

AIHW Working paper

**Technical paper on operational  
definitions and data issues for key  
national indicators of children's health,  
development and wellbeing**

**PRELIMINARY REPORT**

**June 2008**

Australian Institute of Health and Welfare  
Canberra

Cat. no. WP 59.

© Australian Institute of Health and Welfare 2008

This work is copyright. Apart from any use as permitted under the *Copyright Act 1968*, no part may be reproduced without prior written permission from the Australian Institute of Health and Welfare. Requests and enquiries concerning reproduction and rights should be directed to the Head, Media and Communications Unit, Australian Institute of Health and Welfare, GPO Box 570, Canberra ACT 2601.

This publication is part of the Australian Institute of Health and Welfare's working paper series. A complete list of the Institute's publications is available from the Institute's website <[www.aihw.gov.au](http://www.aihw.gov.au)>.

ISBN: 978 1 74024 805 1

### **Suggested citation**

Australian Institute of Health and Welfare 2008. Technical paper on operational definitions and data issues for key national indicators of children's health, development and wellbeing. AIHW Working paper. Cat. no. WP 59. Canberra: AIHW.

### **Australian Institute of Health and Welfare**

Board Chair

Hon. Peter Collins, AM, QC

Director

Penny Allbon

Any enquiries about or comments on this publication should be directed to:

Deanna Eldridge

Australian Institute of Health and Welfare

GPO Box 570

Canberra ACT 2601

Phone: (02) 6244 1011

Email: [deanna.eldridge@aihw.gov.au](mailto:deanna.eldridge@aihw.gov.au)

Published by the Australian Institute of Health and Welfare

# Contents

- 1 Introduction.....1**
  - Purpose of this document .....1
  - Background .....1
  - Forthcoming AIHW report: *A picture of Australia’s children 2009*.....2
- 2 Operational definitions and data issues.....7**
  - How healthy are Australia’s children?.....7
    - Indicator: Mortality .....7
    - Indicator: Morbidity .....10
    - Indicator: Disability .....13
    - Indicator: Mental health.....15
  - How well are we promoting healthy child development?.....17
    - Indicator: Breastfeeding .....17
    - Indicator: Dental health.....19
    - Indicator: Physical activity .....21
    - Indicator: Early learning .....23
  - How well are Australia’s children learning and developing? .....24
    - Indicator: Transition to primary school .....24
    - Indicator: Attending early childhood education programs .....25
    - Indicator: Attendance at primary school .....26
    - Indicator: Literacy and numeracy .....28
    - Indicator: Social and emotional development .....31
  - What factors can affect children adversely? .....32
    - Indicator: Teenage births .....32
    - Indicator: Smoking during pregnancy .....33
    - Indicator: Alcohol use during pregnancy.....35
    - Indicator: Birthweight .....36
    - Indicator: Overweight and obesity .....38
    - Indicator: Environmental tobacco smoke in the home .....40
    - Indicator: Tobacco use.....41
    - Indicator: Alcohol misuse .....42
  - What kind of families and communities do Australia’s children live in?.....43
    - Indicator: Family functioning.....43
    - Indicator: Family economic situation.....45
    - Indicator: Children in non-parental care .....47
    - Indicator: Parental health status .....49

Indicator: Neighbourhood safety.....	52
Indicator: Social capital .....	54
How safe and secure are Australia’s children?.....	56
Indicator: Injuries .....	56
Indicator: School relationships and bullying .....	63
Indicator: Child abuse and neglect.....	64
Indicator: Children as victims of violence.....	67
Indicator: Homelessness .....	69
Indicator: Children and crime.....	70
How well is the system performing in delivering quality health and wellbeing actions to Australia’s children?.....	71
Indicator: Congenital anomalies .....	71
Indicator: Newborn (hearing) screening.....	73
Indicator: Childhood immunisation.....	74
Indicator: Survival for leukaemia .....	76
Indicator: Quality child care.....	77
Indicator: Child protection resubstantiations .....	78
<b>3 Data sources .....</b>	<b>79</b>
AIHW and collaborating units data sources .....	79
ABS data sources.....	82
Other data sources .....	85
<b>Appendix 1: Headline Indicators for Children’s Health, Development and Wellbeing.....</b>	<b>88</b>
<b>References.....</b>	<b>89</b>

# 1 Introduction

## Purpose of this document

The AIHW aims to produce comprehensive and accurate national statistical reports on patterns and trends in children's health, development and wellbeing. Successive issues of AIHW reports on children (1998, 2002, 2005, and 2009 forthcoming) represent major milestones in an evolutionary process of knowledge, indicator and data development in the areas of child health, development and wellbeing. The indicators included in these reports cover a broad range of areas including health and health risk factors, learning and development, family and community environments, safety and security.

This technical paper specifies the operational definitions and primary data sources for the key national indicators of children's health, development and wellbeing (AIHW 2008c). It identifies the best currently available data sources for the key national indicators as identified by the AIHW, in conjunction with the National Child Information Advisory Group. It comments on data gaps and limitations, particularly inconsistencies between indicator (ideal) definitions and existing data definitions. These specifications are guiding the analysis of data for the key national indicators in *A picture of Australia's children 2009*, planned for release in 2009. This technical paper is subject to revision as new issues come to light, for example, in relation to new data sources or changes to existing data sources.

The information in this paper may be useful to researchers and analysts who are interested in compiling data on children's health, development and wellbeing. The AIHW encourages the use of indicator concepts and specifications contained in this paper, with appropriate acknowledgement of the use of AIHW material.

## Background

The 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, 2007d; AIHW: Al-Yaman et al. 2002; AIHW: Moon et al. 2000; AIHW: Moon et al. 1999). This work has been undertaken in consultation with the National Child Information Advisory Group and earlier expert advisory groups, and the Australian Council for Children and Parenting, with funding provided jointly by the AIHW and the Australian Government Department of Health and Ageing.

In April 2008, the AIHW released the latest bulletin on key national indicators of children's health, development and wellbeing: 39 indicators and 56 measures covering important aspects of health and health risk factors, learning and development, family and community environments, safety and security (AIHW 2008c). The bulletin also outlines the process for developing a national indicator reporting framework that incorporates the Headline Indicators for Children's Health, Development and Wellbeing endorsed by the Australian Health Ministers' Conference (AHMC) and the Community and Disability Services Ministers' Conference (CDSMC). The reporting of the Headline Indicators is funded by the Australian Health Ministers' Advisory Council (AHMAC), the Community and Disability Services Ministers' Advisory Council (CDSMAC) and the Australian Education Systems Officials Committee (AESOC). The Headline Indicators are listed in Appendix 1.

The key national indicators and Headline Indicators to appear in *A picture of Australia's children 2009* are structured around answering questions considered vital to assessing the health and wellbeing of Australian children, such as:

- 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?

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, see also AIHW 2008c).

Readers who are interested in more background information on the development of indicators of children's health, development and wellbeing should refer to recent bulletins on this topic (AIHW 2004, 2008c).

## **Forthcoming AIHW report: *A picture of Australia's children 2009***

The forthcoming AIHW report *A picture of Australia's children 2009* will bring together the most up-to-date information on the health, development and wellbeing of children in Australia aged 0–14 years. The report will present national data, with state and territory level data for the Headline Indicators included in appendix tables. As with previous issues, the 2009 report will present trend information to monitor how Australia's children are faring on key measures over time, and how certain population groups, such as Indigenous children, children from socioeconomically disadvantaged backgrounds and rural and regional Australia, are faring by comparison (subject to data of sufficient quality being available).

*A picture of Australia's children 2009* will report on how Australia compares internationally for indicators where internationally comparable data are available, such as infant mortality and childhood immunisation. It is important to note that there are complexities associated with international comparisons. Even where seemingly comparable data are available, differences in data definitions, underlying administrative practices and collection methodology may mean that the data are assessed as not directly comparable. The decision to include international comparisons is made on an indicator-by-indicator basis taking these considerations into account.

Table 1 summarises the key national indicators to appear in *A picture of Australia's children 2009*, and their main data sources.

The operational definitions in Part 2 of this technical paper list the data source and availability of data as at June 2008. There is usually a substantial lag between the collection of data and the availability of this data for analysis and reporting due to administrative and data quality-assurance processes. *A picture of Australia's children 2009* will contain the latest data that are available to the AIHW in time for inclusion in the report. The year of data included in *A picture of Australia's children 2009* may therefore differ from that in this technical paper, depending on the availability of updated data.

The data issues and cross tabulations presented for each indicator are those that have been identified for the purposes of producing *A picture of Australia's children 2009*, and are not exhaustive lists of all possible data issues and cross tabulations from the data source.

Part 3 of this technical paper presents information on the data sources to be used to present the key national and Headline Indicators in *A picture of Australia's children 2009*.

**Table 1: Data sources for key national indicators of children's health, development and wellbeing as at 30 June 2008**

<b>Indicator</b>	<b>Measure</b>	<b>Data source</b>
<b>How healthy are Australia's children?</b>		
<b>Mortality</b>	Mortality rate for infants less than 1 year of age <sup>(a)</sup>	AIHW National Mortality Database
	Sudden infant death syndrome (SIDS) rate	AIHW National Mortality Database
	Death rate for children aged 1–14 years	AIHW National Mortality Database
<b>Morbidity</b>	Proportion of children aged 0–14 years with asthma as a long-term condition	ABS National Health Survey
	New cases of cancer per 100,000 children aged 0–14 years	AIHW National Cancer Statistics Clearing House
	New cases of insulin-dependent diabetes per 100,000 children aged 0–14 years	AIHW National Diabetes Register
<b>Disability</b>	Proportion of children aged 0–14 years with severe or profound core activity limitations	ABS Survey of Disability, Ageing and Carers
<b>Mental health</b>	Proportion of children aged 4–14 years with mental health problems	To be determined
	Proportion of children aged 6–14 years with mental health disorders (attention deficit hyperactivity disorder [ADHD], depressive disorder, conduct disorder)	To be determined
<b>How well are we promoting healthy child development?</b>		
<b>Breastfeeding</b>	Proportion of infants exclusively breast fed at 4 months of age <sup>(a)</sup>	National data not available as at June 2008
<b>Dental health</b>	Proportion of children decay-free at age 6 years and at age 12 years	Child Dental Health Survey
	Mean number of decayed, missing or filled teeth (dmft/DMFT) among primary school children <sup>(a)</sup>	Child Dental Health Survey
<b>Physical activity</b>	Under development	National Children's Physical Activity and Nutrition Survey (data expected to be available mid-2008)
<b>Early learning</b>	Proportion of children aged <1 year old who are read to by an adult on a regular basis	To be determined
<b>How well are Australia's children learning and developing?</b>		
<b>Transition to primary school</b>	Proportion of children entering school with basic skills for life and learning <sup>(a)</sup>	To be determined
<b>Attending early childhood education programs</b>	Proportion of children attending an early educational program in the 2 years prior to beginning primary school <sup>(a)</sup>	Children's Services National Minimum Dataset (data source not available as at June 2008)
<b>Attendance at primary school</b>	Attendance rate of children at primary school <sup>(a)</sup>	MCEETYA National Report on Schooling in Australia (data not available as at June 2008)
<b>Literacy and numeracy</b>	Proportion of primary school children who achieve the literacy benchmark <sup>(a)</sup>	MCEETYA National Report on Schooling in Australia
	Proportion of primary school children who achieve the numeracy benchmark <sup>(a)</sup>	MCEETYA National Report on Schooling in Australia
<b>Social and emotional development</b>	Under development	To be determined

(continued)



**Table 1: Data sources for key national indicators of children's health, development and wellbeing as at 30 June 2008 (continued)**

<b>Indicator</b>	<b>Measure</b>	<b>Data source</b>
<b>What factors can affect children adversely?</b>		
<b>Teenage births</b>	Age-specific fertility rate for 15 to 19 year old women	National Perinatal Data Collection
<b>Smoking in pregnancy</b>	Proportion of women who smoked during the first 20 weeks of pregnancy <sup>(a)</sup>	National Perinatal Data Collection (national data not available as at June 2008)
<b>Alcohol use during pregnancy</b>	Proportion of women who consume alcohol during pregnancy	AIHW National Drug Strategy Household Survey
<b>Birthweight</b>	Proportion of live born infants of low birthweight <sup>(a)</sup>	National Perinatal Data Collection
<b>Overweight and obesity</b>	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 <sup>(a)</sup>	National Children's Physical Activity and Nutrition Survey (data expected to be available mid-2008)
<b>Environmental tobacco smoke in the home</b>	Proportion of households with children aged 0–14 years where adults smoke inside	AIHW National Drug Strategy Household Survey
<b>Tobacco use</b>	Proportion of children aged 12–14 years who are current smokers	Australian School Students' Alcohol and Drug (ASSAD) Survey
<b>Alcohol misuse</b>	Proportion of children aged 12–14 years who have engaged in high-risk drinking (5 or more drinks in a row) at least once in the last 2 weeks	Australian School Students' Alcohol and Drug (ASSAD) Survey
<b>What kind of families and communities do Australia's children live in?</b>		
<b>Family functioning</b>	Under development	To be determined
<b>Family economic situation</b>	Average real equivalised disposable household income for households with children in the 2 <sup>nd</sup> and 3 <sup>rd</sup> income deciles <sup>(a)</sup>	ABS Survey of Income and Housing
<b>Children in non-parental care</b>	Rate of children aged 0–14 years in out-of-home care	AIHW Child Protection Data Collection
	Under development—Children in grandparent families	To be determined
<b>Parental health status</b>	Proportion of parents rating their health as 'fair' or 'poor'	Household, Income and Labour Dynamics in Australia (HILDA) Survey
	Proportion of parents with disability	ABS Survey of Disability, Ageing and Carers
	Proportion of parents with mental health problems	Household, Income and Labour Dynamics in Australia (HILDA) Survey
<b>Neighbourhood safety</b>	Proportion of households with children aged 0–14 years where their neighbourhood is perceived as unsafe	ABS General Social Survey
<b>Social capital</b>	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	ABS General Social Survey
<b>How safe and secure are Australia's children?</b>		
<b>Injuries</b>	Age-specific death rates from all injuries for children aged 0–4, 5–9 and 10–14 years <sup>(a)</sup>	AIHW National Mortality Database

(continued)

**Table 1: Data sources for key national indicators of children's health, development and wellbeing as at 30 June 2008 (continued)**

<b>Indicator</b>	<b>Measure</b>	<b>Data source</b>
<b>How safe and secure are Australia's children? (continued)</b>		
<b>Injuries (continued)</b>	Road transport accident death rate for children aged 0–14 years	Australian Transport Safety Bureau Fatal Road Crash Database
	Accidental drowning death rate for children aged 0–14 years	AIHW National Mortality Database
	Intentional self-harm hospitalisation rate for children aged 10–14 years	AIHW National Hospital Morbidity Database
	Assault death rate for children aged 0–14 years	Australian Institute of Criminology National Homicide Monitoring Program
	Assault hospitalisation rate for children aged 0–14 years	AIHW National Hospital Morbidity Database
	Injury hospitalisation rate for children aged 0–14 years	AIHW National Hospital Morbidity Database
<b>School relationships and bullying</b>	Under development	To be determined
<b>Child abuse and neglect</b>	Rate of children aged 0–12 years who were the subject of child protection substantiation in a given year <sup>(a)</sup>	AIHW Child Protection Data Collection
	Rate of children aged 0–12 years who are the subject of care and protection orders	AIHW Child Protection Data Collection
<b>Children as victims of violence</b>	Rate of children aged 0–14 years who have been the victim of physical and sexual assault	ABS Recorded Crime—Victims, Australia
<b>Homelessness</b>	Rate of children aged 0–15 years seeking assistance from the Supported Accommodation Assistance Program (accompanied and unaccompanied)	AIHW Supported Accommodation Assistance Program (SAAP) National Data Collection
<b>Children and crime</b>	Rate of children aged 10–14 years who are under juvenile justice supervision	AIHW Juvenile Justice National Minimum Dataset
<b>How well is the system performing in delivering quality health, development and wellbeing actions to Australia's children?</b>		
<b>Congenital anomalies</b>	Under development—Rate of selected congenital anomalies among infants at birth	Australian Congenital Anomalies Monitoring System
<b>Newborn screening (hearing)</b>	Under development	To be determined
<b>Immunisation</b>	Proportion of children on the Australian Childhood Immunisation Register who are fully immunised at 2 years of age <sup>(a)</sup>	Australian Childhood Immunisation Register
<b>Survival for leukaemia</b>	Five-year relative survival rate for leukaemia in children aged 0–14 years	AIHW National Cancer Statistics Clearing House and National Death Index
<b>Quality child care</b>	Under development	To be determined
<b>Child protection re-substantiations</b>	Rate of children aged 0–12 years who were the subject of child protection resubstantiation in a given year	AIHW Child Protection Data Collection

(a) Headline Indicator for Children's Health, Development and Wellbeing.

## 2 Operational definitions and data issues

### How healthy are Australia's children?

#### Indicator: Mortality

#### Measure: Mortality rate for infants less than 1 year of age <sup>1</sup>

##### Operational definition

###### *Numerator*

Number of infant deaths (less than 1 year of age) registered in the reference year

Data source: AIHW National Mortality Database

Data availability: Annual from 1964 onwards (2005 available as at June 2008)

###### *Denominator*

Number of live births registered in reference year

Data source: ABS Births Collection (see ABS 2007b)

Data availability: Annual from 1964 onwards (2006 available as at June 2008)

##### Justification for selection

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).

