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Australian Institute of
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Indigenous Early Childhood Development National Partnership Agreement

First annual report on health performance indicators

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*Authoritative information and statistics
to promote better health and wellbeing*

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Australian Institute of Health and Welfare
Canberra

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Contents

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Abbreviations

ABS	Australian Bureau of Statistics
ACCESS	Australian Collaboration for Chlamydia Enhanced Sentinel Surveillance
ACT	Australian Capital Territory
AIHW	Australian Institute of Health and Welfare
BBV	blood-borne virus
CIs	confidence intervals
COAG	Council of Australian Governments
DoHA	(Australian Government) Department of Health and Ageing
ERP	estimated resident population
HIV/AIDS	human immunodeficiency virus infection / acquired immunodeficiency syndrome
ICD-10	International classification of diseases, 10th revision
ICD-10-AM	International statistical classification of diseases and related health problems, 10th revision, Australian modification, 4th edition
IECD NPA	Indigenous Early Childhood Development National Partnership Agreement
NATSISS	National Aboriginal and Torres Strait Islander Social Survey
NCHECR	National Centre in HIV Epidemiology and Clinical Research
NMDS	National Minimum Data Set
NNDSS	National Notifiable Diseases Surveillance System
NPA	National Partnership Agreement
NPDC	National Perinatal Data Collection
NSW	New South Wales
NT	Northern Territory
OATSIH	Office for Aboriginal and Torres Strait Islander Health
PCR	polymerase chain reaction
Qld	Queensland

SA	South Australia
SIDS	sudden infant death syndrome
STIs	sexually transmissible infections
Tas	Tasmania
Vic	Victoria
WA	Western Australia
WHO	World Health Organization

Summary

The first annual report on the health indicators in the Indigenous Early Childhood Development National Partnership Agreement finds areas of improvement in the health of Aboriginal and Torres Strait Islander children and mothers including:

- a 46% decline in infant mortality for Indigenous infants from 2001 to 2010, and a 74% narrowing of the gap between mortality rates for Indigenous and non-Indigenous infants
- a 7% decline in the proportion of low birthweight babies born to Indigenous mothers between 2000 and 2009 and a significant narrowing of the gap between low birthweight babies born to Indigenous and non-Indigenous mothers
- an 84% decline in rates of syphilis among Indigenous teenagers between 1994–96 and 2009–11 and a significant narrowing of the gap between rates of syphilis among Indigenous and non-Indigenous teenagers
- a significant increase in the proportion of Indigenous mothers who attended antenatal care in the first trimester in one jurisdiction (South Australia) between 2007 and 2009 and a significant narrowing of the gap between Indigenous and non-Indigenous mothers who attended antenatal care in the first trimester in that jurisdiction
- a significant decline in the proportion of Indigenous mothers who smoked during pregnancy in one jurisdiction (Tasmania) between 2007 and 2009.

However there are a number of findings which are cause for concern, including:

- lower rates of antenatal care in the first trimester of pregnancy for Indigenous mothers compared to non-Indigenous mothers
- high rates of smoking during pregnancy among Indigenous mothers (52%, or almost 4 times the rate for non-Indigenous mothers)
- rates of syphilis, chlamydia and gonorrhoea that are much higher among Indigenous teenagers compared to non-Indigenous teenagers
- low birthweight is 2.5 times more common among babies born to Indigenous mothers than among babies born to non-Indigenous mothers
- infant mortality rates twice as high for Indigenous infants as for non-Indigenous infants.

Key findings

Antenatal care

- In 2009, in jurisdictions with reliable data (New South Wales, Queensland, South Australia and the Northern Territory), 55% of Indigenous mothers attended at least one antenatal visit in the first trimester.
- Indigenous mothers in these jurisdictions were less likely than non-Indigenous mothers to attend antenatal care in the first trimester (a rate ratio of 0.7).
- Between 2007 and 2009, there was a significant increase (from 41% to 58%) in the proportion of Indigenous mothers in South Australia who attended antenatal care in the first trimester, and a significant narrowing of the gap between Indigenous and non-Indigenous mothers who attended antenatal care in the first trimester in that jurisdiction.

Substance use during pregnancy

- Nationally, over half (52%) of Indigenous women reported smoking during pregnancy in 2009. This was almost 4 times the rate among non-Indigenous mothers.
- Over the period 2007 to 2009, there was a significant (24%) decline in the proportion of Indigenous mothers who smoked during pregnancy was evident in Tasmania.
- Findings from the 2008 NATSISS suggest that, of Indigenous mothers with children aged 0–3 years, 42% smoked during pregnancy, 20% drank alcohol and 5% used illicit drugs.

Low birthweight

- In 2007–2009, 10.8% of liveborn singleton babies born to Indigenous mothers were of low birthweight. This was 2.5 times the rate for babies born to non-Indigenous mothers.
- Over the period 2000 to 2009, there was a significant (7.1%) decline in the proportion of low birthweight babies born to Indigenous mothers, and a significant narrowing of the gap between low birthweight babies born to Indigenous and non-Indigenous mothers. Significant declines were evident in New South Wales and South Australia as well as significant declines in the gap in these jurisdictions.

Infant mortality

- During 2006–2010, the infant mortality rate for Indigenous infants was 8.1 per 1,000 live births which was twice the rate for non-Indigenous infants.
- Over the period 2001 to 2010 there was a 46% decline in the infant mortality rate for Indigenous infants, and a 74% narrowing of the gap between mortality rates for Indigenous and non-Indigenous infants.

Teenage rates of sexually transmissible infections

- For the period 2009–2011, in states and territories with adequate Indigenous notification data, Indigenous teenagers were 30 times more likely than other teenagers to have contracted syphilis, almost 5 times more likely to have contracted chlamydia, and 58 times more likely to have contracted gonorrhoea. Rates of hepatitis B and hepatitis C were 2 and 6 times higher among Indigenous teenagers.

- Between 1994–96 and 2009–11 in Western Australia, South Australia and the Northern Territory combined, there was a significant (84%) decline in rates of syphilis among Indigenous teenagers and a significant narrowing of the gap between rates of syphilis among Indigenous and non-Indigenous teenagers.
- Over the same period, for Indigenous teenagers, rates of chlamydia more than tripled (an increase of 255%), rates of gonorrhoea increased by 81% and there was significant widening of the gap between rates of chlamydia and gonorrhoea among Indigenous and other teenagers.
- Between 1997–99 and 2009–11, there was a significant decline (78% and 69% respectively) in rates of hepatitis B and hepatitis C among Indigenous teenagers, and a significant narrowing of the gap between the rates of hepatitis B and hepatitis C among Indigenous and other teenagers

Changes in the rates of sexually transmissible infections (STI) and newly acquired blood-borne virus (BBV) infections may reflect: changes in STI and BBV surveillance systems, including increased testing for chlamydia and gonorrhoea using nucleic acid-based tests of high sensitivity; the implementation of nationally consistent clinical and laboratory case definitions since 2004; potential differences in the completeness of ascertainment between diseases requiring notification by clinicians and laboratories compared to those notified by laboratories alone; and active case-finding through partner notification, screening and sentinel surveillance activities.

The decline in rates of newly acquired hepatitis B infection should be considered in light of the cohort effect of the infant hepatitis B immunisation program. Differences in the health-seeking behaviour of Aboriginal and Torres Strait Islander adolescents and non-Indigenous adolescents, and self-identification as an Indigenous person, may also have varied over time.

Child under 5 hospitalisation rates by principal diagnosis

- Over the period 2008–09 to 2009–10, Indigenous children aged under 5 were hospitalised at 1.4 times the rate of other children.
- Respiratory diseases were the most common diagnoses of Indigenous children hospitalised, accounting for 28% of hospitalisations.
- Between 2004–05 and 2009–10 there was a significant (13%) increase in hospitalisation rates for Indigenous 0–4 year olds. The gap between hospitalisation rates for Indigenous and other children significantly increased over this period.
- Significant increases in Indigenous child hospitalisation rates were evident for New South Wales, Victoria and the Northern Territory between 2004–05 and 2009–10. There was also a significant widening of the gap between hospitalisation rates for Indigenous and other children in these jurisdictions.

Changes in hospitalisation rates may be reflective of a number of different factors, including changes in access to, and demand for, hospital treatment. Improvements in the recording of Indigenous status in hospital records may also affect hospitalisation rates reported for Indigenous children over time.

Summary Table: IECD Health indicators with available data, Indigenous rates by state and territory, current period

Reported Measure	Year of data	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Number of women who gave birth, where an antenatal visit was reported in the first trimester, as a proportion of women who gave birth	2009	70.3	n.a.	36.1	n.a.	53.2	n.a.	n.a.	48.1	55.4
Mothers aged <20 years		68.2	n.a.	32.7	n.a.	43.1	n.a.	n.a.	34.5	49.6
Mothers aged 20 years and over		70.8	n.a.	36.9	n.a.	55.6	n.a.	n.a.	51.8	56.8
Incidence (per 100,000) of sexually transmissible infections and blood borne viruses among 15–19 year olds										
Syphilis	2009–2011	—	—	187.0	84.2	—	—	—	70.1	72.6
Chlamydia	2009–2011	n.a.	956.2	7324.5	7964.7	2358.3	825.5	n.a.	6461.0	5932.1
Gonorrhoea	2009–2011	n.a.	n.p.	2109.3	4014.4	1483.5	—	n.p.	6886.4	2840.7
Hepatitis B	2009–2011	n.a.	n.a.	n.a.	60.2	n.p.	—	n.p.	65.5	51.7
Hepatitis C	2009–2011	n.a.	n.a.	n.a.	124.3	85.6	n.p.	n.a.	28.1	73.3
HIV	2008–2010	—	—	n.p.	—	—	—	—	—	n.p.
Proportion of low birthweight among liveborn singleton babies, of:	2007–2009	10.3	12.0	9.6	13.8	12.2	7.8	10.3	12.9	10.8
mothers aged <20 years		10.9	14.9	10.1	14.6	9.4	n.p.	n.p.	13.0	11.6
mothers aged 20 years and over		10.1	11.4	9.4	13.5	12.9	8.1	11.0	12.8	10.9
Mortality rate (per 1,000 live births) for infants less than 1 year of age by Indigenous status	2006–2010	6.5	n.a.	8.0	8.3	6.0	n.a.	n.a.	13.1	8.1
Proportion of women who have used tobacco during pregnancy	2009	50.8	43.8	53.1	51.1	58.1	51.9	51.2	54.0	51.9
Mothers aged <20 years		52.1	56.8	52.4	48.4	53.3	65.3	58.8	44.4	51.4
Mothers aged 20 years and over		50.5	41.9	53.2	51.9	59.3	49.1	49.2	56.5	52.0
Proportion of Aboriginal and Torres Strait Islander women with children aged 0–3 years who used substances during pregnancy	2008									
Tobacco		47.1	47.7	34.3	37.4	51.5	48.0[a]	48.0[a]	45.8	42.1
Alcohol		17.4	23.0	22.7	20.7	16.9	19.1[a]	19.1[a]	14.9	19.6
Other substances		3.9	9.3	3.9	8.5	9.1	4.2[a]	4.2[a]	n.a.[b]	5.0

(continued)

Summary Table (continued): IECD Health indicators with available data, Indigenous rates by state and territory, current period

Reported Measure	Year of data	NSW	Vic	Qld	WA	SA	Tas[(c)]	ACT[(c)]	NT	NSW, Vic, Qld, WA, SA & NT
Hospital separation rates per 1,000 for children aged under 5 years by principal diagnoses[(c)]	2008–09 to 2009–10									
Diseases of the respiratory system		79.6	52.1	70.5	130.0	96.2	23.7	23.3	146.9	90.7
Certain conditions originating in the perinatal period		45.9	55.6	42.6	50.1	56.5	20.2	47.6	57.0	48.0
Certain infectious and parasitic diseases		23.7	15.5	22.8	46.0	35.8	6.5	7.2	83.4	33.7
Injury and poisoning		23.9	21.0	25.4	36.5	30.9	11.6	15.3	30.4	27.0
Symptoms, signs and abnormal clinical and laboratory findings n.e.c.		20.0	16.3	17.8	25.8	22.3	13.3	9.0	28.1	20.9
Diseases of the digestive system		16.0	18.0	15.5	17.7	18.9	5.8	11.7	20.3	16.9
Diseases of the skin & subcutaneous tissue (L00-L99)		9.0	5.6	15.1	24.7	14.8	2.2	0.0	37.3	16.5
Congenital malformations,		12.8	12.6	8.7	11.2	12.8	10.5	17.1	9.7	10.9
Diseases of the ear		8.5	9.7	9.0	15.4	13.1	2.8	6.3	9.4	10.0
Factors influencing health status		42.6	22.4	17.1	19.2	19.9	13.1	18.9	25.4	26.9
Diseases of the genitourinary system		5.1	6.0	6.5	6.4	4.8	3.4	n.p.	12.6	6.7
Diseases of the nervous system		5.6	7.1	5.1	5.7	8.1	2.6	n.p.	5.0	5.6
Other diagnoses		13.2	11.4	13.2	18.9	23.2	11.8	4.5	28.4	16.2
Total hospitalisations		306.0	253.4	269.4	407.3	357.3	127.7	163.4	494.0	330.1

n.a. Not available for publication.

n.p. Not published due to numbers less than 5.

n.e.c. Not elsewhere classified.

(a) Substance use proportions (alcohol, tobacco and other substances) for Tasmania and the Australian Capital Territory are combined due to small numbers.
(b) Not reported as estimate has a relative standard error of greater than 50%.
(c) Data for Tasmania and the Australian Capital Territory should be interpreted with caution until further assessment of Indigenous identification is completed.

Source: AIHW National Perinatal Data Collection; AIHW analysis of NNDSS data; National AIDS Registry and National HIV Database; AIHW National Mortality Database; ABS birth registration data; AIHW analyses of 2008 NATSISS; AIHW National Hospital Morbidity Database.

Note: Additional data on these indicators can be found at Appendix A, Tables A1 to A18.

1 Introduction

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

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

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

The *Indigenous Early Childhood National Partnership Agreement* (IECD NPA) is a Council of Australian Governments (COAG) agreement established to improve the health and developmental outcomes for Indigenous children across Australia (COAG 2009a). The IECD NPA is an integral part of COAG's broader agenda to 'close the gap' between Indigenous and non-Indigenous Australians in health, early childhood education and care, education and employment; and it is also closely aligned with other policies such as *Investing in the early years – a national early childhood development strategy* (COAG 2009b).

The IECD NPA consists of three elements to support its overarching goals: that Indigenous children are born and remain healthy, that they have the same health outcomes as non-Indigenous children, that they acquire the basic skills for life and learning, and that Indigenous families are able to access suitable and culturally inclusive early childhood and family support services (COAG 2009a). These three elements are:

- Element 1 – the integration of early childhood services through a minimum of 35 Children and Family Centres, which will be targeted at Indigenous families, but open to all families in the community.
- Element 2 – increased access to antenatal care, pre–pregnancy and teenage sexual and reproductive health services for Indigenous Australians.
- Element 3 – increased access to antenatal, postnatal, child and maternal health services for Indigenous families.

These three elements were designed to put structures in place so that Indigenous babies and children are given an equitable start in life. For example, one of the purposes of Element 2 is to increase the age of first pregnancy in order to increase the likely outcome that babies will be born healthy. It also aims to improve decision-making for young Indigenous women, including increasing their awareness that an early pregnancy may prevent them from exploring other life opportunities (for example, further education or employment). Ensuring that Indigenous young people have the information, resources, and skills to make informed choices about sexual and reproductive health should also decrease the rate of sexually transmitted illnesses among teenagers.

A second purpose of Element 2 is to improve access to, and use of, antenatal care by young Indigenous mothers. Emphasising the importance of attending antenatal care, and at the same time increasing access to comprehensive antenatal care services, should lead to earlier and fuller attendance at antenatal care. Identifying behavioural risk factors leading to poor birth outcomes (for example, smoking and alcohol consumption) can improve services to help pregnant women reduce those risks. The identification of medical risk factors along with their appropriate management is also an important focus. Together, these strategies should lead to a decrease in the proportion of Indigenous babies who are born with low birthweight.

The IECD NPA also focuses on the health and wellbeing after birth of Indigenous children and of their families by improving access to maternal and child health services for Indigenous families across Australia. Maternal and child health services focus on a 'whole of child/whole of family' approach, and generally include immunisations, developmental and behavioural screenings, child health checks, identification of health issues and risk factors, parenting advice and support, and referrals to other services where appropriate. Some services also routinely screen for post-natal depression, and offer both general and targeted parenting support groups (for example, for young mothers/fathers or for parents of children with additional needs). Increased access to, and uptake of, these services should improve the health and wellbeing of Indigenous children, provided adequate services are available to follow-up on identified needs.

On 2 October 2008 (and revised on 2 July 2009) COAG signed the IECD NPA, which is due to end on 30 June 2014.

As part of the IECD NPA, states and territories agreed to a set of key performance indicators designed to measure progress towards the achievements of each of the three elements within the overall policy, and committed to collecting data that would allow the evaluation of each of the elements.

Over the past two years, the AIHW, in consultation with state and territory jurisdictions, has conducted data development work to support standardised national reporting of the 10 performance indicators specified in the IECD NPA:

1. Increased proportion of Indigenous children attending the Children and Family Centres who have had all age-appropriate health checks and vaccinations.
2. Increased proportion of Indigenous three- and four-year olds participating in quality early childhood education and development and child care services.
3. Increased proportion of Indigenous children attending the Children and Family Centres who go on to attend school regularly.
4. Increased proportion of Indigenous children and families accessing a range of services offered at or through Children and Family Centres, including but not limited to childcare, early learning, child and maternal health, and parent and family support services.
5. Increased proportion of pregnant Indigenous women with an antenatal contact in the first trimester of pregnancy each year.
6. Increased proportion of Indigenous teenagers accessing sexual and reproductive health programs and services.

7. Reduced proportion of Indigenous babies born with low birthweight each year.
8. Reduced mortality of Indigenous infants each year.
9. Reduced proportion of Indigenous women who use substances (tobacco, alcohol, illicit drugs) during pregnancy each year.
10. Child under 5 hospitalisation rates by principal diagnosis.

Of these 10 performance indicators, 6 (indicators 5, 6, 7, 8, 9 and 10) relate specifically to health, which is the focus of this report.

Reporting on the IECD health indicators

This report is the first performance report for the IECD NPA. It provides the latest available information, as well as time trends on each of the 6 health-related indicators in the NPA. Of these 6 indicators:

- Four can be sourced from national data collections (indicators 5, 7, 8 and 10).
- Two cannot be measured directly from existing national data collections (Indicators 6 and 9):
  - *Increased proportion of Indigenous teenagers accessing sexual and reproductive health programs and services.*
  - *Reduced proportion of Indigenous women who use substances (tobacco, alcohol, illicit drugs) during pregnancy each year.*

Interim measures have therefore been reported for these two indicators, as outlined in Table 1 below.

Table 1: Health Indicators for Indigenous Early Childhood Development

Indicator in NPA	Reported Indicators/interim indicators	Data source
Health		
5. Increased proportion of pregnant Indigenous women with an antenatal contact in the first trimester of pregnancy each year	Number of women who gave birth, where an antenatal visit was reported in the first trimester, as a proportion of women who gave birth, by Indigenous status	National Perinatal Data Collection
6. Increased proportion of Indigenous teenagers accessing sexual and reproductive health programs and services	1. Incidence of sexually transmissible infections and blood borne viruses among 15–19 year olds, by Indigenous status 2. Pregnancy and birth outcomes, by mother's age and Indigenous status: i. antenatal contact in first trimester ii. substance use (tobacco, alcohol and other substances) during pregnancy iii. low birthweight babies	1. National Notifiable Diseases Surveillance System and the National HIV Registry 2. National Perinatal Data Collection
7. Reduced proportion of Indigenous babies born with low birthweight each year	Proportion of low birthweight among liveborn singleton babies, of mothers by Indigenous status	National Perinatal Data Collection
8. Reduced mortality of Indigenous infants each year	Mortality rate for infants less than 1 year of age by Indigenous status	National Mortality Database
9. Reduced proportion of Indigenous women who use substances (tobacco, alcohol, illicit drugs) during pregnancy each year	1. Proportion of women who have used tobacco during pregnancy by Indigenous status 2. Proportion of Aboriginal and Torres Strait Islander women with children aged 0–3 years who used substances during pregnancy i. tobacco ii. alcohol iii. other substances (e.g. petrol sniffing, drinking Kava, smoking marijuana, or using other illicit drugs) iv. total substances	1. National Perinatal Data Collection 2. National Aboriginal and Torres Strait Islander Social Survey
10. Child under 5 hospitalisation rates by principal diagnosis	Hospital separation rates for children aged under 5 years by principal diagnoses, by Indigenous status	National Mortality Database

Indicator 6: There are no comprehensive national data currently collected on Indigenous teenagers accessing sexual and reproductive health programs and services. The interim measures for this indicator aim to measure outcomes which could indicate whether the sexual and reproductive health programs themselves are leading to reduced rates of STIs and smoking during pregnancy among teenage mothers; to lower rates of low birthweight among babies born to teenage mothers; and to higher rates of antenatal care among teenage mothers.

Indicator 9: There are no national annual administrative data currently available on alcohol and drug use during pregnancy. Survey data for mothers who have a child under 3 are collected in the NATSISS and are reported as a proxy for this indicator until National administrative data become available. The AIHW is currently undertaking work to develop nationally consistent data items on alcohol use during pregnancy for inclusion in the National Perinatal Data Collection for use in future reporting.

Reporting on the health indicators in the IECD NPA complements other reporting on child health, development and wellbeing undertaken by the AIHW.

Data disaggregation

Where possible, data are presented throughout this report by state and territory, Indigenous status and over time. The level of disaggregation presented for the indicators is dependent on the availability of reliable data.

Small numbers

Some data collections presented in this report are based on small numbers. This includes both small states and territories and small populations such as the Indigenous population and children. Even if data are of good quality, the small numbers in states and territories such as the Australian Capital Territory and Tasmania mean that it is not possible to measure changes over time for some indicators (for example, STIs among Indigenous teenagers).

When data are based on small numbers, the report notes this with an appropriate caveat. Some data are also suppressed due to small numbers. See Appendix B for further information.

Time trends and statistical significance

Time trends data included in this report are presented for two time periods – a) the entire period for which reliable data are available; and b) from 2008 onwards (the first year of the NP). This is because both long-term and short-term information is important to understanding current trends. If recent data only are presented, there is no long-term context in which to interpret current patterns. It can be difficult to detect change if only comparing data for a few years, and a longer time series can reveal patterns that may be masked in a shorter time series. On the other hand, future rates may be projected more accurately by using only the data for recent years since it is a fair assumption that the rates in subsequent years will be more similar to those in close proximity than to those in the more distant past.

Both small numbers and volatility in the data from year to year make it difficult to detect significant changes.

Statistical methods can be used to model trend data in various ways, incorporating appropriate assumptions about the nature of the trend in the past, present and future. Several approaches are available to test whether there is a statistically significant trend or whether two or more trends are statistically different.

Throughout this report, time series analyses with 4 or more data points have used linear regression analysis to determine whether there have been significant increases or decreases in the observed rates over the period. Regression analysis has several advantages over other techniques for assessing trends. In general, regression modelling has the advantage of jointly considering the information contained in the series of rates, rather than considering each time point separately. Analysing the series of rates as a unit imposes stability, and consequently, the confidence band around the set of predicted values from regression analysis will be narrower than the confidence limits calculated around the rates separately. Any statistical test based on regression results, will therefore be more powerful.

A minimum of 4 data points are needed in order to have an adequate time series for regression analysis (in order to take into account volatility from year to year), and 7 or more data points are recommended in order to obtain the most reliable results.

For trend analyses with 3 data points, linear regression was first used to determine whether there was a consistent increase or decrease in the data over the 3 year period. The 95% confidence intervals (CIs) for the first and last years were then used to determine whether there was a significant trend in the data over the three years; if the confidence intervals do not overlap, then it is concluded that there was a significant change.

For trend analyses with only 2 data points, the 95% confidence intervals (CIs) for the rates for each year were used to determine statistical significance. If the confidence intervals do not overlap, then it is concluded that the 2 data points are significantly different.

Significance testing of two points based on overlapping confidence intervals only gives an indication of whether the 2 data points are significantly different from each other. It does not take into account whether this difference is a symptom of the volatility in the data over time. A significant difference may become insignificant when more data points become available, and conversely, a non-significant difference may still carry meaning in the context of a longer-time series. Therefore significant changes based on only 2 or 3 data points should be interpreted with caution.

Significant changes are denoted with a * against the per cent change statistics included in relevant tables. Tables also include a * against the rate ratio statistics to indicate that rates for the Indigenous and non-Indigenous populations are statistically different from each other at the $p < 0.05$ level (based on 95% confidence intervals (CIs)).

It should also be noted that the word 'significant' is used throughout the report to denote a statistically significant change at the $p < 0.05$ level.

For more information on statistical significance and per cent change calculations see Appendix B.

Data sources

Data in this report come from a number of different data sources and a brief description of each is presented at Appendix C.

Health-related administrative data sets used in this report include the Australian Institute of Health and Welfare's (AIHW) National Hospital Morbidity Database; the AIHW National Mortality Database; the AIHW National Perinatal Data Collection; the National Notifiable Diseases Surveillance System; and the National Centre in HIV Epidemiology and Clinical Research.

Survey data used in this report come from the National Aboriginal and Torres Strait Islander Social Survey.

Data limitations

A number of limitations of data in this report should be noted. The main issue in most administrative data collections is the under–identification of Aboriginal and Torres Strait Islander people. Under-identification is a major problem in mortality, hospital morbidity and communicable disease data, particularly in some states and territories. Data analysis has therefore been limited to jurisdictions with adequate identification of Indigenous people. Appendix B presents a brief description of the main data issues for each of these data collections.

For recent hospitalisations, New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory are considered as having data of sufficient quality to be included in the analyses. For recent mortality, New South Wales, Queensland, Western Australia, South Australia and the Northern Territory are considered as having adequate identification of Indigenous deaths in their recording systems.

Data on communicable diseases from the National Notifiable Disease Surveillance System have been assessed and found to have varying levels of completeness across diseases and jurisdictions.

The incompleteness of Indigenous identification means the number of hospital separations, deaths and disease notifications recorded as 'Indigenous' should be considered as underestimates of the true levels of hospitalisation and mortality.

Surveys are also subject to a number of data limitations due to sampling and non-sampling errors, such as bias in responses. In relevant tables in this report, estimates with large relative standard errors have been footnoted to indicate that they should be used with caution or are considered too unreliable for general use.

Structure of this report

Information on each of the 6 health-related indicators in the IECD NPA is reported in the following chapters:

- Chapter 2: Antenatal care
- Chapter 3: Teenage rates of sexually transmissible infections
- Chapter 4: Low birthweight
- Chapter 5: Infant mortality
- Chapter 6: Substance use during pregnancy
- Chapter 7: Child under 5 hospitalisations by principal diagnosis.

Data on pregnancy and birth outcomes by mother's age, which is an interim measure for IECD PI 9, are reported under the chapters for antenatal care, substance use during pregnancy and low birthweight.

Each chapter begins with key messages followed by contextual information on the importance of the measure examined. Data are then presented for the latest period, followed by long-term and short-term trends. Each chapter finishes with a summary of measurement issues and data quality.

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

2 Antenatal care

Key findings

Regular antenatal care, particularly in the first trimester of pregnancy, is associated with positive health outcomes for mothers and babies.

