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National Partnership Agreement on Indigenous Early Childhood Development

Second annual report on health performance indicators

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

National Partnership Agreement on Indigenous Early Childhood Development

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Australian Institute of Health and Welfare
Canberra

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Abbreviations

ABS	Australian Bureau of Statistics
AIHW	Australian Institute of Health and Welfare
BBV	bloodborne virus
COAG	Council of Australian Governments
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
LCI	lower confidence interval
NATSISS	National Aboriginal and Torres Strait Islander Social Survey
NNDSS	National Notifiable Diseases Surveillance System
NPDC	National Perinatal Data Collection
STIs	sexually transmissible infections
UCI	upper confidence interval
WHO	World Health Organization

Symbols

–	nil or rounded to zero
. .	not applicable
n.a.	not available
n.e.c.	not elsewhere classified
n.p.	not publishable because of small numbers, confidentiality or other concerns about the quality of the data

Summary

This second report on the health indicators in the National Partnership Agreement on Indigenous Early Childhood Development finds areas of improvement as well as areas of concern in the health of Aboriginal and Torres Strait Islander children and mothers.

Antenatal care

In 2010, 51% of Indigenous mothers attended at least 1 antenatal visit in the first trimester of pregnancy in New South Wales, Victoria, Queensland, Western Australia, South Australia, the Australian Capital Territory and the Northern Territory combined. Although the majority of Aboriginal and Torres Strait Islander mothers access antenatal care at least once during their pregnancy, they tend to access these services later and less often than other mothers (AHMAC 2012a).

Teenage rates of sexually transmissible and bloodborne virus infections

Between 2010 and 2012, in jurisdictions with at least 50% completeness of Indigenous status reporting for teenagers aged 15–19, notification rates for chlamydia, gonorrhoea and syphilis were much higher for Indigenous teenagers than for other teenagers (6,807 and 1,560 per 100,000 for chlamydia; 3,182 and 55 per 100,000 for gonorrhoea; and 81 and 3 per 100,000 for syphilis).

Low birthweight

Between 2008 and 2010, for all Australia, singleton live babies born to Indigenous mothers were 2.4 times as likely to have low birthweight as those born to non-Indigenous mothers. The proportion of low birthweight babies born to Indigenous mothers, and the gap, declined substantially between 2000 and 2010. 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.

Infant mortality

Between 2001 and 2011, in New South Wales, Queensland, Western Australia, South Australia and the Northern Territory combined, Indigenous infant mortality declined by 55% (from 11.2 to 6.6 deaths per 1,000 live births). But the infant mortality rate in 2007–2011 was still almost twice as high for Indigenous infants as for non-Indigenous infants.

Substance use during pregnancy

Nationally, in 2010, 51% of Indigenous mothers smoked during pregnancy. Indigenous mothers were almost 4 times as likely as non-Indigenous mothers to have smoked during pregnancy (age-standardised rates of 49% and 13%, respectively). These figures did not change substantially between 2007 and 2010. Smoking during pregnancy is a significant risk factor for the mother and her baby, for whom the effects persist into childhood.

Hospitalisations for children under 5

Between 2004–05 and 2010–11, hospitalisation rates for Indigenous children aged 0–4 years increased (from 288 to 322 per 1,000 population) in New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory combined.

Key findings

Antenatal care

- In 2010, 51% of Indigenous mothers attended at least 1 antenatal visit in the first trimester in the jurisdictions for which there were reliable data (New South Wales, Victoria, Queensland, Western Australia, South Australia, the Australian Capital Territory and the Northern Territory). A lower proportion of Indigenous than non-Indigenous mothers attended an antenatal visit in the first trimester (age-standardised rates of 52% and 69%, respectively).
- Between 2007 and 2010, in the 3 jurisdictions combined for which data are available on gestational age at first antenatal visits (New South Wales, South Australia and the Northern Territory), the age-standardised proportion of Indigenous mothers who attended antenatal care in the first trimester increased (from 60% to 66%), though this increase was not significant.

Teenage rates of sexually transmissible and bloodborne virus infections

- Between 2010 and 2012, among Indigenous teenagers aged 15–19, there were:
  - about 8,200 notifications of chlamydia in Queensland, Western Australia, South Australia, Tasmania and the Northern Territory combined
  - nearly 4,300 notifications of gonorrhoea in Victoria, Queensland, Western Australia, South Australia, Tasmania, the Australian Capital Territory and the Northern Territory combined
  - approximate 160 notifications of syphilis in all states and territories.
- Compared with other teenagers, notification rates among Indigenous teenagers were:
  - more than 4 times as high for chlamydia (6,807 and 1,560 per 100,000 population, respectively)
  - more than 57 times as high for gonorrhoea (3,182 and 55 per 100,000 population, respectively)
  - 29 times as high for syphilis (80.8 and 2.8 per 100,000 population, respectively).
- Between 1994–96 and 2010–12, in Western Australia, South Australia and the Northern Territory combined, notification rates for chlamydia significantly increased among Indigenous and other teenagers aged 15–19 (from 1,941 to 6,745 and from 173 to 1,495 per 100,000 population, respectively).
- Over the same period, among Indigenous teenagers in Western Australia, South Australia and the Northern Territory combined, notification rates for gonorrhoea increased by more than 70% (from 2,752 to 4,780 per 100,000 population), while notification rates for syphilis decreased by more than 90% (from 909 to 49 per 100,000). Notification rates for gonorrhoea or syphilis among other teenagers did not significantly change during this period.
- Between 1997–98 and 2010–12, in Western Australia, South Australia and the Northern Territory combined, notification rates for hepatitis C declined significantly

among Indigenous and other teenagers (from 171 to 70 and from 56 to 13 per 100,000 population, respectively).

- Over the same period, in Western Australia, South Australia and the Northern Territory combined, notification rates for newly acquired hepatitis B declined significantly among Indigenous teenagers (from 119 to 51 per 100,000 population), but did not significantly change among other teenagers.

It should be noted that notification data for most diseases represents only a proportion of the total cases occurring in the community—that is, only those cases for which health care was sought, a test conducted and a diagnosis made, followed by a notification to health authorities. The degree of under-representation of all cases is unknown, and most likely varies by disease, by jurisdiction and by time (NNDSS 2012).

In interpreting these data, it is important to note that changes in notification rates over time might not solely reflect changes in disease prevalence or incidence. Changes in: testing policies; screening programs, including the preferential testing of high-risk populations (such as Aboriginal and Torres Strait Islander people); the use of less invasive and more sensitive diagnostic tests; and periodic awareness campaigns, might influence the number of notifications that occur over time (NNDSS 2012).

For example, studies have shown significant increases in chlamydia infection rates following the introduction of more sensitive nucleic acid amplification testing (Burckhardt et al. 2006; Dicker et al. 2000). Nucleic acid amplification testing for gonorrhoea and chlamydia was introduced in Australia in the late 1990s, and this is likely to be responsible for some of the observed increases in notification rates for these diseases. Differences in the health-seeking behaviour of Aboriginal and Torres Strait Islander adolescents and non-Indigenous adolescents, and self-identification as an Indigenous person, might also have varied over time. Further information about national trends in Indigenous and other teenagers, methodology and data caveats are detailed in Chapter 3.

Low birthweight

- Nationally, in 2008–2010, 11% of live born singleton babies born to Indigenous mothers were of low birthweight—2.4 times as high as the rate for babies born to non-Indigenous mothers.
- Between 2000 and 2010, in New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory combined, the proportion of low birthweight babies born to Indigenous mothers declined significantly (from 12% to 11% of live born singleton babies), and the gap between low birthweight babies born to Indigenous and non-Indigenous mothers narrowed significantly.

Infant mortality

- During 2007–2011, in New South Wales, Queensland, Western Australia, South Australia and the Northern Territory combined, the mortality rate for Indigenous infants was 7.0 per 1,000 live births—almost twice as high as the rate for non-Indigenous infants.
- Between 2001 and 2011, in New South Wales, Queensland, Western Australia, South Australia and the Northern Territory combined, the mortality rate for Indigenous infants declined by 55% (from 11.2 to 6.6 deaths per 1,000 live births), and the gap between Indigenous and non-Indigenous infants narrowed by a 85%.

Substance use during pregnancy

- Nationally, in 2010, 51% of Indigenous mothers smoked during pregnancy. Indigenous mothers were almost 4 times as likely as non-Indigenous mothers to have smoked during pregnancy (age-standardised rates of 49% and 13%, respectively).
- Trend data for age-standardised Indigenous rates are available individually for New South Wales, Queensland, Western Australia, South Australia, and the Northern Territory. Between 2007 and 2010, the age-standardised proportion of Indigenous mothers who smoked during pregnancy in New South Wales declined significantly (from 48% to 47%) whilst there was no change in the gap between Indigenous and non-Indigenous mothers. 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, for Queensland, Western Australia, South Australia and the Northern Territory.
- Findings from the 2008 National Aboriginal and Torres Strait Islander Social Survey (NATSISS) suggest that 42% of Indigenous mothers with children aged 0–3 years smoked during pregnancy, 20% drank alcohol and 5% used illicit drugs.

Hospitalisation for children under 5

- Between 2009–10 and 2010–11, in New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory combined, Indigenous children aged under 5 were hospitalised at 1.5 times the rate of non-Indigenous children.
- Respiratory diseases are the most common diagnoses of Indigenous children hospitalised, accounting for 28% of hospitalisations.
- Hospitalisation rates for Indigenous children aged 0–4 increased by 13% between 2004–05 and 2010–11 in New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory combined. Over this period, hospitalisation rates for Indigenous children increased at a faster rate than the rates for other children.

Changes in hospitalisation rates might reflect several factors, such as changes in access to, and demand for, hospital treatment. Improvements in the recording of Indigenous status in hospital records might also affect hospitalisation rates reported for Indigenous children over time.

Summary table 1: Indigenous Early Childhood Development health indicators with available data, Indigenous rates, by state and territory

Reported measure	Year of data	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Proportion of women who gave birth reporting a first trimester antenatal visit (per cent)	2010	71.7	48.3	38.2	29.7	56.6	n.a.	57.1	49.7	51.0
Mothers aged less than 20 years		69.3	43.8	35.3	22.9	50.9	n.a.	70.0	38.7	45.8
Mothers aged 20 years and over		72.2	49.2	38.9	31.7	57.8	n.a.	54.7	53.0	52.3
Proportion of women with children aged 0–3 years who used substances during pregnancy (per cent)	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.p.(b)	5.0
Proportion of women who used tobacco during pregnancy (per cent)	2010	48.6	43.1	53.5	50.2	58.3	54.2	59.4	53.2	51.2
Mothers aged less than 20 years		50.1	47.5	55.3	46.6	47.9	63.3	80.0	49.6	51.2
Mothers aged 20 years and over		48.2	42.2	53.1	51.3	60.6	52.8	55.6	54.3	51.2
Proportion of low birthweight among live born singleton babies (per cent), of:	2008–2010	10.1	11.7	9.6	13.1	11.8	8.2	12.1	12.9	10.9
mothers aged less than 20 years		11.5	13.8	10.2	13.4	10.0	6.6	n.p.	13.6	11.6
mothers aged 20 years and over		9.8	11.3	9.5	13.0	12.3	8.4	13.0	12.6	10.7
Mortality rate (per 1,000 live births) for infants less than 1 year of age(c)	2007–2011	4.9	n.a.	7.4	7.5	6.1	n.a.	n.a.	12.7	7.0
Notifications (per 100,000 population) of sexually transmissible and bloodborne virus infections among Indigenous teenagers aged 15–19										
Chlamydia	2010–2012	n.a.	n.a.	7,652.9	8,497.2	3,079.7	758.3	n.a.	6,510.3	6,806.6
Gonorrhoea	2010–2012	n.a.	n.p.	2,780.1	4,559.8	1,554.0	—	n.p.	6,641.4	3,182.3
Syphilis	2010–2012	—	—	228.6	55.9	—	—	—	65.5	80.8
Hepatitis C	2010–2012	n.a.	n.a.	57.1	99.7	94.2	n.p.	n.a.	n.p.	61.5
Hepatitis B	2010–2012	n.a.	n.a.	n.a.	51.9	n.p.	n.a.	n.p.	65.5	51.1
HIV	2009–2011	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.

(continued)

Summary table 1 (continued): Indigenous Early Childhood Development health indicators with available data, Indigenous rates, by state and territory

Reported measure	Year of data	NSW	Vic	Qld	WA	SA	Tas[(d)]	ACT[(d)]	NT	NSW, Vic, Qld, WA, SA, NT
Hospital separation rates (per 1,000 for children aged under 5) by principal diagnosis	2009–10 to 2010–11									
Diseases of the respiratory system		76.7	52.9	72.6	127.6	92.5	24.4	28.4	147.4	89.9
Certain conditions originating in the perinatal period		43.8	61.0	43.7	55.9	46.3	19.7	38.8	57.0	48.2
Certain infectious and parasitic diseases		22.3	15.6	23.8	45.9	33.5	5.7	8.6	68.0	31.5
Injury and poisoning		21.3	22.8	25.3	39.2	30.2	13.6	15.5	31.6	26.7
Symptoms, signs and abnormal clinical and laboratory findings n.e.c.		20.1	16.1	18.3	32.6	22.2	10.0	13.8	27.7	22.0
Diseases of the digestive system		14.9	20.1	14.5	16.6	20.6	9.4	12.1	17.1	15.9
Diseases of the skin and subcutaneous tissue		9.6	6.3	15.1	26.6	18.4	3.1	n.p.	42.6	17.7
Congenital malformations, deformations and chromosomal abnormalities		12.8	12.6	8.8	11.1	12.6	8.3	13.8	9.4	10.9
Diseases of the ear		9.1	10.6	9.5	17.0	16.5	3.7	8.6	9.2	10.8
Factors influencing health status		30.8	20.4	17.1	23.0	33.2	15.1	59.4	22.6	23.9
Diseases of the genitourinary system		5.4	5.8	6.5	8.1	5.5	3.5	4.3	12.4	7.0
Diseases of the nervous system		6.0	7.9	4.5	6.3	7.6	3.9	n.p.	4.9	5.6
Other diagnoses		12.7	10.9	11.1	22.4	23.6	7.7	11.2	22.6	15.1
Total hospitalisations		**285.6**	**263.2**	**270.8**	**432.1**	**362.6**	**128.1**	**217.9**	**472.5**	**325.3**

(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) Deaths registered in 2009 and earlier are based on the final version of cause of death data; deaths registered in 2010 and 2011 are based on revised and preliminary versions, respectively, and are subject to further revision.

(d) Data for Tasmania and the Australian Capital Territory should be interpreted with caution due to the relatively small number of separations for Indigenous children in these jurisdictions.

Note: Additional data on these indicators can be found at Appendix A, tables A1 to A20.

Source: AIHW National Perinatal Data Collection; AIHW analysis of National Notifiable Diseases Surveillance System data; National HIV Registry; AIHW National Mortality Database; Australian Bureau of Statistics birth registration data; AIHW analyses of 2008 NATSISS; AIHW National Hospital Morbidity Database.

1 Introduction

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

Evidence suggests that policies that strengthen the foundations of health in the prenatal and early childhood periods might 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: maternal, child and family health; early childhood education and care; and family support programs can improve outcomes for children, particularly those from disadvantaged backgrounds (COAG 2009a).

The National Partnership Agreement on Indigenous Early Childhood Development is a Council of Australian Governments (COAG) agreement established to improve the health and developmental outcomes for Indigenous children across Australia (COAG 2009a). The partnership agreement 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. It is also closely aligned with other policies such as *Investing in the early years—a national early childhood development strategy* (COAG 2009b).

The partnership agreement consists of 3 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 3 elements are:

- Element 1—The integration of early childhood services through 38 Children and Family Centres, which will be aimed 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 3 elements were designed to put structures in place to ensure 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 to increase chances of babies being born healthy. It also aims to improve decision-making for young Indigenous women, including increasing their awareness that an early pregnancy might prevent them from exploring other life opportunities (for example, further education or employment), so that Indigenous young people have the information, resources, and skills to make informed choices about sexual and reproductive health.

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 partnership agreement also focuses on the health and wellbeing after birth of Indigenous children and of their families (purpose of Element 3) 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 postnatal depression, and offer both general and specific 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.

The partnership agreement was established by COAG on 2 October 2008 (and revised and signed on 2 July 2009), and expired on 30 June 2014. As part of the partnership agreement, states and territories agreed to a set of key performance indicators to measure progress towards the achievements of the 3 elements, and committed to collecting data that would enable each of the elements to be evaluated.

Over 2011 to 2013, the Australian Institute of Health and Welfare (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 partnership agreement:

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 3- and 4-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. Reduced proportion of hospital admissions of Indigenous children 0–4 years.

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 health indicators

The previous (first) annual report on health performance indicators (5–10) of the National Partnership Agreement on Indigenous Early Childhood Development was approved in June 2013 and published by the AIHW on 1 August 2013. The report is available at <www.aihw.gov.au/publication-detail/?id=60129543988>.

The first annual report provided the latest data available in 2012. This report is the second performance report for the partnership agreement, and provides the latest information available in 2013.

The reports also provide time trends on each of the 6 health-related indicators in the partnership agreement. Of these 6 indicators:

- 4 can be sourced from national data collections (indicators 5, 7, 8 and 10)
- 2 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.*

As such, interim measures have been reported for these 2 indicators, as outlined in Table 1.

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 that could indicate whether the sexual and reproductive health programs themselves are leading to: reduced rates of sexually transmissible infections (STIs) and smoking during pregnancy among teenage mothers; lower rates of low birthweight among babies born to teenage mothers; and higher rates of antenatal care among teenage mothers.

Indicator 9: No national annual administrative data are currently available on alcohol and drug use during pregnancy. Survey data for mothers who have a child under 3 are collected in the National Aboriginal and Torres Strait Islander Social Survey (NATSISS) and are reported for this indicator until national administrative data become available. The AIHW is developing nationally consistent data items on alcohol use during pregnancy to be included in the National Perinatal Data Collection for use in future reporting.

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

Table 1: Health Indicators for the National Partnership Agreement on 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 bloodborne 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 live born singleton babies, of mothers, by Indigenous status	National Perinatal Data Collection
8. Reduced mortality of Indigenous infants each year	Mortality rate for infants aged less than 1, 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 who used substances during pregnancy i. tobacco ii. alcohol iii. other substances (for example, 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. Reduced proportion of hospital admissions of Indigenous children 0–4	Hospital separation rates for children aged under 5, by principal diagnosis, by Indigenous status	National Hospital Morbidity Database

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 not reported due to small numbers. See Appendix B for further information.

Time trends and statistical significance

Where possible time trends data included in this report are presented for 2 time periods, that is:

- the entire period for which reliable data are available
- from 2008 onwards (the first year of the National Partnership Agreement).

This is because both long-term and short-term information is important to understand recent trends. If recent data only are presented, there is no long-term context in which to interpret recent patterns. It can be difficult to detect change if only comparing data for a few years. A longer time series can reveal patterns that might be masked in a shorter time series. On the other hand, future rates might be projected more accurately by using only the data for recent years.

Both small numbers and variability in the data from year to year might make it difficult to detect significant changes for some indicators. Statistical methods have been used to assess whether changes and differences are significant.

Significant changes are denoted with a * against the percentage change statistics included in relevant tables. Where appropriate tables also include a * against the rate ratio and rate difference 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).

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 percentage change calculations, see Appendix B.

Measuring the gap

Throughout this report 'the gap' is used to refer to the rate difference—the Indigenous rate minus the non-Indigenous rate. For trend analyses references to the widening or narrowing of the gap, refer to changes in the rate difference over time. References to significant changes in the gap over time reflect statistically significant changes at the $p < 0.05$ level in the rate difference over the reported time period. For more information on measuring the gap, see Appendix B.

Data sources

Data in this report come from several 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 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 HIV Registry.

Survey data used in this report come from the Australian Bureau of Statistics' NATSISS.

Data limitations

Some 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 problem in mortality, hospital morbidity and communicable disease data, particularly in some states and territories. As a result, data analysis has been limited to jurisdictions with adequate identification of Indigenous Australians. Appendix C presents a brief description of the main data issues for each of these data collections.

A recent study on the quality of Indigenous identification in hospitalisation records recommended that data for all states and territories be used to analyse total hospitalisations by Indigenous status from 2010–11 onwards, and that analyses involving all separations for all ages should be adjusted for under-identification (AIHW 2013b).

As the hospital tables presented in this report include data from before 2010–11, the analyses mainly cover the 6 jurisdictions that the AIHW has assessed as having adequate identification of Indigenous hospitalisations between 2004–05 to 2009–10. Those are New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory (public hospitals only) (AIHW 2010).

These jurisdictions represent about 95% of the Indigenous population of Australia (ABS 2012). Totals include hospital separations for people who live in these jurisdictions only, and are not necessarily representative of the jurisdictions not included.

Although some data are reported for public hospitals in Tasmania and the Australian Capital Territory they are reported with caveats due to the relatively small number of separations for Indigenous children in these jurisdictions, and are not included in national totals. Further, as the analyses in this report consider separations for specific main diagnoses for children under 5 only, the data have not been adjusted for under-identification.

For current-period analysis (data for 2009–10 and 2010–11 combined), hospitalisations for which the Indigenous status of the patient was not reported are presented separately in a ‘not stated’ category. This is the practice recommended for presenting hospital data from 2010–11 onward. It has been adopted for this report after investigation showed that excluding the ‘not stated’ separations made little difference to the results for this particular analysis.

For time-trend analyses, 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, as is standard AIHW practice.

It should be noted that the ‘not stated/inadequately described’ category for Indigenous status is not accommodated in the data collection systems of some jurisdictions (for example, Western Australia), and that its existence and use might change over time. This might affect the results of time series analysis. 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 (NNDSS 2013).

