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Key national indicators of children's health, development and wellbeing

Indicator framework for A picture of Australia's children 2009

Introduction

The Australian Institute of Health and Welfare (AIHW) has been monitoring the health, development and wellbeing of Australia's children and young people since 1996 and, to date, has produced six comprehensive national reports in this area (AIHW 2003, 2005, 2007c; AIHW: Al-Yaman et al. 2002; AIHW: Moon et al. 2000; AIHW: Moon et al. 1999). This bulletin previews the key national indicators of children's health, development and wellbeing, hereafter referred to as the 'key national indicators', that are the basis of the forthcoming report, *A picture of Australia's children 2009*, scheduled for release in May 2009. This bulletin also contains the Headline Indicators for Children's Health, Development and Wellbeing, which will be reported on for the first time in *A picture of Australia's children 2009*.

Development of the key national indicators was guided by the National Child Information Advisory Group, and builds upon extensive indicator development work in the areas

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of child health, development and wellbeing undertaken for *A picture of Australia's children* (2005) (AIHW 2005). At that time, the reporting framework was broadened to include individual, family and societal factors that influence the health, development and wellbeing of children. This cross-sectoral approach to child health and wellbeing was influenced by the involvement of the Australian Council for Children and Parenting (ACCAP), among other key stakeholders; and the growing body of evidence pointing to the importance of early childhood in setting the foundation for lifelong learning, behaviour and health outcomes.

Developing a key national indicator framework

The most recent AIHW report on Australia's children, *A picture of Australia's children* (2005), represented a significant shift in AIHW reporting on the health and wellbeing of Australia's children. Reporting moved from topic-based to indicator-based, and was broadened to take into account the wider social, community and economic contexts in which Australian children are growing up and how these influence outcomes for children. This marked a shift away from a primarily health-focused reporting framework. The revised indicator framework followed an ecological approach, where the importance of parents, families and the physical and social environment are well recognised (AIHW 2004, 2005).[1]

The framework and draft indicators for *A picture of Australia's children* (2005) were discussed at a workshop hosted by the ACCAP in 2004, and were later finalised by the AIHW in consultation with an expert committee established for the report. The final set of 27 key national indicators and 44 measures covered a broad range of areas relating to child health, development and wellbeing. Two-thirds of these indicators were health-focused (health status measures, morbidity, disability, mortality, risk and protective factors), with the remaining indicators covering early learning and education, the influences of family, neighbourhood and community factors, safety and security, and economic and social influences. Broadening the scope of the indicators was consistent with international research literature and Australian research, which highlighted the importance of early childhood exposures (such as family environment, social interaction, and education) in shaping children's health, development and wellbeing, in both the short term and later in life (McCain & Mustard 2002; Waters et al. 2002). In recent years, the focus and shift in government policy towards early intervention and prevention has become one of the main themes for early childhood policies and initiatives; recognising that prevention is socially and economically more effective in the long term than later intervention.

1 The National Health Performance Framework (NHPC 2001) was not adopted as a framework for reporting on children because it is not considered an appropriate framework for capturing the developmental aspects which are essential for an indicator framework of child health, development and wellbeing. However, it has been adapted to look at other subsections of the population, for example, young people (AIHW 2007c).

A picture of Australia's children 2009 will continue to use this broadened indicator framework, with some modifications and refinements to the measures, and the inclusion of a number of additional indicators, notably system performance indicators. These changes to the framework reflect the considerable data development and information activities that have been undertaken in recent years in the areas of child health, development and wellbeing. In addition, the Headline Indicators endorsed by Australian Health, Community Services and Disability Ministers in 2006 will be first reported in *A picture of Australia's children 2009*.

The key national indicators presented in this bulletin, for reporting in *A picture of Australia's children 2009*, were produced by the AIHW in consultation with the National Child Information Advisory Group. This group comprises key experts in child health, development and wellbeing, jurisdictional representatives and stakeholders responsible for policies and programs concerning children (see Appendix 1 for a list of members). The AIHW wishes to acknowledge the extensive work undertaken over the last decade by earlier expert advisory groups in the development of the key national indicators for children's health, development and wellbeing. The indicators presented in this bulletin build upon that previous work, and also take into account recent Australian and international research, and emerging key policy issues.

Headline Indicators for Children's Health, Development and Wellbeing

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 national, jurisdictionally agreed headline indicators to monitor the health, development and wellbeing of children in Australia, and to facilitate ongoing data development and collection in these areas. The project began in 2005–06 as a subproject of the Child Health and Wellbeing Reform Initiative. Following extensive consultation with state and territory government agencies and data committees, 19 priority areas were endorsed by AHMC, CDSMC and the Australian Education Systems Officials Committee (AESOC) in July 2006. Sixteen priority areas currently have specific Headline Indicators (see Appendix 2 for a list of the Headline Indicators).

