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SYMBOLS AND USAGES

billion	1,000 million
kg	kilogram
m	metre
n.a.	not available
n.e.c	not elsewhere classified
n.p.	not published
n.y.a.	not yet available
no.	number
'000	thousand
'000m	thousand million
$	dollar
$m	million dollars
$b	billion dollars
$US	American dollar
%	per cent
*	estimate has a relative standard error of 25% to 50% and should be used with caution
**	estimate has a relative standard error of greater than 50% and is considered too unreliable for general use
. .	not applicable
—	nil or rounded to zero (including null cells)

Where figures have been rounded, discrepencies may occur between the sums of the component items and totals.

Australia's babies

Over the past twenty years, the infant mortality rate has halved, from 9.9 deaths per 1,000 live births in 1985, to 5.0 in 2005.

Australian babies today have better health prospects for their first year of life than any previous generation. Over the past century, improved sanitation and hygiene, better ante and post-natal care, greater parental education, the introduction of universal immunisation programs and improved medical technology have all contributed to both dramatically reducing the infant mortality rate and preventing the development of long term health problems in infants. However, despite great improvements to infant health over recent decades, there remain a range of interventions and behaviours that can affect health outcomes for babies.

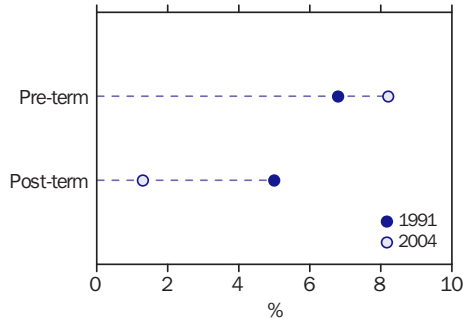
It is acknowledged that the biological, social, family, community and economic conditions of children are important predictors of their future health, educational, behavioural, criminal and psycho-social outcomes.[1] The Australian Government has recognised the importance of early childhood health and wellbeing in ensuring improved outcomes for Australian children in the development of a National Agenda for Early Childhood.[2] This article examines the general characteristics of Australian babies aged under one year, with a particular focus on factors affecting, and improvements to, infant health.

Babies: selected characteristics

Over the last two decades, the number of babies born each year has averaged around a quarter of a million. In 2005 there were 259,800 births, compared with 247,300 in 1985. The age of the mothers of these babies has been steadily increasing over the past two decades, from a median age of 27.3 years in 1985 to 30.7 in 2005 (for more information on recent fertility trends, refer to *Australian Social Trends 2007,* Recent increases in Australia's fertility, pp. 9–12).

The ratio of male to female births has remained stable over this period, with 105.6 male births recorded for every 100 female births in 2005, compared to 105.2 for every 100 births in 1985.

Gestation of baby



Source: Australia's mothers and babies 1991 and *Australia's mothers and babies 2004* (AIHW cat. no. PER 34).

Data sources and definitions

Data used in this article are drawn from multiple sources, with the main data sources being the ABS Births, Deaths and Health collections, the Australian Childhood Immunisation Register, and the Australian Institute of Health and Welfare's (AIHW) National Perinatal Data Collection.

A *confinement* is a pregnancy which results in at least one live birth.

A *multiple birth* is a confinement which results in two or more babies, at least one of which is live-born.

Gestation refers to the duration of pregnancy in completed weeks:

- *Pre-term* refers to babies born at less than 37 weeks gestation.
- *At term* refers to babies born between 37 and 41 weeks gestation.
- *Post-term* refers to babies born at or after 42 weeks gestation.

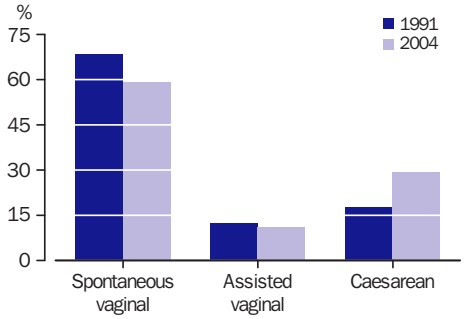
A *caesarean section* is an operative birth through an abdominal incision.

A *separation* is an episode of care for a patient admitted to hospital.