In this report, mortality data are presented for 5 jurisdictions only—New South Wales, Queensland, Western Australia, South Australia and the Northern Territory. The ABS and the AIHW have assessed these jurisdictions as having adequate Indigenous identification. Data are not necessarily representative of excluded jurisdictions. Indigenous status data presented for Australia is a combined rate for these 5 jurisdictions only.

With Indigenous identification being incomplete, the number of hospital separations, deaths and disease notifications recorded as Indigenous should be considered as underestimates of the true levels of hospitalisation, mortality and disease.

Surveys are also subject to 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 a footnote to indicate that they should be used with caution or are considered too unreliable for general use.

Availability of survey data is limited due to the frequency of collections. Survey data in this report come from the NATSISS. The survey is conducted every 6 years, and 2008 data are the most recent available. Data collection for the NATSISS 2014–15 survey began in September 2014 and will be carried through to the end of April 2015.

Structure of this report

Information on each of the 6 health-related indicators in the Indigenous Early Childhood Development National Partnership Agreement is reported in the following chapters:

- Chapter 2: Antenatal care
- Chapter 3: Teenage rates of sexually transmissible and bloodborne virus infections
- Chapter 4: Low birthweight
- Chapter 5: Infant mortality
- Chapter 6: Substance use during pregnancy
- Chapter 7: Hospitalisation for children under 5.

Data on pregnancy and birth outcomes by mother's age—which is an interim measure for IECD performance indicator 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 looked at. Data are then presented for the latest period, followed by 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 2010, 51% of Indigenous mothers attended at least 1 antenatal visit in the first trimester in the jurisdictions for which there were reliable data (New South Wales, Victoria, Queensland, Western Australia, South Australia, the Australian Capital Territory and the Northern Territory). A lower proportion of Indigenous than non-Indigenous mothers attended an antenatal visit in the first trimester (age-standardised rates of 52% and 69%, respectively).
- Between 2007 and 2010, in the 3 jurisdictions combined for which data are available on gestational age at first antenatal visits (New South Wales, South Australia and the Northern Territory), the age-standardised proportion of Indigenous mothers who attended antenatal care in the first trimester increased (from 60% to 66%); however this increase was not significant.

Antenatal care (also referred to as prenatal care) is an important part of pregnancy. Its purpose is to monitor the health of mother and baby, provide health advice, identify complications, and provide intervention if needed. Evidence shows a strong relationship between regular antenatal care and positive child health outcomes. Receiving antenatal care at least 4 times, as recommended by the World Health Organization (WHO), increases the likelihood of the mother receiving the care that she needs (WHO 2009).

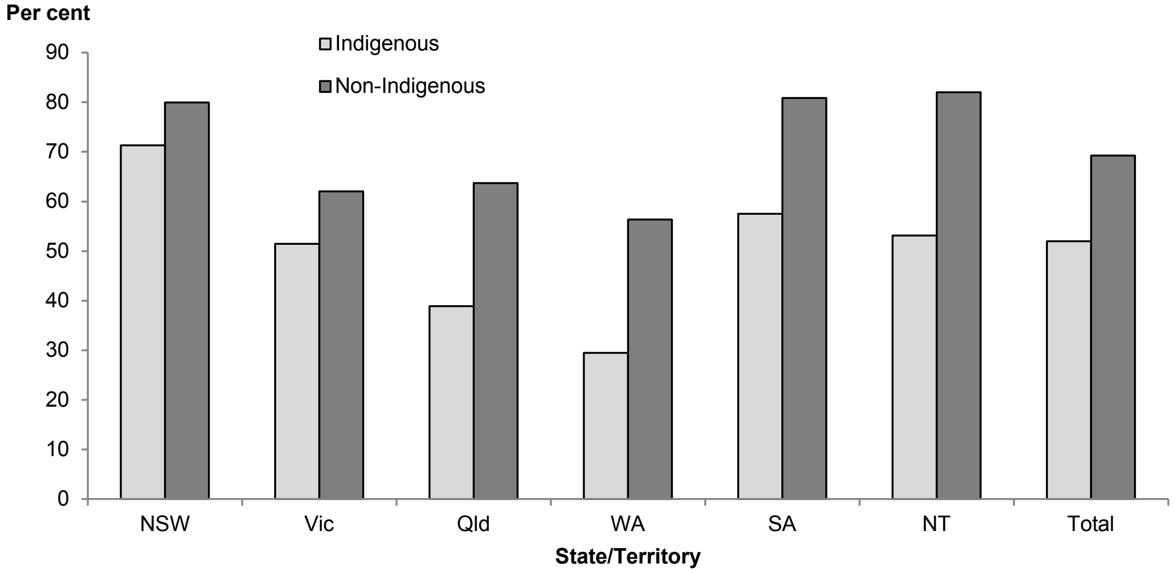
Most guidelines recommend that antenatal care begins during the first trimester of pregnancy, as it helps identify early any risk factor and potential problem that, if not addressed or treated, could increase the risk of adverse outcomes for mother and baby. *Clinical practice guidelines: antenatal care – Module 1* (AHMAC 2012b) recommends that the first antenatal visit should occur within the first 10 weeks of pregnancy, and that for a woman's first pregnancy without complications, 10 antenatal visits should be adequate. For subsequent uncomplicated pregnancies, 7 visits should be adequate.

Antenatal care might be particularly important for Aboriginal and Torres Strait Islander women, as they are at higher risk of giving birth to low birthweight babies, diabetes, poor nutrition, anaemia and smoking during pregnancy (de Costa & Wenitong 2009). Although the majority of Indigenous mothers access antenatal care at least once during their pregnancy, they tend to access these services later and less frequently than other mothers (AHMAC 2012a).

Indigenous women are less likely to attend 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.

Proportion of Indigenous mothers who attend antenatal care in the first trimester of pregnancy



Notes

1. Total includes data for 7 jurisdictions (New South Wales, Victoria, Queensland, Western Australia, South Australia, the Australian Capital Territory and the Northern Territory). Age-standardised Indigenous rates have not been produced separately for the Australian Capital Territory, as denominators for some age groups are less than 30.
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 1 antenatal visit in the first trimester, by Indigenous status and state/territory, NSW, Vic, Qld, WA, SA, the ACT and the NT, 2010

- In 2010, in the 7 jurisdictions for which data were available and of sufficient quality to publish (New South Wales, Victoria, Queensland, Western Australia, South Australia, the Australian Capital Territory and the Northern Territory), 51% of Indigenous mothers attended at least 1 antenatal visit in the first trimester of pregnancy (Figure 2.1). 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 0.8).
- The proportion of Indigenous mothers who attended at least 1 antenatal visit in the first trimester varied by state and territory, ranging from 30% in Western Australia to 71% 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.

Source: AIHW National Perinatal Data Collection; Table A1.

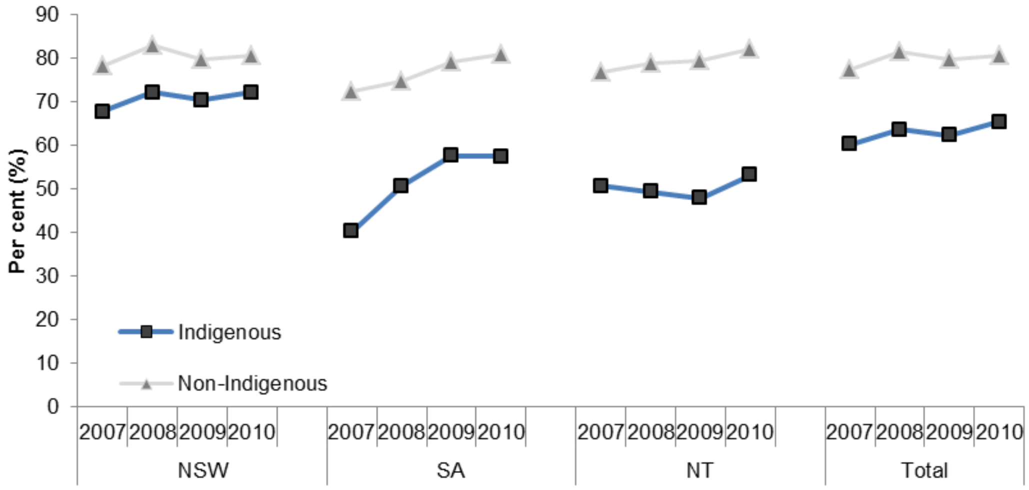
Figure 2.2: Women who gave birth who attended at least 1 antenatal visit in the first trimester, by maternal age and Indigenous status, NSW, Vic, Qld, WA, SA, the ACT and the NT, 2010

- Antenatal visits in the first trimester were slightly more common among Indigenous mothers aged 20 years and over (52%) compared with Indigenous teenage mothers (46%). The same pattern was evident for non-Indigenous mothers, but the difference between the 2 age groups was greater for non-Indigenous mothers (Figure 2.2).

Trends between 2007 and 2010

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

- In the 3 jurisdictions combined for which data were available for 2007–2010 (New South Wales, South Australia and the Northern Territory), the proportion of Indigenous mothers who attended an antenatal visit in the first trimester increased from 60% to 66%; however, this increase was not significant (Figure 2.3).
- There was no significant change in the rate of non-Indigenous mothers attending antenatal care in the first trimester over the same period in those states.



Note: Data might differ from previously published versions of this report due to data updates and corrections.

Source: AIHW National Perinatal Data Collection; Table A3.

Figure 2.3: Women who gave birth who attended at least 1 antenatal visit in the first trimester, by Indigenous status and state/territory, NSW, SA and the NT, 2007–2010

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

No nationally consistent data are currently 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 included in the Perinatal National Minimum Data Set since 1 July 2010. As data are reported 2 years after the collection year, 2012 was the first year that gestational age at first antenatal visit data were reported against the standard (see Appendix C for more information on the AIHW National Perinatal Data Collection or NPDC).

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

Currently data are available from the NPDC for New South Wales, South Australia and the Northern Territory from 2007 (calendar year), for Queensland from July 2009 and for Victoria, Western Australia and the Australian Capital Territory from 2010 (calendar year). Data from 2010 are available for Tasmania, but are not of sufficient quality to publish. Comparability of data currently collected by jurisdictions is limited due to different definitions of 'first antenatal visit'.

3 Teenage rates of sexually transmissible and bloodborne virus infections

Key findings

Bacterial sexually transmissible infections (STIs) (including chlamydia, gonorrhoea and syphilis), 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.

- Between 2010 and 2012, among Indigenous teenagers aged 15–19 there were: 8,200 notifications of chlamydia in Queensland, Western Australia, South Australia, Tasmania and the Northern Territory combined; 4,300 notifications of gonorrhoea in Victoria, Queensland, Western Australia, South Australia, Tasmania, the Australian Capital Territory and the Northern Territory combined; and 150 notifications of syphilis in all states and territories.
- Compared with other teenagers, notification rates among Indigenous teenagers were more than 4 times as high for chlamydia (6,807 and 1,560 per 100,000 population, respectively), more than 57 times as high for gonorrhoea (3,182 and 55 per 100,000 population, respectively) and 29 times as high for syphilis (80.8 and 2.8 per 100,000 population, respectively).
- Between 1994–96 and 2010–12, in Western Australia, South Australia and the Northern Territory combined, notification rates for chlamydia significantly increased among Indigenous and other teenagers aged 15–19 (from 1,941 to 6,745 and from 173 to 1,495 notifications per 100,000 population, respectively).
- Over the same period, among Indigenous teenagers in Western Australia, South Australia and the Northern Territory combined, notification rates for gonorrhoea increased by more than 70% (from 2,752 to 4,780 per 100,000 population), while notification rates for syphilis decreased by more than 90% (from 909 to 49 per 100,000 population). Notification rates for gonorrhoea or syphilis among other teenagers did not significantly change during this period.
- Between 1997–98 and 2010–12, in Western Australia, South Australia and the Northern Territory combined, notification rates for hepatitis C declined significantly among Indigenous and other teenagers (from 171 to 70 and from 56 to 13 per 100,000 population, respectively).
- Over the same period, in Western Australia, South Australia and the Northern Territory combined, notification rates for hepatitis B declined significantly among Indigenous teenagers (from 119 to 51 notifications per 100,000 population), but did not significantly change among other teenagers.

STIs are infectious diseases that are spread from person to person through sexual contact. A large proportion of STIs might go undetected, as many do not show any symptoms or show only mild symptoms. STIs are a major public health concern, contributing to significant long-term morbidity (Bowden et al. 2002; DoHA 2005). Ongoing surveillance is important to monitor the rates of STIs and help guide preventive measures.

Adolescents are at greater risk of STIs as a result of: inexperience and lack of knowledge about the risks of unprotected sex; access to contraception; inconsistent condom use; social pressure; frequency of partner change; substance use; and reluctance to talk with parents or a general practitioner (DoHA 2005). Biologically, adolescents might 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 among Aboriginal and Torres Strait Islander people than for other Australians. Although they can be treated and cured once diagnosed, these infections can have serious long-term effects, including chronic abdominal pain and infertility in women after infection with gonorrhoea and chlamydia. Syphilis can also result in heart and brain damage (Couzos & Murray 2003). These infections can also cause miscarriage and permanent damage to newborn babies, and can increase the risk of contracting or transmitting HIV (Cohen 2004).

Hepatitis and HIV/AIDS are viral infections that can be spread through sexual contact, as well as being blood borne and transmissible through practices such as sharing needles. HIV/AIDS remains incurable. The management of both HIV and hepatitis requires specialist services for which Aboriginal and Torres Strait Islander people might have poorer access (AHMAC 2011).

Reported measure: Incidence of sexually transmissible infections and bloodborne virus (BBV) infection among 15 to 19 year olds, by Indigenous status.

Indigenous teenagers with sexually transmitted and bloodborne virus infection

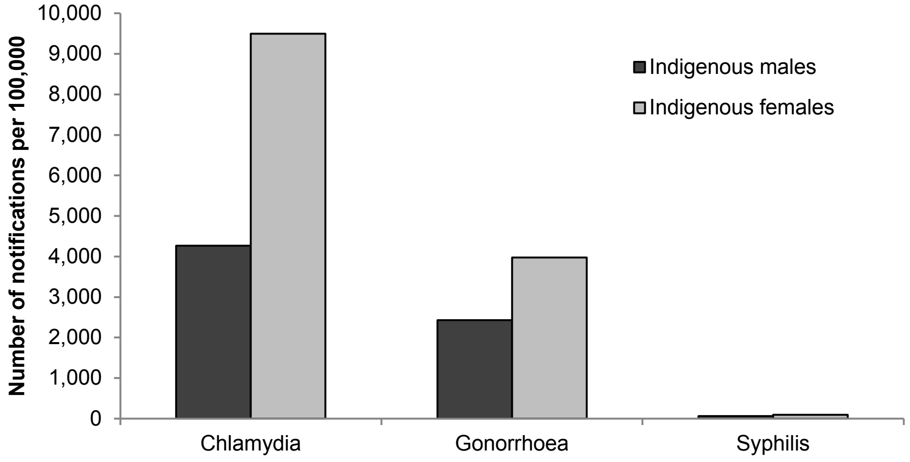
It should be noted that notification data for most diseases represents only a proportion of the total cases occurring in the community—that is, only those cases for which health care was sought, a test conducted and a diagnosis made, followed by a notification to health authorities. The degree of under-representation of all cases is unknown and most likely varies by disease, by jurisdiction and by time (NNDSS 2012).

The level of reporting of Indigenous status in notification data varies by state/territory and by condition. At least 50% completeness of Indigenous status reporting was required for data to be included in the analyses below, though in many cases completeness was more than 80%. Adequate Indigenous identification data are not available for all jurisdictions, and those have not been included in the analyses. Due to the small number of notifications each year, data are presented in 3-year groupings.

- Between 2010 and 2012 among Indigenous teenagers aged 15–19, there were:
  - 8,189 notifications of chlamydia in Queensland, Western Australia, South Australia, Tasmania and the Northern Territory combined. Notification rates for chlamydia among Indigenous teenagers were more than 4 times as high as those for other teenagers (6,807 and 1,560 per 100,000, respectively)
  - 4,292 notifications of gonorrhoea in Victoria, Queensland, Western Australia, South Australia, Tasmania, the Australian Capital Territory and the Northern Territory combined. Notification rates for gonorrhoea among Indigenous teenagers were 57 times as high as those for other teenagers (3,182 and 55 per 100,000, respectively)

  - 156 notifications of syphilis in all states and territories. Notification rates for syphilis among Indigenous teenagers were 29 times as high as those for other teenagers (81 and 3 per 100,000, respectively)
  - 74 notifications of hepatitis C in Queensland, Western Australia, South Australia, Tasmania and the Northern Territory combined. Notification rates for hepatitis C among Indigenous teenagers were 3 times as high as those for other teenagers (62 and 18 per 100,000, respectively)
  - 30 notifications of hepatitis B in Western Australia, South Australia, the Australian Capital Territory and the Northern Territory combined. Notification rates for hepatitis B among Indigenous teenagers were almost twice as high as for other teenagers (51 and 30 per 100,000, respectively) (Table A4).
- There were fewer than 5 cases of HIV among Indigenous teenagers aged 15–19 between 2009 and 2011 (Table A4).

Notifications by sex



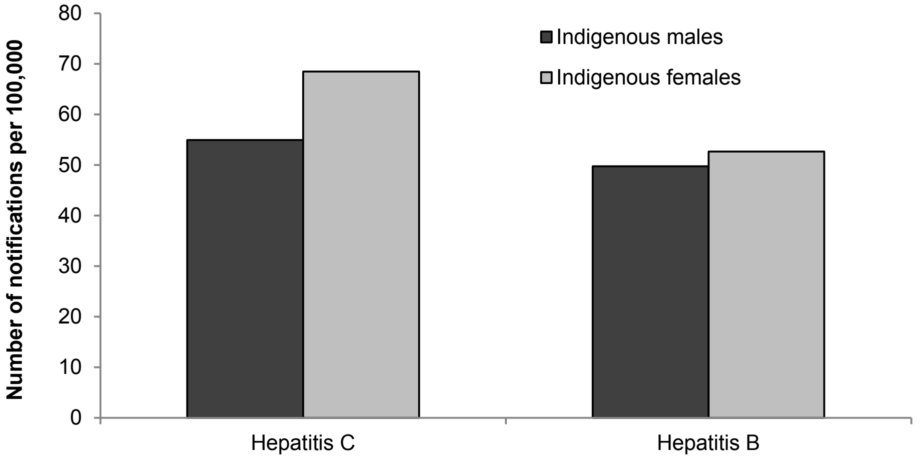
Notes

1. Calendar year reporting. Data are presented for the combined 3-year period 2010–2012 because of the small numbers in individual years.
2. Data are reported for only those jurisdictions that had at least 50% completeness of Indigenous status reporting for teenagers aged 15–19 for each disease for 2010–2012 (see Appendix C for further information). Queensland, Western Australia, South Australia, Tasmania and the Northern Territory for chlamydia; and Victoria, Queensland, Western Australia, South Australia, Tasmania, the Australian Capital Territory and the Northern Territory for gonorrhoea. All jurisdictions are included for syphilis. The data for chlamydia and gonorrhoea should not be considered to be a whole-of-Australia figure. Adequate Indigenous identification data are not available for other jurisdictions, so it is not possible to comment on rates in Indigenous teenagers in those jurisdictions.
3. Number of notifications per 100,000 population aged 15–19. Numerator for calculations is the combined number of notifications over 3 years (2010–2012); denominator is the combined population of those 3 years.
4. Non-congenital syphilis cases only, including cases of less than 2 years and more than 2 years and unknown duration.

Source: AIHW analysis of NNDSS data; Table A5.

Figure 3.1: Notifications per 100,000 Indigenous teenagers aged 15–19 for chlamydia, gonorrhoea and syphilis, by sex, 2010–2012 combined

Between 2010 and 2012, notification rates were higher among Indigenous teenage females compared with Indigenous teenage males for chlamydia, gonorrhoea, syphilis, hepatitis C and hepatitis B (Figure 3.1; Figure 3.2). In contrast, among other teenagers, notification rates for these diseases, with the exception of chlamydia, were higher among teenage males than females (Table A5).



Notes

1. Calendar year reporting. Data are presented for the combined 3-year period 2010–2012 because of the small numbers in individual years.
2. Data are reported for only those jurisdictions that had at least 50% completeness of Indigenous status reporting for teenagers aged 15–19 for each disease for 2010–2012 (see Appendix C for further information). Western Australia, South Australia, the Australian Capital Territory and the Northern Territory are included for hepatitis B. Queensland, Western Australia, South Australia, Tasmania and the Northern Territory are included for hepatitis C. The data should not be considered to be a whole-of-Australia figure. Adequate Indigenous identification data are not available for other jurisdictions, so it is not possible to comment on rates in Indigenous teenagers in those jurisdictions.
3. Hepatitis C and hepatitis B data contain notifications classified as either 'newly acquired' or 'unspecified'. Hepatitis C data for Queensland includes 'unspecified' notifications only.
4. Number of notifications per 100,000 population aged 15–19. Numerator for calculations is the combined number of notifications over 3 years (2010–2012); denominator is the combined population of those 3 years.

