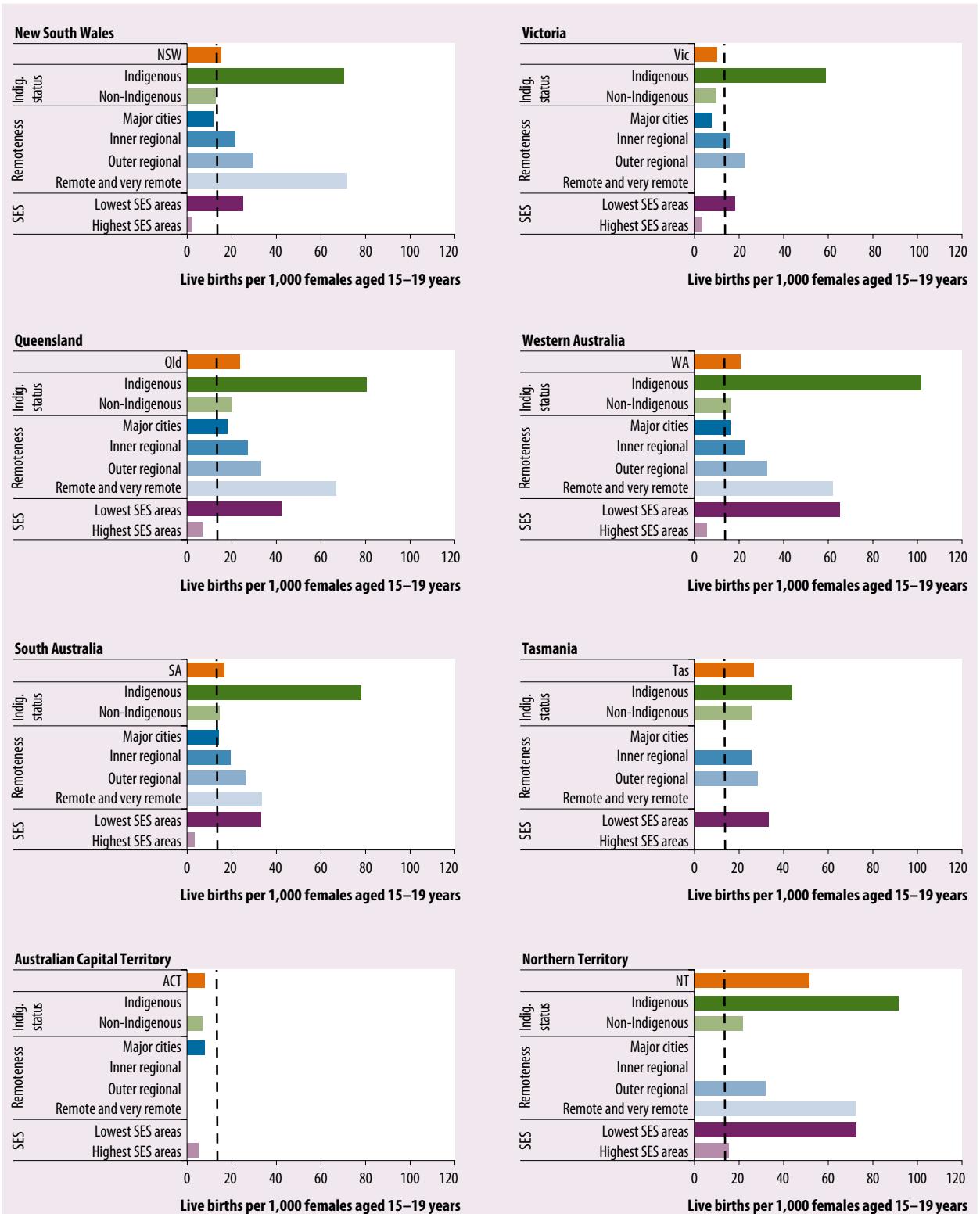
Source: AIHW National Perinatal Data Collection; Table A1.17.

Figure 17.2: Teenage births, by selected population groups, Australia, 2008

- The teenage birth rate among Indigenous women was more than 5 times the non-Indigenous rate in 2008—78 births per 1,000 females aged 15–19 years, compared with 14 (Figure 17.2).
- The Indigenous teenage birth rate was highest in Western Australia and the Northern Territory (101 and 91 births per 1,000, respectively) and lowest in Tasmania (44 births per 1,000) (Figure 17.3). The Indigenous rate was higher in all states and territories in 2008, at between 1.7 and 6 times the non-Indigenous rate.

Nationally, births to teenagers were less common among overseas-born women, compared with Australian-born women:

- In 2008, the teenage birth rate to overseas-born women was 12 per 1,000—around one-third lower than for Australian-born women (18 per 1,000).
- The teenage birth rate among overseas-born women in New South Wales, Queensland, South Australia, Tasmania and the Northern Territory was lower than among Australian-born women in these jurisdictions. However, this pattern was reversed in Western Australia, and there was little difference in the remaining jurisdictions (Table A1.17).



Notes

1. Vertical dotted line indicates the rate for Australia (16.8 live births per 1,000 females aged 15–19 years).
2. Refer to Appendix 2: Methods for explanation of remoteness areas and socioeconomic status (SES). Not all states and territories have all remoteness area categories.

Source: AIHW National Perinatal Data Collection; Table A1.17.

Figure 17.3: Teenage births, by state and territory and selected population groups, 2008

The teenage birth rate increased with increasing geographical remoteness:

- In 2008, teenage women in *Remote and very remote* areas were more than 5 times as likely to give birth than those in *Major cities* (62 live births per 1,000 females aged 15–19 years compared with 12) (Figure 17.2). This pattern was seen in all states and territories for which data were available in all remoteness categories, ranging from twice as high to 6 times as high among women in *Remote and very remote* areas. The higher teenage birth rate in *Very remote* areas is likely to be partly due to the high proportion of Indigenous people in these areas and the higher teenage birth rate among this group.
- The teenage birth rate in *Remote and very remote* areas was lowest in South Australia (33 live births per 1,000 females aged 15–19 years) and highest in the Northern Territory (72) and New South Wales (71). Victoria had the lowest rate among *Major cities* (8), while Queensland had the highest (18) (Figure 17.3).

The teenage birth rate was higher among women living in the lowest socioeconomic status (SES) areas compared with the highest SES areas:

- In 2008, the birth rate among teenage women in the lowest SES areas (31 per 1,000) was more than 7 times as high as in the highest SES areas (4 per 1,000) (Figure 17.2).
- This pattern was seen across the states and territories, with the difference ranging from around 5 times as high in the Northern Territory and Victoria to 11 times as high in Western Australia (the Australian Capital Territory did not have sufficient numbers to report reliable rates). (Figure 17.3).

How does Australia compare internationally?

Australia's teenage birth rate ranked 22nd out of 34 OECD countries in 2008 (Figure 17.4). At 15 live births per 1,000 females aged 15–19 years, the Australian rate was slightly ahead of the OECD average (16), but substantially higher than Switzerland (4.3), Japan (4.8) and Italy (4.8). The teenage birth rate was highest in Mexico (64), Chile (59) and Turkey (36).



Notes

1. Data do not include infants born to mothers aged less than 15 years.
2. Based on live births from 34 OECD countries.

Source: OECD 2010a.

Figure 17.4: Teenage births, selected OECD countries, 2008

18 Family economic situation

Low family income can adversely affect the health, education and self-esteem of children.

In 2007–08, there were an estimated 500,400 low-income households with children aged 0–12 years, receiving an average equivalised disposable income of \$412 per week (\$278 less per week than middle-income households with children of the same age).

For most families, regular adequate income is the single most important determinant of their economic situation. Children living in families without adequate income are at a greater risk of poor health and educational outcomes, both in the short- and long-term. Children living in low-income families are more likely to have insufficient economic resources to support a minimum standard of living (AIHW 2009d). This can affect a child's nutrition and access to medical care, the safety of their environment, level of stress in the family, quality and stability of their care and provision of appropriate housing, heating and clothing (ABS 2006b; Shore 1997). Studies have shown that children from low-income families are more prone to psychological or social difficulties, behavioural problems, lower self-regulation and elevated physiological markers of stress (Barnett 2008).

An emerging field of research is the investigation of children's perspectives on economic adversity. Redmond's (2008) review reveals that a primary concern of economically disadvantaged children is being excluded from activities that other children appear to take for granted and the embarrassment that this can cause. Notwithstanding the importance of adequate income in alleviating poverty and contributing to personal health and wellbeing, income poverty is just one dimension of poverty:

Poverty encompasses a multitude of deprivations that are related, but not restricted, to low income or income inequality... aspects of living that are not easily named or measured, such as quality of life, social cohesion, family and social networks, autonomy and opportunity for future prosperity are also important in assessing levels of poverty (Carson et al. 2007).

In this sense, children who are economically disadvantaged are not necessarily the most disadvantaged children. Close family relationships, particularly closeness to at least one parent, appear to protect children from the worst effects of economic disadvantage. In contrast, economic disadvantage coupled with low family support, or strained or abusive relationships, can cause children to lower their aspirations, exclude themselves from activities or engage in antisocial behaviour (Heady et al. 2006).

Headline Indicator: Average real equivalised disposable household income for households with children aged 0–12 years in the 2nd and 3rd income deciles (\$ per week)

Box 18.1: Measuring family economic situation

Income is usually received by individuals but shared among family members. **Household size and composition** can therefore have a large impact on the standard of living that a given income can support. For this reason, income deciles are formed using **equivalised disposable household income** of all households, whereby an equivalence scale is used to adjust household income for household size and composition. Although they are a widely accepted measure, equivalence scales can mask some underlying household circumstances such as wealth, earning capacity and ability to meet household costs (for details of the modified OECD equivalence scale used by the ABS and choice of scales, see ABS 2007c).

Data on the family economic situation of Australian children are available from the **ABS Survey of Income and Housing (SIH)** (see Appendix 3: Data sources for more information on this survey). The most recent survey, conducted in 2007–08, collected more comprehensive information on income than previous surveys. The estimates from the 2007–08 survey are therefore in general not directly comparable with earlier years. For further information, see *Household income and income distribution* (ABS 2009e). Trend data for 2005–06 and 2007–08 presented in this chapter are expressed in 2007–08 dollars (CPI-adjusted) and, to allow comparisons to be made, where possible the 2005–06 estimates are adjusted to account for factors of the more comprehensive income measure introduced in the 2007–08 survey.

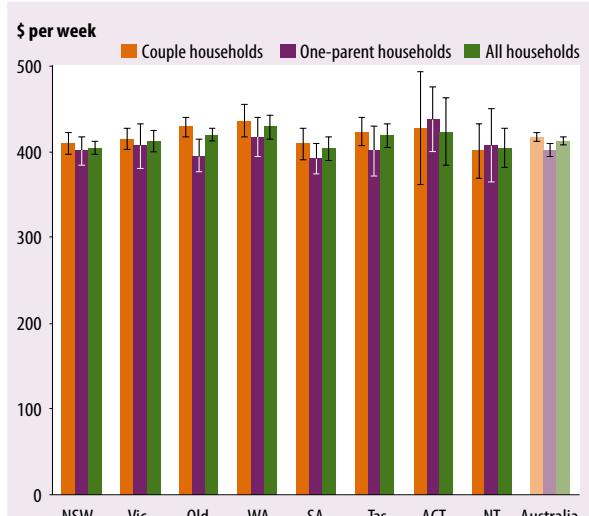
In this chapter, **low-income households** refer to households with people in the second and third deciles of equivalised disposable household income. The lowest decile is excluded because household income is not always a good measure of the total economic resources available to many people with an income close to nil or negative (ABS 2007b).

Middle-income households refer to those households with people in the fifth and sixth income deciles.

Data are for average real equivalised disposable weekly household income. In the chapter, for ease of reading, this is variously described as 'average equivalised disposable income' or 'average equivalised income'.

Very remote areas are excluded from the SIH and there are insufficient data for reporting by Indigenous status.

What is the economic situation of low-income Australian families with children?



Source: ABS 2007–08 Survey of Income and Housing unpublished data; Table A1.18a.

Figure 18.1: Average equivalised disposable income for low-income households with children aged 0–12 years, by state and territory and family type, 2007–08

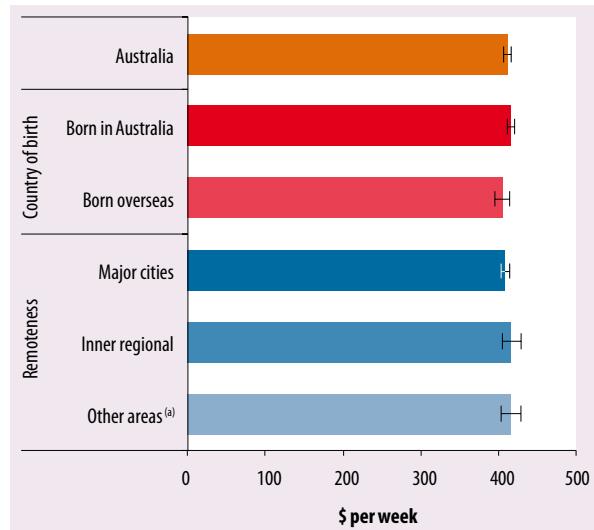
In 2007–08, nationally, there were around 500,400 low-income households with children aged 0–12 years. These households received an average equivalised disposable income of \$412 per week—\$278 less than middle-income households with children aged 0–12 years.

The average equivalised income in low-income households was lowest in South Australia and the Northern Territory (both \$404 per week) and highest in Western Australia and the Australian Capital Territory (\$429 and \$423 per week, respectively) (Figure 18.1). The difference in income between low- and middle-income households ranged from \$256 in Tasmania to \$294 in South Australia (Table A1.18b).

At the national level, the average equivalised income for low-income households was higher for couple-family households compared with one-parent households (\$417 and \$402 per week, respectively) (Figure 18.1). There were no statistically significant differences in average equivalised household income by family type across the states and territories, with the exception of Queensland, where couple-family households had an average equivalised income \$34 greater than one-parent families.

Between 2005–06 and 2007–08, average equivalised income increased by \$41 per week (11%) among low-income households at the national level—from \$371 to \$412 per week. Similar increases were observed in all states but the differences were not significant for the Australian Capital Territory or the Northern Territory. Middle-income households experienced a 14% increase at the national level between 2005–06 and 2007–08.

How does family economic situation vary across population groups?



(a) Other areas include Outer regional and Remote areas combined. Very remote areas are excluded from the survey. Refer to Appendix 2: Methods for explanation of remoteness areas.

Note: Country of birth refers to birthplace of household reference person.
Source: ABS 2007–08 Survey of Income and Housing unpublished data; Table A1.18a.

Figure 18.2: Average equivalised disposable income for low income households with children aged 0–12 years, by selected population groups, Australia, 2007–08

Family economic situation may vary for different population groups such as those of overseas origin. The ABS Survey of Income and Housing only captures the birthplace of the household reference person and does not indicate how long the person has resided in Australia, hence comparisons should be interpreted with caution:

- Nationally, in 2007–08, among low-income households with children aged 0–12 years, households where the household reference person was born in Australia were more likely to have a higher average equivalised income than those where the reference person was born overseas (\$416 and \$405 per week, respectively) (Figure 18.2).
- Among the states and territories, there was little difference in average equivalised income by birthplace, except in Tasmania where equivalised income was \$40 per week higher for households where the reference person was born in Australia rather than overseas (Figure 18.3).
- Nationally, between 2005–06 and 2007–08, there was an increase in average equivalised income for low-income households both where the reference person was born in Australia and where the

reference person was born overseas—an increase of \$48 (13%) and \$25 (7%) per week, respectively. A similar pattern was seen in New South Wales, Victoria, Queensland, Western Australia and South Australia.

The available data show no major differences in the family economic situation of low-income households living in urban areas, compared with those in remote areas:

- In 2007–08, at the national and state and territory levels, average equivalised household income for low-income households with children aged 0–12 years was similar in *Major cities* (\$409), *Inner regional* areas (\$417) and *Outer regional and Remote* areas (\$416) (Figure 18.2).
- At the national level, between 2005–06 and 2007–08, there were increases in average equivalised income for low-income households with children aged 0–12 years in all geographic areas, ranging from a \$34 increase in *Major cities* to \$50 in both *Inner regional* areas and *Outer regional and Remote* areas combined.
- Within the states, increases were experienced in most areas over this period (differences were not statistically significant in the territories). Western Australia recorded the largest increases in each of the areas—\$43 in *Major cities*, \$107 in *Inner regional* areas and \$65 in *Outer regional and Remote* areas. In all states except South Australia, increases were smallest in *Major cities*, compared with *Inner regional* and *Outer regional and Remote* areas combined. For Tasmania, the increase in the *Inner regional* area of Hobart was smaller than in other areas of the state (see Table A1.18a).