##### Data issues

- Rate is calculated based on live births, not the estimated resident population of infants.
- In reporting by state/territory, deaths can be classified by state/territory where death was registered or by state/territory of the usual place of residence prior to death. For the purpose of Headline Indicator reporting, deaths are presented by state/territory of usual residence, excluding deaths where the state/territory of usual residence was different to the state/territory of registration.

##### Cross tabulations

- Sex
- Age (neonatal/post-neonatal)

---

<sup>1</sup> Headline Indicator for Children's Health, Development and Wellbeing

- State and territory (based on usual place of residence and state/territory of registration)
- Indigenous status (Indigenous/non-Indigenous) (data available for Queensland, Western Australia, South Australia and the Northern Territory only)
- Remoteness
- Socioeconomic status

## **Measure: Sudden Infant Death Syndrome (SIDS) rate**

### **Operational definition**

#### *Numerator*

Number of SIDS deaths in reference year

Data source: AIHW National Mortality Database

Data availability: Annual from 1964 onwards (2005 available as at June 2008)

#### *Denominator*

Number of live births registered in the reference year

Data source: ABS Births Collection (see ABS 2007b)

Data availability: Annual from 1964 onwards (2006 available as at June 2008)

### **Justification for selection**

SIDS has been reduced to low levels in Australia (AIHW 2005), however further gains are possible, particularly for Indigenous Australians, through a reduction in exposure to modifiable risk factors (Hunt & Hauck 2006).

### **Data issues**

- The number of infant deaths recorded as being attributed to SIDS has been affected by a number of factors, including: the lack of a consistent clinical definition across jurisdictions, unreliable autopsy procedures in some regional areas and a diagnostic shift in the classification of SIDS deaths to 'unascertainable' deaths (ABS & SIDS and Kids 2003; Byard 2001; Freemantle et al. 2005). As a result, the actual number of deaths due to SIDS may be underestimated and the extent of the decrease in SIDS deaths over time may therefore be overestimated, particularly for regional areas and Indigenous children. In 2004, a consensus was reached on a national definition of SIDS and a commitment made to developing a standardised autopsy procedure for Australia (SIDS and Kids 2004).
- This indicator is based on deaths with an underlying cause of death of SIDS (ICD-9 798.0/ICD-10 R95).

### **Cross tabulations**

- Sex
- State and territory of usual place of residence
- Indigenous status (Indigenous/non-Indigenous) (data available for Queensland, Western Australia, South Australia and the Northern Territory only)

- Remoteness
- Socioeconomic status

## **Measure: Death rate for children aged 1–14 years**

### **Operational definition**

#### *Numerator*

Number of deaths of children aged 1–14 years registered in reference year

Data source: AIHW National Mortality Database

Data availability: Annual from 1964 onwards (2005 available as at June 2008)

#### *Denominator*

Number of children aged 1–14 years in reference year (at 30 June)

Data source: AIHW Population Database

Data availability: Quarterly and/or annual time series from 1979 onwards (2007 available as at June 2008)

### **Justification for selection**

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.

### **Cross tabulations**

- Age
- Sex
- State and territory of usual place of residence
- Cause of death
- Indigenous status (Indigenous/non-Indigenous) (data available for Queensland, Western Australia, South Australia and the Northern Territory only)
- Remoteness
- Socioeconomic status

## **Indicator: Morbidity**

### **Measure: Proportion of children aged 0–14 years with asthma as a long-term condition**

#### **Operational definition**

##### *Numerator*

Number of children aged 0–14 years with asthma as a long-term condition.

Data source: ABS National Health Survey (NHS) and National Aboriginal and Torres Strait Islander Health Survey (NATSIHS)

Data availability: NHS: 1995, 2001, 2004–05; NATSIHS: 2001, 2004–05

##### *Denominator*

Number of children aged 0–14 years in reference year

Data source: ABS National Health Survey (NHS) and National Aboriginal and Torres Strait Islander Health Survey (NATSIHS)

Data availability: NHS: 1995, 2001, 2004–05; NATSIHS 2001, 2004–05

#### **Justification for selection**

Asthma is a National Health Priority Area. It 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.

#### **Data issues**

- The prevalence of asthma among children in ABS National Health Surveys is based on the report of an adult, referred to as a child proxy. Around 80% of child proxies for children aged 0–14 years were mother/step mother and 18% were father/step father in 2004–05 (ABS 2006e).
- Information is primarily collected for those children ever told by a doctor or nurse that they have asthma, and whose asthma is regarded as a current condition. It may also include children for which current long-term asthma was reported in later general questions about medical conditions. The definition of asthma for identification and enumeration purposes is difficult as there are a range of different methodologies and criteria which can be applied. In this survey, almost all current asthma cases identified are those which the respondent reported as being medically diagnosed. Those cases which were identified through general questions about long-term conditions (rather than the specific asthma questions) have not necessarily been medically diagnosed, and may instead be a different respiratory condition. In both situations, however, cases are essentially self-reported.

#### **Cross tabulations**

- Age

- Sex
- Indigenous status
- Remoteness
- Socioeconomic status

### **Measure: New cases of cancer per 100,000 children aged 0–14 years**

#### **Operational definition**

##### *Numerator*

Number of new cases of cancer for children aged 0–14 years in reference year

Data source: AIHW National Cancer Statistics Clearing House Database

Data availability: Annual from 1982 onwards (2004 available as at June 2008)

##### *Denominator*

Number of children aged 0–14 years in reference year (at 30 June)

Data source: AIHW Population Database

Data availability: Quarterly and/or annual time series from 1979 onwards (2007 available as at June 2008)

#### **Justification for selection**

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.

#### **Data issues**

- This indicator is based on the registration of a cancer diagnosis (ICD-9 140–208, 238.4, 238.6, 238.7, 273.3, 273.9 and ICD-10 C00–C97, D45–D46, D47.1, D47.3). This includes cancers that were reclassified from ‘borderline malignancy’ to ‘malignant’ by the World Health Organization in 2000 and excludes non-melanocytic skin cancers (ICD-9 173 and ICD-10 C44), as they are not legally notifiable.

#### **Cross tabulations**

- Age
- Sex
- Type of cancer

### **Measure: New cases of insulin-dependent diabetes per 100,000 children aged 0–14 years**

#### **Operational definition**

##### *Numerator*

Number of children aged 0–14 years who are recorded on the National Diabetes Register as receiving insulin in a given year

Data source: AIHW National Diabetes Register

Data availability: Annual from 1999 onwards (2005 available as at June 2008)

#### *Denominator*

Number of children aged 0–14 years in reference year (at 30 June)

Data source: AIHW Population Database

Data availability: Quarterly and/or annual time series from 1979 onwards (2007 available as at June 2008)

#### **Justification for selection**

Diabetes is a National Health Priority Area and is a common chronic disease in childhood. There is evidence 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)

#### **Data issues**

- People are eligible to be on the NDR if they use insulin to treat their diabetes and their insulin use began on or after 1 January 1999. The NDR has two main data sources:
  - the National Diabetes Services Scheme (NDSS) database, administered by Diabetes Australia
  - the Australasian Paediatric Endocrine Group's (APEG) state and territory databases (for 0–14 year olds).
- The NDR aims to collect all new cases of insulin-treated diabetes mellitus, which includes persons using insulin to manage Type 1, Type 2, gestational and other types of diabetes.
- Data recorded in 1999 is known to be of lower coverage than subsequent years and should be treated with caution in time trend analyses.
- In August 2003, the NDSS registration form was changed, allowing eligible persons to be automatically registered on the NDR, unless they requested to be excluded. Following these changes, ascertainment increased and should be distinguished from an increase in incidence. Incidence estimates have been adjusted for these changes however, for children aged 0–14 years with Type 1 diabetes, no adjustments were made as coverage between 1999–2005 was over 96% (AIHW: Catanzariti et al. 2007).

#### **Cross tabulations**

- Age
- Sex
- Type 1 and Type 2 diabetes



## **Indicator: Disability**

### **Measure: Proportion of children aged 0–14 years with severe or profound core activity limitations**

#### **Operational definition**

##### *Numerator*

Number of children aged 0–14 years with severe or profound core activity limitation

Data source: ABS Survey of Disability, Ageing and Carers (SDAC)

Data availability: 1981, 1988, 1998 and 2003

##### *Denominator*

Number of children aged 0–14 years in reference year

Data source: ABS Survey of Disability, Ageing and Carers (SDAC)

Data availability: 1981, 1988, 1998 and 2003

#### **Justification for selection**

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).

#### **Data issues**

- Disability is a multidimensional concept that is distinct from health condition. The WHO defines disability as ‘a complex phenomenon, reflecting an interaction between features of a person’s body and features of the society in which he or she lives’ (WHO 2008). Disability is commonly described in terms of impairment to body structures and functions; activities (and activity limitations); participation (and participation restriction). Disability is the presence of one, some, or all of these dimensions associated with a health condition, disease or injury, and is closely interrelated to aspects of the physical and social environment (AIHW 2007a).
- Children with a disability can have a core activity limitation if the disability limits their ability to perform tasks in relation to self-care, mobility or communication. There are four levels of core activity limitation: profound, severe, moderate and mild. Children with a profound limitation are not able to do, or always need help with, a core activity (such as self-care, mobility or communication). Those with a severe limitation sometimes need help with a core activity, may have difficulty understanding or being understood by others, or may use sign language more easily than spoken communication (ABS 2003). Because core activities are activities that most people perform at least daily, a child who has severe or profound core activity limitation will usually need at least daily assistance with activities that their peers without this level of disability do not need. A further category of activity limitation for many children with a disability is schooling restriction.
- There have been changes to questions and data items between surveys. Efforts to improve the criteria for identifying disability may have contributed to changes in the

results between surveys before the 1998 survey. There were also some changes made to the 1998 and 2003 disability screening questions. Any changes need to be taken into account when comparing trend data.

- For the first time, the 2006 Census included questions on disability (core activity need for assistance). The SDAC captures a more sophisticated concept of disability; it is recommended that the Census core activity need for assistance items should be used only for analysis that is not possible from the SDAC, such as small area estimates (ABS 2006a).
- Proportion of children with profound/severe or moderate/mild core activity limitation will be reported.

### **Cross tabulations**

- Age
- Sex
- Disability type
- A range of other characteristics can also be obtained from the SDAC regarding cause of disability, activities for which assistance is required, relationship to primary carer, education impacts (including days off school, type of school attends) and income quintiles.

## **Indicator: Mental health**

### **Measure: Proportion of children aged 4–14 years with mental health problems**

#### **Operational definition**

##### *Numerator*

Number of children aged 4–14 years with mental health problems

Data source: To be determined

Data availability:

##### *Denominator*

Number of children aged 4–14 years in reference year

Data source: To be determined

Data availability:

#### **Justification for selection**

Mental health is a National Health Priority Area. It is estimated that as many as 20% of children in modern societies are affected by mental health problems (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).

#### **Data issues**

- The most recent national data to address this indicator come from the 1998 Child and Adolescent component of the National Survey of Mental Health and Wellbeing (Sawyer et al. 2000). Data from this survey have been previously reported in *Australia's children: their health and wellbeing 2002* (AIHW: Al-Yaman et al. 2002) and *A picture of Australia's children* (AIHW 2005). These data will not be republished in *A picture of Australia's children 2009*, as it is considered to be too out-dated to provide an accurate picture of the current proportion of children with mental health disorders in 2009.
- The Strengths and Difficulties Questionnaire (SDQ) collects information about children's mental health and behaviour (Goodman 2001). The SDQ has been used by a number of jurisdictions, however is not comparable between jurisdictions due to different survey methodology and age of children. *Growing Up in Australia: the Longitudinal Study of Australian Children* (LSAC) used the SDQ to measure social and emotional outcomes in the K-cohort (children aged 4–5 years in Wave 1 and 6–7 years in Wave 2). These data sources are being investigated for their suitability to report on this indicator in *A picture of Australia's children 2009*.

#### **Cross tabulations**

To be defined.

**Measure: Proportion of children aged 6–14 years with mental health disorders (attention deficit hyperactivity disorder [ADHD], depressive disorder, conduct disorder)**

**Operational definition**

*Numerator*

Number of children aged 6–14 years with mental health disorders (attention deficit hyperactivity disorder [ADHD], depressive disorder, conduct disorder)

Data source: To be determined

Data availability:

*Denominator*

Number of children aged 6–14 years in reference year

Data source: To be determined

Data availability:

**Justification for selection**

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).

**Data issues**

- The most recent national data to address this indicator come from the 1998 Child and Adolescent component of the National Survey of Mental Health and Wellbeing (Sawyer et al. 2000). Data from this survey have been previously reported in *Australia's children: their health and wellbeing 2002* (AIHW: Al-Yaman et al. 2002) and *A picture of Australia's children* (AIHW 2005). These data will not be republished in *A picture of Australia's children 2009*, as it is considered to be too out-dated to provide an accurate picture of the current proportion of children with mental health disorders in 2009.
- Prevalence estimates from the 2003 Burden of Disease and Injury Study are available for anxiety and depression and ADHD for children aged 5–14 years. These prevalence estimates have been modelled based on prevalence data from the 1998 Child and Adolescent component of the National Survey of Mental Health and Wellbeing. The modelling includes assumptions for remission rates, mortality risk, and for depression and anxiety, a pooled estimate from follow-up studies of people with various anxiety disorders (Begg et al. 2007). This data source is being investigated for its suitability to report on this indicator as a proxy data source in *A picture of Australia's children 2009*.

**Cross tabulations**

To be defined.

# How well are we promoting healthy child development?

## Indicator: Breastfeeding

### Measure: Proportion of infants exclusively breast fed at 4 months of age<sup>2</sup>

#### Operational definition

##### *Numerator*

Number of infants exclusively breastfed at 4 months of age

Data source: National data not currently available

Data availability:

##### *Denominator*

Number of infants in reference year

Data source: National data not currently available

Data availability:

### Proxy measure: Proportion of infants exclusively or partially breastfed to 4 months of age

Data will be sourced from the ABS 2004–05 National Health Survey (see 'Data issues').

#### Justification for selection

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).

#### Data issues

- Recommended indicators for monitoring breastfeeding in Australia, based on the WHO guidelines, define an exclusively breastfed infant as 'an infant has received only breastmilk from his/her mother or a wet nurse, or expressed breastmilk, and no other liquids or solids with the exception of drops or syrups consisting of vitamins, mineral supplements or medicines'.
- The 2001 NHS breastfeeding status data item included a 'fully breastfed' category. The ABS NHS defined 'fully breastfed' as receiving only breastmilk on a regular basis. The 'fully breastfed' category was not included in the 2004–05 NHS; in this survey breastfeeding status was recorded as 'exclusively or partially breastfed'. The ABS advised that 'data from this survey cannot be compiled to the concepts of "exclusively breastfed" or "predominantly breastfed" ... data to support these concepts were not

---

<sup>2</sup> Headline Indicator for Children's Health, Development and Wellbeing

obtained in the survey' (ABS 2006e). 'Exclusively or partially breastfed on a regular basis' is the only data available to report in *A picture of Australia's children 2009*; data on fully breastfed from the 2001 NHS were reported previously in *A picture of Australia's children* (AIHW 2005).

- The 2004–05 NHS collected information on whether children (aged 0 to 3 years) had ever been breastfed, were currently being breastfed, the total time breastfed, including weaning, and the age at which solid food started to be given regularly (defined as at least once a day). It reports on breastfeeding practice over the period 2001–02 to 2004–05, since some children reported on were 3 years old at time of survey. The most accurate available national picture of breastfeeding practice in 2004–05 would seem to come from NHS data on children aged 1 year in 2004–05.
- The Growing up in Australia: Longitudinal Study of Australian Children (LSAC) contains information on full and complementary (supplementation of breastmilk with other food and drink) breastfeeding for the B cohort.
- The Australian Government Department of Health and Ageing plans to conduct a national breastfeeding survey. This may collect information on exclusive breastfeeding, however, the results will be not be available for inclusion in *A picture of Australia's children 2009*.

### **Cross tabulations**

To be defined.

## Indicator: Dental health

**Measure: Mean number of decayed, missing or filled teeth (dmft/DMFT) among primary school children<sup>3</sup>**

### Operational definition

#### *Numerator*

Sum of decayed, missing or filled teeth scores for children aged 12 years

Data source: Child Dental Health Survey

Data availability: Annual from 1990 (2002 available as at June 2008)

#### *Denominator*

Number of children aged 12 years with a decayed, missing or filled teeth score in reference year

Data source: Child Dental Health Survey

Data availability: Annual from 1990 (2002 available as at June 2008)

### Justification for selection

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).

### Data issues

- DMFT/dmft is the measure of decayed, missing and filled teeth (upper case for permanent teeth, lower case for deciduous).
- The Child Dental Health Survey only looks at public dental services. Access to these services can vary greatly between jurisdictions.
- Data are available for single year of age from 4 to 12 years.
- There are no national standards for dental services data, which impacts on data quality. In particular, it is not possible to report by Indigenous status due to the poor quality of Indigenous identification data in most jurisdictions. Data on culturally and linguistically diverse (CALD) background is not collected.
- Major changes to school dental services in NSW occurred during the period 1996–2002, which has a significant impact on trend analysis. For this reason, the data to be reported in *A picture of Australia's children 2009* will exclude NSW.