The establishment of Headline Indicators reporting complements the national reporting previously undertaken by the AIHW, by presenting jurisdictional and subpopulation data on a selected set of indicators. The Headline Indicators are designed to focus government policy attention on identified priorities for children's health, development and wellbeing. This will be facilitated by the comparison of state and territory data, and data from subpopulations of children, including children with a disability, children from culturally and linguistically diverse (CALD) backgrounds, children living in disadvantage, and Aboriginal and Torres Strait Islander children. They are a mechanism to assist in guiding and evaluating policy development by measuring progress on a set of indicators that are potentially amenable to change over time by prevention or early intervention. Headline Indicators are not intended to provide detailed knowledge about the cause of specific improvements.

For most of the 19 priority areas, specific indicators have been identified; however, for a small number, a robust indicator is yet to be determined. In addition, for a number of priority areas, further indicator and data development work is required before the indicator can be reported on. The implementation plan for the Headline Indicator project therefore comprises a work program which includes both a reporting stream and a data development stream.

Reporting on the Headline Indicators will occur on a biennial basis, and will be first published as a component of *A picture of Australia's children 2009*. This report will present information for 10 of the 19 Headline Indicator priority areas for which indicators are defined and data are currently available, with varying levels of disaggregation (see Appendix 2). A further six Headline Indicators, requiring varying degrees of indicator and/or data development, will be discussed in the report and, where available, the key national indicator will be used as a proxy indicator. Further developmental work will be undertaken for those indicators which are currently not defined or for which there are currently no data being collected. The first stand-alone Headline Indicator report, due for publication in May 2011, will also include further information on the data development component of the Headline Indicator project.

Indicator framework for *A picture of Australia's children 2009*

The key national indicators and the Headline Indicators of children's health, development and wellbeing have been organised into a framework around answering questions considered vital to assessing the health and wellbeing of children in Australia (see Appendix 3 for an overview of the complete framework). A similar approach was used in *A picture of Australia's children* (2005). The key questions are:

- How healthy are Australia's children?
- How well are we promoting healthy child development?
- How well are Australia's children learning and developing?
- What factors can affect children adversely?
- What kind of families and communities do Australia's children live in?
- How safe and secure are Australia's children?
- How well is the system performing in delivering quality health, development and wellbeing actions to Australia's children?

System performance indicators will be included for the first time in the 2009 report, recognising the importance of assessing the impact of existing systems on health, developmental and wellbeing outcomes for children and their families, and identifying potential areas where system delivery could be improved. The report will also include a demographic profile of children in Australia, including the size, composition, regional distribution and cultural diversity of the population aged 0–14 years.

Presenting national information about children can mask disparities that occur among subpopulations in Australia. In acknowledgment of the importance of providing an accurate picture of the health, development and wellbeing of all children in Australia, *A picture of Australia's children 2009* will include information on Aboriginal and Torres Strait Islander children, children from rural and regional areas, and children from diverse socioeconomic backgrounds, where quality data are available. For the Headline Indicators, subpopulation data by state and territory will be provided where available and appropriate. It is also important to look at how children in Australia are performing compared with children in other countries; therefore international comparisons will be included where comparable data are available.

The selection of the key national indicators for children's health, development and wellbeing was guided by criteria developed by the National Health Performance Committee (NHPC 2004). According to the NHPC guidelines, national indicators should:

- be worth measuring—the indicators represent an important and salient aspect of the public's health or the performance of the health system
- be measurable for diverse populations—the indicators are valid and reliable for the general population and diverse populations (i.e. Aboriginal and Torres Strait Islander people, rural/urban dwellers, people with different socioeconomic circumstances, etc.)
- be understood by people who need to act—people who need to act on their own behalf or on behalf of others should be able to readily comprehend the indicators and what can be done to improve outcomes
- galvanise action—the indicators are of such a nature that action can be taken at the national, state, local or community level by individuals, organised groups and public and private agencies
- be relevant to policy and practice—relevant to actions that can lead to improvement when widely applied
- be measurable over time to reflect results of actions—if action is taken, tangible results will be seen, indicating improvements in various aspects of children's wellbeing
- be feasible to collect and report—the information required for the indicator can be obtained at reasonable cost in relation to its value and can be collected, analysed and reported within an appropriate time frame
- comply with national processes of data definitions.

The following tables present the key national indicators (39 indicators and 55 measures) to be reported in *A picture of Australia's children 2009,* along with brief justifications explaining the relevance and importance of the indicators to children's health, development and wellbeing.

Key national indicators and Headline Indicators of children's health, development and wellbeing

How healthy are Australia's children?