- In 2009, 55% of Indigenous mothers attended at least one antenatal visit in the first trimester in the jurisdictions for which there was reliable data (New South Wales, Queensland, South Australia and the Northern Territory). This was lower than the proportion of non-Indigenous mothers attending an antenatal visit in the first trimester.
- Between 2007 and 2009, there was a significant increase (from 41% to 58%) in the proportion of Indigenous mothers who attended antenatal care in the first trimester in South Australia, and a significant narrowing of the gap between Indigenous and non-Indigenous mothers in that state.

Antenatal care (also referred to as prenatal care) is an important part of pregnancy and evidence shows there is a strong relationship between regular antenatal care and positive child health outcomes. Receiving antenatal care at least 4 times, as recommended by the WHO, increases the likelihood of receiving effective maternal health interventions (WHO 2009). The purpose of antenatal visits is to monitor the health of mother and baby, provide health advice, identify complications, and provide intervention if needed.

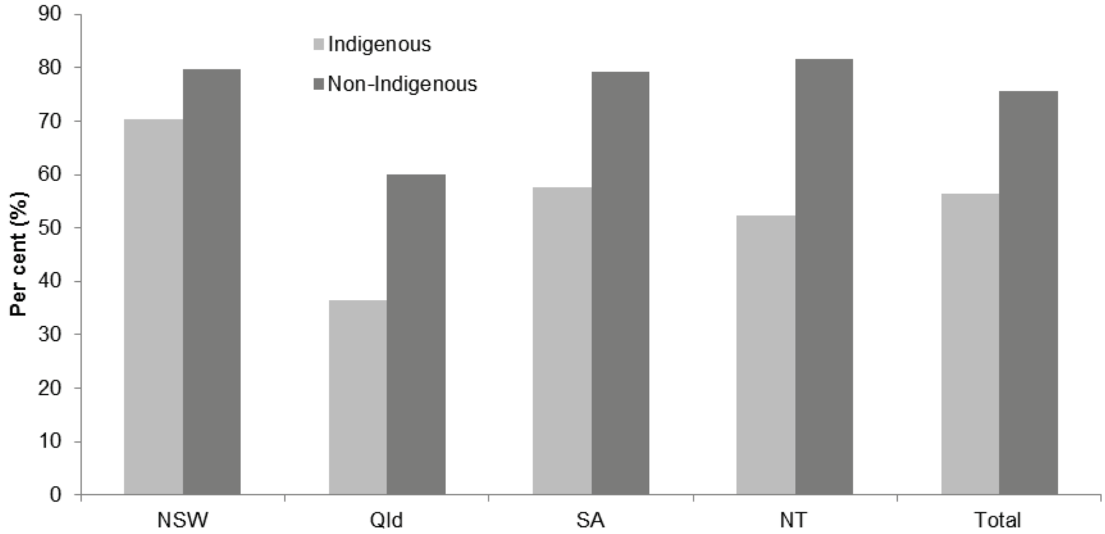
Most guidelines recommend that antenatal care commences during the first trimester of pregnancy, as it enables identification of risk factors and potential problems in the early stages of pregnancy which, if not addressed or treated, could increase the risk of adverse outcomes for mother and baby.

Antenatal care may be particularly important for Aboriginal and Torres Strait Islander women, as they are at higher risk of giving birth to low birthweight babies and of other risks such as diabetes, poor nutrition, anaemia, urinary tract infections and smoking during pregnancy (de Costa & Wenitong 2009).

Indigenous women currently have lower rates of attending antenatal care in the first trimester than non-Indigenous women. Factors contributing to Indigenous women not presenting early for antenatal care include distance from obstetric services in rural and remote areas (or absence of local clinics); socioeconomic, educational and family factors; transport; and the cultural accessibility of services (de Costa & Wenitong 2009).

Reported measure: Number of women who gave birth, where an antenatal visit was reported in the first trimester, as a proportion of women who gave birth, by Indigenous status.

What proportion of Indigenous mothers attend antenatal care in the first trimester of pregnancy?



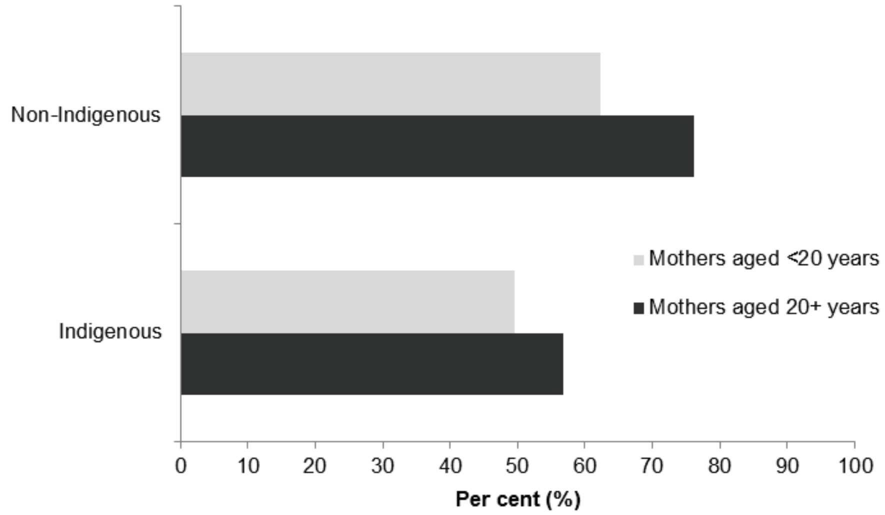
Notes

1. Qld rates are from 1 July to 31 Dec 2009
2. Proportions are directly age-standardised.

Source: AIHW National Perinatal Data Collection; Table A1.

Figure 2.1: Women who gave birth who attended at least one antenatal visit in the first trimester, by Indigenous status and state and territory, NSW, Qld, SA and NT, 2009

- In 2009, in the four jurisdictions for which data were available (New South Wales, Queensland, South Australia and the Northern Territory), 55% of Indigenous mothers attended at least one antenatal visit in the first trimester of pregnancy. After adjusting for differences in age structure between the Indigenous and non-Indigenous populations, Indigenous mothers were less likely than non-Indigenous mothers to attend an antenatal visit in the first trimester (a rate ratio of 0.7).
- The proportion of Indigenous mothers who attended at least one antenatal visit in the first trimester varied by state and territory, ranging from 36% in Queensland to 70% in New South Wales (Figure 2.1). Due to jurisdictional differences in definitions of ‘first antenatal visit’, state/territory comparisons should be made with caution.
- Antenatal visits in the first trimester were slightly more common among Indigenous mothers aged 20 years and over (57%) compared to Indigenous teenage mothers (50%). The same pattern was evident for non-Indigenous mothers, however the difference between the two age groups was greater for non-Indigenous mothers (Figure 2.2).



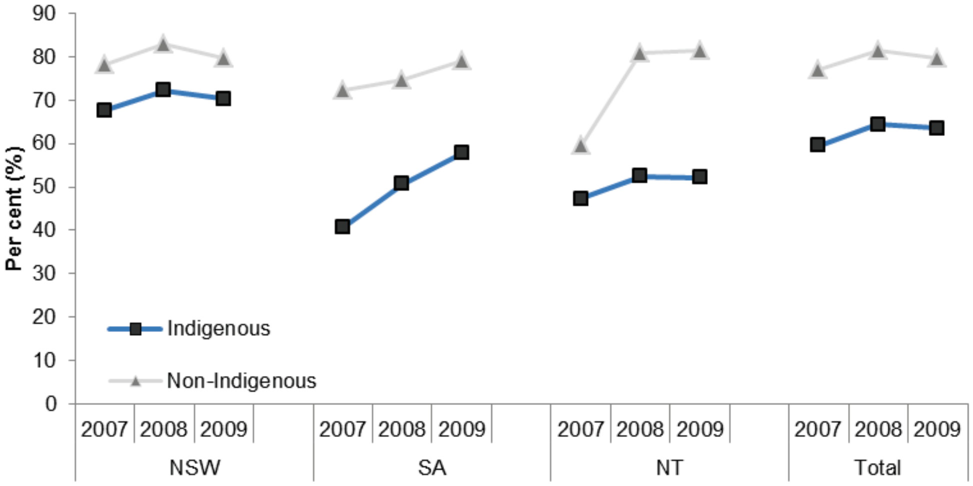
Source: AIHW National Perinatal Data Collection; Table A1.

Figure 2.2: Women who gave birth who attended at least one antenatal visit in the first trimester, by maternal age and Indigenous status, NSW, Qld, SA and NT, 2009

Medium-term trends: What changed between 2007 and 2009?

The following statistics have been adjusted for differing age structures to allow comparisons between Indigenous and non-Indigenous mothers.

- In the three jurisdictions combined for which data were available on gestational age at first antenatal visit over the period 2007 to 2009 (New South Wales, South Australia and the Northern Territory), there was no significant change in the proportion of Indigenous mothers who attended an antenatal visit in the first trimester (rates were between 60% and 64%) (Figure 2.3).
- In the Northern Territory, the rate of Indigenous mothers attending antenatal care increased from 47% in 2007 to 52% in 2009, however this increase was not statistically significant. The gap between Indigenous and non-Indigenous mothers significantly increased, from 12% to 29%. This was because the attendance rate for non-Indigenous mothers over that period increased at a faster rate than for non-Indigenous mothers.
- In South Australia the rate of Indigenous mothers attending antenatal care significantly increased, from 41% to 58%. This was a faster change than the rate for non-Indigenous mothers and there was a significant reduction (33%) in the gap between Indigenous and non-Indigenous mothers in that state.
- In New South Wales, there was no significant change over time in the rate of Indigenous mothers attending antenatal care in the first trimester.



Source: AIHW National Perinatal Data Collection; Table A3.

Figure 2.3: Women who gave birth who attended at least one antenatal visit in the first trimester, by Indigenous status and state/territory, NSW, SA and NT, 2007 to 2009

Short-term trends: What has changed since 2008?

Between 2008 and 2009, there was no significant change in the proportion of Indigenous women who attended antenatal care in the first trimester. For non-Indigenous women, there was a significant increase in South Australia and a significant decline in New South Wales. Over this period the gap remained unchanged in all three jurisdictions with available data (Table A3).

Box 2.1: Measuring antenatal care in the first 20 weeks of pregnancy

There are currently no nationally consistent data available for antenatal care in the first 20 weeks of pregnancy; however, a new data element for gestational age at first antenatal visit has been developed and included in the Perinatal National Minimum Data Set from

1 July 2010 (see Appendix C for more information on the NPDC).

Currently data are available from the AIHW National Perinatal Data Collection (NPDC) for New South Wales, South Australia and the Northern Territory from 2007 (calendar year) and for Queensland from July 2009. Comparability of data currently collected by jurisdictions is limited due to different definitions of 'first antenatal visit'.

Complete national data for the 2011 calendar year are expected to be available for reporting in late 2013.

3 Teenage rates of sexually transmissible infections

Key findings

Bacterial STIs (including syphilis, chlamydia and gonorrhoea), HIV/AIDS and hepatitis can have serious long-term effects if not treated or diagnosed. Teenagers are at greater risk of STIs than the rest of the population.

- For the period 2009–2011, in the states and territories with adequate Indigenous notification data, Indigenous teenagers were 30 times more likely than other teenagers to have contracted syphilis, almost 5 times more likely to have contracted chlamydia, and 58 times more likely to have contracted gonorrhoea.
- Between 1994–96 and 2009–11, in Western Australia, South Australia and the Northern Territory combined, there was a significant (84%) decline in rates of syphilis among Indigenous teenagers. Over the same period, rates of chlamydia more than tripled (an increase of 255%) and rates of gonorrhoea increased by 81% for Indigenous teenagers.
- Between 1994-96 and 2009–11, there was a significant decline (78% and 69% respectively) in rates of hepatitis B and hepatitis C among Indigenous teenagers, and a significant narrowing of the gap between Indigenous and non-Indigenous teenagers.

STIs are infectious diseases that are spread from person to person through sexual contact. Diagnosis can be difficult as many STIs are asymptomatic or produce only mild symptoms. STIs remain a major public health concern, contributing to significant long-term morbidity (Bowden et al. 2002; DoHA 2005). Ongoing surveillance is important in order to monitor the rates of STIs and guide preventive measures.

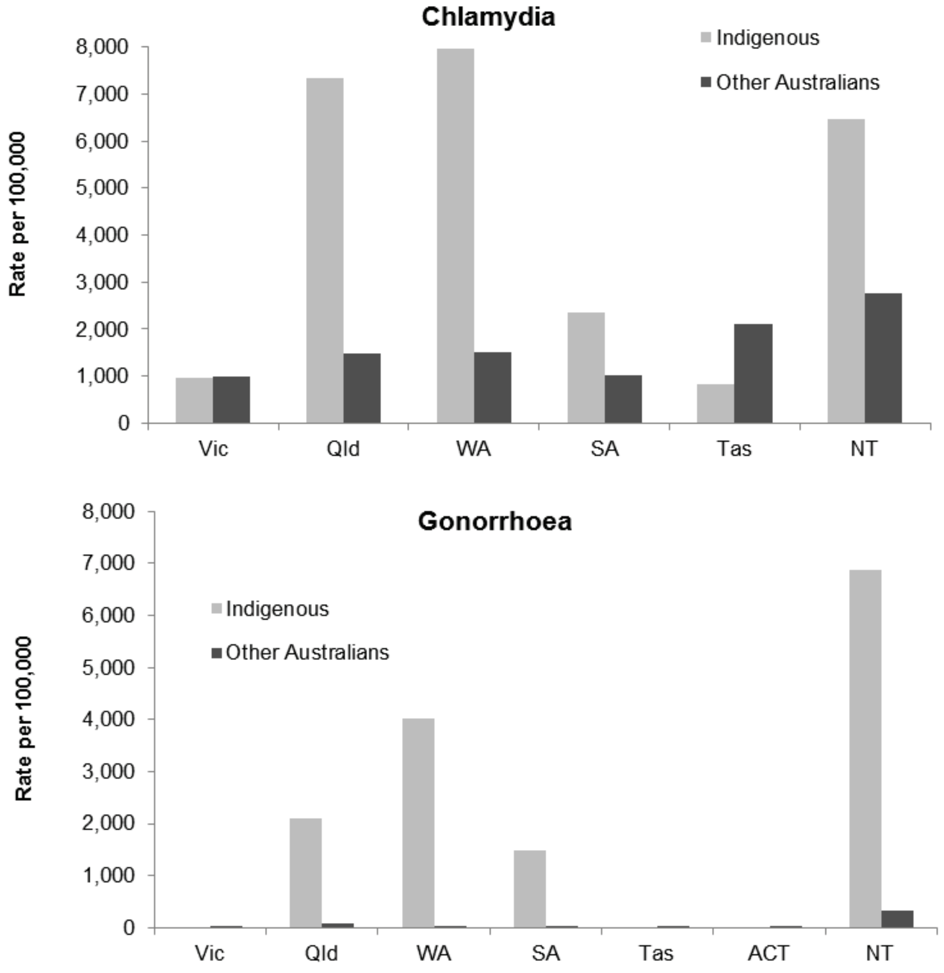
Adolescents are at greater risk of STIs as a result of inexperience and lack of knowledge regarding the risks associated with unprotected sex and access to contraception; inconsistent condom use; social pressure; frequency of partner change; substance use; and reluctance to talk with parents or with their family general practitioner (DoHA 2005). Biologically, adolescents may be more vulnerable to STIs due to immature reproductive and immune systems (Sales & DiClemente 2010).

Several STIs (chlamydia, gonorrhoea, syphilis and donovanosis) are much more common for Aboriginal and Torres Strait Islander peoples than for other Australians. These infections, although they can be treated and cured once diagnosed, can have serious long-term effects, such as infertility in women after gonorrhoea and chlamydia, and heart and brain damage after syphilis (Couzos & Murray 2003).They can also cause miscarriage and permanent damage to new born babies. Hepatitis and HIV/AIDS are viral infections which can be fatal. HIV/AIDS remains incurable and management of both HIV and hepatitis requires specialist services for which Aboriginal and Torres Strait Islander people may have poorer access (AHMAC 2011).

Reported measure: Incidence of sexually transmissible infections and blood borne viruses among 15–19 year olds, by Indigenous status.

How many Indigenous teenagers contract STIs?

- For the period 2009–2011, in states and territories for which there was adequate identification of Indigenous status in notifications for each disease, there were 139 notifications of syphilis among Indigenous teenagers (all states and territories); 7,834 notifications of chlamydia (Victoria, Queensland, Western Australia, South Australia, Tasmania and the Northern Territory); 3,797 notifications of gonorrhoea (Victoria, Queensland, Western Australia, South Australia, Tasmania, the Australian Capital Territory and the Northern Territory); 34 notifications of hepatitis B (Western Australia, South Australia, Tasmania, the Australian Capital Territory and the Northern Territory); and 47 notifications of hepatitis C (Western Australia, South Australia, Tasmania and the Northern Territory) (Table A4).
- There were fewer than five cases of HIV among Indigenous teenagers for the period 2008–2010.
- Notifications rates for Indigenous teenagers were 72.6 per 100,000 for Syphilis, 5932.1 per 100,000 for chlamydia, 2,840.7 for gonorrhoea, 51.7 for hepatitis B and 73.3 for hepatitis C.
- Notification rates for syphilis were 30 times higher for Indigenous teenagers than for other teenagers, and notification rates for gonorrhoea were 58 times higher. Rates of chlamydia were almost 5 times higher for Indigenous teenagers, and rates of hepatitis B and hepatitis C were 2 and 6 times higher than for other teenagers respectively.
- STI notification rates varied greatly by state and territory (Figure 3.1). For example:
  - rates of chlamydia for Indigenous teenagers were over 7,000 per 100,000 in Queensland and Western Australia, 5 times the rate for other Australians. In Victoria, rates were around 1,000 per 100,000 and were similar for Indigenous and other teenagers. In Tasmania, rates were higher for other teenagers than for Indigenous teenagers, however these figures should be interpreted with caution due to the relatively small numbers involved.
  - Queensland, Western Australia and the Northern Territory were the only jurisdictions in which cases of syphilis were reported for Indigenous teenagers. Rates were 187.0, 84.2 and 70.1 per 100,000 in these jurisdictions respectively.
  - rates of gonorrhoea for Indigenous teenagers were highest in the Northern Territory, followed by Western Australia (respectively 21 and 111 times the rates for other teenagers in those jurisdictions). Queensland and South Australia also had high rates of gonorrhoea, while the other states and territories had no or very few cases reported.
  - of the states and territories with adequate Indigenous identification for hepatitis B and hepatitis C notifications, Western Australia had the highest rate of hepatitis C notifications among Indigenous teenagers, at 9 times the rate of other teenagers, and the Northern Territory had the highest rate of hepatitis B notifications, at a similar rate to other teenagers.



Source: AIHW analysis of NNDSS data; Table A4.

Figure 3.1: Notification rates per 100,000 per year for chlamydia and gonorrhoea, by Indigenous status and state and territory, 2009–2011

Long-term trends: What has changed between 1994 and 2011?

Notification rates for syphilis, chlamydia and gonorrhoea are considered reliable for reporting from 1994 onwards in Western Australia, South Australia and the Northern Territory. Notification rates for hepatitis B and hepatitis C are considered reliable for reporting from 1997 onwards in these three jurisdictions. Data are presented in 3 year groupings due to the small number of notifications each year.

- Between 1994–96 and 2009–11 in Western Australia, South Australia and the Northern Territory combined, there was a significant (84%) decline in rates of syphilis among Indigenous teenagers. There was no significant change for other teenagers, and therefore there was a significant decline in the gap (Figure 3.2).
- Over the same period, there was a large significant increase (255%) in rates of chlamydia among Indigenous teenagers. Rates for other teenagers also increased, and at a faster rate (an increase of 712%).

- Gonorrhoea notification rates for Indigenous teenagers significantly increased (81%) between 1994–96 and 2009–11, while rates for other teenagers did not significantly change, resulting in a significant widening of the gap.
- Hepatitis B and C notification rates both significantly decreased for Indigenous teenagers by 78% and 69% respectively. There was a significant decline in the gap between Indigenous and non-Indigenous rates for both these diseases (Figure 3.3).
- HIV notification data are available for reporting from 1998 onwards. Due to the very small number of notifications among Indigenous teenagers each year, only rates for other teenagers have been presented in this report. This data indicates that there has been no significant change in HIV notification rates for other teenagers during the period 1998–2000 to 2009–2010 (see Table A5b).

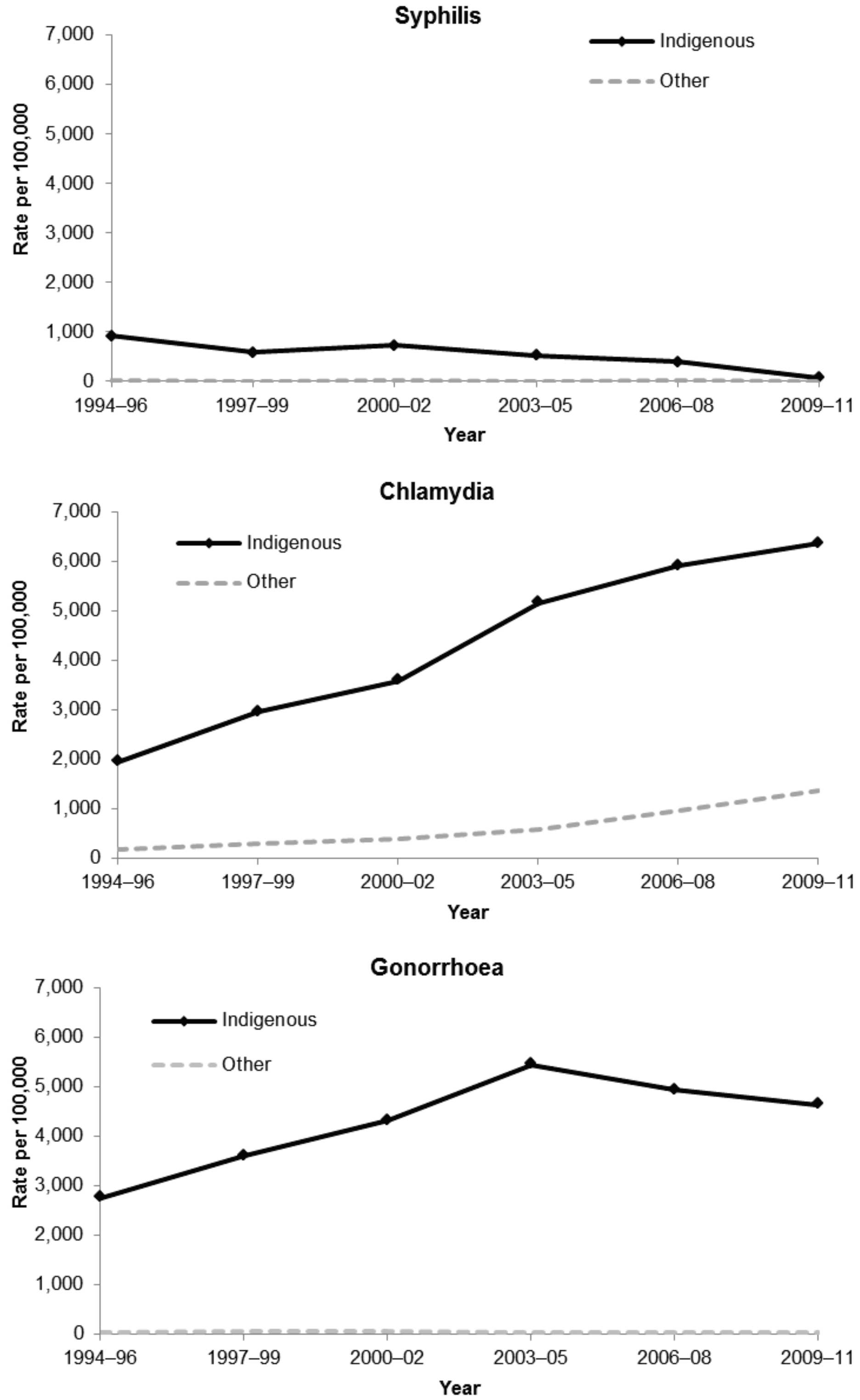
Changes in the rates of sexually transmissible infections (STI) and newly acquired blood-borne virus (BBV) infections may reflect: changes in STI and BBV surveillance systems; the implementation of nationally consistent clinical and laboratory case definitions since 2004; potential differences in the completeness of ascertainment between diseases requiring notification by clinicians and laboratories compared to those notified by laboratories alone; and active case-finding through partner notification, screening and sentinel surveillance activities.

Notification rates for chlamydia and other STIs are particularly susceptible to change in overall rates of testing as well as in targeted testing in high-risk groups. The observed increases in notification rates for chlamydia (and potentially gonorrhoea) therefore need to be interpreted in the context of recent increases in testing for STIs. In recent years, health-care workers and those who are sexually active have become more aware of silent infections such as chlamydia . There have been improvements in access to less-invasive PCR (polymerase chain reaction) testing and to population health screening programs like Young Person Health Checks that are actively seeking out young people and putting in place contact tracing and proof of cure regimes. There have also been increased testing for chlamydia and gonorrhoea using nucleic acid-based tests of high sensitivity. This has meant that more people are getting tested, diagnosed and treated.

Between May 2007 and June 2010, the Australian Government Department of Health and Ageing funded a pilot program called the Australian Collaboration for Chlamydia Enhanced Sentinel Surveillance (ACCESS). The aim of the program was to monitor the uptake and outcome of chlamydia testing in Australia through a range of sentinel sites including sexual health services, general practices and laboratories. Between 2007 and 2010, the number of people who accessed these sentinel sites and were tested increased by 21% (DoHA 2012).

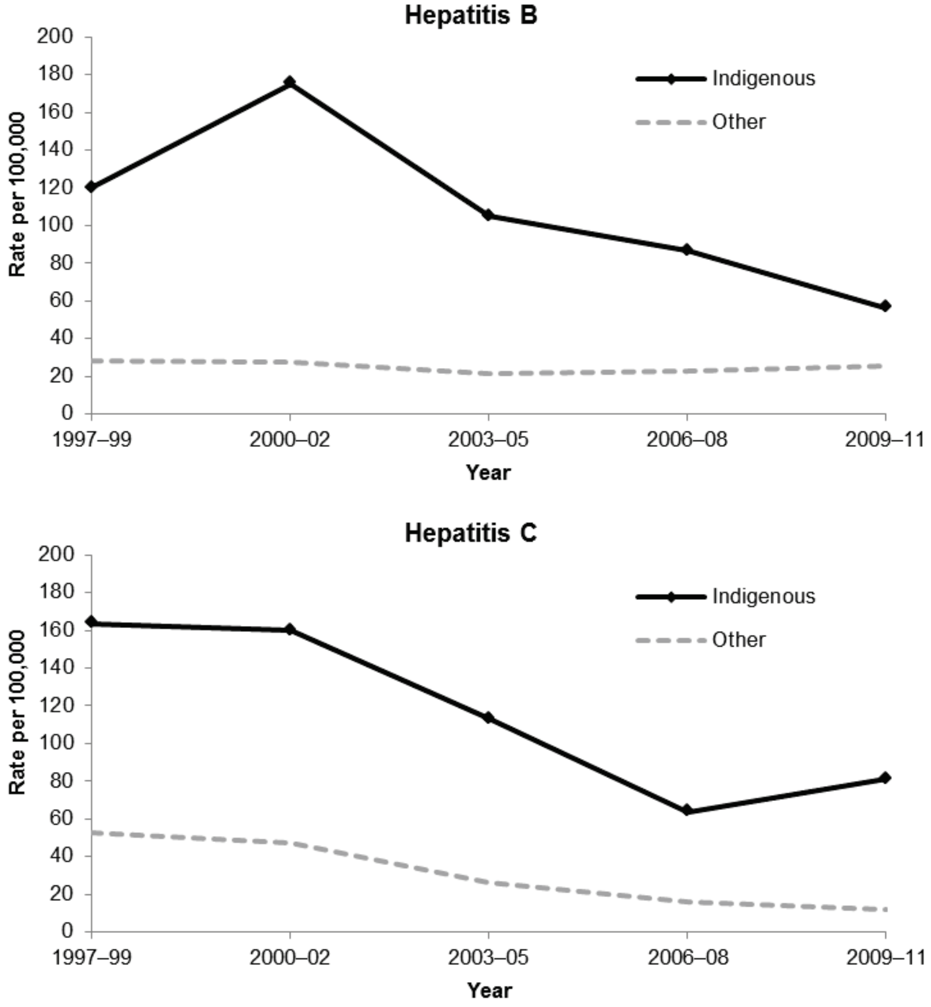
In 2008 the Office for Aboriginal and Torres Strait Islander Health (OATSIH) funded six youth demonstration projects across Australia over three years (2008 to 2011) to improve the sexual health of Aboriginal and Torres Strait Islander young people. The projects aimed to increase the number of Aboriginal and Torres Strait Islander young people accessing services for the testing and treatment of sexually transmissible infections and HIV, reduce the level of risk behaviours and contribute to the development of best practice approaches.