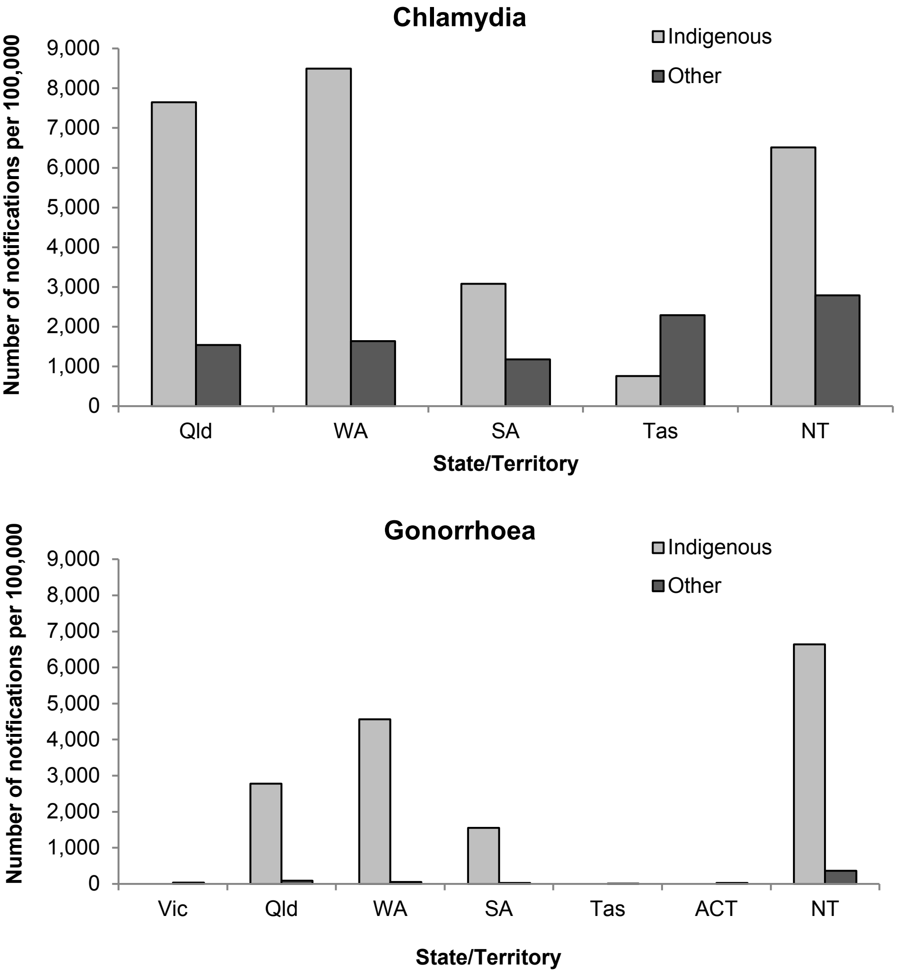
Source: AIHW analysis of NNDSS data; Table A5.

Figure 3.2: Notifications per 100,000 Indigenous teenagers aged 15–19 for hepatitis C and hepatitis B, by sex, 2010–2012 combined

Notifications by state/territory

Notification rates varied greatly by state and territory (Figure 3.3).

- Between 2010 and 2012 among Indigenous teenagers aged 15–19:
    - notification rates for chlamydia were more than 7,600 per 100,000 population in Queensland and nearly 8,500 per 100,000 population in Western Australia, 5 times the notification rate among other teenagers in these states. In Tasmania, notification rates were higher among other teenagers than among Indigenous teenagers, but these figures should be interpreted with caution due to the relatively small numbers involved.
    - notification rates for gonorrhoea were more than 6,600 per 100,000 population in the Northern Territory and more than 4,500 per 100,000 in Western Australia (18 and 85 times the rates among other teenagers in those jurisdictions, respectively). Queensland and South Australia also had high notification rates for gonorrhoea among Indigenous teenagers, while Victoria, Tasmania and the Australian Capital Territory had no or less than 5 cases of gonorrhoea reported.
    - notification rates for syphilis were 229 for Queensland per 100,000 population, 56 per 100,000 for Western Australia and 66 per 100,000 in the Northern Territory. These were the only jurisdictions in which cases of syphilis were reported, though data is available from all 8 states and territories.
    - of the jurisdictions with at least 50% completeness of Indigenous status reporting, Western Australia had the highest rate of hepatitis C notifications (100 notifications per 100,000 population)—6 times the notification rate of other teenagers—and the Northern Territory had the highest notification rate of hepatitis B (66 per 100,000 population), at a lower notification rate than other teenagers (127 notifications per 100,000 population) (Table A4).



Notes

1. Calendar year reporting. Data are presented for the combined 3-year period 2010–2012 because of the small numbers in individual years.
2. Data are reported for only those jurisdictions that had at least 50% completeness of Indigenous status reporting for teenagers aged 15–19 for each disease for 2010–2012 (see Appendix C for further information). Queensland, Western Australia, South Australia, Tasmania and the Northern Territory are included for Chlamydia. Victoria, Queensland, Western Australia, South Australia, Tasmania, the Australian Capital Territory and the Northern Territory are included for gonorrhoea. They should not be considered to be a whole-of-Australia figure. Adequate Indigenous identification data are not available for other jurisdictions, so it is not possible to comment on STI rates in Indigenous teenagers in those jurisdictions.
3. Number of notifications per 100,000 population aged 15–19. Numerator for calculations is the combined number of notifications over 3 years (2010–2012); denominator is the combined population of those 3 years.

Source: AIHW analysis of NNDSS data; Table A4.

Figure 3.3: Notifications per 100,000 teenagers aged 15–19 for chlamydia and gonorrhoea, by Indigenous status and state/territory, 2010–2012 combined

Factors influencing trends in sexually transmitted and bloodborne virus infection

Changes in the notification rates of STIs and newly acquired bloodborne virus infections might not solely reflect changes in disease prevalence or incidence. Changes in STI and BBV infection 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; screening programs, including the preferential testing of high-risk populations (such as Aboriginal and Torres Strait Islander people); periodic awareness campaigns; potential differences between diseases requiring notification by clinicians and laboratories compared with those notified by laboratories alone; and active case-finding through partner notification, screening and sentinel surveillance activities might influence the number of notifications that occur over time.

In recent years, health-care workers and people who are sexually active have become more aware of silent infections such as chlamydia. There have been improvements in access to less-invasive polymerase chain reaction testing, and to population health screening programs—like Young Person Health Checks—that actively seek out young people and put in place contact tracing and proof of cure regimes. This has meant that more people are getting tested, diagnosed and treated.

Notification rates for chlamydia and other STIs are particularly susceptible to changes in overall rates of testing, as well as in targeted testing in high-risk groups. So the observed increases in notification rates for chlamydia (and potentially gonorrhoea) in this report must be interpreted in the context of recent increases in testing for STIs—between 2009 and 2012 the number of chlamydia tests carried out through Medicare increased by 50% (The Kirby Institute 2013b), and between 1998–99 and 2007–08, there was an estimated 6-fold increase in STI screens managed in Australian general practice, from 32 per 100,000 encounters to 205 per 100,000 encounters (Britt & Miller 2009).

The Nucleic Acid Amplification Sexually Transmissible Infections Screening Program began in Australia in 1998 and is an ongoing program that aims to make testing for gonorrhoea and chlamydia more accessible for Aboriginal and Torres Strait Islander people in participating jurisdictions—currently Queensland, the Northern Territory and New South Wales. This program ensures that there are no direct costs to clients, and that early detection and treatment for STIs is available, using non-invasive testing technology. Studies have shown significant increases in chlamydia infection rates after the more sensitive nucleic acid amplification testing was introduced (Burckhardt et al. 2006; Dicker et al. 2000), which is likely to be responsible for some of the observed increases in notification rates.

The Torres Strait Sexual Health Strategy began in December 2007 and concluded in 2012. It was designed to raise community awareness, knowledge and understanding of sexual health issues, and provided those at risk with information, and services required to prevent and control STIs and HIV, including Young Person Health Checks (DoHa 2011).

Between 2005 and 2011 the Australian Government Department of Health funded a Chlamydia Pilot Testing Program, which included 20 projects focused on testing, increasing awareness and surveillance in high-risk group. The University of Melbourne also conducted a pilot program to assess the feasibility, acceptability, efficacy and cost-effectiveness of chlamydia testing in general practice settings. Between 2007 and 2010, the number of people who accessed these sentinel sites and were tested increased by 21% (DoHA 2012). The

University of Melbourne is now evaluating its program. The final evaluation report was submitted to the Australian Government Department of Health in late 2014. In addition, the University of Melbourne is up-skilling practice nurses and Aboriginal health workers in chlamydia testing and prevention, and safe sex promotion.

The Tri-State Centre for Sexual Health was funded from 2008 to 2011 to improve sexual health outcomes for Aboriginal and Torres Strait Islander people in the cross-border region of Central Australia. The Australian, Western Australian, South Australian and the Northern Territory governments all contributed funding to establish the centre. Its objectives were to support primary health care services to: develop, resource, implement and evaluate best practice in STI prevention, detection and clinical management; strengthen regional commitment and approaches to STI/HIV control; and collaborate with health services and academic, government and community agencies in developing, implementing and evaluating sexual health promotion strategies and sexual health research.

The Torres Strait Health Protection Strategy provided funding to Queensland Health over 4 years from 2010 to 2014 to increase Australia's health service capacity in the Torres Strait to protect communities from communicable diseases, including STIs and BBVs. Projects include:

- capital works to expand the clinic on Saibai Island and provide additional staff accommodation (managed by the Australian Government Department of Health)
- recruiting staff, improving service delivery and developing, implementing and evaluating a culturally appropriate sexual health campaign
- employing a Torres Strait communication officer located in Queensland
- supporting the ongoing work of the Health Issues Committee
- meeting the costs associated with the Department of Foreign Affairs and Trade's initiative for easier cross-border movements for health professionals between non-declared ports in the Torres Strait and the South Fly coast of Papua New Guinea.

The Australian Society for HIV Medicine received a national grant in 2010 and 2011 to reduce the impact of STIs and BBVs in Aboriginal and Torres Strait Islander people. The project aimed to increase awareness, skills and knowledge on STIs and BBVs among health-care providers working with Aboriginal and Torres Strait Islander people.

In 2008, the Australian Government Department of Health funded 6 youth demonstration projects across Australia over 3 years (2008–2011) to improve the sexual health of Aboriginal and Torres Strait Islander young people. The projects aimed to increase the number of young Indigenous Australians accessing services to test and treat STIs and HIV, reduce risk behaviours and contribute to the development of best practice approaches. The evaluation (AIHW 2013a) found that the key features of a successful sexual health model were:

- consultation with a broad range of stakeholders, including community Elders, youth and health professionals
- engagement and partnerships with the community, organisations and services
- culturally appropriate project design and implementation
- flexible and adaptable project design, delivery and implementation
- staff who are respected by the community, are accessible to young people, engage well with young people and are the same gender as the target group
- evaluation techniques that can be adapted to local needs.

One of the most significant challenges faced by the projects was recruiting and keeping staff. As a result, the evaluation proposed that greater training and support for the Indigenous sexual health workforce be provided to increase the available pool of people with the required skills.

The combined effect of these national and Australian-Government initiated programs is likely to lead to an increase in testing for STI and BBV infections, and a resulting increase in notification rates. In addition, there are other state and territory initiatives that are not covered in this section, but also play important roles in increasing testing for STI and BBV infections.

Box 3.1: Measuring teenage rates of STI and BBV infections

Data on notifications of STI and BBV infections—including chlamydia, gonorrhoea, syphilis, hepatitis C and hepatitis B—are available from the National Notifiable Disease Surveillance System. It should be noted that not all cases of STI and BBV infections are sexually acquired. However, the national case definitions for these infections do not specifically distinguish between sites of infection or modes of transmission.

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

Donovanosis is not reported due to small numbers. 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.

Notifications among Indigenous teenagers is expressed as the number of cases of chlamydia, gonorrhoea, syphilis, hepatitis C, hepatitis B and HIV infections among those aged 15–19 years per 100,000 population.

Syphilis data are limited to non-congenital syphilis cases only, including cases of less than 2 years, more than 2 years and unknown duration.

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.

For all jurisdictions except Queensland, hepatitis C data included in this report contain notifications classified as either 'newly acquired' (meaning infection acquired within 24 months before diagnosis) or 'unspecified' (meaning infection acquired more than 24 months before diagnosis or not able to be specified). Hepatitis C data for Queensland contain 'unspecified' cases only.

Hepatitis B data included in this report contain notifications classified as either 'newly acquired' or 'unspecified' for all jurisdictions.

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

Identification of Indigenous notifications in all states and territories is incomplete, with the level of completeness varying across diseases as well as jurisdictions. Using a cut-off of 50% completeness of Indigenous status reporting for 2010–2012 data for teenagers aged 15–19, Western Australia, South Australia and the Northern Territory were assessed as having adequate identification for chlamydia, gonorrhoea, syphilis, hepatitis C and hepatitis B. Of the remaining states/territories: Queensland and Tasmania had adequate identification for chlamydia, gonorrhoea, syphilis and hepatitis C; Victoria for gonorrhoea and syphilis; the Australian Capital Territory for gonorrhoea, syphilis and hepatitis B; and New South Wales for syphilis only.

For 2009–2011, all states and territories are considered to have adequate identification of Indigenous status for HIV notifications.

Notification data on STIs reflect diagnosed cases for the condition rather than the extent of the problem in the population. As a result, information on people who have the condition but have not been diagnosed is not captured in these data.

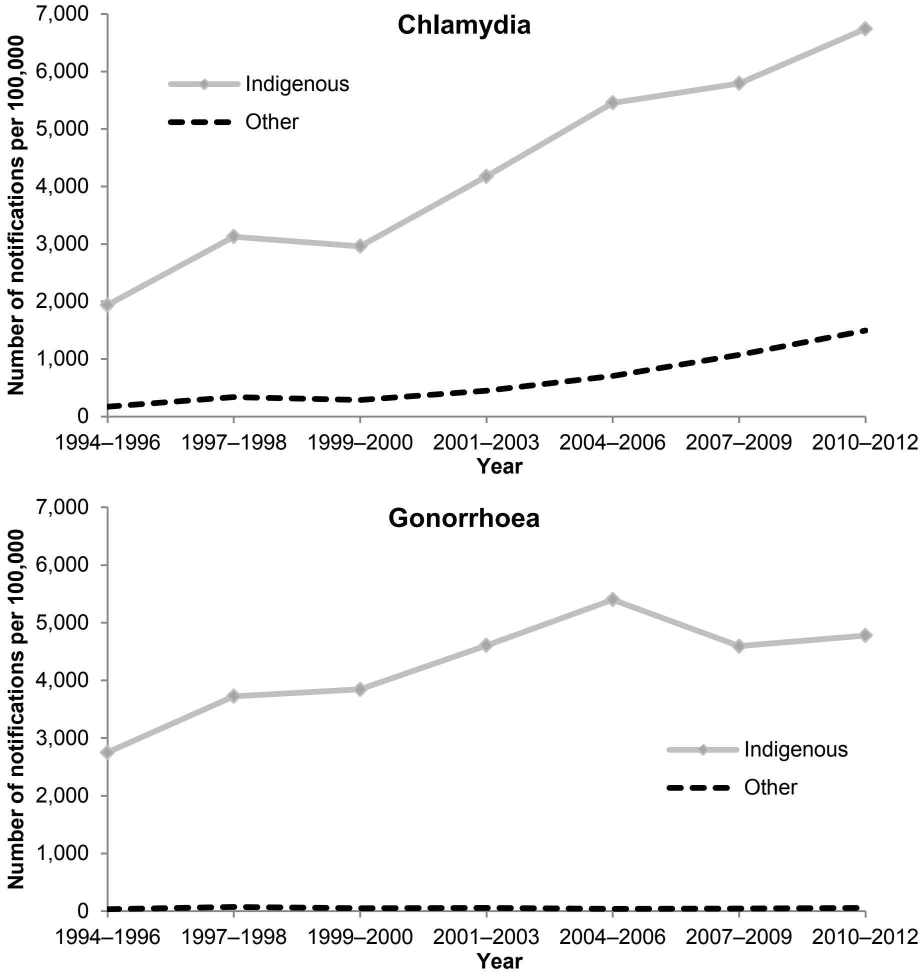
Long-term trends between 1994 and 2012

Indigenous identification in notifications for chlamydia, gonorrhoea and syphilis are considered reliable for reporting from 1994 onwards in Western Australia, South Australia and the Northern Territory. For hepatitis C and hepatitis B, they are considered reliable for reporting from 1997 onwards in these 3 jurisdictions. Adequate Indigenous identification data are not available for other jurisdictions, so it is not possible to comment on STI rates in Indigenous teenagers in those jurisdictions.

Differences in the health-seeking behaviour of Indigenous and non-Indigenous adolescents, and self-identification as an Indigenous person, might also have varied over time.

Chlamydia, gonorrhoea and syphilis

- Between 1994–1996 and 2010–2012 among Indigenous teenagers aged 15–19 in Western Australia, South Australia and the Northern Territory combined:
  - notification rates for chlamydia more than tripled (from 1,941 to 6,745 per 100,000 population), while notification rates among other teenagers increased more than 8-fold (from 173 to 1,495 per 100,000 population). The gap between Indigenous and other teenager notification rates for chlamydia almost tripled (from 1,768 to 5,250 per 100,000 population).
  - notification rates for gonorrhoea increased by more than 70% (from 2,752 to 4,780 per 100,000 population), while notification rates among other teenagers did not significantly change (from 33 to 54 per 100,000 population), resulting in a significant widening of the gap.
  - syphilis notification rates decreased by more than 90%; from 909 to 49 notifications per 100,000 population. There was no significant change among other teenagers (from 3.1 to 2.4 notifications per 100,000 population), resulting in a significant narrowing of the gap (Figure 3.5).

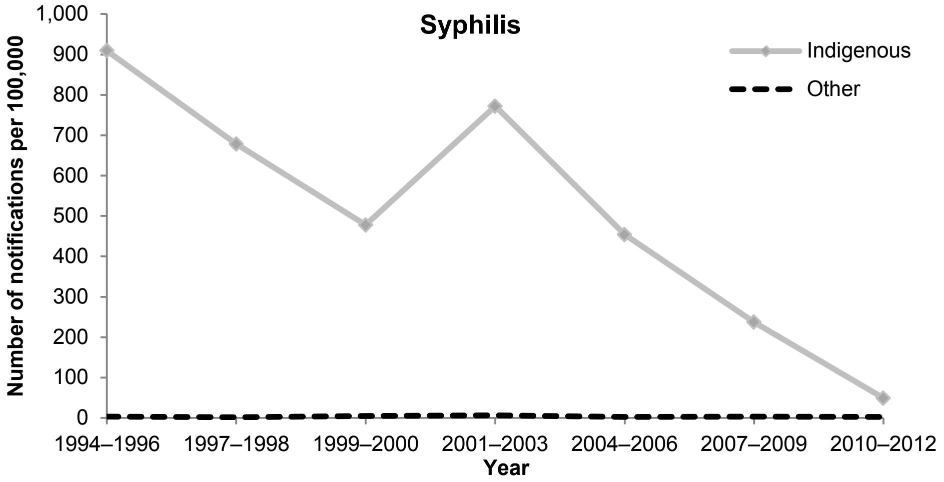


Notes

1. A cut-off of 50% completeness of Indigenous status reporting was used to determine inclusion for the analyses in this report. Indigenous identification in notifications for chlamydia and gonorrhoea are considered reliable for reporting from 1994 onwards in Western Australia, South Australia and the Northern Territory. Adequate Indigenous identification data are not available for other jurisdictions, so it is not possible to comment on STI rates in Indigenous teenagers in those jurisdictions.
2. Calendar year reporting. Data are presented for the combined 2- and 3-year periods because of the small numbers in individual years.
3. Number of notifications per 100,000 population aged 15–19. Numerator for calculations is the combined number of notifications over 2 or 3 years; denominator is the combined population of those years.

Source: AIHW analysis of NNDSS data; Table A6.

Figure 3.4: Notifications per 100,000 teenagers aged 15–19 for chlamydia and gonorrhoea, by Indigenous status, WA, SA and the NT combined, 1994–1996 to 2010–2012



Notes

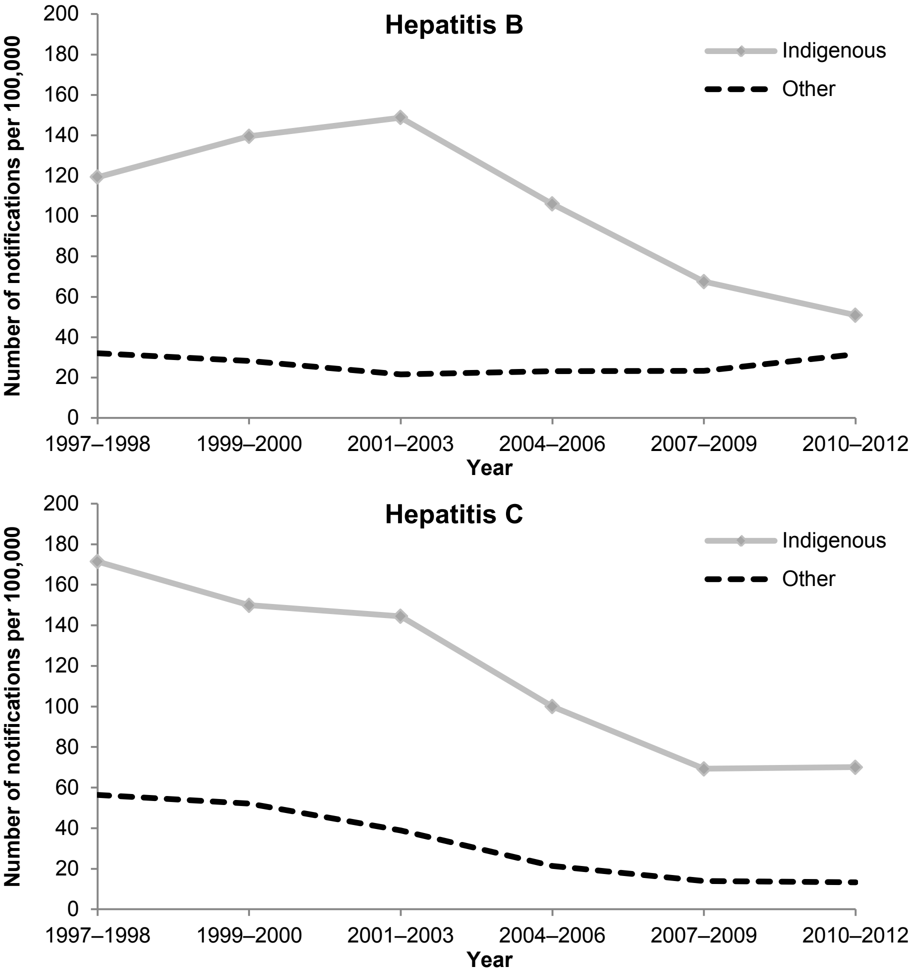
1. A cut-off of 50% completeness of Indigenous status reporting for the reported periods for teenagers aged 15–19 was used to determine inclusion for the analyses in this report. Indigenous identification in notifications for syphilis are considered reliable for reporting from 1994 onwards in Western Australia, South Australia and the Northern Territory. Adequate Indigenous identification data are not available for other jurisdictions, so it is not possible to comment on STI rates in Indigenous teenagers in those jurisdictions.
2. Calendar year reporting. Data are presented for the combined 2 and 3-year periods because of the small numbers in individual years.
3. Number of notifications per 100,000 population aged 15–19. Numerator for calculations is the combined number of notifications over 2 or 3 years; denominator is the combined population of those years.
4. Syphilis data are limited to non-congenital syphilis cases only, including cases of less than 2 years, more than 2 years, and unknown duration.