Indicator	Measure	Justification
Mortality	Infant mortality rate[(a)]	The majority of childhood deaths occur in the first year of life, reflecting the prevailing health and hygiene conditions and effectiveness of the health system in maternal and perinatal health. Australia experiences very low and relatively stable infant mortality rates compared with other countries, however these overall rates mask significantly higher rates of infant mortality for Indigenous Australians (SCRGSP 2005).
	Sudden infant death syndrome (SIDS) rate	SIDS has been reduced to low levels in Australia (AIHW 2005), however further health gains are possible, particularly for Indigenous Australians, through a reduction in exposure to modifiable risk factors (Hunt & Hauck 2006).
	Death rate for children aged 1–14 years	Death rates are commonly used to measure population health (Mathers et al. 2005) and reflect circumstances around the time of death, provide insight into changes in social and environmental conditions, medical interventions, lifestyles and trends in underlying risk factors.
Morbidity	Proportion of children aged 0–14 years with asthma as a long-term condition	Asthma is a National Health Priority Area and is the leading cause of disease burden among children (Begg et al. 2007), leading to increased levels of health-care utilisation, school absenteeism, restriction of normal activities and sleep disturbances (Poulos et al. 2005). Asthma prevalence appears to have peaked in the mid-1990s, with some indication that the trend may have reversed (AIHW ACAM 2005). Further monitoring is needed to detect changes in prevalence.
	New cases of cancer per 100,000 children aged 0–14 years	Cancer, although relatively uncommon among children, is the second highest cause of death among 1–14 year olds (AIHW 2005), and is a National Health Priority Area.
	New cases of insulin-dependent diabetes per 100,000 children aged 0–14 years	Diabetes is a National Health Priority Area and is a common chronic disease in childhood. Evidence suggests that Type 1 diabetes is increasing among children (Chong et al. 2007; Haynes et al. 2004; Taplin et al. 2005), and that Type 2 diabetes is becoming a significant problem (Craig et al. 2007; McMahon et al. 2004).

(continued)

How healthy are Australia's children? (continued)

Indicator	Measure	Justification
Disability	Proportion of children aged 0–14 years with severe or profound core activity limitations	Children with disabilities can have diverse physical and/or intellectual impairments. Childhood disability may also result in activity and participation limitations which restrict their full involvement in society (and that of their carers) and can create serious financial hardship for families (AIHW: Al-Yaman et al. 2002).
Mental health	Proportion of children aged 4–14 years with mental health problems	Mental health is a National Health Priority Area. It is estimated that as many as 20% of children are affected by mental health problems in modern societies (Bayer et al. 2007). Children with mental health problems experience suffering, functional impairment, exposure to stigma and discrimination, and increased risk of premature death (Patel et al. 2007). In Australia, mental health problems and disorders accounted for the second highest burden of disease among children in 2003 (Begg et al. 2007).
	Proportion of children aged 6–14 years with mental health disorders (attention deficit hyperactivity disorder [ADHD], depressive disorder, conduct disorder)	ADHD, depressive disorder and conduct disorder have great significance for child and adolescent health in Australia (Sawyer et al. 2000), with ADHD and anxiety and depression being leading causes of the disease burden among children in 2003 (Begg et al. 2007). These conditions have implications for a child's psychosocial growth and development, health-care requirements, educational and occupational attainment and their involvement with the justice system (Bhatia & Bhatia 2007; Eme 2007; Laurel & Wolraich 2007).

(a) Headline Indicator.

How well are we promoting healthy child development?

Indicator	Measure	Justification
Breastfeeding	Proportion of infants exclusively breastfed at 4 months of age[(a)]	Breastfeeding aids in growth, cognitive development and is protective against infections and immune-related diseases later in life (Schack-Nielsen & Michaelsen 2006). In Australia, in accordance with World Health Organization guidelines, exclusive breastfeeding is recommended up to 6 months of age, before additional fluids and solids need to be introduced (NHMRC 2003).
Dental health	Proportion of children decay-free at age 6 years and at age 12 years Mean number of decayed, missing or filled teeth (dmft/DMFT) among primary school children[(a)]	Good oral health throughout infancy and early childhood contributes to better dental health in adulthood, resulting in less decay and reduced loss of natural teeth (AIHW 2005). Conversely, poor dental health adversely affects children's health and wellbeing. Untreated dental caries facilitate abscess formation, cellulitis and the systemic spread of disease. Poor dental health can lead to failure to thrive and school absences which can negatively affect school performance (Berg & Coniglio 2006).
Physical activity	Under development	Physical activity is important in maintaining good health. Regular physical activity reduces cardiovascular risk factors such as overweight, high blood pressure, and Type 2 diabetes, protects against some forms of cancer and strengthens the musculoskeletal system (AIHW 2006). Physical activity also improves the psychosocial wellbeing of children by reducing symptoms of depression, stress and anxiety and through improvements in self-confidence, self-esteem, energy levels, sleep quality and ability to concentrate (Hills et al. 2007).
Early learning	Proportion of children aged <1 year old who are read to by an adult on a regular basis	Shared reading positively affects children's vocabulary development, listening comprehension and understanding of the conventions of print. It also encourages phonological awareness (the ability to recognise the internal sound structure of words) and is an important predictor of early literary success (Centre for Community Child Health & The Smith Family 2004).

(a) Headline Indicator.

How well are Australia's children learning and developing?