...gestation

The length of gestation is considered to be a key indicator of infant health, with pre-term birth being associated with poorer health outcomes in babies. Over the thirteen years to 2004 a decrease in the number of post-term births (from 5% in 1991 to 1% in 2004) and a marginal increase in the percentage of pre-term births (from 7% in 1991 to 8% in 2004) have contributed to a shorter average length of gestation. In 2004 the average gestation period was 38.8 weeks, a decrease from 39.2 weeks in 1991. The percentage of babies born at term increased, from 88% in 1991 to 91% in 2004.

Birth method



Source: Australia's mothers and babies 1991 and *Australia's mothers and babies 2004* (AIHW cat. no. PER 34).

...birth method

Most babies born in Australia are born by spontaneous vaginal birth. In 2004, 59% of women gave birth in this way, a fall from 68% in 1991. Much of this decline can be explained by the increasing use of caesarean section for delivery, with 29% of women giving birth by caesarean section in 2004, a substantial increase from 18% in 1991. Factors associated with increased caesarean rates are advancing maternal age, multiple pregnancy, low birthweight, breech presentation and private accommodation status in hospital.[3] Around one in nine mothers (11%) had an assisted vaginal delivery, with forceps or vacuum extraction being used to assist the birth, a decrease from 13% in 1991.

...birthweight

The birthweight of a child is widely accepted as a key indicator of infant health and can be affected by a number of factors, including the age, size, health and nutritional status of the mother, pre-term birth, and tobacco smoking during pregnancy.[4, 5] In 2004 the average birthweight for babies born in Australia was 3,370 grams, similar to the average of 3,350 grams recorded in 1991.

Low birthweight is generally associated with poorer health outcomes, including increased risk of illness and death, longer periods of hospitalisation after birth, and increased risk of developing significant disabilities.[5] A baby is defined as having a low birthweight if they are born weighing less than 2,500 grams.[5] Low birthweight occurred in 6% of liveborn babies born in both 1991 and 2004.

...assisted fertility

An increasing number of babies today are being born with the aid of assisted reproduction technology (ART), which uses

Indigenous babies

Health outcomes for Indigenous babies remain significantly poorer than those experienced by the general Australian population.

Adverse health outcomes are far more prevalent, with infant mortality nearly triple the non-Indigenous rate. Indigenous babies are also more likely to have a lower birthweight, be born prematurely, and are less likely to be fully immunised, or breastfed past 6 months of age.

Mothers of Indigenous babies have a median age that is 6 years younger than mothers of non-Indigenous babies, and are more than twice as likely to smoke during pregnancy. [6]

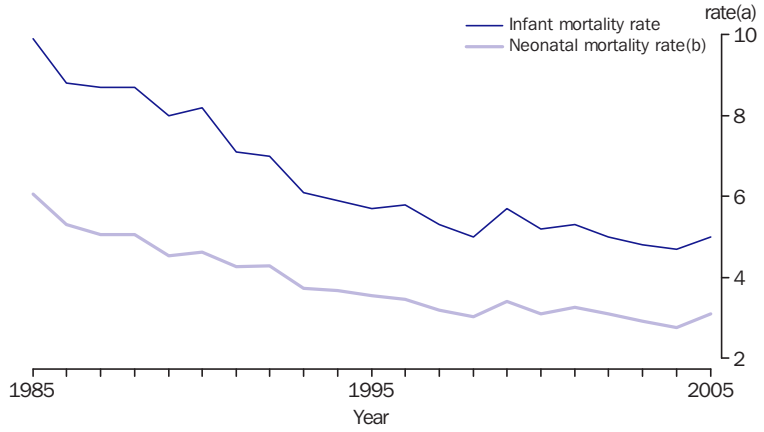
Babies: selected indicators

	Units	*Indigenous*	*Non-Indigenous*
Median age of mother(a) – 2005	years	24.5	30.9
Average birthweight(b) – 2004	grams	3,160	3,380
Average gestation(b) – 2004	weeks	38.3	38.9
Pre-term birth(b) – 2004	%	14.3	7.9
Infant mortality rate (a)(c)(d) – 2005	rate	12.7	4.5
Babies fully immunised at 6 to 12 months of age – 2001	%	84.0(e)	94.8
Babies breastfed for 6 months or more – 2004–05	%	24.2(e)	29.8

(a) Some Indigenous births and deaths are not identified as such when they are registered. Caution should therefore be exercised when undertaking analysis of Indigenous fertility and mortality. For further information see *Births, Australia 2005* (ABS cat. no. 3301.0) and *Deaths, Australia 2005* (ABS cat. no. 3302.0).
(b) Data for Tasmania are not available and have not been included.
(c) Infant deaths per 1,000 live births.
(d) Data for Queensland, South Australia, Western Australia and the Northern Territory combined.
(e) For Indigenous persons in non-remote areas only.