The decline in rates of newly acquired hepatitis B infection should be considered in light of the cohort effect of the infant hepatitis B immunisation program. Differences in the health-seeking behaviour of Aboriginal and Torres Strait Islander adolescents and non-Indigenous adolescents, and self-identification as an Indigenous person, may also have varied over time.



Source: AIHW analysis of NNDSS data; Table A5a.

Figure 3.2: Notification rates (per 100,000 per year) of syphilis, chlamydia and gonorrhoea among 15–19 year olds, by Indigenous status, WA, SA and NT, 1994–96 to 2009–2011



Note: Complete and consistent data for Hepatitis B and Hepatitis C are not available prior to 1997.

Source: AIHW analysis of NNDSS data; Table A5a.

Figure 3.3: Notification rates (per 100,000 per year) of hepatitis B and hepatitis C among 15–19 year olds, by Indigenous status, WA, SA and NT, 1997–99 to 2009–2011

Short-term trends: What has changed since 2008?

- Between 2008 and 2011, there was a significant increase in rates of chlamydia among Indigenous and other teenagers in Western Australia, South Australia and the Northern Territory combined (an increase of 21% for Indigenous and 49% for other teenagers) (Table A5a).
- Over the same period, there were no significant changes in rates of syphilis, gonorrhoea, hepatitis B or hepatitis C for Indigenous teenagers. There was, however, a significant decline in rates of syphilis and a significant increase in rates of Hepatitis B among other Australian teenagers (Table A5a).

Note that these trends are based on single-year data for 2008, 2009, 2010 and 2011 which have not been presented in tables or figures, due to small numbers (3 years combined data are reported). It should also be noted that the word 'significant' is used here and throughout the report to denote a statistically significant change at the $p < 0.05$ level.

Box 3.1: Measuring teenage rates of sexually transmitted infections

Data on the incidence of HIV are available from the National Centre in HIV Epidemiology and Clinical Research (NCHECR).

Data on incidence of other STIs which are nationally notifiable (chlamydia, gonorrhoea and syphilis) are available from the National Notifiable Disease Surveillance System (NNDSS). Data for these STIs are reported here, as well as hepatitis B and hepatitis C. It should be noted that not all notifications of chlamydial infection, gonococcal infection, and syphilis are sexually acquired. The national case definitions for these infections do not specifically distinguish between sites of infection or modes of transmission.

Donovanosis is not reported due to small numbers and poor coverage of Indigenous notifications. Herpes and trichomoniasis are not included as they are currently not notifiable diseases and there is no national data source available to report on these conditions.

Incidence of STIs among Indigenous teenagers is expressed as the number of new cases of syphilis, HIV, hepatitis B, hepatitis C, chlamydia and gonorrhoea infections among persons aged 15 to 19 years per 100,000 population.

Syphilis data are limited to notifications of less than 2 years duration and known status.

Data supplied by the Northern Territory for chlamydia and gonococcal infections are for genital infections only, while for other states and territories data are for all sites of infection.

Hepatitis B and hepatitis C data contain notifications of newly diagnosed infections, including cases known to have been newly acquired whether or not the infection was sexually transmitted.

HIV data contain notifications of newly diagnosed HIV infection and HIV infections known to be newly acquired.

Coverage of Indigenous status in notification data to the reported to the NNDSS varies by state/territory and by condition. Using a cut-off of 50% completeness of Indigenous status for 2009–2011 data, all states and territories had adequate identification for syphilis. For the other diseases, Western Australia, South Australia, Tasmania and the Northern Territory were assessed to have adequate Indigenous identification for chlamydia, gonorrhoea, hepatitis B and hepatitis C. Queensland and Victoria had insufficient Indigenous identification for hepatitis B and C, but adequate identification for syphilis, gonorrhoea and chlamydia; the Australian Capital Territory had only adequate identification for gonorrhoea and hepatitis B and New South Wales did not have adequate identification for any of the other sexually-transmitted diseases (other than syphilis).

All states and territories are considered to have adequate identification of Indigenous status for HIV notifications (according to assessment by NCHECR).

For long-term trend analyses, notification rates for syphilis, chlamydia, and gonorrhoea are considered reliable for reporting from 1994 onwards in Western Australia, South Australia and the Northern Territory. Notification rates for hepatitis B and hepatitis C are considered reliable for reporting from 1997 onwards in these three jurisdictions. Data are presented in 3 year groupings due to the small number of notifications each year.

Notification data on STIs reflect diagnosed cases for the condition rather than the extent of the problem in the population. Information on people who have the condition but have not been diagnosed is therefore not captured in these data.

4 Low birthweight

Key findings

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

- In 2007–2009, 10.8% of liveborn singleton babies born to Indigenous mothers were of low birthweight. This was 2.5 times the rate for babies born to non-Indigenous mothers.
- Over the period 2000 to 2009, there was a significant (7.1%) decline in the proportion of low birthweight babies born to Indigenous mothers, and a significant narrowing of the gap between Indigenous and non-Indigenous mothers.

Birthweight is a key indicator of infant health and a principal determinant of a baby's chance of survival and good health. For newborns, low birthweight (less than 2,500 grams) poses a greater risk of lengthy hospitalisation after birth, of the need for resuscitation, and of death. Low birthweight is a risk factor for neurological and physical disabilities and for ill health in childhood, with the risk of adverse outcomes increasing with decreasing birthweight (Ford et al. 2003).

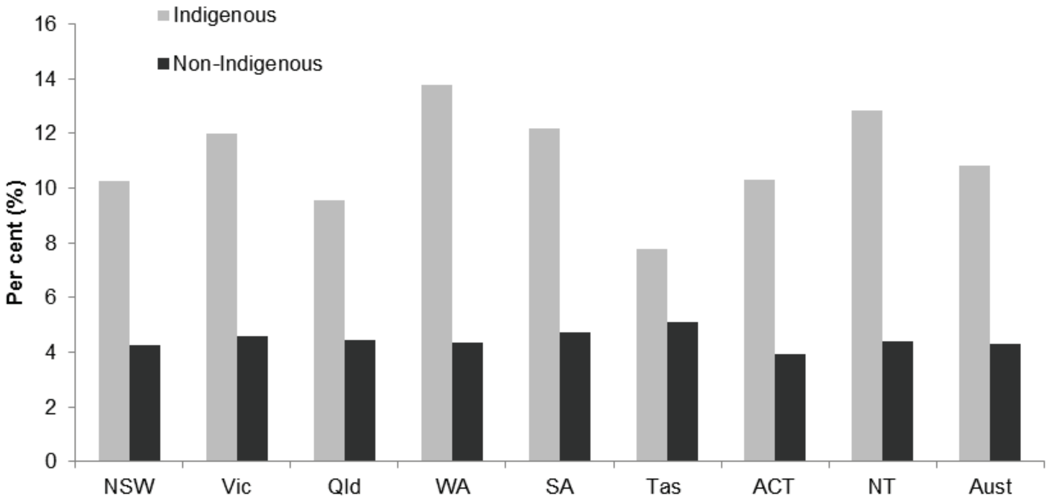
Children who had extremely low birthweight (less than 1,000 grams) are more likely to have psycho-social problems and are at an increased risk of difficulties at school. Teenagers who have extremely low birthweight have been found to be less likely than their peers to achieve well on intellectual measures, particularly in arithmetic (Saigal 2000).

The health effects of low birthweight are not restricted to infancy and childhood, but continue into adulthood. Among adults who were of low birthweight, research has found an increased risk of Type 2 diabetes, high blood pressure, metabolic and cardiovascular diseases and, possibly, obesity in later life (Hovi et al. 2007; Phillips 2006; Tappy 2006). There is some evidence that Aboriginal and Torres Strait Islander babies born of low birthweight have higher rates of mortality from renal and cardiovascular diseases in adulthood (White et al. 2010).

A baby may be small due to being born early (preterm) or may be small for its gestational age (suggesting possible intrauterine growth restriction). Factors that contribute to low birthweight include maternal age, illness during pregnancy, low socioeconomic status, multiple pregnancy, harmful behaviours such as smoking or excessive alcohol consumption during pregnancy, poor nutrition during pregnancy and poor antenatal care (Laws et al. 2007; Laws et al. 2006). Many of these risk factors are modifiable and susceptible to intervention.

Reported measure: Proportion of liveborn singleton infants of low birthweight, by Indigenous status.

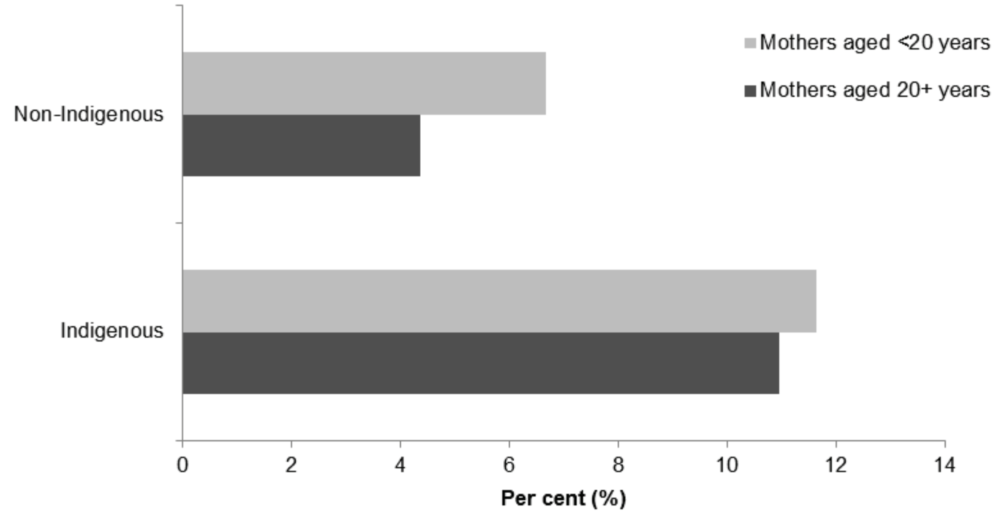
What proportion of babies born to Indigenous mothers are of low birthweight?



Source: AIHW National Perinatal Data Collection; Table A6.

Figure 4.1: Proportion of low birthweight liveborn singleton babies, by Indigenous status of the mother and state and territory, 2007–2009

- During the 3 year period 2007–2009, there were approximately 40,000 liveborn babies born of low birthweight (excluding multiple births) in Australia. Approximately 10.8% of babies born to Indigenous mothers were of low birthweight, compared to 4.3% of babies born to non-Indigenous mothers (Figure 4.1).
- Western Australia and the Northern Territory had the highest proportion of Indigenous babies of low birthweight (13.8% and 12.9% respectively). Babies born to Indigenous mothers were 3 times as likely to be born of low birthweight as babies born to non-Indigenous mothers in these jurisdictions.
- In the non-Indigenous population, low birthweight babies were more common among teenage mothers (6.7%), than among mothers aged 20 years and over (4.4%). However in the Indigenous population, rates were similar for these two age groups (11.6% and 10.9% respectively) (Figure 4.2).



Source: AIHW National Perinatal Data Collection; Table A7.

Figure 4.2: Proportion of low birthweight liveborn singleton babies, by age of mother and Indigenous status, Australia, 2007–2009

Long-term trends: What has changed between 2000 and 2009?

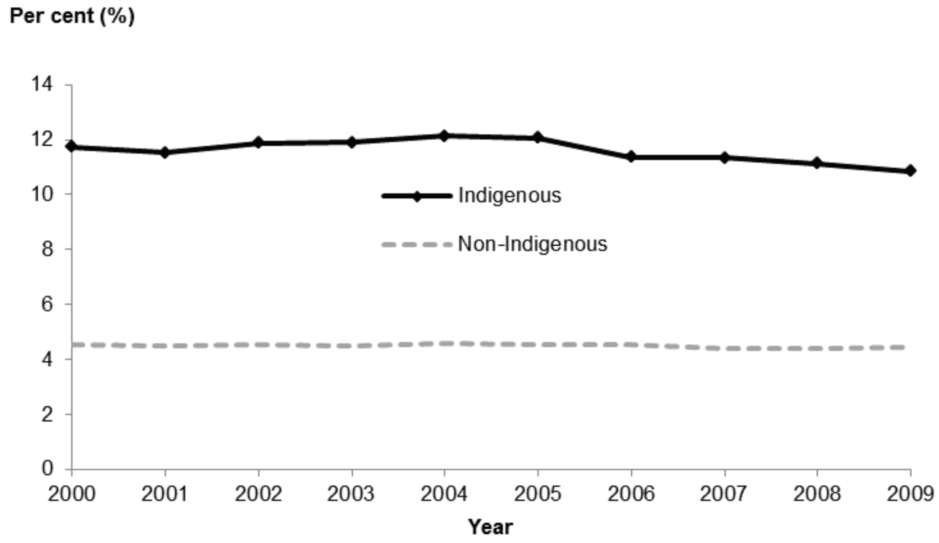
Nationally, in the jurisdictions for which data were reliable over the period 2000 to 2009 (New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory):

- there was a significant decline in the proportion of babies of low birthweight born to Indigenous mothers (a decline of 7.1%) (Figure 4.3). Significant declines were evident for both teenage mothers and mothers aged 20 years and over (Table A9).
- there was a small narrowing of the gap between low birthweight babies of Indigenous and non-Indigenous mothers (a decline of 9.9%).

It is interesting to note, however, that trend data from 1991 to 2009 show an increase in the proportion of low birthweight babies born to Indigenous mothers and a significant increase in the gap (AHMAC 2012). This suggests that improvements have been made in more recent years.

Across the states and territories:

- New South Wales and South Australia saw a significant decline (of 13% and 26% respectively) in the proportion of low birthweight babies born to Indigenous mothers and a significant narrowing of the gap.
- in the remaining states and territories, the proportion of babies of low birthweight born to Indigenous mothers was relatively stable over the period 2000 to 2009.



Source: AIHW National Perinatal Data Collection; Table A8.

Figure 4.3: Proportion of low birthweight liveborn singleton babies, by Indigenous status of the mother, NSW, Vic, Qld, WA, SA & NT, 2000–2009

Short–term trends: What has changed since 2008?

Between 2008 and 2009, there was no significant change in the proportion of low birthweight babies born to Indigenous or non-Indigenous mothers.

Box 4.1: Measuring low birthweight

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

Low birthweight is reported against this indicator for liveborn singleton infants only. Data on birthweight are available from the AIHW National Perinatal Data Collection (NPDC) (see Appendix C for more information on this data collection). State and territory reporting is based on the state/territory of usual residence of the mother. Reporting of Indigenous status is based on the Indigenous status of the mother. As many Indigenous babies have only one Indigenous parent, this is likely to underestimate the number of Indigenous babies since babies with an Indigenous father and non-Indigenous mother would not be captured. Work is underway to improve the identification of Indigenous babies by adding a new data element—'Indigenous status of baby'—to the Perinatal National Minimum Data Set (NMDS). This data element was added to the Perinatal NMDS in July 2012.

5 Infant mortality

Key findings

Infant mortality is a key measure of child health and of the overall health of a population, and reflects the effectiveness of the health system in maternal and perinatal health.

- During 2006–2010, the infant mortality rate for Indigenous infants was 8.1 per 1,000 live births, which was twice the rate for non-Indigenous infants.
- Over the period 2001 to 2010 there was a 46% decline in the infant mortality rate for Indigenous infants, and a 74% narrowing of the gap compared to non-Indigenous infants.

The infant mortality rate is used internationally as a key indicator of the health conditions in a country, and the effectiveness of the health system in maternal and perinatal health. The infant mortality rate also provides insight into changes in social and environmental conditions, hygiene, medical interventions, lifestyles and trends in underlying risk factors.

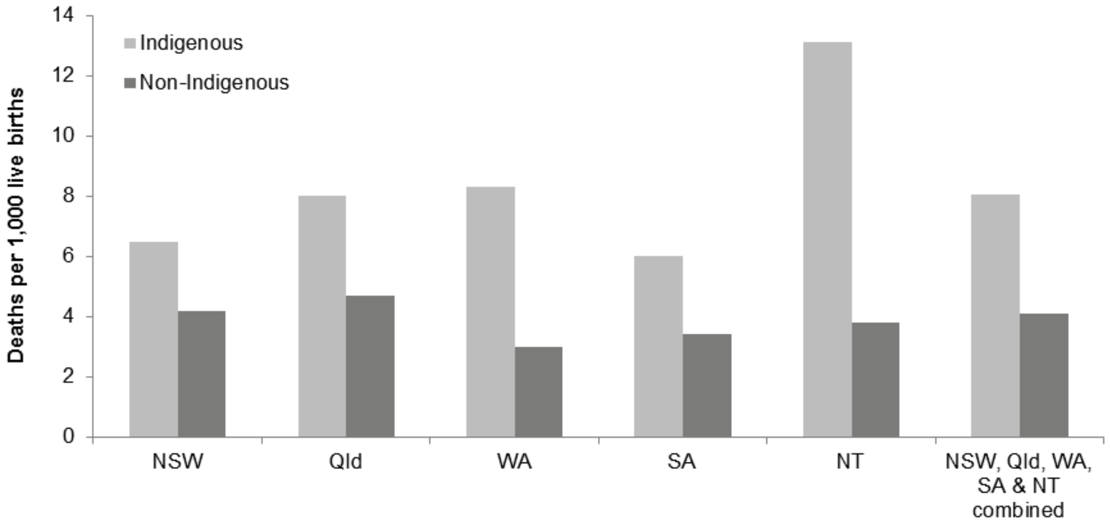
Social and economic factors are powerful determinants of infant and child mortality in both developed and developing countries (Collison et al. 2007; Marmot 2006). Infant and child mortality have been shown to be clearly associated with indicators of parental disadvantage, such as low income, long duration of income support, teenage motherhood, mother's education, number of siblings and living in socioeconomically disadvantaged areas (Yu 2008). One explanation for these patterns is the strong association between infant mortality and the accessibility and effectiveness of health services for mothers and babies, which are also affected by the economic resources of families (Freemantle et al. 2006). Infant survival can also be affected by maternal factors (such as age; number of prior pregnancies resulting in birth; and birth interval); nutritional deficiency; injury; smoking and other behavioural risk factors; and access to medical treatment (Mosley & Chen 2003).

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

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

Reported measure: Mortality rate for infants less than 1 year of age.

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

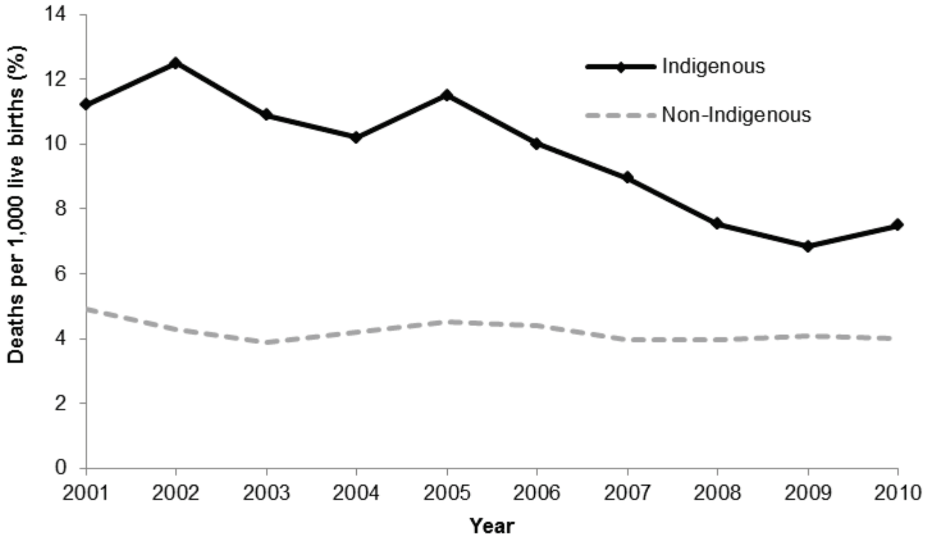


Source: AIHW National Mortality Database; Table A10.

Figure 5.1: Infant mortality rates, by Indigenous status and state and territory, 2006–2010

- During 2006–2010, around 12% of infant deaths were identified as Indigenous (533 in the five jurisdictions with reliable data on Indigenous mortality—New South Wales, Queensland, Western Australia, South Australia and the Northern Territory).
- For Indigenous infants, the infant mortality rate was twice that of non-Indigenous infants—8.1 and 4.1 infant deaths per 1,000 live births, respectively (Figure 5.1).
- The Indigenous infant mortality rate varied considerably by jurisdiction from 6 infant deaths per 1,000 live births in South Australia to 13.1 in the Northern Territory.
- The mortality rates for Indigenous infants was nearly twice as high as for non-Indigenous infants in New South Wales, Queensland and South Australia; and approximately 3 times as high in Western Australia and the Northern Territory.

Long-term trends: what has changed over the past decade?



Source: AIHW National Mortality Database; Table A11.

Figure 5.2: Infant mortality rates, by Indigenous status, NSW, Qld, WA, SA & NT, 2001–2010

During the period 2001–2010 in the jurisdictions with reliable Indigenous mortality data (New South Wales, Queensland, Western Australia, South Australia and the Northern Territory), there was a significant (46%) decline in the mortality rate for Indigenous infants over this period. A smaller decline (13%) was evident for non-Indigenous infants, resulting in a significant narrowing of the gap (Figure 5.2).

Short-term trends: what has changed since 2008?

Between 2008 and 2010, there was no significant change in the Indigenous infant mortality rate or in the gap.

Box 5.1: Measuring infant mortality

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

Data on infant mortality are available from the AIHW National Mortality Database (see Appendix C for more information).

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

6 Substance use during pregnancy

Key findings

Substance use during pregnancy increases the risk of complications, can affect the growth and development of the foetus and infant and these effects can carry though to childhood.

- Nationally, over half (52%) of Indigenous women reported smoking during pregnancy in 2009. This was almost 4 times the rate among non-Indigenous mothers.
- Findings from the 2008 NATSISS suggest that of Indigenous mothers with children aged 0–3 years, 42% smoked during pregnancy, 20% drank alcohol and 5% used illicit drugs.

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

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

Fetal alcohol spectrum disorder can occur when an unborn baby is exposed to harmful levels of alcohol. This is becoming increasingly recognised as an important public health concern. Alcohol is known to be harmful to the unborn child and is considered the most common preventable cause of birth defects and brain damage in children (Brems et al. 2010). Variations in the timing, dose and frequency of alcohol exposure, as well as the individual susceptibility of the unborn baby, are thought to contribute to the range and severity of impairments in affected children. These conditions include physical, cognitive and behavioural impairments that are life-long and can be profound.

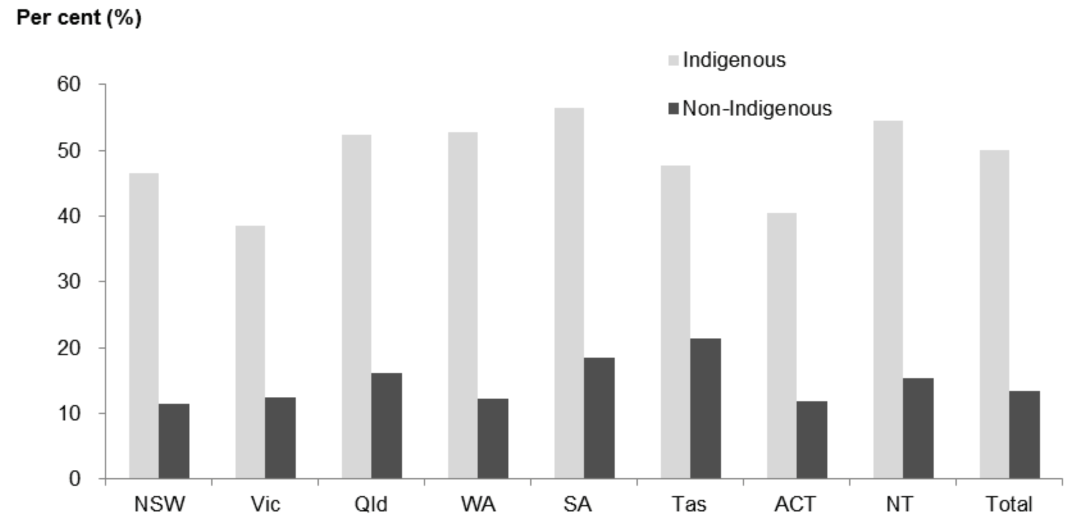
Reported measures:

a) Proportion of women who have used tobacco during pregnancy by Indigenous status

b) Proportion of Aboriginal and Torres Strait Islander women with children aged 0–3 years who used substances during pregnancy.

What proportion of Indigenous women smoke during pregnancy?

- Nationally, 52% (5,600) of the 11,300 Indigenous women who gave birth in 2009 reported that they smoked during their pregnancy.
- Indigenous mothers were almost 4 times as likely to smoke during pregnancy as non-Indigenous mothers.
- When 'not stated' responses to the smoking status question are excluded from analysis, South Australia had the highest rate of smoking in pregnancy among Indigenous mothers (58%), followed by the Northern Territory (54%) (Figure 6.1).

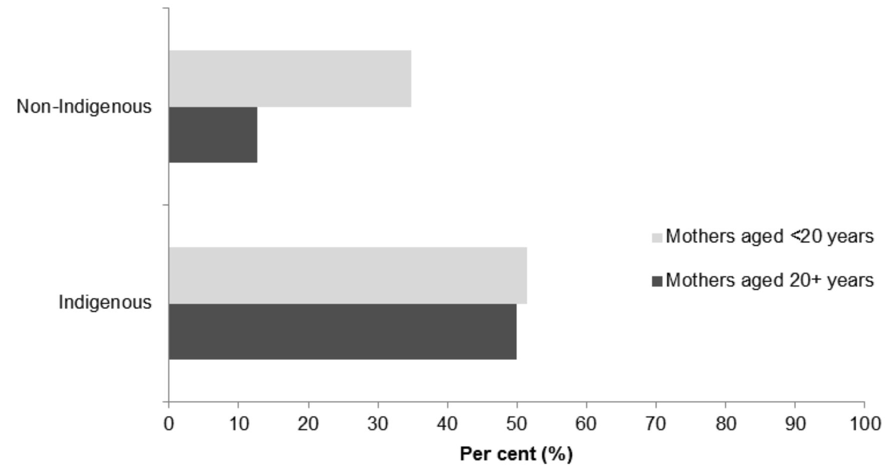


*Note: P*roportions are age-standardised.