Indicator	Measure	Justification
Transition to primary school	Proportion of children entering school with basic skills for life and learning[(a)]	Research has shown that children experience greater success at school when they have developed the emotional capability to manage their feelings and behaviour and when they have a base of strong academic and social skills (Klein 2006).
Attending early childhood education programs	Proportion of children attending an early education program in the 2 years prior to beginning primary school[(a)]	Preschool attendance can aid in preparing children for formal schooling. It prepares children emotionally and socially and aids their motor skill, language and cognitive development. Preschool programs may be especially positive for children from disadvantaged backgrounds where children may not be receiving adequate stimulation from the home environment (AIHW 2005).
Attendance at primary school	Attendance rate of children at primary school[(a)]	Absenteeism from primary school has adverse effects on a child's educational and social development. They miss out on critical stages of development with their peers and are less likely to achieve academic progress and success. Absenteeism can also exacerbate issues of low self-esteem, social isolation and dissatisfaction (Victorian Department of Human Services 2007).
Literacy and numeracy	Proportion of primary school children who achieve the literacy benchmarks[(a)] Proportion of primary school children who achieve the numeracy benchmarks[(a)]	National benchmarks in literacy and numeracy represent the minimum acceptable standard below which a student will have difficulty making sufficient progress at school. Academic performance in early grades is considered a significant predictor of children's retention in high school and secondary college. Proficiency in literacy and numeracy is essential for day-to-day living, for further educational opportunities and for employment prospects.
Social and emotional development	Under development	Social and emotional development encompasses a number of skills that children need to develop in order to succeed at school and in life in general. These include the ability to identify and understand one's feelings, accurately read and comprehend emotional states in others, manage strong emotions and their expression, regulate ones behaviour, develop empathy for others and establish and sustain relationships. These skills form the basis for self-regulation, enabling children to withstand impulses, maintain focus and undertake tasks regardless of competing interests (NIEER 2005).

(a) Headline Indicator.

What factors can affect children adversely?

Indicator	Measure	Justification
Teenage births	Age-specific fertility rate for 15–19 year old women[(a)]	Children born to teenage mothers develop more behaviour 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). Other health risks include low birthweight due to either prematurity or intrauterine growth restriction, infection, chemical dependence (due to maternal substance abuse) and sudden infant death syndrome (Malamitsi-Puchner & Boutsikou 2006).
Smoking in pregnancy	Proportion of women who smoked during the first 20 weeks of pregnancy[(a)]	Smoking in pregnancy is associated with multiple adverse outcomes for children such as low birthweight, intrauterine growth restriction, prematurity, birth defects of extremities, perinatal mortality, sudden infant death syndrome and lowered cognitive development in preschool-aged children (Chomitz et al. 1995; Julvez et al. 2007; McDermott et al. 2002). Smoking during pregnancy is the most important known modifiable risk factor for low birthweight and infant mortality.
Alcohol use during pregnancy	Proportion of women who consume alcohol during pregnancy	Alcohol use during pregnancy is associated with abnormal patterns of development in newborns. It can cause birth defects and presents in a range of disorders including growth deficiency, neurological problems and facial abnormalities (Kumada et al. 2007).
Birthweight	Proportion of live born infants of low birthweight[(a)]	Birthweight is an indicator of general health for infants and is a determinant of infant survival, health, development and wellbeing. Low birthweight is associated with increased risk of dying during the first year of life and long-term disability and disease (Ford et al. 2003). Low birthweight is associated with pre-term births, multiple births, substance abuse, socioeconomic disadvantage and poor maternal health and lifestyle. Many of these risks are amenable to interventions such as good antenatal care and nutrition, controlling infections and limiting substance use (Chomitz et al. 1995).
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[(a)]	Overweight and obese children are at a higher risk of being overweight and obese in adulthood (Guo et al. 2002). Some children may experience immediate health complications such as gallstones, hepatitis and sleep apnoea, or initiate the disease processes that lead to higher risks of morbidity and mortality later in life (Must & Strauss 1999). Obesity carries more stigma in children than a physical disability and can affect social acceptance and self-esteem (Waters & Baur 2003).

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What factors can affect children adversely? (continued)

Indicator	Measure	Justification
Environmental tobacco smoke in the home	Proportion of households with children aged 0–14 years where adults smoke inside	Young or unborn children who are exposed to tobacco smoke are at risk of serious health problems including increased risk and severity of asthma, infections of the lower respiratory tract, low birthweight, middle ear infections and sudden infant death syndrome (Chan-Yeung & Dimich-Ward 2003; NHMRC 1997; Thomson 2007).
Tobacco use	Proportion of children aged 12–14 years who are current smokers	Children and adolescents who smoke are less physically fit and have more respiratory illness than their peers. Smoking is also associated with impaired lung growth, chronic coughing and wheezing (CDCP 2004). Smoking in childhood is strongly associated with smoking in adulthood (Difranza & Wellman 2003), leading to increased risk of diseases such as lung cancer, chronic obstructive pulmonary disease and coronary heart disease (Burns 2003).
Alcohol misuse	Proportion of children aged 12–14 years who have engaged in high-risk drinking (five or more drinks in a row) at least once in the last 2 weeks	Alcohol use by children and adolescents is a factor in many injury-related deaths, risky sexual behaviour, academic failure, illicit drug and tobacco use, unruly behaviour, violence and property destruction, and can damage the maturing adolescent brain (United States Department of Health and Human Services 2007). Early use of alcohol has also been associated with more frequent use during late adolescence, increased risk for later dependence, as well as other health problems in early adulthood, including accidental injuries and mental health problems (Lubman et al. 2007).