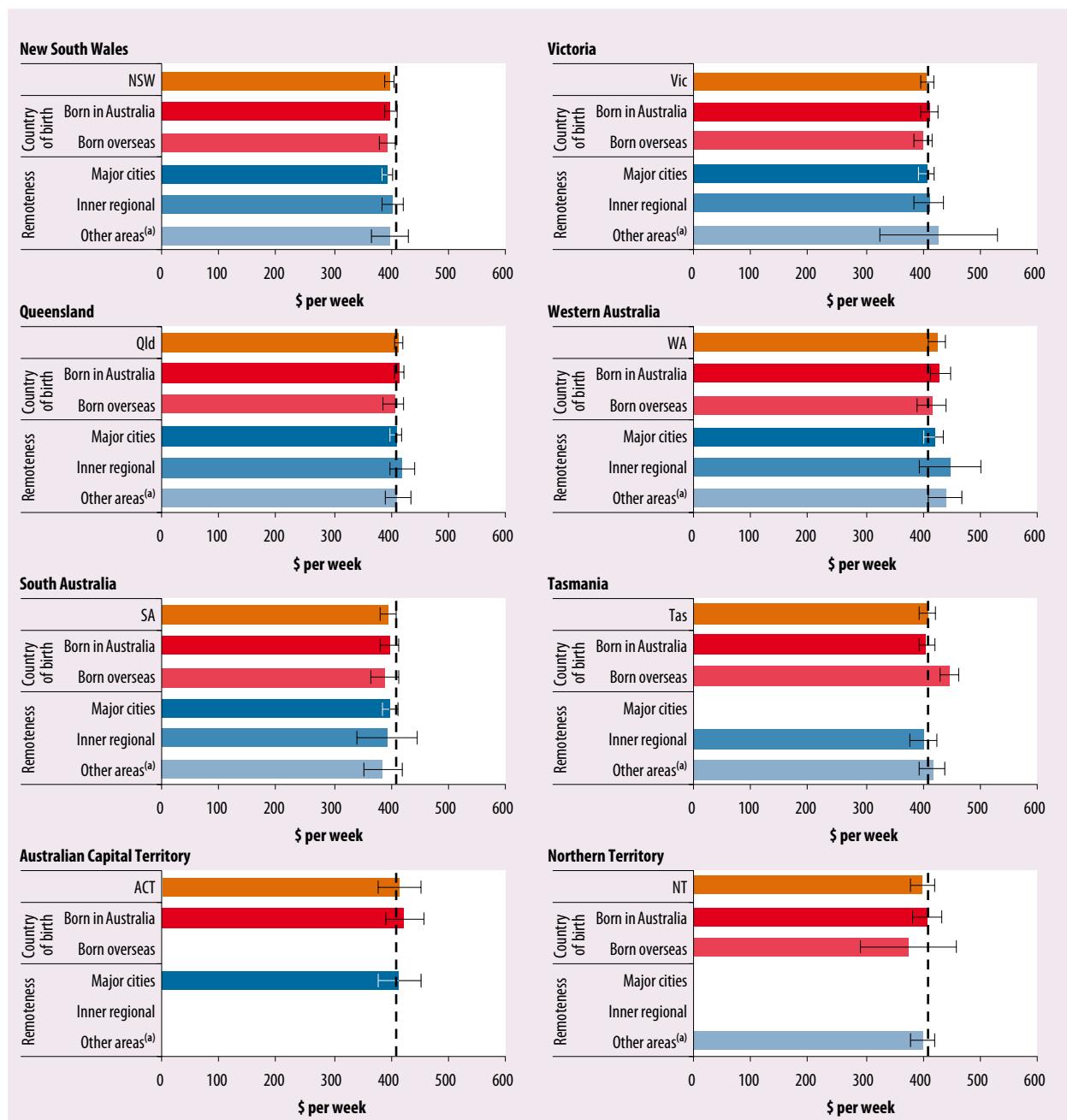
How does Australia compare internationally?

No internationally comparable data are available for this Headline Indicator. However, the OECD measured income inequality for children across 27 OECD countries by calculating the difference between income at the 50th percentile (the median) and income at the 10th percentile of the disposable income distribution for households with children aged 0 to 17 years. The measure is said to capture ‘bottom-end inequality’, that is, how far children are falling behind the median of what is considered normal in a given society, as this could put children at risk of social exclusion (UNICEF 2010).

Data are from various surveys conducted between 2007 and 2008. For Australia, the data source is the

2008 Household Income and Labour Dynamics in Australia (HILDA) survey. It is noted in the UNICEF report that these surveys were conducted before the global financial crisis, representing a snapshot taken in relatively prosperous times.

Australia fell just below the OECD average, meaning that it had greater income inequality for children than the average. The countries with the least inequality were Norway and Denmark. Australia's score was comparable to the United Kingdom and Belgium. Countries with greater income inequality than Australia included Canada and Spain.



(a) Other areas include Outer regional and Remote areas combined. Very remote areas are excluded from the survey. Not all states and territories have all remoteness area categories. Refer to Appendix 2: Methods for explanation of remoteness areas.

Notes

1. Vertical dotted line indicates mean for Australia (\$412 per week).

2. Country of birth refers to birthplace of household reference person.

Source: ABS 2007–08 Survey of Income and Housing unpublished data; Table A1.18a.

Figure 18.3: Average equivalised disposable income for low income households with children aged 0–12 years, by state and territory and selected population groups, 2007–08

19 Shelter

Access to stable, adequate housing is recognised as a basic human need and it plays a major role in the health and wellbeing of families, in particular children.

Currently there is no single data source that can report on this Headline Indicator. Further investigation is required to determine the feasibility of using two data sources.

A child's access to stable, adequate, shelter is recognised as a basic human need. Having adequate housing enables adults and children to engage with the wider community—socially, recreationally and economically, and can influence both their physical and mental health (Vic DHS 2008). The inclusion of shelter as a Headline Indicator priority area recognises that housing conditions and stability, and their social determinants, impact on the health, development and wellbeing of children.

For children, the home environment, including both physical and social dimensions, provides a sense of identity and security that is fundamental to their development. Shelter is closely linked to the social and emotional aspects of a child's health and wellbeing, and not merely to the structural features of the built environment. This approach to shelter is consistent with the view that children's interactions with their immediate environment, and the relationship between children's immediate environments and larger social contexts, are critical to their development (Wise 2003).

There are a number of components of shelter that affect child development and wellbeing, including home ownership, affordability, mobility, homelessness, overcrowding and characteristics of the dwelling.

Housing costs are usually the largest and least flexible item in a family budget. High housing costs can adversely affect child wellbeing through the experience of financial or material hardships (Harkness & Newman 2005); impact on parental wellbeing and family stress and the quality, size and type of housing a family can afford (Leventhal & Newman 2010).

Housing mobility, overcrowding and homelessness are associated with a decrease in children's short-term academic achievement and an increase in social, emotional and behavioural problems (Colton 1996; Rubin et al. 1996). Frequent family

moves are linked with increased grade repetitions, school suspensions and expulsions and other psychological issues. The magnitude of the effect of frequent moves increases with additional risk factors such as poverty, minority race, single-parent family structure, low levels of parental education and young maternal age (Cooper 2001). In addition, the adverse effects of overcrowding and homelessness on children can persist throughout life, ultimately affecting future socioeconomic status and adult wellbeing; children are also at a greater risk of finding themselves in similar situations as their parents, leading to the intergenerational transmission of social inequality (Solari & Mare 2007).

Headline Indicator: Proportion of children aged 0–12 years living in households experiencing at least one of the specified aspects of housing disadvantage: homelessness, overcrowding, housing stress, forced residential mobility

Headline Indicator development

Due to the multidimensional nature of shelter, the identification of a single indicator to measure progress is particularly challenging. The AIHW undertook work in 2009–2010 to progress indicator development for the *Shelter* priority area. This process of defining and selecting a Children's Headline Indicator for *Shelter* involved:

- identifying the aspects related to shelter which were most strongly associated with children's health, development and wellbeing
- reviewing relevant national and international literature, frameworks and indicator reports
- consulting with key experts and stakeholders.

The AIHW has published an information paper describing this process in detail (AIHW 2010e).

Definition and conceptualisation

The project report *Headline indicators for children's health, development and wellbeing* (Vic DHS 2008) was the starting point for establishing the conceptual basis for a *Shelter* Headline Indicator. The report highlights the importance of a child's access to stable, adequate shelter to enable them to engage with the wider community, socially, recreationally and economically, noting the influence on both their physical and mental health.

The following definition for shelter, incorporating both physical and social dimensions, was used as the basis for developing a Headline Indicator:

In the Australian context, shelter is synonymous with housing, which for most is a dwelling that provides safety, security and privacy. Access to stable, adequate housing is recognised as a basic human need and plays a major role in the health and wellbeing of families and, in particular, children, by providing:

- a safe environment
- the security that allows participation in the social, educational, economic, and community aspects of their lives
- the privacy to foster autonomy as an individual and a family unit (AIHW 2009c).

The absence of these aspects of housing, and the interactions between them, may affect children's health, behaviour, development and education outcomes and opportunities for wider engagement with society. Key components of this definition are related to the accessibility, affordability, security and appropriateness of housing.

While the impact of emotional and mental aspects of shelter or housing are also important, particularly in relation to domestic violence and its links to homelessness, these aspects are already captured under other Headline Indicators, such as *Child abuse and neglect* and *Social and emotional wellbeing*, and so were not considered further in relation to a Headline Indicator for *Shelter*.

Selecting a *Shelter* Headline Indicator

Based on a review of national and international literature and key indicator frameworks, and through the consultation process, several potential indicators were identified for the *Shelter* priority area. Each of these indicators covered only a single aspect of shelter, for example, home ownership,

housing affordability or residential mobility; and did not capture the multidimensional aspect of the priority area. It was therefore agreed through the consultation process that an indicator for *Shelter* which incorporates multiple aspects of housing disadvantage, such as homelessness, overcrowding, housing stress and forced residential mobility, would be investigated.

Two options for a Headline Indicator for *Shelter* were identified through this process. The first option considers the feasibility of an indicator incorporating multiple aspects of housing disadvantage and the second, an indicator of housing affordability. An indicator of housing affordability was considered due to the correlation with both overcrowding and homelessness.

An assessment of these two options showed that an indicator of housing affordability performs slightly better due to the feasibility of collection, reporting and availability of data. However, an indicator's capacity to include the multidimensional nature of shelter and facilitate international comparisons are also important attributes of the housing disadvantage indicator. In addition, a housing disadvantage indicator:

- is consistent with research showing the strong associations between housing affordability, overcrowding, housing mobility and homelessness with children's health, development and wellbeing outcomes (due to the high level of correlation between these housing measures it is very difficult to identify which has the greatest impact)
- is more closely associated with the agreed conceptual basis for a *Shelter* Headline Indicator and the key components of the definition relating to affordability, security and appropriateness of housing
- received a higher level of support through the consultation and review process.

Based on these considerations, it was agreed that an indicator of housing disadvantage would be the most suitable basis for a Children's Headline Indicator for the area of *Shelter*. The Headline Indicator for the area of shelter has therefore been defined as the proportion of children aged 0–12 years living in households experiencing at least one of the specified aspects of housing disadvantage:

- homelessness—currently experiencing primary, secondary or tertiary homelessness
- overcrowding—where one or more additional bedrooms are required

- housing stress—children living in low-income households paying greater than 30% of household income on housing costs
- forced residential mobility.

Data issues and availability

There is currently no single data collection to support reporting against all four components of the housing disadvantage indicator. A large-scale national survey that supports disaggregation by state and territory for subpopulations of children would be the most appropriate data collection vehicle.

In the absence of this, it is proposed to use:

- the ABS Census of Population and Housing to capture data for the homelessness component, once adjusted estimates are released following the 2011 Census

- the ABS Survey of Income and Housing (SIH) to capture data relating to overcrowding, housing stress and forced residential mobility.

Using this methodology, the possibility of counting a person in both data collections would be minimised, as the SIH collects information by personal interview from usual residents of private dwellings and by definition excludes the homeless population. The SIH is also considered the preferred data source for measuring housing stress as it is more accurate, more frequent and treats reimbursements, such as Commonwealth Rent Assistance, more appropriately.

As there is no single data source that can report on all four components of the housing disadvantage indicator, further investigation is required to determine the feasibility of using these data sources.

20 Child abuse and neglect

Victims of abuse and neglect may experience reduced social skills, poor school performance and impaired language ability, and they are at increased risk of criminal offending and mental health problems.

In 2009–10, 7 in every 1,000 children aged 0–12 years were the subject of a substantiated report of abuse or neglect. Indigenous children were over-represented at 8 times the rate of other children.

There is a demonstrated relationship between the health and wellbeing of children and the environment in which they grow up. Children who are raised in supportive, nurturing environments are more likely to have better social, behavioural and health outcomes (McCain & Mustard 2002; Stanley et al. 2003). The reverse is also true—children who have been abused or neglected often have poor outcomes. Young victims of abuse and neglect may experience reduced social skills, poor school performance, impaired language ability, a higher likelihood of criminal offending and mental health issues such as eating disorders, substance misuse and depression (Chartier et al. 2007; Gupta 2008; Zolotor et al. 1999).

The adverse effects of abuse and neglect can last a lifetime. Adult survivors of childhood abuse and neglect tend to experience higher levels of alcohol and substance misuse, homelessness, chronic physical ill health and mental health problems such as depression, self-harm and post-traumatic stress (Lamont 2010). They are also more likely to experience abuse and violence in adulthood, and abuse or neglect their own children. The short- and long-term consequences of abuse are thought to be related to the type, severity and duration of abuse, and the context in which it occurs.

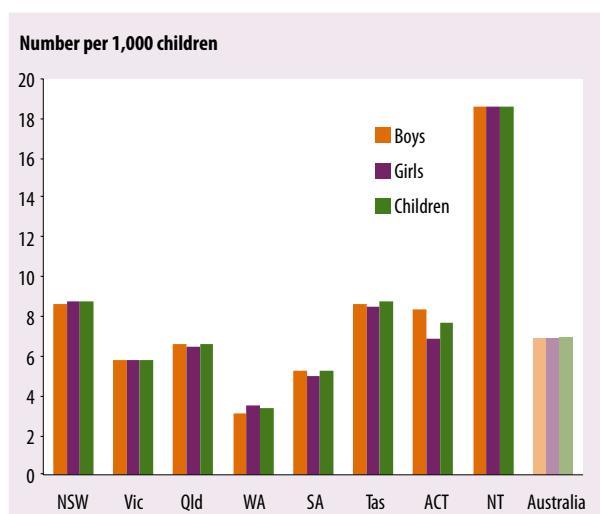
There are a range of factors that may place children at higher risk of abuse and neglect. These include family stressors such as financial difficulties, social isolation, domestic violence, mental health problems, disability, alcohol and substance misuse and the lack of safe and affordable housing (Layton 2003; Tennant et al. 2003; Vic DHS 2002). Many of these factors are interrelated and therefore exacerbate the problems faced by some families.

The complex nature of child abuse and neglect is widely acknowledged. In response, the Australian Government, in collaboration with states

and territories, has implemented the *National Framework for Protecting Australia's Children 2009–2020*, which promotes preventative initiatives to improve the safety and wellbeing of all children (COAG 2009b).

Headline Indicator: Rate of children aged 0–12 years who were the subject of a child protection substantiation in a given year

How many Australian children are the subject of a child protection substantiation?



Note: Only includes children who were the subject of a substantiation of a notification received during 2009–10 (see Box 20.1). Children may have been the subject of more than one substantiation during the year.

Source: AIHW Child Protection Data Collection; Table A1.20.

Figure 20.1: Children aged 0–12 years who were the subject of a substantiation, by state and territory, 2009–10

Box 20.1: Measuring child abuse and neglect

There are currently no reliable data on the incidence or prevalence of child abuse and neglect in Australia, mainly due to the difficulties in defining measures and collecting data.

However, national data are available from the **AIHW Child Protection Data Collection** for situations where children have come to the attention of child protection authorities; these data are collated by the AIHW from all state and territory governments (see *Appendix 3: Data sources* for more information on this data collection). It should be noted that these data relate to an unknown proportion of all abuse and neglect cases in the community and are therefore not a reliable measure of incidence or prevalence (see AIHW 2010b and earlier issues).

In Australia, statutory child protection is the responsibility of the state and territory governments.

Definitions of notification, investigation and substantiation

A child protection **notification** is an allegation of child abuse or neglect, child maltreatment or harm to a child that is made to an authorised department. An **investigation** is the process of obtaining more detailed information about a child who is the subject of a notification, and an assessment of the degree of harm or risk of harm to the child. A finalised investigation refers to an investigation where an outcome has been reached; that is, the notification is substantiated or not substantiated (AIHW 2010b:77).

Substantiation refers to the conclusion that, after investigation, a child has been, is being or is likely to be abused or neglected or otherwise harmed. A decision about the appropriate level of continued involvement by the state or territory child protection and support services would then be made. This generally includes the provision of support services to the child and family. In situations where further intervention is required the child may be placed on a **care and protection order** or in **out-of-home care**.

At any point in the child protection process, departments may choose to divert children and their families into **family support services**. These services seek to benefit families by improving their ability to care for children and to strengthen family relationships, and are often used as an alternative early intervention response for less serious cases where notifications do not involve child abuse or neglect.

Data comparability

While the broad processes in state and territory child protection systems are similar, child protection legislation, policies and practices vary. Variations between jurisdictions in recorded cases of abuse or neglect may reflect these differences in each jurisdiction, rather than a true variation in the levels of child abuse and neglect (see Bromfield & Higgins 2005). Trends in substantiation data must also be interpreted with caution as increases may partially reflect increased community awareness and willingness to report concerns, or changes to policies, practices and data reporting methods.