### Cross tabulations

- Sex
- State and territory (excluding NSW)

---

<sup>3</sup> Headline Indicator for Children's Health, Development and Wellbeing

- Remoteness
- Socioeconomic status

## **Measure: Proportion of children decay-free at age 6 years and at age 12 years**

### **Operational definition**

#### *Numerator*

Number of children aged 6 years with dmft and DMFT score of zero/Number of children aged 12 years with dmft and DMFT score of zero

Data source: Child Dental Health Survey

Data availability: Annual from 1990 (2002 available as at June 2008)

#### *Denominator*

Number of children aged 6 years in reference year /Number of children aged 12 years in reference year

Data source: Child Dental Health Survey

Data availability: Annual from 1990 (2002 available as at June 2008)

### **Justification for selection**

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).

### **Data issues**

- DMFT/dmft is the measure of decayed, missing and filled teeth (upper case for permanent teeth, lower case for deciduous).
- Data for single year of age from 4 to 12 years is available.
- The Child Dental Health Survey looks at public dental services only. Access to these services can vary greatly between jurisdictions.
- There are no national standards for dental services data, which impacts on data quality. In particular, it is not possible to report by Indigenous status due to the poor quality of Indigenous identification data in most jurisdictions. Data on culturally and linguistically diverse (CALD) background is not collected.
- Major changes to school dental services in NSW occurred during the period 1996–2002, which has a significant impact on trend analysis. For this reason, the data to be reported in *A picture of Australia's children 2009* will exclude NSW.

### **Cross tabulations**

- Sex
- State and territory (excluding NSW)
- Socioeconomic status
- Remoteness



## **Indicator: Physical activity**

### **Measure: Under development—Proportion of children meeting the National Physical Activity Guidelines and exceeding the screen time guidelines**

#### **Operational definition**

##### *Numerator*

Number of children meeting the National Physical Activity Guidelines and exceeding the screen time guidelines

Data source: 2007 National Children's Nutrition and Physical Activity Survey

Data availability: 2007 (data expected to be available mid-2008)

##### *Denominator*

Number of children in reference year

Data source: 2007 National Children's Nutrition and Physical Activity Survey

Data availability: 2007 (data expected to be available mid-2008)

#### **Justification for selection**

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).

#### **Data issues**

- This indicator is currently under development. A proposed indicator is the proportion of children meeting the National Physical Activity Guidelines (at least 60 minutes of moderate to vigorous physical activity) and exceeding the screen time guidelines (no more than 2 hours per day). The difficulty with this indicator relates to how the Guidelines are operationalised for reporting, for example, whether children meet the activity and screen time targets: all days of the week, most days of the week, on average across all days; or as the probability that a randomly selected child meets the guidelines on a randomly selected day (Olds et al. 2007).
- Data from the 2007 National Nutrition and Physical Activity Survey are comparable with the ABS 1995 National Nutrition Survey.

#### **Cross tabulations**

- Age
- Sex
- State and territory
- Family type (for example, lone parent, couple parent)
- Indigenous status
- Remoteness

- Socioeconomic status
- Culturally and Linguistically Diverse (CALD) background

## **Indicator: Early learning**

### **Measure: Proportion of children aged <1 year old who are read to by an adult on a regular basis**

#### **Operational definition**

##### *Numerator*

Number of children aged <1 year who are read to by an adult on a regular basis

Data source: To be determined

Data availability:

##### *Denominator*

Number of children aged <1 year old in reference year

Data source: To be determined

Data availability:

#### **Justification for selection**

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).

#### **Data issues**

- Measurement difficulties arise in the use of the term 'regular', being read to by an 'adult' (which may exclude reading by older siblings), and in connection with self-report. For example, some studies have defined 'regular' as being read to at least three times per week; however, further specification is possible (for example, on at least three separate days, or three separate occasions, possibly more than once per day).
- Self-report of reading to infants introduces the possibility of inaccurate estimation of reading frequency to provide a socially desirable response.
- Limited national data are available. *Growing up in Australia: the Longitudinal Study of Australian Children* (LSAC) includes a receptive vocabulary measure and a precursor to reading measure (K cohort), and also a time-use diary (B and K cohorts) for time spent reading to children. This data source is being investigated for its suitability to report on this indicator as a proxy data source in *A picture of Australia's children 2009*.

#### **Cross tabulations**

To be defined.

# How well are Australia's children learning and developing?

## Indicator: Transition to primary school

**Measure: Under development—Proportion of children entering school with basic skills for life and learning<sup>4</sup>**

### Operational definition

*Numerator under development.*

Data source: To be determined

Data availability:

*Denominator under development*

Data source: To be determined

Data availability:

### Justification for selection

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).

### Data issues

- This measure requires considerable indicator and data development. The Australian Early Development Index (AEDI) and Growing up in Australia: the Longitudinal Study of Australian Children (LSAC) are being investigated for their suitability as proxy data sources until the measure is further defined.

### Cross tabulations

To be defined.

---

<sup>4</sup> Headline Indicator for Children's Health, Development and Wellbeing

## **Indicator: Attending early childhood education programs**

**Measure: Proportion of children attending an early educational program in the 2 years prior to beginning primary school<sup>5</sup>**

### **Operational definition**

#### *Numerator*

Number of children attending an early educational program in the two years prior to beginning primary school in the reference year

Data source: Children's Services National Minimum Data Set (not yet implemented)

Data availability: Not currently available

#### *Denominator*

Number of children in the population in the reference year in the age range corresponding to two years prior to beginning primary school in the reference year

Data source: Children's Services National Minimum Data Set (not yet implemented)

Data availability: Not currently available

**Proxy measure: Proportion of children aged 3–4 years enrolled at preschool or attending long day care**

Data will be sourced from the ABS Child Care Survey, with data available triennially from 1993 onwards (2005 available as at June 2008) (see 'Data issues').

### **Justification for selection**

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).

### **Data issues**

- Data presented for the proxy measure (children attending preschool or long day care centre) will overestimate the number of children attending an early educational program, as not all long day care centres offer an early educational program delivered by a qualified early childhood teacher.

### **Cross tabulations (for proxy measure)**

- Age
- Sex
- Remoteness
- Socioeconomic status
- Family composition (couple family/lone-parent family)
- Employment status of parent(s)

---

<sup>5</sup> Headline Indicator for Children's Health, Development and Wellbeing

## **Indicator: Attendance at primary school**

### **Measure: Attendance rate of children at primary school<sup>6</sup>**

#### **Operational definition**

##### *Numerator*

Number of actual full-time equivalent 'student days' attended over the first semester as defined by each State and Territory's school calendar<sup>7</sup>

Data source: MCEETYA National Report on Schooling in Australia 2007

Data availability: Annual from 2007 onwards (data not available as at June 2008)

##### *Denominator*

Total number of possible 'student days' over the first semester as defined by each State and Territory's school calendar<sup>7</sup>

Data source: MCEETYA National Report on Schooling in Australia 2007

Data availability: Annual from 2007 onwards (data not available as at June 2008)

#### **Justification for selection**

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).

#### **Data issues**

- The focus of this indicator is attendance at school rather than school enrolment. No data will be available for reporting in *A picture of Australia's children 2009*.
- The South Australian Department of Education and Children's Services has done some analysis on non-attendance at school (South Australian Department of Education and Children's Services 2006), and *The 'growing up' of Aboriginal and Torres Strait Islander children: a literature review* discusses non-attendance for Indigenous children (Penman 2006).

#### **Cross tabulations**

- Age or school year level (to be defined)
- Sex
- State and territory
- Indigenous status (methods used for identification vary between jurisdictions)

---

<sup>6</sup> Headline Indicator for Children's Health, Development and Wellbeing

<sup>7</sup> In the transitional phase, the period will vary between jurisdictions/sectors but must include at least the last 20 days in May. Transitional arrangements were agreed until data can be collected in a consistent manner across all education jurisdictions/sectors.

- Language background other than English (methods used for identification vary between jurisdictions)
- Remoteness based on the MCEETYA Schools Geographic Location Classification (Metropolitan, Provincial, Remote and Very Remote)

## Indicator: Literacy and numeracy

### Measure: Proportion of primary school children who achieve the literacy benchmark<sup>8</sup>

#### Operational definition

##### *Numerator*

Number of children in Year 5 meeting national literacy (reading and writing) benchmarks

Data source: MCEETYA National Report on Schooling in Australia (see MCEETYA 2007)

Data availability: Annual from 1999 onwards (2006 available as at June 2008)

##### *Denominator*

Number of children in Year 5 eligible and tested for literacy (reading and writing) benchmarks

Data source: MCEETYA National Report on Schooling in Australia (see MCEETYA 2007)

Data availability: Annual from 1999 onwards (2006 available as at June 2008)

#### Justification for selection

National benchmarks in literacy and numeracy represent the minimum acceptable standard below which a student will have difficulty making sufficient progress at school (MCEETYA 2007). 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.

#### Data issues

- Years 3 and 5 literacy achievement reported annually from 1999 onwards.
- Year 7 literacy achievement reported annually from 2001 onwards.
- From 2008 an additional literacy measure – spelling – will be available, although this will not be available for reporting in *A picture of Australia's children 2009*.
- Average age at a given year level (Years 3, 5, 7) varies between jurisdictions.
- While all children enrolled in Years 3, 5, and 7 should participate in the education department-based literacy tests, some children may have been absent on the day of the test, some may have been withdrawn by parents/care-givers from the testing, and others may have been attending a school not participating in the testing. Other students may have been formally exempted from the tests where testing would not be appropriate, such as those with a disability or high support needs, those with English language difficulties, and those where testing would have adverse effects on their health and wellbeing (AIHW 2007c).

#### Cross tabulations:

- Year level

---

<sup>8</sup> Headline Indicator for Children's Health, Development and Wellbeing



- Sex
- State and territory
- Indigenous status (methods used for identification vary between jurisdictions)
- Language background other than English (methods used for identification vary between jurisdictions)
- Remoteness based on the MCEETYA Schools Geographic Location Classification (Metropolitan, Provincial, Remote and Very Remote)

## **Measure: Proportion of primary school children who achieve the numeracy benchmark<sup>9</sup>**

### **Operational definition**

#### *Numerator*

Number of children in Year 5 meeting national numeracy benchmarks

Data source: MCEETYA National Report on Schooling in Australia (see MCEETYA 2007)

Data availability: Annual from 2000 onwards (2006 available as at June 2008)

#### *Denominator*

Number of children in Year 5 eligible and tested for numeracy benchmarks

Data source: MCEETYA National Report on Schooling in Australia (see MCEETYA 2007)

Data availability: Annual from 2000 onwards (2006 available as at June 2008)

### **Justification for selection**

National benchmarks in literacy and numeracy represent the minimum acceptable standard below which a student will have difficulty making sufficient progress at school (MCEETYA 2007). 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.

### **Data issues**

- Years 3 and 5 numeracy achievement reported annually from 2000 onwards.
- Year 7 numeracy achievement reported annually from 2001 onwards.
- Average age at a given year level (3, 5, 7) varies between jurisdictions.
- While all children enrolled in Years 3, 5, and 7 should participate in the education department-based numeracy tests, some children may have been absent on the day of the test, some may have been withdrawn by parents/care-givers from the testing, and others may have been attending a school not participating in the testing. Other students may have been formally exempted from the tests where testing would not be appropriate, such as those with a disability or high support needs, those with English language difficulties, and those where testing would have adverse effects on their health and wellbeing (AIHW 2007c).

---

<sup>9</sup> Headline Indicator for Children's Health, Development and Wellbeing

**Cross tabulations:**

- Year level
- Sex
- State and territory
- Indigenous status (methods used for identification vary between jurisdictions)
- Language background other than English (methods used for identification vary between jurisdictions)
- Remoteness based on the MCEETYA Schools Geographic Location Classification (Metropolitan, Provincial, Remote and Very Remote)

## **Indicator: Social and emotional development**

### **Measure: Under development**

#### **Operational definition**

*Numerator under development*

Data source: To be determined

Data availability:

*Denominator under development*

Data source: To be determined

Data availability:

#### **Justification for selection**

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 recognise and comprehend emotional states in others, manage strong emotions and their expression, regulate one's 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).

#### **Data issues**

- Considerable indicator development needs to be undertaken prior to identifying potential data sources.
- There is a distinction between social and emotional development (developmental pathway) and social and emotional wellbeing/mental health (illness pathway).
- The Australian Early Development Index (AEDI), Growing up in Australia: the Longitudinal Study of Australian Children (LSAC) and the Programme for International Student Assessment (PISA) are potential data sources. PISA includes a substantial student questionnaire. Although students responding to this questionnaire are aged 15 years, there is acknowledgement of the cumulative effect of what occurs between 0-14 years.
- The AEDI was identified as a possible data source to provide further information on children's social and emotional development. The index collects information on the physical health and wellbeing, social competence, emotional maturity, language and cognitive skills, communication skills and general knowledge of children in their first year of primary school. Two domain scores, social competence and emotional maturity, seem possible candidates for measures of social and emotional development in early childhood.

#### **Cross tabulations**

To be defined.

# What factors can affect children adversely?

## Indicator: Teenage births

**Measure: Age-specific fertility rate for 15 to 19 year old women<sup>10</sup>**

### Operational definition

#### *Numerator*

Number of live births to women aged 15–19 years in reference year

Data source: National Perinatal Data Collection

Data availability: Annual from 1991 onwards (2005 available as at June 2008)

#### *Denominator*

The female estimated resident population aged 15–19 years in reference year (at 30 June)

Data source: National Perinatal Data Collection

Data availability: Annual from 1991 onwards (2005 available as at June 2008)

### Justification for selection

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).

### Data issues

- Due to the small number of births occurring among women aged less than 15 years, births to mothers aged under 15 years are included in the 15–19 year age group.

### Cross tabulations

- State and territory
- Indigenous status of mother
- Birthplace of mother (born in Australia/overseas born)
- Remoteness
- Socioeconomic status

---

<sup>10</sup> Headline Indicator for Children's Health, Development and Wellbeing

## **Indicator: Smoking during pregnancy**

### **Measure: Proportion of women who smoked during the first 20 weeks of pregnancy<sup>11</sup>**

#### **Operational definition**

##### *Numerator*

Number of women who report having smoked in the first 20 weeks of pregnancy (among women who gave birth in reference year)

Data source: National Perinatal Data Collection

Data availability: National data not currently available (as at June 2008)

##### *Denominator*

Number of women who gave birth in reference year

Data source: National Perinatal Data Collection

Data availability: National data not currently available (as at June 2008)

### **Proxy measure: Proportion of women who report having smoked at any time during pregnancy**

Data will be sourced from the National Perinatal Data Collection, with data available for most jurisdictions in 2005 (see 'Data issues').

#### **Justification for selection**

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 a known modifiable risk factor for low birthweight and perinatal death (Laws et al. 2006).

#### **Data issues**

- National data on smoking in the first 20 weeks are currently not available. Data on smoking in the first 20 weeks of pregnancy are only collected in South Australia. Other jurisdictions plan to implement standard data items to measure the prevalence of smoking in the first 20 weeks throughout 2008 and early-2009. The first year of complete data will most likely be available for reporting in 2010.
- Data on smoking at any time during pregnancy have been collected in some states and territories since 2001. The latest available data are for 2005 (all jurisdictions except Victoria). For Queensland, data are available from 1 July 2005 and therefore only six months of Queensland data are available in the collection at this time.

---

<sup>11</sup> Headline Indicator for Children's Health, Development and Wellbeing

**Cross tabulations (for proxy measure)**

- State and territory (excluding Victoria; 6 months of data only available for Queensland)
- Indigenous status
- Remoteness
- Birthplace (born in Australia/overseas born)
- Socioeconomic status

## **Indicator: Alcohol use during pregnancy**

### **Measure: Proportion of women who consume alcohol during pregnancy**

#### **Operational definition**

##### *Numerator*

Number of women who consumed alcohol while pregnant in reference year

Data source: AIHW National Drug Strategy Household Survey (NDSHS)

Data availability: 1985, 1988, 1991, 1993, 1995, 1998, 2001, 2004 and 2007

##### *Denominator*

Number of pregnant women in reference year

Data source: AIHW National Drug Strategy Household Survey (NDSHS)

Data availability: 1985, 1988, 1991, 1993, 1995, 1998, 2001, 2004 and 2007

#### **Justification for selection**

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). The current Australian alcohol guidelines recommend that women who are pregnant consider not drinking at all and should never drink to become intoxicated (NHMRC 2001). These guidelines are currently being reviewed – the draft Australian alcohol guidelines for low-risk drinking currently recommend abstaining from alcohol while pregnant and breastfeeding (NHMRC 2007).

#### **Data issues**

- The AIHW NDSHS collects information on women who consumed alcohol while pregnant or while pregnant and breastfeeding in the last 12 months.
- Alcohol use during pregnancy is currently collected by some jurisdictions in the Midwives Collection, however there is no standardised data collection instrument or data definition for alcohol consumption during pregnancy across jurisdictions. Development of alcohol consumption in pregnancy is required as a data element for the *National Health Data Dictionary* (AIHW: Ford et al. 2003).