(a) Headline Indicator.

What kind of families and communities do Australia's children live in?

Indicator	Measure	Justification
Family functioning	Under development	Family functioning is concerned with how families relate, communicate, make decisions, solve problems and maintain relationships. Benefits for children living in families that get on together include having positive role models for building relationships, the ability to cope with stressful life events and the development of high self-esteem (AIHW 2005).
Family economic situation	Average real equivalised disposable household income for households with children in the 2nd and 3rd income deciles[(a)]	For most families, household income is the most important determinant of their economic situation. Children living in low-income households are more likely to have insufficient economic resources to support a minimum standard of living and this can affect a child's nutrition, access to medical care, the safety of their environment, level of stress in the family and the quality and stability of their care (ABS 2006; AIHW 2005).
Children in non-parental care	Rate of children aged 0–14 years in out-of-home care	Children in out-of-home care represent a particularly disadvantaged group. Most have suffered child abuse or neglect and/or family relationship breakdown. Young people in out-of-home care have higher levels of aggressive/violent behaviour, substance use, intellectual disability and mental health problems and poorer educational outcomes compared with other young people (Cashmore & Ainsworth 2004; Jackson 2001).
	Under development—Children in grandparent families	Grandparent-headed families are becoming increasingly prevalent in Australia (Horner et al. 2007). Children living in grandparent families have often been exposed to parental substance use, child abuse or neglect, and family violence. This has significant implications for the physical, cognitive and psychosocial development of these children (Patton 2003).
Parental health status	Proportion of parents rating their health as 'fair' or 'poor'	Parents' health and wellbeing impacts on the health and wellbeing of children in a number of ways. Children rely on their primary carer for their physical, emotional and economic needs, and support. When disruption to parenting occurs, as sometimes happens with the onset of a physical or mental illness, the needs of a child may receive less attention or may not be met at all (Silburn et al. 1996).
	Proportion of parents with disability	Parental disabilities may include physical and mental health problems. Depending on the severity of the disability, the wellbeing of children may be affected by factors such as family discord, discontinuity of care, poor general parental skills, social isolation, poverty and they may experience developmental delays (ABS 1999; AICAFMHA 2001; McConnell et al. 2003). Children who take on a caring role may have restricted social and educational opportunities and experience increased levels of stress (Mukherjee et al. 2002).
	Proportion of parents with mental health problems	While many parents who have a mental illness are capable parents, mental health problems can affect parent-child relationships in a number of ways. Problems may include relationship discord, discontinuity of care, poor general parenting skills, social isolation and exclusion (AICAFMHA 2001).

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What kind of families and communities do Australia's children live in? (continued)

Indicator	Measure	Justification
Neighbourhood safety	Proportion of households with children aged 0–14 years where their neighbourhood is perceived as unsafe	High neighbourhood quality has been associated with positive outcomes for children, including lower levels of child maltreatment and youth delinquency and higher levels of children's physical and mental health, educational attainment and collective efficacy. One of the most common indicators of neighbourhood quality is parents' perception of neighbourhood safety (Ferguson 2006).
Social capital	Proportion of households with children under 15 years of age where respondent was able to get support in time of crisis from persons living outside the household	Social capital is an important part of the social context in which a child develops. It refers to the connections among individuals or the social networks that facilitate the norms of reciprocity and trustworthiness (AIHW 2005). Families with rich social support 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. Benefits to children of strong social networks include decreased school dropout rate, lower risk of involvement in gangs and the committing of delinquent acts, increased likelihood of gaining meaningful employment, lower levels of depression in at-risk teens and positive behavioural outcomes in at-risk children (Ferguson 2006).

(a) Headline Indicator.

How safe and secure are Australia's children?