Source: ABS Births and Deaths collections; 2001 and 2004-05 National Health Survey; 2001 National Health Survey (Indigenous); 2004-05 National Aboriginal and Torres Strait Islander Health Survey; *Australia's mothers and babies 2004* (AIHW cat. no. PER 34); AIHW 2007 National Perinatal Data Collection.

Infant and neonatal mortality rates(a)(b)



(a) Deaths per 1,000 live births.
(b) The neonatal mortality rate measures the number of deaths for infants within the first 28 days of life (that weigh at least 400 grams or have a gestational age of 20 weeks or more) per 1,000 live births.

Source: ABS Births collection, ABS Deaths collection.

medical technology such as in-vitro fertilisation or other fertility treatments to assist in the conception of a child. In 2004, an estimated 2.5% of all births in Australia were the result of ART treatment. Between 1989 and 2004, the number of live births occurring in Australia and New Zealand as a result of ART treatment increased by 74%.[7, 8]

Mothers in Australia and New Zealand who conceive in this way tend to be older than mothers in general, with an average age at delivery of 34.5 years in 2004, compared with an average age of 29.7 years for all Australian mothers in 2004.[7] Pregnancies commenced using ART are also substantially more likely to result in a multiple birth, with 16% of all deliveries resulting in a multiple birth.[7]

Infant mortality: main causes — 2005

Cause of death	no.	rate(a)	%
Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery	356	1.4	27.3
Disorders related to short gestation and low birthweight, not elsewhere classified	90	0.3	6.9
Respiratory and cardiovascular disorders specific to the perinatal period	104	0.4	8.0
Infections specific to the perinatal period	35	0.1	2.7
Haemorrhagic and haematological disorders of fetus and newborn	27	0.1	2.1
Congenital malformations of the nervous system	47	0.2	3.6
Congenital malformations of the circulatory system	86	0.3	6.6
Congenital malformations of the respiratory system	23	0.1	1.8
Sudden Infant Death Syndrome	87	0.3	6.7
Total infant mortality rate(b)	**1 302**	**5.0**	**100.0**

(a) Infant deaths per 1,000 live births.
(b) This table presents data for selected main causes only, therefore components do not add to the total.

Source: Causes of Death, Australia, 2005 (ABS cat. no. 3303.0).

...multiple births

The percentage of confinements that result in multiple births has increased over the past 20 years, from 1.1% in 1985 to 1.7% in 2005. The increased use of ART is a major factor in the higher rate of multiple births observed during this period. Babies born as the result of a multiple birth are more likely to have a low birthweight and short gestation, and experience an increased risk of illness, mortality and longer periods of hospitalisation.[9, 10] Twins born in 2004 weighed on average one kilogram less than their singleton counterparts, with an average weight of 2,410 grams, compared with 3,410 grams for singleton babies. Low birthweight occurred in half (50%) of all twin births and nearly all (95%) triplet and higher order multiple births in 2004, compared with just 5% of singleton births.

Infant mortality and illness

...infant and neonatal mortality

Infant mortality refers to the deaths of children before their first birthday and is a key indicator of infant health, in addition to providing insight into the broader social conditions of the population. Over the past twenty years, the infant mortality rate (the number of infant deaths per 1,000 live births) has halved, from 9.9 in 1985 to 5.0 in 2005. The neonatal mortality rate (the death of a child during their first 28 days of life, per 1,000 live births) has also halved during this period, from 6.1 in 1985 to 3.1 in 2005. Factors that have contributed to these declines include improved medical care and technology, such as developments in neonatal intensive care, and a major reduction in the number of deaths from Sudden Infant Death Syndrome (SIDS).

Between 1985 and 2005, deaths from SIDS declined by 83%, from 523 deaths in 1985 to 87 in 2005. The decline in SIDS deaths in Australia during this period is strongly associated with a public health campaign launched by SIDS and Kids (formerly the National SIDS Council of Australia).[11] The campaign raised awareness of the risk factors which increased the likelihood of sudden infant death and promoted the importance of safer practices (such as placing the baby to sleep on their back) in reducing the risk of SIDS.