Source: AIHW National Perinatal Data Collection; Table A13.

Figure 6.1: Women who smoked during pregnancy, by Indigenous status and state/territory, 2009

- Nationally, rates of smoking during pregnancy were similar among Indigenous teenage mothers (51%) and Indigenous mothers aged 20 years and over (52%) (Figure 6.2).



*Note: P*roportions for mothers aged 20 years and over are age-standardised.

Source: AIHW National Perinatal Data Collection; Table A13.

Figure 6.2: Women who smoked during pregnancy, by maternal age and Indigenous status, 2009

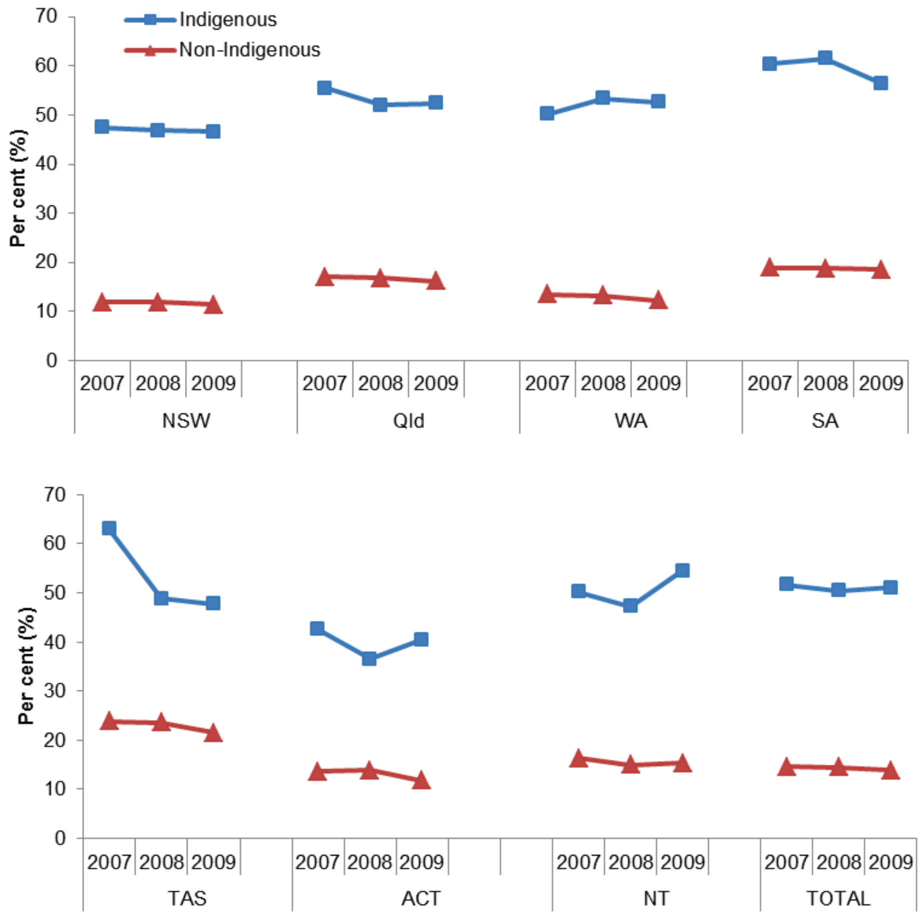
Medium-term trends: What has changed between 2007 and 2009?

Nationally, between 2007 and 2009, there was no significant change in the proportion of Indigenous mothers who smoked during pregnancy, or in the gap between Indigenous and non-Indigenous mothers. This was true for all states and territories with the exception of Tasmania, in which there was a significant (24%) decline in the proportion of Indigenous mothers who smoked during pregnancy; and in Western Australia where there was a significant (10%) increase in the gap (Figure 6.3). These data should be interpreted with caution due to the small number of Indigenous mothers who smoked during pregnancy in Tasmania.

It will be important to monitor whether a downward trend becomes evident in the longer term.

Short-term trends: what has changed since 2008?

- Between 2008 and 2009, there was no significant change in the proportion of Indigenous mothers who smoked during pregnancy, or in the gap between Indigenous and non-Indigenous mothers.



Note: Proportions are age-standardised.

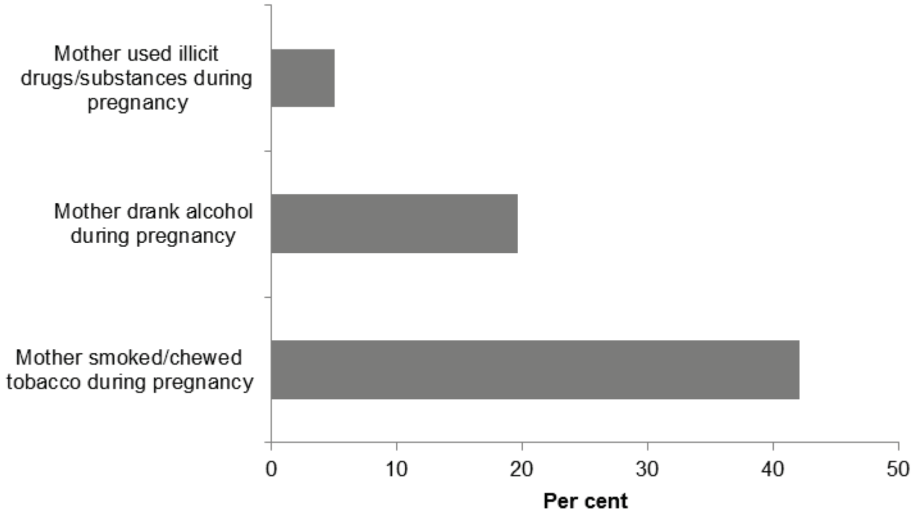
Source: AIHW National Perinatal Data Collection; Table A14.

Figure 6.3: Women who smoked during pregnancy, by Indigenous status and state/territory, 2007 to 2009

What proportion of Indigenous children had mothers who reported using substances during pregnancy?

Data on substance use during pregnancy by the mothers of Indigenous children are available from the 2008 NATSISS.

- In 2008, an estimated 42% of mothers of Indigenous children aged 0–3 years reported smoking/chewing tobacco during pregnancy. This ranged from 34% in Queensland to 52% in South Australia (Figure 6.4).
- An estimated 20% of mothers of Indigenous children reported drinking alcohol during pregnancy. The highest rates were reported in Victoria and Queensland at 23%.
- Approximately 5% of mothers of Indigenous children reported using illicit drugs during pregnancy, however these data should be interpreted with a caution due to small numbers and resulting high relative standard errors.



Source: AIHW analysis of 2008 NATSISS; Table A15.

Figure 6.4: Substance use during pregnancy by mothers of Indigenous children aged 0–3 years, 2008

Box 6.1: Measuring substance use during pregnancy

Administrative data

Information on mothers' tobacco smoking during pregnancy is available from the AIHW National Perinatal Data Collection.

All states and territories have included nationally consistent data items on smoking during pregnancy in their collections since 2009. Data for Victoria are not available prior to 2009.

Because of current differences in methods used for collecting information on smoking status, care must be taken when comparing across jurisdictions. 'Not stated' responses to the smoking status question have been excluded from analyses.

A new data element on smoking in the first 20 weeks of pregnancy has been developed and included in the Perinatal National Minimum Data Set from 1 January 2010 (see Appendix C for more information on the NPDC).

Work is under way to develop data items for alcohol use during pregnancy for inclusion in the Perinatal NMDS.

Survey data

The 2008 National Aboriginal and Torres Strait Islander Social Survey (NATSISS) collected information on whether mothers of children aged 0 to 3 years smoked tobacco, drank alcohol or used illicit substances during pregnancy.

As these data are based on a relatively small sample, data presented by state/territory should be treated with caution.

Data on whether any substances were used during pregnancy (tobacco, alcohol or illicit drugs/substances) are not able to be generated from the ABS Confidentialised Unit Record File for the NATSISS.

Both administrative and survey data on mothers' substance use during pregnancy are self-reported and therefore may be an under-estimate.

7 Child under 5 hospitalisation rates by principal diagnosis

Key findings

Child hospitalisation rates can be an indicator of the health of young children, as well as indicating access to, and use of, hospital treatment.

- Over the period 2008–09 to 2009–10, Indigenous children aged under 5 were hospitalised at 1.4 times the rate of other children.
- Respiratory diseases are the most common diagnoses of Indigenous children hospitalised, accounting for 28% of hospitalisations.
- Hospitalisation rates for Indigenous 0–4 year olds significantly increased (13%) between 2004–05 and 2009–10. The gap between Indigenous and other child hospitalisation rates also significantly increased over this period.

Hospitalisation rates can be an indicator of the health of young children, although they only represent the most serious cases of ill health requiring in–patient hospital treatment (SCRGSP 2009). However for some diagnoses, a hospitalisation could indicate that a preventative health procedure has occurred (for example, tympanoplasty tube insertion to treat middle ear disease). Rates of hospitalisation also indicate access to, and use of, hospital treatment, which is also affected by the availability of primary care and other services.

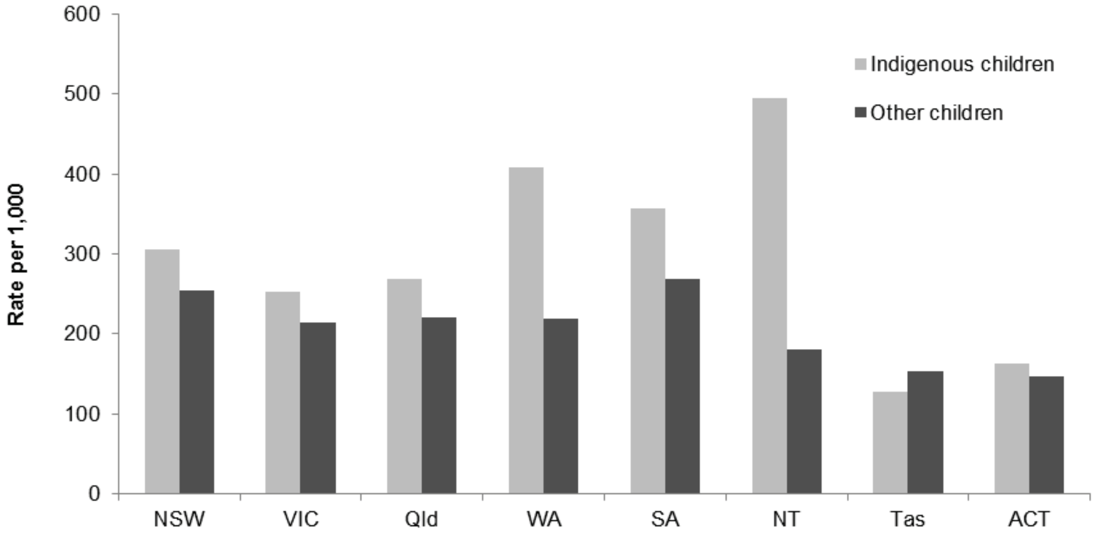
Using hospitalisation data alone to determine the level of ill-health amongst a population has a number of limitations, for example:

- Hospitalisation rates for a particular disease do not directly indicate the level of occurrence of that disease in the population. A high level of occurrence of a disease that does not usually become serious enough to require hospitalisation will not be reflected in a high level of hospitalisation.
- Some sick people will be managed in a primary care setting and some sick people will not seek treatment at all.
- Hospitalisation data can also be influenced by the capacity of primary health care to detect and manage conditions at an early stage, thus averting a more serious illness that would require hospitalisation.
- Hospitalisation may be influenced by the availability of services or by changes in treatment practices reflecting new technologies and drugs or understandings of disease.

Changes in hospitalisation rates may therefore be reflective of a number of different factors including changes in access to, and demand for, hospital treatment. Hospitalisation rates may partly reflect a particular disease being appropriately diagnosed and managed. Improvements in the recording of Indigenous status in hospital records may also affect hospitalisation rates reported for Indigenous children over time.

Reported measure: Hospitalisation rates for children under 5 (0-4 years) by Indigenous status and principal diagnoses (ICD-10 AM chapter level).

What is the rate of hospitalisation among Indigenous children aged under 5?



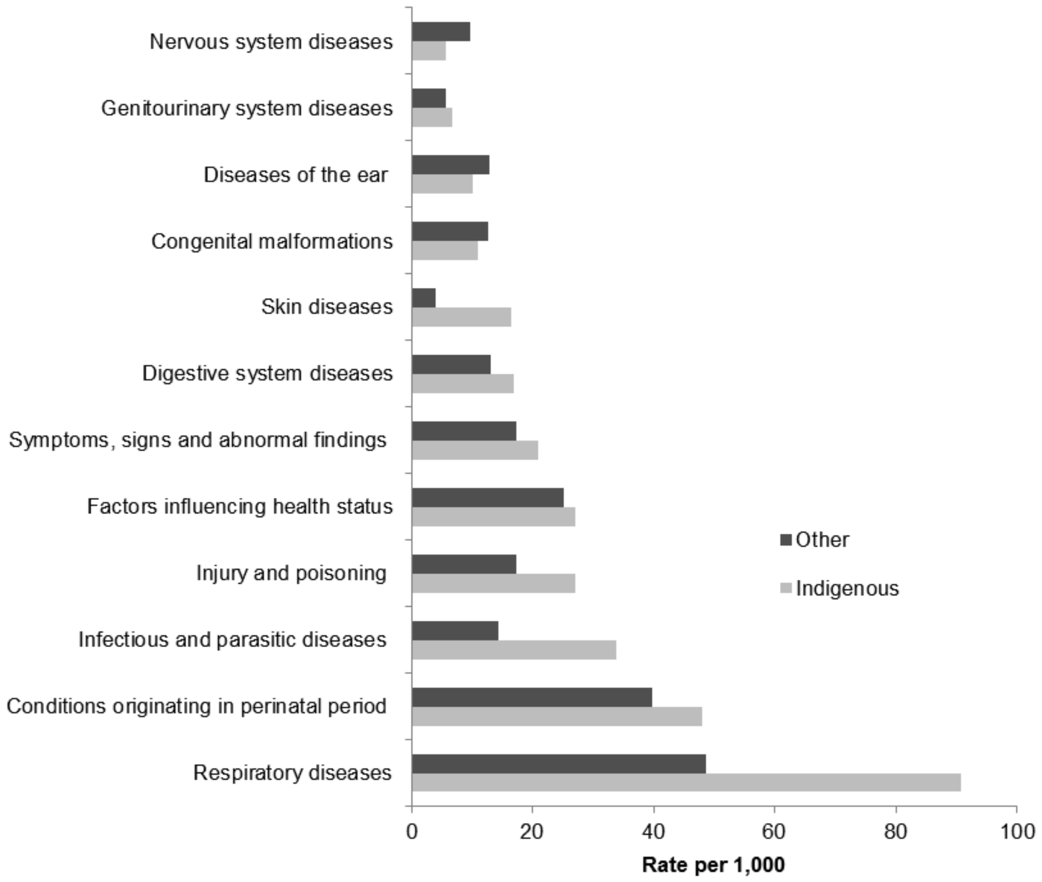
Note: Data for Tasmania and the Australian Capital Territory should be interpreted with caution until further assessment of Indigenous identification is completed.

Source: AIHW National Hospital Morbidity Database; Table A16.

Figure 7.1: Child under 5 hospital separation rates, by Indigenous status and state and territory, 2008–09 to 2009–10

- During the 2 year period 2008–09 to 2009–10, there were approximately 42,000 hospital separations of Indigenous children aged under 5 years in the six jurisdictions with reliable data on Indigenous hospitalisations—New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory. The hospital separation rate for Indigenous children was 1.4 times that of other Australian children—330 compared to 234 per 1,000 population, respectively (Table A16).
- Hospital separation rates for Indigenous children varied across jurisdictions, from 253 per 1,000 population in Victoria to 494 per 1,000 population in the Northern Territory (Figure 7.1). Rates were less than 200 per 1,000 population in Tasmania and the Australian Capital Territory, however, these rates should be interpreted with caution due to the relatively small number of separations for Indigenous children in these jurisdictions and until further assessment of Indigenous identification is completed.

What are the most common diagnoses for hospitalisations among Indigenous children?



Notes:

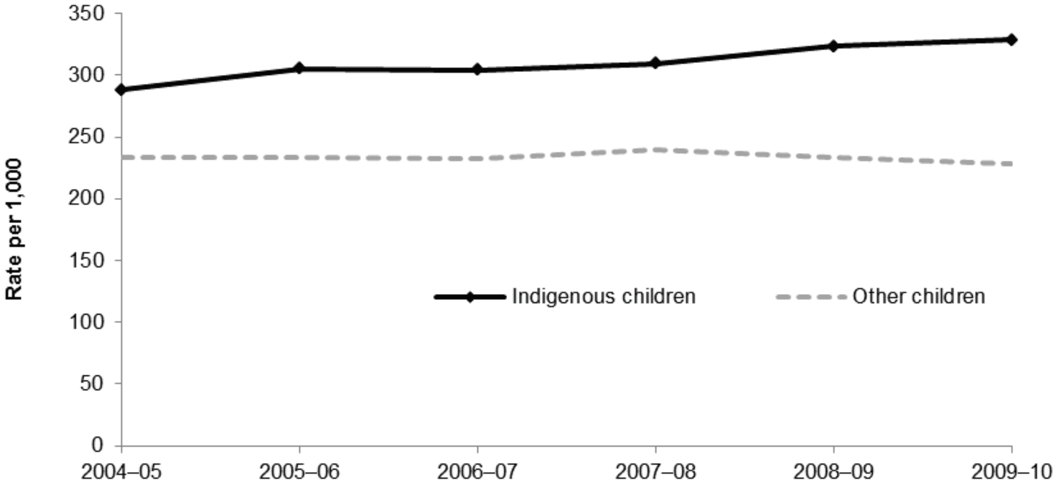
1. Symptoms, signs and abnormal findings refers to the ICD-10 AM chapter 'Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified'. This includes symptoms, signs and abnormal results of clinical or other investigatory procedures and ill-defined conditions regarding which no diagnosis classifiable elsewhere is recorded. Examples of diagnoses include abnormalities of breathing and pelvic and abdominal pain.
2. Factors influencing health status refers to the ICD10-chapter 'Factors influencing health status and contact with health services' and is used when circumstances other than a disease, injury or external causse is recorded as a diagnosis or problem. For example, persons encountering health services for examination, investigation or follow-up care.

Source: AIHW National Hospital Morbidity Database; Table A16.

Figure 7.2: Child under 5 hospital separation rates, by principal diagnosis and Indigenous status, NSW, Vic, Qld, WA, SA & NT, 2008–09 to 2009–10

- Respiratory diseases were the most common diagnoses for hospitalisations of Indigenous children during the period 2008–09 to 2009–10, accounting for 28% of total hospitalisations of Indigenous children. This was followed by conditions in the perinatal period (15%) and infectious and parasitic diseases (10%).
- The greatest difference in rates between Indigenous and other Australian children was for respiratory diseases (a difference of 42 per 1,000), followed by infectious and parasitic diseases (a difference of 19 per 1,000), and diseases of the skin (a difference of 13 per 1,000). Indigenous children were hospitalised for diseases of the skin at 4 times the rate of other children. Indigenous children were hospitalised for respiratory diseases and infectious and parasitic diseases at twice the rate of other children (Figure 7.2).

Long-term trends: What has changed during 2004–05 to 2009–10?

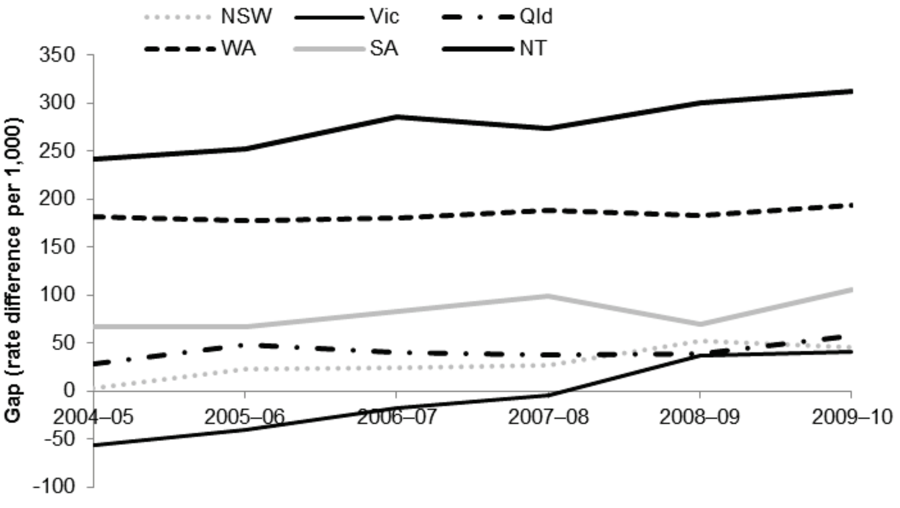


Source: AIHW National Mortality Database; Table A17.

Figure 7.3: Child 0–4 hospitalisation rates, by Indigenous status, NSW, Vic, Qld, WA, SA & NT, 2004–05 to 2009–10

- Between 2004–05 to 2009–10, in the jurisdictions where data are considered to be of acceptable quality (New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory), hospitalisation rates for Indigenous children for all causes significantly increased by 13% (Figure 7.3). The gap between Indigenous and other child hospitalisations significantly increased by 74%.
- There were significant increases in Indigenous child hospitalisation rates in New South Wales (33%), Victoria (34%) and the Northern Territory (17%), and a significant widening of the gap in these jurisdictions (Figure 7.4).
- For the jurisdictions combined, there were significant increases in Indigenous child hospitalisation rates for respiratory diseases (11%), conditions originating in the perinatal period (22%), injury and poisoning (15%) and contact with health services (for example, examination, investigation and follow-up care) (73%) (Table A17).

As previously discussed, increases in hospitalisation rates may reflect increases in access to hospital treatment and/or improvements in the recording of Indigenous status in hospital records, rather than an increase in ill-health or disease.



Note: A negative rate difference (gap) indicates that rates for Indigenous Australians are lower than for Other Australians.
Source: AIHW National Hospital Morbidity Database; Table A18.

Figure 7.4: Gap (rate difference) in child 0–5 hospitalisation rates, by state/territory, 2004–05 to 2009–10

Short-term trends: What has changed since 2008–09?

Hospitalisation rates for Indigenous children aged 0–4 years were stable between 2008–09 and 2009–10 in all states and territories where Indigenous status data were considered to be of acceptable quality. There was a significant increase in the gap between Indigenous and other Australians for total child hospitalisations (Table A18), and a significant increase in both the Indigenous rate and the gap for hospitalisations from 'symptoms, signs and abnormal clinical and laboratory findings' (Table A17).

Box 7.1: Measuring child hospitalisations

The 'Child under 5 hospitalisation rate' is the number of hospital separations of children aged under 5 years of age in a given year, expressed per 1,000 population of children aged under 5 years in the same year. Data on child hospitalisations are available from the AIHW National Hospital Morbidity Database (see Appendix C for more information).

Indigenous status data are of sufficient quality to report for six jurisdictions: New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory. National totals include these six jurisdictions only. Tasmania and the Australian Capital Territory (public hospitals only) are presented separately with caveats until further audits of the quality of data in these jurisdictions are completed. Increases in rates of hospitalisation among Indigenous children does not necessarily reflect increases in disease prevalence, but rather may reflect increases in access to hospital and other health services and/or increases in the propensity to identify as Indigenous in hospital administration records.

Appendix A: Detailed tables

Table A1: Women who gave birth who attended at least one antenatal visit in the first trimester, by maternal age, Indigenous status and state/territory, NSW, Qld, SA and NT, 2009[(a)(b)(c)]

	NSW	Qld[(d)]	SA	NT	Total[(e)]	Total LCI[(f)]	Total UCI[(f)]
				Mother aged <20 years			
Number							
Indigenous	369	93	47	105	614	. .	. .
Non-Indigenous	1,930	520	397	51	2,898	. .	. .
Crude rate							
Indigenous	68.2	32.7	43.1	34.5	49.6	45.7	53.5
Non-Indigenous	72.7	40.6	62.1	61.4	62.2	60.0	64.5
Rate ratio[(g)]	0.9	0.8	0.7*	0.6*	0.8*	. .	. .
Rate difference[(h)]	–4.5	–7.8	–19.0*	–26.9*	–12.6*	. .	. .
				Mother aged 20 years and over			
Number							
Indigenous	1,622	485	247	563	2,917	. .	. .
Non-Indigenous	70,111	16,109	12,935	1,867	101,022	. .	. .
Crude Rate							
Indigenous	70.8	36.9	55.6	51.8	56.8	54.7	58.9
Non-Indigenous	80.2	60.3	79.8	82.4	76.2	75.7	76.6
Age-standardised rate[(i)]							
Indigenous	70.4	36.6	58.4	52.9	56.6	54.6	58.7
Non-Indigenous	80.1	60.9	79.9	82.5	76.1	75.6	76.6
Rate ratio[(g)]	0.9*	0.6*	0.7*	0.6*	0.7*	. .	. .
Rate difference[(h)]	–9.7*	–24.4*	–21.6*	–29.6*	–19.5*	. .	. .
				Total mothers			
Number							
Indigenous	1,991	578	294	668	3,531	. .	. .
Non-Indigenous	72,045	16,629	13,332	1,918	103,924	. .	. .
Crude Rate							
Indigenous	70.3	36.1	53.2	48.1	55.4	53.6	57.2
Non-Indigenous	80.0	59.4	79.1	81.6	75.7	75.2	76.1
Age-standardised rate[(i)]							
Indigenous	70.3	36.4	57.7	52.2	56.3	53.6	57.2
Non-Indigenous	79.8	60.0	79.2	81.6	75.5	75.2	76.1
Rate ratio[(g)]	0.9*	0.6*	0.7*	0.6*	0.7*	. .	. .
Rate difference[(h)]	–9.4*	–23.6*	–21.4*	–29.4*	–19.1*	. .	. .

(continued)

Table A1 (continued): Women who gave birth who attended at least one antenatal visit in the first trimester, by maternal age, Indigenous status and state/territory, NSW, Qld, SA and NT, 2009(a)(b)(c)

* Represents results with statistically significant differences in the Indigenous/non-Indigenous comparison at the $p < 0.05$ level.

. . Not applicable.

(a) Women who gave birth in the period, whether resulting in a live or still birth, if the birthweight is at least 400 grams or the gestational age is 20 weeks or more. Excludes births where mother's Indigenous status was not stated. First trimester is up to and including 13 completed weeks of pregnancy. Antenatal visits relate to care provided by skilled birth attendants for reasons related to pregnancy. Maternal age is the age of the mother at the time of giving birth. The day of the first visit for antenatal care is the day of the first contact with a midwife, medical practitioner, or other recognised health professional where antenatal care was provided. It does not include contact if it was to confirm the pregnancy only or those contacts that occurred during pregnancy that related to other non-pregnancy related issues. It does not include a first contact after the onset of labour.

(b) Gestation at first antenatal visit is not part of the Perinatal NMDS. The current question is not consistent across jurisdictions, therefore caution should be used when interpreting these numbers. Data are not available for WA and Tasmania. Data are available in Queensland but only for half of 2009. Data are available in Victoria and the ACT but are not of sufficient quality to publish. Data are by usual place of residence of the mother. Women who gave birth in NSW, SA or the NT but reside in another jurisdiction are not reported due to small numbers.

(c) Data excludes Australian non-residents, residents of external territories and where state/territory of residence was not stated. Data also exclude gestational age not stated.

(d) Only includes data for 6 months and should be used with caution.