Source: AIHW analysis of NNDSS data; Table A6.

Figure 3.5: Notifications per 100,000 teenagers aged 15–19 for syphilis, by Indigenous status, WA, SA and the NT combined, 1994–1996 to 2010–2012

Hepatitis C, hepatitis B and HIV

- Between 1997–98 and 2010–12, in Western Australia, South Australia and the Northern Territory combined:
  - notification rates for hepatitis C declined significantly among Indigenous and other teenagers aged 15–19 (from 171 to 70 and from 56 to 13 notifications per 100,000 population, respectively), with a significant narrowing of the gap between notification rates among Indigenous and other teenagers
  - notification rates for hepatitis B declined significantly (from 119 to 51 per 100,000 population), but did not change among other teenagers (about 32 per 100,000 population), resulting in a significant narrowing of the gap between notification rates among Indigenous and other teenagers (Figure 3.6).
- HIV notification data are available for reporting from 1998 onwards for New South Wales, Victoria, Queensland, Western Australia, South Australia, Tasmania and the Northern Territory. Due to the very small number of notifications among Indigenous teenagers aged 15–19 each year, only notification rates among other teenagers have been presented in this report. This data indicates there has been no significant change in HIV notification rates among other teenagers between 1998–1999 and 2010–2011 (Table A7).



Notes

1. A cut-off of 50% completeness of Indigenous status reporting for the reported periods for teenagers aged 15–19 was used to determine inclusion for the analyses in this report. Indigenous identification in notifications for hepatitis C and hepatitis B are considered reliable for reporting from 1997 onwards in Western Australia, South Australia and the Northern Territory. Adequate Indigenous identification data are not available for other jurisdictions, so it is not possible to comment on STI rates in Indigenous teenagers in those jurisdictions.
2. Data for hepatitis C and hepatitis B included in this report contain notifications classified as either 'newly acquired' or 'unspecified'.
3. Complete and consistent data for hepatitis C and hepatitis B are not available before 1997.

Source: AIHW analysis of NNDSS data; Table A6.

Figure 3.6: Notifications per 100,000 teenagers aged 15–19 for hepatitis C and hepatitis B, by Indigenous status, WA, SA and the NT combined, 1997–1998 to 2010–2012

Short-term trends since 2008

Short-term trends are based on single-year data for 2008, 2009, 2010, 2011 and 2012, and the previously mentioned cautions in interpreting trend data apply. Due to small numbers, single-year data have not been presented in tables or figures (data for 2 or 3 years combined are reported in Tables A4, A5, A6 and A7).

- Between 2008 and 2012, there was no significant change in the notification rates for chlamydia, gonorrhoea, syphilis, hepatitis C or hepatitis B among Indigenous teenagers aged 15–19 in Western Australia, South Australia and the Northern Territory combined, but notification rates for hepatitis B among other teenagers increased significantly (Table A6).
- Due to the very small number of HIV notifications among Indigenous teenagers aged 15–19 each year, only notification rates among other teenagers have been presented in this report. Between 2008 and 2011, the rates for HIV notifications among other teenagers in New South Wales, Victoria, Queensland Western Australia, South Australia, Tasmania and the Northern Territory combined increased significantly (55%) (Table A7).

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.

- Nationally, in 2008–2010, 11% of live born singleton babies born to Indigenous mothers were of low birthweight. This was 2.4 times as high as the rate for babies born to non-Indigenous mothers.
- Between 2000 and 2010, in New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory combined, the proportion of low birthweight babies born to Indigenous mothers declined significantly (from 12% to 11% of live born singleton babies), and the gap between Indigenous and non-Indigenous mothers narrowed significantly.

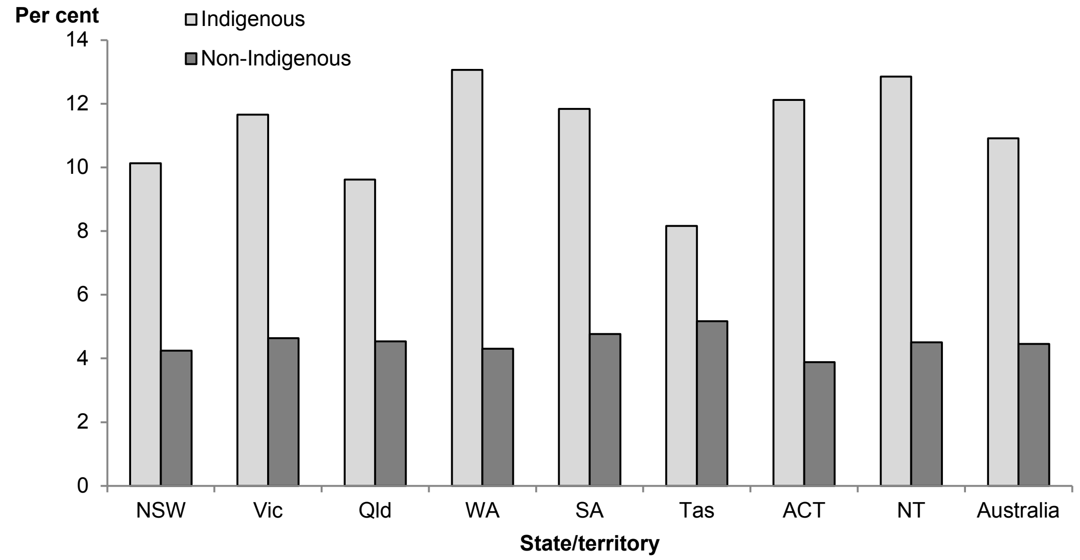
Birthweight is a key indicator of infant health, and a principal determinant of a baby's chance of survival and good health. For newborns, low birthweight (less than 2,500 grams) poses a greater risk of: lengthy hospitalisation after birth; the need for resuscitation; and death. Low birthweight is a 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).

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 of low birthweight have higher rates of mortality from renal and cardiovascular diseases in adulthood (White et al. 2010).

A baby might be small due to being born early (pre-term) or might 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 live born singleton infants of low birthweight, by Indigenous status.

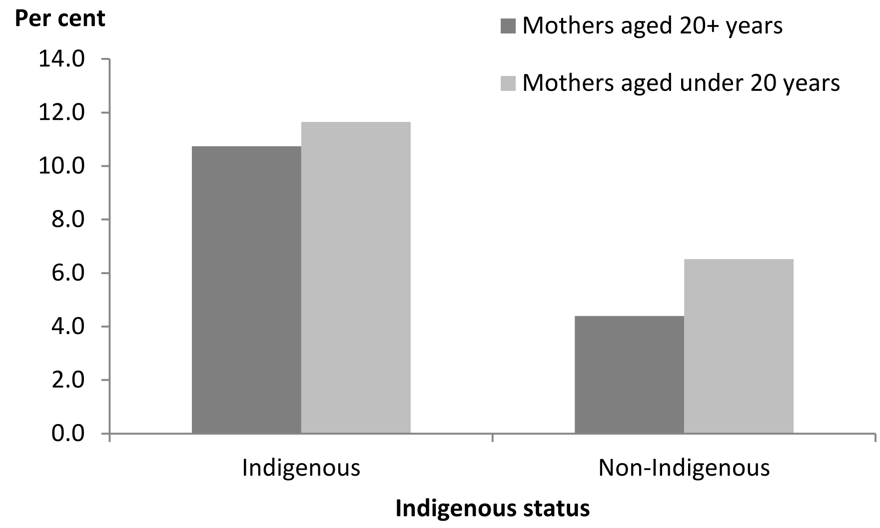
Proportion of babies born to Indigenous mothers of low birthweight



Source: AIHW National Perinatal Data Collection; Table A8.

Figure 4.1: Proportion of low birthweight live born singleton babies, by maternal Indigenous status and state/territory, 2008–2010

- During 2008–2010, about 40,400 live born infants were of low birthweight (excluding multiple births) in Australia. About 11% of babies born to Indigenous mothers were of low birthweight, compared with 5.0% of babies born to non-Indigenous mothers (Figure 4.1).
- Western Australia and the Northern Territory had the highest proportion of Indigenous infants of low birthweight (13% for both). In these jurisdictions, babies born to Indigenous mothers were 3 times as likely to be of low birthweight as babies born to non-Indigenous mothers.
- In the non-Indigenous population, low birthweight babies were more common among teenage mothers (6.5%), than among mothers aged 20 years and over (4%). But in the Indigenous population, rates were similar for both age groups (12% and 11%, respectively) (Figure 4.2).



Source: AIHW National Perinatal Data Collection; Table A9.

Figure 4.2: Proportion of low birthweight live born singleton babies, maternal age and Indigenous status, Australia, 2008–2010

Trends between 2000 and 2010

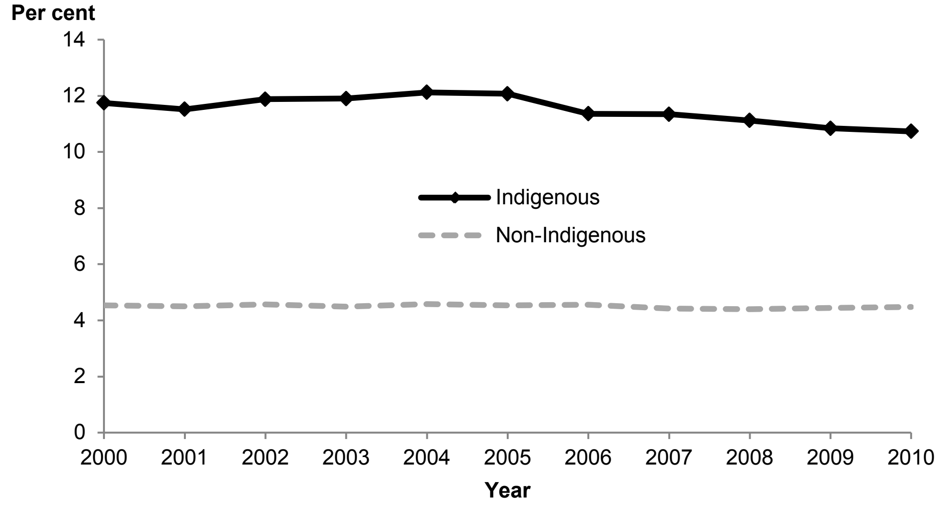
Nationally, in the jurisdictions for which data were reliable between 2000 and 2010 (New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory):

- the proportion of babies of low birthweight born to both teenage Indigenous mothers and mothers aged 20 years and over declined significantly (by 9%) (Figure 4.3; Table A11).
- the gap between low birthweight babies of Indigenous and non-Indigenous mothers narrowed significantly (by 14%).

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 widening of the gap (AHMAC 2012a). 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 16% and 24%, respectively) in the proportion of low birthweight live born singleton babies born to Indigenous mothers, as well as a significant narrowing of the gap.
- in the remaining states and territories, the proportion of live born singleton babies of low birthweight born to Indigenous mothers was relatively stable between 2000 and 2010.



Source: AIHW National Perinatal Data Collection; Table A10.

Figure 4.3: Proportion of low birthweight live born singleton babies, by maternal Indigenous status, NSW, Vic, Qld, WA, SA and the NT, 2000–2010

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 live born 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 1 Indigenous parent, this is likely to underestimate the number of Indigenous babies, as babies with an Indigenous father and non-Indigenous mother would not be captured. Work is under way to improve the identification of Indigenous babies with a new data element—'Indigenous status of baby'—added to the Perinatal National Minimum Data Set in July 2012.

5 Infant mortality

Key findings

- During 2007–2011, in New South Wales, Queensland, Western Australia, South Australia and the Northern Territory combined, the infant mortality rate for Indigenous infants was 7.0 per 1,000 live births—almost twice the rate for non-Indigenous infants.
- Between 2001 and 2011, in New South Wales, Queensland, Western Australia, South Australia and the Northern Territory combined, the infant mortality rate for Indigenous infants declined by 55% (from 11.2 to 6.6 deaths per 1,000 live births), and the gap narrowed by 84.5% compared with 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.

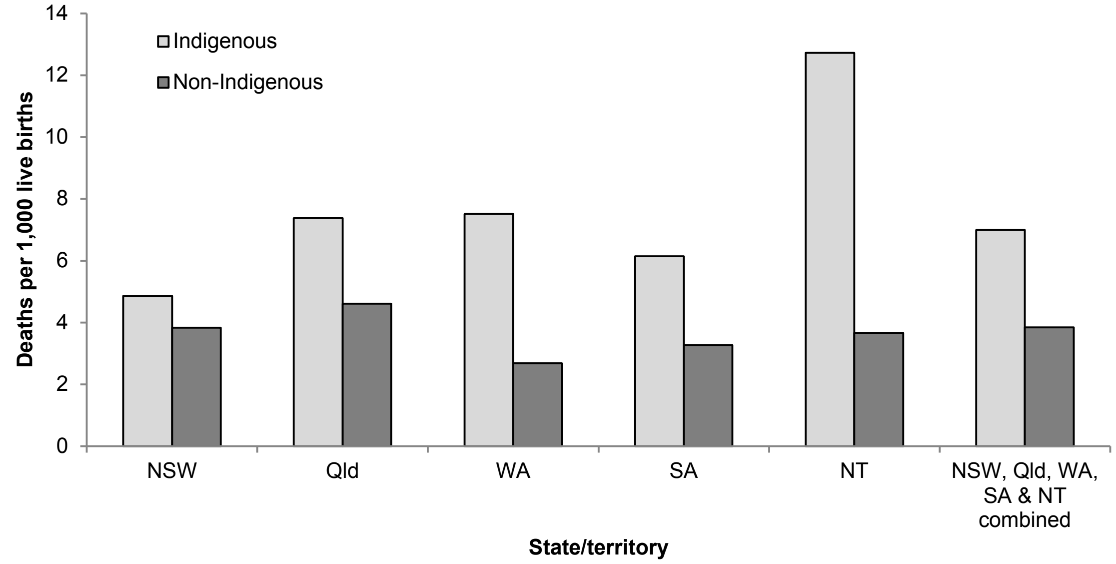
Social and economic factors are powerful determinants of infant and child mortality in both developed and developing countries (Collison et al. 2007; Marmot 2006). Infant and child mortality have been shown to be clearly associated with indicators of parental disadvantage, such as low income, long duration 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, and reductions in vaccine-preventable diseases through national childhood immunisation programs.

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

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

Number of Indigenous infants who die in their first year of life

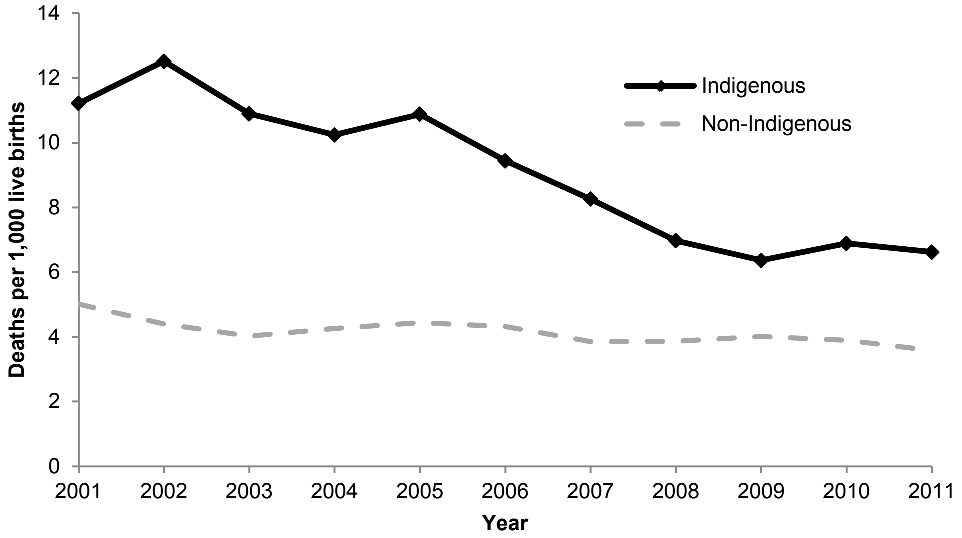


Source: AIHW National Mortality Database; Table A12.

Figure 5.1: Infant mortality rates, by Indigenous status and state/territory, 2007–2011

- During 2007–2011, about 12% of infant deaths were identified as Indigenous (526 in the 5 jurisdictions with reliable data on Indigenous mortality—New South Wales, Queensland, Western Australia, South Australia and the Northern Territory.
- For Indigenous infants, the infant mortality rate was almost twice as high as that of non-Indigenous infants—7.0 and 3.8 infant deaths per 1,000 live births, respectively (Figure 5.1).
- The Indigenous infant mortality rate varied considerably by jurisdiction from 4.9 infant deaths per 1,000 live births in New South Wales to 12.7 in the Northern Territory.
- The mortality rates for Indigenous infants were 1.3 times as high as for non-Indigenous infants in New South Wales, nearly twice as high in Queensland and South Australia; and about 3 times as high in Western Australia and the Northern Territory.

Long-term trends between 2001 and 2011



Source: AIHW National Mortality Database; Table A13.

Figure 5.2: Infant mortality rates, by Indigenous status, NSW, Qld, WA, SA and the NT, 2001–2011

During 2001–2011 in the jurisdictions with reliable Indigenous mortality data (New South Wales, Queensland, Western Australia, South Australia and the Northern Territory), the mortality rate for Indigenous infants declined significantly (55%), from 11.2 to 6.6 deaths per 1,000 live births. A smaller decline (19%) was evident for non-Indigenous infants, resulting in a significant narrowing of the gap (Figure 5.2).

Short-term trends since 2008

Between 2008 and 2011, 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).

Five jurisdictions have been included in the mortality analyses—New South Wales, Queensland, Western Australia, South Australia and the Northern Territory—as they had sufficient levels of Indigenous identification and sufficient numbers of deaths. Data are not necessarily representative of excluded jurisdictions. Indigenous status data presented for infant mortality is a combined rate for these 5 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 fetus and infant, and these effects can carry through to childhood.

- Nationally, in 2010, more than half (51%) of Indigenous women reported smoking during pregnancy. Indigenous mothers were almost 4 times as likely as non-Indigenous mothers to have smoked during pregnancy (age-standardised rates of 49% and 13%, respectively).
- Findings from the 2008 NATSISS suggest that 42% of Indigenous mothers with children aged 0–3 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 fetus to numerous toxins. This increases the risk of spontaneous abortion and ectopic pregnancy. It can also result in health problems for the newborn, including low birthweight, intrauterine growth restriction, prematurity, placental complications, birth defects, lung function abnormalities, 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, 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.

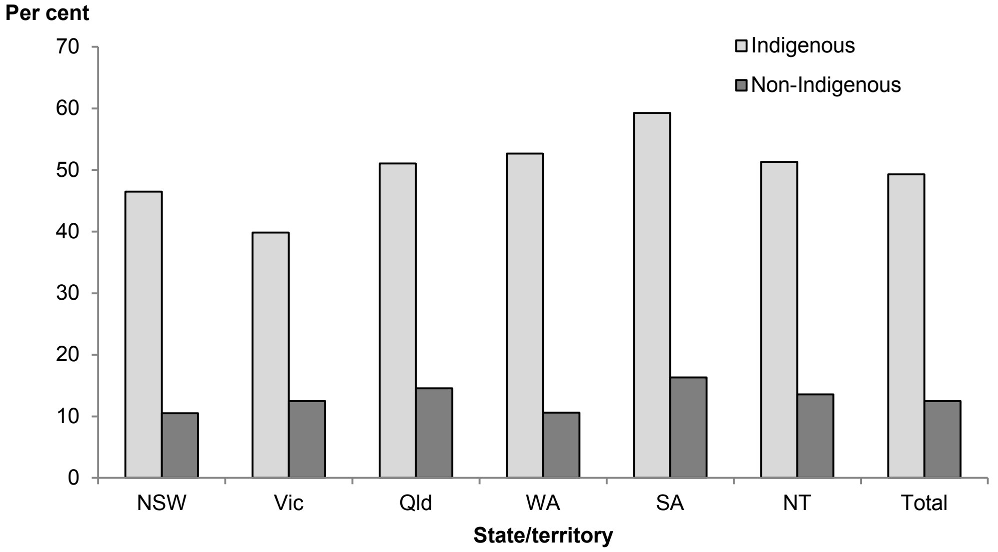
Reported measures:

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.