#### **Cross tabulations**

- Age
- Indigenous status
- Remoteness
- Socioeconomic status

## **Indicator: Birthweight**

### **Measure: Proportion of live born infants of low birthweight<sup>12</sup>**

#### **Operational definition**

##### *Numerator*

Number of low birth weight (<2,500g) live born infants in reference year

Data source: National Perinatal Data Collection

Data availability: Annual from 1991 onwards (2005 available as at June 2008)

##### *Denominator*

Number of births (live born) registered in reference year

Data source: National Perinatal Data Collection

Data availability: Annual from 1991 onwards (2005 available as at June 2008)

#### **Justification for selection**

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 (AIHW: 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).

#### **Data issues**

- The definition of low birth weight as weighing less than 2,500 grams at birth is the Australian and World Health Organization standard.
- A small number of births occurring in one year are registered in the following year. This is due to parents delaying the registration or the Registrar delaying the registration of a birth.

#### **Cross tabulations**

- Baby characteristics:
  - sex
  - gestational age
- Maternal characteristics:
  - age
  - Indigenous status
  - remoteness of residence
  - country of birth

---

<sup>12</sup> Headline Indicator for Children's Health, Development and Wellbeing



- parity
- plurality
- socioeconomic status
- State and territory

## **Indicator: Overweight and obesity**

**Measure: Proportion of children whose body mass index (BMI) is above the international cut off points for 'overweight' and 'obese' for their age and sex<sup>13</sup>**

### **Operational definition**

#### *Numerator*

Number of children whose BMI is above the international cut off points for 'overweight' and 'obese' for their age and sex

Data source: 2007 National Children's Nutrition and Physical Activity Survey

Data availability: 2007 (data expected to be available mid-2008)

#### *Denominator*

Number of children of same age and sex in reference year

Data source: 2007 National Children's Nutrition and Physical Activity Survey

Data availability: 2007 (data expected to be available mid-2008)

### **Justification for selection**

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).

### **Data issues**

- Overweight and obesity are measured according to Body Mass Index (BMI), which is the ratio of weight in kilograms to the square of the height in metres (kg/m<sup>2</sup>). Age- and sex-specific BMI cut-offs should be used for children under 18 years (see Cole et al. 2000). BMI categorises people into one of four groups: underweight, acceptable weight, overweight or obese.
- Further work is required to determine the most appropriate ages for reporting BMI for this Headline Indicator.
- Data from the 2007 National Nutrition and Physical Activity Survey are comparable with the ABS 1995 National Nutrition Survey.

### **Cross tabulations**

- Age
- Sex
- State and territory
- Family type (for example, lone parent, couple parent)

---

<sup>13</sup> Headline Indicator for Children's Health, Development and Wellbeing

- Indigenous status
- Remoteness
- Socioeconomic status
- Culturally and Linguistically Diverse (CALD) background

## **Indicator: Environmental tobacco smoke in the home**

### **Measure: Proportion of households with children aged 0–14 years where adults smoke inside**

#### **Operational definition**

##### *Numerator*

Number of households with dependent children aged 0–14 years where a household member smoked inside the home

Data source: AIHW National Drug Strategy Household Survey (NDSHS)

Data availability: 1985, 1988, 1991, 1993, 1995, 1998, 2001, 2004 and 2007

##### *Denominator*

Number of households with dependent children aged 0–14 years

Data source: AIHW National Drug Strategy Household Survey (NDSHS)

Data availability: 1985, 1988, 1991, 1993, 1995, 1998, 2001, 2004 and 2007

#### **Justification for selection**

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).

#### **Data issues**

- The AIHW NDSHS collects information on any member in the household smoking at least one cigarette, cigar or pipe of tobacco per day in the home. This household member is not necessarily an adult.

#### **Cross tabulations**

- Age of child
- Dependent/no dependent children
- Socioeconomic status

## **Indicator: Tobacco use**

### **Measure: Proportion of children aged 12–14 who are current smokers**

#### **Operational definition**

##### *Numerator*

Number of 'current smokers' at each age (12, 13, 14 years)

Data source: Australian School Students' Alcohol and Drug (ASSAD) Survey

Data availability: Triennial from 1984 onwards (2005 available as at June 2008)

##### *Denominator*

Number of children at each age (12, 13, 14 years)

Data source: Australian School Students' Alcohol and Drug (ASSAD) Survey

Data availability: Triennial from 1984 onwards (2005 available as at June 2008)

#### **Justification for selection**

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).

#### **Data issues**

- No data are available for children younger than 12 years.
- A 'current smoker' is defined in ASSAD surveys as smoking at least once in the week prior to the survey.
- The AIHW National Drug Strategy Household Survey (NDSHS) collected data on 12–14 year olds in 2004 and 2007. This may allow for further cross tabulations (for example, by remoteness status), providing that data are sufficiently reliable to publish for this age group.

#### **Cross tabulations:**

- Age
- Sex
- Socioeconomic status

## **Indicator: Alcohol misuse**

**Measure: Proportion of children aged 12–14 years who have engaged in high risk drinking (5 or more drinks in a row) at least once in the last 2 weeks**

### **Operational definition**

#### *Numerator*

Number of children at each age (12, 13, 14 years) who have engaged in high risk drinking (5 or more drinks in a row) at least once in the last 2 weeks

Data source: Australian School Students' Alcohol and Drug (ASSAD) Survey

Data availability: Triennial from 1984 onwards (2005 available as at June 2008)

#### *Denominator*

Number of children at each age (12, 13, 14 years)

Data source: Australian School Students' Alcohol and Drug (ASSAD) Survey

Data availability: Triennial from 1984 onwards (2005 available as at June 2008)

### **Justification for selection**

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).

### **Data issues**

- No data are available for children younger than 12 years.
- The AIHW National Drug Strategy Household Survey (NDSHS) collected data on 12–14 year olds in 2004 and 2007. This may allow for further cross tabulations (for example, by remoteness status), providing that data are sufficiently reliable to publish for this age group.

### **Cross tabulations:**

- Age
- Sex

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

## Indicator: Family functioning

### Measure: Under development

#### Operational definition

*Numerator under development*

Data source: To be determined

Data availability:

*Denominator under development*

Data source: To be determined

Data availability:

#### Justification for selection

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).

#### Data issues

- The Child and Adolescent Component of the 1998 National Survey of Mental Health and Wellbeing (Sawyer et al. 2000) has not been repeated and thus data are available for one time period only. These data were previously reported in *Australia's Children 2002* (AIHW: Al-Yaman et al. 2002) and *A Picture of Australia's Children* (AIHW 2005) and will not be republished in *A picture of Australia's children 2009*, as it is considered to be too out-dated to provide an accurate picture of family functioning in 2009.
- Potential data sources to be explored include:
  - The ABS Time Use Survey 2006. Includes data on mothers/fathers time spent on child care activities (including playing/reading/talking with child, teaching/helping/reprimanding children).
  - The Household, Income and Labour Dynamics (HILDA) Survey collects information on relationship satisfaction (with partner, children, between children), parenting stress, work-family stress, and time spent playing with children. Most items are available for Waves 1-6 (2001-2006).
  - The Growing up in Australia: Longitudinal Study of Australian Children (LSAC) collects information on activities with children (such as reading, playing, playground, movies, helping with homework, eating meals together), parenting style, parental warmth, family cohesion, attachment to family and relationship with partner. Most items are available for both the birth and kindergarten cohorts (infants and 4-5 year olds).

## **Cross tabulations**

To be defined.



## **Indicator: Family economic situation**

### **Measure: Average real equivalised disposable household income for households with children in the 2<sup>nd</sup> and 3<sup>rd</sup> income deciles<sup>14</sup>**

#### **Operational definition**

##### *Numerator*

Disposable equivalised household income for households with children in the 2<sup>nd</sup> and 3<sup>rd</sup> income deciles with children aged 0–12 years

Data source: ABS Survey of Income and Housing

Data availability: Most years from 1994–95 to 2003–04 (no survey was run in 1998–99 or 2001–02), 2005–06

##### *Denominator*

Number of households in the 2<sup>nd</sup> and 3<sup>rd</sup> income deciles with children aged 0–12 years

Data source: ABS Survey of Income and Housing

Data availability: Most years from 1994–95 to 2003–04 (no survey was run in 1998–99 or 2001–02), 2005–06

#### **Justification for selection**

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 2006b; AIHW 2005).

#### **Data issues**

- The ABS Survey of Income and Housing estimates the income available to individuals within a household from total household income by taking into account differences in household size and composition. The survey measures net income, that is, after deduction of income tax and the Medicare levy.
- Changes in income can be measured over time by adjusting for inflation; however, the survey is limited in addressing the causes of financial hardship in families.
- The determination of households in the 2<sup>nd</sup> and 3<sup>rd</sup> income deciles with children is based on the national income deciles. For some households, net income is nil or negative; the lowest decile, which includes households with negative or nil incomes, is not used because household income is not always a good indicator of the total economic resources available to many people in this group (ABS 2007c).
- Income does not necessarily measure the total economic resources available to a household. The ABS survey also measures household net worth which, together with income, provides a comprehensive picture of family economic situation.

---

<sup>14</sup> Headline Indicator for Children's Health, Development and Wellbeing

- The ABS General Social Survey (2002 and 2006) and the Household, Income and Labour Dynamics in Australia (HILDA) Survey can also be used to obtain a measure of employment status of parents and can provide cross tabulations with other indicators of financial stress such as number and type of cash flow problems (for example, inability to pay bills, heat home) and family and community support (for example, asking for favours, contact with family/friends).
- The ABS Survey of Income and Housing does not collect Indigenous identification data.

### **Cross tabulations**

- Age of youngest child in household (>5 years, 5-14 years)
- Family type
- Main source of income
- State and territory
- Remoteness

## **Indicator: Children in non-parental care**

### **Measure: Rate of children aged 0–14 years in out-of-home care**

#### **Operational definition**

##### *Numerator*

Number of children aged 0–14 years who were in out-of-home care

Data source: AIHW Child Protection Data Collection

Data availability: Annual from 1997 onwards (2007 available as at June 2008)

##### *Denominator*

Number of children aged 0–14 years in reference year (at 31 March)

Data source: AIHW Population Database

Data availability: Quarterly/and or annual time series from 1979 onwards (2007 available as at June 2008)

#### **Justification for selection**

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).

#### **Data issues**

- Out-of-home care provides alternative accommodation to children and young people who are unable to live with their parents. Data are available on the type of placement which can include foster care, relative/kinship care, facility-based or residential care, and independent living arrangements.
- Differences in child protection legislation, policies and practices across jurisdictions and over time can affect the number and rate of children in out-of-home care and so caution must be taken when interpreting the data.
- There is considerable overlap between this indicator and with the indicator of children on care and protection orders. Around 87% of children on care and protection orders were also placed in out-of-home care in 2005–06.

#### **Cross tabulations**

- Sex
- Age
- Type of placement
- Indigenous status
- State and territory

## **Measure: Under development—Children in grandparent families**

### **Operational definition**

*Numerator under development*

Data source: To be determined

Data availability:

*Denominator under development*

Data source: To be determined

Data availability:

### **Justification for selection**

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).

### **Data issues**

- The 2006 Census collected information about relationships between family members but it is difficult to obtain an accurate measure of the number of children living with grandparents and not living with parents.
- Various ABS surveys contain information about family composition of households, but grandparent families are not readily identifiable from data items on family composition and relationship in household
- The ABS 2006–07 Family Characteristics and Transitions Survey (ABS 2008b) will be investigated as a potential data source.

### **Cross tabulations**

To be defined.

## **Indicator: Parental health status**

### **Measure: Proportion of parents rating their health as 'fair' or 'poor'**

#### **Operational definition**

##### *Numerator*

Number of parents with dependent children aged 0–14 years who rate their health as fair or poor

Data source: Household, Income and Labour Dynamics in Australia (HILDA) Survey

Data availability: Annual from 2001 onwards (2006 available as at June 2008)

##### *Denominator*

Number of parents with dependent children aged 0–14 years

Data source: Household, Income and Labour Dynamics in Australia (HILDA) Survey

Data availability: Annual from 2001 onwards (2006 available as at June 2008)

#### **Justification for selection**

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).

#### **Data issues**

- This is a subjective data item. Perceptions may be influenced by many factors, which may be unrelated to health or which may reflect momentary or short term, rather than usual, feelings or circumstances. Responses may have been influenced by factors involved in the interview itself, such as the presence of another family member.
- There are limited data sources which collect information on general health status in conjunction with the parental role of the respondent.

#### **Cross tabulations**

- Age
- Sex
- Household/family type
- Indigenous status
- Socioeconomic status

### **Measure: Proportion of parents with disability**

#### **Operational definition**

##### *Numerator*

Number of parents with disability with co-resident dependent children aged 0–14 years

Data source: ABS Survey of Disability, Ageing and Carers (SDAC)

Data availability: 1981, 1988, 1993, 1998 and 2003

#### *Denominator*

Total number of parents with co-resident dependent children aged 0–14 years

Data source: ABS Survey of Disability, Ageing and Carers (SDAC)

Data availability: 1981, 1988, 1993, 1998 and 2003

#### **Justification for selection**

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).

#### **Data issues**

- Disability can be difficult to define and measure because of a person's perception and ability to perform a range of activities associated with daily life. The SDAC has a specific focus on disability and seeks to identify persons with disability based on the presence of one or more of 17 limitations, restrictions and impairments. Information is available on main disabling condition, including intellectual, sensory/speech, psychiatric, physical/diverse disorders.
- The SDAC is based on self report, or through proxy, of disability status and therefore certain conditions may not have been reported. For example, sensitive conditions, such as alcohol- or drug-related problems, or seasonal conditions, such as asthma or epilepsy (ABS 2003).
- There have been changes to questions and data items between surveys. Efforts to improve the criteria for identifying disability may have contributed to changes in the results between surveys before the 1998 survey. There were also some changes made to the 1998 and 2003 disability screening questions. Any changes need to be taken into account in the analysis of trend data.

#### **Cross tabulations:**

- Sex
- Age
- Disability status (profound/severe, moderate, mild, no activity limitation)
- Disability group (intellectual, sensory/speech, psychiatric, physical/diverse)
- Family type
- Carer information – dependent child as carer, activities for which the child provides assistance

## **Measure: Proportion of parents with a mental health problem**

### **Operational definition**

#### *Numerator*

Number of parents with dependent children aged 0–14 years who have a mental health problem

Data source: Household, Income and Labour Dynamics in Australia (HILDA) Survey

Data availability: Annual from 2001 onwards (2006 available as at June 2008)

#### *Denominator*

Total number of parents with dependent children aged 0–14 years

Data source: Household, Income and Labour Dynamics in Australia (HILDA) Survey

Data availability: Annual from 2001 onwards (2006 available as at June 2008)

### **Justification for selection**

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).

### **Data issues**

- It is difficult to measure the number of children living with a parent with mental illness as the parental role of people accessing mental health services is not always recorded and definitions of mental illness vary in survey data.
- The HILDA Survey measures mental health using the SF36 – a 36 item survey that measures 8 domains of subjective health. Scale scores for each of the 8 health domains can be summarised to produce a single measure of mental health: the Mental Health Component Summary (MCS) Score. An analysis of population averages suggests that an MCS score of less than 41 is indicative of a poor level of mental health.
- The ABS Survey of Disability, Ageing and Carers (SDAC) also collects information on parents with mental health problems. This survey has a specific focus on disability and seeks to identify persons with disability based on the presence of one or more of 17 limitations, restrictions and impairments. Information is available on main disabling condition, including intellectual and other mental disorders.

### **Cross tabulations:**

- Sex
- Age
- Family type
- Indigenous status
- Socioeconomic status

## **Indicator: Neighbourhood safety**

### **Measure: Proportion of households with children aged 0–14 years where neighbourhood is perceived as unsafe**

#### **Operational definition**

##### *Numerator*

Number of households with dependent children aged 0–14 years where the selected person in household perceives their neighbourhood as unsafe or very unsafe

Data source: ABS General Social Survey (GSS)

Data availability: 2002 and 2006

##### *Denominator*

Number of households with dependent children aged 0–14 years in reference year

Data source: ABS General Social Survey (GSS)

Data availability: 2002 and 2006

#### **Justification for selection**

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).

Children living in unsafe, particularly violent, neighbourhoods are more likely than their peers in safer communities to display or experience anti-social behaviours (such as aggression or bullying), suffer from stress, anxiety or depression, and/or start to fail at school (Aneshensel & Succo 1996; Attar et al. 1994; Coulton et al. 1996; Schwartz & Proctor 2000; Wilson 1987, in Coulton et al. 1996). This association is strongest where lack of safety is real, but perceived feelings of living in an unsafe neighbourhood may also affect these responses (Colder et al. 2000).

#### **Data issues**

- The ABS GSS asks about how safe a person feels in various circumstances (for example, when home alone during the day, when home alone after dark or when walking alone through their local area after dark). Respondents are also asked if they have been the victim of an actual or attempted break-in the last 12 months.
- The order of response categories was changed for the 2006 GSS, so that 'Very safe' was the first possible response ('Very unsafe' was the first possible response in the 2002 survey). This methodological change has had an impact on the data, with more people reporting they feel safer in 2006. Due to this change, 2002 and 2006 data are not directly comparable and trend information should be interpreted with caution.
- It is important to note that the 'selected person' in the household for the GSS is not necessarily the parent. Even though family households are selected with children under 15 years of age as the population of interest, the person interviewed could be another child in the house aged 18 years or over.