(e) Total includes NSW, Qld, SA and NT only. These data are not generalisable to Australia.

(f) LCL & UCL = upper and lower confidence intervals at the $p < 0.05$ level.

(g) ‘Rate ratio’ is the directly age-standardised Indigenous rate divided by the directly age-standardised non-Indigenous rate.

(h) ‘Rate difference’ is the directly age-standardised Indigenous rate less the directly age-standardised non-Indigenous rate.

(i) Data are directly age-standardised using the Australian female population who gave birth in 2009 as the standard population.

Source: AIHW National Perinatal Data Collection.

Table A2: Mothers who gave birth who attended at least one antenatal visit in the first trimester, by Indigenous status of mother, NSW, SA and NT combined, 2007 to 2009[a][b][c]

	2007	2008	2009	Short-term change (2008–2009)[d]	Long-term change (2007–2009)[d]
			Number		
Indigenous					
Mothers aged <20 years	455	550	521	–5.3	14.5
Mothers aged 20+ years	2,099	2,385	2,432	2.0	15.9*
Total	*2,560*	*2,935*	*2,953*	*0.6*	*15.4*
Non-Indigenous					
Mothers aged <20 years	2,167	2,410	2,378	–1.3	9.7
Mothers aged 20+ years	77,383	86,253	84,913	–1.6	9.7
Total	*79,558*	*88,670*	*87,295*	*–1.6*	*9.7*
			Per cent[e]		
Indigenous					
Mothers aged <20 years	50.1	55.6	54.6	–1.7	9.0
Mothers aged 20+ years[f]	59.8	64.9	64.0	–1.3	7.0
Total[f]	*59.4*	*66.3*	*63.6*	*–4.1*	*7.1*
Non-Indigenous					
Mothers aged <20 years	64.4	69.3	70.5	1.7	9.4*
Mothers aged 20+ years[f]	77.6	82.2	80.1	–2.5*	3.2
Total[f]	*76.9*	*81.7*	*79.6*	*–2.5**	*3.6*
			Rate ratio[g]		
Mothers aged <20 years	0.8	0.8	0.8	–3.4	–0.4
Mothers aged 20+ years	0.8	0.8	0.8	1.3	3.6*
Total	*0.8*	*0.8*	*0.8*	*–1.7*	*3.4*
			Rate difference[h]		
Mothers aged <20 years	–14.3	–13.7	–15.8	15.5	11.1
Mothers aged 20+ years	–17.7	–17.3	–16.1	–7.2	–9.5*
Total	*–17.5*	*–15.3*	*–16.0*	*4.7*	*–8.5*

* Represents results with a statistically significant change at the $p < 0.05$ level over the period.

(a) Indigenous and non-Indigenous data exclude births where the mother's Indigenous status is not stated.

(b) Jurisdiction is based on place of usual residence. Data not available from the ACT, Victoria, Qld, WA and Tasmania.

(c) SA data excludes women where number of antenatal visits attended is unknown.

(d) Per cent change based on the average annual change over the period.

(e) Per cent of women who gave birth in the period, whether resulting in a live or stillbirth, if the birthweight is at least 400 grams or the gestational age was 20 weeks or more. Excludes gestational age not stated.

(f) Rates for mothers aged 20 years and over, and total mothers are directly age-standardised using the using the Australian female population in 2009 who gave birth as the standard population.

(g) 'Rate ratio' is the directly age-standardised Indigenous rate divided by the directly age-standardised non-Indigenous rate.

(h) 'Rate difference' is the directly age-standardised Indigenous rate less the directly age-standardised non-Indigenous rate.

Source: AIHW National Perinatal Data Collection.

Table A3: Mothers who gave birth who attended at least one antenatal visit in the first trimester, by Indigenous status of mother and state/territory, NSW, SA and NT, 2007 to 2009[(a)(b)(c)]

	2007	2008	2009	Short-term change (2008–2009)[(d)]	Long-term change (2007–2009)[(d)]
			Number		
Indigenous					
NSW	1,822	2,023	1,991	–1.6	9.3
SA	171	259	294	13.5	71.9*
NT	561	653	668	2.3	19.1*
Total	*2,554*	*2,935*	*2,953*	*0.6*	*15.6*
Non-Indigenous					
NSW	69,485	74,592	72,045	–3.4	3.7
SA	8,792	12,182	13,332	9.4	51.6*
NT	1,281	1,896	1,918	1.2	49.7
Total	*79,558*	*88,670*	*87,295*	*–1.6*	*9.7*
			Per cent[(e)]		
Indigenous					
NSW	67.7	72.2	70.3	–2.7	3.8
SA	40.7	50.8	57.7	13.7	41.9*
NT	47.3	52.4	52.1	–0.6	10.2
Total	*59.5*	*64.4*	*63.6*	*–1.3*	*7.0*
Non-Indigenous					
NSW	78.2	83.0	79.7	–3.9*	2.0
SA	72.4	74.8	79.2	5.9*	9.3*
NT	59.7	81.0	81.6	0.7	36.6
Total	*77.0*	*81.6*	*79.6*	*–2.4**	*3.4*
			Rate ratio[(f)]		
NSW	0.9	0.9	0.9	1.3	1.7*
SA	0.6	0.7	0.7	7.4	29.9*
NT	0.8	0.6	0.6	–1.3	–19.3
Total	*0.8*	*0.8*	*0.8*	*1.1*	*3.5**
			Rate difference[(g)]		
NSW	–10.4	–10.8	–9.5	–12.1	–9.3
SA	–31.8	–24.0	–21.4	–10.7	–32.5*
NT	–12.4	–28.6	–29.4	3.1	137.3*
Total	*–17.6*	*–17.2*	*–16.0*	*–6.6*	*–8.7**

(continued)

Table A3 (continued): Mothers who gave birth who attended at least one antenatal visit in the first trimester, by Indigenous status of mother and state/territory, NSW, SA and NT, 2007 to 2009(a)(b)(c)

* Represents results with a statistically significant change at the $p < 0.05$ level over the period.

(a) Indigenous and non-Indigenous data exclude births where the mother's Indigenous status is not stated.

(b) Jurisdiction is based on place of usual residence. Data not available from the ACT, Victoria, Qld, WA and Tasmania.

(c) SA data excludes women where number of antenatal care visits attended is unknown.

(d) Per cent change based on the average annual change over the period.

(e) Per cent of women who gave birth in the period, whether resulting in a live or stillbirth, if the birthweight is at least 400 grams or the gestational age was 20 weeks or more. Rates are directly age-standardised using the using the Australian female population who gave birth in 2009 as the standard population. Rates exclude gestational age not stated.

(f) 'Rate ratio' is the directly age-standardised Indigenous rate divided by the directly age-standardised non-Indigenous rate.

(g) 'Rate difference' is the directly age-standardised Indigenous rate less the directly age-standardised non-Indigenous rate.

Source: AIHW National Perinatal Data Collection.

Table A4: Numbers and rates (per 100,000 per year) of notifications of sexually transmissible infections and blood-borne viruses among 15–19 year olds, by Indigenous status and state/territory, syphilis, chlamydia, gonorrhoea, hepatitis B, hepatitis C (2009–2011); HIV (2008–2010)(a)(b)

	Indigenous				Other(c)				
State/ territory	Number	Rate per 100,000(d)	95% LCL(e)	95% UCL(e)	Rate per 100,000(d)	95% LCL(e)	95% UCL(e)	Rate ratio(f)(g)	Rate difference(h)
					Syphilis(i)				
NSW	0	0.0	. .	. .	1.4	0.8	2.0	. .	–1.4
Vic	0	0.0	. .	. .	3.7	2.6	4.8	. .	–3.7
Qld	103	187.0	150.9	223.1	3.3	2.1	4.5	57.0	183.7
WA	21	84.2	48.2	120.2	2.5	1.0	3.9	34.1	81.8
SA	0	0.0	. .	. .	0.0	. .	. .	. .	0.0
Tas	0	0.0	. .	. .	0.0	. .	. .	. .	0.0
ACT	0	0.0	. .	. .	n.p.	. .	. .	n.p.	n.p.
NT	15	70.1	34.6	105.6	n.p.	. .	. .	n.p.	n.p.
Australia	**139**	**72.6**	**60.5**	**84.7**	**2.4**	**2.0**	**2.9**	**30.0**	**70.2**
					Chlamydia				
Vic	123	956.2	787.2	1,125.2	995.2	976.4	1,014.0	1.0	–39.0
Qld	4,035	7,324.5	7,098.5	7,550.5	1,469.1	1,443.9	1,494.4	5.0*	5,855.4*
WA	1,986	7,964.7	7,614.4	8,315.0	1,504.0	1,468.0	1,540.0	5.3*	6,460.7*
SA	248	2,358.3	2,064.8	2,651.8	1,020.1	984.7	1,055.5	2.3*	1,338.2*
Tas	60	825.5	616.6	1,034.4	2,111.1	2,019.7	2,202.5	0.4*	–1,285.6*
NT	1,382	6,461.0	6,120.3	6,801.6	2,773.1	2,581.4	2,964.8	2.3*	3,687.9*
Vic, Qld, WA, SA, Tas & NT	**7,834**	**5,932.1**	**5,800.7**	**6,063.5**	**1,280.6**	**1,267.5**	**1,293.7**	**4.6***	**4,651.5***
					Gonorrhoea				
Vic	n.p.	n.p.	n.p.	n.p.	32.4	29.0	35.8	n.p.	n.p.
Qld	1,162	2,109.3	1,988.0	2,230.6	81.1	75.2	87.1	26.0*	2,028.2*
WA	1,001	4,014.4	3,765.7	4,263.1	36.3	30.7	41.9	110.5*	3,978.1*
SA	156	1,483.5	1,250.7	1,716.2	26.2	20.5	31.9	56.6*	1,457.3*
Tas	0	0.0	. .	. .	5.1	0.6	9.7	. .	–5.1
ACT	n.p.	n.p.	n.p.	n.p.	24.0	12.6	35.4	n.p.	n.p.
NT	1,473	6,886.4	6,534.7	7,238.1	324.2	258.7	389.8	21.2*	6,562.2*
Vic, Qld, WA, SA, Ta, ACT & NT	**3,797**	**2,840.7**	**2,750.3**	**2,931.0**	**48.9**	**46.3**	**51.4**	**58.1***	**2,791.8***

(continued)

Table A4 (continued): Numbers and rates (per 100,000 per year) of notifications of sexually transmissible infections and blood-borne viruses among 15–19 year olds, by Indigenous status and state/territory, syphilis, chlamydia, gonorrhoea, hepatitis B, hepatitis C (2009–2011); HIV (2008–2010)(a)(b)

	Indigenous				Other(c)				
State/ territory	Number	Rate per 100,000(d)	95% LCL(e)	95% UCL(e)	Rate per 100,000(d)	95% LCL(e)	95% UCL(e)	Rate ratio(f)(g)	Rate difference(h)
				Hepatitis B(j)					
WA	15	60.2	29.7	90.6	23.3	18.8	27.8	2.6*	36.8*
SA	n.p.	n.p.	n.p.	n.p.	25.2	19.7	30.8	n.p.	n.p.
Tas	0	0.0	. .	. .	14.4	6.9	22.0	. .	–14.4
ACT	n.p.	n.p.	n.p.	n.p.	25.4	13.7	37.1	n.p.	n.p.
NT	14	65.5	31.2	99.7	69.0	38.7	99.2	0.9	–3.5
WA, SA, Tas, ACT & NT	**34**	**51.7**	**34.3**	**69.1**	**24.6**	**21.4**	**27.7**	**2.1***	**27.2***
				Hepatitis C(j)					
WA	31	124.3	80.6	168.1	13.9	10.4	17.4	8.9*	110.4*
SA	9	85.6	29.7	141.5	8.3	5.1	11.5	10.3*	77.3*
Tas	n.p.	n.p.	n.p.	n.p.	15.4	7.6	23.3	n.p.	n.p.
NT	6	28.1	5.6	50.5	n.p.	. .	. .	n.p.	n.p.
WA, SA, Tas & NT	**47**	**73.3**	**52.4**	**94.3**	**12.1**	**9.8**	**14.4**	**6.1***	**61.2***
				HIV(k)					
NSW	0	0.0	. .	. .	0.7	0.3	1.2	n.p.	n.p.
Vic	0	0.0	. .	. .	1.3	0.6	2.0	n.p.	n.p.
Qld	n.p.	n.p.	. .	. .	0.9	0.3	1.6	n.p.	n.p.
WA	0	0.0	. .	. .	n.p.	. .	. .	n.p.	n.p.
SA	0	0.0	. .	. .	n.p.	. .	. .	n.p.	n.p.
Tas	0	0.0	. .	. .	0.0	. .	. .	. .	0.0
ACT	0	0.0	. .	. .	n.p.	. .	. .	n.p.	n.p.
NT	0	0.0	. .	. .	0.0	. .	. .	. .	0.0
Australia	**n.p.**	**n.p.**	**. .**	**. .**	**0.8**	**0.6**	**1.1**	**n.p.**	**n.p.**

* Represents results with statistically significant differences in the Indigenous/non-Indigenous comparison at the $p < 0.05$ level.

n.p. not available for publication due to numbers less than 5, however included in totals where appropriate.

(a) Calendar year reporting. Data are presented in 3-year groupings because of the small numbers each year.

(b) Data are reported for only those jurisdictions which are considered to have adequate levels of Indigenous under-identification for each disease.

(c) 'Other' includes notifications for non-Indigenous people and those for whom Indigenous status was not stated.

(d) Number of notifications per 100,000 population aged 15–19 years.

(e) Upper and lower confidence intervals at the $p < 0.05$ level.

(f) 'Rate ratio' is the Indigenous rate divided by the rate for other Australians.

(g) Because of the very high rates of syphilis and gonorrhoea in the Indigenous population and low rates of these STIs in the other population, rate ratios are large and may vary between reports, as fairly minor changes in rates can result in large changes in the resulting ratios.

(h) 'Rate difference' is the Indigenous rate minus rate for other Australians.

(i) Syphilis data limited to notifications of less than 2 years duration and includes notifications of congenital syphilis.

(j) Hepatitis B and hepatitis C data contains notifications of newly diagnosed infections, including cases known to have been newly acquired, whether or not the infection was sexually transmitted.

(k) HIV data contains notifications of newly diagnosed HIV infection and includes HIV infections known to have been newly acquired.

Source: AIHW analysis of NNDSS data; National AIDS Registry; National HIV database.

Table A5a: Numbers and rates (per 100,000 per year) of notifications of syphilis, chlamydia, gonorrhoea, hepatitis B, and hepatitis C among 15–19 year olds, by Indigenous status, WA, SA and NT, 1994-96 to 2009-11

	1994–1996	1997–1999	2000–2002	2003–2005	2006–2008	2009–2011	Short-term change (2008 to 2011)[(a)]	Long-term change (1994–96 to 2009–11)[(a)]
				Syphilis[(b)]				
Indigenous number	351	237	327	252	206	36	–62.2	–75.7*
Indigenous rate per 100,000[(c)]	909.4	578.9	725.4	517.3	387.2	63.3	–63.4	–84.0*
Other rate per 100,000[(c)(d)]	3.1	2.3	7.0	1.9	3.3	1.6	–63.3*	–46.8
Rate ratio[(e)]	294.2	249.5	103.2	274.2	118.3	38.4	–15.0	–77.8*
Rate difference[(f)]	906.3	576.6	718.4	515.4	383.9	61.7	–63.4	–84.1*
				Chlamydia				
Indigenous number	749	1212	1616	2509	3139	3616	25.7*	427.4*
Indigenous rate per 100,000[(c)]	1,940.6	2,960.6	3,584.9	5,149.9	5,900.2	6,361.6	20.9*	255.1*
Other rate per 100,000[(c)(d)]	172.4	311.1	390.6	596.8	972.3	1,358.5	49.0*	717.9*
Rate ratio[(e)]	11.3	9.5	9.2	8.6	6.1	4.7	–18.9*	–59.2*
Rate difference[(f)]	1,768.3	2,649.5	3,194.3	4,553.1	4,927.8	5,003.2	14.4	210.0*
				Gonorrhoea				
Indigenous number	1061	1472	1945	2653	2623	2630	17.7	172.4*
Indigenous rate per 100,000[(c)]	2,749.0	3,595.8	4,314.7	5,445.5	4,930.3	4,626.9	13.2	80.5*
Other rate per 100,000[(c)(d)]	33.4	62.2	56.5	48.8	44.1	42.9	–6.8	–6.7
Rate ratio[(e)]	82.3	57.8	76.4	111.7	111.8	107.9	22.7	60.2*
Rate difference[(f)]	2,715.6	3,533.5	4,258.3	5,396.7	4,886.2	4,584.0	13.4	81.6*
				Hepatitis B				
Indigenous number	n.a.	49	79	51	46	32	21.4	–59.3
Indigenous rate per 100,000[(c)]	n.a.	119.7	175.3	104.7	86.5	56.3	16.9	–78.0*
Other rate per 100,000[(c)(d)]	n.a.	28.3	27.6	21.6	22.8	25.8	45.9*	–15.0
Rate ratio[(e)]	n.a.	4.2	6.4	4.9	3.8	2.2	–19.0	–68.2
Rate difference[(f)]	n.a.	91.4	147.7	83.1	63.7	30.5	8.1	–97.5*
				Hepatitis C				
Indigenous number	n.a.	67	72	55	34	46	50.0	–51.7*
Indigenous rate per 100,000[(c)]	n.a.	163.7	159.7	112.9	63.9	80.9	43.9	–69.2*
Other rate per 100,000[(c)(d)]	n.a.	52.8	47.1	26.4	16.4	11.7	–21.5	–92.8*
Rate ratio[(e)]	n.a.	3.1	3.4	4.3	3.9	6.9	81.7	114.3*
Rate difference[(f)]	n.a.	110.9	112.6	86.5	47.5	69.3	79.6	–58.0*

(continued)

Table A5a (continued): Numbers and rates (per 100,000 per year) of notifications of syphilis, chlamydia, gonorrhoea, hepatitis B, and hepatitis C among 15–19 year olds, by Indigenous status, WA, SA and NT, 1994–96 to 2009–11

* Represents results with a statistically significant change at the $p < 0.05$ level over the period.

n.a. Not available for reporting - hepatitis B and C notification data not complete or consistent prior to 1997.

(a) Per cent change based on the average annual change over the period.
(b) Syphilis data limited to notifications of less than 2 years duration and includes notifications of congenital syphilis.
(c) Crude rates per 100,000 population aged 15–19 years.
(d) 'Other' includes notifications for non-Indigenous people and those for whom Indigenous status was not stated.
(e) Notification rate for Indigenous Australians divided by the notification rate for other Australians.
(f) Notification rate for Indigenous Australians minus the notification rate for other Australians.

Source: AIHW analyses of NNDSS data.

Table A5b: Numbers and rates (per 100,000 per year) of notifications of HIV, among 15–19 year olds, by Indigenous status, NSW, Vic, Qld, WA, SA and NT, 1998–2000 to 2009–2010

	1998–2000	2001–2003	2004–2006	2007–2008	2009–2010	Short-term change (2008 to 2010)(a)	Long-term change (1998–00 to 2009–10)(a)
Indigenous number	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Indigenous rate per 100,000(b)	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Other rate per 100,000(b)(c)	0.9	0.8	0.9	0.7	0.9	–27.7	–3.8
Rate ratio(d)	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Rate difference(e)	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.

* Represents results with a statistically significant change at the $p < 0.05$ level over the period.

n.p. Not published where numbers are less than 5.

(a) Per cent change based on the average annual change over the period.

(b) Crude rates per 100,000 population aged 15–19 years.

(c) 'Other' includes notifications for non-Indigenous people and those for whom Indigenous status was not stated.

(d) Notification rate for Indigenous Australians divided by the notification rate for other Australians.

(e) Notification rate for Indigenous Australians minus the notification rate for other Australians.

Source: AIHW analyses of National AIDS Registry; National HIV database.

Table A6: Incidence of low birthweight among liveborn singleton babies, by Indigenous status of the mother and state/territory, 2007–2009[(a)(b)(c)(d)]

	Indigenous(e)				Non-Indigenous					
	Number	Per cent(f)	95%LCL(g)	95%UCL(g)	Number	Proportion(f)	95%LCL(g)	95%UCL(g)	Rate ratio(h)	Rate difference(i)
NSW	906	10.3	n.p.	n.p.	11,648	4.3	n.p.	n.p.	2.4*	6.0*
Vic	241	12.0	n.p.	n.p.	9,290	4.6	n.p.	n.p.	2.6*	7.4*
Qld	922	9.6	n.p.	n.p.	7,473	4.5	n.p.	n.p.	2.1*	5.1*
WA	705	13.8	n.p.	n.p.	3,648	4.4	n.p.	n.p.	3.2*	9.4*
SA	219	12.2	n.p.	n.p.	2,631	4.7	n.p.	n.p.	2.6*	7.4*
Tas(j)	61	7.8	n.p.	n.p.	902	5.1	n.p.	n.p.	1.5*	2.7*
ACT(j)	22	10.3	n.p.	n.p.	534	3.9	n.p.	n.p.	2.6*	6.4*
NT	528	12.9	n.p.	n.p.	304	4.4	n.p.	n.p.	2.9*	8.4*
Aust	**3,604**	**10.8**	**10.5**	**11.2**	**36,430**	**4.3**	**4.3**	**4.3**	**2.5***	**6.5***

* Represents results with statistically significant differences in the Indigenous/non-Indigenous comparison at the $p < 0.05$ level.

n.p. Not published – confidence intervals reported for national rates only for point in time estimates.

(a) Low birthweight is defined as less than 2500grams. Data excludes babies with unknown birthweight.

(b) Data relate to live births. Data exclude stillbirths; births less than 20 weeks gestation and less than 400 grams birthweight; multiple births and unknown gestational age.

(c) Data are by place of usual residence of the mother. Table excludes non-residents, external territories and not stated state/territory of residence.

(d) Three-year combined data are reported due to the small number of low birthweight babies born to Indigenous mothers each year.

(e) Data on Indigenous births relate to babies born to Indigenous mothers only, and excludes babies born to non-Indigenous mothers and Indigenous fathers. Therefore the information may not be based on the total count of Indigenous babies.

(f) Per cent of liveborn singleton infants.

(g) Upper and lower confidence intervals at the $p>0.05$ level.

(h) ‘Rate ratio’ is the proportion of low birthweight babies born to Indigenous mothers divided by the proportion of low birthweight babies born to non-Indigenous mothers.

(i) ‘Rate difference’ is the proportion of low birthweight babies born to Indigenous mothers less the proportion of low birthweight babies born to non-Indigenous mothers.

(j) Birthweight data on babies born to Indigenous mothers residing in Tas and the ACT should be viewed with caution as they are based on small numbers of births.

Source: AIHW (unpublished) National Perinatal Data Collection.

Table A7: Incidence of low birthweight among liveborn singleton babies, by Indigenous status of mother, by maternal age and state/territory, 2007–2009(a)(b)(c)(d)

	Indigenous(f)				Non-Indigenous					
	Number	**Per cent(g)**	**95%LCL(h)**	**95%UCL(h)**	**Number**	**Per cent(g)**	**95%LCL(h)**	**95%UCL(h)**	**Rate ratio(i)**	**Rate difference(j)**
					Mothers aged <20 years					
NSW	188	10.9	n.p.	n.p.	564	6.8	n.p.	n.p.	1.6*	4.2*
Vic	46	14.9	n.p.	n.p.	363	7.5	n.p.	n.p.	2.0*	7.5*
Qld	189	10.1	n.p.	n.p.	484	6.0	n.p.	n.p.	1.7*	4.1*
WA	166	14.6	n.p.	n.p.	206	6.2	n.p.	n.p.	2.3*	8.4*
SA	34	9.4	n.p.	n.p.	159	7.2	n.p.	n.p.	1.3*	2.2*
Tas(e)	n.p.	n.p.	n.p.	n.p.	82	7.0	n.p.	n.p.	n.p.	n.p.
ACT(e)	n.p.	n.p.	n.p.	n.p.	21	7.2	n.p.	n.p.	n.p.	n.p.
NT	122	13.0	n.p.	n.p.	20	7.5	n.p.	n.p.	1.7*	5.5*
Aust	**756**	**11.6**	**10.8**	**12.5**	**1,899**	**6.7**	**6.4**	**7.0**	**1.7***	**5.0***
					Mothers aged 20 years and over					
NSW	718	10.1	n.p.	n.p.	11,081	4.2	n.p.	n.p.	2.4*	5.9*
Vic	194	11.4	n.p.	n.p.	8,925	4.5	n.p.	n.p.	2.5*	6.9*
Qld	733	9.4	n.p.	n.p.	6,989	4.4	n.p.	n.p.	2.1*	5.0*
WA	539	13.5	n.p.	n.p.	3,442	4.3	n.p.	n.p.	3.2*	9.2*
SA	185	12.9	n.p.	n.p.	2,472	4.6	n.p.	n.p.	2.8*	8.2*
Tas(e)	53	8.1	n.p.	n.p.	820	5.0	n.p.	n.p.	1.6*	3.1*
ACT(e)	19	11.0	n.p.	n.p.	513	3.8	n.p.	n.p.	2.9*	7.1*
NT	406	12.8	n.p.	n.p.	284	4.3	n.p.	n.p.	3.0*	8.5*
Aust	**2,847**	**10.9**	**10.5**	**11.3**	**34,526**	**4.4**	**4.3**	**4.4**	**2.5***	**6.6***

(continued)

Table A7 (continued): Incidence of low birthweight among liveborn singleton babies, by Indigenous status of mother, by maternal age and state/territory, 2007–2009[(a)(b)(c)(d)(e)]

	Indigenous[(f)]				Non-Indigenous					
	Number	Per cent[(g)]	95%LCL[(h)]	95%UCL[(h)]	Number	Per cent[(g)]	95%LCL[(h)]	95%UCL[(h)]	Rate ratio[(i)]	Rate difference[(j)]
					Total mothers					
NSW	906	10.3	n.p.	n.p.	11,648	4.3	n.p.	n.p.	2.4*	6.0*
Vic	241	12.0	n.p.	n.p.	9,290	4.6	n.p.	n.p.	2.6*	7.4*
Qld	922	9.6	n.p.	n.p.	7,473	4.5	n.p.	n.p.	2.1*	5.1*
WA	705	13.8	n.p.	n.p.	3,648	4.4	n.p.	n.p.	3.2*	9.4*
SA	219	12.2	n.p.	n.p.	2,631	4.7	n.p.	n.p.	2.6*	7.4*
Tas[(e)]	61	7.8	n.p.	n.p.	902	5.1	n.p.	n.p.	1.5*	2.7*
ACT[(e)]	22	10.3	n.p.	n.p.	534	3.9	n.p.	n.p.	2.6*	6.4*
NT	528	12.9	n.p.	n.p.	304	4.4	n.p.	n.p.	2.9*	8.4*
Aust	**3,604**	**10.8**	**10.5**	**11.2**	**36,430**	**4.3**	**4.3**	**4.3**	**2.5***	**6.5***

* Represents results with statistically significant differences in the Indigenous/non-Indigenous comparison at the $p < 0.05$ level.

n.p. Not published – confidence intervals reported for national rates only for point in time estimates/not available for publication due to numbers less than 5, however included in totals where appropriate.

(a) Low birthweight is defined as less than 2500grams. Data excludes babies with unknown birthweight.

(b) Data relate to live births. Data exclude stillbirths; births less than 20 weeks gestation and less than 400 grams birthweight; multiple births and unknown gestational age.

(c) Data are by place of usual residence of the mother. Table excludes non-residents, external territories and not stated State/Territory of residence.