Proportion of Indigenous women who smoked during pregnancy

- Nationally, 51% (5,700) of Indigenous women who gave birth in 2010 reported that they smoked during their pregnancy.
- After adjusting for differences in age structure between the Indigenous and non-Indigenous populations, Indigenous mothers were almost 4 times as likely to smoke during pregnancy as non-Indigenous mothers (49% and 13%, respectively).
- The difference between Indigenous and non-Indigenous mothers who smoked during pregnancy was largest in South Australia (59% and 16%, respectively), followed by Western Australia (53% and 11%, respectively) (Figure 6.1).
- Nationally, rates of smoking during pregnancy were the same among Indigenous teenage mothers and Indigenous mothers aged 20 years and over (51%). In contrast, among non-Indigenous mothers smoking during pregnancy was much more common among teenage mothers than among mothers aged 20 years and over (Figure 6.2).

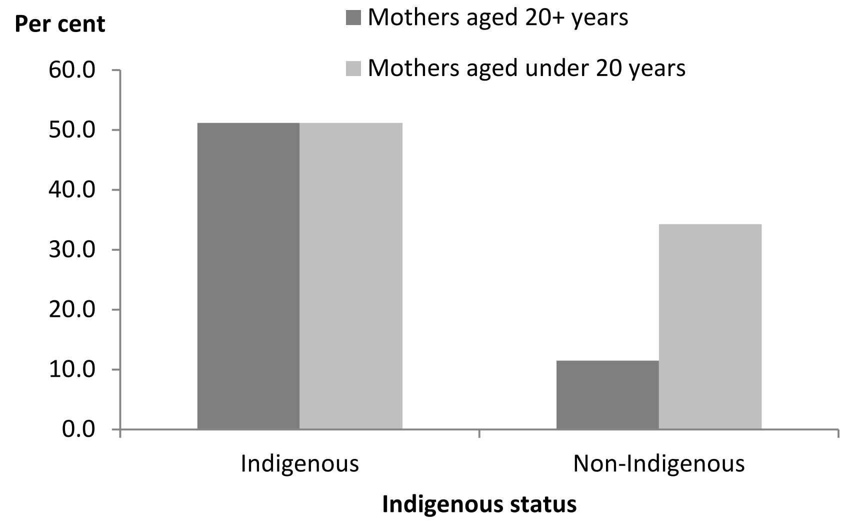


Notes

1. Total includes data for 8 jurisdictions (New South Wales, Victoria, Queensland, Western Australia, South Australia, Tasmania, the Australian Capital Territory and the Northern Territory). Age-standardised Indigenous rates have not been produced separately for the Australian Capital Territory or Tasmania, as denominators for some age groups are less than 30.
2. Proportions are directly age-standardised.

Source: AIHW National Perinatal Data Collection; Table A15.

Figure 6.1: Women who smoked during pregnancy, by Indigenous status and state/territory, 2010



Source: AIHW National Perinatal Data Collection; Table A15.

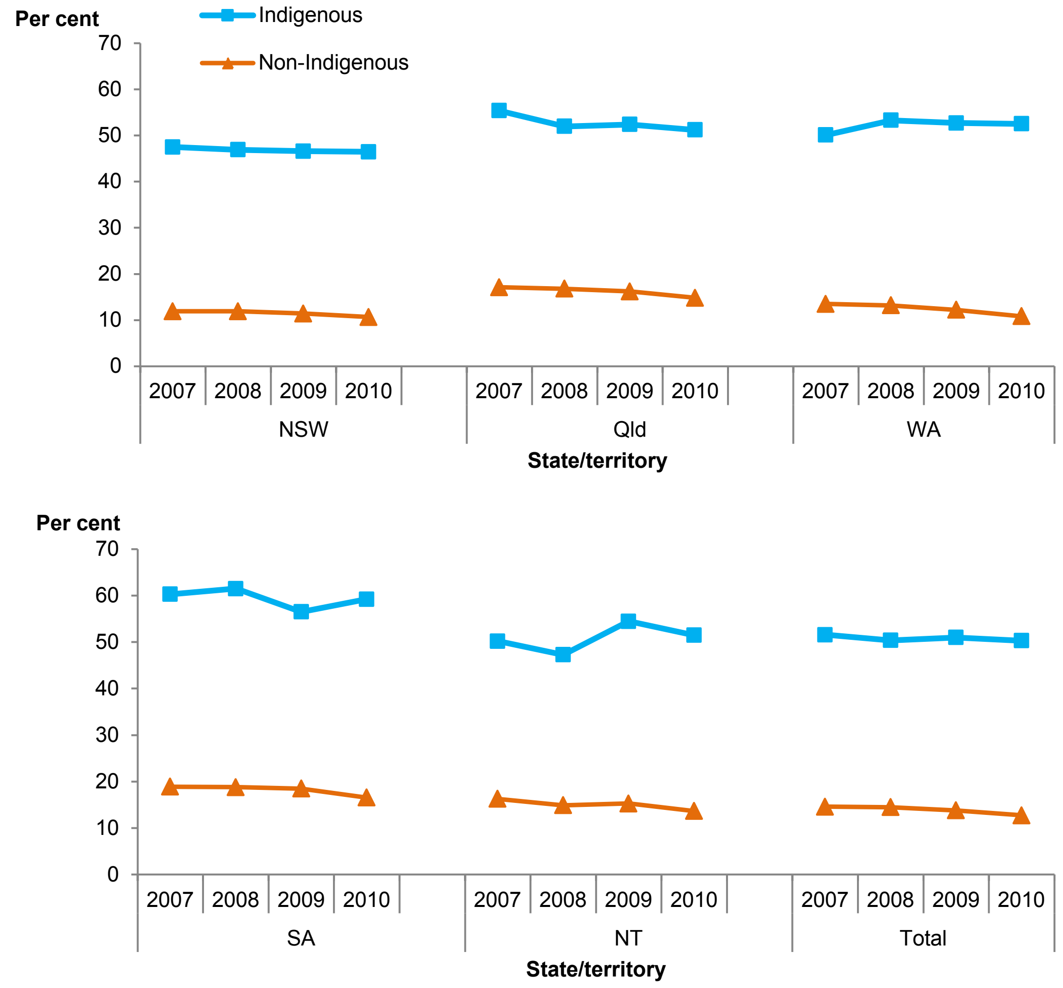
Figure 6.2: Women who smoked during pregnancy, by maternal age and Indigenous status, 2010

Trends between 2007 and 2010

Trend data are available for all jurisdictions combined, excluding Victoria. Trend data for age-standardised Indigenous rates are available for all jurisdictions individually, excluding Victoria, Tasmania and the Australian Capital Territory.

- Between 2007 and 2010:
  - across the 7 combined jurisdictions, 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
  - the age-standardised proportion of Indigenous mothers who smoked during pregnancy in New South Wales declined significantly (from 48% to 47%)
  - 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 for Queensland, Western Australia, South Australia and the Northern Territory (Figure 6.3).

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



Notes

1. Total includes data for 7 jurisdictions (New South Wales, Queensland, Western Australia, South Australia, Tasmania, the Australian Capital Territory and the Northern Territory). Age-standardised Indigenous rates have not been produced separately for the Australian Capital Territory or Tasmania, as denominators for some age groups are less than 30.
2. Data exclude Victoria, as data on smoking during pregnancy was not available for 2007 and 2008.
3. Proportions are directly age-standardised.
4. Data might differ from previously published versions of this report due to data updates and corrections.

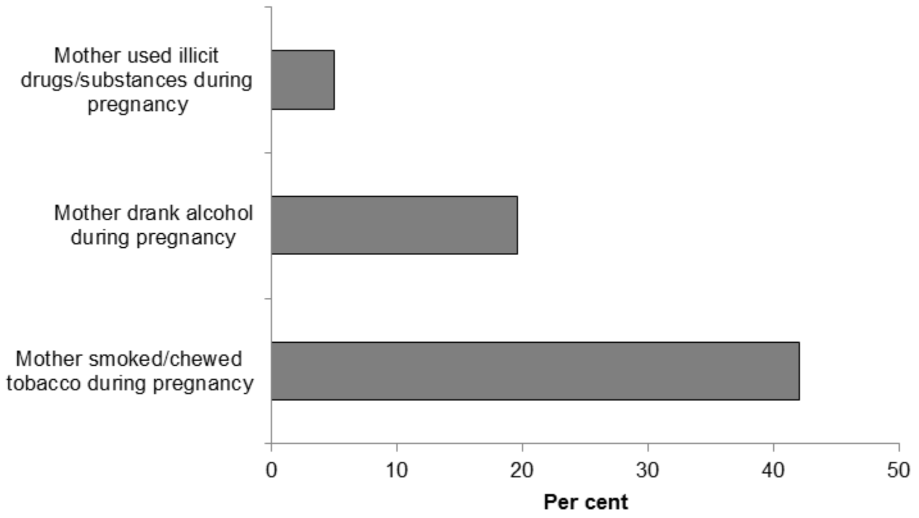
Source: AIHW National Perinatal Data Collection; Table A16.

Figure 6.3: Women who smoked during pregnancy, by Indigenous status and state/territory, 2007–2010

Proportion of Indigenous mothers with children aged 0–3 who used substances during pregnancy

This section sources data from the 2008 National NATSISS, which collected data on selected health issues from Indigenous mothers with children aged 0–3 years. This is the latest available data available at the time this report was prepared, so information in this section is the same as it was in the first report.

- In 2008, an estimated 42% of mothers of Indigenous children aged 0–3 years reported smoking/chewing tobacco during pregnancy (Figure 6.4). This ranged from 34% in Queensland to 52% in South Australia (Table A17).
- An estimated 20% of mothers of Indigenous children reported drinking alcohol during pregnancy (Figure 6.4). The highest rates were reported in Victoria and Queensland at 23% (Table A17).
- About 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 (Figure 6.4).



Source: AIHW analysis of 2008 NATSISS; Table A17.

Figure 6.4: Substance use during pregnancy by Indigenous mothers of children aged 0–3, 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 (NPDC).

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

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 before 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.

Two new data elements on smoking in the first 20 weeks of pregnancy and after 20 weeks of pregnancy have 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 National Minimum Data Set.

Proportions of women who smoke during pregnancy have been calculated excluding ‘not stated’ responses to the smoking status question from the total number of women who gave birth.

Survey data

The 2008 NATSISS collected information on whether mothers of children aged 0–3 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.

Both administrative and survey data on mothers’ substance use during pregnancy are self-reported, so might be an underestimate.

7 Hospitalisation for children under 5

Key findings

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

- Between 2009–10 and 2010–11, in New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory combined, Indigenous children aged under 5 were hospitalised at 1.5 times the rate of non-Indigenous children.
- Respiratory diseases are the most common diagnoses of Indigenous children hospitalised, accounting for 28% of hospitalisations.
- Hospitalisation rates for Indigenous children aged 0–4 increased by 13% between 2004–05 and 2010–11 in New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory combined. Over this period, hospitalisation rates for Indigenous children increased at a faster rate than the rates for other children.

Hospitalisation rates can be an indicator of the health of young children, although they only represent the most serious cases of ill health requiring admitted 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.

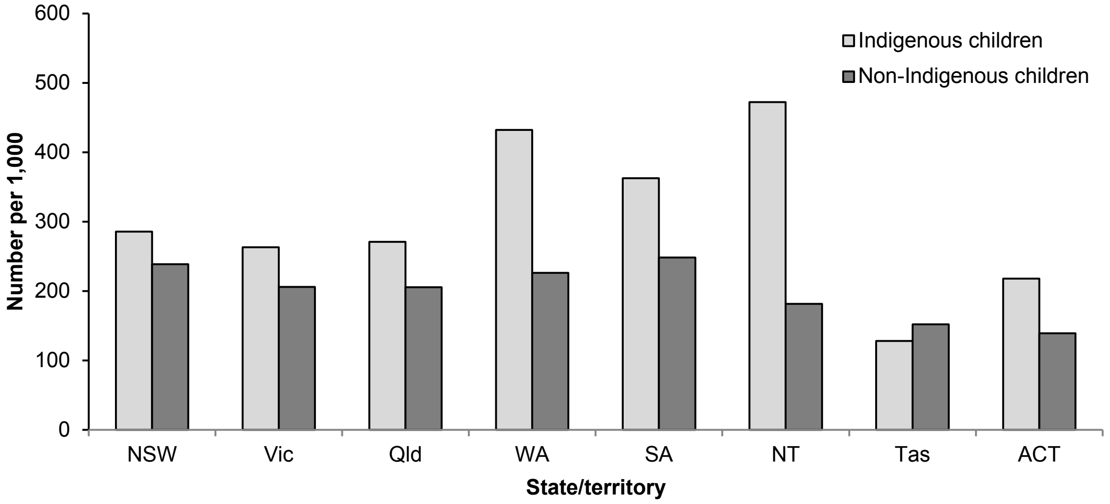
Using hospitalisation data alone to determine the level of ill-health among a population has limitations:

- 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, averting a more serious illness that would require hospitalisation.
- Hospitalisation might be influenced by the availability of services or by changes in treatment practices reflecting new technologies and drugs or understandings of disease.

As a result, changes in hospitalisation rates might reflect several factors, including changes in access to, and demand for, hospital treatment. Hospitalisation rates might partly reflect a particular disease being appropriately diagnosed and managed. Improvements in the recording of Indigenous status in hospital records might 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 diagnosis (ICD-10 AM chapter level).

Rate of hospitalisation among Indigenous children aged under 5



Note: Rates for Tasmania and the Australian Capital Territory should be interpreted with caution due to the relatively small number of separations for Indigenous children in these jurisdictions.

Source: AIHW National Hospital Morbidity Database; Table A18.

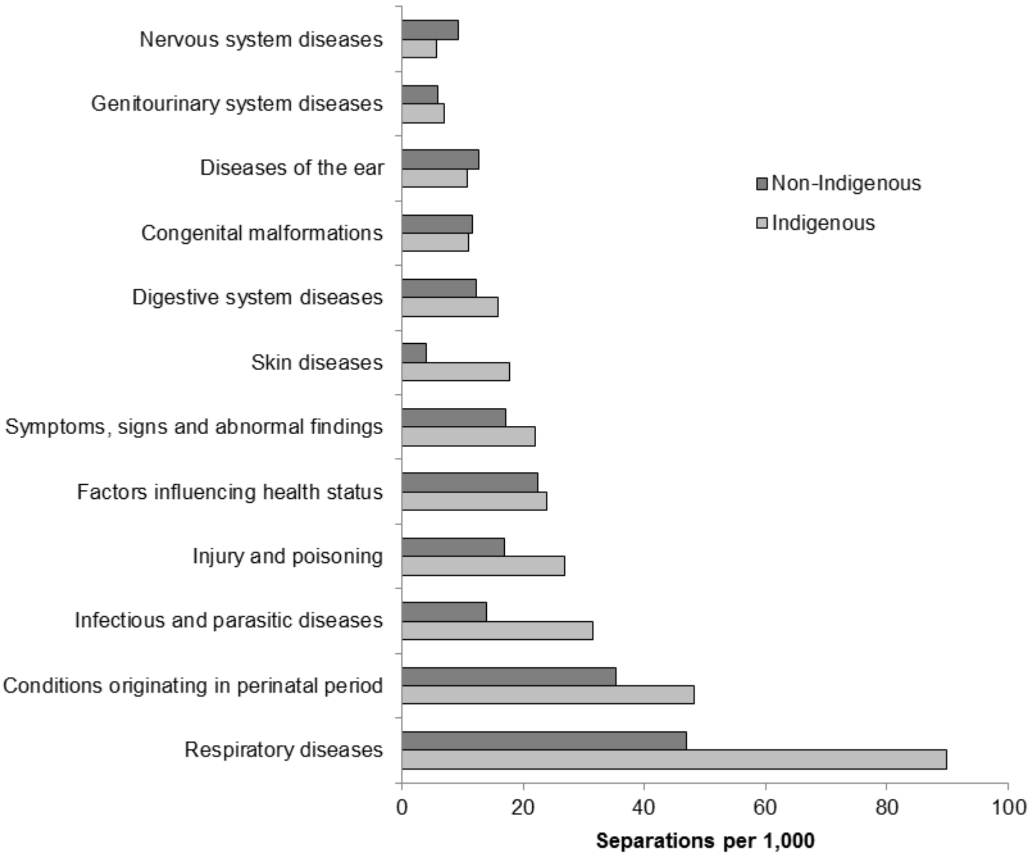
Figure 7.1: Hospital separation rates for children under 5, by Indigenous status and state/territory, 2009–10 to 2010–11

- Between 2009–10 and 2010–11, there were about 43,000 hospital separations of Indigenous children aged under 5 in the 6 jurisdictions with reliable data on Indigenous hospitalisations for this period—New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory. The hospital separation rate in these jurisdictions for Indigenous children was 1.5 times that of non-Indigenous children—325 compared with 222 per 1,000 population (Table A18).
- Hospital separation rates for Indigenous children varied across jurisdictions, from 263 per 1,000 population in Victoria to 473 per 1,000 population in the Northern Territory (Figure 7.1). Rates were less than 220 per 1,000 population in Tasmania and the Australian Capital Territory; however, these should be interpreted with caution due to the relatively small number of separations for Indigenous children in these jurisdictions.

Most common diagnoses for hospitalisations among Indigenous children

- Respiratory diseases were the most common diagnoses for hospitalisations of Indigenous children between 2009–10 and 2010–11, accounting for 28% of all hospitalisations of Indigenous children aged under 5 years. This was followed by conditions originating in the perinatal period (15%) and infectious and parasitic diseases (10%).
- The greatest difference in rates between Indigenous and non-Indigenous children was for respiratory diseases (a difference of 43 per 1,000 population), followed by infectious and parasitic diseases (a difference of 17 per 1,000 population), and diseases of the skin (a difference of 14 per 1,000 population).

- Indigenous children were hospitalised for diseases of the skin at more than 4 times the rate of non-Indigenous children for respiratory diseases and infectious and parasitic diseases at twice the rate of non-Indigenous children (Figure 7.2).



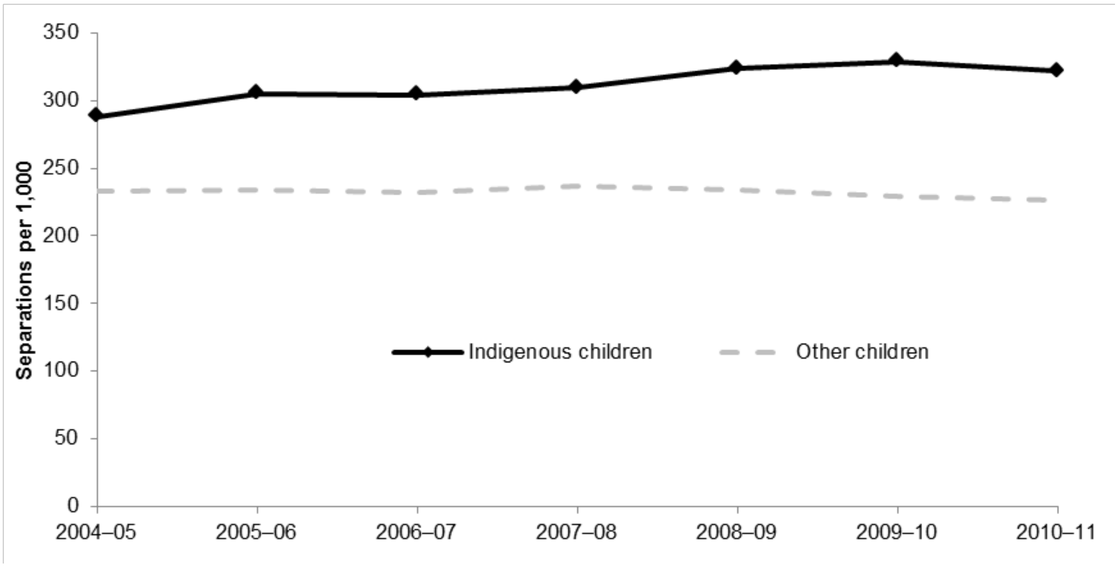
Notes

1. Symptoms, signs and abnormal findings refers to the International Statistical Classification of Diseases and Related Health Problems, 10th revision, Australian modification, 4th edition (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 for 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 ICD-10-AM 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, such as examination, investigation or follow-up care.

Source: AIHW National Hospital Morbidity Database; Table A18.

Figure 7.2: Hospital separation rates for children under 5, by principal diagnosis and Indigenous status, NSW, Vic, Qld, WA, SA and the NT, 2009–10 to 2010–11

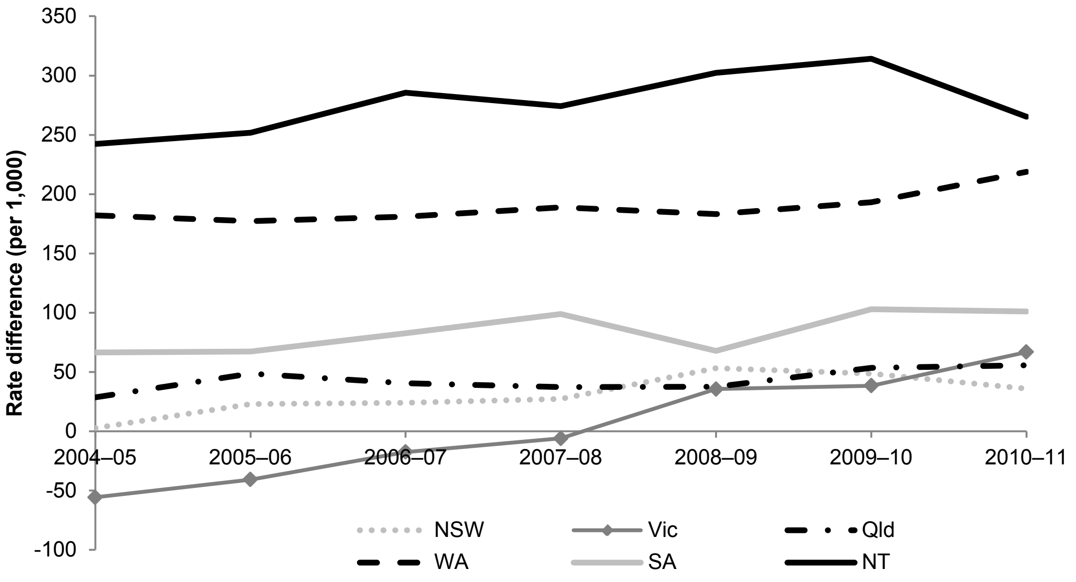
Trends between 2004–05 and 2010–11



Source: AIHW National Hospital Morbidity Database; Table A19.