### **Cross tabulations**

- Remoteness
- Socioeconomic status

## **Indicator: Social capital**

**Measure: 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**

### **Operational definition**

#### *Numerator*

Number of households with dependent children aged 0–14 years where respondent was able to get support in time of crisis from persons living outside the household

Data source: ABS General Social Survey (GSS); ABS 2002 National Aboriginal and Torres Strait Islander Social Survey (NATSISS)

Data availability: GSS 2002 and 2006; NATSISS 2002

#### *Denominator*

Number of households with dependent children aged 0–14 years in reference year

Data source: ABS General Social Survey (GSS); ABS 2002 National Aboriginal and Torres Strait Islander Social Survey (NATSISS)

Data availability: GSS 2002 and 2006; NATSISS 2002

### **Justification for selection**

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).

### **Data issues**

- There are a number of data items in the ABS GSS that relate to 'social capital'. The ABS has adopted the OECD definition of social capital. Data collected include:
  - support for children and other relatives in other households
  - support in time of crisis
  - levels of trust in people and institutions
  - whether feels able to have a say on important issues
  - diversity of people's social networks
  - active involvement in groups
  - contact with family and friends
  - close friendships
  - provision of unpaid assistance

- civic and community activities
- linking relationships to people in organisations of influence
- Different studies have used varying indicators to measure social capital. Due to data deficiencies, measures of social and support networks will be used as a proxy measure of social capital. The main indicator of a support network is the access to social support in times of crisis.
- Support in time of crisis refers to whether there is someone outside the person's household that could be asked for support in a time of crisis. Support could be in the form of emotional, physical or financial help. Potential sources of support could be family members, friends, neighbours, work colleagues and various community, government and professional organisations.
- Information is available for Indigenous Australians on this measure from the ABS 2002 NATSISS.

#### **Cross tabulations**

- Family type
- Remoteness
- Income quintiles
- Indigenous status (from ABS 2002 NATSISS)

# How safe and secure are Australia's children?

## Indicator: Injuries

**Measure: Age-specific death rates from all injuries for children aged 0–4, 5–9 and 10–14 years<sup>15</sup>**

### Operational definition

#### *Numerator*

Number of deaths from all injuries for children aged 0–4, 5–9 and 10–14 years in reference year

Data source: AIHW National Mortality Database

Data availability: Annual from 1964 onwards (2005 available as at June 2008)

#### *Denominator*

Number of children aged 0–4, 5–9 and 10–14 years in reference year (at 30 June)

Data source: AIHW Population Database

Data availability: Quarterly and/or annual time series from 1979 onwards (2007 available as at June 2008)

### Justification for selection

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.

### Data issues

- A new operational definition of injury has been developed by the AIHW National Injury Surveillance Unit (Kreisfeld & Harrison 2005), which examines injury deaths by multiple cause of death (rather than only the underlying cause of death) and considers *Complications of medical and surgical care* separately from other causes of injury.
- This indicator is based on deaths with a multiple cause of death of injury (ICD-10 S00–T75, T79) or an underlying cause of death of an external cause (ICD-10 V01–Y36, Y85–Y87, Y89). Multiple causes of death are available from 1997 onwards.

### Cross tabulations

- Age
- Sex

---

<sup>15</sup> Headline Indicator for Children's Health, Development and Wellbeing

- State and territory
- Indigenous status (Indigenous/non-Indigenous) (data available for Queensland, Western Australia, South Australia and the Northern Territory only)
- Remoteness
- Socioeconomic status

## **Measure: Road transport accident death rate for children aged 0–14 years**

### **Operational definition**

#### *Numerator*

Number of deaths of children aged 0–14 years from road transport accidents in reference year

Data source: Australian Transport Safety Bureau (ATSB) Fatal Road Crash Database

Data availability: Annual from 1989 onwards (2007 data available as at June 2008)

#### *Denominator*

Number of children aged 0–14 years in reference year (at 30 June)

Data source: AIHW Population Database

Data availability: Quarterly and/or annual time series from 1979 onwards (2007 available as at June 2008)

### **Justification for selection**

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).

### **Data issues**

- The ABS compile deaths data received from the Registrars of Births, Deaths and Marriages, and advise that care should be taken in interpreting injury deaths data from 2004 onwards for several external causes of death (although this issue may also apply for recent years before 2004), due to underenumeration. The AIHW National Injury Surveillance Unit has investigated this undercount in relation to road transport accident deaths, and advises that data from the ATSB is the most accurate enumeration of deaths due to road transport accidents.
- As a result of using the ATSB Fatal Road Crash Database for this indicator, statistics presented for this indicator will not be comparable to statistics derived from the AIHW National Mortality Database (sourced from ABS Causes of Death Collection (see ABS 2008a)).

### **Cross tabulations**

- Age
- Sex
- Remoteness (lag in data availability – 2004 available as at June 2008)

- Socioeconomic status (lag in data availability – 2004 available as at June 2008)

## **Measure: Accidental drowning death rate for children aged 0–14 years**

### **Operational definition**

#### *Numerator*

Number of deaths of children aged 0–14 years from accidental drowning in reference year

Data source: AIHW National Mortality Database

Data availability: Annual from 1964 onwards (2005 available as at June 2008)

#### *Denominator*

Number of children aged 0–14 years in reference year (at 30 June)

Data source: AIHW Population Database

Data availability: Quarterly and/or annual time series from 1979 onwards (2007 available as at June 2008)

### **Justification for selection**

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.

### **Data issues**

- An expanded scope has been developed by the AIHW National Injury Surveillance Unit to identify deaths due to accidental drowning. This expansion means that cases of accidental drowning associated with a range of external causes, such as floods and transport accidents, are now identified as accidental drowning cases (Henley et al. 2007).
- This indicator is based on deaths with a multiple cause of death in the ICD-10 range S00–T75, T79 and W65–W74; or T75.1 and V01–X59; or an underlying cause of death of an external cause in the ICD-10 range W65–W74. Multiple causes of death are available from 1997 onwards.

### **Cross tabulations**

- Age
- Sex
- Indigenous status (Indigenous/non-Indigenous) (data available for Queensland, Western Australia, South Australia and the Northern Territory only), remoteness and socioeconomic status – due to the small number of deaths due to accidental drowning, reliable rates can not be presented for these population groups.

## **Measure: Intentional self-harm hospitalisation rate for children aged 10–14 years**

### **Operational definition**

#### *Numerator*

Number of children aged 10–14 years hospitalised for intentional self-harm in reference year

Data source: AIHW National Hospital Morbidity Database

Data availability: Annual from 1993–94 onwards (2006–07 available as at June 2008)

#### *Denominator*

Number of children aged 10–14 years in reference year (at 31 December)

Data source: AIHW Population Database

Data availability: Quarterly and/or annual time series from 1979 onwards (2006 available as at June 2008)

### **Justification for selection**

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).

### **Data issues**

- Hospital records in the AIHW National Hospital Morbidity Database are for 'separations' and not individuals. As one individual can have multiple admissions, hospitalisation rates do not usually reflect the incidence or prevalence of the disease or condition in question. An approximate method has been used to reduce over-counting of injury cases, by omitting records in which the mode of admission is recorded as being a transfer from another acute-care hospital. These records have been excluded, as they are likely to result in multiple counting of the one injury case. This is consistent with other AIHW reports on injury (see, for example, Berry & Harrison 2007).
- This indicator is based on separations with a principal diagnosis of injury (ICD-10-AM S00–T75, T79) and a first reported external cause of intentional self-harm (ICD-10-AM X60–X84).

### **Cross tabulations**

- Age
- Sex
- Indigenous status (Indigenous/other Australians) (data not available for Tasmania, the Australian Capital Territory and private hospitals in the Northern Territory), remoteness and socioeconomic status—due to the small number of hospitalisations due to intentional self-harm, reliable rates can not be presented for these population groups.

## **Measure: Assault death rate for children aged 0–14 years**

### **Operational definition**

#### *Numerator*

Number of deaths of children aged 0–14 years from assault in reference year

Data source: Australian Institute of Criminology (AIC) National Homicide Monitoring Program (NHMP)

Data availability: Annual from 1989 onwards (2005–06 available as at June 2008)

#### *Denominator*

Number of children aged 0–14 years in reference year (at 31 December)

Data source: AIHW Population Database

Data availability: Quarterly and/or annual time series from 1979 onwards (2006 available as at June 2008)

### **Justification for selection**

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).

### **Data issues**

- The ABS compile deaths data received from the Registrars of Births, Deaths and Marriages, and advise that care should be taken in interpreting assault deaths data from 2004 onwards (although this issue may also apply for recent years before 2004), due to underenumeration. The AIHW National Injury Surveillance Unit has investigated this undercount in relation to assault (homicide) deaths, and advises that data from the AIC is the most accurate enumeration of deaths due to assault (homicide).
- As a result of using the AIC NHMP for this indicator, statistics presented for this indicator will not be comparable to statistics derived from the AIHW National Mortality Database (sourced from ABS Causes of Death Collection (see ABS 2008a)).

### **Cross tabulations**

- Age
- Sex

## **Measure: Assault hospitalisation rate for children aged 0–14 years**

### **Operational definition**

#### *Numerator*

Number of hospitalisations of children aged 0–14 years for assault in reference year

Data source: AIHW National Hospital Morbidity Database



Data availability: Annual from 1993–94 onwards (2006–07 available as at June 2008)

*Denominator*

Number of children aged 0–14 years in reference year (at 31 December)

Data source: AIHW Population Database

Data availability: Quarterly and/or annual time series from 1979 onwards (2007 available as at June 2008)

**Justification for selection**

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).

**Data issues**

- Hospital records in the AIHW National Hospital Morbidity Database are for ‘separations’ and not individuals. As one individual can have multiple admissions, hospitalisation rates do not usually reflect the incidence or prevalence of the disease or condition in question. An approximate method has been used to reduce over-counting of injury cases, by omitting records in which the mode of admission is recorded as being a transfer from another acute-care hospital. These records have been excluded, as they are likely to result in multiple counting of the one injury case. This is consistent with other AIHW reports on injury (see, for example, Berry & Harrison 2007).
- This indicator is based on separations with a principal diagnosis of injury (ICD-10-AM S00–T75, T79) and a first reported external cause of assault (ICD-10-AM X85–Y09).

**Cross tabulations**

- Age
- Sex
- Indigenous status (Indigenous/other Australians) (data not available for Tasmania , the Australian Capital Territory and private hospitals in the Northern Territory)
- Remoteness
- Socioeconomic status

**Measure: Injury hospitalisation rate for children aged 0–14 years**

**Operational definition**

*Numerator*

Number of hospitalisations of children aged 0–14 years for injury in reference year

Data source: AIHW National Hospital Morbidity Database

Data availability: Annual from 1993–94 onwards (2006–07 available as at June 2008)

*Denominator*

Number of children aged 0–14 years in reference year (at 31 December)

Data source: AIHW Population Database

Data availability: Quarterly and/or annual time series from 1979 onwards (2006 available as at June 2008)

### **Justification for selection**

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.

### **Data issues**

- Hospital records in the AIHW National Hospital Morbidity Database are for 'separations' and not individuals. As one individual can have multiple admissions, hospitalisation rates do not usually reflect the incidence or prevalence of the disease or condition in question. An approximate method has been used to reduce over-counting of injury cases, by omitting records in which the mode of admission is recorded as being a transfer from another acute-care hospital. These records have been excluded, as they are likely to result in multiple counting of the one injury case. This is consistent with other AIHW reports on injury (see, for example, Berry & Harrison 2007).
- This indicator is based on separations with a principal diagnosis of injury (ICD-10-AM S00–T75, T79) and considers *Complications of medical and surgical care* (principal diagnosis with ICD-10-AM codes T80–T88) and residual groups (principal diagnosis with ICD-10-AM codes T78, T80–98) separately.

### **Cross tabulations**

- Age
- Sex
- Indigenous status (Indigenous/other Australians) (data not available for Tasmania, the Australian Capital Territory and private hospitals in the Northern Territory)
- Remoteness
- Socioeconomic status

## **Indicator: School relationships and bullying**

### **Measure: Under development**

#### **Operational definition**

*Numerator under development*

Data source: To be determined

Data availability:

*Denominator under development*

Data source: To be determined

Data availability:

#### **Justification for selection**

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).

#### **Data issues**

- No national data are currently available on school relationships and bullying. Significant indicator and data development are required.
- Jurisdictional data are available from the Victorian Child Health and Wellbeing Survey and the Victorian Department of Education and Early Childhood Development.
- There is a bullying subsection on the Strengths and Difficulties Questionnaire (SDQ) – potentially some data can therefore be derived for Victoria, NSW and WA.
- Information on cyber bullying is potentially available from police data (Victoria and NSW), although this is likely to capture cases at the severe end of the spectrum.

#### **Cross tabulations**

To be defined.

## Indicator: Child abuse and neglect

### Measure: Rate of children aged 0–12 years who were the subject of child protection substantiation in a given year<sup>16</sup>

#### Operational definition

##### *Numerator:*

Number of children aged 0–12 years who were the subject of child protection substantiations of notifications received during the reference year

Data source: AIHW Child Protection Data Collection

Data availability: Annual from 1991 onwards (2006–07 available as at June 2008)

##### *Denominator:*

Number of children aged 0–12 years in reference year (at 31 December)

Data source: AIHW Population Database

Data availability: Quarterly and/or annual time series from 1979 onwards (2006 available as at June 2008)

#### Justification for selection

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).

#### Data issues

- The data reported to the AIHW on child protection substantiations reflects departmental activity. Investigations that are not finalised within the financial year are not included in the data for the reference year, or subsequent years.
- AIHW publishes these data by state and territory. National aggregation is not ideal due to differences between jurisdictions in defining and collecting data, but national data have been published previously.
- Differences in child protection legislation, policies and practices across jurisdictions and over time can affect the number and rate of children in substantiations and so caution must be taken when interpreting the data. For example, the rise in notifications in Tasmania from 2003–04 to 2004–05 is in part due to the introduction of the *Family Violence Act 2004* which extended the definition of child abuse and neglect to include a child affected by family violence.

---

<sup>16</sup> Headline Indicator for Children's Health, Development and Wellbeing

### **Cross tabulations**

- Sex
- Age
- State and territory
- Indigenous status

## **Measure: Rate of children aged 0–12 years who are the subject of care and protection orders**

### **Operational definition**

#### *Numerator*

Number of children aged 0–12 years who were on care and protection orders

Data source: AIHW Child Protection Data Collection

Data availability: Annual from 1991 onwards (2007 available as at June 2008)

#### *Denominator*

Number of children aged 0–12 years in reference year (at 31 March)

Data source: AIHW Population Database

Data availability: Quarterly and/or annual time series from 1979 onwards (2007 available as at June 2008)

### **Justification for selection**

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 2008b).

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.

### **Data issues**

- Differences in child protection legislation, policies and practices across jurisdictions and over time can affect the number and rate of children on care and protection orders and so caution must be taken when interpreting the data.
- The scope of the data collection for children on care and protection orders was changed in 1997; data from 1997 onwards should not be compared with previous years.
- Children may be placed under care and protection orders for reasons other than abuse and neglect, for example, a break-down in the relationship between the child and the parent, or when the parent is unwilling or unable to adequately care for the child.

### **Cross tabulations**

- Age
- Sex
- State and territory
- Indigenous status

## **Indicator: Children as victims of violence**

### **Measure: Rate of children aged 0–14 years who have been the victim of physical and sexual assault**

#### **Operational definition**

##### *Numerator:*

Number of children aged 0–14 years who were the victim of assault (physical or sexual)

Data source: ABS Recorded Crime – Victims (ABS 2007a)

Data availability: Annual from 1993 (2006 available as at June 2008, but physical and sexual assault last reported in 2003)

##### *Denominator:*

Number of children aged 0–14 years in reference year (at 30 June)

Data source: AIHW Population Database

Data availability: Quarterly and/or annual time series from 1979 onwards (2007 available as at June 2008)

#### **Justification for selection**

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).

#### **Data issues**

- The offence categories used for national crime statistics are based on the Australian Standard Offence Classification (ASOC) (ABS 1997).
- The recorded crime statistics relate to victims of a selected range of offences that have been recorded by police. These offences may have been reported by a victim, witness or other person, or they may have been detected by police. The statistics do not provide a total picture of crime, as not all crimes are reported to police, nor do all incidents which are reported to police get recorded as a crime.
- The reported level of crime experienced by children and young people is likely to be underestimated, as children in particular, may feel intimidated and reluctant to report personal crimes if the perpetrator is known to them or in a position of power.
- The latest available data for assault and sexual assault for 0–24 year-olds is from 2003. Data on other types of offences (such as robbery, murder, kidnapping) are available for 2006.
- ABS also advises care in interpreting police statistics as fluctuations in recorded crime may be a reflection of changes in community attitudes in reporting crime, changes in police procedures or changes in crime reporting systems, rather than a change in the incidence of criminal behaviour.

## Cross tabulations

- Sex
- Age



## **Indicator: Homelessness**

### **Measure: Rate of children aged 0–15 years seeking assistance from the Supported Accommodation Assistance Program (accompanied and unaccompanied)**

#### **Operational definition**

##### *Numerator*

Number of children aged 0–15 years seeking SAAP assistance (accompanied and unaccompanied)

Data source: AIHW SAAP National Data Collection

Data availability: Annual from 1996–97 (2006–07 available as at June 2008)

##### *Denominator*

Number of children aged 0–15 years in the reference period (at 30 June)

Data source: AIHW Population Database

Data availability: Quarterly and/or annual time series from 1979 onwards (2007 available as at June 2008)

#### **Justification for selection**

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).