(d) Three-year combined data are reported due to the small number of low birthweight babies born to Indigenous mothers each year.

(e) Birthweight data on babies born to Indigenous mothers residing in Tas and the ACT should be viewed with caution as they are based on small numbers of births.

(f) Data on Indigenous births relate to babies born to Indigenous mothers only, and excludes babies born to non-Indigenous mothers and Indigenous fathers. Therefore the information may not be based on the total count of Indigenous babies.

(g) Per cent of liveborn singleton infants.

(h) Upper and lower confidence intervals at the $p>0.05$ level.

(i) 'Rate ratio' is the proportion of low birthweight babies born to Indigenous mothers divided by the proportion of low birthweight babies born to non-Indigenous mothers.

(j) 'Rate difference' is the proportion of low birthweight babies born to Indigenous mothers less the proportion of low birthweight babies born to non-Indigenous mothers.

Source: AIHW (unpublished) National Perinatal Data Collection.

Table A8: Incidence of low birthweight among liveborn singleton babies, by Indigenous status of the mother and state/territory, NSW, Vic, Qld, WA, SA and NT, 2000 to 2009(a)(b)(c)(d)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Short-term change (2008–2009)(e)	Long-term change (2000–2009)(e)
						NSW						
Indigenous												
Number	231	246	249	242	259	269	283	298	314	294	–6.4	33.6*
Per cent	11.0	11.7	11.6	11.2	11.2	10.8	10.8	10.3	10.4	10.0	–4.1	–12.9*
Non-Indigenous												
Number	3,604	3,556	3,582	3,530	3,572	3,669	3,778	3,888	3,947	3,813	–3.4	10.6*
Per cent	4.4	4.4	4.4	4.3	4.4	4.3	4.3	4.3	4.3	4.2	–3.8	–4.1*
Rate ratio(f)	2.5	2.7	2.6	2.6	2.5	2.5	2.5	2.4	2.4	2.4	–0.3	–8.9*
Rate difference(g)	6.6	7.3	7.2	6.9	6.8	6.5	6.4	6.0	6.1	5.8	–4.3	–18.7*
						Vic						
Indigenous												
Number	45	38	50	36	54	60	54	65	85	91	7.1	106.4*
Per cent	13.9	10.8	13.7	11.4	13.9	13.1	10.9	10.6	13.1	12.2	–6.3	–7.1
Non-Indigenous												
Number	2,752	2,722	2,859	2,822	2,791	2,917	3,028	3,147	3,067	3,076	0.3	14.9*
Per cent	4.7	4.7	4.8	4.8	4.7	4.7	4.7	4.7	4.5	4.6	1.2	–3.2*
Rate ratio(f)	3.0	2.3	2.8	2.4	3.0	2.8	2.3	2.3	2.9	2.7	–7.5	–4.1
Rate difference(g)	9.3	6.2	8.9	6.6	9.2	8.4	6.2	5.9	8.5	7.6	–10.3	–9.0

(continued)

Table A8 (continued): Incidence of low birthweight among liveborn singleton babies, by Indigenous status of the mother and state/territory, NSW, Vic, Qld, WA, SA and NT, 2000 to 2009[(a)(b)(c)(d)]

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Short-term change (2008–2009)[(e)]	Long-term change (2000–2009)[(e)]
						Qld						
Indigenous												
Number	276	245	287	291	283	317	276	308	294	320	8.8	16.5*
Per cent	10.3	9.4	10.8	10.4	10.5	10.6	9.7	10.0	8.9	9.8	9.9	–7.3
Non-Indigenous												
Number	2,080	2,027	2,033	2,075	2,163	2,305	2,476	2,391	2,445	2,637	7.9	29.0*
Per cent	4.6	4.5	4.6	4.5	4.7	4.6	4.8	4.3	4.4	4.7	6.5	–1.0
Rate ratio[(f)]	2.2	2.1	2.4	2.3	2.2	2.3	2.0	2.3	2.0	2.1	3.3	–6.3
Rate difference[(g)]	5.6	4.9	6.3	5.9	5.8	6.0	4.9	5.6	4.6	5.2	13.3	–12.5
						WA						
Indigenous												
Number	194	210	195	191	205	224	227	249	233	223	–4.3	23.0*
Per cent	13.2	14.0	12.4	12.9	13.9	14.2	13.2	14.4	14.0	13.0	–7.1	3.6
Non-Indigenous												
Number	991	944	963	949	1,051	1,069	1,150	1,214	1,213	1,221	0.7	32.1*
Per cent	4.3	4.2	4.3	4.3	4.6	4.4	4.4	4.4	4.3	4.3	–0.9	1.8
Rate ratio[(f)]	3.0	3.3	2.9	3.0	3.0	3.2	3.0	3.2	3.2	3.0	–6.3	1.7
Rate difference[(g)]	8.9	9.8	8.1	8.6	9.3	9.8	8.8	9.9	9.6	8.7	–9.9	4.5

(continued)

Table A8 (continued): Incidence of low birthweight among liveborn singleton babies, by Indigenous status of the mother and state/territory, NSW, Vic, Qld, WA, SA and NT, 2000 to 2009[(a)(b)(c)(d)]

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Short-term change (2008–2009)[(e)]	Long-term change (2000–2009)[(e)]
						SA						
Indigenous												
Number	67	55	60	65	69	71	68	81	75	63	–16.0	17.9
Per cent	15.5	14.6	14.6	14.7	13.7	14.6	12.1	13.8	12.4	10.4	–16.4	–25.5*
Non-Indigenous												
Number	811	790	763	728	750	844	826	861	849	921	8.5	15.3*
Per cent	4.9	4.8	4.6	4.4	4.6	5.0	4.7	4.7	4.6	5.0	8.7	1.6
Rate ratio[(f)]	3.2	3.1	3.2	3.4	3.0	2.9	2.6	3.0	2.7	2.1	–23.1	–27.1*
Rate difference[(g)]	10.6	9.9	10.0	10.3	9.1	9.7	7.4	9.2	7.8	5.4	–31.0	–37.8*
						NT						
Indigenous												
Number	164	171	170	192	178	186	185	169	184	174	–5.4	5.4
Per cent	12.7	11.9	12.3	14.0	14.0	14.0	13.6	12.3	13.7	12.5	–8.7	4.1
Non-Indigenous												
Number	111	100	96	120	123	123	114	89	98	117	19.4	–0.6
Per cent	5.0	4.6	4.4	5.5	5.8	5.7	5.3	4.1	4.1	5.0	20.5	–6.3
Rate ratio[(f)]	2.5	2.6	2.8	2.6	2.4	2.5	2.5	3.0	3.3	2.5	–24.2	13.0
Rate difference[(g)]	7.7	7.3	7.9	8.5	8.2	8.3	8.2	8.3	9.5	7.5	–21.4	10.9

(continued)

Table A8 (continued): Incidence of low birthweight among liveborn singleton babies, by Indigenous status of the mother and state/territory, NSW, Vic, Qld, WA, SA and NT, 2000 to 2009(a)(b)(c)(d)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Short-term change (2008–2009)(e)	Long-term change (2000–2009)(e)
						Total(h)						
Indigenous												
Number	977	965	1,011	1,017	1,048	1,127	1,093	1,165	1,172	1,153	–1.6	22.9*
Per cent	11.7	11.5	11.9	11.9	12.1	12.1	11.4	11.3	11.1	10.8	–2.5	–7.1*
Non-Indigenous												
Number	10,349	10,139	10,296	10,224	10,450	10,927	11,372	11,506	11,545	11,703	1.4	16.9*
Per cent	4.5	4.5	4.6	4.5	4.6	4.5	4.6	4.4	4.4	4.4	1.0	–2.6*
Rate ratio(f)	2.6	2.6	2.6	2.6	2.6	2.7	2.5	2.6	2.5	2.4	–3.5	–4.6
Rate difference(g)	7.2	7.0	7.3	7.4	7.5	7.5	6.8	6.9	6.7	6.4	–4.8	–9.9*

* Represents results with a statistically significant change at the $p < 0.05$ level over the period.

(a) Low birthweight is defined as less than 2500grams. Data excludes babies with unknown birthweight.

(b) Data relate to live births. Data exclude stillbirths; births less than 20 weeks gestation and less than 400 grams birthweight; and multiple births.

(c) Data are by place of usual residence of the mother. Table excludes non-residents, external territories and not stated state/territory of residence.

(d) Data on Indigenous births relate to babies born to Indigenous mothers only, and excludes babies born to non-Indigenous mothers and Indigenous fathers. Therefore the information may not be based on the total count of Indigenous babies.

(e) Per cent change based on the average annual change over the period.

(f) ‘Rate ratio’ is the proportion of low birthweight babies born to Indigenous mothers divided by the proportion of low birthweight babies born to non-Indigenous mothers.

(g) ‘Rate difference’ is the proportion of low birthweight babies born to Indigenous mothers minus the proportion of low birthweight babies born to non-Indigenous mothers.

(h) Total excludes Tas and the ACT as data from these jurisdictions are not considered stable enough to include in trends analysis, because of small population size and data quality issues over the reporting period (AIHW; Leeds et. Al 2007).

Source: AIHW (unpublished) National Perinatal Data Collection.

Table A9: Incidence of low birthweight among liveborn singleton babies, by Indigenous status of mother and by maternal age, NSW, Vic, Qld, WA, SA and NT, 2000 to 2009[(a)(b)(c)(d)(e)]

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Short-term change (2008–2009)[(f)]	Long-term change (2000–2009)[(f)]
						Number						
Indigenous												
Mothers aged <20	240	241	235	248	247	263	245	243	242	255	5.4	4.3
Mothers aged 20+	736	724	776	769	801	864	848	922	930	897	–3.5	29.1*
Total	*977*	*965*	*1,011*	*1,017*	*1,048*	*1,127*	*1,093*	*1,165*	*1,172*	*1,153*	*–1.6*	*22.9**
Non-Indigenous												
Mothers aged <20	703	647	587	587	617	633	612	619	579	584	0.9	–10.1*
Mothers aged 20+	9,645	9,492	9,706	9,636	9,833	10,294	10,758	10,886	10,964	11,117	1.4	18.8*
Total	*10,349*	*10,139*	*10,296*	*10,224*	*10,450*	*10,927*	*11,372*	*11,506*	*11,545*	*11,703*	*1.4*	*16.9**
						Per cent						
Indigenous												
Mothers aged <20	12.5	12.7	12.2	12.7	12.8	12.9	12.0	12.0	11.1	12.1	9.6	–7.9*
Mothers aged 20+	11.5	11.2	11.8	11.7	11.9	11.9	11.2	11.2	11.1	10.5	–5.5	–6.5*
Total	*11.7*	*11.5*	*11.9*	*11.9*	*12.1*	*12.1*	*11.4*	*11.3*	*11.1*	*10.8*	*–2.5*	*–7.1**
Non-Indigenous												
Mothers aged <20	7.1	6.7	6.2	6.6	7.0	7.1	6.7	6.8	6.3	6.7	5.1	–2.4
Mothers aged 20+	4.4	4.4	4.5	4.4	4.5	4.4	4.5	4.3	4.3	4.4	1.0	–2.1
Total	*4.5*	*4.5*	*4.6*	*4.5*	*4.6*	*4.5*	*4.6*	*4.4*	*4.4*	*4.4*	*1.0*	*–2.6**
						Rate ratio[(g)]						
Mothers aged <20	1.7	1.9	2.0	1.9	1.8	1.8	1.8	1.7	1.7	1.8	4.3	–6.1
Mothers aged 20+	2.6	2.5	2.6	2.6	2.7	2.7	2.5	2.6	2.6	2.4	–6.4	–4.5
Total	*2.6*	*2.6*	*2.6*	*2.6*	*2.6*	*2.7*	*2.5*	*2.6*	*2.5*	*2.4*	*–3.5*	*–4.6*

(continued)

Table A9 (continued): Incidence of low birthweight among liveborn singleton babies, by Indigenous status of mother and by maternal age, NSW, Vic, Qld, WA, SA and NT, 2000 to 2009(a)(b)(c)(d)(e)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Short-term change (2008–2009)(f)	Long-term change (2000–2009)(f)
						Rate difference(h)						
Mothers aged <20	5.3	6.1	5.9	6.1	5.8	5.8	5.2	5.1	4.7	5.5	15.7	–15.3*
Mothers aged 20+	7.1	6.8	7.3	7.3	7.4	7.4	6.7	6.9	6.8	6.2	–9.6	–9.2
Total	*7.2*	*7.0*	*7.3*	*7.4*	*7.5*	*7.5*	*6.8*	*6.9*	*6.7*	*6.4*	*–4.8*	*–9.9**

* Represents results with a statistically significant change at the $p < 0.05$ level over the period.

(a) Low birthweight is defined as less than 2500grams. Data excludes babies with unknown birthweight.

(b) Data relate to live births. Data exclude stillbirths; births less than 20 weeks gestation and less than 400 grams birthweight; and multiple births.

(c) Data are by place of usual residence of the mother. Table excludes non-residents, external territories and not stated state/territory of residence.

(d) Data on Indigenous births relate to babies born to Indigenous mothers only, and excludes babies born to non-Indigenous mothers and Indigenous fathers. Therefore the information may not be based on the total count of Indigenous babies.

(e) Excludes Tas and the ACT as data from these jurisdictions are not considered stable enough to include in trends analysis, because of small population size and data quality issues over the reporting period (AIHW; Leeds et. Al 2007).

(f) Per cent change based on the average annual change over the period.

(g) 'Rate ratio' is the proportion of low birthweight babies born to Indigenous mothers divided by the proportion of low birthweight babies born to non-Indigenous mothers.

(h) 'Rate difference' is the proportion of low birthweight babies born to Indigenous mothers minus the proportion of low birthweight babies born to non-Indigenous mothers.

Source: AIHW (unpublished) National Perinatal Data Collection.

Table A10: Infant (<1 year) mortality, by Indigenous status and state/territory, NSW, Qld, WA, SA and NT, 2006–2010[a][b][c][d][e]

	Indigenous				Non-Indigenous					
	Number of deaths	Rate per 1,000 live births[f]	95% LCL[g]	95% UCL[g]	Number of deaths	Rate per 1,000 live births[f]	95%LCL[g]	95%UCL[g]	Rate ratio[h]	Rate difference[i]
NSW	129	6.5	n.p.	n.p.	1,835	4.2	n.p.	n.p.	1.5*	2.3*
Qld[j]	182	8.0	n.p.	n.p.	1,340	4.7	n.p.	n.p.	1.7*	3.2*
WA	94	8.3	n.p.	n.p.	416	3.0	n.p.	n.p.	2.8*	5.3*
SA	26	6.0	n.p.	n.p.	321	3.4	n.p.	n.p.	1.8*	2.6*
NT	102	13.1	n.p.	n.p.	43	3.8	n.p.	n.p.	3.4*	9.3*
NSW, WA, Qld, SA & NT combined[k]	**533**	**8.1**	**7.4**	**8.8**	**3,955**	**4.1**	**4.0**	**4.2**	**2.0***	**4.0***

* Represents results with statistically significant differences in the Indigenous/non-Indigenous comparison at the $p < 0.05$ level.

n.p. Not published – confidence intervals reported for national rates only for point in time estimates.

(a) Includes all deaths within the first year of life. Infant mortality is defined as the number of deaths of infants below 1 year of age per 1000 live births during a given period.

(b) Data are reported individually by jurisdiction of residence for NSW, Qld, WA, SA and the NT only. These five states and territories have been included due to there being evidence of sufficient levels of identification and sufficient numbers of deaths to support mortality analysis.

(c) Due to the small numbers of Indigenous deaths reported each year, 5-year combined data are presented.

(d) Although most deaths of Indigenous people are registered, it is likely that some are not accurately identified as Indigenous. Therefore, these data are likely to underestimate the Indigenous all causes mortality rate.

(e) Data are based on year of registration and state/territory of usual residence.

(f) Infant deaths per 1000 live births.

(g) Upper and lower confidence intervals at the $p>0.05$ level.

(h) ‘Rate ratio’ is the Indigenous mortality rate divided by the non-Indigenous mortality rate.

(i) ‘Rate difference’ is the Indigenous mortality rate less the non-Indigenous mortality rate.

(j) Care should be taken when interpreting infant mortality rates for Qld due to recent changes in the timeliness of birth and death registrations. Qld deaths data for 2010 have been adjusted to minimise the impact of late registration of deaths on mortality indicators.

(k) Total includes data for NSW, Qld, WA, SA and NT only. These five jurisdictions have been included due to there being evidence of sufficient levels of identification and sufficient numbers of deaths to support mortality analysis. They do not present an Australian figure.

Source: AIHW National Mortality Database; ABS Birth registration data.

Table A11: Infant (<1 year) mortality rates, by Indigenous status, NSW, Qld, WA, SA and NT combined, 2001 to 2010[a][b][c][d][e]

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Short-term change (2008–2010)[f]	Long-term change (2001–2010)[f]
Number of deaths												
Indigenous	116	130	115	111	124	112	114	101	97	109	7.9	–17.3*
Non-Indigenous	822	734	670	716	795	790	758	791	817	799	1.0	7.3
No. per 1,000 live births[g]												
Indigenous	11.2	12.5	10.9	10.2	11.5	10.0	9.0	7.5	6.8	7.5	–0.5	–46.4*
Non-Indigenous	5.0	4.4	4.0	4.3	4.6	4.5	4.0	4.0	4.1	4.0	0.4	–12.7*
Rate ratio[h]	2.2	2.8	2.7	2.4	2.5	2.2	2.2	1.9	1.7	1.9	–0.9	–40.5*
Rate difference[i]	6.2	8.1	6.9	6.0	6.9	5.5	4.9	3.5	2.7	3.5	–1.5	–73.5*

* Represents results with a statistically significant change at the $p < 0.05$ level over the period.

(a) Includes all deaths within the first year of life. Infant mortality is defined as the number of deaths of infants below 1 year of age per 1000 live births during a given period.

(b) Data are presented for NSW, Qld, WA, SA and the NT only. These jurisdictions are considered to have adequate levels of Indigenous identification in mortality data for these periods. They do not represent an Australian figure.

(c) Although most deaths of Indigenous Australians are registered, it is likely that some are not accurately identified as Indigenous. Therefore, these statistics are likely to underestimate the Indigenous infant deaths and, depending on the under-identification in births, may either underestimate or overestimate rates.

(d) Because of changes in the level of accuracy of Indigenous identification in the births and deaths data over time, caution should be used in interpreting changes in Indigenous infant mortality rates. It is also difficult to exactly identify the difference between the Indigenous and non-Indigenous infant mortality rates because of these data quality issues.

(e) Deaths are by year of registration in the state/territory of usual residence.

(f) Per cent change based on the average annual change over the period.

(g) Number per 1000 live births. The volatility in infant mortality rates is partially due to the relatively small number of infant deaths registered.

(h) ‘Rate ratio’ is the Indigenous mortality rate divided by the non-Indigenous mortality rate.

(i) ‘Rate difference’ is the Indigenous mortality rate minus the non-Indigenous mortality rate.

Source: AIHW National Mortality Database; ABS Births.

Table A12: Tobacco smoking during pregnancy by maternal age and state/territory, Indigenous women, 2009[a][b][c]

	NSW	Vic	Qld	WA	SA[d][e]	Tas	ACT	NT[e]	Total
					Mothers aged <20 years				
Number									
Smoked	298	54	335	186	65	32	10	100	1,080
Did not smoke	274	41	304	198	57	17	7	125	1,023
Not stated	n.p.	14	n.p.	n.p.	n.p.	0	0	89	110
Total[f]	**573**	**109**	**642**	**385**	**124**	**49**	**17**	**314**	**2,213**
Per cent[g]									
Smoked	52.1	56.8	52.4	48.4	53.3	65.3	58.8	44.4	51.4
Did not smoke	47.9	43.2	47.6	51.6	46.7	34.7	41.2	55.6	48.6
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
					Mothers aged 20+ years				
Number									
Smoked	1,219	253	1,421	711	287	115	32	476	4,514
Did not smoke	1,193	351	1,249	660	197	119	33	366	4,168
Not stated	n.p.	50	n.p.	n.p.	n.p.	n.p.	0	282	378
Total[f]	**2,419**	**654**	**2,690**	**1,374**	**500**	**234**	**65**	**1,124**	**9,060**
Per cent[g]									
Smoked	50.5	41.9	53.2	51.9	59.3	49.1	49.2	56.5	52.0
Did not smoke	49.5	58.1	46.8	48.1	40.7	50.9	50.8	43.5	48.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
					Total mothers				
Number									
Smoked	1,517	308	1,756	897	352	147	42	576	5,595
Did not smoke	1,467	396	1,553	858	254	136	40	491	5,195
Not stated	8	64	23	n.p.	18	n.p.	0	371	488
Total[f]	**2,992**	**768**	**3,332**	**1,759**	**624**	**283**	**82**	**1,438**	**11,278**
Per cent[g]									
Smoked	50.8	43.8	53.1	51.1	58.1	51.9	51.2	54.0	51.9
Did not smoke	49.2	56.3	46.9	48.9	41.9	48.1	48.8	46.0	48.1
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

n.p. Not available for publication due to numbers less than 5, however included in totals where appropriate.

(a) Excludes women whose Indigenous status was not stated.

(b) Data are by usual residence of the mother. Table excludes non-residents, external territories and not stated State/Territory of residence.

(c) Smoking status during pregnancy was not part of the Perinatal NMDS for the 2009 collection period. The question used is not consistent across jurisdictions, therefore caution should be used when interpreting these numbers.

(d) For women who gave birth in SA, 'smoked' includes women who quit before the first antenatal visit.

(e) For women who gave birth in SA and the NT, smoking status was recorded at the first antenatal visit.

(f) Includes mothers for whom smoking status was not stated.

(g) Per cent excludes mothers for whom smoking status was not stated.

Source: AIHW National Perinatal Data Collection.

Table A13: Age standardised proportions of tobacco smoking during pregnancy, by Indigenous status of mother and by maternal age, by state/territory, 2009(a)(b)(c)(d)(e)

	NSW	Vic	Qld	WA	SA(f)(g)	Tas	ACT	NT(g)	Total	Total LCI(h)	Total UCI(h)
	%	%	%	%	%	%	%	%	%	%	%
					Mothers aged <20 years						
Indigenous											
Smoked	52.1	56.8	52.4	48.4	53.3	65.3	58.8	44.4	51.4	48.3	54.4
Did not smoke	47.9	43.2	47.6	51.6	46.7	34.7	41.2	55.6	48.6	45.7	51.6
Non-Indigenous											
Smoked	31.6	34.2	37.5	30.8	39.6	40.3	45.7	38.9	34.8	33.6	36.0
Did not smoke	68.4	65.8	62.5	69.2	60.4	59.7	54.3	61.1	65.2	63.6	66.8
Rate ratio(i)	1.7*	1.7*	1.4*	1.6*	1.3*	1.6*	1.3	1.1	1.5*	. .	. .
Rate difference(j)	20.5*	22.6*	15.0*	17.6*	13.7*	25.0*	13.1	5.6	16.6*	. .	. .
					Mothers aged 20+ years						
Indigenous											
Smoked	46.4	37.9	52.4	52.9	56.6	47.0	39.7	54.9	49.9	48.5	51.4
Did not smoke	53.6	62.1	47.6	47.1	43.4	53.0	60.3	45.1	50.1	48.5	51.6
Non-Indigenous											
Smoked	10.5	11.6	15.3	11.4	17.7	20.7	10.3	14.4	12.6	12.5	12.7
Did not smoke	89.5	88.4	84.7	88.6	82.3	79.3	89.7	85.6	87.4	87.0	87.7
Rate ratio(i)	4.4*	3.3*	3.4*	4.6*	3.2*	2.3*	3.8*	3.8*	4.0*	. .	. .
Rate difference(j)	35.8*	26.3*	37.1*	41.5*	39.0*	26.3*	29.3*	40.6*	37.3*	. .	. .
					Total mothers						
Indigenous											
Smoked	46.6	38.6	52.4	52.7	56.5	47.7	40.4	54.5	50.0	48.6	51.3
Did not smoke	53.3	61.3	47.6	47.2	43.5	52.2	59.5	45.5	50.0	48.6	51.3
Non-Indigenous											
Smoked	11.4	12.5	16.2	12.2	18.5	21.4	11.7	15.3	13.5	13.3	13.6
Did not smoke	88.5	87.5	83.7	87.7	81.4	78.5	88.2	84.6	86.4	86.1	86.8
Rate ratio(i)	4.1*	3.1*	3.2*	4.3*	3.0*	2.2*	3.4*	3.6*	3.7*	. .	. .
Rate difference(j)	35.2*	26.1*	36.2*	40.5*	37.9*	26.2*	28.7*	39.1*	36.5*	. .	. .

(continued)

Table A13 (continued): Age standardised proportions of tobacco smoking during pregnancy, by Indigenous status of mother and by maternal age, by state/ territory, 2009(a)(b)(c)(d)(e)

* Represents results with statistically significant differences in the Indigenous/non-Indigenous comparison at the p < 0.05 level.

. . Not applicable.

(a) Excludes women whose Indigenous status was not stated.

(b) Data are by usual residence of the mother. Table excludes non-residents, external territories and not stated State/Territory of residence.

(c) Smoking status during pregnancy was not part of the Perinatal NMDS for the 2009 collection period. The question used is not consistent across jurisdictions, therefore caution should be used when interpreting these numbers.

(d) Rates for <20 are crude rates. Rates for women aged 20+ and total rates are directly age-standardised using the Australian female population who gave birth in 2009.

(e) Proportions exclude mothers for whom smoking status was not stated.

(f) For women who gave birth in SA, 'smoked' includes women who quit before the first antenatal visit.

(g) For women who gave birth in SA and the NT, smoking status was recorded at the first antenatal visit.

(h) Upper and lower confidence intervals at the p>0.05 level.

(i) ‘Rate ratio’ is the Indigenous proportion divided by the non-Indigenous proportion using the Australian female population who gave birth in 2009 as the standard population.

(j) ‘Rate difference’ is the Indigenous proportion minus the non-Indigenous proportion using the Australian female population who gave birth in 2009 as the standard population.

Source: AIHW National Perinatal Data Collection.