Figure 7.3: Hospitalisation rates for children under 5, by Indigenous status, NSW, Vic, Qld, WA, SA and the NT, 2004–05 to 2010–11

- Between 2004–05 and 2010–11, 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 increased by 13% (Figure 7.3). Hospitalisation rates for other children remain relatively constant, leading to a 76% increase in the rate difference over time.
  - Indigenous child hospitalisation rates increased in New South Wales (27%), Victoria (44%), and Western Australia (7%), at a faster rate than the rates for other children (Table A20). As a result, the gap in hospitalisation rates between Indigenous and other children in these jurisdictions widened—from 3 to 36 in New South Wales, 56 to 67 in Victoria, and 182 to 219 in Western Australia (Figure 7.4).
  - Indigenous child hospitalisation rates increased for conditions originating in the perinatal period (24%), injury and poisoning (16%) and respiratory diseases (11%), but decreased for infectious and parasitic diseases (32%) (Table A19).



Note: A negative rate difference indicates that rates for Indigenous children are lower than for other children.

Source: AIHW National Hospital Morbidity Database; Table A20.

Figure 7.4: Rate difference in hospitalisation rates for children under 5, by state/territory, 2004–05 to 2010–11

Box 7.1: Measuring child hospitalisations

The 'Child under 5 hospitalisation rate' is the number of hospital separations of children aged under 5 in a given year, expressed per 1,000 population of children aged under 5 in the same year.

Data on child hospitalisations are available from the AIHW National Hospital Morbidity Database (see Appendix C for more information).

A recent AIHW study on the quality of Indigenous identification in hospitalisation records done in 2011–12 recommended that data for all states and territories be used for analysis of total hospitalisations by Indigenous status (AIHW 2013b).

As this report includes data from 2004–05 to 2010–11, hospitalisation data are mainly presented for the 6 jurisdictions that have adequate identification of Indigenous hospitalisations over most of this period: New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory (public hospitals only) (AIHW 2010). These 6 jurisdictions represent about 95% of the Indigenous population of Australia (ABS 2012). National totals include hospital separations for children who live in these 6 jurisdictions only, and are not necessarily representative of the jurisdictions not included. Although some data are reported for Tasmania and the Australian Capital Territory (public hospitals only), they are reported with caveats due to the relatively small number of separations for Indigenous children in these jurisdictions, and are not included in national totals.

Appendix A: Detailed tables

Table 1: Indigenous Early Childhood Development health indicators with available data, Indigenous numbers, by state and territory

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	2010	2,250	376	1,267	307	341	n.a.	36	660	5,237
Mothers aged less than 20 years		411	53	235	54	57	n.a.	7	118	935
Mothers aged 20 years and over		1,839	323	1,032	253	284	n.a.	29	542	4,302
Number of women with children aged 0–3 years who used substances during pregnancy	2008									
Tobacco		6,243	1,180	4,578	2,039	1,162	892[(a)]	892[(a)]	1,898	17,990
Alcohol		2,307	569	3,027	1,127	379	354[(a)]	354[(a)]	617	8,380
Other substances		514	229	526	464	137	77[(a)]	77[(a)]	174	2,122
Number of women who have used tobacco during pregnancy	2010	1,557	329	1,846	771	370	123	38	637	5,671
Mothers aged less than 20 years		304	56	380	158	56	19	8	135	1,116
Mothers aged 20 years and over		1,253	272	1,466	613	314	104	30	502	4,554
Number of low birthweight live born singleton babies, of:	2008–2010	919	254	958	660	219	64	24	520	3,618
mothers aged less than 20 years		203	47	200	151	37	8	n.p.	124	773
mothers aged 20 years and over		716	206	758	509	182	56	21	396	2,844
Deaths of infants aged less than 1 year[(b)]	2007–2011	128	n.a.	182	89	28	n.a.	n.a.	99	526
Notifications of sexually transmissible infections and bloodborne viruses among Indigenous teenagers aged 15–19										
Chlamydia	2010–2012	n.a.	n.a.	4,286	2,130	327	55	n.a.	1,391	8,189
Gonorrhoea	2010–2012	n.a.	n.p.	1,557	1,143	165	—	n.p.	1,419	4,292
Syphilis	2010–2012	—	—	128	14	—	—	—	14	156
Hepatitis C	2010–2012	n.a.	n.a.	32	25	10	n.p.	n.a.	n.p.	74
Hepatitis B	2010–2012	n.a.	n.a.	n.a.	13	n.p.	n.a.	n.p.	14	30
HIV	2009–2011	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.

(continued)

Summary table 2 (continued): Indigenous Early Childhood Development health indicators with available data, Indigenous numbers, by state and territory

Reported measure	Year of data	NSW	Vic	Qld	WA	SA	Tas(c)	ACT(c)	NT	NSW, Vic, Qld, WA, SA, NT
Number of hospitalisations for children under 5(c)	2009–10 to 2010–11									
Diseases of the respiratory system		3,205	462	3,000	2,246	655	120	33	2,311	11,879
Certain conditions originating in the perinatal period		1,830	533	1,803	983	328	97	45	894	6,371
Certain infectious and parasitic diseases		933	136	982	807	237	28	10	1,067	4,162
Injury and poisoning		892	199	1,046	690	214	67	18	495	3,536
Symptoms, signs and abnormal clinical and laboratory findings n.e.c.		842	141	756	573	157	49	16	435	2,904
Diseases of the digestive system		622	176	599	292	146	46	14	268	2,103
Diseases of the skin and subcutaneous tissue		400	55	622	469	130	15	n.p.	668	2,344
Congenital malformations, deformations and chromosomal abnormalities		537	110	364	195	89	41	16	148	1,443
Diseases of the ear		380	93	393	299	117	18	10	144	1,426
Factors influencing health status		1,287	178	706	404	235	74	69	354	3,164
Diseases of the genitourinary system		227	51	270	143	39	17	5	194	924
Diseases of the nervous system		249	69	184	111	54	19	n.p.	77	744
Other diagnoses		529	95	458	394	167	38	13	354	1,997
Total hospitalisations		**11,940**	**2,299**	**11,183**	**7,606**	**2,568**	**629**	**253**	**7,409**	**43,005**

(a) Substance use proportions (alcohol, tobacco and other substances) for Tasmania and the Australian Capital Territory are combined due to small numbers.

(b) Deaths registered in 2009 and earlier are based on the final version of cause of death data; deaths registered in 2010 and 2011 are based on revised and preliminary versions, respectively, and are subject to further revision.

(c) Data for Tasmania and the Australian Capital Territory should be interpreted with caution due to the relatively small number of separations for Indigenous children in these jurisdictions.

Note: Additional data on these indicators can be found in tables A1 to A20.

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

Table A1: Women who gave birth who attended at least 1 antenatal visit in the first trimester, by maternal age, Indigenous status and state/territory, NSW, Vic, Qld, WA, SA, the ACT and the NT, 2010[(a)(b)(c)]

	NSW	Vic	Qld	WA	SA	ACT[(d)]	NT	Total[(e)(f)]	Total LCI[(g)]	Total UCI[(g)]
					Mother aged less than 20 years					
Number										
Indigenous	411	53	235	54	57	7	118	935	. .	. .
Non-Indigenous	1,912	654	1,087	283	431	37	52	4,456	. .	. .
Crude rate[(h)]										
Indigenous	69.3	43.8	35.3	22.9	50.9	70.0	38.7	45.8	43.6	47.9
Non-Indigenous	73.1	42.8	42.9	40.8	66.8	44.6	61.2	54.4	53.4	55.5
Rate ratio[(i)]	0.9	1.0	0.8*	0.6*	0.8	1.6	0.6*	0.8*	. .	. .
Rate difference[(j)]	–3.8	1.0	–7.5*	–17.9*	–15.9	25.4	–22.5*	–8.7*	. .	. .
					Mother aged 20 years and over					
Number										
Indigenous	1,839	323	1,032	253	284	29	542	4,302	. .	. .
Non-Indigenous	71,494	42,757	34,199	12,228	13,494	2,168	1,921	178,261	. .	. .
Crude rate[(h)]										
Indigenous	72.2	49.2	38.9	31.7	57.8	54.7	53.0	52.3	51.2	53.4
Non-Indigenous	80.3	63.7	63.8	57.0	81.2	45.7	82.7	69.9	69.8	70.1
Age-standardised rate[(k)]										
Indigenous	71.4	51.8	39.0	29.7	57.8	n.p.	53.7	52.2	50.4	54.0
Non-Indigenous	80.2	62.8	64.5	57.0	81.4	44.9	82.8	69.8	69.5	70.2
Rate ratio[(i)]	0.9*	0.8*	0.6*	0.5*	0.7*	n.p.	0.6*	0.7*	. .	. .
Rate difference[(j)]	–8.8*	–11.0*	–25.5*	–27.2*	–23.6*	n.p.	–29.1*	–17.6*	. .	. .

(continued)

Table A1 (continued): Women who gave birth who attended at least 1 antenatal visit in the first trimester, by maternal age, Indigenous status and state/territory, NSW, Vic, Qld, WA, SA, the ACT and the NT, 2010[(a)(b)(c)]

	NSW	Vic	Qld	WA	SA	ACT[(d)]	NT	Total[(e)(f)]	Total LCI[(g)]	Total UCI[(g)]
						Total mothers				
Number										
Indigenous	2,250	376	1,267	307	341	36	660	5,237	. .	. .
Non-Indigenous	73,411	43,453	35,286	12,511	13,925	2,205	1,973	182,764	. .	. .
Crude rate[(h)]										
Indigenous	71.7	48.3	38.2	29.7	56.6	57.1	49.7	51.0	50.0	52.0
Non-Indigenous	80.1	63.3	62.9	56.5	80.7	45.7	81.9	69.5	69.3	69.6
Age-standardised rate[(k)]										
Indigenous	71.3	51.5	38.9	29.5	57.5	n.p.	53.1	52.0	50.2	53.7
Non-Indigenous	79.9	62.1	63.7	56.4	80.8	44.9	82.0	69.3	68.9	69.6
Rate ratio[(i)]	0.9*	0.8*	0.6*	0.5*	0.7*	n.p.	0.6*	0.8*	. .	. .
Rate difference[(j)]	–8.6*	–10.6*	–24.8*	–26.9*	–23.3*	n.p.	–28.9*	–17.3*	. .	. .

(continued)

Table A1 (continued): Women who gave birth who attended at least 1 antenatal visit in the first trimester, by maternal age, Indigenous status and state/territory, NSW, Vic, Qld, WA, SA, the ACT and the NT, 2010(a)(b)(c)

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

(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 contact 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 was added to the Perinatal National Minimum Data Set in July 2010. For births before July 2010, data collection is not consistent across jurisdictions, and caution should be used when interpreting these numbers. Data are available in Tasmania but are not of sufficient quality to publish. Data are by usual place of residence of the mother.

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

(d) Indigenous age-standardised rates have not been produced for the Australian Capital Territory, as denominators for some age groups are less than 30.

(e) Total includes data for Victoria, Western Australia, and the Australian Capital Territory for the first time and is not comparable with totals from previous years.

(f) Total includes New South Wales, Victoria, Queensland, Western Australia, South Australia, the Australian Capital Territory and the Northern Territory only. These data cannot be generalised to Australia.

(g) LCI and UCI = upper and lower confidence intervals at the $p < 0.05$ level.

(h) Excludes women whose gestation at first antenatal visit was not stated.

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

(j) Rate difference is the directly age-standardised Indigenous rate minus the directly age-standardised non-Indigenous rate.

(k) Data are directly age-standardised using the Australian female population who gave birth in 2010 as the standard population.

Source: AIHW National Perinatal Data Collection.

Table A2: Women who gave birth who attended at least 1 antenatal visit in the first trimester, by maternal Indigenous status, NSW, SA and the NT combined, 2007–2010[a][b][c]

	2007	2008	2009	2010	Change (per cent)[d]
		Number			
Indigenous					
Mothers aged less than 20 years	467	545	514	570	. .
Mothers aged 20 years and over	2,140	2,362	2,398	2,611	. .
Total	**2,607**	**2,907**	**2,912**	**3,181**	**. .**
Non-Indigenous					
Mothers aged less than 20 years	2,180	2,407	2,375	2,360	. .
Mothers aged 20 years and over	77,753	86,209	84,692	85,414	. .
Total	**79,941**	**88,623**	**87,071**	**87,779**	**. .**
		Per cent[e]			
Indigenous					
Mothers aged less than 20 years	50.8	54.9	53.7	58.4	12.7
Mothers aged 20 years and over[f]	60.7	64.0	62.8	65.8	6.9
Total[f]	**60.3**	**62.4**	**62.4**	**65.5**	**7.7**
Non-Indigenous					
Mothers aged less than 20 years	64.7	69.1	70.5	72.3	11.2*
Mothers aged 20 years and over[f]	77.9	82.1	80.1	80.9	2.6
Total[f]	**77.4**	**81.6**	**79.7**	**80.6**	**3.0**
		Rate ratio[g]			
Mothers aged less than 20 years	0.8	0.8	0.8	0.8	1.3
Mothers aged 20 years and over	0.8	0.8	0.8	0.8	4.1
Total	**0.8**	**0.8**	**0.8**	**0.8**	**4.6**
		Rate difference[h]			
Mothers aged less than 20 years	–13.9	–14.2	–16.8	–13.9	5.6
Mothers aged 20 years and over	–17.2	–18.1	–17.3	–15.1	–12.3
Total	**–17.1**	**–19.2**	**–17.3**	**–15.1**	**–13.9**

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

(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 of the mother. Data exclude Vic, Qld, WA, Tas and ACT as data on gestational age at first antenatal visit was not available or not of sufficient quality to publish for 2007 and 2008.

(c) South Australia data exclude women where number of antenatal visits attended is unknown.

(d) Percentage change is based on the average annual change over the period.

(e) Percentage 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 women whose gestation at first antenatal visit was 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 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 minus the directly age-standardised non-Indigenous rate.

Note: Data might differ from previously published versions of this report due to data updates and corrections.

Source: AIHW National Perinatal Data Collection.

Table A3: Women who gave birth who attended at least 1 antenatal visit in the first trimester, by maternal Indigenous status and state/territory, NSW, SA and the NT, 2007–2010[(a)(b)(c)]

	2007	2008	2009	2010	Per cent change (2007–2010)[(d)]
			Number		
Indigenous					
NSW	1,822	2,023	1,989	2,184	. .
SA	169	259	294	341	. .
NT	616	625	629	656	. .
Total	**2,607**	**2,907**	**2,912**	**3,181**	**. .**
Non-Indigenous					
NSW	69,487	74,592	71,889	71,918	. .
SA	8,794	12,181	13,333	13,914	. .
NT	1,660	1,850	1,849	1,947	. .
Total	**79,941**	**88,623**	**87,071**	**87,779**	**. .**
			Age-standardised rate[(e)(f)]		
Indigenous					
NSW	67.7	72.2	70.5	72.2	5.1
SA	40.3	50.8	57.7	57.5	43.6
NT	50.8	49.5	47.9	53.2	3.3
Total	**60.3**	**63.6**	**62.4**	**65.5**	**7.1**
Non-Indigenous					
NSW	78.2	83.0	79.9	80.5	1.5
SA	72.5	74.8	79.3	80.9	12.3*
NT	76.7	78.8	79.5	82.3	6.8*
Total	**77.4**	**81.6**	**79.7**	**80.6**	**3.0**
			Rate ratio[(g)]		
NSW	0.9	0.9	0.9	0.9	3.5*
SA	0.6	0.7	0.7	0.7	27.8
NT	0.7	0.6	0.6	0.6	–3.3
Total	**0.8**	**0.8**	**0.8**	**0.8**	**4.0**
			Rate difference[(h)]		
NSW	–10.4	–10.8	–9.4	–8.3	–22.0
SA	–32.2	–24.0	–21.6	–23.4	–26.9
NT	–25.9	–29.3	–31.6	–29.1	13.6
Total	**–17.1**	**–18.0**	**–17.3**	**–15.1**	**–11.7**

(continued)

Table A3 (continued): Women who gave birth who attended at least 1 antenatal visit in the first trimester, by maternal Indigenous status and state/territory, NSW, SA and the NT, 2007–2010(a)(b)(c)

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

(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, Queensland, Western Australia, Tasmania and the Australian Capital Territory, as data on gestational age at first antenatal visit was not available or not of sufficient quality to publish for 2007 and 2008.
(c) South Australia data exclude women where the number of antenatal visits attended is unknown.
(d) Percentage change is based on the average annual change over the period.
(e) Excludes women whose gestation at first antenatal visit was not stated.
(f) Data are directly age-standardised using the Australian female population who gave birth in 2010 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 minus the directly age-standardised non-Indigenous rate.

Note: Data might differ from previously published versions of this report due to data updates and corrections.

Source: AIHW National Perinatal Data Collection.

Table A4: Numbers and rates (per 100,000 population) of notifications of sexually transmissible infections and bloodborne viruses among teenagers aged 15–19, by Indigenous status and state/territory, chlamydia, gonorrhoea, syphilis, hepatitis C, hepatitis B (2010–2012); HIV (2009–2011)(a)(b)

	Indigenous		Other(c)		
State/territory	**Number**	**Rate (per 100,000)(d)**	**Rate (per 100,000)(d)**	**Rate ratio(e)(f)**	**Rate difference(g)**
		Chlamydia			
Qld	4,286	7,652.9	1,537.7	5.0	6,115.2
WA	2,130	8,497.2	1,637.4	5.2	6,859.8
SA	327	3,079.7	1,174.7	2.6	1,905.0
Tas	55	758.3	2,286.1	0.3	–1,527.8
NT	1,391	6,510.3	2,791.5	2.3	3,718.9
Qld, WA, SA, Tas, NT	**8,189**	**6,806.6**	**1,559.7**	**4.4**	**5,247.0**
		Gonorrhoea			
Vic	n.p.	n.p.	37.9	n.p.	n.p.
Qld	1,557	2,780.1	86.2	32.2	2,693.9
WA	1,143	4,559.8	53.9	84.6	4,505.9
SA	165	1,554.0	27.0	57.5	1,526.9
Tas	—	—	6.3	. .	–6.3
ACT	n.p.	n.p.	24.6	n.p.	n.p.
NT	1,419	6,641.4	362.1	18.3	6,279.3
Vic, Qld, WA, SA, Tas, ACT, NT	**4,292**	**3,182.3**	**55.4**	**57.4**	**3,126.9**
		Syphilis(h)			
NSW	—	—	1.7	—	–1.7
Vic	—	—	3.8	—	–3.8
Qld	128	228.6	3.5	65.3	225.1
WA	14	55.9	1.6	35.2	54.3
SA	—	—	n.p.	n.p.	n.p.
Tas	—	—	n.p.	n.p.	n.p.
ACT	—	—	n.p.	n.p.	n.p.
NT	14	65.5	39.8	1.6	25.7
Australia	**156**	**80.8**	**2.8**	**29.2**	**78.0**

(continued)

Table A4 (continued): Numbers and rates (per 100,000 population) of notifications of sexually transmissible infections and bloodborne viruses among teenagers aged 15–19, by Indigenous status and state/territory, chlamydia, gonorrhoea, syphilis, hepatitis C, hepatitis B (2010–2012); HIV (2009–2011)[(a)(b)]

	Indigenous		Other[(c)]		
State/territory	Number	Rate (per 100,000)[(d)]	Rate (per 100,000)[(d)]	Rate ratio[(e)(f)]	Rate difference[(g)]
		Hepatitis C[(i)]			
Qld	32	57.1	21.8	2.6	35.3
WA	25	99.7	16.1	6.2	83.7
SA	10	94.2	7.8	12.1	86.4
Tas	n.p.	n.p.	20.1	n.p.	n.p.
NT	n.p.	n.p.	29.0	n.p.	n.p.
Qld, WA, SA, Tas, NT	**74**	**61.5**	**17.9**	**3.4**	**43.6**
		Hepatitis B[(i)]			
WA	13	51.9	33.3	1.6	18.6
SA	n.p.	n.p.	20.5	n.p.	n.p.
ACT	n.p.	n.p.	16.4	n.p.	n.p.
NT	14	65.5	126.7	0.5	–61.2
WA, SA, ACT, NT	**30**	**51.1**	**30.3**	**1.7**	**20.9**
		HIV[(j)]			
NSW	n.p.	n.p.	1.1	n.p.	n.p.
Vic	n.p.	n.p.	0.8	n.p.	n.p.
Qld	n.p.	n.p.	1.4	n.p.	n.p.
WA	n.p.	n.p.	n.p.	n.p.	n.p.
SA	n.p.	n.p.	n.p.	n.p.	n.p.
Tas	n.p.	n.p.	n.p.	n.p.	n.p.
ACT	n.p.	n.p.	n.p.	n.p.	n.p.
NT	n.p.	n.p.	n.p.	n.p.	n.p.
Australia	**n.p.**	**n.p.**	**1.0**	**n.p.**	**n.p.**

(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 that had at least 50% completeness of Indigenous status reporting for teenagers aged 15–19 for each disease for the reported period. Adequate Indigenous identification data are not available for other jurisdictions, so it is not possible to comment on STI rates in Indigenous teenagers in those jurisdictions (see Appendix C for further information).