The actual birth itself can be a mortality risk for babies, with fatalities caused by complications of pregnancy, labour and delivery and maternal factors being a major cause of infant death, accounting for 27% of deaths. Respiratory and cardiovascular disorders are also a major cause of infant death, causing 8% of deaths. In addition, conditions related to low birthweight and short gestation, congenital and genetic conditions, communicable diseases, accidents and injury, infections and SIDS are significant causes of death and ill health in infants.

...infant illness

An analysis of data from the Australian Institute of Health and Welfare's National Hospital Morbidity Database shows that disorders relating to the length of gestation and fetal growth were the most common cause of hospital separations for infants in 2004–05. This cause accounted for 15% of hospital separations for infants in 2004–05, an increase from 11% in 1994–95.

Respiratory conditions, most commonly acute bronchiolitis, were the next most common cause of hospitalisation, responsible for 13% of separations in 2004–05, down from 14% in 1994–95. Infectious and parasitic diseases accounted for 6% of separations, unchanged from 1994–95. Hospital separations relating to injuries and poisoning also did not change during this period, accounting for 2% of separations in both 2004–05 and 1994–95.

Breastfeeding

Breastfeeding has been shown to provide significant health benefits for both mother and child. For babies, breastfeeding increases resistance to infection and disease, reduces the likelihood of allergic diseases such as asthma and eczema, and is also associated with higher IQ scores.[13, 14] Mothers who breastfeed tend to experience a quicker recovery from childbirth and reduced risk of breast cancer before menopause.[13] For these reasons both the Australian Government and the World Health Organisation recommend that babies are fed only breastmilk until 6 months of age.[13]

At the beginning of the previous century before the widespread use of infant formula, breastfeeding or the use of a wet nurse was the most common way to feed an infant. There is evidence that most Australian newborns were breastfed before the 1940's. However, by the 1970's only 40–50% of babies were breastfed.[14]

Infant mortality: an international perspective

Considerable variation exists in infant mortality rates internationally. In the developing world, where infant mortality rates are high, infectious diseases, diarrhoea and malnutrition are still common causes of infant death. In developed countries, where infant mortality rates are low, illnesses relating to preterm birth and congenital causes are more likely to be major causes of infant death.

Significant differences also exist in neonatal mortality rates: the chances of a woman (during her childbearing years) losing a baby during its first 28 days of life is 1 in 5 in Africa, compared with 1 in 125 in more developed countries.[12]

Infant mortality rates, selected countries — 2004

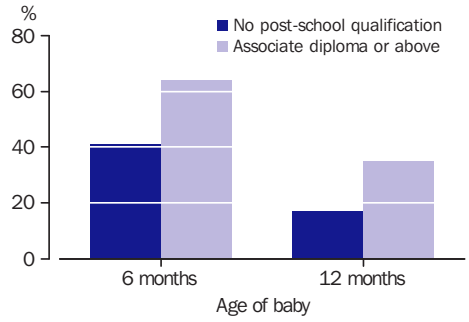
Country	Infant mortality rate(a)
Australia	5
Canada	5
China	26
France	4
India	62
Japan	3
New Zealand	5
Sweden	3
Switzerland	4
United Kingdom	5
United States of America	6
African Region	100
Region of the Americas	21
South-East Asia Region	56
European Region	18
Eastern Mediterranean Region	69
Western Pacific Region	25

(a) Infant deaths per 1,000 live births.

Source: World Health Organisation, *World Health Statistics 2006*, viewed 30 April 2007, <http:// www.who.int/whosis/whostat2006_mortality.pdf>.

Since then the prevalence of breastfeeding has increased along with growing public awareness of the importance of breastfeeding. In 2004–05, 88% of children aged under 3 years had ever been breastfed, receiving breastmilk either exclusively, or as part of their diet in combination with breastmilk substitutes and/or solid food.

Breastfeeding rates(a) by education level of mother — 2001



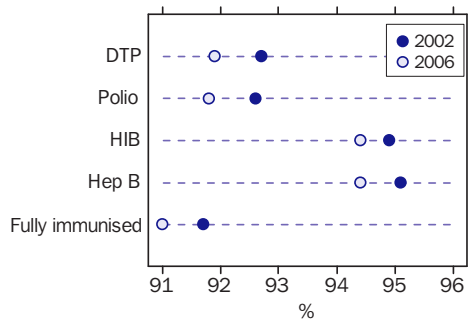
(a) Includes babies breastfed exclusively, babies receiving breastmilk in combination with breastmilk substitutes, and babies receiving breastmilk in combination with solid food.