These differences should be noted when interpreting child protection data across jurisdictions and over time.

Source: AIHW 2010b.

In 2009–10, around 25,200 children (7 in every 1,000 children) were the subject of a child protection substantiation (see Box 20.1). The substantiation rate ranged from 3 per 1,000 children in Western Australia to 19 per 1,000 children in the Northern Territory (Figure 20.1).

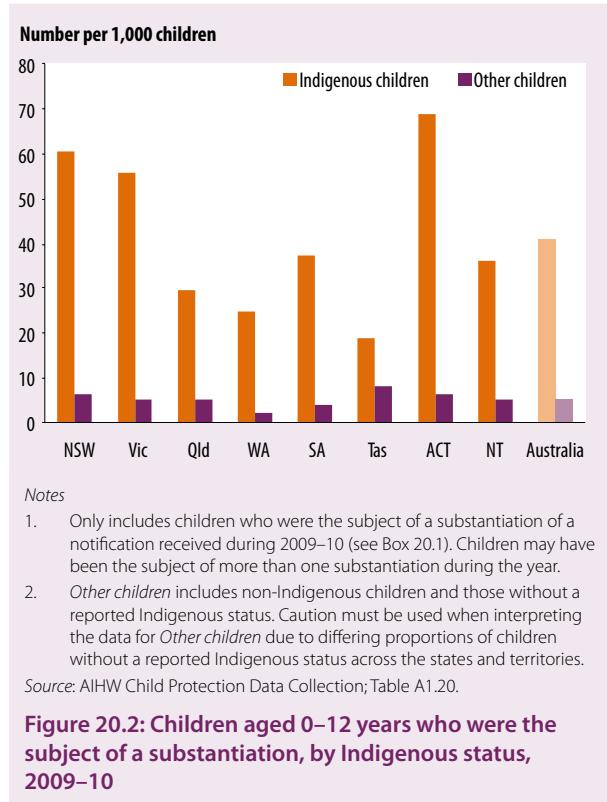
The national substantiation rate has remained steady over the three years to 2009–10 (7 per 1,000 children each year from 2007–08 to 2009–10), with similar patterns observed across most states and territories. There has been little change in the national substantiation rate since 2005–06 (8 per 1,000 children), the earliest year suitable for assessing trends.

At the national level, substantiation rates were similar for boys and girls (both 7 per 1,000 children in 2009–10). A similar pattern was found across the states and territories.

In 2009–10, infants aged less than 1 year were found to be at increased risk of being the subject of a child protection substantiation:

- The national substantiation rate for children less than 1 year of age was almost twice the rate for children aged 1–4 years and 5–12 years (13, 7 and 6 per 1,000 children, respectively) (Table A1.20). A similar pattern was found across all states and territories.
- Infant substantiation rates ranged from 6 per 1,000 in Western Australia to 43 per 1,000 children in the Northern Territory (Figure 20.3).
- There was a small decrease in the national substantiation rate for infants from the previous year (from 16 per 1,000 children in 2008–09, to 13 per 1,000 in 2009–10) (AIHW 2010c). A similar pattern was found in most jurisdictions.

How do substantiation rates vary among Aboriginal and Torres Strait Islander children?



Aboriginal and Torres Strait Islander children are over-represented in the child protection system (AIHW 2010b). The reasons for this are complex and include the intergenerational effects of separation from family and culture (a legacy of the Stolen Generations), perceptions arising from cultural differences in child-rearing practices and the relative socioeconomic disadvantage experienced by Indigenous Australians (National Inquiry into the Separation of Aboriginal and Torres Strait Islander Children from their Families (Australia) 1997; Stanley et al. 2003):

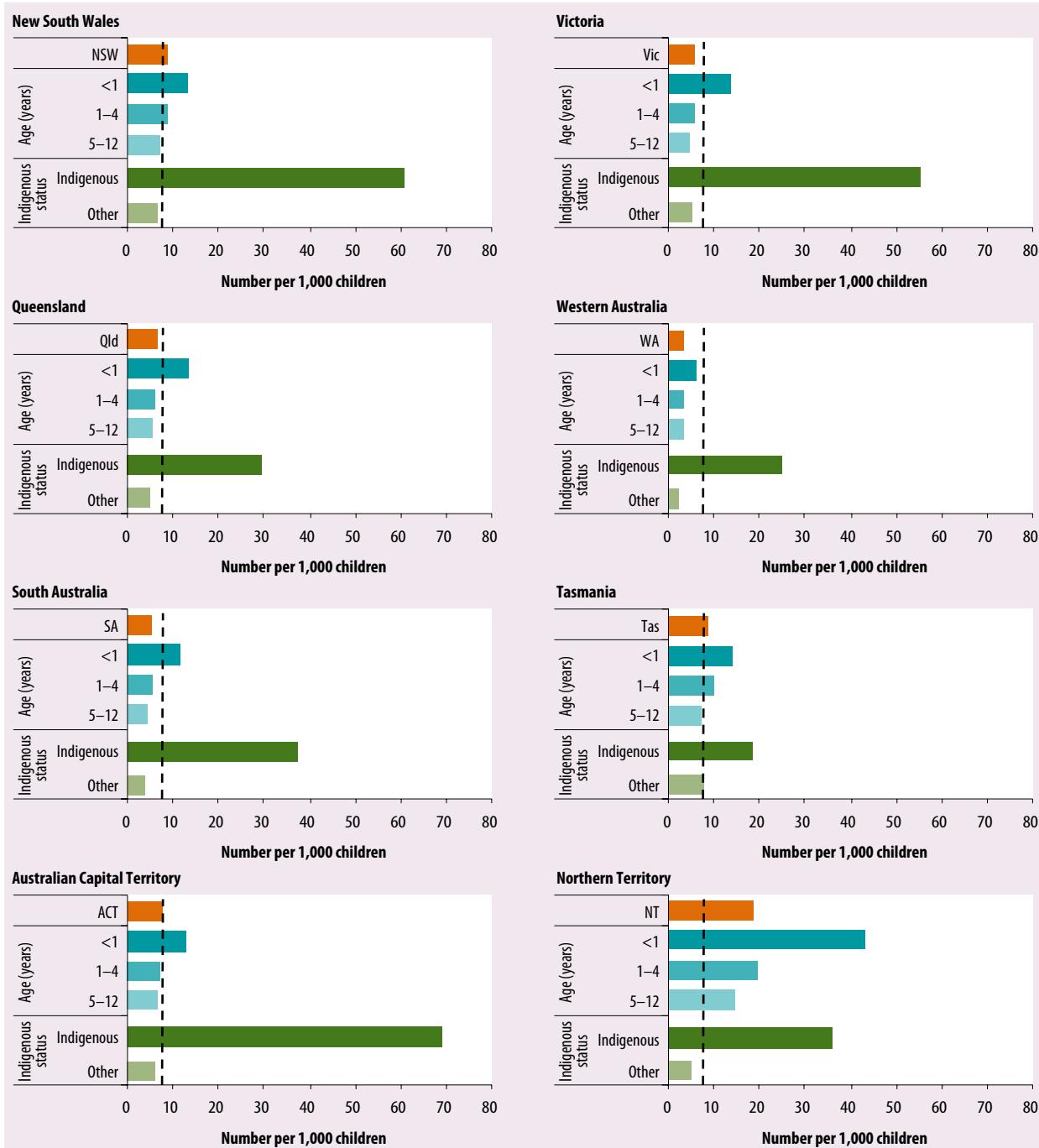
- In 2009–10, the substantiation rate for Indigenous children was 8 times the rate for other Australian children (41 and 5 per 1,000 children, respectively). The difference in substantiation rates between Indigenous and other children varied across the states and territories, with rates ranging from twice as high for Indigenous children in Tasmania to 12 times as high in Western Australia (Figure 20.2).

- Substantiation rates for Indigenous children in 2009–10 ranged from 19 per 1,000 in Tasmania to 69 per 1,000 children in the Australian Capital Territory.
- The national substantiation rate for Indigenous children in 2009–10 was similar to the rate for the previous year (41 per 1,000 children in 2008–09) (AIHW 2010c). A similar pattern was found in most jurisdictions.

How does Australia compare internationally?

No internationally comparable data on child protection substantiation rates are available. However, some data on child deaths due to negligence, maltreatment or physical assault are available for selected countries (for children aged 0–19 years). While not comparable with the substantiation data presented for the Headline Indicator in this chapter, these mortality data may provide an indication of how Australia compares internationally with regards to child maltreatment. It is important to note that these data relate to all child deaths in Australia, including cases which may not have come to the attention of child protection authorities.

Australia's rate of child deaths due to negligence, maltreatment or physical assault was in the bottom third of OECD countries in 2006–2008 (20th out of 28 countries). With 27 deaths among children aged 0–19 years over this 3-year period (a rate of 0.5 child deaths per 100,000), Australia ranked more highly than the OECD average (0.6 per 100,000), but had a rate twice as high as the United Kingdom and Sweden (0.24 and 0.28 per 100,000, respectively). The United States had the highest rate among OECD countries (3.7 per 100,000). Six countries were ranked equal first and reported zero child deaths due to negligence, maltreatment or physical assault (Figure 20.4).



Notes

- The vertical dotted line indicates the rate for Australia (7 per 1,000 children).
- Only includes children who were the subject of a substantiation of a notification received during 2009–10 (see Box 20.1). Children may have been the subject of more than one substantiation during the year.
- Other children* includes non-Indigenous children and those without a reported Indigenous status. Caution must be used when interpreting the data for *Other children* due to differing proportions of children without a reported Indigenous status across the states and territories.
- Rates for subcategories may exclude unborn children; refer to data in Table A1.20 for further detail.

Source: AIHW Child Protection Data Collection; Table A1.20.

Figure 20.3: Children aged 0–12 years who were the subject of a substantiation, by state and territory, age and Indigenous status, 2009–10



21 Family social network

Families with rich social networks have been found to have increased access to information, material resources and friends and neighbours to assist them in managing their daily lives and problems.

Data are not currently available to report on this Children's Headline Indicator.

Family social network can be understood broadly to refer to a child's social network comprising their immediate family, as well as the family's broader social network. The quality of the relationships and interactions in a child's social environment affects children's health, development and wellbeing. Families with rich social networks have been found to have increased access to information, material resources and friends and neighbours to assist them in managing their daily lives and problems. Support provided by social institutions and from formal and informal social networks is important to healthy child development and overall child wellbeing (Ferguson 2006; Runyan et al. 1998; Sheldon 2002; Waters et al. 2002; Wise 2003; Zubrick et al. 2008).

Social support and sharing experiences with other parents can support better parenting and result in improved outcomes for children, including decreasing the likelihood that children drop out of school or commit delinquent acts, improving outcomes for youth in finishing school and gaining employment, improving positive behavioural outcomes for at-risk preschool children and lowering levels of depression in at-risk teens (Ferguson 2006).

Strong family relationships and supportive neighbourhoods can also act as a protective factor against socioeconomic disadvantage and buffer the effects of other risk factors (Zwi & Henry 2005). Conversely, living in isolation from extended family networks and support services is associated with less effective parenting behaviours and practices and poorer parental mental health, which are associated with poorer health, development and wellbeing outcomes for children (Wise 2003; Zubrick et al. 2008).

Social capital is an important aspect of the social context in which a child develops. Social capital can be understood as networks of social relationships, characterised by norms of trust and reciprocity. It is the name given to quality

relationships that enable people to come together to collectively share experiences or resolve problems, where all involved can achieve mutually desired benefits (Stone & Hughes 2000). Strong connections between individuals promote a sense of belonging and provide access to support. This can be represented by the degree to which people feel they can get assistance from neighbours, allow their children to play outside safely and participate in community activities (Zwi & Henry 2005). High levels of trust in other people are also associated with positive outcomes for children. Trust in others facilitates exchanges of resources and support. Conversely, low levels of trust within a neighbourhood are associated with poor child outcomes (Ferguson 2006).

Headline Indicator: Proportion of children aged 0–12 years whose parent or guardian was usually able to get help when needed

Headline Indicator development

Family social network is a broad and multidimensional priority area, as there are a number of distinct elements of families' social networks that are associated with children's wellbeing. In the project report, *Headline indicators for children's health, development and wellbeing* (Vic DHS 2008), family social network was identified as requiring further work to conceptualise and define a Headline Indicator.

The AIHW undertook work in 2009–2010 to progress indicator development for the *Family social network* priority area. This process of defining and selecting a Children's Headline Indicator for family social network involved:

- identifying the aspects which were most strongly associated with children's health, development and wellbeing

- reviewing relevant national and international literature, frameworks and indicator reports
- consulting with key experts and stakeholders.

The AIHW has published an information paper describing this process in detail (AIHW 2010d).

Definition and conceptualisation

The term *family social network* is broad and multidimensional, and is not widely used in policy or research. The project report *Headline indicators for children's health, development and wellbeing* (Vic DHS 2008) was the starting point for establishing the conceptual basis for a *Family social network* Headline Indicator. For this indicator the report refers to social interactions both within children's immediate social environments and between families and wider social environments. The report highlights the importance to children's wellbeing of families' access to social support, the quality and depth of their social relationships and the strength of their social networks.

The term *family social network* could therefore be interpreted broadly to cover both:

- the child's immediate family and relationships and interactions within the immediate family
- family relationships and interactions with wider social environments, that is, the people, groups or institutions connected to a child's immediate family by interactions which may or may not involve the child directly.

Findings from the literature review demonstrated that both of these aspects of children's social networks are extremely important to children's wellbeing and that they are interconnected. It was recognised, however, that it would be extremely difficult to cover both aspects within a single Headline Indicator. It was agreed, through the consultation process, that family relationships and interactions with wider social environments were more relevant to the term *family social network* and that these wider family relationships and interactions should be the focus of the Headline Indicator. The quality of social relationships was identified through the literature review and the consultation process as the characteristic that was most important to children's wellbeing. It was therefore agreed that the conceptual basis of a Headline Indicator for family social network should be the *quality* of family relationships and interactions with wider social environments.

Selecting a *Family social network* Headline Indicator

Based on a review of the literature and major indicator frameworks, as well as the consultation processes, nine potential indicators were identified for the *Family social network* priority area.

These indicators reflected different aspects of the quality of family relationships and interactions with wider social environments. Five of the indicators reflected the quality of interactions in informal networks and included indicators such as frequency of contact with friends, neighbours and acquaintances; being able to ask for help from friends or neighbours and having people to confide in. Trust was also identified as a potential indicator, because of its association with social interactions of cooperation and mutual benefit. The remaining three indicators related to the quality of interactions with formal social institutions, such as social services, community organisations and educational systems.

In deciding which indicator was most suitable as a Headline Indicator for *Family social network*, the indicator selection criteria outlined in the project report *Headline Indicators for children's health, development and wellbeing* (Vic DHS 2008:8) were also considered. Each of the indicators were assessed against the criteria, and it was agreed that 'being able to get help when needed' would be the most suitable basis for a Headline Indicator for family social network, to indicate the quality of family relationships with others outside the immediate family. This is a widely used indicator and strongly associated with children's health, development and wellbeing in a range of studies, including recent Australian research drawing on *Growing Up in Australia: the Longitudinal Study of Australian Children* (Zubrick et al. 2008).

The Children's Headline Indicator for the area of *Family social network* has therefore been broadly defined as the proportion of children aged 0–12 years whose parent or guardian was usually able to get help when needed.

Data issues and availability

Three national data collections which cover the subject of 'being able to get help when needed' were examined in terms of question wording and results:

- ABS General Social Survey
- Household Income and Labour Dynamics in Australia (HILDA) Survey

- Growing up in Australia: the Longitudinal Study of Australian Children (LSAC).

Each of these data sources collects information on this subject in slightly different ways and uses different methodology, but none fully meets the requirements for reporting on the Children's Headline Indicator for *Family social network* as defined.

This raised a number of conceptual issues for collecting and reporting on the recommended Headline Indicator, such as the frequency with which help is able to be obtained when needed, the amount of help that is able to be obtained and the sources of help to be included.

This led to the development of a more technical definition of the Headline Indicator: *the proportion*

of children aged 0–12 years with at least one residential parent or guardian who was usually able to get help from formal and/or informal social networks (from sources outside the household) when needed.

There is currently no national data source suitable for reporting on the recommended Headline Indicator for family social network. Further work is therefore needed to identify the most appropriate data collection methodology and vehicle for this Headline Indicator, which involves further clarification of definitional and conceptual issues. A large-scale national survey which uses children as the counting unit, and allows disaggregation by state and territory for subpopulations of children, is considered preferable.

Appendix 1

DETAILED TABLES

2 Demographic overview of children in Australia

Table A1.2a: Children in Australia, June 2010

Age group	Boys		Girls		Children	
	Number	Per cent	Number	Per cent	Number	Per cent
<1 year	154,426	1.4	146,607	1.3	301,033	1.3
1–4 years	595,185	5.4	564,870	5.0	1,160,055	5.2
5–9 years	701,203	6.3	664,544	5.9	1,365,747	6.1
10–12 years	428,949	3.9	408,141	3.6	837,090	3.7
0–12 years	1,879,763	16.9	1,784,162	15.9	3,663,925	16.4

Note: Per cent refers to per cent of total population.