(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.

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

(f) 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 might vary between reports, as fairly minor changes in rates can result in large changes in the resulting ratios.

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

(h) Syphilis data are limited to non-congenital syphilis cases only, including cases of less than 2 years, more than 2 years, and unknown duration.

(i) Hepatitis C and hepatitis B data contain notifications classified as either 'newly acquired' or 'unspecified', whether or not the infection was sexually transmitted. Hepatitis C data for Queensland includes 'unspecified' notifications only.

(j) HIV data contain notifications of newly diagnosed HIV infection, and includes HIV infections known to have been newly acquired.

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

Table A5: Notifications per 100,000 of sexually transmissible infections among teenagers aged 15–19, by Indigenous status and sex, chlamydia, gonorrhoea, syphilis, hepatitis C and hepatitis B, 2010–2012 combined[(a)(b)(c)]

	Indigenous			Other[(d)]		
	Males	**Females**	**Rate ratio[(e)]**	**Males**	**Females**	**Rate ratio[(e)]**
Chlamydia	4,267.0	9,496.2	0.4	754.8	2,404.2	0.3
Gonorrhoea	2,430.8	3,978.9	0.6	61.8	48.7	1.3
Syphilis[(f)]	65.5	96.9	0.7	4.3	1.1	4.0
Hepatitis C[(g)]	54.9	68.5	0.8	18.9	16.9	1.1
Hepatitis B[(g)]	49.7	52.6	0.9	44.5	15.2	2.9

(a) Calendar year reporting. Data are presented for a 3-year period because of the small numbers in individual years.

(b) Data are reported for only those jurisdictions that had at least 50% completeness of Indigenous status reporting for teenagers aged 15–19 for each disease for the reported period. Adequate Indigenous identification data are not available for other jurisdictions, so it is not possible to comment on STI rates in Indigenous teenagers in those jurisdictions (see Appendix C for further information). Queensland, Western Australia, South Australia, Tasmania and the Northern Territory are included for chlamydia; Victoria, Queensland, Western Australia, South Australia, Tasmania, the Australian Capital Territory and the Northern Territory are included for gonorrhoea; all jurisdictions are included for syphilis; Western Australia, South Australia, the Australian Capital Territory and the Northern Territory are included for hepatitis B; and Queensland, Western Australia, South Australia, Tasmania and the Northern Territory are included for hepatitis C. Except for syphilis they should not be considered to be a whole-of-Australia figure.

(c) Number of notifications per 100,000 population aged 15–19. Numerator for calculations is the combined number of notifications over 3 years (2010–2012); denominator is the combined population of those 3 years.

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

(e) Rate ratio is the male rate divided by the female rate.

(f) Syphilis data are limited to non-congenital syphilis cases only, including cases of less than 2 years, more than 2 years, and unknown duration.

(g) Hepatitis C and hepatitis B data contain notifications classified as either 'newly acquired' or 'unspecified', whether or not the infection was sexually transmitted. Hepatitis C data for Queensland includes 'unspecified' notifications only.

Source: AIHW analysis of NNDSS data.

Table A6: Numbers and rates (per 100,000 population) of notifications of chlamydia, gonorrhoea, syphilis, hepatitis C, and hepatitis B among teenagers aged 15–19, by Indigenous status, WA, SA and the NT combined, 1994–1996 to 2010–2012(a)

	1994–1996	1997–1998	1999–2000	2001–2003	2004–2006	2007–2009	2010–2012	Short-term change (2008 to 2012)(b)	Long-term change (1994–1996 to 2010–2012)(b)
Chlamydia									
Indigenous number	749	839	849	1,937	2,729	3,178	3,848	25.5	514.8*
Indigenous rate (per 100,000)(c)	1,940.6	3,126.9	2,960.7	4,176.4	5,456.3	5,794.5	6,744.8	21.0	277.1*
Other rate (per 100,000)(c)(d)	172.5	340.0	288.9	448.9	704.5	1,071.3	1,495.4	45.2	835.8*
Rate ratio(e)	11.2	9.2	10.2	9.3	7.7	5.4	4.5	–16.7	–66.2*
Rate difference(f)	1,768.1	2,786.9	2,671.8	3,727.5	4,751.7	4,723.2	5,249.5	15.3	222.6*
Gonorrhoea									
Indigenous number	1,062	999	1,102	2,137	2,701	2,519	2,727	11.8	217.0*
Indigenous rate (per 100,000)(c)	2,751.6	3,723.2	3,842.9	4,607.6	5,400.3	4,592.9	4,779.9	7.8	79.4*
Other rate (per 100,000)(c)(d)	33.4	73.4	49.4	57.0	40.9	45.6	54.2	40.9	–1.6
Rate ratio(e)	82.4	50.7	77.8	80.9	132.1	100.7	88.1	–19.0	48.8
Rate difference(f)	2,718.2	3,649.7	3,793.5	4,550.6	5,359.4	4,547.3	4,725.7	7.5	80.4*
Syphilis(g)									
Indigenous number	351	182	137	358	227	130	28	–68.9	–69.8
Indigenous rate (per 100,000)(c)	909.4	678.3	477.8	771.9	453.9	237.0	49.1	–69.4	–93.7*
Other rate (per 100,000)(c)(d)	3.1	1.8	4.7	6.0	2.0	2.9	2.4	3.7	–26.5
Rate ratio(e)	294.2	386.8	102.4	128.7	225.7	83.2	20.1	–53.9	–104.7*
Rate difference(f)	906.3	676.5	473.1	765.9	451.8	234.2	46.6	–70.4	–93.9*

(continued)

Table A6 (continued): Numbers and rates (per 100,000 population) of notifications of chlamydia, gonorrhoea, syphilis, hepatitis C, and hepatitis B among teenagers aged 15–19, by Indigenous status, WA, SA and the NT combined, 1994–1996 to 2010–2012[(a)]

	1994–1996	1997–1998	1999–2000	2001–2003	2004–2006	2007–2009	2010–2012	Short-term change (2008 to 2012)[(b)]	Long-term change (1994–1996 to 2010–2012)[(b)]
					Hepatitis C[(h)]				
Indigenous number	n.a.	46	43	67	50	38	40	8.9	–23.9
Indigenous rate (per 100,000)[(c)]	n.a.	171.4	150.0	144.5	100.0	69.3	70.1	4.6	–72.2*
Other rate (per 100,000)[(c)(d)]	n.a.	56.3	52.2	38.8	21.4	14.0	13.3	–5.5	–95.7*
Rate ratio[(e)]	n.a.	3.0	2.9	3.7	4.7	5.0	5.3	–5.2	94.6*
Rate difference[(f)]	n.a.	115.1	97.8	105.6	78.5	55.3	56.8	10.1	–60.8*
					Hepatitis B[(h)]				
Indigenous number	n.a.	32	40	69	53	37	29	–20.0	–27.9
Indigenous rate (per 100,000)[(c)]	n.a.	119.3	139.5	148.8	106.0	67.5	50.8	–22.6	–82.1*
Other rate (per 100,000)[(c)(d)]	n.a.	32.0	28.2	21.5	23.2	23.3	31.6	115.0*	–5.0
Rate ratio[(e)]	n.a.	3.7	4.9	6.9	4.6	2.9	1.6	–51.6	–87.5
Rate difference[(f)]	n.a.	87.3	111.3	127.2	82.8	44.1	19.3	–63.2	–110.4*

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

(a) A cut-off of 50% completeness of Indigenous status reporting for the reported periods for teenagers aged 15–19 was used to determine inclusion for the analyses in this report. Indigenous identification in notifications for chlamydia, gonorrhoea and syphilis are considered reliable for reporting from 1994 onwards in Western Australia, South Australia and the Northern Territory. Indigenous identification in notifications for hepatitis C and hepatitis B are considered reliable for reporting from 1997 onwards in these 3 jurisdictions. Adequate Indigenous identification data are not available for other jurisdictions, so it is not possible to comment on STI rates in Indigenous teenagers in those jurisdictions.

(b) Percentage change is based on the average annual change over the period. Short-term trends are based on single-year data for 2008 to 2012, which have not been presented separately due to small numbers.

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

(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.

(g) Syphilis data are limited to non-congenital syphilis cases only, including cases of less than 2 years, more than 2 years, and unknown duration.

(h) Hepatitis C and hepatitis B data contain notifications classified as either 'newly acquired' or 'unspecified', whether or not the infection was sexually transmitted.

Source: AIHW analyses of NNDSS data.

Table A7: Numbers and rates (per 100,000 population) of notifications of HIV, among teenagers aged 15–19, by Indigenous status, NSW, Vic, Qld, WA, SA, Tas and the NT, 1998–1999 to 2010–2011

	1998–1999	2000–2001	2002–2003	2004–2005	2006–2007	2008–2009	2010–2011	Short-term change (2008 to 2011)[(a)]	Long-term change (1998–1999 to 2010–2011)[(a)]
Indigenous number	n.p.	n.p.	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.	n.p.	n.p.
Other rate (per 100,000)[(b)(c)]	1.0	0.9	0.6	0.8	0.9	0.8	1.1	54.9*	5.8
Rate ratio[(d)]	n.p.	n.p.	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.	n.p.	n.p.

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

(a) Percentage change is based on the average annual change over the period.

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

(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 HIV Registry.

Table A8: Incidence of low birthweight among live born singleton babies, by maternal Indigenous status and state/territory, 2008–2010(a)(b)(c)(d)

	Indigenous(e)				Non-Indigenous					
	Number	Per cent(f)	95% LCI(g)	95% UCI(g)	Number	Per cent(f)	95% LCI(g)	95% UCI(g)	Rate ratio(h)	Rate difference(i)
NSW	919	10.1	n.p.	n.p.	11,601	4.2	n.p.	n.p.	2.4*	5.9*
Vic	254	11.7	n.p.	n.p.	9,398	4.6	n.p.	n.p.	2.5*	7.0*
Qld	958	9.6	n.p.	n.p.	7,667	4.5	n.p.	n.p.	2.1*	5.1*
WA	660	13.1	n.p.	n.p.	3,661	4.3	n.p.	n.p.	3.0*	8.8*
SA	219	11.8	n.p.	n.p.	2,651	4.8	n.p.	n.p.	2.5*	7.1*
Tas(j)	64	8.2	n.p.	n.p.	897	5.2	n.p.	n.p.	1.6*	3.0*
ACT(j)	24	12.1	n.p.	n.p.	545	3.9	n.p.	n.p.	3.1*	8.2*
NT	520	12.9	n.p.	n.p.	319	4.5	n.p.	n.p.	2.9*	8.3*
Australia	**3,618**	**10.9**	**10.6**	**11.3**	**36,739**	**4.5**	**4.4**	**4.5**	**2.4***	**6.5***

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

(a) Low birthweight is defined as less than 2500grams. Data exclude 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) 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 exclude babies born to non-Indigenous mothers and Indigenous fathers. As a result, the information might not be based on the total number of Indigenous babies.

(f) Percentage of live born 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 minus the proportion of low birthweight babies born to non-Indigenous mothers.

(j) Birthweight data on babies born to Indigenous mothers living in Tasmania and the Australian Capital Territory should be viewed with caution, as they are based on small numbers of births.

Source: AIHW (unpublished) National Perinatal Data Collection.

Table A9: Incidence of low birthweight among live born singleton babies, by maternal Indigenous status , maternal age and state/territory, 2008–2010[a][b][c][d]

	Indigenous[f]				Non-Indigenous					
	Number	Per cent[g]	95% LCI[h]	95% UCI[h]	Number	Per cent[g]	95% LCI[h]	95% UCI[h]	Rate ratio[i]	Rate difference[j]
					Mothers aged less than 20 years					
NSW	203	11.5	n.p.	n.p.	522	6.4	n.p.	n.p.	1.8*	5.1*
Vic	47	13.8	n.p.	n.p.	350	7.4	n.p.	n.p.	1.9*	6.4*
Qld	200	10.2	n.p.	n.p.	499	6.2	n.p.	n.p.	1.6*	4.0*
WA	151	13.4	n.p.	n.p.	168	5.3	n.p.	n.p.	2.5*	8.0*
SA	37	10.0	n.p.	n.p.	150	7.2	n.p.	n.p.	1.4	2.8
Tas[e]	8	6.6	n.p.	n.p.	87	7.9	n.p.	n.p.	0.8	–1.3
ACT[e]	n.p.	n.p.	n.p.	n.p.	19	7.1	n.p.	n.p.	n.p.	n.p.
NT	124	13.6	n.p.	n.p.	15	5.7	n.p.	n.p.	2.4*	7.8*
Australia	**773**	**11.6**	**10.9**	**12.4**	**1,810**	**6.5**	**6.2**	**6.8**	**1.8***	**5.1***
					Mothers aged 20 years and over					
NSW	716	9.8	n.p.	n.p.	11,077	4.2	n.p.	n.p.	2.3*	5.6*
Vic	206	11.3	n.p.	n.p.	9,043	4.6	n.p.	n.p.	2.5*	6.7*
Qld	758	9.5	n.p.	n.p.	7,168	4.5	n.p.	n.p.	2.1*	5.0*
WA	509	13.0	n.p.	n.p.	3,493	4.3	n.p.	n.p.	3.0*	8.7*
SA	182	12.3	n.p.	n.p.	2,501	4.7	n.p.	n.p.	2.6*	7.6*
Tas[e]	56	8.4	n.p.	n.p.	810	5.0	n.p.	n.p.	1.7*	3.5*
ACT[e]	21	13.0	n.p.	n.p.	526	3.8	n.p.	n.p.	3.4*	9.2*
NT	396	12.6	n.p.	n.p.	304	4.5	n.p.	n.p.	2.8*	8.2*
Australia	**2,844**	**10.7**	**10.4**	**11.1**	**34,922**	**4.4**	**4.3**	**4.4**	**2.4***	**6.3***

(continued)

Table A9 (continued): Incidence of low birthweight among live born singleton babies, by maternal Indigenous status, maternal age and state/territory, 2008–2010(a)(b)(c)(d)

	Indigenous(f)				Non-Indigenous					
	Number	**Per cent**(g)	**95% LCI**(h)	**95% UCI**(h)	**Number**	**Per cent**(g)	**95% LCI**(h)	**95% UCI**(h)	**Rate ratio**(i)	**Rate difference**(j)
					Total mothers					
NSW	919	10.1	n.p.	n.p.	11,601	4.2	n.p.	n.p.	2.4*	5.9*
Vic	254	11.7	n.p.	n.p.	9,398	4.6	n.p.	n.p.	2.5*	7.0*
Qld	958	9.6	n.p.	n.p.	7,667	4.5	n.p.	n.p.	2.1*	5.1*
WA	660	13.1	n.p.	n.p.	3,661	4.3	n.p.	n.p.	3.0*	8.8*
SA	219	11.8	n.p.	n.p.	2,651	4.8	n.p.	n.p.	2.5*	7.1*
Tas(e)	64	8.2	n.p.	n.p.	897	5.2	n.p.	n.p.	1.6*	3.0*
ACT(e)	24	12.1	n.p.	n.p.	545	3.9	n.p.	n.p.	3.1*	8.2*
NT	520	12.9	n.p.	n.p.	319	4.5	n.p.	n.p.	2.9*	8.3*
Australia	**3,618**	**10.9**	**10.6**	**11.3**	**36,739**	**4.5**	**4.4**	**4.5**	**2.4***	**6.5***

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

(a) Low birthweight is defined as less than 2500grams. Data exclude 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) 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 living in Tasmania and the Australian Capital Territory 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 exclude babies born to non-Indigenous mothers and Indigenous fathers. As a result, the information might not be based on the total number of Indigenous babies.

(g) Percentage of live born 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 minus the proportion of low birthweight babies born to non-Indigenous mothers.

Source: AIHW (unpublished) National Perinatal Data Collection.

Table A10: Incidence of low birthweight among live born singleton babies, by maternal Indigenous status and state/territory, NSW, Vic, Qld, WA, SA and the NT, 2000–2010(a)(b)(c)(d)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Change 2000–2010 (per cent)(e)
						NSW						
Indigenous												
Number	231	246	249	242	259	269	283	298	314	294	300	. .
Per cent	11.0	11.7	11.6	11.2	11.2	10.8	10.8	10.3	10.4	10.0	9.7	–15.9*
Non-Indigenous												
Number	3,604	3,556	3,582	3,530	3,572	3,669	3,778	3,888	3,947	3,813	3,766	. .
Per cent	4.4	4.4	4.4	4.3	4.4	4.3	4.3	4.3	4.3	4.2	4.2	–5.0*
Rate ratio(f)	2.5	2.7	2.6	2.6	2.5	2.5	2.5	2.4	2.4	2.4	2.3	–11.1*
Rate difference(g)	6.6	7.3	7.2	6.9	6.8	6.5	6.4	6.0	6.1	5.8	5.5	–23.1*
						Vic						
Indigenous												
Number	45	38	50	36	54	60	54	65	85	91	78	. .
Per cent	13.9	10.8	13.7	11.4	13.9	13.1	10.9	10.6	13.1	12.2	10.0	–13.7
Non-Indigenous												
Number	2,752	2,722	2,859	2,822	2,791	2,917	3,028	3,147	3,067	3,076	3,251	. .
Per cent	4.7	4.7	4.8	4.8	4.7	4.7	4.7	4.7	4.5	4.6	4.8	–1.7
Rate ratio(f)	3.0	2.3	2.8	2.4	3.0	2.8	2.3	2.3	2.9	2.7	2.1	–11.9
Rate difference(g)	9.3	6.2	8.9	6.6	9.2	8.4	6.2	5.9	8.5	7.6	5.2	–19.8

(continued)

Table A10 (continued): Incidence of low birthweight among live born singleton babies, by maternal Indigenous status and state/territory, NSW, Vic, Qld, WA, SA and the NT, 2000–2010[(a)(b)(c)(d)]

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Per cent change (2000–2010)[(e)]
						Qld						
Indigenous												
Number	276	245	287	291	283	317	276	308	294	320	344	. .
Per cent	10.3	9.4	10.8	10.4	10.5	10.6	9.7	10.0	8.9	9.8	10.1	–5.9
Non-Indigenous												
Number	2,080	2,027	2,033	2,075	2,163	2,305	2,476	2,391	2,445	2,637	2,584	. .
Per cent	4.6	4.5	4.6	4.5	4.7	4.6	4.8	4.3	4.4	4.7	4.6	–0.8
Rate ratio[(f)]	2.2	2.1	2.4	2.3	2.2	2.3	2.0	2.3	2.0	2.1	2.2	–5.1
Rate difference[(g)]	5.6	4.9	6.3	5.9	5.8	6.0	4.9	5.6	4.6	5.2	5.5	–10.1
						WA						
Indigenous												
Number	194	210	195	191	205	224	227	249	233	223	204	. .
Per cent	13.2	14.0	12.4	12.9	13.9	14.2	13.2	14.4	14.0	13.0	12.3	–1.2
Non-Indigenous												
Number	991	944	963	949	1,051	1,069	1,150	1,214	1,213	1,221	1,227	. .
Per cent	4.3	4.2	4.3	4.3	4.6	4.4	4.4	4.4	4.3	4.3	4.3	0.7
Rate ratio[(f)]	3.0	3.3	2.9	3.0	3.0	3.2	3.0	3.2	3.2	3.0	2.9	–2.1
Rate difference[(g)]	8.9	9.8	8.1	8.6	9.3	9.8	8.8	9.9	9.6	8.7	8.0	–2.1

(continued)

Table A10 (continued): Incidence of low birthweight among live born singleton babies, by maternal Indigenous status and state/territory, NSW, Vic, Qld, WA, SA and the NT, 2000–2010(a)(b)(c)(d)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Per cent change (2000–2010)(e)
						SA						
Indigenous												
Number	67	55	60	65	69	71	68	81	75	63	81	. .
Per cent	15.5	14.6	14.6	14.7	13.7	14.6	12.1	13.8	12.4	10.4	12.7	–24.0*
Non-Indigenous												
Number	811	790	763	728	750	844	826	861	849	921	881	. .
Per cent	4.9	4.8	4.6	4.4	4.6	5.0	4.7	4.7	4.6	5.0	4.8	1.7
Rate ratio(f)	3.2	3.1	3.2	3.4	3.0	2.9	2.6	3.0	2.7	2.1	2.7	–25.9*
Rate difference(g)	10.6	9.9	10.0	10.3	9.1	9.7	7.4	9.2	7.8	5.4	7.9	–35.8*
						NT						
Indigenous												
Number	164	171	170	192	178	186	185	169	184	174	163	. .
Per cent	12.7	11.9	12.3	14.0	14.0	14.0	13.6	12.3	13.7	12.5	12.4	1.0
Non-Indigenous												
Number	111	100	96	120	123	123	114	89	98	117	104	. .
Per cent	5.0	4.6	4.4	5.5	5.8	5.7	5.3	4.1	4.1	5.0	4.4	–10.5
Rate ratio(f)	2.5	2.6	2.8	2.6	2.4	2.5	2.5	3.0	3.3	2.5	2.8	13.9
Rate difference(g)	7.7	7.3	7.9	8.5	8.2	8.3	8.2	8.3	9.5	7.5	8.1	8.6

(continued)

Table A10 (continued): Incidence of low birthweight among live born singleton babies, by maternal Indigenous status and state/territory, NSW, Vic, Qld, WA, SA and the NT, 2000–2010(a)(b)(c)(d)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Per cent change (2000–2010)(e)
						Total(h)						
Indigenous												
Number	977	965	1,011	1,017	1,048	1,127	1,093	1,165	1,172	1,153	1,170	. .
Per cent	11.7	11.5	11.9	11.9	12.1	12.1	11.4	11.3	11.1	10.8	10.7	–9.2*
Non-Indigenous												
Number	10,349	10,139	10,296	10,224	10,450	10,927	11,372	11,506	11,545	11,703	11,813	. .
Per cent	4.5	4.5	4.6	4.5	4.6	4.5	4.6	4.4	4.4	4.4	4.5	–2.5
Rate ratio(f)	2.6	2.6	2.6	2.6	2.6	2.7	2.5	2.6	2.5	2.4	2.4	–6.9*
Rate difference(g)	7.2	7.0	7.3	7.4	7.5	7.5	6.8	6.9	6.7	6.4	6.3	–13.5*

* 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 exclude 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 exclude babies born to non-Indigenous mothers and Indigenous fathers. As a result, the information might not be based on the total number of Indigenous babies.