Table A14: Age standardised proportions of tobacco use during pregnancy, by Indigenous status of the mother and state/territory, NSW, Qld, WA, SA, Tas, ACT, NT 2007 to 2009(a)(b)(c)

	2007	2008	2009	Short-term change (2008–2009)(d)	Long-term change (2007–2009)(d)
				Per cent	
NSW					
Indigenous rate	47.5	46.9	46.6	–0.6	–1.9
Non-Indigenous rate	11.9	11.9	11.4	–4.4	–4.2
Rate ratio(e)	4.0	3.9	4.1	3.9	2.4
Rate difference(f)	35.6	35.0	35.2	0.6	–1.1
Qld					
Indigenous rate	55.4	52.0	52.4	0.6	–5.6
Non-Indigenous rate	17.1	16.8	16.2	–3.6	–5.2*
Rate ratio(e)	3.2	3.1	3.2	4.4	–0.4
Rate difference(f)	38.4	35.2	36.2	2.6	–5.8
WA					
Indigenous rate	50.1	53.3	52.7	–1.2	5.1
Non-Indigenous rate	13.5	13.2	12.2	–7.7*	–9.5*
Rate ratio(e)	3.7	4.0	4.3	7.0	16.1*
Rate difference(f)	36.6	40.1	40.5	0.9	10.4*
SA					
Indigenous rate	60.3	61.5	56.5	–8.2	–6.5
Non-Indigenous rate	18.9	18.8	18.5	–1.3	–1.9*
Rate ratio(e)	3.2	3.3	3.0	–7.0	–4.6
Rate difference(f)	41.4	42.7	37.9	–11.3	–8.5
Tas					
Indigenous rate	63.0	48.8	47.7	–2.3	–24.3*
Non-Indigenous rate	23.8	23.6	21.4	–9.2	–10.0*
Rate ratio(e)	2.6	2.1	2.2	7.5	–15.9
Rate difference(f)	39.1	25.2	26.2	4.1	–33.0
ACT					
Indigenous rate	42.5	36.4	40.4	10.9	–4.9
Non-Indigenous rate	13.6	13.9	11.7	–15.2	–13.8
Rate ratio(e)	3.1	2.6	3.4	30.8	10.3
Rate difference(f)	28.8	22.6	28.7	26.9	–0.7
NT					
Indigenous rate	50.2	47.3	54.5	15.2	8.4
Non-Indigenous rate	16.3	14.9	15.3	2.7	–6.3
Rate ratio(e)	3.1	3.2	3.6	12.2	15.7*
Rate difference(f)	33.9	32.3	39.1	21.0	15.6

(continued)

Table A14 (continued): Age standardised proportions of tobacco use during pregnancy, by Indigenous status of the mother and state/territory, NSW, Qld, WA, SA, Tas, ACT, NT 2007 to 2009[a][b][c]

	2007	2008	2009	Short-term change (2008–2009)[d]	Long-term change (2007–2009)[d]
			Per cent		
Total					
Indigenous rate	51.6	50.4	51.0	1.1	–1.2
Non-Indigenous rate	14.6	14.5	13.8	–4.7*	–5.5*
Rate ratio[e]	3.5	3.5	3.7	6.1	4.5
Rate difference[f]	37.0	36.0	37.2	3.5	0.5

* Represents results with a statistically significant change at the $p < 0.05$ level over the period.

(a) Indigenous and non-Indigenous data exclude births where the mother's Indigenous status is not stated.

(b) Jurisdiction is based on place of usual residence. Data exclude Victoria as data on smoking during pregnancy was not available for 2007 and 2008.

(c) Proportions are directly age standardised to the total number of women who gave birth in 2009.

(d) Per cent change based on the average annual change over the period.

(e) 'Rate ratio' is the directly age-standardised Indigenous rate divided by the directly age-standardised non-Indigenous rate.

(f) 'Rate difference' is the directly age-standardised Indigenous rate less the directly age-standardised non-Indigenous rate.

Source: AIHW National Perinatal Data Collection.

Table A15: Substance use by a child's mother during pregnancy, Indigenous children aged 0–3 years, by state/territory, 2008[(a)(b)]

	NSW	Vic	Qld	WA	SA	Tas/ACT	NT	Aust
				Number				
Tobacco use								
Did smoke/chew tobacco during pregnancy	6,243	1,180	4,578	2,039	1,162	892	1,898	17,990
Did not smoke/chew tobacco during pregnancy	7,018	1,294	8,757	3,405	1,096	964	2,247	24,781
Total	**13,261**	**2,474**	**13,334**	**5,444**	**2,258**	**1,856**	**4,144**	**42,771**
Alcohol consumption								
Drank alcohol during pregnancy	2,307	569	3,027	1,127	379	354	617	8,380
Did not drink alcohol during pregnancy	10,954	1,905	10,307	4,317	1,861	1,502	3,527	34,373
Total	**13,261**	**2,474**	**13,334**	**5,444**	**2,240**	**1,856**	**4,144**	**42,753**
Illicit drug or substance use								
Used illicit drugs/substances during pregnancy	514	229	526	464	137	77	174	2,122
Did not use illicit drugs/substances during pregnancy	12,747	2,245	12,808	4,980	2,121	1,779	3,970	40,649
Total	**13,261**	**2,474**	**13,334**	**5,444**	**2,258**	**1,856**	**4,144**	**42,771**
				Per cent				
Tobacco use								
Did smoke/chew tobacco during pregnancy	47.1	47.7	34.3	37.4	51.5	48.0	45.8	42.1
Did not smoke/chew tobacco during pregnancy	52.9	52.3	65.7	62.6	48.5	52.0	54.2	57.9
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Alcohol consumption								
Drank alcohol during pregnancy	17.4	23.0	22.7	20.7	16.9*	19.1*	14.9*	19.6
Did not drink alcohol during pregnancy	82.6	77.0	77.3	79.3	83.1	80.9	85.1	80.4
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Illicit drug or substance use								
Used illicit drugs/substances during pregnancy	3.9*	9.3*	3.9*	8.5*	9.1*	4.2*	4.2**	5.0
Did not use illicit drugs/substances during pregnancy	96.1	90.7	96.1	91.5	93.9	95.8	95.8	95.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

* Has a relative standard error of between 25% and 50% and should be used with caution.

** Has a relative standard error of greater than 50% and is considered too unreliable for general use.

(a) Children aged 0–3 years.

(b) Excludes not stated/not collected.

Source: AIHW analyses of 2008 NATSISS.

Table A16: Hospital separation rates for children under 5 (0–4 years), by leading principal diagnosis, by Indigenous status and state/territory, 2008–09 to 2009–10[(a)(b)(c)(d)]

	Indigenous		Other[(e)]			
Leading principal diagnoses[(b)]	**%[(f)]**	**Rate per 1000[(g)]**	**%[(f)]**	**Rate per 1000[(g)]**	**Rate ratio[(h)]**	**Rate difference[(i)]**
	NSW					
Diseases of the respiratory system (J00-J99)	26.0	79.6	21.4	54.3	1.5*	25.2*
Certain conditions originating in the perinatal period (P00-P96)	15.0	45.9	14.5	36.9	1.2*	8.9*
Certain infectious and parasitic diseases (A00-B99)	7.8	23.7	6.8	17.3	1.4*	6.4*
Injury and poisoning & certain other consequences of external causes (S00-T98)	7.8	23.9	6.0	15.3	1.6*	8.6*
Symptoms, signs and abnormal clinical and laboratory findings n.e.c. (R00-R99)	6.5	20.0	8.6	21.8	0.9*	–1.8*
Diseases of the digestive system (K00-K93)	5.2	16.0	4.7	12.0	1.3*	4.0*
Diseases of the skin & subcutaneous tissue (L00-L99)	2.9	9.0	1.6	4.0	2.3*	5.0*
Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)	4.2	12.8	5.7	14.6	0.9*	–1.8*
Diseases of the ear and mastoid process (H60-H95)	2.8	8.5	4.4	11.3	0.8*	–2.8*
Factors influencing health status and contact with health services (Z00-Z99)	13.9	42.6	15.8	40.1	1.1	2.4
Diseases of the genitourinary system (N00-N99)	1.7	5.1	2.4	6.0	0.9*	–0.9*
Diseases of the nervous system (G00-G99)	1.8	5.6	2.7	6.9	0.8*	–1.3*
Other[(j)]	4.3	13.2	5.4	13.8	1.0	–0.6
Total hospitalisations[(k)]	**100.0**	**306.0**	**100.0**	**254.4**	**1.2***	**51.6***
	Vic					
Diseases of the respiratory system (J00-J99)	20.6	52.1	18.4	39.5	1.3*	12.6*
Certain conditions originating in the perinatal period (P00-P96)	22.0	55.6	20.8	44.4	1.3*	11.2*
Certain infectious and parasitic diseases (A00-B99)	6.1	15.5	4.8	10.2	1.5*	5.3*
Injury and poisoning & certain other consequences of external causes (S00-T98)	8.3	21.0	7.2	15.5	1.4*	5.5*
Symptoms, signs and abnormal clinical and laboratory findings n.e.c. (R00-R99)	6.4	16.3	6.8	14.5	1.1	1.7
Diseases of the digestive system (K00-K93)	7.1	18.0	5.9	12.7	1.4*	5.3*
Diseases of the skin & subcutaneous tissue (L00-L99)	2.2	5.6	1.9	4.1	1.3	1.4
Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)	5.0	12.6	5.7	12.2	1.0	0.3
Diseases of the ear and mastoid process (H60-H95)	3.8	9.7	5.8	12.4	0.8*	–2.6*
Factors influencing health status and contact with health services (Z00-Z99)	8.8	22.4	7.7	16.5	1.4*	5.9*
Diseases of the genitourinary system (N00-N99)	2.4	6.0	2.3	5.0	1.2	1.1
Diseases of the nervous system (G00-G99)	2.8	7.1	6.1	13.1	0.5*	–6.0*
Other[(j)]	4.5	11.4	6.4	13.7	0.8	–2.3
Total hospitalisations[(k)]	**100.0**	**253.4**	**100.0**	**214.1**	**1.2***	**39.3***

(continued)

Table A16 (continued): Hospital separation rates for children under 5 (0–4 years), by leading principal diagnosis, by Indigenous status and state/territory, 2008–09 to 2009–10(a)(b)(c)(d)

	Indigenous		Other(e)			
Leading principal diagnoses(b)	**%(f)**	**Rate per 1000(g)**	**%(f)**	**Rate per 1000(g)**	**Rate ratio(h)**	**Rate difference(i)**
	Qld					
Diseases of the respiratory system (J00-J99)	26.2	70.5	22.3	49.2	1.4*	21.3*
Certain conditions originating in the perinatal period (P00-P96)	15.8	42.6	16.5	36.4	1.2*	6.2*
Certain infectious and parasitic diseases (A00-B99)	8.5	22.8	6.2	13.8	1.7*	9.0*
Injury and poisoning & certain other consequences of external causes (S00-T98)	9.4	25.4	10.0	22.2	1.1*	3.2*
Symptoms, signs and abnormal clinical and laboratory findings n.e.c. (R00-R99)	6.6	17.8	6.6	14.5	1.2*	3.3*
Diseases of the digestive system (K00-K93)	5.7	15.5	6.1	13.4	1.2*	2.1*
Diseases of the skin & subcutaneous tissue (L00-L99)	5.6	15.1	1.7	3.8	3.9*	11.2*
Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)	3.2	8.7	5.0	10.9	0.8*	–2.2*
Diseases of the ear and mastoid process (H60-H95)	3.3	9.0	5.0	11.1	0.8*	–2.1*
Factors influencing health status and contact with health services (Z00-Z99)	6.4	17.1	8.3	18.3	0.9	–1.2
Diseases of the genitourinary system (N00-N99)	2.4	6.5	2.4	5.3	1.2*	1.2*
Diseases of the nervous system (G00-G99)	1.9	5.1	4.1	9.0	0.6*	–3.9*
Other(j)	4.9	13.2	5.8	12.9	1.0	0.3
Total hospitalisations(k)	**100.0**	**269.4**	**100.0**	**220.9**	**1.2***	**48.5***
	WA					
Diseases of the respiratory system (J00-J99)	31.9	130.0	18.7	40.9	3.2*	89.1*
Certain conditions originating in the perinatal period (P00-P96)	12.3	50.1	17.8	39.0	1.3*	11.0*
Certain infectious and parasitic diseases (A00-B99)	11.3	46.0	6.7	14.7	3.1*	31.4*
Injury and poisoning & certain other consequences of external causes (S00-T98)	8.9	36.5	8.2	17.9	2.0*	18.5*
Symptoms, signs and abnormal clinical and laboratory findings n.e.c. (R00-R99)	6.3	25.8	7.8	17.2	1.5*	8.6*
Diseases of the digestive system (K00-K93)	4.3	17.7	6.9	15.2	1.2*	2.5*
Diseases of the skin & subcutaneous tissue (L00-L99)	6.1	24.7	1.5	3.3	7.5*	21.3*
Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)	2.7	11.2	4.9	10.8	1.0	0.4
Diseases of the ear and mastoid process (H60-H95)	3.8	15.4	5.9	12.8	1.2*	2.6*
Factors influencing health status and contact with health services (Z00-Z99)	4.7	19.2	7.1	15.5	1.2*	3.7*
Diseases of the genitourinary system (N00-N99)	1.6	6.4	3.0	6.5	1.0	–0.2
Diseases of the nervous system (G00-G99)	1.4	5.7	5.7	12.5	0.5*	–6.8*
Other(j)	4.6	18.9	5.7	12.4	1.5*	6.4*
Total hospitalisations(k)	**100.0**	**407.3**	**100.0**	**218.8**	**1.9***	**188.5***

(continued)

Table A16 (continued): Hospital separation rates for children under 5 (0–4 years), by leading principal diagnosis, by Indigenous status and state/territory, 2008–09 to 2009–10[(a)(b)(c)(d)]

	Indigenous		Other[(e)]			
Leading principal diagnoses	**%[(f)]**	**Rate per 1000[(g)]**	**%[(f)]**	**Rate per 1000[(g)]**	**Rate ratio[(h)]**	**Rate difference[(i)]**
	SA					
Diseases of the respiratory system (J00-J99)	26.9	96.2	24.2	64.9	1.5*	31.3*
Certain conditions originating in the perinatal period (P00-P96)	15.8	56.5	16.7	44.9	1.3*	11.6*
Certain infectious and parasitic diseases (A00-B99)	10.0	35.8	5.8	15.7	2.3*	20.1*
Injury and poisoning & certain other consequences of external causes (S00-T98)	8.7	30.9	6.6	17.9	1.7*	13.1*
Symptoms, signs and abnormal clinical and laboratory findings n.e.c. (R00-R99)	6.2	22.3	5.6	15.0	1.5*	7.3*
Diseases of the digestive system (K00-K93)	5.3	18.9	5.7	15.3	1.2	3.7
Diseases of the skin & subcutaneous tissue (L00-L99)	4.1	14.8	1.2	3.2	4.6*	11.6*
Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)	3.6	12.8	5.0	13.6	0.9	–0.8
Diseases of the ear and mastoid process (H60-H95)	3.7	13.1	10.3	27.6	0.5*	–14.5*
Factors influencing health status and contact with health services (Z00-Z99)	5.6	19.9	8.5	22.8	0.9	–2.8
Diseases of the genitourinary system (N00-N99)	1.4	4.8	2.4	6.5	0.7	–1.6
Diseases of the nervous system (G00-G99)	2.3	8.1	2.8	7.5	1.1	0.6
Other[(j)]	6.5	23.2	5.3	14.2	1.6*	9.0*
Total hospitalisations[(k)]	**100.0**	**357.3**	**100.0**	**268.9**	**1.3***	**88.4***
	NT					
Diseases of the respiratory system (J00-J99)	29.7	146.9	22.8	41.3	3.6*	105.6*
Certain conditions originating in the perinatal period (P00-P96)	11.5	57.0	18.7	33.9	1.7*	23.1*
Certain infectious and parasitic diseases (A00-B99)	16.9	83.4	9.5	17.2	4.9*	66.3*
Injury and poisoning & certain other consequences of external causes (S00-T98)	6.2	30.4	10.2	18.4	1.7*	12.0*
Symptoms, signs and abnormal clinical and laboratory findings n.e.c. (R00-R99)	5.7	28.1	7.6	13.7	2.0*	14.4*
Diseases of the digestive system (K00-K93)	4.1	20.3	5.1	9.3	2.2*	11.1*
Diseases of the skin & subcutaneous tissue (L00-L99)	7.5	37.3	2.6	4.6	8.0*	32.6*
Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)	2.0	9.7	4.4	8.0	1.2	1.7
Diseases of the ear and mastoid process (H60-H95)	1.9	9.4	3.1	5.6	1.7*	3.8*
Factors influencing health status and contact with health services (Z00-Z99)	5.1	25.4	6.6	11.9	2.1*	13.5*
Diseases of the genitourinary system (N00-N99)	2.6	12.6	3.0	5.3	2.4*	7.3*
Diseases of the nervous system (G00-G99)	1.0	5.0	2.2	4.0	1.3	1.0
Other[(j)]	5.8	28.4	4.3	7.7	3.7*	20.7*
Total hospitalisations[(k)]	**100.0**	**494.0**	**100.0**	**181.0**	**2.7***	**313.0***

(continued)

Table A16 (continued): Hospital separation rates for children under 5 (0–4 years), by leading principal diagnosis, by Indigenous status and state/territory, 2008–09 to 2009–10[(a)(b)(c)(d)]

	Indigenous		Other[(e)]			
Leading principal diagnoses	**%[(f)]**	**Rate per 1000[(g)]**	**%[(f)]**	**Rate per 1000[(g)]**	**Rate ratio[(h)]**	**Rate difference[(i)]**
	Total[(l)]					
Diseases of the respiratory system (J00-J99)	27.5	90.7	20.8	48.6	1.9*	42.1*
Certain conditions originating in the perinatal period (P00-P96)	14.5	48.0	17.0	39.6	1.2*	8.4*
Certain infectious and parasitic diseases (A00-B99)	10.2	33.7	6.1	14.3	2.4*	19.4*
Injury and poisoning & certain other consequences of external causes (S00-T98)	8.2	27.0	7.4	17.3	1.6*	9.7*
Symptoms, signs and abnormal clinical and laboratory findings n.e.c. (R00-R99)	6.3	20.9	7.4	17.3	1.2*	3.6*
Diseases of the digestive system (K00-K93)	5.1	16.9	5.6	13.0	1.3*	3.8*
Diseases of the skin & subcutaneous tissue (L00-L99)	5.0	16.5	1.7	3.9	4.3*	12.6*
Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)	3.3	10.9	5.4	12.7	0.9*	–1.7*
Diseases of the ear and mastoid process (H60-H95)	3.0	10.0	5.5	12.8	0.8*	–2.8*
Factors influencing health status and contact with health services (Z00-Z99)	8.2	26.9	10.8	25.2	1.1*	1.7*
Diseases of the genitourinary system (N00-N99)	2.0	6.7	2.4	5.7	1.2*	1.0*
Diseases of the nervous system (G00-G99)	1.7	5.6	4.1	9.6	0.6*	–4.0*
Other[(j)]	4.9	16.2	5.8	13.4	1.2*	2.8*
Total hospitalisations[(k)]	**100.0**	**330.1**	**100.0**	**233.6**	**1.4***	**96.5***
	Tas[(m)]					
Diseases of the respiratory system (J00-J99)	18.5	23.7	18.3	28.0	0.8	–4.3
Certain conditions originating in the perinatal period (P00-P96)	15.9	20.2	19.1	29.2	0.7	–9.0
Certain infectious and parasitic diseases (A00-B99)	5.1	6.5	4.9	7.5	0.9	–1.1
Injury and poisoning & certain other consequences of external causes (S00-T98)	9.1	11.6	7.5	11.4	1.0	0.2
Symptoms, signs and abnormal clinical and laboratory findings n.e.c. (R00-R99)	10.5	13.3	6.9	10.5	1.3	2.8
Diseases of the digestive system (K00-K93)	4.6	5.8	6.3	9.7	0.6*	–3.9*
Diseases of the skin & subcutaneous tissue (L00-L99)	1.7	2.2	1.8	2.7	0.8	–0.6
Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)	8.3	10.5	7.8	12.0	0.9	–1.4
Diseases of the ear and mastoid process (H60-H95)	2.2	2.8	2.3	3.6	0.8	–0.8
Factors influencing health status and contact with health services (Z00-Z99)	10.3	13.1	13.9	21.3	0.6*	–8.2*
Diseases of the genitourinary system (N00-N99)	2.7	3.4	3.4	5.2	0.7*	–1.8*
Diseases of the nervous system (G00-G99)	2.0	2.6	1.7	2.6	1.0	0.0
Other[(j)]	9.3	11.8	6.2	9.4	1.3	2.4
Total hospitalisations[(k)]	**100.0**	**127.7**	**100.0**	**153.1**	**0.8***	**–25.4***

(continued)

Table A16 (continued): Hospital separation rates for children under 5 (0–4 years), by leading principal diagnosis, by Indigenous status and state/territory, 2008–09 to 2009–10[a][b][c][d]

	Indigenous		Other[e]			
Leading principal diagnoses	**%[f]**	**Rate per 1000[g]**	**%[f]**	**Rate per 1000[g]**	**Rate ratio[h]**	**Rate difference[i]**
	ACT[m]					
Diseases of the respiratory system (J00-J99)	14.3	23.3	17.5	25.7	0.9	–2.3
Certain conditions originating in the perinatal period (P00-P96)	29.1	47.6	25.5	37.4	1.3	10.2
Certain infectious and parasitic diseases (A00-B99)	4.4	7.2	5.5	8.1	0.9	–0.9
Injury and poisoning & certain other consequences of external causes (S00-T98)	9.3	15.3	6.6	9.7	1.6	5.6
Symptoms, signs and abnormal clinical and laboratory findings n.e.c. (R00-R99)	5.5	9.0	5.4	7.9	1.1	1.1
Diseases of the digestive system (K00-K93)	7.1	11.7	4.9	7.2	1.6	4.4
Diseases of the skin & subcutaneous tissue (L00-L99)	0.0	0.0	1.8	2.7	—	—
Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)	10.4	17.1	7.0	10.3	1.7	6.7
Diseases of the ear and mastoid process (H60-H95)	3.8	6.3	2.3	3.4	1.9	2.9
Factors influencing health status and contact with health services (Z00-Z99)	11.5	18.9	9.9	14.6	1.3	4.3
Diseases of the genitourinary system (N00-N99)	n.p.	n.p.	2.9	4.2	n.p.	n.p.
Diseases of the nervous system (G00-G99)	n.p.	n.p.	2.2	3.2	n.p.	n.p.
Other[j]	2.7	4.5	8.4	12.3	0.4	–7.9
Total hospitalisations[k]	**100.0**	**163.4**	**100.0**	**146.7**	**1.1**	**16.6**

* Represents results with statistically significant differences in the Indigenous/Other comparison at the $p < 0.05$ level.

n.e.c. Not elsewhere classified.

n.p. Not available for publication due to numbers less than 5, however included in totals where appropriate.

(a) Data are from public and most private hospitals. Separations for Newborns (without qualified days) and records for hospital boarders and posthumous organ procurement are excluded.

(b) Leading principal diagnosis categories are based on the ICD-10-AM sixth edition (National Centre for Classification in Health 2010).

(c) Financial year reporting. Two years combined data presented due to the relatively small number of hospital separations each year.

(d) Data are reported by state/territory of usual residence of the patient hospitalised. Data exclude private hospitals in the NT, Tas and the ACT.

(e) 'Other' includes hospitalisations of non-Indigenous children and those for whom Indigenous status was not stated.

(f) Percentage is number of hospital separations by diagnosis divided by all hospital separations during the reference period.

(g) ‘Rates’ are number of hospital separations for children under 5 years per 1,000 population.

(h) ‘Rate ratio’ is the Indigenous rate divided by the rate for other children.

(i) ‘Rate difference’ is the Indigenous children rate minus the rate for other children.

(j) ‘Other’ includes neoplasms; diseases of the eye and adnexa; diseases of the blood and blood forming organs and certain disorders involving the immune system; endocrine, metabolic and nutritional disorders; mental and behavioural disorders; diseases of the circulatory system; pregnancy, childbirth and the puerperium; and diseases of the musculoskeletal system and connective tissue.

(k) Includes hospitalisations with no principal diagnosis recorded.

(l) Total includes six jurisdictions for which the quality of Indigenous identification in hospitalisation data is considered acceptable (NSW, Vic, Qld, WA, SA and the NT only).

(m) Data for Tasmania and the ACT should be interpreted with caution until further assessment of Indigenous identification is completed.

Source: AIHW National Hospital Morbidity Database; CRC 2012.

Table A17: Hospital separation rates for children under 5 (0–4 years), by leading principal diagnosis, NSW, Vic, Qld, WA, SA and NT combined, 2004–05 to 2009–10[a][b][c][d][e]

Leading principal diagnoses	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	Short-term change (2008–09 to 2009–10)[f]	Long-term change (2004–05 to 2009–10)[f]
			Indigenous children (rate per 1000 persons)[g]					
Diseases of the respiratory system (J00-J99)	80.9	85.5	81.8	88.4	88.9	90.3	1.5	11.3*
Certain conditions arising during the perinatal period (P00-P96)	38.8	42.1	44.0	43.6	47.1	47.7	1.3	21.9*
Certain infectious and parasitic diseases (A00-B99)	37.5	44.5	43.2	39.3	33.3	33.4	0.2	–22.2
Injury, poisoning & other consequences of external causes (S00-T98)	23.5	23.9	24.0	23.6	26.5	26.9	1.6	14.9*
Factors influencing health status and contact with health services (Z00-Z99)	16.3	16.4	17.1	17.0	25.8	27.4	6.4	73.4*
Symptoms, signs & abnormal findings	19.2	19.8	19.0	21.0	19.2	22.2	15.7*	11.0
Other[h]	71.8	72.7	75.3	76.8	82.9	80.7	–2.6	15.3*
Total hospitalisations[i]	**288.2**	**305.2**	**304.4**	**309.7**	**323.6**	**328.7**	**1.6**	**13.0***
			Other children (rate per 1000 persons)[g][j]					
Diseases of the respiratory system (J00-J99)	45.9	45.2	43.7	50.2	48.0	47.9	–0.1	7.9
Certain conditions arising during the perinatal period (P00-P96)	40.7	41.6	41.8	42.5	40.1	38.1	–5.0	–6.0
Certain infectious and parasitic diseases (A00-B99)	18.8	22.2	22.3	16.9	14.5	13.8	–5.3*	–40.9*
Injury, poisoning & other consequences of external causes (S00-T98)	17.1	17.4	17.3	16.7	17.1	17.1	0.2	–1.1
Factors influencing health status and contact with health services (Z00-Z99)	18.1	17.8	18.2	19.3	24.8	24.9	0.5	44.5*
Symptoms, signs & abnormal findings	17.6	18.6	18.7	18.7	17.0	17.1	0.6	–5.8
Other[h]	74.6	71.0	69.9	72.1	71.3	69.0	–3.2*	–4.7
Total hospitalisations[i]	**233.0**	**233.9**	**232.1**	**236.5**	**232.9**	**228.1**	**–2.1***	**–1.4**
			Rate ratio[k]					
Diseases of the respiratory system (J00-J99)	1.8	1.9	1.9	1.8	1.9	1.9	1.7	3.0
Certain conditions arising during the perinatal period (P00-P96)	1.0	1.0	1.1	1.0	1.2	1.3	6.6	29.5*
Certain infectious and parasitic diseases (A00-B99)	2.0	2.0	1.9	2.3	2.3	2.4	5.9	24.6*
Injury, poisoning & other consequences of external causes (S00-T98)	1.4	1.4	1.4	1.4	1.5	1.6	1.5	16.0*
Factors influencing health status and contact with health services (Z00-Z99)	0.9	0.9	0.9	0.9	1.0	1.1	5.8	20.4*
Symptoms, signs & abnormal findings	1.1	1.1	1.0	1.1	1.1	1.3	15.0	17.2*
Other[h]	1.0	1.0	1.1	1.1	1.2	1.2	0.6	21.4*
Total hospitalisations[i]	**1.2**	**1.3**	**1.3**	**1.3**	**1.4**	**1.4**	**3.8**	**14.7***

(continued)

Table A17 (continued): Hospital separation rates for children under 5 (0–4 years), by leading principal diagnosis, NSW, Vic, Qld, WA, SA and NT combined, 2004–05 to 2009–10[(a)(b)(c)(d)(e)]

Leading principal diagnoses	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	Short-term change (2008–09 to 2009–10)[(f)]	Long-term change (2004–05 to 2009–10)[(f)]
			Rate difference[(l)]					
Diseases of the respiratory system (J00-J99)	35.0	40.3	38.2	38.2	40.9	42.4	3.5	15.7*
Certain conditions arising during the perinatal period (P00-P96)	–2.0	0.5	2.2	1.1	7.0	9.6	37.6	–551.3*
Certain infectious and parasitic diseases (A00-B99)	18.7	22.3	20.9	22.4	18.7	19.6	4.6	–3.3
Injury, poisoning & certain other consequences of external causes (S00-T98)	6.4	6.5	6.7	6.9	9.4	9.8	4.3	57.4*
Factors influencing health status and contact with health services (Z00-Z99)	–1.8	–1.4	–1.2	–2.3	1.0	2.5	153.6	–217.0*
Symptoms, signs & abnormal findings	1.6	1.3	0.3	2.3	2.2	5.1	134.9*	200.7*
Other[(h)]	–2.9	1.7	5.4	4.7	11.6	11.7	0.9	–504.9*
Total hospitalisations[(i)]	**55.2**	**71.3**	**72.3**	**73.2**	**90.6**	**100.6**	**11.0***	**74.0***

* Represents results with a statistically significant change at the p < 0.05 level over the period.