Source: ABS 2010a.

Table A1.2b: Distribution of children across the states and territories, June 2010

Age group	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia^(a)
Number									
0–4 years	462,888	353,610	314,493	154,511	98,912	33,655	24,134	18,761	1,461,088
5–9 years	441,773	328,154	289,868	142,614	93,857	30,803	20,969	17,556	1,365,747
10–12 years	269,168	199,847	177,271	88,857	59,535	19,619	12,516	10,154	837,090
0–12 years	1,173,829	881,611	781,632	385,982	252,304	84,077	57,619	46,471	3,663,925
Per cent of state/territory population^(b)									
0–4 years	6.4	6.4	7.0	6.7	6.0	6.6	6.7	8.2	6.5
5–9 years	6.1	5.9	6.4	6.2	5.7	6.1	5.8	7.6	6.1
10–12 years	3.7	3.6	3.9	3.9	3.6	3.9	3.5	4.4	3.7
0–12 years	16.2	15.9	17.3	16.8	15.3	16.6	16.1	20.2	16.4
Per cent of Australian population^(c)									
0–12 years	32.0	24.1	21.3	10.5	6.9	2.3	1.6	1.3	100.0

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

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

(c) The denominator is the total Australian population aged 0–12 years.

Source: ABS 2010a.

Table A1.2c: Distribution of Indigenous children and all children aged 0–14 years, by remoteness, 2006

	Indigenous children		All children	
	Number	Per cent	Number	Per cent
Major cities	61,486	31.7	2,673,435	66.0
Inner regional	44,125	22.7	842,484	20.8
Outer regional	43,782	22.5	417,375	10.3
Remote	17,280	8.9	72,929	1.8
Very remote	27,576	14.2	43,666	1.1
Australia^(a)	194,249	100.0	4,050,445	100.0

(a) Includes migratory and other Territories.

Source: ABS 2006a.

Table A1.2d: Distribution of children aged 0–14 years across the states and territories, by remoteness, June 2009

Remoteness area	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia ^(a)
Number									
Major cities	972,434	742,067	511,832	299,163	204,440	..	64,771	..	2,794,707
Inner regional	278,251	213,867	201,814	61,440	37,852	62,077	89	..	855,471
Outer regional	90,402	49,360	142,377	43,825	36,262	33,724	..	26,929	422,879
Remote	7,079	783	19,923	22,490	9,298	1,441	..	11,340	72,354
Very remote	861	..	12,839	11,658	2,916	436	..	14,662	43,803
Total	1,349,027	1,006,077	888,785	438,576	290,768	97,678	64,860	52,931	4,189,214
Per cent									
Major cities	72.1	73.8	57.6	68.2	70.3	..	99.9	..	66.7
Inner regional	20.6	21.3	22.7	14.0	13.0	63.6	0.1	..	20.4
Outer regional	6.7	4.9	16.0	10.0	12.5	34.5	..	50.9	10.1
Remote	0.5	0.1	2.2	5.1	3.2	1.5	..	21.4	1.7
Very remote	0.1	..	1.4	2.7	1.0	0.4	..	27.7	1.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

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

Source: ABS unpublished estimated resident population data.

Table A1.2e: Indigenous children aged 0–12 years, in Australia, June 2006

Age group	Boys		Girls		Children	
	Number	Per cent	Number	Per cent	Number	Per cent
0–4 years	32,753	4.9	31,673	5.0	64,426	4.9
5–9 years	33,335	4.9	31,801	4.9	65,136	4.9
10–12 years	19,998	4.7	18,986	4.7	38,894	4.7
0–12 years	86,086	4.8	82,460	4.9	168,546	4.8

Note: Per cent refers to per cent of all Australian children of that sex and age.

Source: ABS 2009c.

Table A1.2f: Indigenous children aged 0–12 years, by state and territory, June 2006

State or territory	Number	Per cent^(a)
New South Wales	50,480	4.4
Victoria	10,764	1.3
Queensland	48,997	6.8
Western Australia	22,640	6.4
South Australia	8,884	3.6
Tasmania	5,806	7.0
Australian Capital Territory ^(b)	1,555	2.5
Northern Territory	19,565	43.6
Australia	168,546	4.8

(a) Per cent refers to per cent of all children aged 0–12 years within each state/territory.

(b) ACT data are for 0–14-year-olds.

Source: ABS 2009c.

Table A1.2g: Countries of birth of children aged 0–14 years born overseas, June 2009

Country	Number	Per cent
United Kingdom ^(a)	58,060	16.8
New Zealand	56,700	16.4
India	21,750	6.3
South Africa	19,390	5.6
Philippines	14,300	4.1
United States of America	12,840	3.7
China ^(b)	12,280	3.6
Korea, Republic of (South)	8,830	2.6
Malaysia	7,300	2.1
Singapore	7,170	2.1
Other	126,340	36.6
Total born overseas	344,960	100.0

(a) Includes Channel Islands and Isle of Man.

(b) Excludes Special Administrative Regions (SARs) and Taiwan.

Source: ABS 2010e.

Table A1.2h: Children aged 0–14 years by family structure, 1997, 2003 and 2007

Family structure	1997		2003		2007	
	Number ('000)	Per cent	Number ('000)	Per cent	Number ('000)	Per cent
Couple families						
0–4 years	1,088	84.2	1,043	84.0	1,133	88.3
5–9 years	1,055	80.4	1,048	80.1	1,061	81.9
10–14 years	1,055	81.1	1,047	78.2	1,079	78.8
<i>Total children in couple families</i>	<i>3,198</i>	<i>81.9</i>	<i>3,138</i>	<i>80.7</i>	<i>3,273</i>	<i>82.9</i>
One-parent families						
0–4 years	204	15.8	199	16.0	150	11.7
5–9 years	258	19.6	261	19.9	235	18.1
10–14 years	246	18.9	292	21.8	290	21.2
<i>Total children in one-parent families</i>	<i>708</i>	<i>18.1</i>	<i>752</i>	<i>19.3</i>	<i>675</i>	<i>17.1</i>
<i>Lone mother families</i>						
0–4 years	196	15.2	183	14.7	139	10.8
5–9 years	232	17.7	234	17.9	200	15.4
10–14 years	201	15.4	246	18.4	248	18.1
Total	629	16.1	663	17.0	587	14.9
<i>Lone father families</i>						
0–4 years	8	0.6	16	1.3	*11	*0.9
5–9 years	25	1.9	27	2.1	35	2.7
10–14 years	45	3.5	46	3.4	42	3.1
Total	78	2.0	89	2.3	77	2.0
All children	3,906	..	3,890	..	3,948	..

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

Notes

1. Denominator for all percentages is all children in the relevant age group in each survey year.
2. Children in couple families include children of same-sex couples.

Source: ABS 2008c.

Table A1.2i: Household composition, occupied private dwellings, 2006 (per cent)

Household type	Indigenous households	Other households
One-family households	76.0	70.3
Couples with dependent children ^(a)	28.2	26.4
One-parent families with dependent children ^(a)	23.0	6.8
Families without dependent children ^(a)	24.8	37.1
Multi-family households	5.3	1.2
Group households	4.9	3.9
Lone person households	13.8	24.6
Total (per cent)	100.0	100.0
Total (number)	166,668	6,977,424

(a) A dependent child is either under 15 years of age or a dependent student aged 15–24 years. In 2006, 90% of the 178,292 Indigenous dependent children living in occupied private dwellings were children aged under 15 years.

Notes

1. Proportions exclude *Not classifiable households*.
2. An Indigenous household is any household that had at least one person of any age as a resident at the time who identified as Aboriginal and/or Torres Strait Islander.

Source: ABS 2008d.

3 Overview of children's health, development and wellbeing

Table A1.3: Children's Headline Indicator priority areas with available data by Indigenous status, by state and territory

Priority area	Indigenous status	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Infant mortality ^(a)	Indigenous	8.6	n.p.	9.5	11.3	8.0	n.p.	n.p.	15.5	10.3
	Non-Indigenous	4.4	n.p.	4.6	3.2	3.6	n.p.	n.p.	4.5	4.2
Birthweight ^(b)	Indigenous	11.6	14.2	10.3	15.0	13.6	n.p.	n.p.	14.4	12.3
	Non-Indigenous	5.7	6.1	6.0	5.7	5.9	6.6	5.1	5.0	5.9
Immunisation ^(c)	Indigenous	90.9	n.p.	92.6	77.7	n.p.	n.p.	n.p.	95.2	90.2
	Other children	92.7	93.5	93.1	91.3	92.6	94.0	94.9	90.0	92.8
Dental health ^(d)	Indigenous	n.a.	n.a.	n.a.	n.a.	1.4	n.a.	n.a.	n.a.	n.a.
	Other children	n.a.	n.a.	n.a.	n.a.	0.8	n.a.	n.a.	n.a.	n.a.
Injuries ^(e)	Indigenous	10.3	n.p.	16.6	22.3	13.6	n.p.	n.p.	30.3	16.9
	Non-Indigenous	5.3	n.p.	6.4	5.9	6.0	n.p.	n.p.	11.1	5.8
Transition to primary school ^(f)	Indigenous	38.9	42.4	50.4	52.3	49.5	n.p.	n.p.	65.7	47.5
	Non-Indigenous	20.5	20.1	28.2	22.9	21.9	21.2	21.8	22.8	22.4
Literacy ^(g)	Indigenous	77.9	84.8	65.7	56.2	67.7	79.0	77.4	31.0	66.7
	Non-Indigenous	94.3	94.6	90.6	91.8	91.9	91.8	94.4	89.1	93.1
Numeracy ^(h)	Indigenous	82.5	86.9	73.9	67.4	73.5	85.7	83.6	45.5	74.2
	Non-Indigenous	96.1	95.9	94.0	95.0	94.1	94.1	95.8	92.9	95.3
Teenage births ⁽ⁱ⁾	Indigenous	69.4	58.6	80.0	100.9	77.4	43.6	n.p.	90.9	77.5
	Non-Indigenous	12.7	9.8	20.0	16.2	14.6	25.3	6.9	21.6	14.2
Child abuse and neglect ^(j)	Indigenous	60.5	55.7	29.8	24.8	37.5	18.7	69.1	36.4	41.0
	Other children	6.5	5.2	5.0	2.0	4.0	8.0	6.2	5.1	5.2

(a) *Infant mortality* expressed as number of deaths of infants aged less than 1 year per 1,000 live births. Data are for 2003–2007 combined.

(b) *Birthweight* expressed as per cent of live born infants of low birthweight (defined as birthweight less than 2,500 grams). Data are for 2008. Indigenous status is based on Indigenous status of mother.

(c) *Immunisation* expressed as per cent of children on the Australian Childhood Immunisation Register who are fully immunised at 2 years of age. Data as at 30 September 2010.

(d) *Dental health* expressed as the mean number of decayed, missing or filled teeth (DMFT) among primary school children aged 12 years. Data are for 2003–2004.

(e) *Injuries* expressed as number of deaths of children aged 0–14 years due to injury, per 100,000 population. Data are for 2003–2007 combined.

(f) *Transition to primary school* expressed as the per cent of children developmentally vulnerable on one or more domains of the AEDI at school entry. Data are for 2009.

(g) *Literacy* expressed as the per cent of Year 5 students who achieve at or above the national minimum standards for reading. Data are for 2009.

(h) *Numeracy* expressed as the number of Year 5 students who achieve at or above the national minimum standards for numeracy. Data are for 2009.

(i) *Teenage births* expressed as the number of live births to teenage mothers aged 15–19 years, per 1,000 females aged 15–19 years. Data are for 2008. Indigenous status is based on Indigenous status of mother.

(j) *Child abuse and neglect* expressed as the number of children aged 0–12 years who were the subject of a substantiation of a notification received in a given year per 1,000 children. Data are for 2009–10.

Sources: Refer to chapters 4 to 16 for information on the data source used for each Headline Indicator.

4 Smoking in pregnancy

Table A1.4: Women who smoked at any time during pregnancy, Australia, 2008^(a)

	Number	Per cent ^(b)
Age of mother		
Less than 20 years	3,983	39.0
20–34 years	26,738	16.5
35 years and over	4,986	10.4
Indigenous status of mother		
Indigenous ^(c)	5,327	50.9
Non-Indigenous ^(c)	30,334	49.1
Birthplace of mother		
Australia	31,543	19.1
Born overseas	4,043	7.5
Remoteness		
Major cities	18,577	12.4
Inner regional	8,705	22.6
Outer regional	5,937	24.3
Remote and very remote	2,480	30.3
Socioeconomic status		
Lowest SES areas	12,805	25.3
Highest SES areas	2,100	5.5
Mothers who smoked	35,708	16.2
All mothers	220,484	100.0

(a) Data are not available to measure the Headline Indicator, *Smoking during the first 20 weeks of pregnancy*. Data are therefore presented for smoking at any time during pregnancy at the national level only (excludes Victoria).

(b) Shows the proportion of all mothers in the relevant category who smoked during pregnancy.

(c) Age-standardised: 48% (Indigenous); 15% (non-Indigenous).

Notes

1. Data excludes Victoria.
2. Sub-totals may not add to total of all mothers who smoked due to not stated responses.
3. Refer to Appendix 2: Methods for explanation of remoteness areas and socioeconomic status (SES).

Source: AIHW National Perinatal Data Collection.

5 Infant mortality

Table A1.5: Infant mortality, 2007

	State/territory of usual residence									Australia
	NSW	Vic	Qld	WA	SA	Tas	ACT	NT		
Number										
Sex										
Males	212	143	165	36	54	14	10	21		655
Females	175	127	143	35	34	14	8	12		548
Indigenous status (2003–2007)										
Indigenous	147	n.p.	176	104	28	n.p.	n.p.	121		576
Non-Indigenous	1,831	n.p.	1,136	399	314	n.p.	n.p.	49		3,729
Remoteness (2005–2007)										
Major cities	837	649	421	213	163	..	61	..		2,344
Inner regional	260	176	187	38	28	47	—	..		736
Outer regional	101	48	166	36	30	25	..	31		437
Remote and very remote	16	n.p.	48	39	16	n.p.	..	69		191
Socioeconomic status (2006–2007)										
Lowest SES areas	183	125	170	31	50	31	n.p.	35		625
Highest SES areas	82	85	62	25	12	n.p.	30	n.p.		300
All infants	387	270	308	71	88	28	18	33		1,203
Deaths per 1,000 live births										
Sex										
Males	4.6	4.0	5.2	2.4	5.5	4.1	4.1	10.4		4.5
Females	4.0	3.7	4.8	2.5	3.5	4.3	3.4	6.4		3.9
Indigenous status (2003–2007)										
Indigenous	8.6	n.p.	9.5	11.3	8.0	n.p.	n.p.	15.5		10.3
Non-Indigenous	4.4	n.p.	4.6	3.2	3.6	n.p.	n.p.	4.5		4.2
Remoteness (2005–2007)										
Major cities	4.2	4.2	4.2	3.7	4.0	..	4.5	..		4.2
Inner regional	5.7	4.8	5.5	3.9	4.3	3.7	—	..		5.1
Outer regional	6.8	5.7	6.4	4.4	4.5	4.0	..	5.3		5.7
Remote and very remote	10.6	n.p.	7.4	5.7	7.2	n.p.	..	12.7		8.3
Socioeconomic status (2006–2007)										
Lowest SES areas	4.6	5.3	6.7	8.2	3.8	3.9	n.p.	11.8		5.4
Highest SES areas	2.3	3.4	3.6	2.3	2.5	n.p.	5.0	n.p.		3.0
All infants	4.3	3.8	5.0	2.4	4.5	4.2	3.8	8.5		4.2

Notes

- For data quality reasons, data for Indigenous status are for NSW, Qld, WA, SA and the NT only. The data are not necessarily representative of the jurisdictions excluded.
- Refer to Appendix 2: Methods for explanation of remoteness areas and socioeconomic status (SES).

Source: AIHW National Mortality Database.