#### **Data issues**

- All children at risk of homelessness are not captured in the data as only those who sought assistance are included. AIHW will investigate the possibility of using data from the Counting the Homeless Project, based on the 2006 Census, for this age group (dependent on data availability and age breakdowns).
- The extent to which children as clients are captured in the data has improved in recent years. It is now possible to also present the number of children presenting to a SAAP agency unaccompanied.
- Seeking assistance from SAAP includes any service received (for example, shower or meal), not only accommodation (although accommodation can be singled out). However, all SAAP clients are either homeless, or at risk of homelessness, regardless of the service type they receive.

#### **Cross tabulations**

- Sex
- Age
- Main reason for seeking assistance

- Accompanied and unaccompanied children
- Indigenous status

## **Indicator: Children and crime**

### **Measure: Rate of children aged 10–14 years who are under juvenile justice supervision**

#### **Operational definition**

##### *Numerator*

Number of children aged 10–14 years under juvenile justice supervision

Data source: AIHW Juvenile Justice National Minimum Dataset (JJ NMDS)

Data availability: Annual from 2000–01 (2006–07 available as at June 2008)

##### *Denominator*

Number of children aged 10–14 years in reference year (at 31 March)

Data source: AIHW Population Database

Data availability: Quarterly and/or annual time series from 1979 onwards (2007 available as at June 2008)

#### **Justification for selection**

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).

#### **Data issues**

- Data for Australian Capital Territory are available from 2003–04 onwards only.

#### **Cross tabulations:**

- Age
- Sex
- Type of supervision (detention or community-based)
- Age at first juvenile justice supervision
- Indigenous status
- State and territory

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

## Indicator: Congenital anomalies

**Measure: Under development—Rate of selected congenital anomalies among infants at birth**

### Operational definition

#### *Numerator*

Number of infants (less than 1 year of age) with congenital anomaly at birth in reference year

Data source: Australian Congenital Anomalies Monitoring System (ACAMS)

Data availability: Annual from 1981 onwards (2002–2003 available as at June 2008)

#### *Denominator*

Number of live births and/or fetal deaths in reference year

Data source: National Perinatal Data Collection (NPDC)

Data availability: Annual from 1991 onwards (2005 available as at June 2008)

### Justification for selection

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.

### Data issues

- Data from ACAMS are based on notifications to birth defects registers in New South Wales, Victoria, Western Australia and South Australia, and on data collected by perinatal data collections in Queensland, Tasmania and the Australian Capital Territory (Abeywardana & Sullivan 2008).
- Data is collected on congenital anomalies in live births and stillbirths of 20 weeks gestational age or more, or 400 grams birthweight or more (including induced abortions), for all states and the Australian Capital Territory. Data on induced abortion due to congenital anomaly at less than 20 weeks gestation, or less than 400 grams weight, is required to calculate an accurate rate of congenital anomaly. Currently this information is available for four states only: New South Wales, Victoria, Western Australia and South Australia. Therefore, at the national level, only an estimated rate (including live births, stillbirths and induced abortion data from four states) and a birth rate (including live births and stillbirths) can be presented.

- Possible congenital anomalies include neural tube defects, abdominal wall defects and renal conditions.

### **Cross tabulations**

- Baby characteristics:
  - sex
  - gestational age
  - birthweight
  - type of congenital anomaly
- Maternal characteristics:
  - Age
  - Indigenous status
  - remoteness of residence
  - country of birth
  - parity
  - plurality
- State and territory
- Outcome (live birth, fetal death, termination of pregnancy)

## **Indicator: Newborn screening (hearing)**

**Measure: Under development—Proportion of live births receiving a newborn hearing screen**

### **Operational definition**

#### *Numerator*

Number of live births receiving a newborn hearing screen in reference year

Data source: To be determined

Data availability:

#### *Denominator*

Number of live births in reference year

Data source: National Perinatal Data Collection (NPDC)

Data availability: Annual from 1991 onwards (2005 available as at June 2008)

### **Justification for selection**

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).

### **Data issues**

- This indicator is under development.

### **Cross tabulations**

To be defined.

## Indicator: Childhood immunisation

### Measure: Proportion of children on the Australian Childhood Immunisation Register who are fully immunised at 2 years of age<sup>17</sup>

#### Operational definition

##### *Numerator*

Number of children on the ACIR who are fully immunised at 2 years of age

Data source: Australian Childhood Immunisation Register (ACIR)

Data availability: Quarterly from March 1998 onwards (December 2007 available as at June 2008)

##### *Denominator*

Number of children aged 2 years on the ACIR

Data source: Australian Childhood Immunisation Register (ACIR)

Data availability: Quarterly from March 1998 onwards (December 2007 available as at June 2008)

#### Justification for selection

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).

#### Data issues

- In the separate contexts of the ACIR and the National Immunisation Program Schedule, 'fully immunised' has two different meanings. As reflected on the ACIR, a fully immunised child has received the scheduled doses of the following vaccines: diphtheria, tetanus and pertussis triple antigen; poliomyelitis; hepatitis B; Hib; and measles, mumps, rubella. In the context of the Schedule, a fully immunised child has received the scheduled doses of all vaccines on the Schedule. Along with the above vaccines, rotavirus, varicella (chicken pox), meningococcal C and pneumococcal conjugate are included in the National Immunisation Program Schedule for children up to 2 years of age. These latter four vaccines are not reflected in the ACIR proportions of fully immunised children to be reported in *A picture of Australia's children 2009*.
- ACIR collects information on sex, remoteness, and Indigenous status but these data are currently not available for release.
- Immunisation data will be accompanied by notification rates for the communicable diseases on the ACIR.

---

<sup>17</sup> Headline Indicator for Children's Health, Development and Wellbeing

**Cross tabulations:**

- State and territory

## **Indicator: Survival for leukaemia**

### **Measure: Five-year relative survival rate for leukaemia in children aged 0–14 years**

#### **Operational definition**

##### *Numerator*

Survival of children aged 0–14 years with leukaemia (observed)

Data source: AIHW National Cancer Statistics Clearing House and the AIHW National Death Index

Data availability: 1982–1986, 1992–1997 and 1998–2004

##### *Denominator*

Survival of children aged 0–14 years (expected)

Data source: AIHW analysis of ABS life tables (see ABS 2007d)

Data availability: Annual from 2002 onwards (2006 available as at June 2008)

#### **Justification for selection**

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).

#### **Data issues**

- Relative survival analysis compares the survival rate of children with leukaemia (ICD-10 C91–C95) with the survival rate of the Australian population of the same sex and age in the same calendar year as the cancer cohort.
- Relative survival is defined as the observed survival divided by the expected survival, and is usually expressed as a percentage.

#### **Cross tabulations**

- Age
- Sex
- Type of leukaemia
- Remoteness
- Socioeconomic status



## **Indicator: Quality child care**

### **Measure: Under development**

#### **Operational definition**

*Numerator under development*

Data source: To be determined

Data availability:

*Denominator under development*

Data source: To be determined

Data availability:

#### **Justification for selection**

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).

#### **Data issues**

- No measure is currently defined for this indicator due to difficulties in choosing an appropriate measure and considerable data gaps in this area. This indicator requires significant indicator and data development, which may not be complete for inclusion in *A picture of Australia's children 2009*.
- Possible data sources include disaggregated data from the National Childcare Accreditation Council (NCAC), Growing up in Australia: the Longitudinal Study of Australian Children (LSAC). The Data Mapping Pilot Project on early childhood (by ABS, Treasury, FaCSIA and AIHW) will identify what data is available to answer specific policy questions.

#### **Cross tabulations**

To be defined.

## **Indicator: Child protection resubstantiations**

### **Measure: Rate of children aged 0–12 years who were the subject of a child protection resubstantiation in a given year**

#### **Operational definition**

The resubstantiation rate reported for reference year,  $y$ , is defined in terms of resubstantiation within 3 or 12 months of a substantiation in the previous year.

#### *Numerator*

Number of children aged 0–12 years who were the subject of a substantiation in year  $y$  minus 1 (the year prior to the reference year), who were the subject of a resubstantiation within 3 months/12 months

Data source: AIHW Child Protection Data Collection

Data availability: Annual from 1991 onwards (2006–07 available as at June 2008)

#### *Denominator*

Number of children aged 0–12 years who were the subject of a substantiation in year  $y$  minus 1

Data source: AIHW Child Protection Data Collection

Data availability: Annual from 1991 onwards (2006–07 available as at June 2008)

#### **Proxy measure: Rate of resubstantiation for children aged 0–17 years**

Data will be sourced from the AIHW Child Protection Data Collection, with data available annually from 1992–93 onwards (2006–07 available as at June 2008) (see 'Data issues').

#### **Justification for selection**

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).

#### **Data issues**

- Currently, only the aggregate number of resubstantiations for the 0–17 year age group is available.
- Data are not comparable across jurisdictions because definitions of substantiation vary considerably, therefore a national rate can not be presented (AIHW 2008b).

#### **Cross tabulations**

- State and territory

# 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. Data are provided by the state and territory community services departments and are used to produce *Child Protection Australia* and are also provided to the Productivity Commission for the *Report on Government Services*.

There are three separate child protection collections: child protection notifications, investigations and substantiations; children on care and protection orders; and children in out-of-home care.

Further information:

[www.aihw.gov.au/chilyouth/childwelfare/childprotection/index.cfm](http://www.aihw.gov.au/chilyouth/childwelfare/childprotection/index.cfm)

### AIHW National Drug Strategy Household Survey (NDSHS)

The NDSHS is a key data collection under the National Drug Strategy. The survey commenced in 1985 and has been managed by the AIHW since 1998.

The 2007 NDSHS was conducted between July and November 2007. Almost 25,000 Australians aged 12 years or older participated in the survey, in which they were asked about their knowledge of and attitudes towards drugs, their drug consumption histories, and related behaviours.

The data collected from these surveys have contributed to the development of policies for Australia's response to drug-related issues.

Further information: AIHW 2008a or [www.aihw.gov.au/drugs/ndshs07.cfm](http://www.aihw.gov.au/drugs/ndshs07.cfm)

### AIHW National Hospital Morbidity Database (NHMD)

The NHMD is compiled by the AIHW from data supplied by the state and territory health authorities. It is a collection of electronic confidentialised summary records for separations (that is, episodes of care) in public and private hospitals in Australia.

Hospital records are for 'separations' and not individuals, and as there can be multiple admissions for the same individuals, hospital separation rates do not usually reflect the incidence or prevalence of the disease or condition in question.

The collection contains establishment data (information about the hospital), demographic data of the patient, administrative data, length of stay data and, clinical and related data.

Diagnoses have been classified according to ICD-10-AM since 1998–99.

Further information: [www.aihw.gov.au/hospitals/nhm\\_database.cfm](http://www.aihw.gov.au/hospitals/nhm_database.cfm)

### AIHW National Mortality Database

The AIHW National Mortality Database includes information on the factors that caused death, and 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). The tenth revision (ICD-10) is available for use from 1997.

Further information: [www.aihw.gov.au/mortality/index.cfm](http://www.aihw.gov.au/mortality/index.cfm)

### **AIHW Population Database**

Population data held by AIHW are sourced from the ABS Demography section and are updated as revised/new estimates become available. All population estimates currently produced by ABS are based on a usual residence concept, that is, where people usually reside, and are referred to as estimated resident populations (ERPs).

### **Australian Congenital Anomalies Monitoring System**

The Australian Congenital Anomalies Monitoring System contains data based on notifications of major congenital anomalies to birth defects registers in New South Wales, Victoria, Western Australia and South Australia and on data collected on congenital anomalies in Queensland, Tasmania and the Australian Capital Territory. The Northern Territory is currently unable to provide data in a format enabling it to be compiled with data from the other states and territories.

Information is included on live births and stillbirths of 20 weeks gestational age or more, or 400 grams birthweight or more (including induced abortions), with a congenital anomaly, for all states and the Australian Capital Territory. Information on induced abortions of less than 20 weeks gestational age and less than 400 grams weight with a congenital anomaly is only available for four states: New South Wales, Victoria, Western Australia and South Australia.

Further information: Abeywardana & Sullivan 2008 or [www.npsu.unsw.edu.au/NPSUweb.nsf/page/CADC](http://www.npsu.unsw.edu.au/NPSUweb.nsf/page/CADC)

### **Child Dental Health Survey**

The Child Dental Health Survey is an annual survey which monitors the dental health of children enrolled in school dental services operated by the Australian state and territory health departments.

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.

Further information: AIHW DSRU: Armfield et al. 2007

### **Children's Services National Minimum Data Set**

The development of the Children's Services National Minimum Data Set has been completed with the publication of the final report in February 2007 (NCSIMG Children's Services Data Working Group 2007). The Children's Services NMDS, endorsed by the Community and Disability Services Ministers' Advisory Council in 2006, aims to provide nationally comparable and comprehensive data about the provision of child care and preschool services

including information about the children who use the services, the service providers and their workers. Options for the implementation of the data set are now being examined.

### **Juvenile Justice National Minimum Data Set (JJ NMDS)**

The JJ NMDS is the annual national collection of information on young people in community supervision and detention in Australia. It contains flow data from 2000–01 for all states and territories in Australia (except the ACT – data are available from 2003–04). Data is provided by the department responsible for juvenile justice in each jurisdiction. The JJ NMDS is designed to provide relevant and comparable information that will contribute to the national monitoring of juvenile justice policies and programs.

Information collected includes: the number and characteristics of young people in juvenile justice supervision (age, sex, Indigenous status); patterns of supervision (type, length, location); and juvenile justice detention centre characteristics.

Further information: [www.aihw.gov.au/chilyouth/juvenilejustice/index.cfm](http://www.aihw.gov.au/chilyouth/juvenilejustice/index.cfm)

### **National Cancer Statistics Clearing House (NCSCCH)**

The AIHW maintains the NCSCCH. Information on the incidence of cancer in the Australian population is provided by the state and territory cancer registries to the NCSCCH. The NCSCCH is the only national database of cancer incidence in Australia. It contains information on incidence, mortality, specific cancer sites, cancer histology, geographical variation, trends over time and survival.

Data items enable record linkage to be performed (for example, to the National Death Index) and the analysis of cancer by site and behaviour.

Further information: [www.aihw.gov.au/cancer/ncsch/index.cfm](http://www.aihw.gov.au/cancer/ncsch/index.cfm)

### **National Diabetes Register (NDR)**

The NDR, held at the AIHW, is a register of people living in Australia with insulin-treated diabetes. This includes persons using insulin to manage Type 1, Type 2, gestational and other types of diabetes.

People are eligible to be on the NDR if they use insulin to treat their diabetes and their insulin use began on or after 1 January 1999.

The NDR has two main data sources:

- the National Diabetes Services Scheme (NDSS) database, administered by Diabetes Australia
- the Australasian Paediatric Endocrine Group's (APEG) state and territory databases.

Further information: [www.aihw.gov.au/diabetes/ndr.cfm](http://www.aihw.gov.au/diabetes/ndr.cfm)

### **National Perinatal Data Collection (NPDC)**

The 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 dataset by the AIHW National Perinatal 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.

Further information: [www.npsu.unsw.edu.au/NPSUweb.nsf/page/NPDC](http://www.npsu.unsw.edu.au/NPSUweb.nsf/page/NPDC)

### **Supported Accommodation Assistance Program (SAAP) National Data Collection**

The SAAP National Data Collection has been providing annual information on the provision of assistance through SAAP since 1996–97. The AIHW has had the role of National Data Collection Agency (NDCA) since the collection's inception.

The National Data Collection consists of distinct components, each of which can be thought of as a separate collection. Currently, four collections are run annually: the Client Collection, the Administrative Data Collection, the Demand for Accommodation Collection and the Casual Client Collection.

The Client Collection collects information about all clients receiving support under SAAP of more than 1 hour's duration. Data collected include basic sociodemographic information and information on the services requested by, and provided to, each client. Information about each client's situation before and after receiving SAAP services is also collected.

The Administrative Data Collection consists of general information about the agencies providing accommodation and support services to people who are homeless or in crisis.

The Demand for Accommodation Collection is conducted annually over 2 weeks. It measures the level of unmet demand for SAAP services by collecting information about the number of requests for accommodation from SAAP agencies that are not met, for whatever reason.

The 2-week Casual Client Collection is conducted annually to elicit information about short-term or one-off assistance provided to homeless people.

Further information: [www.aihw.gov.au/housing/sacs/saap/index.cfm](http://www.aihw.gov.au/housing/sacs/saap/index.cfm)

## **ABS data sources**

### **ABS Births, Australia**

The ABS compile aggregate statistics on births, based on data provided by the parent(s) of the child to the state and territory Registrars of Births, Deaths and Marriages.

The statistics in the *Births, Australia* publication refer to births registered during the relevant calendar year. As there is usually an interval between the occurrence and registration of a birth, some births occurring in one year are not registered until the following year or even later.

Further information:

[www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/3301.0Main+Features12006?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/3301.0Main+Features12006?OpenDocument)

### **ABS General Social Survey (GSS)**

The ABS conducted the GSS in 2002 and 2006, with plans to repeat the survey at four-yearly intervals.

The aims of the GSS are to: present data on a range of social dimensions of the Australian community at a single point in time by collecting data on a range of topics from the same individual; enable analysis of the interrelationship of social circumstances and outcomes,

including the exploration of multiple advantage and disadvantage and; provide a base for comparing social circumstances and outcomes over time and across population groups.