(a) Data are from public and most private hospitals. Separations for newborns (without qualified days) and records for hospital boarders and posthumous organ procurement are excluded.

(b) Leading principal diagnosis categories are based on the ICD–10–AM sixth edition (National Centre for Classification in Health 2010).

(c) Financial year reporting.

(d) Data are reported by state/territory of usual residence of the patient hospitalised. Data exclude private hospitals in the NT, Tas and the ACT.

(e) Data presented for the six jurisdictions for which the quality of Indigenous identification in hospitalisation data is considered acceptable (NSW, Vic, Qld, WA, SA and the NT only).

(f) Per cent change based on the average annual change over the period.

(g) The rate is per 1000 children in the population aged 0–4 years.

(h) 'Other' includes neoplasms; diseases of the eye and adnexa; diseases of the blood and blood forming organs and certain disorders involving the immune system; endocrine, metabolic and nutritional disorders; mental and behavioural disorders; diseases of the circulatory system; pregnancy, childbirth and the puerperium; and diseases of the musculoskeletal system and connective tissue.

(i) Includes hospitalisations with no principal diagnosis recorded.

(j) 'Other children' includes hospitalisations of non-Indigenous children and those for whom Indigenous status was not stated.

(k) 'Rate ratio' is the Indigenous rate divided by the rate for other children.

(l) 'Rate difference' is the Indigenous children rate minus the rate for other children.

Source: AIHW National Hospital Morbidity Database.

Table A18: Hospital separation rates for children under 5 (0–4 years), by state/territory, 2004–05 to 2009–10[a][b][c][d]

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	Short-term change (2008–09 to 2009–10)[e]	Long-term change (2004–05 to 2009–10)[e]
NSW								
Indigenous children (rate per 1000 persons)	226.4	252.8	255.1	264.0	305.0	298.7	–2.1	33.3*
Other children (rate per 1000 persons)[f]	223.5	229.8	231.2	237.0	253.2	252.9	–0.1	14.3*
Rate ratio[g]	1.0	1.1	1.1	1.1	1.2	1.2	–1.9	16.4*
Rate difference[h]	2.9	23.0	23.9	27.0	51.8	45.8	–11.6	1497.5*
Vic								
Indigenous children (rate per 1000 persons)	188.9	203.3	226.0	241.7	254.8	245.9	–3.5	34.4*
Other children (rate per 1000 persons)[f]	244.6	243.9	243.1	246.2	217.2	205.0	–5.6*	–16.1*
Rate ratio[g]	0.8	0.8	0.9	1.0	1.2	1.2	2.3	59.3*
Rate difference[h]	–55.7	–40.6	–17.1	–4.5	37.6	40.9	8.8	–187.3*
Qld								
Indigenous children (rate per 1000 persons)	250.7	268.6	256.0	258.9	259.8	272.3	4.8	4.8
Other children (rate per 1000 persons)[f]	222.2	220.2	215.3	220.6	220.4	215.2	–2.4*	–1.9
Rate ratio[g]	1.1	1.2	1.2	1.2	1.2	1.3	7.3	6.9
Rate difference[h]	28.5	48.4	40.7	38.3	39.4	57.1	44.9	56.9
WA								
Indigenous children (rate per 1000 persons)	414.3	402.2	395.9	408.4	397.2	409.2	3.0	–1.0
Other children (rate per 1000 persons)[f]	232.4	224.9	215.0	219.6	213.7	215.3	0.7	–7.0
Rate ratio[g]	1.8	1.8	1.8	1.9	1.9	1.9	2.3	6.6
Rate difference[h]	181.9	177.3	180.9	188.8	183.5	193.9	5.7	6.8
SA								
Indigenous children (rate per 1000 persons)	341.8	340.3	358.4	375.9	337.3	368.2	9.2	5.9
Other children (rate per 1000 persons)[f]	275.3	273.0	275.4	276.2	268.0	262.2	–2.2	–4.1*
Rate ratio[g]	1.2	1.2	1.3	1.4	1.3	1.4	11.6	10.5*
Rate difference[h]	66.5	67.3	83.0	99.7	69.3	106.0	53.0	47.3

(continued)

Table A18 (continued): Hospital separation rates for children under 5 (0–4 years), by state/territory, 2004–05 to 2009–10[(a)(b)(c)(d)]

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	Short-term change (2008/09 to 2009/10)(e)	Long-term change (2004/05 to 2009/10)(e)
			NT					
Indigenous children (rate per 1000 persons)	415.4	453.2	464.9	454.1	487.4	493.7	1.3	16.6*
Other children (rate per 1000 persons)(f)	173.2	201.5	179.6	180.8	186.7	181.2	–2.9	–0.3
Rate ratio(g)	2.4	2.2	2.6	2.5	2.6	2.7	4.4	15.7*
Rate difference(h)	242.2	251.7	285.3	273.3	300.7	312.5	3.9	28.7*
			Total(i)					
Indigenous children (rate per 1000 persons)	288.2	305.2	304.4	309.7	323.6	328.7	1.6	13.0*
Other children (rate per 1000 persons)(f)	233.0	233.9	232.1	236.5	233.0	228.1	–2.1*	–1.4
Rate ratio(g)	1.2	1.3	1.3	1.3	1.4	1.4	3.8	14.7*
Rate difference(h)	55.2	71.3	72.3	73.2	90.6	100.6	11.0*	74.0*
			Tas					
Indigenous children (rate per 1000 persons)	60.3	88.1	94.0	115.4	106.8	142.6	33.5	115.8*
Other children (rate per 1000 persons)(f)	148.4	165.3	156.7	138.4	136.9	167.6	22.4*	–0.7
Rate ratio(g)	0.4	0.5	0.6	0.8	0.8	0.9	9.1	112.4*
Rate difference(h)	–88.1	–77.2	–62.7	–23.0	–30.1	–25.0	–16.9	–80.5*
			ACT					
Indigenous children (rate per 1000 persons)	88.6	124.4	134.6	120.5	152.6	169.1	10.8	76.3*
Other children (rate per 1000 persons)(f)	138.7	149.4	140.4	142.2	154.3	137.5	–10.9*	1.1
Rate ratio(g)	0.6	0.8	1.0	0.8	1.0	1.2	24.4	74.1*
Rate difference(h)	–50.1	–25.0	–5.8	–21.7	–1.7	31.6	–1958.8	–131.9*

* Represents results with a statistically significant change at the $p < 0.05$ level over the period.

(a) Data are from public and most private hospitals.

(b) Separations for newborns (without qualified days) and records for hospital boarders and posthumous organ procurement are excluded.

(c) Financial year reporting.

(d) Data are reported by state/territory of usual residence of the patient hospitalised. Data exclude private hospitals in the NT, Tas and the ACT.

(e) Per cent change based on the average annual change over the period.

(f) 'Other children' includes hospitalisations of non-Indigenous children and those for whom Indigenous status was not stated.

(g) ‘Rate ratio’ is the Indigenous rate divided by the rate for other children.

(h) ‘Rate difference’ is the Indigenous children rate minus the rate for other children.

(i) Total includes six jurisdictions for which the quality of Indigenous identification in hospitalisation data is considered acceptable (NSW, Vic, Qld, WA, SA and the NT only).

Source: AIHW National Hospital Morbidity Database; SCRGSP 2011; CRC 2012.

Appendix B: Methods

Crude rates

A crude rate is defined as the number of events over a specified period (for example, a year) divided by the total population at risk of the event. In this report, crude rates are presented in some tables for Indigenous Australians.

Age-specific rates

An age-specific rate is defined as the number of events for a specified age group over a specified period (for example, a year) divided by the total population at risk of the event in that age group. Age-specific rates in this report were calculated by dividing, for example, the number of deaths in each specified age group by the corresponding population in the same age group.

Age-standardised rates

Age-standardised rates enable comparisons to be made between populations that have different age structures, such as the Indigenous and non-Indigenous populations. Direct standardisation, in which the age-specific rates are multiplied by a constant population, was used in this report. This effectively removes the influence of the age structure on the summary rate. The report states where age-standardised rates have been used.

Age-standardised rates have been used for indicators on smoking during pregnancy and antenatal care. These have been directly age-standardised using the population of women aged 15–44 years in Australia as the standard population.

Rate ratio

Rate ratios are calculated by dividing the rate for Indigenous Australians with a particular characteristic by the rate for non-Indigenous Australians with the same characteristic.

A rate ratio of 1 indicates that the prevalence of the characteristic is the same in the Indigenous and non-Indigenous populations. Rate ratios of greater than 1 indicate higher prevalence in the Indigenous population and rate ratios of less than 1 indicate higher prevalence in the non-Indigenous population.

Rate difference

Rate difference is calculated by subtracting the rate for Indigenous Australians from the rate for non-Indigenous Australians for the characteristic of interest.

Confidence intervals

The observed value of a rate may vary due to chance even where there is no variation in the underlying value of the rate. Rates derived from administrative data counts are not subject to sampling error but may still be subject to natural random variation, especially for small counts. A 95% confidence interval (CI) for an estimate is a range of values which is very likely (95 times out of 100) to contain the true unknown value. For indicators based on administrative data which include a comparison between time periods, or population groups, 95% confidence intervals have been calculated. CIs are presented in tables and graphs (as error bars) for national rates only but have been used to indicate statistically significant differences in the Indigenous and non-Indigenous comparisons at the state/territory level. CIs are not presented for state/territory rates as they are not to be used for jurisdictional comparisons due to differences in Indigenous under-identification by state/territory for the administrative data sets analysed in this report.

Where the 95% CIs of two estimates do not overlap it can be concluded that there is a statistically significant difference between the two estimates.

As with all statistical comparisons, care should be exercised in interpreting the results of the comparison. If two rates are statistically significantly different from each other, the difference is unlikely to have arisen by chance. Judgement should, however, be exercised in deciding whether or not the difference is of any practical significance.

The standard method of calculating CIs has been used in this report. Typically in the standard method, the observed rate is assumed to have natural variability in the numerator count (for example, deaths, hospital visits) but not in the population denominator count. Also, the rate is assumed to have been generated from a normal distribution ('Bell curve'). Random variation in the numerator count is assumed to be centred around the true value; that is, there is no systematic bias.

The formulas used to calculated 95% confidence intervals using the standard method are:

Crude rate:

$$CI\ (CR)_{95\%} = CR \quad \pm 1.96 \times \frac{CR}{\sqrt{\sum_{i=1}^{I} d}}$$

Where d = the number of deaths

Age-standardised rate:

$$CI\ (ASR)_{95\%} = ASR \ \pm 1.96 \times \sqrt{\sum_{i=1}^{I} \frac{w_i^2 d_i}{n_i^2}}$$

Where w_i = the proportion of the standard population in age group i

d_i = the number of deaths in age group i

n_i = the number of people in the population in age group i

Suppression of numbers and rates

In this report, numbers based on a cell count of less than 5 have been suppressed for confidentiality reasons (indicated in tables as 'n.p.'). Rates, rate ratios and rate differences based on numerators of less than 5 have also been suppressed, as rates based on only a few cases are not reliable due to difficulties in distinguishing random fluctuation from true changes in the underlying rate.

Annual change and per cent change

Percentage change is calculated by multiplying the average annual change over a period by the number of data points less 1. This is then divided by the rate for the first year in the series and multiplied by 100.

The average annual change in rates, rate ratios and rate differences are calculated using linear regression which uses the 'least squares' method to calculate a straight line that best fits the data and returns an array that best describes the line. The simple linear regression line ($Y = a + bX$, or 'slope' estimate) was used to determine the average annual change in the data over the period.

The per cent change estimate depends heavily on the first data point used in the time series.

Statistical significance

For trend analyses with 4 or more data points, the 95% confidence intervals (CIs) for the standard error of the slope estimate (average annual change) based on linear regression are used to determine whether the apparent increases or decreases in the data are statistically significant at the $p < 0.05$ level. The formula used to calculate the CIs for the standard error of the slope estimate is:

$$95\%\ CI(x) = x \pm 1.96 \times SE(x)$$

where x is the average annual change (slope estimate).

If the upper and lower 95% confidence intervals do not include zero, then it can be concluded that there is statistical evidence of an increasing or decreasing trend in the data over the study period.

For trends analyses with 3 data points, linear regression was first used to determine whether there was a consistent increase or decrease in the data over the 3 year period. The 95% CIs for the first and last year were then used to determine whether there is a significant trend in the data over the three years; if the confidence intervals do not overlap, then it is concluded that there was a significant change.

For trends analyses with only 2 data points, the 95% CIs for the rates for each year were used to determine statistical significance. If the CIs do not overlap, then it is concluded that the 2 data points are significantly different.

Significant changes are denoted with a * against the per cent change statistics included in relevant tables.

For Indigenous and non-Indigenous comparisons, the 95% CIs for the Indigenous and non-Indigenous rates are used to determine statistical significance. If the CIs do not overlap, then it is concluded that there is statistically significant difference between the Indigenous and non-Indigenous rates.

Tables include a * next to the rate ratio to indicate that rates for the Indigenous and non-Indigenous populations are statistically different from each other at the $p < 0.05$ level (based on 95% CIs).

The word 'significant'

Statistically significant differences, for example between jurisdictions or over time, are denoted as 'significant'. The word 'significant' is not used outside its statistical context.

Relative standard error

Relative standard error (RSE) is a measure of sampling error, which is obtained by expressing the standard error as a percentage of the estimate.

$$RSE(estimate) = 100 \times \left(\frac{SE(estimate)}{(estimate)} \right)$$

The ABS considers that only estimates with relative standard errors of less than 25%, and percentages based on such estimates, are sufficiently reliable for most purposes. The ABS convention is to place a single asterisk against estimates with relative standard errors between 25% and 50% to indicate that they have high standard errors and should be used with caution. Estimates with relative standard errors greater than 50% are given a double asterisk to indicate that they are considered too unreliable for general use.

For data derived from sample surveys in this report, the same annotation as used by the ABS has been used to assist readers to understand the reliability of data presented.

Appendix C: Data sources

AIHW National Mortality Database

Mortality data presented in this report are from the AIHW National Mortality Database. The AIHW National Mortality Database includes information on the factors that caused death, as well as other information about the deceased person, such as age at death, place of death, country of birth, and where applicable, the circumstances of their death. These data are collected in Australia by the Registrars of Births, Deaths and Marriages in each state and territory. The data are then compiled nationally by the ABS, which codes the data according to the International Classification of Diseases (ICD).

Mortality analysis in this report is based on year of registration of death. Data presented by state and territory are based on the state or territory of usual residence. Data issues relating to a specific mortality analysis are footnoted in tables and figures throughout the report.

Deaths registered in 2010, for which Queensland was the deceased person's usual residence, have been adjusted to exclude deaths registered in 2010 that occurred prior to 2007. This is to minimise the impact of late registration of deaths due to recent changes in the timeliness requirements for death registrations in Queensland.

Indigenous data

At present, there is considerable variation across the states and territories in the completeness of mortality data for Indigenous people. Information concerning the number of deaths of Indigenous people is limited by the accuracy with which Indigenous persons are identified in death records. Problems associated with identification result in an underestimation of deaths of Indigenous people.

Mortality data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory are considered to have sufficient coverage to produce reliable statistics on Indigenous Australian deaths for the period 2001–2010. Due to the small numbers of deaths among Indigenous children, 5 years of mortality data have been combined for analysis in this report (2006−2010).

Where Indigenous status is *Not stated/inadequately described*, these deaths have been excluded from the analysis. As such, the categories used for presentation of mortality analysis are *Indigenous Australians* and *Non-Indigenous Australians*.

Interpretation of Indigenous mortality statistics should take into account the relative quality of the data from these jurisdictions, and the fact that data from these jurisdictions are not necessarily representative of the excluded jurisdictions.

Data availability: annual from 1991 onwards.

AIHW National Perinatal Data Collection (NPDC)

Data on low birthweight, antenatal care and smoking during pregnancy come from the AIHW National Perinatal Data Collection.

The AIHW National Perinatal Data Collection (NPDC) is a national population-based cross-sectional data collection of pregnancy and childbirth. The data are based on births reported to the perinatal data collection in each state and territory in Australia. Midwives and other staff, using information obtained from mothers and from hospital or other records, complete notification forms for each birth. Selected information is then compiled annually into this national data set by the AIHW National Perinatal Epidemiology and Statistics Unit. Information is included in the NPDC on both live births and stillbirths of at least 400 grams birthweight or at least 20 weeks gestation.

Indigenous data

The Perinatal NMDS currently has no data item for the Indigenous status of the baby, and thus reporting of Indigenous status of the baby is based on maternal Indigenous status. In 2009, this represented approximately 73% of all Indigenous births based on data from ABS birth registrations (ABS 2011). Consultation for a new data element to collect the Indigenous status of the baby was completed in June 2010 and the data element was added to the Perinatal NMDS in July 2012.

No formal national assessment has been undertaken to determine completeness of the coverage of Indigenous mothers in the Perinatal NMDS. However, the proportion of Indigenous mothers for the period 2000–2009 has been consistent, at 3.4–3.8% of women who gave birth. Comparisons between states and territories should be interpreted with caution.

Babies of mothers for whom Indigenous status was not stated have been excluded from analysis.

Long-term time series exclude Tasmania and the Australian Capital Territory, as data from these jurisdictions are not considered stable enough to be included in trends analyses, mainly because of small population size and some issues with data quality over a longer-term reporting period.

Data presented by state/territory are based on the usual residence of the mother. Data exclude Australian non-residents of external territories and where state/territory of residence was not stated.

Data availability: annual from 1991 onwards.

National Hospital Morbidity Database

The National Hospital Morbidity Database is a compilation of episode-level records from admitted patient morbidity data collection systems in Australian hospitals. The database contains data relating to admitted patients in almost all hospitals, including public acute hospitals, public psychiatric hospitals, private acute hospitals, private psychiatric hospitals and private free-standing day hospital facilities. Public sector hospitals that are not included are those not within the jurisdiction of a state or territory health authority (for example, hospitals operated by the Department of Defence or correctional authorities, and hospitals located in offshore territories).

Hospital records are for ‘separations’ and not individuals, and there can be multiple admissions for the same individual.

The data supplied are based on the National Minimum Data Set for Admitted Patient Care and include demographic, administrative and length-of-stay data, and data on the diagnoses of the patients, the procedures they underwent in hospital, and external causes of injury and poisoning.

Care types 7.3, 9 and 10 (Newborn – unqualified days only; organ procurement; hospital border) have been excluded from analysis.

ICD-10-AM Classification of diseases and related health problems

For hospital diagnoses, the 10th revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10) is used with modifications. The ICD-10-AM is an Australian modification of ICD-10, and has been used in the AIHW National Hospital Morbidity Database from 1998–99 onwards. All hospital data presented in this report are based on the principal diagnosis.

Indigenous data

Data are presented for the six jurisdictions that the AIHW has assessed as having adequate identification of Indigenous hospitalisations in 2006–08: New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory (public hospitals only) (AIHW 2010). These six jurisdictions represent approximately 96% of the Indigenous population of Australia. National totals include hospital separations for people resident in these six jurisdictions only and are not necessarily representative of the jurisdictions not included. Indigenous status data are reported for Tasmania and the Australian Capital Territory (public hospitals only) with caveats.

Hospitalisations for which the Indigenous status of the patient was not reported have been included with hospitalisations data for non-Indigenous people under the 'other' category. This is to enable consistency across jurisdictions, because public hospitals in some states and territories did not have a category for the reporting of 'not stated' or inadequately recorded/reported Indigenous status during the period of study.

For current-period analysis, an aggregate of 2 years of data has been used, because the number of hospitalisations for some conditions is likely to be small for a single year. Data are presented by state/territory of usual residence of the patient.

The following caveats were recommended for analysis of hospitalisation data from selected jurisdictions in *Indigenous identification in hospital separations data: quality report* (AIHW 2010):

- Interpretation of results should take into account the relative quality of the data from the jurisdictions included (currently a small degree of Indigenous under-identification in data from New South Wales and South Australia, and relatively marked Indigenous under-identification in data from Queensland and Victoria).
- Interpretation of time series analysis should take into account the possible contribution of changes over time in ascertainment of Indigenous status. This will be reflected in Indigenous patient changes in hospitalisation rates for Indigenous people.

It should be noted that since the time of writing this report, a more recent study on the quality of Indigenous identification in hospitalisation records in Australia was conducted in 2011-12 by the AIHW, for which a report was published in May 2013 (*Indigenous identification in hospital separations data: 2013 Quality report)***.** This report presents revised recommendations for analysis of Indigenous hospital separations data and estimates of correction factors that can be applied to the data for analysis purposes at the national level; national by remoteness; state and territory level and remoteness levels within jurisdictions**.**

Data availability: annual from 1993–94 onwards.

Data Quality Statement:
<http://meteor.aihw.gov.au/content/index.phtml/itemId/511338>.

National Notifiable Diseases Surveillance System

Data on nationally notifiable diseases, including sexually transmitted diseases and hepatitis B and C, come from the National Notifiable Diseases Surveillance System.

The National Notifiable Diseases Surveillance System (NNDSS) was established in 1990 by the Communicable Diseases Network of Australia and New Zealand. Notifications of notifiable communicable diseases are reported to state or territory health authorities under the provisions of the public health legislation in each jurisdiction. Computerised, de-identified unit records of notifications are supplied to the Australian Government Department of Health and Ageing on a daily basis for collation, analysis and publication on the internet and in the *Communicable Diseases Intelligence* journal. Data provided for each notification include a unique record reference number, state or territory code, disease code, date of onset, date of notification to the relevant health authority, sex, age, Indigenous status and postcode of residence.

The quality and completeness of data compiled in the NNDSS varies. Surveillance of communicable diseases varies between jurisdictions. Therefore, the proportion of diagnosed cases of a particular disease that is notified to health authorities is not known with certainty and may vary among diseases, between jurisdictions and over time.

Not all notifications of chlamydial infection, gonococcal infection, and syphilis are sexually acquired. The national case definitions for these infections do not specifically distinguish between sites of infection or modes of transmission.

Data for hepatitis C included in this report are for newly acquired notifications only (excluding Queensland, where hepatitis C data are reported in a separate category).

Data on syphilis is limited to notifications of less than 2 years duration and includes notifications of congenital syphilis.

Data supplied by the Northern Territory for chlamydia and gonococcal infections are for genital infections only, while for other states and territories data are for all sites of infection.

Indigenous data

Identification of Indigenous notifications in all states and territories is incomplete, with the level of completeness varying across diseases as well as jurisdictions. The NNDSS provided the Australian Institute of Health and Welfare (AIHW) with data on Indigenous status completeness by disease and jurisdiction. Using a cut-off of 50% completeness of Indigenous status for the period 2009–2011, Western Australia, South Australia, Tasmania and the Northern Territory were assessed to have adequate identification for chlamydia, syphilis, gonorrhoea, hepatitis B and hepatitis C. Of the remaining states/territories, Queensland and Victoria had adequate identification for syphilis, gonorrhoea and chlamydia; the Australian Capital Territory had adequate identification for syphilis, gonorrhoea and hepatitis B; and New South Wales had adequate identification for syphilis only.

Three years have been combined for reporting due to the small number of Indigenous and non-Indigenous notifications for some STIs each year.

‘Other Australians’ includes notifications for non-Indigenous Australians and those for whom Indigenous status is not stated.

Data availability: 1991 onwards.

National Centre in HIV Epidemiology and Clinical Research

The National Centre in HIV Epidemiology and Clinical Research (NCHECR) was established in 1986 by the Australian Government to fulfil a number of key roles in Australia's approach to dealing with HIV/AIDS. The NCHECR's primary functions relate to the coordination of national surveillance programs, clinical research and clinical trials. While its original focus was exclusively on HIV/AIDS, the NCHECR's work has expanded to encompass hepatitis B and C, and sexually transmissible infections. The NCHECR also conducts research into the transmission, prevention and natural history of these infections. The NCHECR's research program has increasingly taken on a regional focus, with major collaborative programs in Thailand and Cambodia. Other functions of the NCHECR include the training of health professionals, and input into the development and implementation of health policy and programs.

Indigenous data

Recording of Indigenous status in the NCHECR data is considered reliable in all states and territories. Notifications for which Indigenous status was not reported have been included with notifications data for non-Indigenous people under the 'other' category.

Data are presented for the 3-year period 2008–2010 because notifications of some diseases are too small to present for a single year.

Data availability: 1986 onwards.

National Aboriginal and Torres Strait Islander Social Survey (NATSISS)

The Australian Bureau of Statistics (ABS) conducted the 2002 National Aboriginal and Torres Strait Islander Social Survey (NATSISS) between August 2002 and April 2003. The 2008 NATSISS was conducted between August 2008 and April 2009. The survey provides information 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 2008 NATSISS included for the first time children aged under 15. The NATSISS will be conducted every 6 years with the next survey planned for 2013.

The 2008 NATSISS collected information by personal interview from 13,300 Indigenous Australians across all states and territories of Australia, including those living in remote areas. The sample covered persons aged 15 years and over who are usual residents in selected private dwellings. It collected information on a wide range of subjects including family and culture, health, education, employment, income, financial stress, housing, and law and justice.

For 15–17 year olds, data may reflect parental responses or in some cases young people may have been personally interviewed with the consent of an adult.

Data availability: 2002 and 2008.

Data are weighted to the total Indigenous population in 2008. Estimates with a relative standard error of between 25 and 50%, and 50% and over, have been identified with an asterisk (*; **) in this report.

There are many logistical, analytical and conceptual challenges in surveying the Aboriginal and Torres Strait Islander population, as the population is relatively small and less accessible— Indigenous Australians account for 2.5% of the total population, one-quarter of whom live in remote or very remote areas. The small size of the Indigenous child population results in estimates from the NATSISS being based on a small number of events which are subject to uncertainty, meaning data disaggregated at the state/territory level is subject to high relative standard errors and should therefore be interpreted with caution.

Population data

ABS estimated resident population (ERP) data were used to calculate most of the rates presented in this report, except where the denominator was available from within the data source (for example, indicators for which data were derived from the National Perinatal Data Collection).

For the Indigenous population, the ABS's *Experimental estimates and projections (Series B)*, based on the 2006 Census, were used to calculate rates. Non-Indigenous rates were calculated by subtracting the Indigenous population from the total ERP.

Age-specific rates and age-standardised rates were calculated using the ERP of the reference year as at 30 June. For this report, total population ERP data for June 2007 onwards were available as preliminary estimates only. Final estimates were used for all earlier years.

Data Quality Statement:
<http://meteor.aihw.gov.au/content/index.phtml/itemId/449223>.

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This is the first annual performance report for the Indigenous Early Childhood Development National Partnership Agreement (NPA). It provides the latest available information, as well as trends on the six health-related indicators in the NPA. Key findings include that Indigenous mothers had higher rates of low birthweight babies than non-Indigenous mothers and more than half of Indigenous mothers reported smoking during pregnancy. There was a 46% decline in the infant mortality rate for Indigenous infants between 2001 and 2010.

Indigenous Early Childhood Development National Partnership Agreement

AIHW