6 Birthweight

Table A1.6: Low birthweight infants, 2008

	State/territory of usual residence								Australia
	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	
	Number								
Sex									
Males	2,714	2,072	1,756	897	587	195	118	147	8,486
Females	3,060	2,310	2,037	987	630	246	132	173	9,575
Indigenous status of mother									
Indigenous	357	94	348	255	85	36	10	198	1,383
Non-Indigenous	5,390	4,284	3,444	1,629	1,133	405	239	122	16,646
Birthplace of mother									
Australia	4,055	3,219	3,107	1,357	993	415	189	295	13,630
Born overseas	1,705	1,163	685	483	225	26	61	23	4,371
Remoteness									
Major cities	4,234	3,356	2,252	1,292	894	..	250	..	12,278
Inner regional	1,148	822	755	206	133	275	—	..	3,339
Outer regional	351	201	631	182	150	154	..	130	1,799
Remote and very remote	45	—	155	200	41	12	..	187	643
Socioeconomic status									
Lowest SES areas	1,494	832	987	193	532	289	n.p.	141	4,469
Highest SES areas	935	824	556	308	120	—	140	13.	2,896
All infants	5,778	4,382	3,795	1,884	1,218	441	250	320	18,068
Per cent									
Sex									
Males	5.5	5.7	5.5	5.8	5.8	5.9	4.7	7.6	5.6
Females	6.4	6.7	6.9	6.6	6.5	7.9	5.7	9.2	6.7
Indigenous status of mother									
Indigenous	11.6	14.2	10.3	15.0	13.6	n.p.	n.p.	14.4	12.3
Non-Indigenous	5.7	6.1	6.0	5.7	5.9	6.6	5.1	5.0	5.9
Birthplace of mother									
Australia	6.0	6.3	6.3	6.4	6.1	6.9	5.1	9.0	6.2
Born overseas	5.9	6.0	5.8	5.7	6.4	6.5	5.6	4.3	5.9
Remoteness									
Major cities	5.7	6.2	6.2	6.0	6.2	..	5.2	..	6.0
Inner regional	6.7	6.2	6.1	5.5	5.7	6.5	—	..	6.3
Outer regional	6.2	7.0	6.3	6.3	6.9	7.5	..	6.3	6.5
Remote and very remote	7.4	—	6.1	8.3	5.2	n.p.	..	10.6	7.8
Socioeconomic status									
Lowest SES areas	6.6	6.6	7.2	7.9	7.5	7.6	n.p.	10.8	7.0
Highest SES areas	5.0	6.0	5.9	5.6	5.0	—	4.8	n.p.	5.5
All infants	5.9	6.2	6.2	6.2	6.2	6.9	5.2	8.4	6.1

Notes

1. Data are for live born singleton infants.
2. Sub-totals may not add to total of all infants due to not stated responses.
3. Data are based on mother's place of usual residence. Excludes non-residents and records where state of usual residence was not stated.
4. Refer to Appendix 2: Methods for explanation of remoteness areas and socioeconomic status (SES).

Source: AIHW National Perinatal Data Collection.

8 Immunisation

Table A1.8: Children on the ACIR who are fully immunised at 2 years of age, 30 September 2010

	State/territory of usual residence								
	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Number									
Sex									
Boys	11,057	8,267	7,628	3,575	2,249	766	568	432	34,542
Girls	10,987	7,904	6,961	3,502	2,199	724	533	436	33,246
Indigenous status									
Indigenous	914	195	1,072	414	189	116	22	337	3,259
Non-Indigenous children	20,550	15,225	13,207	6,530	4,163	1,338	1,055	503	62,571
Remoteness									
Major cities	16,300	12,229	8,548	4,976	3,168	..	1,095	..	46,317
Inner regional	4,244	3,269	3,108	901	572	992	6	..	13,090
Other areas ^(a)	1,473	656	2,929	1,191	707	498	..	867	8,321
Socioeconomic status (SES)									
Lowest SES areas	5,104	2,710	3,342	445	1,602	909	..	308	14,421
Highest SES areas	4,220	2,778	2,200	1,272	558	196	730	98	11,856
All children	22,044	16,171	14,589	7,077	4,448	1,490	1,101	868	67,788
Per cent									
Sex									
Boys	92.2	93.1	92.8	90.8	92.6	94.1	94.7	92.3	92.5
Girls	92.7	93.6	92.8	89.7	92.2	93.4	95.2	91.6	92.6
Indigenous status									
Indigenous	90.9	n.p.	92.6	77.7	n.p.	n.p.	n.p.	95.2	90.2
Non-Indigenous children	92.7	93.5	93.1	91.3	92.6	94.0	94.9	90.0	92.8
Remoteness									
Major cities	92.3	93.0	92.0	90.6	91.8	..	94.9	..	92.3
Inner regional	93.2	94.2	93.4	90.7	93.6	94.1	n.p.	..	93.4
Other areas ^(a)	92.5	94.8	94.3	88.6	94.2	93.2	..	91.9	92.9
Socioeconomic status (SES)									
Lowest SES areas	91.9	93.4	92.9	85.7	93.4	93.6	..	93.9	92.5
Highest SES areas	91.6	91.6	92.5	90.1	90.6	n.p.	95.1	n.p.	91.8
All children	92.4	93.3	92.8	90.3	92.4	93.8	94.9	91.9	92.6

(a) Other areas include Outer regional, Remote and Very remote areas.

Notes

1. Refer to Appendix 2: Methods for explanation of remoteness areas and socioeconomic status (SES).
2. Sub-totals may not add to total of all children due to Not stated responses.
3. Includes children who have received the scheduled doses of vaccines for diphtheria, tetanus and pertussis; poliomyelitis; hepatitis B; Hib; and measles, mumps and rubella. Excludes other scheduled vaccines for children aged up to 2 years (rotavirus, chicken pox, meningococcal and pneumococcal conjugate).

Source: Australian Childhood Immunisation Register unpublished data.

9 Overweight and obesity

Table A1.9a: Overweight and obesity, children aged 5–14 years, 2007–08 (number)

	State/territory of usual residence							
	NSW	Vic	Qld	WA	SA	Tas	ACT	Australia
Sex								
Boys	85,700	39,400	49,500	23,300	17,100	4,200	3,400	223,700
Girls	48,400	63,300	52,800	24,900	8,900	3,900	3,100	206,200
Age								
5–9 years	66,300	32,100	54,500	20,000	14,700	3,600	2,800	194,900
10–14 years	67,700	70,600	47,800	28,200	11,300	4,600	3,800	235,000
Country of birth								
Australia ^(a)	n.p.	90,300	93,500	43,300	n.p.	8,200	6,600	399,600
Born overseas	n.p.	12,400	8,700	n.p.	n.p.	—	—	30,300
Remoteness								
Major cities	83,600	66,200	42,600	29,200	18,400	..	6,600	246,500
Other areas ^(b)	50,500	36,500	59,600	19,000	7,600	8,200	—	183,400
Socioeconomic status								
Lowest SES areas	42,900	18,900	28,700	9,500	4,800	3,900	400	110,000
Highest SES areas	10,100	30,900	n.p.	11,700	6,000	n.p.	3,700	66,900
Family type								
Couple with children	108,800	87,100	67,600	33,800	20,600	7,100	5,200	330,100
One-parent with children	25,200	15,600	34,600	14,400	5,400	n.p.	1,400	99,900
Total overweight and obese children	134,100	102,700	102,200	48,200	26,000	8,200	6,600	429,900

(a) Includes Other Territories. Country of birth refers to the household reference person for the survey.

(b) Other areas include *Inner regional*, *Outer regional* and *Remote* areas. The survey was not conducted in *Very remote* areas of Australia.

Notes

- Refer to Box 9.1 for information about the measurement of overweight and obesity.
- Data not presented for the Northern Territory due to small sample size, but estimates for the Northern Territory are included in data for Australia.
- Refer to Appendix 2: Methods for explanation of remoteness areas and socioeconomic status (SES).

Source: ABS 2007–08 National Health Survey unpublished data.

Table A1.9b: Overweight and obesity, children aged 5–14 years, 2007–08 (per cent and 95% confidence intervals)

	State/territory of usual residence							
	NSW	Vic	Qld	WA	SA	Tas	ACT	Australia
Sex								
Boys	26.2 (19.0–33.4)	18.5 (11.2–25.8)	24.3 (15.3–33.3)	23.1 (15.1–31.1)	32.3 (19.8–44.8)	19.7 (9.1–30.3)	22.6 (14.3–30.9)	23.8 (20.0–27.6)
Girls	15.9 (10.1–21.7)	27.2 (17.8–36.6)	26.5 (17.7–35.3)	27.2 (17.0–37.4)	17.5 (8.3–26.7)	17.5 (7.0–28.0)	20.7 (13.4–28.0)	22.3 (18.1–26.5)
Age								
5–9 years	20.6 (13.9–27.3)	15.9 (9.4–22.4)	27.5 (18.4–36.6)	21.8 (12.1–31.5)	27.5 (16.5–38.5)	16.3 (7.0–25.6)	19.1 (11.7–26.5)	21.3 (17.3–25.3)
10–14 years	21.9 (14.9–28.9)	29.1 (19.6–38.6)	23.4 (14.0–32.8)	28.0 (19.9–36.1)	22.5 (11.2–33.8)	20.8 (8.8–32.8)	24.0 (14.4–33.6)	24.7 (20.7–28.7)
Country of birth								
Australia ^(a)	n.p.	22.7 (16.9–28.5)	24.9 (18.1–31.7)	26.0 (19.5–32.5)	n.p.	19.0 (11.2–26.8)	23.7 (17.5–29.9)	23.3 (20.4–26.2)
Born overseas	n.p.	25.8 (5.7–45.9)	32.7 (7.0–58.4)	n.p.	n.p.	—	—	20.1 (11.5–28.7)
Remoteness								
Major cities	19.0 (13.5–24.5)	20.7 (14.7–26.7)	23.2 (15.1–31.3)	24.5 (17.2–31.8)	22.6 (14.1–31.1)	..	21.7 (16.0–27.4)	21.0 (17.5–24.5)
Other areas ^(b)	26.2 (15.1–37.3)	29.3 (17.6–41.0)	27.3 (17.6–37.0)	25.9 (14.2–37.6)	34.2 (15.6–52.8)	18.6 (10.9–26.3)	—	26.6 (21.9–31.3)
Socioeconomic status								
Lowest SES areas	25.0 (13.6–36.4)	30.7 (9.9–51.5)	40.6 (22.7–58.5)	41.6 (10.5–72.7)	35.2 (11.9–58.5)	28.1 (14.2–42.0)	38.8 (21.1–75.5)	30.6 (22.4–38.8)
Highest SES areas	8.7 (2.2–15.2)	24.8 (14.3–35.3)	n.p.	23.6 (11.1–36.1)	21.9 (7.6–36.2)	n.p.	25.5 (17.6–33.4)	17.5 (12.8–22.2)
Family type								
Couple family	22.1 (17.1–27.1)	23.5 (16.6–30.4)	21.0 (14.2–27.8)	20.9 (14.9–26.9)	24.7 (15.6–33.8)	19.4 (11.0–27.8)	20.6 (15.4–25.8)	22.0 (19.0–25.0)
One-parent family	18.1 (8.1–28.1)	21.1 (9.6–32.6)	43.0 (27.4–58.6)	46.5 (25.5–67.5)	26.8 (13.6–40.0)	n.p.	26.5 (8.0–45.0)	27.5 (20.6–34.4)
Total overweight and obese children	21.2 (16.3–26.1)	23.1 (17.3–28.9)	25.4 (18.8–32.0)	25.0 (19.3–30.7)	25.1 (17.6–32.6)	18.6 (10.9–26.3)	21.7 (16.0–27.4)	23.1 (20.2–26.0)

(a) Includes Other Territories. Country of birth refers to the household reference person for the survey.

(b) Other areas include Inner regional, Outer regional and Remote areas. The survey was not conducted in very remote areas of Australia.

Notes

1. Refer to Box 9.1 for information about the measurement of overweight and obesity.

2. Data not presented for the Northern Territory due to small sample size, but estimates for the Northern Territory are included in data for Australia.

3. Refer to Appendix 2: Methods for explanation of remoteness areas and socioeconomic status (SES).

Source: ABS 2007–08 National Health Survey unpublished data.

10 Dental health

Table A1.10: Decayed, missing or filled permanent teeth (DMFT) among primary school children aged 12 years, 2003–2004 (mean and 95% confidence intervals)

	State/territory of usual residence								
	NSW ^(a)	Vic	Qld	WA	SA	Tas ^(b)	ACT	NT	Australia
Decayed	n.a.	0.6(0.5–0.7)	0.5(0.5–0.5)	0.3(0.3–0.4)	0.3(0.3–0.3)	0.7(0.5–0.8)	0.4(0.3–0.4)	0.4(0.4–0.5)	0.5(0.5–0.5)
Missing/filled	n.a.	0.5(0.4–0.5)	0.7(0.6–0.7)	0.5(0.5–0.6)	0.5(0.5–0.5)	0.5(0.4–0.6)	0.7(0.6–0.8)	0.5(0.4–0.6)	0.5(0.5–0.5)
Sex									
Boys	n.a.	1.0(0.8–1.1)	1.2(1.1–1.2)	0.8(0.7–0.8)	0.8(0.7–0.8)	1.2(0.9–1.4)	0.9(0.7–1.1)	0.9(0.8–1.0)	1.0(0.9–1.0)
Girls	n.a.	1.2(1.0–1.3)	1.2(1.1–1.3)	1.0(0.9–1.1)	0.9(0.9–0.9)	1.2(1.0–1.5)	1.3(1.0–1.5)	0.9(0.8–1.0)	1.1(1.1–1.1)
Indigenous status									
Indigenous	n.a.	n.a.	n.a.	n.a.	1.4(1.2–1.6)	n.a.	n.a.	n.a.	n.a.
Non-Indigenous	n.a.	n.a.	n.a.	n.a.	0.8(0.8–0.8)	n.a.	n.a.	n.a.	n.a.
Remoteness									
Major cities	n.a.	0.9(0.7–1.0)	1.1(1.0–1.1)	0.8(0.7–0.9)	0.8(0.7–0.8)	..	1.1(0.9–1.3)	..	0.9(0.9–0.9)
Inner regional	n.a.	1.3(1.1–1.5)	1.6(1.4–1.8)	0.9(0.7–1.0)	0.9(0.8–0.9)	n.a.	n.p.	..	1.3(1.2–1.4)
Outer regional	n.a.	1.7(1.2–2.2)	1.0(0.9–1.2)	1.1(0.9–1.3)	0.9(0.9–1.0)	n.a.	..	0.7(0.6–0.8)	1.1(1.1–1.2)
Remote and very remote	n.a.	n.p.	0.9(0.5–1.4)	0.9(0.7–1.1)	1.3(1.1–1.5)	n.a.	..	1.2(1.0–1.4)	1.1(1.0–1.2)
Socioeconomic status									
Lowest SES areas	n.a.	1.0(0.7–1.4)	1.4(1.2–1.7)	1.0(0.9–1.2)	0.9(0.9–1.0)	n.a.	n.a.	1.2(1.1–1.4)	1.1(1.1–1.2)
Highest SES areas	n.a.	0.7(0.5–0.9)	0.7(0.5–0.9)	0.6(0.5–0.7)	0.7(0.6–0.7)	n.a.	1.1(0.9–1.3)	0.6(0.5–0.7)	0.7(0.7–0.7)
Mean DMFT(totals)	n.a.	1.1(1.0–1.2)	1.2(1.1–1.2)	0.9(0.8–0.9)	0.8(0.8–0.8)	1.2(1.0–1.3)	1.1(0.9–1.2)	0.9(0.8–1.0)	1.0(1.0–1.1)

(a) Data not available for New South Wales due to non-representativeness of the sample (see Armfield et al. 2009 for more information).

(b) Data for remoteness areas and SES were not available for Tasmania.

Notes

1. Refer to Appendix 2: Methods for explanation of remoteness areas.

2. Socioeconomic status (SES) is based on the ABS 2001 SEIFA Index of Relative Disadvantage. Refer to Appendix 2: Methods for explanation of SES.
Source: Armfield et al. 2009a; Child Dental Health Survey 2003–2004 unpublished data.

12 Injuries

Table A1.12: Injury deaths of children aged 0–14 years, 2005–2007

	State/territory of usual residence								
	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Number									
Sex									
Boys	130	77	91	49	35	18	n.p.	16	n.p.
Girls	78	51	72	29	30	11	n.p.	15	n.p.
Age									
0–4 years	108	57	96	49	44	13	5	14	386
5–9 years	52	28	21	13	8	7	n.p.	8	n.p.
10–14 years	48	43	46	16	13	9	n.p.	9	n.p.
Indigenous status^(a) (2003–2007)									
Indigenous	30	n.p.	47	29	7	n.p.	n.p.	34	147
Non-Indigenous	335	n.p.	244	113	84	n.p.	n.p.	16	792
Remoteness									
Major cities	112	67	58	44	40	..	6	..	327
Inner regional	56	42	41	10	5	13	—	..	167
Other areas ^(b)	40	19	62	23	19	16	..	31	211
Socioeconomic status									
Lowest SES areas	44	33	50	18	20	21	—	16	202
Highest SES areas	12	12	15	9	9	n.p.	n.p.	n.p.	63
All children	208	128	163	78	65	29	6	31	708
Deaths per 100,000 children									
Sex									
Boys	6.3	5.1	7.1	7.7	7.9	12.1	n.p.	20.1	6.7
Girls	4.0	3.6	5.9	4.9	7.1	7.8	n.p.	20.0	4.9
Age									
0–4 years	8.3	6.0	11.9	12.5	16.3	14.3	8.0	26.3	9.8
5–9 years	3.9	2.9	2.5	3.2	2.8	7.3	n.p.	15.6	3.4
10–14 years	3.5	4.3	5.3	3.7	4.3	8.7	n.p.	17.9	4.4
Indigenous status^(a) (2003–2007)									
Indigenous	10.3	n.p.	16.6	22.3	13.6	n.p.	n.p.	30.3	16.9
Non-Indigenous	5.3	n.p.	6.4	5.9	6.0	n.p.	n.p.	11.1	5.8
Remoteness									
Major cities	3.9	3.2	4.1	5.2	6.6	..	3.2	..	4.1
Inner regional	6.6	6.5	7.2	6.2	4.5	7.0	—	..	6.6
Other areas ^(b)	13.1	12.2	12.4	10.0	13.1	15.2	..	20.0	13.2
Socioeconomic status									
Lowest SES areas	2.3	3.5	4.5	10.6	3.4	6.0	—	12.7	3.9
Highest SES areas	0.8	1.1	1.9	1.8	3.7	n.p.	n.p.	n.p.	1.4
All children	5.2	4.4	6.5	6.3	7.5	10.0	3.2	20.0	5.8

(a) For data quality reasons, data for Indigenous status are for NSW, Qld, WA, SA and the NT only. The data presented are not necessarily representative of the jurisdictions excluded.