The focus is on the relationships between characteristics from different areas of social concern, rather than in-depth information about a particular field. Topics include: demographic characteristics, health and disability, housing, education, work, income, financial stress, assets and liabilities, information technology, transport, family and community, crime and feelings of safety, attendance at culture and leisure venues, sports attendance and participation, social networks and social participation, voluntary work and visa category.

Further information:

[www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4159.0Main+Features12006?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4159.0Main+Features12006?OpenDocument)

### **ABS National Aboriginal and Torres Strait Islander Health Survey (NATSIHS)**

The ABS 2004–05 NATSIHS provides information about the health circumstances of Indigenous Australians. This survey, which was conducted in remote and non-remote areas throughout Australia, collected information from Indigenous Australians about health-related issues, including health status, risk factors and actions, and socioeconomic circumstances. The sample size was considerably larger than the supplementary Indigenous sample in the 2001 National Health Survey.

The aims of the survey were to: provide broad information about the health of Indigenous Australians, by remoteness, and at the national and state/territory levels; allow for the relationships across the health status, risk factors and health-related actions of Indigenous Australians to be explored; provide comparisons over time in the health of Indigenous Australians; and provide comparisons with results for the non-Indigenous population from the 2001 and 2004–05 National Health Survey (NHS).

Further information: ABS 2006c or

[www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4715.0Main+Features12004-05?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4715.0Main+Features12004-05?OpenDocument)

### **ABS National Aboriginal and Torres Strait Islander Social Survey (NATSISS)**

The 2002 NATSISS was conducted between August 2002 and April 2003. Information was collected about the Aboriginal and Torres Strait Islander populations of Australia for a wide range of areas of social concern including health, education, culture and labour force participation. The survey is expected to be conducted at 6-yearly intervals.

Information was collected by personal interview from approximately 10,000 Aboriginal and Torres Strait Islander people aged 15 years and over throughout Australia, including those living in remote areas.

Further information:

[www.abs.gov.au/Ausstats/abs@.nsf/0d21d0868273a2c3ca25697b00207e97/9ad558b6d0aed752ca256c7600018788!OpenDocument](http://www.abs.gov.au/Ausstats/abs@.nsf/0d21d0868273a2c3ca25697b00207e97/9ad558b6d0aed752ca256c7600018788!OpenDocument)

### **ABS National Health Survey (NHS)**

The most recent NHS was conducted between August 2004 and June 2005 by the ABS. The survey collected information from 19,501 Australians of all ages and from all states and territories and from urban and remote areas. Very remote areas were excluded.

The aims of the survey are to obtain national benchmark information on a range of health issues and to enable trends in health to be monitored over time. Information was collected about the health status of the Australian population, health-related aspects of lifestyle and other health risk factors and use of health services.

In the ABS National Health Surveys, information is reported by a parent/guardian for young people under the age of 15 years, a combination of self- and parent-report for ages 15–17 years and self-report only for aged 18 years and over.

Further information: ABS 2006d

### **ABS Recorded Crime – Victims**

*ABS Recorded Crime – Victims* is an annual publication which presents national crime statistics relating to victims of a selected range of offences that have been recorded by police. These statistics provide indicators of the level and nature of recorded crime victimisation in Australia and a basis for measuring change over time. The statistics for the publication are derived from administrative systems maintained by state and territory police.

Further information:

[www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4510.0Main+Features12006?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4510.0Main+Features12006?OpenDocument)

### **ABS Survey of Disability, Ageing and Carers (SDAC)**

The SDAC collects information about people of all ages with a disability, older people (aged 60 years and over) and people who provide assistance to older people and people with disabilities. The most recent survey was conducted in 2003.

The aims of the survey are to: measure the prevalence of disability in Australia; measure the need for support of older people and those with a disability; provide a demographic and socioeconomic profile of people with disabilities, older people and carers compared with the general population; and to estimate the number of, and provide information about, people who provide care to older people and people with disabilities.

People with a disability were asked questions relating to help and assistance needed and received for self-care, mobility, communication, cognition or emotion, health care, housework, property maintenance, meal preparation, paperwork (reading and writing tasks), transport activities, internet use and participation in community activities. Those aged 5–20 years (or their proxies) were asked about schooling restrictions, and those aged 15–64 years about employment restrictions.

Further information: ABS 2003

### **ABS Survey of Income and Housing (SIH)**

The ABS SIH (previously known as the Survey of Income and Housing Costs (SIHC)) is a household survey which collects information on sources of income, amounts received, housing characteristics, household characteristics and personal characteristics.

The aim of the survey is to enable the analysis and monitoring of the social and economic welfare of Australian residents in private dwellings.

From 1994–95 to 2003–04, the survey was conducted in all years except 1998–99 and 2001–02. From 2003–04, the survey has been conducted biennially (most recently in 2005–06).



Further information:

[www.abs.gov.au/AUSSTATS/abs@.nsf/DOSSbyTopic/F0CDB39ECC092711CA256BD00026C3D5?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/DOSSbyTopic/F0CDB39ECC092711CA256BD00026C3D5?OpenDocument)

## **Other data sources**

### **Australian Childhood Immunisation Register (ACIR)**

The ACIR records details of vaccinations given to children under the age of seven who live in Australia. The aims of the ACIR are to provide an accurate measure of the immunisation coverage of children in Australia under 7 years of age 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.

Further information: [www.medicareaustralia.gov.au/provider/patients/acir/statistics.jsp](http://www.medicareaustralia.gov.au/provider/patients/acir/statistics.jsp)

### **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 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.

Further information: [www.rch.org.au/australianedi/edi.cfm?doc\\_id=6211](http://www.rch.org.au/australianedi/edi.cfm?doc_id=6211)

### **Australian Institute of Criminology National Homicide Monitoring Program**

The Australian Institute of Criminology has operated the National Homicide Monitoring Program (NHMP) since 1989.

The purpose of the program is to identify the characteristics of individuals which place them at risk of homicide victimisation and offending, and the circumstances which contribute to the likelihood of a homicide occurring. The two main data sources used by the program are police records and coronial files.

Further information: [www.aic.gov.au/research/projects/0001.html](http://www.aic.gov.au/research/projects/0001.html)

### **Australian Secondary Students' Alcohol and Drug (ASSAD) Survey**

The ASSAD Survey is a triennial secondary school-based survey which monitors the use of tobacco, alcohol and other substances among adolescents in Australia. The first survey was conducted by the Cancer Councils in each Australian state and territory in 1984, and was restricted to secondary school students' use of tobacco and alcohol. In 1996, the federal, state and territory health departments became collaborators with the Cancer Councils, and the

survey was expanded to include questions on the use of illicit substances. The most recent survey was conducted in 2005 and used a representative sample of over 20,000 secondary school students in Years 7–12 across Australia.

The questionnaire covers the use of tobacco, alcohol, pain relievers, sleeping tablets and the use of illicit substances such as cannabis and hallucinogens.

Further information:

[www.nationaldrugstrategy.gov.au/internet/drugstrategy/publishing.nsf/Content/publications-monographs](http://www.nationaldrugstrategy.gov.au/internet/drugstrategy/publishing.nsf/Content/publications-monographs) (see Monograph series no. 58, 59 and 60)

### **Australian Transport Safety Bureau Fatal Road Crash Database**

The Fatal Road Crash Database contains information on road transport crash fatalities in Australia, as reported by the police each month to the State and Territory road safety authorities.

The data can be examined by either fatalities or fatal crashes. Information collected for fatal crashes include date, location and type of crash. Information collected for fatalities include age, gender and road user type.

Further information:

[www.infrastructure.gov.au/roads/safety/road\\_fatality\\_statistics/fatal\\_road\\_crash\\_database.aspx](http://www.infrastructure.gov.au/roads/safety/road_fatality_statistics/fatal_road_crash_database.aspx)

### **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, 2 and 2.5 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.

Further information: [www.aifs.gov.au/growingup/](http://www.aifs.gov.au/growingup/)

### **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 follows 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.

Further information: [www.facs.gov.au/internet/facsinternet.nsf/research/ldi-lsic\\_nav.htm](http://www.facs.gov.au/internet/facsinternet.nsf/research/ldi-lsic_nav.htm)

### **Household, Income and Labour Dynamics in Australia (HILDA) Survey**

The HILDA Survey is a longitudinal household-based panel survey which began in 2001. The HILDA Survey is commissioned and funded by the Australian Government Department of Families, Housing, Community Services and Indigenous Affairs. The survey aims to describe the way people's lives are changing by tracking all members of an initial sample of households over an indefinite period. Wave 6 (2006) data are available as at June 2008.

Data are collected on a wide range of issues, including: household structure, family background, marital history, family formation, education, employment history, current employment, job search, income, health and wellbeing, child care, and housing. In addition, in every wave there is scope for additional questions on special topics. Interviews are conducted with all persons in the household aged 15 years and over, although information may be collected on persons aged under 15 years from other household members.

Further information: [www.melbourneinstitute.com/hilda/](http://www.melbourneinstitute.com/hilda/)

### **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.

Further information: [www.kidseatkidsplay.com.au/](http://www.kidseatkidsplay.com.au/)

# Appendix 1: 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 2 <sup>nd</sup> and 3 <sup>rd</sup> 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 <sup>#</sup>
Breastfeeding	Proportion of infants exclusively breast fed at 4 months of age <sup>#</sup>
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 <sup>*</sup>
Attending Early Childhood Education Programs	Proportion of children attending an early educational program in the 2 years prior to beginning primary school <sup>#</sup>
Transition to Primary School	Proportion of children entering school with basic skills for life and learning <sup>*</sup>
Attendance at Primary School	Attendance rate of children at primary school <sup>*</sup>
Social and Emotional Wellbeing	**
Shelter	**
Family Social Network	**

*Notes:*

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

# References

- Abeywardana S, Karim M, Grayson N & Sullivan EA 2007. Congenital anomalies in Australia 1998–2001. Congenital anomalies series no. 2. Cat. no. PER 37. Sydney: AIHW National Perinatal Statistics Unit.
- Abeywardana S & Sullivan EA 2008. Congenital anomalies in Australia 2002–2003. Birth anomalies series no. 3. Cat. no. PER 41. Sydney: AIHW National Perinatal Statistics Unit.
- ABS (Australian Bureau of Statistics) 1997. Australian Standard Offence Classification. ABS Cat. no. 1234.0. Viewed 1 June 2008, <[www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/1234.0Main+Features11997?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/1234.0Main+Features11997?OpenDocument)>.
- ABS 1999. Disability, Ageing and Carers, Australia: summary of findings 1998. ABS Cat. no. 4430.0. Viewed 16 May 2008, <[www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/4430.01998?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/4430.01998?OpenDocument)>.
- ABS 2003. Disability, Ageing and Carers, Australia: summary of findings 2003. ABS Cat. no. 4430.0. Viewed 16 May 2008, <[www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4430.0Explanatory%20Notes12003?OpenDocument#](http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4430.0Explanatory%20Notes12003?OpenDocument#)>.
- ABS 2006a. Census Dictionary, 2006 (Reissue). Core Activity Need for Assistance (ASSNP). ABS Cat. no. 2901.0. Viewed 19 May 2008, <[www.abs.gov.au/AUSSTATS/abs@.nsf/Latestproducts/304E60A454FD00D2CA25729E0008A89F?opendocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/Latestproducts/304E60A454FD00D2CA25729E0008A89F?opendocument)>.
- ABS 2006b. Measures of Australia's progress, 2006. ABS Cat. no. 1370.0. Canberra: ABS.
- ABS 2006c. National Aboriginal and Torres Strait Islander health survey 2004–05: summary of results. ABS Cat. no. 4715.0. Canberra: ABS.
- ABS 2006d. National health survey 2004–05: summary of results. ABS Cat. no. 4364.0. Canberra: ABS.
- ABS 2006e. National health survey: user's guide—electronic publication. ABS Cat. no. 4363.0.55.001. Canberra: ABS.
- ABS 2007a. 2006 Recorded Crime—Victims, Australia: Sex and age group by offence category. ABS Cat. no. 4510.0. Viewed 28 May 2008, <[www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/4510.02006?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/4510.02006?OpenDocument)>.
- ABS 2007b. Births, Australia, 2006. ABS Cat. no. 3301.0. Canberra: ABS.
- ABS 2007c. Survey of Income and Housing User Guide Australia 2005–06 (new issue). ABS Cat. no. 6553.0. Viewed 1 May 2008, <[www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/6553.02005-06?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/6553.02005-06?OpenDocument)>.
- ABS 2007d. Table 1. Life Tables, Australia. ABS Cat. no. 3302.0.55.001. Viewed 1 April 2008, <[www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3302.0.55.0012006?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3302.0.55.0012006?OpenDocument)>.
- ABS 2008a. Causes of death, Australia, 2006. ABS Cat. no. 3303.0. Canberra: ABS.
- ABS 2008b. Family characteristics and transitions, Australia, 2006–07. ABS Cat. no. 4442.0. Viewed 7 June 2008, <[www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/4442.02006-07?OpenDocument](http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/4442.02006-07?OpenDocument)>.

ABS & SIDS and Kids 2003. SIDS Information Paper. Viewed 29 April 2008, <[www.sidsandkids.org/documents/finalsidspaper2003\\_002.pdf](http://www.sidsandkids.org/documents/finalsidspaper2003_002.pdf)>.

AICAFMHA (Australian Infant, Child, Adolescent and Family Mental Health Association) 2001. Children of parents affected by mental illness – a scoping project. Canberra: Mental Health and Special Programs Branch, Department of Health and Aged Care.

AIHW (Australian Institute of Health and Welfare) 2003. Australia's young people: their health and wellbeing 2003. Cat. no. PHE 50. Canberra: AIHW.

AIHW 2004. Key national indicators of children's health, development and wellbeing. Bulletin no. 20. Cat. no. AUS 53. Canberra: AIHW.

AIHW 2005. A picture of Australia's children. Cat. no. PHE 58. Canberra: AIHW.

AIHW 2006. Australia's health 2006: the tenth biennial health report of the Australian Institute of Health and Welfare. Cat. no. AUS 73. Canberra: AIHW.

AIHW 2007a. Australia's welfare 2007. The eighth biennial welfare report of the Australian Institute of Health and Welfare. Cat. no. AUS 93. Canberra: AIHW.

AIHW 2007b. Child protection Australia 2005–06. Cat. no. CWS 28. Canberra: AIHW.

AIHW 2007c. Educational outcomes of children on guardianship or custody orders: a pilot study. Child welfare series no. 42. Cat. no. CWS 30 Canberra: AIHW.

AIHW 2007d. Young Australians: their health and wellbeing 2007. Cat. no. PHE 87. Canberra: AIHW.

AIHW 2008a. 2007 National Drug Strategy Household Survey: first results. Drug statistics series number 20. Cat. no. PHE 98. Canberra: AIHW.

AIHW 2008b. Child protection Australia 2006–07. Child welfare series no. 43. Cat. no. CWS 31. Canberra: AIHW.

AIHW 2008c. Key national indicators of children's health, development and wellbeing: indicator framework for A picture of Australia's children 2009. Bulletin no. 58. Cat. no. AUS 100 Canberra: AIHW.

AIHW ACAM (Australian Centre for Asthma Monitoring) 2005. Asthma in Australia 2005. Cat. no. ACM 6 Canberra: AIHW.

AIHW DSRU (Dental Statistics Research Unit): Armfield JM, Slade GD & Spencer AJ 2007. Water fluoridation and children's dental health: The Child Dental Health Survey, Australia 2002. Dental statistics and research series no. 36. Cat. no. DEN 170. Canberra: AIHW.

AIHW: Al-Yaman F, Bryant M & Sargeant H 2002. Australia's children: their health and wellbeing 2002. Cat. no. PHE 36. Canberra: AIHW.

AIHW: Catanzariti L, Faulks K & Waters A-M 2007. National Diabetes Register: statistical profile 1999–2005. Cat. no. CVD 39. Diabetes series no. 7. Canberra: AIHW.

AIHW: Ford J, Nassar N, Sullivan EA, Chambers G & Lancaster P 2003. Reproductive health indicators Australia 2002. Cat. no. PER 20. Canberra: AIHW National Perinatal Statistics Unit.

AIHW: Moon L, Meyer P & Grau J 2000. Australia's young people: their health and wellbeing 1999. Cat. no. PHE 19. Canberra: AIHW.

AIHW: Moon L, Rahman N & Bhatia K 1999. Australia's children: their health and wellbeing 1998. Cat. no. PHE 7. Canberra: AIHW.

Ambert AM 2006. One parent families: characteristics, causes, consequences and issues. Ontario: The Vanier Institute of the Family.