Indicator	Measure	Justification
Injuries	Age-specific death rates from all injuries for children aged 0–4, 5–9 and 10–14 years[(a)]	Injury (including poisoning) is the leading cause of death and a major cause of hospitalisation among children aged 0–14 years in Australia. Injuries resulting in disability and disfigurement can impair a child's development and affect their future wellbeing (AIHW 2005). Many causes of injury are preventable, and are therefore amenable to intervention. Injury prevention and control is a National Health Priority Area.
	Road transport accident death rate for children aged 0–14 years	Road transport accidents remain the most common external cause of death from injury among children, despite large declines over the last 2 decades (AIHW 2005). Many of the causes of road transport accidents are preventable and therefore amenable to further intervention and reduction (WHO 2004).
	Accidental drowning death rate for children aged 0–14 years	Accidental drowning is a leading cause of childhood death, especially among 1–4 year olds, and is a focus of childhood injury prevention initiatives. Prevention strategies include: fencing of swimming pools, raising community awareness, close supervision, flotation devices and resuscitation training for supervisors (Pitt & Cass 2001; Schnitzer 2006). Continued monitoring of the success of these interventions is essential.
	Intentional self-harm hospitalisation rate for children aged 0–14 years	Intentional self-harm is a significant public health problem and is often, although not always, related to suicidal behaviour. Children and adolescents who are at risk of self-harm often suffer from depression, anxiety, impulsivity, low self-esteem and suicidal ideation (Lowenstein 2005).
	Assault death rate for children aged 0–14 years	Although deaths from assault are relatively rare among children, fatal outcomes from intentionally inflicted injuries or homicide provide an indication of the nature and extent of extreme interpersonal violence in this age group. Interpersonal violence, including domestic violence and child abuse, is often associated with parental drug and alcohol misuse and mental health problems (AIHW 2004).
	Assault hospitalisation rate for children aged 0–14 years	Hospitalisation rates for assault capture serious incidents of intentional harm inflicted by other people. This group includes hospitalisations for injuries from domestic violence and child abuse (AIHW 2004).
	Injury hospitalisation rate for children aged 0–14 years	Injury is a major reason for hospitalisations of children aged 1–14 years and injury prevention and control is a National Health Priority Area. Serious injury can result in chronic and disabling conditions which have a lasting impact on the health and wellbeing of the child.
School relationships and bullying	Under development	School connectedness and supportive social relationships have been associated with lower levels of absenteeism, delinquency, aggression, substance use and sexual risk behaviour, and higher levels of academic achievement and self-esteem amongst children (Hopkins et al. 2007; Springer et al. 2006). Conversely, bullying is associated with lower academic achievement, feeling 'unsafe' at school, depression, a number of psychosomatic conditions and contributes to maladjustment of children at school (Spector & Kelly 2006).

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How safe and secure are Australia's children? (continued)

Indicator	Measure	Justification
Child abuse and neglect	Rate of children aged 0–12 years who were the subject of child protection substantiation in a given year[(a)]	Child abuse may include neglect, physical abuse, sexual abuse and emotional or psychological abuse. Children who are subjected to abuse may experience fear and bodily harm, poor school performance, learning disorders, poor peer relations, antisocial behaviour and mental health disorders (Paolucci et al. 2001; Shonkoff & Phillips 2000). Abuse is substantiated if, in the professional opinion of officers of the child protection authority, there is reasonable cause to believe that a child has been, is being or is likely to be abused or neglected or otherwise harmed (AIHW 2007b).
	Rate of children aged 0–12 years who are the subject of care and protection orders	Children on care and protection orders are those whose safety and wellbeing are of serious concern due to abuse, neglect or the inability of parents to provide adequate care and protection (AIHW 2008). Recourse to the court is generally a last resort and is used in situations where supervision and counselling are resisted by the family, where other avenues for resolution of the situation have been exhausted, or where removal of a child into out-of-home care requires legal authorisation.
Children as victims of violence	Rate of children aged 0–14 years who have been the victim of physical and sexual assault	Physical and sexual abuse have multifaceted short and long-term negative effects on child development (Paolucci et al. 2001). In particular, a history of child sexual abuse has been associated with psychopathology, depression, anxiety disorder, phobias, panic disorder, post-traumatic stress disorder, substance abuse and violent and sexual offending later in life (Lee & Hoaken 2007; Molnar et al. 2001; Rick & Douglas 2007).
Homelessness	Rate of children aged 0–15 years seeking assistance from the Supported Accommodation Assistance Program (accompanied and unaccompanied)	Children experience a number of negative educational, social and health consequences as a result of being homeless. These can include early school leaving, behavioural problems, lacking parental affection and support, and psychological problems such as depression and low self-esteem. Many homeless children have experienced or witnessed domestic violence, have been victims of other crime, or have been involved in criminal activities themselves (AIHW 2005).
Children and crime	Rate of children aged 10–14 years who are under juvenile justice supervision	Young people under juvenile justice supervision represent a particularly disadvantaged population, characterised by mental health and behavioural problems, high socioeconomic stress, physical abuse and childhood neglect (Bickel & Campbell 2002; Lynch et al. 2003; Stewart et al. 2002). These children are vulnerable to continued and more serious offending later in life (Makkai & Payne 2003).

(a) Headline Indicator.

How well is the system performing in delivering quality health, development and wellbeing actions to Australia's children?