(b) Other areas include children living in Outer regional, Remote and Very remote areas.

Notes

- Sub-totals may not add to total of all children due to Not stated responses.
- Refer to Appendix 2: Methods for explanation of remoteness areas and socioeconomic status (SES).

Source: AIHW National Mortality Database.

13 Attending early childhood education programs

Table A1.13: Children aged 4–8 years who attended an early childhood education program in the year prior to beginning primary school, 2008 (number, per cent and 95% confidence intervals)^{(a)(b)}

	Number	Per cent
Sex		
Boys	421,368	80.7(78.4–83.0)
Girls	417,993	82.7(80.1–85.3)
Family type		
Couple family	705,914	82.7(80.8–84.6)
One-parent family	133,447	76.7(73.3–80.1)
Language diversity		
LBOTE ^(c)	48,161	72.0(65.2–78.9)
Non-LBOTE	791,199	82.3(80.5–84.2)
Remoteness		
Major cities	581,140	83.1(81.0–85.2)
Inner regional	177,588	78.8(74.0–83.6)
Other areas ^(d)	80,633	78.2(72.7–83.7)
Socioeconomic status		
Lowest SES areas	128,613	72.0(64.0–80.0)
Highest SES areas	219,498	86.3(82.8–89.7)
All children	839,361	81.7(79.8–83.6)

(a) Reliable data are not available to measure the Headline Indicator, *Attending an early educational program in the year prior to beginning primary school*. Proxy data are therefore presented at the national level only.

(b) The question about prior attendance at an early education program was asked of the parents of 4–8-year-old children who were attending school at the time of the survey.

(c) LBOTE refers to language background other than English.

(d) Other areas include Outer regional and Remote areas combined. The survey was not conducted in Very remote areas of Australia.

Note: Refer to Appendix 2: Methods for explanation of remoteness areas and socioeconomic status (SES).

Source: AIHW analysis of ABS 2008 Childhood Education and Care Survey confidentialised unit record file.

14 Transition to primary school

Table A1.14a: Children developmentally vulnerable on one or more domains of the Australian Early Development Index, 2009 (number)

	State/territory of usual residence								
	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Sex									
Boys	11,288	7,706	10,146	4,223	2,295	832	621	665	37,780
Girls	6,453	4,126	5,449	2,222	1,223	411	306	467	20,660
Indigenous status									
Indigenous	1,413	262	1,707	834	269	92	37	724	5,338
Non-Indigenous	16,328	11,570	13,888	5,611	3,249	1,151	890	408	53,102
Language diversity									
LBOTE	5,611	3,444	2,185	1,413	658	48	229	724	14,312
Proficient in English	3,243	1,906	1,286	850	443	35	120	396	8,279
Not proficient in English	s90	s90	s90	s90	s90	s90	s90	s90	s90
Non-LBOTE (English only)	12,130	8,388	13,410	5,032	2,860	1,195	698	408	44,128
Proficient in English	10,300	7,291	11,550	4,304	2,514	1,031	618	363	37,978
Not proficient in English	s90	s90	s90	s90	s90	s90	s90	s90	s90
Remoteness									
Major cities	12,496	8,546	8,673	4,062	2,519	..	925	..	37,221
Inner regional	3,756	2,669	3,600	1,022	407	777	n.p.	..	12,233
Outer regional	1,279	611	2,516	698	428	435	..	397	6,364
Remote	165	6	406	352	103	28	..	284	1,344
Very remote	45	..	400	311	61	n.p.	..	451	1,271
Socioeconomic status									
Lowest SES areas	5,842	2,941	4,336	1,503	1,418	673	—	479	17,192
Highest SES areas	3,034	2,039	2,456	1,506	275	56	545	26	9,937
All children	17,741	11,832	15,595	6,445	3,518	1,243	927	1,132	58,440

Notes

1. LBOTE refers to language background other than English.
2. s90 indicates a value that is suppressed because the corresponding percentage is ≥90%.
3. Refer to Appendix 2: Methods for explanation of remoteness areas and socioeconomic status (SES).

Source: Australian Early Development Index unpublished data.

Table A1.14b: Children developmentally vulnerable on one or more domains of the Australian Early Development Index, 2009 (per cent)

	State/territory of usual residence								Australia
	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	
Sex									
Boys	26.9	26.4	38.2	31.8	29.8	28.8	29.0	46.8	30.2
Girls	15.7	14.1	20.9	17.4	16.0	14.6	15.0	31.7	16.8
Indigenous status									
Indigenous	38.9	42.4	50.4	52.3	49.5	n.p.	n.p.	65.7	47.5
Non-Indigenous	20.5	20.1	28.2	22.9	21.9	21.2	21.8	22.8	22.4
Language diversity									
LBOTE	27.9	30.4	42.1	36.9	31.9	n.p.	32.0	65.8	32.1
Proficient in English	18.4	19.8	30.5	26.4	24.2	n.p.	19.9	53.4	21.8
Not proficient in English	≥90.0	≥90.0	≥90.0	≥90.0	n.p.	n.p.	n.p.	≥90.0	≥90.0
Non-LBOTE (English only)	19.2	17.8	28.3	22.6	21.5	21.7	20.2	22.8	21.7
Proficient in English	16.9	15.9	25.4	20.1	19.5	19.3	18.3	20.9	19.3
Not proficient in English	≥90.0	≥90.0	≥90.0	≥90.0	≥90.0	n.p.	n.p.	n.p.	≥90.0
Remoteness									
Major cities	20.7	20.2	28.5	23.5	23.0	..	22.2	..	22.5
Inner regional	22.6	20.2	29.8	24.7	19.6	21.2	n.p.	..	23.6
Outer regional	23.9	22.3	31.8	27.9	24.5	22.6	..	25.7	26.9
Remote	26.1	n.p.	29.3	27.4	22.3	n.p.	..	43.2	29.5
Very remote	n.p.	..	46.2	36.8	n.p.	n.p.	..	65.1	47.5
Socioeconomic status									
Lowest SES areas	28.0	31.9	38.5	37.4	31.7	27.2	—	58.6	32.3
Highest SES areas	14.3	13.8	22.4	17.8	11.8	14.7	20.6	n.p.	16.3
All children	21.3	20.3	29.6	24.7	22.9	21.8	22.2	39.1	23.5

Notes

1. LBOTE refers to language background other than English.
2. ≥90 indicates per cent equal to or greater than 90.
3. Refer to Appendix 2: Methods for explanation of remoteness areas and socioeconomic status (SES).

Source: Australian Early Development Index unpublished data.

Table A1.14c: Children developmentally vulnerable by AEDI domain, 2009 (per cent)

	AEDI domain				
	Physical health and wellbeing	Social competence	Emotional maturity	Language and cognitive skills	Communication skills and general knowledge
Indigenous status					
Indigenous	21.8	20.2	17.2	28.7	21.3
Non-Indigenous	8.7	9.0	8.5	7.9	8.6
Language diversity					
LBOTE	10.5	11.8	9.5	12.3	19.9
Proficient in English	7.4	7.9	7.2	7.5	7.9
Not proficient in English	29.2	35.0	23.3	41.2	≥90.0
Non-LBOTE (English only)	9.0	9.0	8.7	8.1	6.8
Proficient in English	7.7	7.8	7.9	6.6	4.1
Not proficient in English	50.0	45.5	34.1	53.5	≥90.0
Remoteness					
Major cities	8.6	8.9	8.3	7.6	9.2
Inner regional	9.6	9.7	9.3	9.6	8.1
Outer regional	11.6	11.0	10.1	12.2	9.5
Remote	12.4	11.8	11.8	16.1	10.1
Very remote	22.7	20.8	19.9	30.1	23.0
Socioeconomic status					
Lowest SES areas	13.5	13.4	11.9	14.2	14.3
Highest SES areas	6.1	6.2	6.4	4.7	5.4

Notes

1. LBOTE refers to language background other than English.
 2. ≥90 indicates per cent equal to or greater than 90.
 3. Refer to Appendix 2: Methods for explanation of remoteness areas and socioeconomic status (SES).
- Source: Australian Early Development Index unpublished data.

15 Attendance at primary school

Table A1.15: Attendance rate of students in Year 5, 2009 (per cent)

School sector	State/territory of school							
	NSW	Vic	Qld	WA	SA	Tas	ACT	NT
Government								
Sex								
Boys	94	94	93	93	92	95	94	85
Girls	94	94	93	93	93	95	93	86
Indigenous status								
Indigenous	89	89	87	82	83	92	89	76
Non-Indigenous	94	94	93	94	93	95	94	93
All children	94	94	93	93	92	95	93	86
Catholic								
Sex								
Boys	95	94	94	94	94	96	94	81
Girls	95	94	94	93	94	93	94	82
Indigenous status								
Indigenous	89	90	90	78	91	96	91	71
Non-Indigenous	95	94	94	94	94	95	94	87
All children	95	94	94	93	94	95	94	81
Independent								
Sex								
Boys	95	94	93	94	94	95	95	90
Girls	95	95	94	95	94	93	95	89
Indigenous status								
Indigenous	89	94	88	81	88	95	85	64
Non-Indigenous	95	94	94	95	94	94	95	94
All children	95	94	94	95	94	94	95	89

Notes

1. Data collection methodologies vary between states and territories and school sectors. See MCEECDYA 2010 for further information.
2. Relevant information was not available to publish numbers or confidence intervals.

Source: SCRGSP 2010.

16 Literacy and numeracy

Table A1.16: Year 5 students who achieve at or above the national minimum standards, 2009 (per cent)

	State/territory								Australia
	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	
Reading									
Sex									
Boys	91.7	92.6	86.5	86.5	88.6	86.9	91.9	62.3	89.6
Girls	95.7	96.0	91.5	91.5	93.5	93.9	96.1	68.6	93.9
Indigenous status									
Indigenous	77.9	84.8	65.7	56.2	67.7	79.0	77.4	31.0	66.7
Non-Indigenous	94.3	94.6	90.6	91.8	91.9	91.8	94.4	89.1	93.1
Language diversity									
LBOTE ^(a)	92.7	92.6	80.0	86.4	85.2	91.2	90.0	27.2	89.7
Non-LBOTE	94.0	94.8	89.7	90.8	91.8	90.2	94.6	80.4	92.4
Remoteness^(b)									
Metropolitan	94.2	94.5	90.3	91.1	91.8	91.5	94.0	..	93.0
Provincial	92.3	93.5	87.9	87.9	90.0	89.5	n.p.	84.9	90.7
Remote	79.4	94.2	77.9	82.2	90.1	82.9	..	64.5	79.5
Very remote	70.4	..	59.3	56.3	58.6	n.p.	..	21.9	49.1
All children	93.7	94.2	88.9	88.9	91.0	90.3	94.0	65.4	91.7
Numeracy									
Sex									
Boys	95.3	95.1	92.8	92.9	93.4	92.6	95.2	73.3	94.0
Girls	95.7	95.8	92.5	92.6	93.2	93.8	95.7	73.8	94.3
Indigenous status									
Indigenous	82.5	86.9	73.9	67.4	73.5	85.7	83.6	45.5	74.2
Non-Indigenous	96.1	95.9	94.0	95.0	94.1	94.1	95.8	92.9	95.3
Language diversity									
LBOTE ^(a)	95.6	94.3	86.8	90.5	89.2	90.6	92.6	41.3	92.9
Non-LBOTE	95.5	95.9	93.2	94.2	93.9	93.3	95.9	86.8	94.6
Remoteness^(b)									
Metropolitan	96.1	95.7	93.8	94.5	93.8	93.8	95.5	..	95.2
Provincial	94.1	94.9	91.8	92.3	92.7	92.8	n.p.	90.6	93.4
Remote	85.3	97.5	82.9	86.5	93.0	90.6	..	73.1	84.6
Very remote	78.1	..	68.3	65.7	71.0	n.p.	..	35.3	59.5
All children	95.5	95.5	92.6	92.8	93.3	93.2	95.5	73.5	94.2

(a) LBOTE refers to language background other than English.

(b) Remoteness classified according to the MCEETYA Schools Geographic Location scale (see Jones 2004 for further information). Not all states and territories have all remoteness area categories.

Source: ACARA 2010b.

17 Teenage births

Table A1.17: Live births to teenage mothers aged 15–19 years, 2008

	State/territory of usual residence								Australia	
	NSW	Vic	Qld	WA	SA	Tas	ACT	NT		
Number										
Indigenous status of mother										
Indigenous	609	117	666	388	130	49	11	308	2,278	
Non-Indigenous	2,823	1,704	2,779	1,143	739	394	81	98	9,761	
Birthplace of mother										
Born in Australia	3,097	1,589	3,108	1,327	812	436	85	400	10,854	
Born overseas	337	235	334	181	57	7	8	8	1,167	
Remoteness										
Major cities	1,877	1,026	1,577	876	551	..	92	..	5,999	
Inner regional	1,083	603	902	209	121	285	n.p.	..	3,204	
Outer regional	408	192	707	211	143	147	..	128	1,936	
Remote and very remote	70	n.p.	259	235	54	11.	..	280	912	
Socioeconomic status (SES)										
Lowest SES areas	1,271	498	1,292	274	527	315	—	226	4,403	
Highest SES areas	102	123	185	104	29	—	40	11	594	
Total teenage births	3,438	1,824	3,445	1,531	869	443	93	408	12,051	
Number per 1,000 females aged 15–19 years										
Indigenous status of mother										
Indigenous	69.4	58.6	80.0	100.9	77.4	43.6	n.p.	90.9	77.5	
Non-Indigenous	12.7	9.8	20.0	16.2	14.6	25.3	6.9	21.6	14.2	
Birthplace of mother										
Born in Australia	16.3	10.9	25.7	29.1	13.8	27.8	12.3	38.5	18.3	
Born overseas	10.0	9.7	19.2	34.5	4.7	8.6	15.9	5.4	12.2	
Remoteness										
Major cities	11.4	8.0	17.8	16.1	14.2	..	7.7	..	12.3	
Inner regional	21.2	15.9	27.0	22.2	19.3	25.3	n.p.	..	21.4	
Outer regional	29.1	22.5	33.0	32.5	25.8	28.3	..	31.7	29.7	
Remote and very remote	70.6	n.p.	66.3	61.5	33.3	n.p.	..	71.7	62.2	
Socioeconomic status (SES)										
Lowest SES areas	24.6	18.2	42.1	64.8	32.8	33.0	n.p.	72.0	30.9	
Highest SES areas	2.4	3.6	6.9	5.7	3.4	—	5.1	15.4	4.3	
Total teenage births	14.9	10.4	23.4	20.6	16.6	26.5	7.8	51.4	16.8	

Notes

- Includes births to mothers aged less than 15 years.
- Refer to Appendix 2: Methods for explanation of remoteness areas and socioeconomic status (SES).

Source: AIHW National Perinatal Data Collection.

18 Family economic situation

Table A1.18a: Average equivalised disposable household income for households with children aged 0–12 years in the 2nd and 3rd income deciles^(a), 2007–08 (\$ per week)

	State/territory of usual residence						Australia
	NSW	Vic	Qld	WA	SA	Tas	
Country of birth							
Born in Australia	408 (398–418)	416 (401–431)	423 (415–431)	434 (415–453)	406 (389–423)	417 (402–432)	433 (397–469)
Born overseas	401 (386–416)	405 (388–422)	411 (393–429)	419 (394–444)	399 (373–425)	457 (439–475)	n.p.
Remoteness							
Major cities	402 (393–411)	411 (397–425)	416 (405–427)	423 (406–440)	407 (393–421)	..	423 (384–462)
Inner regional	412 (393–431)	416 (391–441)	426 (403–449)	451 (396–506)	402 (348–456)	411 (387–435)	—
Other areas ^(b)	405 (372–438)	432 (327–537)	419 (394–444)	444 (414–474)	395 (361–429)	427 (404–450)	..
Family type							
Couple, one-family households	410 (397–423)	415 (403–427)	429 (417–441)	436 (417–455)	409 (391–427)	423 (406–440)	428 (362–494)
One-parent, one-family households	401 (384–418)	406 (381–431)	395 (376–414)	417 (394–440)	392 (374–410)	401 (371–431)	438 (400–476)
Multiple family households	387 (325–449)	n.p.	431 (411–451)	—	n.p.	n.p.	n.p.
Low-income households with children							
	405 (397–413)	412 (400–424)	420 (413–427)	429 (415–443)	404 (390–418)	419 (405–433)	423 (384–462)
							404 (382–426)
							412 (408–416)

(a) Households with income in the 2nd and 3rd income deciles are classified as low-income households.