Source: ABS 2001 National Health Survey.

Some population groups are more likely to continue with breastfeeding than others, with older and more educated mothers being more likely to still be breastfeeding their children (either exclusively or in combination with breastmilk substitutes and/or solid food) at 6 and 12 months of age in 2001. For mothers aged 30 years or over, 54% were still breastfeeding their baby at 6 months of age, compared with 38% for mothers aged 18–29 years. Mothers aged 30 years or over were also twice as likely to be breastfeeding their babies at 12 months of age (28%) compared with mothers aged 18–29 years (14%).

In 2001, almost two-thirds (64%) of mothers with a post-school qualification at the level of associate diploma or above were breastfeeding their babies at 6 months of age, compared with 41% of those with no post-school qualification. By the time their babies were 12 months old, nearly twice as many mothers with an associate diploma or above (35%) were still breastfeeding their child compared with women with no post-school qualification (17%).

Vaccination coverage for Australian babies at 12 months of age



Source: Australian Childhood Immunisation Register, viewed 3 May 2007, <http:// www.medicareaustralia.gov.au/ providers/health_statistics/ statistical_reporting.acir.htm>.

Immunisation

Immunisation programs for children are recognised as a highly effective public health intervention, greatly reducing the incidence of epidemics of infectious diseases. As a result of widespread vaccination programs, many once common childhood illnesses such as polio and diphtheria are no longer major causes of death and disability for Australian children.

Babies aged under 12 months currently experience high rates of vaccination, although overall vaccination coverage has declined marginally in recent years. In 2006, 91% of children in this age group were fully immunised, compared with 92% in 2002.

An analysis of vaccines administered under the National Immunisation Program Schedule reveals that 92% of children at 12 months of age in 2006 had received the DTP vaccine, which provides immunisation against diphtheria, tetanus and pertussis (whooping cough), compared with 93% in 2002. For individual vaccines, 92% were immunised against polio (93% in 2002), 94% against Haemophilius influenzae type B (HIB), slightly less than in 2002 (95%), and 94% were immunised against Hepatitis B (95% in 2002).

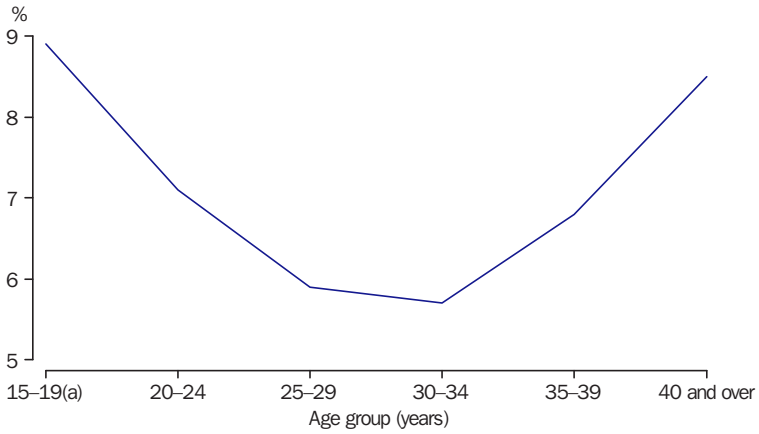
Mothers

As discussed above, the health of the mother can affect infant health both during gestation and after birth. A mother who is healthy, receives good nutrition and does not smoke or drink at risky levels, is more likely to give birth to a healthy child.

...risk factors

Smoking is one major risk factor that can adversely affect infant health, increasing the likelihood of low birthweight, pre-term birth, fetal and neonatal death and SIDS.[6] Women are less likely to smoke during pregnancy than women of the same age in the general population, with 17% of women giving birth in 2003 (excluding Victoria, Tasmania and Queensland) smoking during their pregnancy, compared with 25% of women in the childbearing age group of 15–44 years in 2004. Younger women are more likely to smoke during pregnancy, with 42% of mothers aged under 20 reporting smoking during pregnancy, compared with 11% of mothers aged over 40 years.

Percentage of babies born with low birthweight by age of mother — 2004



(a) Includes liveborn babies born to women aged less than 15 years.