Indicator	Measure	Justification
Congenital anomalies	Under development—Rate of selected congenital anomalies among infants at births[a]	Congenital anomalies are a major cause of hospitalisation in infancy and childhood and a leading cause of infant mortality in Australia (Abeywardana et al. 2007). Preventative strategies can reduce the prevalence of some congenital anomalies, while timely intervention for children born with some congenital anomalies can significantly reduce morbidity, mortality and associated disabilities.
Newborn screening (hearing)	Under development	Congenital hearing impairment is traditionally diagnosed late in Australia and, for many children, deafness remains a disability leading to severe and lasting language impairment (Wake 2002; Wake et al. 2005). Early diagnosis and intervention can improve language, cognitive and social outcomes in hearing-impaired children (Yoshinaga-Itano 2003).
Immunisation	Proportion of children on the Australian Childhood Immunisation Register who are fully immunised at 2 years of age[b]	Immunisation against childhood diseases, such as diphtheria, pertussis, tetanus, polio and measles, is one of the most cost-effective public health interventions in preventing childhood morbidity and mortality (Pollard 2007). The rate of immunisation coverage reflects the capacity of the health system to effectively target and provide vaccinations to all children (World Bank 2000).
Survival for leukaemia	Five-year relative survival rate for leukaemia in children aged 0–14 years	Leukaemia is the most common cancer among Australian children (AIHW 2005). If detected early, medical treatment is often successful and advances in medical research have resulted in significant improvements in survival since the 1960s (Ziegler et al. 2005). Survival after diagnosis can be used to assess the effectiveness of early detection and treatment. The leukaemia survival rate is a health system quality indicator for the Child Health Indicators of Life and Development (CHILD) Project developed by the European Union Community Health Monitoring Programme (Rigby & Köhler 2002).
Quality child care	Under development[a]	Good-quality child care provides support for a child's learning, socialisation, development and their transition to school. Good-quality child care can also be an effective intervention for disadvantaged children or those with special education needs. Conversely, poor-quality child care may be associated with developmental risk (Harrison & Ungerer 2005).
Child protection re-substantiations	Rate of children aged 0–12 years who were the subject of child protection resubstantiation in a given year	Resubstantiation rates are an important measure of the effectiveness of child protection services in preventing the recurrence of abuse, neglect or harm to children (SCRGSP 2007).

(a) This indicator is under development. The placement of the indicator within the framework may be reviewed upon finalisation of the indicator.

(b) Headline Indicator.

Indicator and data limitations

The key national indicators for children's health, development and wellbeing and the Headline Indicators aim to provide a comprehensive picture of the health, development and wellbeing of Australian children, however for a number of indicators there is either a lack of national data or a lack of recent data.

A number of indicators require significant indicator and/or data development. These include physical activity, breastfeeding, attendance at early childhood education programs, transition to and attendance at primary school, social and emotional development, smoking in pregnancy, family functioning, children in non-parental care (grandparent families), school relationships and bullying, congenital anomalies, newborn screening (hearing) and quality child care. That is, either further work is required to develop an appropriate measure for these indicators or no national data are currently available. Therefore, for some of these indicators, only contextual information and research findings highlighting the importance of these areas in relation to children's health, development and wellbeing can be reported in *A picture of Australia's children 2009*.

There are also no up-to-date national data on the mental health of children, with the most recent data being the 1998 Child and Adolescent Component of the National Survey of Mental Health and Wellbeing. This data source is considered to be too outdated to continue reporting, and there are no alternative national data sources considered appropriate. Contextual information highlighting the importance of child mental health and wellbeing and jurisdictional data, where available, based on the Strengths and Difficulties Questionnaire (SDQ) developed by Goodman (1997), will be included in *A picture of Australia's children 2009* where appropriate.

Data developments

In recent years, there have been a number of data development activities undertaken in the areas of children's health, development and wellbeing, increasing the available information for a number of the indicators for *A picture of Australia's children 2009*. Those of particular relevance for this report are described below. Further information on a number of other data development and information activities relevant to children can be found in AIHW (2007:63).

National Children's Physical Activity and Nutrition Survey: This survey was conducted in 2007 by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and the University of Adelaide, with funding from the Australian Government Departments of Health and Ageing, and Agriculture, Fisheries and Forestry, and the Australian Food and Grocery Council.

The survey collected comprehensive information on overweight and obesity, physical activity and nutrition from more than 4,000 children aged 2–16 years. The survey data can be measured against Australia's Nutrient Reference Values, the Australian Dietary

Guidelines for Children and the Australian Physical Activity Guidelines. The results of the survey will inform research and government policy, and influence the promotion of good nutrition and healthy lifestyles in Australia.

Growing Up in Australia: the Longitudinal Study of Australian Children (LSAC): This study was initiated and funded by the Australian Government Department of Families, Housing, Community Services and Indigenous Affairs as part of its Stronger Families and Communities Strategy, and is being undertaken in partnership with the Australian Institute of Family Studies, with advice provided by a consortium of leading researchers. The study has a broad, multidisciplinary base, exploring family and social issues relevant to children's development, including family functioning, health, non-parental child care, and education.

The LSAC follows two cohorts of children—infants aged 3–19 months and children aged approximately 4–5 years at Wave 1 (2004)—with data collection occurring every 2 years. Data from waves 1, 1.5 and 2 are currently available, enabling the longitudinal nature of this study to be utilised. A key benefit of this type of longitudinal study is to investigate how children's outcomes are interlinked with their environment, rather than providing the basis for national monitoring. It is expected that the LSAC will mainly be used to provide supporting and contextual information for *A picture of Australia's children 2009*.

Footprints in Time: the Longitudinal Study of Indigenous Children (LSIC): This study was initiated and funded by the Australian Government Department of Families, Housing, Community Services and Indigenous Affairs, and is guided by the LSIC Steering Committee. The study will follow two cohorts of children—infants aged 0–12 months and children aged 4–5 years.

The study aims to improve the understanding of, and policy response to, the diverse circumstances faced by Aboriginal and Torres Strait Islander children, their families, and communities. The long-term objective of the study is to inform governments and communities about how programs and services can achieve positive outcomes for Aboriginal and Torres Strait Islander children.