(b) Other areas include Outer regional and Remote areas combined. The survey was not conducted in Very remote areas of Australia.

Note: Refer to Appendix 2: Methods for explanation of remoteness areas.

Source: ABS 2007–08 Survey of Income and Housing unpublished data.

Table A1.18b: Average equivalised disposable household income for households with children aged 0–12 years; difference between '2nd and 3rd' and '5th and 6th' income deciles^(a), 2007–08 (\$ per week)

	State/territory of usual residence									Australia
	NSW	Vic	Qld	WA	SA	Tas	ACT	NT		
Country of birth										
Born in Australia	288 (271–305)	272 (253–291)	275 (260–290)	258 (233–283)	285 (263–307)	257 (233–281)	278 (234–322)	266 (228–304)	277 (269–285)	
Born overseas	269 (247–291)	272 (238–306)	271 (246–296)	290 (257–323)	324 (285–363)	—	382 (0–1,050)	314 (218–410)	278 (265–291)	
Remoteness										
Major cities	283 (268–298)	265 (245–285)	266 (248–284)	274 (250–298)	289 (265–313)	..	292 (246–338)	..	277 (268–286)	
Inner regional	292 (260–324)	288 (255–321)	264 (235–293)	237 (177–297)	289 (221–357)	266 (232–300)	—	—	279 (263–295)	
Other areas ^(b)	268 (225–311)	285 (103–467)	308 (274–342)	263 (213–313)	316 (268–364)	245 (204–286)	..	281 (248–314)	288 (267–309)	
Family type										
Couple, one-family households	280 (262–298)	273 (255–291)	268 (252–284)	265 (241–289)	287 (261–313)	250 (225–275)	283 (212–354)	283 (241–325)	276 (268–284)	
One-parent, one-family households	268 (239–297)	247 (209–285)	280 (253–307)	266 (233–299)	317 (284–350)	269 (217–321)	298 (242–354)	312 (139–485)	273 (259–287)	
Multiple family households	293 (205–381)	np.	269 (226–312)	—	—	n.p.	—	—	296 (249–343)	
Difference between low- and middle-income households	282 (269–295)	273 (256–290)	274 (256–290)	274 (262–286)	268 (249–287)	294 (272–316)	256 (235–277)	292 (246–338)	281 (248–314)	278 (271–285)

(a) Households with income in the 2nd and 3rd income deciles are classified as low-income households and those in the 5th and 6th income deciles as middle-income households.

(b) Other areas include Outer regional, Remote and Very remote areas combined. The survey was not conducted in Very remote areas of Australia.

Note: Refer to Appendix 2: Methods for explanation of remoteness areas.

Source: ABS 2007–08 Survey of Income and Housing unpublished data.

20 Child abuse and neglect

Table A1.20: Children aged 0–12 years who were the subject of a child protection substantiation, 2009–10

	State/territory								
	NSW ^(a)	Vic	Qld	WA ^(b)	SA	Tas	ACT	NT	Australia
Number									
Sex									
Boys	5,205	2,612	2,668	625	675	377	244	444	12,850
Girls	4,998	2,507	2,441	658	625	346	194	419	12,188
Age									
Less than 1 year	1,296	974	909	182	236	94	65	163	3,919
1–4 years	3,300	1,607	1,529	389	417	264	136	293	7,935
5–12 years	5,240	2,552	2,712	685	662	362	233	408	12,854
Indigenous status									
Indigenous children	3,080	609	1,517	561	340	109	96	730	7,042
Other children ^(c)	7,230	4,524	3,633	726	975	627	342	134	18,191
All children	10,310	5,133	5,150	1,287	1,315	736	438	864	25,233
Number per 1,000 children									
Sex									
Boys	8.7	5.8	6.7	3.2	5.3	8.7	8.4	18.7	6.9
Girls	8.8	5.9	6.5	3.5	5.1	8.5	7.0	18.7	6.9
Age									
Less than 1 year	13.5	13.6	13.6	5.9	11.9	14.1	13.2	43.3	13.0
1–4 years	9.0	5.8	6.3	3.2	5.4	9.9	7.4	19.9	6.9
5–12 years	7.4	4.8	5.8	3.0	4.3	7.2	7.0	14.7	5.8
Indigenous status									
Indigenous children	60.5	55.7	29.8	24.8	37.5	18.7	69.1	36.4	41.0
Other children ^(c)	6.5	5.2	5.0	2.0	4.0	8.0	6.2	5.1	5.2
All children	8.8	5.9	6.6	3.4	5.2	8.8	7.7	18.7	6.9

(a) In accordance with the NSW *Keep Them Safe* reforms, the data reported for part of 2009–10 reflect legislative changes to the NSW *Children and Young Persons (Care and Protection) Act 1998*, proclaimed on 24 January 2010. This includes raising the reporting threshold from 'risk of harm' to the new 'risk of significant harm'.

(b) Western Australia introduced a new client information system in March 2010, but the supporting data warehouse is not yet ready. Data from the 2009 calendar year extracted as at the beginning of March from the legacy information system has been provided as a proxy for 2009–10 data, which is normally extracted at the beginning of September.

(c) *Other children* includes non-Indigenous children and those without a reported Indigenous status.

Notes

- Only includes children who were the subject of a substantiation of a notification received during 2009–10 (see Box 20.1). Children may have been the subject of more than one substantiation during the year.
- Subcategories may exclude unborn children and therefore may not add to the 'Persons' total.

Source: AIHW Child Protection Data Collection.

Appendix 2

METHODS

Crude rates

A crude rate is defined as the number of events over a specified period (for example, a year) divided by the total population at risk of the event.

Age-specific rates

An age-specific rate is defined as the number of events for a specified age group over a specified period (for example, a year) divided by the total population at risk of the event in that age group. Unless otherwise stated, rates presented throughout this report are age-specific.

Age-specific rates in this report were calculated by dividing, for example, the number of deaths in each specified age group by the corresponding population in the same age group.

Age-standardised rates

Age-standardised rates enable comparisons to be made between populations that have different age structures. Direct standardisation, in which the age-specific rates are multiplied by a constant population, was used in this report. This effectively removes the influence of the age structure on the summary rate. The report states where age-standardised rates have been used.

All age-standardised rates in this report have used the June 2001 Australian total estimated resident population as the standard population.

Rate ratio

Rate ratios are calculated by dividing the proportion of the study population (for example, Indigenous Australians) with a particular characteristic by the proportion of the standard population (for example, non-Indigenous Australians) with the same characteristic.

A rate ratio of 1 indicates that the prevalence of the characteristic is the same in the study and standard populations. Rate ratios of greater than 1 indicate higher prevalence in the study population and rate ratios of less than 1 indicate higher prevalence in the standard population.

Confidence intervals

The observed value of a rate may vary due to chance even where there is no variation in the underlying value of the rate. Therefore, where indicators based on survey data include a comparison between time periods, age and sex, geographical locations or population groups, 95% confidence intervals have been calculated. The confidence intervals are used to provide an approximate indication of the true difference between rates. They are shown on graphs as error bars. If the error bars do not overlap, the difference can be said to be statistically significant.

However, in some instances where the confidence intervals (and error bars) overlap only slightly, a further significance test can indicate a statistically significant difference. Where this is the case, the difference has been noted in the text and can be taken as significant.

As with all statistical comparisons, care should be exercised in interpreting the results of the comparison. If two rates are statistically significantly different from each other, the difference is unlikely to have arisen by chance. Judgement should, however, be exercised in deciding whether or not the difference is of any practical significance.

Two methods of calculating confidence intervals have been used in this report, depending on whether the data approximates a normal distribution or a Poisson distribution.

Suppression of numbers and rates

In this report, numbers based on a cell count of less than 5 have been suppressed for confidentiality reasons (indicated in tables as 'n.p.'). Rates based on numerators of less than 5 have also been suppressed, as rates based on only a few cases are not reliable due to difficulties in distinguishing random fluctuation from true changes in the underlying rate.

Further, rates based on a denominator of less than 300 have also been suppressed for confidentiality reasons (indicated in tables as 'n.p.').

Population data

The ABS estimated resident population (ERP) data were used to calculate most of the rates presented in this report, except where the denominator was available from within the data source (for example, indicators for which data was derived from the National Perinatal Data Collection or the Australian Childhood Immunisation Register).

Age-specific rates based on ABS ERP data were calculated using the ERP of the reference year as at 30 June for calendar year data (1 January to 30 December) and 31 December for financial year data (1 July to 30 June). For this report, population data for December 2006 and for June 2007 onwards were available as preliminary estimates only. Final estimates were used for all earlier years.

The denominator for rates by socioeconomic status and remoteness area were calculated by applying an ABS concordance between statistical local area (SLA) and socioeconomic status and between SLA and remoteness area, to the relevant ERP by SLA counts.

The most recent direct count of the Indigenous population, for which data was available for this report, was the 2006 Census. The ABS has also released projected estimates for the Indigenous population for more recent years, based on the 2006 Census.

Population groups

Aboriginal and Torres Strait Islander people

Throughout this report, where analysis excludes cases where Indigenous status is not stated or inadequately described, the categories used for presentation of the data are *Indigenous children* and *Non-Indigenous children*. Where analysis includes these cases where Indigenous status is not stated or inadequately described, the categories used for presentation of the data are *Indigenous children* and *Other children*.

Mortality data quality for Indigenous Australians

At present, there is considerable variation across the states and territories in the completeness of mortality data for Indigenous people. Information concerning the number of deaths of Indigenous people is limited by the accuracy with which Indigenous persons are identified in death records. Problems associated with identification result in an underestimation of deaths of Indigenous people.

Mortality data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory are considered to have sufficient coverage to produce reliable statistics on Indigenous Australian deaths for the period 1998–2007 (2001–2007 for New South Wales). Due to the small numbers of deaths among Indigenous children, 5 years of mortality data have been combined for analysis in this report (2003–2007).

Where Indigenous status is *Not stated/inadequately described*, these deaths have been excluded from the analysis. As such, the categories used for presentation of mortality analysis are *Indigenous Australians* and *Non-Indigenous Australians*.

Interpretation of Indigenous mortality statistics should take into account the relative quality of the data from these jurisdictions, and the fact that data from these jurisdictions are not necessarily representative of the excluded jurisdictions.

Survey data quality for Indigenous Australians

There are many logistical, analytical and conceptual challenges in surveying the Aboriginal and Torres Strait Islander population, as the population is relatively small and less accessible; Indigenous Australians account for 2.5% of the total population, one-quarter of whom live in remote or very remote areas. Although there are a number of surveys specifically relating to the Indigenous population, such as the ABS National Aboriginal and Torres Strait Islander Health and Social Surveys, these surveys do not collect information for many of the indicators or for the relevant age group covered in this report. The small size of the Indigenous child population results in estimates from surveys being based on a small number of events which are subject to uncertainty, meaning data for many of the indicators are therefore not sufficiently robust to present.

Remoteness area

Except where otherwise stated, this report uses the Australian Standard Geographical Classification (ASGC), which groups geographic areas into five classes. These classes are based on Census Collection Districts and are defined using the Accessibility/Remoteness Index of Australia (ARIA). ARIA is a measure of the remoteness of a location from the services provided by large towns or cities. A higher ARIA score denotes a more remote location. The five classes of the ASGC Remoteness classification, along with a sixth *Migratory* class, are listed in Table A2.1.

Table A2.1: Remoteness areas for the ASGC Remoteness Classification

Classes	Collection districts (CDs) within class
Major cities of Australia	CDs with an average ARIA index value of 0 to 0.2
Inner regional Australia	CDs with an average ARIA index value greater than 0.2 and less than or equal to 2.4
Outer regional Australia	CDs with an average ARIA index value greater than 2.4 and less than or equal to 5.92
Remote Australia	CDs with an average ARIA index value greater than 5.92 and less than or equal to 10.53
Very remote Australia	CDs with an average ARIA index value greater than 10.53
Migratory	Off-shore, shipping and migratory CDs

Source: ABS 2008b.

Socioeconomic status

The Socio-Economic Index for Areas (SEIFA) are summary measures of socioeconomic status (SES) that summarise a range of socioeconomic variables associated with disadvantage. Socioeconomic disadvantage is typically associated with low income, high unemployment and low levels of education. Unless otherwise stated, the SEIFA index used in this report is the 2006 SEIFA Index of Relative Socioeconomic Disadvantage (IRSD) developed by the ABS for use at the statistical local area level. See Adhikari (2006) for the complete list of variables and corresponding weights used for the IRSD.

Since the IRSD only summarises variables that indicate disadvantage, a low score indicates that an area has many low-income families, many people with little training and many people working in unskilled occupations; hence, this area may be considered as disadvantaged relative to other areas. A high score implies that the area has few families with low incomes and few people with little or no training and working in unskilled occupations. These areas with high index scores may be considered less disadvantaged relative to other areas. It is important to understand that a high score reflects a relative lack of disadvantage rather than advantage, and that the IRSD relates to the average disadvantage of all people living in a geographic area and cannot be presumed to apply to all individuals living within the area. For further information see Adhikari (2006).

SEIFA quintiles were used for this report—the most disadvantaged quintile is referred to as *Lowest SES areas* and the least disadvantaged quintile is referred to as *Highest SES areas*.

There are two methods for defining SEIFA quintiles: population-based and area-based.

The population-based method ranks the SEIFA scores for a particular geography (for example, Statistical Local Area or Postal Area) from lowest to highest, and the geographical areas are divided into 5 groups (quintiles), such that approximately 20% of the population are in each quintile. In this report, the population-based method has been used for SEIFA analysis on data from administrative data sources.

The area-based method ranks the SEIFA scores for a particular geography from lowest to highest, and the SEIFA scores for a given geography (for example, Statistical Local Area or Postal Area) are divided into five equal groups. In this approach, quintiles have equal numbers of a given geography but not necessarily equal population sizes. The area-based method has been used for survey data in this report.

Australian cut-offs for SEIFA quintiles have been used for national, state and territory data.

Mortality data

Mortality data presented in this report are from the AIHW National Mortality Database (see *Appendix 3: Data sources*). Unless otherwise stated, mortality analysis in this report is based on year of registration of death; results may therefore differ slightly from results based on year of death. Data presented by state and territory are based on the state or territory of usual residence. Data issues relating to a specific mortality analysis are footnoted in tables and figures throughout the report. Cause of death analysis in this report is based on underlying cause of death (rather than multiple cause of death), unless otherwise stated.

Cause of death classification

Australia uses the International Statistical Classification of Diseases and Related Health Problems for coding of causes of death. The tenth revision (ICD-10) is available from 1999 onwards. The ABS backcoded the 1997 and 1998 cause of death data in ICD-10 and, consequently, causes of death were dual-coded in ICD-9 and ICD-10 for these years. In this report, trend data for mortality used ICD-10 from 1997 onwards.

The ICD-10 codes used for analysis in this report are listed in Table A2.2.

Table A2.2: ICD-10 codes used in this report for mortality data

	ICD-10
Injury and poisoning ^(a)	V01–Y98
Symptoms, signs and ill-defined conditions	R00–R99
Sudden infant death syndrome	R95
Other symptoms, signs and abnormal findings	R00–R94, R96–R99
Perinatal conditions	P00–P96
Disorders of short gestation and low birthweight	P07
Fetus and newborn affected by maternal complications of pregnancy	P01
Fetus and newborn affected by complications of placenta, cord and membranes	P02
Other perinatal conditions	P03–P06, P08–P96
Congenital anomalies	Q00–Q99
Congenital malformations of the circulatory system	Q20–Q28
Other congenital anomalies	Q00–Q19, Q29–Q99

(a) Injury and poisoning analysis presented in *Chapter 12: Injuries* uses the criteria described in the following section, *Injury and poisoning*.

Injury and poisoning

There are a number of issues when performing injury and poisoning analysis on mortality data. The methods and ICD codes used in this report are consistent with those used by the AIHW National Injury Surveillance Unit. These methods are summarised here, but are described in detail by Henley and colleagues (2007).

Injury mortality analysis is based on multiple cause of death, rather than underlying cause of death. This approach provides more valid estimates of deaths related to injury, and a more complete and reliable picture of the burden of injury mortality. The criterion used to select injury deaths was an ICD-10 multiple cause of death code in the range S00–T75 or T79, or an underlying cause of death code in the range V01–Y36, Y85–Y87 or Y89. Cases meeting this criterion are referred to as community injury, and exclude cases relating to complications of surgical and medical care.

International data

This report includes information on how Australia compares internationally for Headline Indicators where comparable data are available. In some cases where international data are not available for the defined Headline Indicator, other related data have been presented.

It is important to note that there are complexities associated with international comparisons. Even where seemingly comparable data are available, differences in data definitions, collection methodology and administrative policies and practices may mean that the data are not directly comparable.

Where possible, in this report Australia is compared with other Organisation for Economic Co-operation and Development (OECD) member countries. Data for all current 34 OECD member countries are not available in all cases—rankings are based on countries with available data for comparable time periods only.

The international figures display data for 'selected' OECD countries only, as well as the OECD average. Countries presented in figures include:

- Australia
- countries with the highest and lowest rankings
- selected countries considered to be more comparable with Australia, such as Canada, New Zealand, the United Kingdom and the United States of America.