- Aneshensel CS & Succo CA 1996. The neighbourhood context of adolescent mental health. *Journal of Health and Social Behavior* 37:293-310.
- Attar BK, Guerra NG & Tolan PH 1994. Neighborhood disadvantage, stressful life events, and adjustment in urban elementary-school children. *Journal of Clinical Psychology* 23:391-400.
- Bayer JK, Hiscock H, Morton-Allen E, Ukoumme OC & Wake M 2007. Prevention of mental health problems: rationale for a universal approach. *Archives of Disease in Childhood* 92(1):34-8.
- Begg S, Vos T, Barker B, Stevenson C, Stanely L & Lopez A 2007. The burden of disease and injury in Australia 2003. Cat. no. PHE 82. Canberra: AIHW.
- Berg P & Coniglio D 2006. Oral health in children overlooked and undertreated. *Journal of the American Academy of Physician Assistants* 19(4):40-52.
- Berry JG & Harrison JE 2007. Hospital separations due to injury and poisoning, Australia 2003-04. Cat. no. INJCAT 88. Adelaide: AIHW.
- Bhatia SK & Bhatia SC 2007. Childhood and adolescent depression. *American Family Physician* 75(1):73-80.
- Bickel R & Campbell A 2002. Mental health of adolescents in custody: the use of the 'Adolescent Psychopathology Scale' in the Tasmanian context. *Australian and New Zealand Journal of Psychiatry* 36(5):603-9.
- Burns DM 2003. Tobacco related diseases. *Seminars in Oncology Nursing* 19(4):244-9.
- Byard RW 2001. Inaccurate classification of infant deaths in Australia: a persistent and pervasive problem. *Medical Journal of Australia* 175:5-7.
- Cashmore J & Ainsworth F 2004. Audit of Australian out-of-home care research. *Child and Family Welfare Association of Australia*. Sydney: Association of Children's Welfare Agencies.
- CDCP (Centers for Disease Control and Prevention) 2004. The health consequences of smoking: a report of the Surgeon General. Washington DC: CDCP.
- Centre for Community Child Health & Telethon Institute of Child Health Research 2007. Australian Early Development Index: Building better communities for children. Australian results 2004-2006. Melbourne: Centre for Community Child Health and Telethon Institute of Child Health Research.
- Centre for Community Child Health & The Smith Family 2004. Let's read: literature review. Viewed 18 December 2007, <[www.letsread.com.au/pages/documents/LetsRead\\_LitReview.pdf?PHPSESSID=b547fbfd8160e5bfa2f65d4036892886](http://www.letsread.com.au/pages/documents/LetsRead_LitReview.pdf?PHPSESSID=b547fbfd8160e5bfa2f65d4036892886)>.
- Chan-Yeung M & Dimich-Ward H 2003. Respiratory health effects of exposure to environmental tobacco smoke. *Respirology* 8(2):131-9.
- Chomitz VR, Cheung LWY & Lieberman E 1995. The role of lifestyle in preventing low birth weight. *The Future of Children* 5(1):121-38.
- Chong J, Craig M, Cameron F, Clarke C, Rodda C, Donath S et al. 2007. Marked increase in Type 1 diabetes mellitus incidence in children aged 0-14 yr in Victoria, Australia, from 1999 to 2002. *Pediatric Diabetes* 8:67-73.
- Colder CR, Mott J, Levy S & Flay B 2000. The relation of perceived neighbourhood danger to childhood aggression: a test of mediating mechanisms. *American Journal of Community Psychology* 28(1):83-103.

- Cole TJ, Bellizzi MC, Flegal KM & Dietz WH 2000. Establishing a standard definition for child overweight and obesity worldwide: international survey. *British Medical Journal* 320(7244):1240-5.
- Coulton CJ, Korbin JE & Su M 1996. Measuring neighbourhood context for young children in an urban area. *American Journal of Community Psychology* 24(1):5-32.
- Craig M, Femia G, Broyda V, Lloyd M & Howard N 2007. Type 2 diabetes in Indigenous and non-Indigenous children and adolescents in New South Wales. *Medical Journal of Australia* 186(10):497-9.
- Difranza JR & Wellman RJ 2003. Preventing cancer by controlling youth tobacco use. *Seminars in Oncology Nursing* 19(4):261-7.
- Eme RF 2007. Sex differences in child-onset, life-course-persistent conduct disorder. A review of biological influences. *Clinical Psychology Review* 27:607-27.
- Ferguson KM 2006. Social capital and children's wellbeing: a critical synthesis of the international social capital literature. *International Journal of Social Welfare* 15(1):2-18.
- Freemantle C, Read A, de Klerk N, Charles A, McAullay D & Stanley F 2005. Interpretation of recent sudden infant death syndrome rates in Western Australia. *Journal of Paediatric and Child Health* 41:669-70.
- Goodman R 2001. Psychometric properties of the Strengths and Difficulties Questionnaire. *Journal of the American Academy of Child and Adolescent Psychiatry* 40(11):1337-45.
- Guo SS, Wu W, Chumlea WC & Roche AF 2002. Predicting overweight and obesity in adulthood from body mass index values in childhood and adolescence. *American Journal of Clinical Nutrition* 76:653-8.
- Harrison L & Ungerer J 2005. What can the longitudinal study of Australian children tell us about infants' and 4-5 year olds' experience of early childhood education and care. *Family Matters* 72:26-35.
- Haynes A, Bower C, Bulsara M, Jones T & Davis E 2004. Continued increase in the incidence of childhood Type 1 diabetes in a population-based Australian sample (1985-2002). *Diabetologia* 47(5):866-70.
- Henley G, Kreisfeld R & Harrison JE 2007. Injury deaths, Australia, 2003-04. Injury research and statistics series number 31. Cat. no. INJCAT 89. Adelaide: AIHW.
- Hills AP, King NA & Armstrong TP 2007. The contribution of physical activity and sedentary behaviours to the growth and development of children and adolescents: implications for overweight and obesity. *Sports Medicine* 37(6):533-45.
- Hopkins GL, McBride D, Marshak HH, Freier K, Stevens JV Jr, Kannenberg W et al. 2007. Developing healthy kids in healthy communities: eight evidence-based strategies for preventing high-risk behaviour. *Medical Journal of Australia* 186(Suppl 10):S70-S3.
- Horner B, Downie J, Hay D & Wichmann H 2007. Grandparent-headed families in Australia. *Family Matters* 76:76-84.
- Hunt CE & Hauck FR 2006. Sudden infant death syndrome. *Canadian Medical Association Journal* 174(13):1861-9.
- Jackson S 2001. Reducing risk and promoting resilience in vulnerable children. IUC [Inter-University Centre] *Journal of Social Work Theory and Practice*. Viewed 18 December 2007, <[www.bemidjistate.edu/academics/publications/social\\_work\\_journal/issue04/articles/jackson.html](http://www.bemidjistate.edu/academics/publications/social_work_journal/issue04/articles/jackson.html)>.



- Julvez J, Ribas-Fito N, Torrent M, Fornis M, Gracia-Esteban R & Sunyer J 2007. Maternal smoking habits and cognitive development of children at age 4 years in a population-based birth cohort. *International Journal of Epidemiology* 36:825–32.
- Klein LG 2006. Using indicators of school readiness to improve public policy for young children. In: Ben-Arieh A & Goerge R (eds.). *Indicators of children's well-being: understanding their role, usage and policy influence*. Dordrecht, Netherlands: Springer, 105–29.
- Kreisfeld R & Harrison JE 2005. Injury deaths, Australia, 1999. Injury research and statistics series number 24. Cat. no. INJCAT 67. Adelaide: AIHW.
- Kumada T, Jiang Y, Cameron DB & Komuro H 2007. How does alcohol impair neuronal migration? *Journal of Neuroscience Research* 85:465–70.
- Laurel K & Wolraich ML 2007. ADHD service use and patterns in youth. *Ambulatory Pediatrics* 7:107–20.
- Laws P, Grayson N & Sullivan EA 2006. Smoking and pregnancy. AIHW Cat. no. PER 33. Sydney: AIHW National Perinatal Statistics Unit.
- Lee V & Hoaken PNS 2007. Cognition, emotion, and neurobiological development: mediating the relation between maltreatment and aggression. *Child Maltreatment* 12(3):281–98.
- Lowenstein LF 2005. Youths who intentionally practise self harm. *International Journal of Adolescent Medicine and Health* 17(3):225–30.
- Lubman DI, Hides L, Yücel M & Toumbourou JW 2007. Intervening early to reduce developmentally harmful substance use among youth populations. *Medical Journal of Australia* 187(7 Suppl):S22–5.
- Lynch M, Buckman J & Krenske L 2003. *Youth justice: criminal trajectories*. Canberra: Australian Institute of Criminology.
- Makkai T & Payne J 2003. *Drugs and crime: a study of incarcerated male offenders*. Research and public policy series no. 52. Canberra: Australian Institute of Criminology.
- Malamitsi-Puchner A & Boutsikou T 2006. Adolescent pregnancy and perinatal outcome. *Pediatric Endocrinology Reviews* 3(Suppl 1):170–1.
- Mathers CD, Fat DM, Inoue M, Rao C & Lopez AD 2005. Counting the dead and what they died from: an assessment of the global status of cause of death data. *Bulletin of the World Health Organization* 83:171–7.
- McConnell D, Llewellyn G, Mayes R, Russo D & Honey A 2003. Developmental profiles of children born to mothers with intellectual disability. *Journal of Intellectual and Developmental Disability* 28(2):1–14.
- McDermott L, Russell A & Dobson A 2002. *Cigarette smoking in Australian women in Australia 2002, National Tobacco Strategy 1999 to 2002*. Canberra: Commonwealth Department of Health and Ageing
- MCEETYA (Ministerial Council on Education, Employment, Training and Youth Affairs) 2007. *2006 National Report on Schooling in Australia: National Benchmark Results Reading, Writing and Numeracy Years 3, 5 and 7*. Melbourne: MCEETYA.
- McMahon SK, Haynes A, Ratman M, Grant MT, Carne CL, Jones TW et al. 2004. Increase in Type 2 diabetes in children and adolescents in Western Australia. *Medical Journal of Australia* 180:459–61.

- Molnar BE, Buka SL & Kessler RC 2001. Child sexual abuse and subsequent psychopathology: results from the National Comorbidity Survey. *American Journal of Public Health* 91(5):753–60.
- Mukherjee S, Sloper P & Lewin R 2002. The meaning of parental illness to young people: the case of inflammatory bowel disease. *Child Care Health and Development* 28:479–85.
- Must A & Strauss RS 1999. Risks and consequences of childhood and adolescent obesity. *International Journal of Obesity* 23(Suppl 2):S2–S11.
- NCSIMG (National Community Services Information Management Group) Children's Services Data Working Group 2007. Final report on the development of the Children's Services National Minimum Data Set. Cat. no. CFS 6 Canberra: AIHW.
- NHMRC (National Health and Medical Research Council) 1997. The health effects of passive smoking: a scientific information paper. Canberra: NHMRC.
- NHMRC 2001. Australian alcohol guidelines: health risks and benefits, October 2001. Canberra: NHMRC.
- NHMRC 2003. Dietary guidelines for children and adolescents in Australia incorporating the infant feeding guidelines for health workers. Canberra: NHMRC.
- NHMRC 2007. Australian alcohol guidelines for low-risk drinking: draft for public consultation, October 2007. Viewed 15 January 2008, <[www.nhmrc.gov.au/consult/\\_files/draft\\_australian\\_alcohol\\_guidelines.pdf](http://www.nhmrc.gov.au/consult/_files/draft_australian_alcohol_guidelines.pdf)>.
- NHPC (National Health Performance Committee) 2004. National report on health sector performance indicators 2003. Canberra: AIHW.
- NIEER (National Institute for Early Education Research) 2005. Promoting children's social and emotional development through preschool. Viewed 11 December 2007, <[nieer.org/docs/?DocID=125](http://nieer.org/docs/?DocID=125)>.
- Olds T, Ridley K, Wake M, Hesketh K, Waters E, Patton G et al. 2007. How should activity guidelines for young people be operationalised? *International Journal of Behavioural Nutrition and Physical Activity* 4(1):43. Viewed 27 February 2008, <[www.ijbnpa.org/content/4/1/43](http://www.ijbnpa.org/content/4/1/43)>.
- Paolucci EO, Genuis ML & Violato C 2001. A meta-analysis of the published research on the effects of child sexual abuse. *Journal of Psychology* 135(1):17–36.
- Patel V, Flisher AJ, Hetrick S & McGorry P 2007. Mental health of young people: a global public-health challenge. *Lancet* 369(9569):1302–13.
- Patton N 2003. Parental drug use – the bigger picture: a review of the literature. Melbourne: The Mirabel Foundation.
- Penman R 2006. The 'growing up' of Aboriginal and Torres Strait Islander children: a literature review. Occasional paper no. 15. Canberra: Australian Government Department of Families, Community Services and Indigenous Affairs.
- Pitt W & Cass D 2001. Preventing children drowning in Australia. *Medical Journal of Australia* 175:603–4.
- Pollard AJ 2007. Childhood immunisation: what is the future? *Archives of Disease in Childhood* 92(5):426–33.
- Poulos LM, Toelle BG & Marks GB 2005. The burden of asthma in children: an Australian perspective. *Paediatric Respiratory Reviews* 6:20–7.
- Rick S & Douglas DH 2007. Neurobiological effects of childhood abuse. *Journal of Psychosocial Nursing* 45(4):47–54.

- Rigby M & Köhler L (eds.) 2002. Child Health Indicators of Life and Development (CHILD): report to the European Commission. Keele, United Kingdom: Centre for Health Planning and Management and Health and Consumer Protection Directorate, European Commission.
- Sawyer M, Arney F, Baghurst P, Clark JJ, Graetz BW, Kosky RJ et al. 2000. The mental health of young people in Australia. Canberra: Commonwealth Department of Health and Aged Care.
- Schack-Nielsen L & Michaelsen K 2006. Breastfeeding and future health. *Current Opinion in Clinical Nutrition and Metabolic Care* 9:289-96.
- Schnitzer G 2006. Prevention of unintentional childhood injuries. *American Family Physician* 74(11):1864-9.
- Schwartz D & Proctor LJ 2000. Community violence exposure and children's social adjustment in the school peer group: the mediating roles of emotion regulation and social cognition. *Journal of Consulting and Clinical Psychology* 68(4):670-83.
- SCRGSP (Steering Committee for the Review of Government Service Provision) 2005. Report on government services 2005. Canberra: Productivity Commission.
- SCRGSP 2007. Report on government services 2007. Canberra: Productivity Commission.
- Shonkoff JP & Phillips DA 2000. From neurons to neighbourhoods: the science of early childhood development. Washington, DC: National Academy Press.
- SIDS and Kids 2004. Adoption of a national consensus for the definition of SIDS and autopsy approach to unexpected infant death. First Australian SIDS Pathology Workshop. Canberra, March 22-23.
- Silburn SR, Zubrick SR, Garton A, Gurrin L, Burton P, Dalby R et al. 1996. Western Australia Child Health Survey: Family and Community Health. Perth: Australian Bureau of Statistics & TVW Telethon Institute For Child Health Research.
- South Australian Department of Education and Children's Services 2006. Student voice: issues affecting attendance. Viewed 6 June 2008, <[www.decs.sa.gov.au/speced2/pages/attendance/](http://www.decs.sa.gov.au/speced2/pages/attendance/)>.
- Spector ND & Kelly SF 2006. Pediatrician's role in screening and treatment: bullying, prediabetes, oral health. *Current Opinion in Pediatrics* 18:661-70.
- Springer A, Parcel G, Baumler E & Ross M 2006. Supportive social relationships and adolescent health risk behaviour among secondary school students in El Salvador. *Social Science and Medicine* 62:1628-40.
- Stewart A, Dennison S & Waterson E 2002. Pathways from child maltreatment to juvenile offending. *Trends and issues in crime and criminal justice* no. 241. Canberra: Australian Institute of Criminology.
- Taplin C, Craig M, Lloyd M, Taylor C, Crock P, Silink M et al. 2005. The rising incidence of childhood Type 1 diabetes in New South Wales, 1990-2002. *Medical Journal of Australia* 183(5):243-6.
- Thomson NC 2007. The role of environmental tobacco smoke in the origins and progression of asthma. *Current allergy and asthma reports* 7(4):303-9.
- United States Department of Health and Human Services 2007. The Surgeon General's call to action to prevent and reduce underage drinking. Rockville, MD: US Department of Health and Human Services, Public Health Service, Office of the Surgeon General.
- Victorian Department of Human Services 2007. Reduced absences from primary school. Viewed 17 December 2007, <[www.office-for-](http://www.office-for-)

children.vic.gov.au/catalogue\_of\_evidence/sections/absenteeism/reduced\_absences\_from\_primary\_school>.

Wake M 2002. Newborn hearing screening: decision time for Australia. *Medical Journal of Australia* 177(4):172-3.

Wake M, Poulakis Z, Hughes EK, Carey-Sargeant C & Rickards FW 2005. Hearing impairment: a population study of age at diagnosis, severity, and language outcomes at 7-8 years. *Archives of Disease in Childhood* 90:238-44.

Waters EB & Baur LA 2003. Childhood obesity: modernity's scourge. *Medical Journal of Australia* 178(9):422-3.

WHO (World Health Organization) 2004. *World report on road traffic injury prevention*. Geneva: WHO.

WHO (World Health Organization) 2008. *Disabilities*. Viewed 2008, <[www.who.int/topics/disabilities/en/](http://www.who.int/topics/disabilities/en/)>.

World Bank 2000. *Using immunization coverage rates for monitoring health sector performance*. Washington, DC: World Bank.

Yoshinaga-Itano C 2003. Early intervention after universal neonatal hearing screening: impact on outcomes. *Mental Retardation and Developmental Disabilities Research Reviews* 9:252-66.

Ziegler DS, Pozza LD, Waters KD & Marshall GM 2005. Advances in childhood leukaemia: successful clinical-trials research leads to individualised therapy. *Medical Journal of Australia* 182:78-81.