Australian Early Development Index: Building Better Communities for Children (AEDI): This project is conducted by the Centre for Community Child Health at the Royal Children's Hospital Melbourne, in partnership with the Telethon Institute for Child Health Research, with funding from the Australian Government Department of Families, Housing, Community Services and Indigenous Affairs and support from Shell Company of Australia Limited.

The AEDI project could potentially fill some data gaps for the indicators relating to transition to primary school and social and emotional development. The AEDI is a community measure of young 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 (Centre for Community Child Health & Telethon Institute of Child Health Research 2007). Although currently implemented in only 54 communities around Australia, the Australian Government has committed to the national implementation of the AEDI.

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Appendix 1: National Child Information Advisory Group membership

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Appendix 2: Headline Indicators for Children's Health, Development and Wellbeing

Priority areas	Headline Indicators
Infant Mortality	Mortality rate for infants less than 1 year of age
Birthweight	Proportion of live born infants of low birthweight
Immunisation	Proportion of children on the Australian Childhood Immunisation Register who are fully immunised at 2 years of age
Dental Health	Mean number of decayed, missing or filled teeth (dmft/DMFT) among primary school children
Injuries	Age-specific death rates from all injuries for children aged 0–4, 5–9 and 10–14 years
Literacy	Proportion of primary school children who achieve the literacy benchmark
Numeracy	Proportion of primary school children who achieve the numeracy benchmark
Teenage Births	Age-specific fertility rate for 15 to 19 year old women
Family Economic Situation	Average real equivalised disposable household income for households with children in the 2nd and 3rd income deciles
Child Abuse and Neglect	Rate of children aged 0–12 years who were the subject of child protection substantiation in a given year
Smoking in Pregnancy	Proportion of women who smoked during the first 20 weeks of pregnancy#
Breastfeeding	Proportion of infants exclusively breast fed at 4 months of age#
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*
Attending Early Childhood Education Programs	Proportion of children attending an early education program in the 2 years prior to beginning primary school#
Transition to Primary School	Proportion of children entering school with basic skills for life and learning*
Attendance at Primary School	Attendance rate of children at primary school*
Social and Emotional Wellbeing	**
Shelter	**
Family Social Network	**

Notes

Shaded	Data already available for reporting
#	Data not currently being collected
*	Further development to the indicator needed before data collection and/or reporting
**	No indicator identified at present; to be developed

Appendix 3: Framework for *A picture of Australia's children 2009*

How healthy are Australia's children?							
Mortality *Age-specific and condition-specific death rates*	Morbidity *Hospitalisations and chronic conditions*	Disability *Profound or severe core activity limitations*	Mental health *Mental health problems*				
How well are we promoting healthy child development?							
Breastfeeding *Exclusive breastfeeding of infants*	Dental health *Children with decayed, missing or filled teeth*	Physical activity *Under development*	Early learning *Children who are read to by an adult*				
How well are Australia's children learning and developing?							
Transition to primary school *Children entering school with skills for life and learning*	Attending early childhood education programs *Children attending early childhood education programs*	Attendance at primary school *Children attending primary school each day*	Literacy and numeracy *Children meeting literacy and numeracy benchmarks*	Social and emotional development *Under development*			
What factors can affect children adversely?							
Teenage births *Age-specific fertility rate for females aged 15–19 years*	Smoking during pregnancy *Mother's tobacco smoking during pregnancy*	Alcohol use during pregnancy *Mother's alcohol consumption during pregnancy*	Low birthweight *Babies <2,500 grams at birth*	Overweight and obesity *Children with acceptable/ unacceptable BMI scores*	Environmental tobacco smoke in the home *Children in households where adults smoke inside*	Tobacco use *Current smokers*	Alcohol misuse *Children engaging in high-risk drinking*
What kind of families and communities do Australia's children live in?							
Family functioning *Under development*	Family economic situation *Average real equivalised disposable household income in the 2nd and 3rd deciles*	Children in non-parental care *Children in out-of-home care and other non-parental care*	Parental health status *Parents with fair or poor health, disabilities, mental health problems*	Neighbourhood safety *Proportion who perceive their neighbourhood as unsafe*	Social capital *Children in households that are able to get support in a time of crisis*		
How safe and secure are Australia's children?							
Injuries *Injury mortality and hospitalisations*	School relationships and bullying *Under development*	Child abuse and neglect *Child protection substantiations, children on care and protection orders*	Children as victims of violence *Physical and sexual assault*	Homelessness *Children seeking SAAP assistance*	Children and crime *Children under juvenile justice supervision*		
How well is the system performing in delivering quality health, development and wellbeing actions to Australia's children?							
Congenital anomalies *Selected congenital anomalies among infants at birth[(a)]*	Newborn screening (hearing) *Under development*	Childhood immunisation *Children who are fully vaccinated*	Survival for leukaemia *Five-year relative survival for leukaemia*	Quality child care *Under development[(a)]*	Child protection resubstantiations *Resubstantiated claims of child abuse and neglect*		

(a) This indicator is under development. The placement of the indicator within the framework may be reviewed upon finalisation.

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