Source: Australian Institute of Health and Welfare 2007 National Perinatal Data Collection.

Drug taking and excessive use of alcohol are also associated with poorer infant outcomes. Illicit drug taking during pregnancy is associated with increased risk of low birthweight, prematurity, growth retardation and birth defects, while heavy drinking during pregnancy is associated with fetal alcohol syndrome.[15, 16] In 2004, 6% of women who were pregnant and/or breastfeeding in the past 12 months reported using an illicit drug whilst pregnant and/or breastfeeding, and 47% reported having used alcohol whilst pregnant and/or breastfeeding. The proportion of women who drink at risky levels during pregnancy is not known.

The age of mother at birth can also affect health outcomes. Very young and older mothers are more likely to give birth to babies with shorter gestation times and lower birthweights than the average. In 2004, 6% of babies were born with a low birthweight. The percentage of babies born with a low birthweight rose to 9% both for babies born to mothers aged 15–19 years and mothers aged 40 years and over. The risk of low birthweight increased substantially for babies born to mothers aged over 45 years, with 16% of babies in this category being born with a low birthweight (although this is based on a relatively small number of births).

Endnotes

1 Australian Institute of Health and Welfare 2005, *A picture of Australia's children*, cat. no. PHE 58, AIHW, Canberra.

2 Commonwealth Task Force on Child Development, Health and Wellbeing, *The National Agenda for Early Childhood: A Draft Framework*, FaCSIA, viewed 24 November 2006, <http://www.facsia.gov.au/internet/facsinternet.nsf/via/early_childhood/$File/naec_aug04.pdf>.

3 Ford, J, Nassar, N, Sullivan, EA, Chambers, G and Lancaster, P (for Australian Institute of Health and Welfare) 2003, *Reproductive health indicators Australia 2002,* cat. no. PER 20, AIHW, Canberra.

4 Australian Institute of Health and Welfare 2006, *Chronic diseases and associated risk factors in Australia,* cat. no. PHE 81, AIHW, Canberra.

5 Laws, PJ, Grayson, N and Sullivan, EA (for Australian Institute of Health and Welfare) 2006, *Australia's mothers and babies 2004*, cat. no. PER 34, AIHW, Sydney.

6 Laws, PJ, Grayson, N and Sullivan, EA (for Australian Institute of Health and Welfare) 2006, *Smoking and pregnancy,* cat. no. PER 33, AIHW, Sydney.

7 Wang, YA, Dean, JH, Grayson, N and Sullivan, EA (for Australian Institute of Health and Welfare) 2006, *Assisted reproduction technology in Australia and New Zealand 2004,* cat. no. PER 39, AIHW, Sydney.

8 Australian Institute of Health 1991, *Assisted conception, Australia and New Zealand 1989,* AIHW, Sydney.

9 Laws, PJ and Sullivan, EA (for Australian Institute of Health and Welfare) 2005, *Australia's mothers and babies 2003*, cat. no. PER 29, AIHW, Sydney.

10 Rowbotham, J 'Double trouble over high rate of IVF twin births', *The Sydney Morning Herald*, 30 November 2006.

11 Al-Yaman, F, Bryant, M and Sargeant, H (for Australian Institute of Health and Welfare) 2002, *Australia's Children: Their health and wellbeing 2002,* cat. no. PHE 36, AIHW, Canberra.

12 World Health Organisation 2005, *Facts and Figures from the World Health Report 2005,* WHO, viewed 8 January 2007, <http://www.who.int/whr/2005/media_centre/facts_en.pdf>.

13 National Health and Medical Research Council 2003, *Dietary Guidelines for Children and Adolescents in Australia, incorporating the Infant Feeding Guidelines for Health Workers,* Commonwealth of Australia, Canberra.

14 Australian Bureau of Statistics 1997, *Australian Social Trends,* 'Protecting the health of our children', cat. no. 4102.0, ABS, Canberra.

15 Better Health Channel 2006, *Pregnancy and drugs,* viewed 12 January 2007, <http://www.betterhealth.vic.gov.au/ bhcv2/bhcarticles.nsf/pages/ Pregnancy_and_drugs>.

16 Department of Health and Ageing 2006, *Maternal and Infant Health,* DoHA, viewed 12 January 2007, <http://www.health.gov.au/internet/wcms/publishing.nsf/ Content/phd-maternal-index>.

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