Rankings are displayed on figures to provide a clear indication of where a country is positioned in relation to all OECD countries with available data.

Appendix 3

DATA SOURCES

AIHW and collaborating units data sources

AIHW Child Protection Data Collection

The AIHW collects annual statistics on child protection in Australia for children and adolescents aged 0–17 years. Aggregate data are provided by the state and territory departments responsible for child protection and are used to produce the annual *Child Protection Australia* report and are also provided to the Productivity Commission for the *Report on Government Services*.

There are four separate child protection collections: child protection notifications, investigations and substantiations; children on care and protection orders; children in out-of-home care; and intensive family support services.

See also the *Data developments* section later in this appendix for information on the National Child Protection Unit Record Collection.

Data availability: Annual from 1991 onwards

Further information: <www.aihw.gov.au/child-protection/>

AIHW National Mortality Database

The AIHW National Mortality Database includes information on the factors that caused death, as well as other information about the deceased person, such as age at death, place of death, country of birth, and where applicable, the circumstances of their death. These data are collected in Australia by the Registrars of Births, Deaths and Marriages in each state and territory. The data are then compiled nationally by the ABS, which codes the data according to the International Classification of Diseases (ICD).

Data availability: Annual from 1964 onwards

Further information: <www.aihw.gov.au/mortality/index.cfm>

AIHW National Perinatal Data Collection (NPDC)

The AIHW National Perinatal Data Collection (NPDC) is a national population-based cross-sectional data collection of pregnancy and childbirth. The data are based on births reported to the perinatal data collection in each state and territory in Australia. Midwives and other staff, using information obtained from mothers and from hospital or other records, complete notification forms for each birth. Selected information is then compiled annually into this national data set by the AIHW National Perinatal Epidemiology and Statistics Unit. Information is included in the NPDC on both live births and stillbirths of at least 400 grams birthweight or at least 20 weeks gestation.

Data availability: Annual from 1991 onwards

Further information: <www.preru.unsw.edu.au/PRERUWeb.nsf/page/NPDC>

Child Dental Health Survey

The Child Dental Health Survey is an annual survey that monitors the dental health of children and young people enrolled in school dental services operated by the Australian state and territory health departments. This survey represents the only data routinely collected by all states and territories on child dental health.

Data for the Child Dental Health Survey are derived from routine examinations of children enrolled in the school dental services. The survey collects information on selected demographic characteristics and dental health status, including decay experience of deciduous and permanent teeth, immediate treatment needs (some states and territories only) and fissure sealants.

Data availability: Annual from 1990

Further information: Armfield et al. 2007

ABS data sources

ABS Childhood Education and Care Survey (CEaCS)

The ABS Childhood Education and Care Survey (CEaCS) was conducted for the first time in June 2008. Prior to the CEaCS, the ABS conducted the Child Care Survey (CCS) triennially between 1969 and 2005. The main aims of the CCS was to provide information on the use and cost of child care in a survey (related to care usage in a survey reference week), and some aspects of families' requirements for formal care or preschool.

In addition to this information, the CEaCS collected information for the first time on early childhood education and learning (the types of learning activities that children aged 0–8 years engage in, the environments in which these activities take place and patterns of attendance at preschool and school).

The scope of the 2008 CEaCS was Australian resident children aged 0–12 years and their families living in private dwellings in non-remote Australia. The CEaCS excludes people living in *Very remote* parts of Australia. For the Northern Territory, this represents 23% of the population. In each selected household, detailed information about child care arrangements and early childhood education was collected for a maximum of two children aged 0–12 years. Information was obtained via interview from an adult who permanently resided in the selected household and was either the child's parent, step-parent or guardian.

Data availability: Child Care Survey, triennial from 1969 to 2005; Childhood Education and Care Survey, 2008

Further information: ABS 2009b

ABS National Health Survey (NHS)

The ABS 2007–08 National Health Survey (NHS) was conducted between August 2007 and June 2008 and collected information from around 21,000 people. Both urban and rural areas in all states and territories were included, but very remote areas of Australia were excluded. One person aged 18 years and over in each dwelling was selected and interviewed about their own health and, if there were children resident, an adult was asked about the health of one child.

The NHS collected information on the health status of the population, and on health-related aspects of people's lifestyles, such as smoking, diet, exercise and alcohol consumption. Other information on the use of health services (such as, consultations with health practitioners, visits to hospital, days away from work and other actions people have recently taken for their health) was also collected, along with demographic and socioeconomic characteristics.

The NHS is a comprehensive survey of the Australian population; however, the survey population may not be sufficiently large to obtain accurate information about people of a given age with a particular disease.

Data availability: 1977–78, 1983, 1989–90, 1995, 2001, 2004–05, 2007–08

Further information: <www.abs.gov.au/ausstats/abs@.nsf/mf/4364.0/>

ABS Survey of Income and Housing (SIH)

The ABS Survey of Income and Housing (SIH) (previously known as the Survey of Income and Housing Costs) is a household survey that collects information from residents aged 15 years and over on sources of income and amount received, as well as housing, household and personal information. In 2007–08, the sample for the SIH was around 10,000 households. The SIH excludes people living in *Very remote* parts of Australia. For the Northern Territory, this represents 23% of the population.

As income received by individuals is often shared between members of a household, equivalised household income is a commonly used measure in analysis of the SIH. Equivalised household income is calculated by using an equivalence scale to adjust household income for household size and composition. This survey allows analysis of the amount of income received and the source of that income, and how factors such as these vary depending on age, state or territory, the remoteness of the household, or household size. It is also possible to examine housing circumstances such as the rate of home ownership among various groups.

Data availability: Most years from 1994–95 to 2003–04 (no survey was run in 1998–99 or 2001–02), 2005–06, 2007–08

Further information: <www.abs.gov.au/AUSSTATS/abs@.nsf/DOSSbyTopic/F0CDB39ECC092711CA256BD00026C3D5?OpenDocument>

Other data sources

Australian Childhood Immunisation Register (ACIR)

The Australian Childhood Immunisation Register (ACIR) was established in 1996 and records information on the immunisation status of children aged less than 7 years who are enrolled in Medicare; children not eligible to enrol in Medicare can also be added to the ACIR. The aims of the ACIR are to provide an accurate measure of the immunisation coverage of children in Australia and to provide an effective management tool for monitoring immunisation coverage and service delivery. Health professionals use the ACIR to monitor immunisation coverage levels, service delivery and disease outbreaks.

Data availability: Quarterly from March 1998 onwards

Further information: <www.medicareaustralia.gov.au/provider/patients/acir/statistics.jsp>

Australian Early Development Index (AEDI)

The Australian Early Development Index (AEDI) was completed nationwide for the first time in 2009. Information was collected on over 260,000 Australian children (97.5 per cent of the estimated five-year-old population) in their first year of full-time school between 1 May and 31 July. COAG has endorsed the AEDI as a national progress measure of early childhood development in Australia.

The AEDI is a population measure of children's health and development, based on the scores from a teacher-completed checklist in their first year of formal schooling. It aims to provide communities with a basis for reviewing the services, supports and environments that influence children in their first 5 years of life. The AEDI measures development in five domains:

- physical health and wellbeing
- social competence
- emotional maturity
- language and cognitive skills (school-based)
- communication skills and general knowledge.

The AEDI is funded by the Australian Government and is conducted by the Centre for Community Child Health (at The Royal Children's Hospital, Melbourne and a key research centre of the

Murdoch Childrens Research Institute) in partnership with the Telethon Institute for Child Health Research, Perth.

Data availability: 2009

Further information: <www.rch.org.au/aedi>

National Assessment Program—Literacy and Numeracy (NAPLAN) Report

The National Assessment Program—Literacy and Numeracy (NAPLAN) tests are conducted in May each year for all students across Australia in Years 3, 5, 7 and 9. All students in the same year level are assessed on the same test items in the assessment domains of reading, writing, language conventions (spelling, grammar and punctuation) and numeracy.

Each year, over one million students nationally sit the NAPLAN tests. The National Protocols for Test Administration ensure consistency in the administration of the tests by all test administration authorities and schools across Australia.

National minimum standards have been developed for reading, writing, spelling, language conventions (grammar and punctuation) and numeracy for students in Years 3, 5, 7 and 9. Students who achieve the minimum standards have demonstrated at least the basic understanding required for their year level. In 2008, the first NAPLAN tests were conducted. For the first time, students in each state and territory sat the same tests, allowing the consistent assessment of students across Australia. There is now a common and continuous reporting scale used for all students in Years 3, 5, 7 and 9, which provides considerably more information about student achievement than was previously available (MCEETYA 2008b).

Data availability: Annual from 2008

Further information: <www.nap.edu.au/>

National Report on Schooling in Australia—Attendance at primary school

States and territories, and school sectors reported aggregated student attendance data for the first time in 2007 for:

- all relevant schools (that is, not on a sample basis)
- special schools (except distance education schools, juvenile justice schools, intensive language centres, hospital schools and senior secondary colleges)

- students enrolled as full-time, or full-time equivalent
- students in Years 1 to 10.

The data are reported:

- by school sector (Government, Catholic and Independent), by state and territory
- separately for each of the agreed year levels
- for Indigenous and non-Indigenous students
- for males and females.

In the government sector, most jurisdictions measured student attendance over the entire first semester in the school calendar year. The remaining jurisdictions measured attendance over the term that included the month of May. The Catholic and independent school sectors collected data over a 20-day period, in the month of May. The student attendance data collection is in a transitional phase until all sectors have the capacity to be able to report using the agreed standard. Therefore, each jurisdiction and sector provides explanatory notes about the method used to collect and report on student attendance data (MCEECDYA 2010).

Variations by school sector, state and territory, and year level may be partly explained by differences in data collection methodology across states, territories and school sectors (MCEECDYA 2010).

Until 2008, national reporting on schooling was the responsibility of the Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA) and then the Ministerial Council for Education, Early Childhood Development and Youth Affairs (MCEECDYA). From 2009 this is now the responsibility of the Australian Curriculum, Assessment and Reporting Authority (ACARA).

Data availability: Annual from 2007

Further information: <<http://cms.curriculum.edu.au/anr2008/index.htm>>

Data developments

ABS Australian Health Survey

The Australian Health Survey (AHS) will be conducted by the ABS in consultation with the Australian Government Department of Health and Ageing, commencing in March 2011. The survey comprises the existing National Health Survey, the National Aboriginal and Torres Strait Islander Health Survey, and two new surveys: the National

Nutrition and Physical Activity Survey and the National Health Measures Survey.

Results from this survey will help fill important gaps in information on the health of Australians, in particular, in nutrition and physical activity. The AHS will be the first national ABS survey since 1995 to obtain information about the nutritional status of Australians. Some of the aims of the AHS are to provide estimates of certain chronic diseases and determinants, and enable monitoring and reporting against national food, nutrition and physical activity guidelines and recommendations.

The AHS will involve a sample of around 50,000 people, and will collect information gathered using physical measures (for example, measuring height and weight, or the taking of blood pressure) and through biomedical measures, such as blood samples.

First findings from the AHS are expected to be published in late 2012.

AIHW National Child Protection Unit Record Collection

The AIHW and the states and territories are currently developing a National Child Protection Unit Record Collection with the aim of improving the analytic potential of the national child protection data collection. State and Territory Ministers agreed to work with the Commonwealth on this project. This new collection will allow much more in-depth analysis and reporting in relation to children and young people within the child protection system.

A unit-record module relating to carers of children within the child protection system is also currently under development. In addition, specifications for a national minimum dataset are being developed for a national collection on treatment and support services in the context of child protection.

The AIHW is also continuing to work with the jurisdictions to improve the national aggregate collection by reviewing and amending the national data standards, expanding the collection of Indigenous data and developing collections on foster and relative/kinship carers.

In collaboration with the Performance and Data Working Group (PDWG), the AIHW have also contributed to the development and reporting of the indicators of change under the *National Framework for Protecting Australia's Children 2009–2020*.

Australian National Infant Feeding Survey

The AIHW is managing the implementation and analysis of the 2010 Australian National Infant Feeding Survey (ANIFS) to collect previously unavailable national baseline data on the prevalence and duration of breastfeeding. The ANIFS is funded by the Australian Government Department of Health and Ageing.

The objectives of the ANIFS are to collect and report:

- national baseline data on the prevalence and duration of breastfeeding
- national baseline data on other foods and drinks consumed by infants and toddlers
- national baseline data on perinatal depression
- national barriers to initiating and continuing breastfeeding by exploring the associations with demographic information and other characteristics of the infant and parent/carer.

The ANIFS was conducted between November 2010 and January 2011, with data expected to be available from mid-2011. Medicare Australia mailed the survey questionnaire to a random sample of mothers and primary carers of infants aged under 24 months selected from the Medicare enrolment database. The survey has been well received by the community and has achieved a higher-than-expected response rate.

Analysis of the survey data will determine the extent to which the reporting requirements for the *Breastfeeding* Children's Headline indicator—the proportion of infants exclusively breastfed at 4 months of age—are met. Data for infants of Indigenous mothers and primary carers will not be available.

Early Childhood Education and Care National Minimum Data Set

The AIHW, in conjunction with the ABS, has been contracted by the Australian Government Department of Education, Employment and Workplace Relations to develop and implement data standards and definitions to support six indicators to assess performance against the National Partnership Agreement on Early Childhood Education.

The data elements and associated standards for the Early Childhood Education and Care National Minimum Data Set (ECEC NMDS), which support reporting against these indicators, were endorsed in May 2010 by the Early Childhood Data Sub Group. These standards may evolve and change over time as the ECEC NMDS is being implemented. The ECEC NMDS was in the field March–September 2010 (exact time period varied by state/territory), and will be an annual collection. Data are expected to be available for reporting in 2013.

Following implementation, the ECEC NMDS will be the preferred data source for the *Attending early childhood education programs* Children's Headline Indicator priority area.

Appendix 4

CHILD HEALTH AND WELLBEING SUBCOMMITTEE MEMBERS

Ms Jenny Cleary (Chair)

Northern Territory Department of Health and Families

Dr Elizabeth Murphy (Deputy Chair)

NSW Health

Ms Corelle Davies (Deputy Chair)

Queensland Health

Ms Melinda Bromley

Australian Government Department of Health and Ageing

Dr Jenny Proimos

Victorian Department of Education and Early Childhood Development

Ms Deborah Schaler

ACT Health

Ms Gail Mondy

South Australian Children, Youth and Women's Health Service

Mr Mark Crake

WA Department of Health

Ms Christine Long

Tasmanian Department of Health and Human Services

Mr David Engelhardt

Australian Education, Early Childhood Development and Youth Affairs Senior Officials Committee

Ms Karen Wilson

Community and Disability Services Ministers Advisory Council

Ms Tracy Martin

Maternity Services Inter-Jurisdictional Committee

Ms Dana Shen

Indigenous representative

Dr Russell Ayres

Australian Government Department of Education, Employment and Workplace Relations

Dr Tracey Bessell (Secretariat)

Australian Government Department of Health and Ageing

Ms Judy Diamond (Secretariat)

Australian Government Department of Health and Ageing

Membership current at June 2011

Abbreviations

ABS	Australian Bureau of Statistics
ACIR	Australian Childhood Immunisation Register
AEDI	Australian Early Development Index
AESOC	Australian Education Systems Officials Committee
AEEYSOC	Australian Education, Early Childhood Development and Youth Affairs Senior Officials Committee
AHMC	Australian Health Ministers' Conference
AIHW	Australian Institute of Health and Welfare
ARIA	Accessibility/Remoteness Index of Australia
ASGC	Australian Standard Geographical Classification
BMI	body mass index
CDSMC	Community and Disability Services Ministers' Conference
CI	Confidence interval
COAG	Council of Australian Governments
DMFT	decayed, missing or filled permanent teeth
dmft	decayed, missing or filled deciduous teeth
DTP	diphtheria, tetanus and pertussis (vaccination)
ERP	Estimated resident population
Hib	<i>Haemophilus influenzae</i> type b
ICD	International Classification of Diseases
ICD-10	International Statistical Classification of Diseases and Related Health Problems, 10th Revision
IRSD	Index of Relative Socioeconomic Disadvantage
LSAC	Growing up in Australia: the Longitudinal Study of Australian Children
MCEECDYA	Ministerial Council for Education, Early Childhood Development and Youth Affairs
MCEETYA	Ministerial Council on Education, Employment, Training and Youth Affairs
MMR	measles, mumps and rubella (vaccination)
NAPLAN	National Assessment Program—Literacy and Numeracy
OECD	Organisation for Economic Co-operation and Development
RSE	relative standard error
SCRSGP	Steering Committee for the Review of Government Service Provision
SEIFA	Socio-Economic Indexes for Areas
SIDS	sudden infant death syndrome
SLA	statistical local area
UN	United Nations
WHO	World Health Organization

Australian states and territories

ACT Australian Capital Territory

NSW New South Wales

NT Northern Territory

Qld Queensland

SA South Australia

Tas Tasmania

Vic Victoria

WA Western Australia

Symbols used in tables

n.a. not available

— rounded to zero, including null cells

. . not applicable

n.p. not published (data cannot be released due to quality issues, confidentiality or permission not granted)

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