(e) Percentage change is 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 Tasmania and the Australian Capital Territory, 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.

Source: AIHW (unpublished) National Perinatal Data Collection.

Table A11: Incidence of low birthweight among live born singleton babies, by maternal Indigenous status and maternal age, NSW, Vic, Qld, WA, SA and the NT combined, 2000–2010[(a)(b)(c)(d)(e)]

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Per cent change (2000–2010)[(f)]
						Number						
Indigenous												
Mothers aged less than 20	240	241	235	248	247	263	245	243	242	255	258	. .
Mothers aged 20 years and over	736	724	776	769	801	864	848	922	930	897	912	. .
Total	**977**	**965**	**1,011**	**1,017**	**1,048**	**1,127**	**1,093**	**1,165**	**1,172**	**1,153**	**1,170**	**. .**
Non-Indigenous												
Mothers aged less than 20	703	647	587	587	617	633	612	619	579	584	522	. .
Mothers aged 20 years and over	9,645	9,492	9,706	9,636	9,833	10,294	10,758	10,886	10,964	11,117	11,288	. .
Total	**10,349**	**10,139**	**10,296**	**10,224**	**10,450**	**10,927**	**11,372**	**11,506**	**11,545**	**11,703**	**11,813**	**. .**
						Per cent						
Indigenous												
Mothers aged less than 20	12.5	12.7	12.2	12.7	12.8	12.9	12.0	12.0	11.1	12.1	11.9	–8.2*
Mothers aged 20 years and over	11.5	11.2	11.8	11.7	11.9	11.9	11.2	11.2	11.1	10.5	10.5	–9.1*
Total	**11.7**	**11.5**	**11.9**	**11.9**	**12.1**	**12.1**	**11.4**	**11.3**	**11.1**	**10.8**	**10.7**	**–9.2***
Non-Indigenous												
Mothers aged less than 20	7.1	6.7	6.2	6.6	7.0	7.1	6.7	6.8	6.3	6.7	6.2	–5.6
Mothers aged 20 years and over	4.4	4.4	4.5	4.4	4.5	4.4	4.5	4.3	4.3	4.4	4.4	–1.7
Total	**4.5**	**4.5**	**4.6**	**4.5**	**4.6**	**4.5**	**4.6**	**4.4**	**4.4**	**4.4**	**4.5**	**–2.5**

(continued)

Table A11 (continued): Incidence of low birthweight among live born singleton babies, by maternal Indigenous status and maternal age, NSW, Vic, Qld, WA, SA and the NT combined, 2000–2010[(a)(b)(c)(d)(e)]

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Per cent change (2000–2010)[(f)]
					Rate ratio[(g)]							
Mothers aged less than 20	1.7	1.9	2.0	1.9	1.8	1.8	1.8	1.7	1.7	1.8	1.9	–2.7
Mothers aged 20 years and over	2.6	2.5	2.6	2.6	2.7	2.7	2.5	2.6	2.6	2.4	2.4	–7.5*
Total	**2.6**	**2.6**	**2.6**	**2.6**	**2.6**	**2.7**	**2.5**	**2.6**	**2.5**	**2.4**	**2.4**	**–6.9***
					Rate difference[(h)]							
Mothers aged less than 20	5.3	6.1	5.9	6.1	5.8	5.8	5.2	5.1	4.7	5.5	5.7	–11.7
Mothers aged 20 years and over	7.1	6.8	7.3	7.3	7.4	7.4	6.7	6.9	6.8	6.2	6.0	–13.8*
Total	**7.2**	**7.0**	**7.3**	**7.4**	**7.5**	**7.5**	**6.8**	**6.9**	**6.7**	**6.4**	**6.3**	**–13.5***

* 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 exclude 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 exclude babies born to non-Indigenous mothers and Indigenous fathers. As a result, the information might not be based on the total number of Indigenous babies.

(e) Excludes Tasmania and the Australian Capital Territory, 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 .

(f) Percentage change is 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 A12: Infant (less than 1 year) mortality, by Indigenous status and state/territory, NSW, Qld, WA, SA and the NT, 2007–2011(a)(b)(c)(d)(e)(f)

	Indigenous		Non-Indigenous			
	Number of deaths	Rate (per 1,000 live births)(g)	Number of deaths	Rate (per 1,000 live births)(g)	Rate ratio(h)	Rate difference(i)
NSW	128	4.9	1,795	3.8	1.3	1.0
Qld(j)	182	7.4	1,355	4.6	1.6	2.8
WA	89	7.5	386	2.7	2.8	4.8
SA	28	6.1	311	3.3	1.9	2.9
NT	99	12.7	43	3.7	3.5	9.1
NSW, Qld, WA, SA, NT combined(k)	**526**	**7.0**	**3,890**	**3.8**	**1.8**	**3.2**

(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 1,000 live births during a given period.

(b) Data are reported individually by jurisdiction of residence for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only, which have sufficient levels of Indigenous 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 Australians are registered, it is likely that some are not accurately identified as Indigenous. As a result, 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) Deaths registered in 2009 and earlier are based on the final version of cause of death data; deaths registered in 2010 and 2011 are based on revised and preliminary versions, respectively, and are subject to further revision.

(g) Rates are crude rates (per 1,000 live births) (denominator sourced from ABS 2013).

(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.

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

(k) Total includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory, which have sufficient levels of Indigenous identification and sufficient numbers of deaths to support mortality analysis. They do not present an whole-of-Australia figure.

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

Table A13: Infant (less than 1 year) mortality rates, by Indigenous status, NSW, Qld, WA, SA and the NT combined, 2001–2011(a)(b)(c)(d)(e)(f)(g)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Short-term change (2008–2011)(h)	Long-term change (2001–2011)(h)
Number of deaths													
Indigenous	116	130	115	111	124	112	114	101	97	109	105	7.1	–17.5*
Non-Indigenous	822	734	670	716	795	790	758	791	817	799	725	–8.2	3.6
Rate per 1,000 live births(i)													
Indigenous	11.2	12.5	10.9	10.2	10.9	9.4	8.3	7.0	6.4	6.9	6.6	–2.3	–55.3*
Non-Indigenous	5.0	4.4	4.0	4.3	4.4	4.3	3.9	3.9	4.0	3.9	3.6	–7.5	–19.2*
Rate ratio(j)	2.2	2.8	2.7	2.4	2.5	2.2	2.1	1.8	1.6	1.8	1.8	5.2	–45.2*
Rate difference(k)	6.2	8.1	6.9	6.0	6.4	5.1	4.4	3.1	2.3	3.0	3.0	4.1	–84.5*

* 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 1,000 live births during a given period.

(b) Data are presented for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only, which have sufficient levels of Indigenous identification and sufficient numbers of deaths to support mortality analysis 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. As a result, these statistics are likely to underestimate the Indigenous infant deaths and, depending on the under-identification in births, might 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) Deaths registered in 2009 and earlier are based on the final version of cause of death data; deaths registered in 2010 and 2011 are based on revised and preliminary versions, respectively, and are subject to further revision.

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

(h) Percentage change is based on the average annual change over the period.

(i) Number per 1,000 live births. The variability in infant mortality rates is partially due to the relatively small number of infant deaths registered. Note that rates might differ slightly from those published in the previous edition of this report for comparable years of data due to the use of updated births data (as published in ABS 2013).

(j) Rate ratio is the Indigenous mortality rate divided by the non-Indigenous mortality rate.

(k) Rate difference is the Indigenous mortality rate minus the non-Indigenous mortality rate.

Source: AIHW National Mortality Database; ABS births.

Table A14: Tobacco smoking during pregnancy, among Indigenous mothers, by maternal age and state/territory, 2010[a][b][c]

	NSW	Vic	Qld	WA	SA[d][e]	Tas	ACT	NT[e]	Total
				Mothers aged less than 20 years					
Number									
Smoked	304	56	380	158	56	19	8	135	1,116
Did not smoke	303	62	307	181	61	11	n.p.	137	1,064
Not stated	0	6	6	33	n.p.	0	n.p.	38	84
Total[f]	**607**	**124**	**693**	**372**	**118**	**30**	**10**	**310**	**2,264**
Per cent[g]									
Smoked	50.1	47.5	55.3	46.6	47.9	63.3	80.0	49.6	51.2
Did not smoke	49.9	52.5	44.7	53.4	52.1	36.7	20.0	50.4	48.8
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
				Mothers aged 20 years and over					
Number									
Smoked	1,253	272	1,466	613	314	104	30	502	4,554
Did not smoke	1,345	373	1,295	583	204	93	24	423	4,340
Not stated	7	31	30	134	13	n.p.	n.p.	111	328
Total[f]	**2,605**	**676**	**2,791**	**1,330**	**531**	**199**	**54**	**1,036**	**9,222**
Per cent[g]									
Smoked	48.2	42.2	53.1	51.3	60.6	52.8	55.6	54.3	51.2
Did not smoke	51.8	57.8	46.9	48.7	39.4	47.2	44.4	45.7	48.8
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
				Total mothers					
Number									
Smoked	1,557	329	1,846	771	370	123	38	637	5,671
Did not smoke	1,648	435	1,602	764	265	104	26	560	5,404
Not stated	7	37	36	167	14	n.p.	n.p.	149	412
Total[f]	**3,212**	**801**	**3,484**	**1,702**	**649**	**229**	**64**	**1,346**	**11,487**
Per cent[g]									
Smoked	48.6	43.1	53.5	50.2	58.3	54.2	59.4	53.2	51.2
Did not smoke	51.4	56.9	46.5	49.8	41.7	45.8	40.6	46.8	48.8
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(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) The Perinatal National Minimum Data Set includes 2 standardised data items on smoking during pregnancy for births from July 2010: smoking during first 20 weeks of pregnancy; and smoking after 20 weeks of pregnancy. Standardised data were implemented by Victoria, Queensland, Western Australia, and the Australian Capital Territory for the whole year, and partially implemented by South Australia, Tasmania, and the Northern Territory from July 2010. For the remainder, data from non-standard smoking items made available as part of the National Perinatal Data Collection have been used, The question used is not consistent across jurisdictions, so caution should be used when interpreting these numbers.

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

(e) For women who gave birth in South Australia and the Northern Territory, smoking status was recorded at the first antenatal visit.

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

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

Source: AIHW National Perinatal Data Collection.

Table A15: Age-standardised proportions of tobacco smoking during pregnancy, by maternal Indigenous status, maternal age and state/ territory, 2010 (per cent) (a)(b)(c)(d)(e)

	NSW	Vic	Qld	WA	SA(f)(g)	Tas(h)	ACT(h)	NT(g)	Total(i)	Total LCI(j)	Total UCI(j)
							Mothers aged less than 20 years				
Indigenous											
Smoked	50.1	47.5	55.3	46.6	47.9	63.3	80.0	49.6	51.2	49.1	53.3
Did not smoke	49.9	52.5	44.7	53.4	52.1	36.7	20.0	50.4	48.8	46.7	50.9
Non-Indigenous											
Smoked	29.4	36.9	36.5	28.7	39.8	45.5	51.2	25.6	34.2	33.3	35.2
Did not smoke	70.6	63.1	63.5	71.3	60.2	54.5	48.8	74.4	65.8	64.8	66.7
Rate ratio(k)	1.7*	1.3	1.5*	1.6*	1.2	1.4	1.6	1.9*	1.5*	. .	. .
Rate difference(l)	20.7*	10.6	18.8*	17.9*	8.0	17.8	28.8	24.0*	16.9*	. .	. .
							Mothers aged 20 years and over				
Indigenous											
Smoked	48.2	42.2	53.1	51.3	60.6	52.8	55.6	54.3	51.2	50.2	52.2
Did not smoke	51.8	57.8	46.9	48.7	39.4	47.2	44.4	45.7	48.8	47.8	49.8
Non-Indigenous											
Smoked	9.5	10.9	14.2	9.9	15.5	20.5	9.2	13.2	11.5	11.4	11.6
Did not smoke	90.5	89.1	85.8	90.1	84.5	79.5	90.8	86.8	88.5	88.4	88.6
Rate ratio(k)	5.1*	3.9*	3.7*	5.2*	3.9*	2.6*	6.0*	4.1*	4.5*	. .	. .
Rate difference(l)	38.7*	31.2*	38.9*	41.4*	45.1*	32.3*	46.4*	41.1*	39.7*	. .	. .
							Total mothers				
Indigenous											
Smoked	46.5	39.8	51.1	52.7	59.3	n.p.	n.p.	51.3	49.3	47.7	50.9
Did not smoke	53.5	60.2	48.9	47.3	40.7	n.p.	n.p.	48.7	50.7	49.0	52.4
Non-Indigenous											
Smoked	10.5	12.5	14.6	10.6	16.3	20.1	11.8	13.5	12.5	12.4	12.6
Did not smoke	89.5	87.5	85.4	89.4	83.7	79.9	88.2	86.5	87.5	87.2	87.9
Rate ratio(k)	4.4*	3.2*	3.5*	5.0*	3.6*	n.p.	n.p.	3.8*	3.9*	. .	. .
Rate difference(l)	36.0*	27.3*	36.5*	42.1*	43.0*	n.p.	n.p.	37.8*	36.8*	. .	. .

(continued)

Table A15 (continued): Age-standardised proportions of tobacco smoking during pregnancy, by maternal Indigenous status, maternal age and state/ territory, 2010 (per cent) (a)(b)(c)(d)(e)

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

(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) The Perinatal National Minimum Data Set includes 2 standardised data items on smoking during pregnancy for births from July 2010: smoking during first 20 weeks of pregnancy; and smoking after 20 weeks of pregnancy. Standardised data were implemented by Victoria, Queensland, Western Australia, and the Australian Capital Territory for the whole year, and partially implemented by South Australia, Tasmania, and the Northern Territory from July 2010. For the remainder, data from non-standard smoking items made available as part of the National Perinatal Data Collection have been used, The question used is not consistent across jurisdictions, so caution should be used when interpreting these numbers.

(d) Rates for mothers aged less than 20 years and those aged 20 years and over are crude rates. Total rates are directly age-standardised using the Australian female population who gave birth in 2010 as the standard population.

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

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

(g) For women who gave birth in South Australia and the Northern Territory, smoking status was recorded at the first antenatal visit.

(h) Indigenous age-standardised rates have not been produced for the Tasmania and the Australian Capital Territory, as denominators for some age groups are less than 30.

(i) Total includes New South Wales, Victoria, Queensland, Western Australia, South Australia, Tasmania, the Australian Capital Territory and the Northern Territory.

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

(k) Rate ratio is the Indigenous proportion divided by the non-Indigenous proportion.

(l) Rate difference is the Indigenous proportion minus the non-Indigenous proportion.

Source: AIHW National Perinatal Data Collection.

Table A16: Age-standardised rates of tobacco use during pregnancy, by maternal Indigenous status, by state/territory, NSW, Qld, WA, SA, Tas, the ACT and the NT, 2007–2010[(a)(b)(c)]

	2007	2008	2009	2010	Per cent change 2007–2010 (per
NSW					
Indigenous rate	47.5	46.9	46.6	46.5	–2.2*
Non-Indigenous rate	11.9	11.9	11.4	10.7	–10.6
Rate ratio(e)	4.0	3.9	4.1	4.4	9.5
Rate difference(f)	35.6	35.0	35.2	35.8	0.7
Qld					
Indigenous rate	55.4	52.0	52.4	51.2	–6.6
Non-Indigenous rate	17.1	16.8	16.2	14.8	–13.0
Rate ratio(e)	3.2	3.1	3.2	3.5	8.1
Rate difference(f)	38.4	35.2	36.2	36.4	–3.9
WA					
Indigenous rate	50.1	53.3	52.7	52.6	4.0
Non-Indigenous rate	13.5	13.2	12.2	10.8	–19.9*
Rate ratio(e)	3.7	4.0	4.3	4.8	30.3*
Rate difference(f)	36.6	40.1	40.5	41.7	12.9
SA					
Indigenous rate	60.3	61.5	56.5	59.2	–4.1
Non-Indigenous rate	18.9	18.8	18.5	16.6	–11.5
Rate ratio(e)	3.2	3.3	3.0	3.6	7.7
Rate difference(f)	41.4	42.7	37.9	42.7	–0.8
Tas(g)					
Indigenous rate	n.p.	n.p.	n.p.	n.p.	n.p.
Non-Indigenous rate	23.8	23.6	21.4	20.5	–15.3*
Rate ratio(e)	n.p.	n.p.	n.p.	n.p.	n.p.
Rate difference(f)	n.p.	n.p.	n.p.	n.p.	n.p.
ACT(g)					
Indigenous rate	n.p.	n.p.	n.p.	n.p.	n.p.
Non-Indigenous rate	13.6	13.9	11.7	12.2	–13.8
Rate ratio(e)	n.p.	n.p.	n.p.	n.p.	n.p.
Rate difference(f)	n.p.	n.p.	n.p.	n.p.	n.p.
NT					
Indigenous rate	50.2	47.3	54.5	51.5	6.6
Non-Indigenous rate	16.3	14.9	15.3	13.7	–13.9
Rate ratio(e)	3.1	3.2	3.6	3.8	23.3*
Rate difference(f)	33.9	32.3	39.1	37.8	16.4
Total(h)					
Indigenous rate	51.6	50.4	51.0	50.3	–1.9
Non-Indigenous rate	14.6	14.5	13.8	12.7	–12.9
Rate ratio(e)	3.5	3.5	3.7	3.9	13.2
Rate difference(f)	37.0	36.0	37.2	37.6	2.4

(continued)

Table A16 (continued): Age-standardised rates of tobacco use during pregnancy, by maternal Indigenous status and state/territory, NSW, Qld, WA, SA, Tas, the ACT and the NT, 2007–2010(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) Data are by usual residence of the mother. Data exclude Victoria, as data on smoking during pregnancy was not available for 2007 and 2008.

(c) Proportions are directly age-standardised using the Australian female population who gave birth in the relevant year as the standard population.

(d) Percentage change is 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 minus the directly age-standardised non-Indigenous rate.

(g) Indigenous age-standardised rates have not been produced for the Tasmania or the Australian Capital Territory, as denominators for some age groups are less than 30.

(h) Total includes New South Wales, Queensland, Western Australia, South Australia, Tasmania, the Australian Capital Territory and the Northern Territory only. These data cannot be generalised to Australia.

Note: Data might differ from previously published versions of this report due to data updates and corrections.

Source: AIHW National Perinatal Data Collection.

Table A17: Substance use during pregnancy by Indigenous mothers of children aged 0–3, by state/territory, 2008[(a)(b)]

	NSW	Vic	Qld	WA	SA	Tas/ACT	NT	Australia
				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 A18: Hospital separation rates for children under 5, by principal diagnosis, Indigenous status and state/territory, 2009–10 and 2010–11[(a)(b)(c)(d)(e)]

	Indigenous		Non-Indigenous		Not stated		
Principal diagnoses(b)	**Per cent**(f)	**Rate (per 1,000)**(g)	**Per cent**(f)	**Rate (per 1,000)**(g)	**Per cent**(f)	**Rate ratio**(h)	**Rate difference**(i)
	NSW						
Diseases of the respiratory system (J00-J99)	26.8	76.7	22.1	52.7	16.6	1.5	24.0
Certain conditions originating in the perinatal period (P00-P96)	15.3	43.8	14.3	34.1	29.0	1.3	9.7
Certain infectious and parasitic diseases (A00-B99)	7.8	22.3	6.9	16.6	4.4	1.3	5.7
Injury and poisoning and certain other consequences of external causes (S00-T98)	7.5	21.3	6.2	14.8	4.1	1.4	6.5
Symptoms, signs and abnormal clinical and laboratory findings n.e.c. (R00-R99)	7.1	20.1	9.0	21.6	6.1	0.9	–1.5
Diseases of the digestive system (K00-K93)	5.2	14.9	4.7	11.3	4.5	1.3	3.6
Diseases of the skin & and subcutaneous tissue (L00-L99)	3.4	9.6	1.7	4.0	1.2	2.4	5.5
Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)	4.5	12.8	5.4	12.9	4.2	1.0	0.0
Diseases of the ear and mastoid process (H60-H95)	3.2	9.1	4.8	11.5	3.7	0.8	–2.4
Factors influencing health status and contact with health services (Z00-Z99)	10.8	30.8	13.4	31.9	17.0	1.0	–1.2
Diseases of the genitourinary system (N00-N99)	1.9	5.4	2.6	6.3	1.9	0.9	–0.8
Diseases of the nervous system (G00-G99)	2.1	6.0	2.8	6.8	1.4	0.9	–0.8
Other(j)	4.4	12.7	5.9	14.1	5.8	0.9	–1.5
Total hospitalisations(k)	**100.0**	**285.6**	**100.0**	**238.7**	**100.0**	**1.2**	**46.9**

(continued)

Table A18 (continued): Hospital separation rates for children under 5, by principal diagnosis, Indigenous status and state/territory, 2009–10 and 2010–11[a][b][c][d][e]

Principal diagnoses[b]	Indigenous Per cent[f]	Indigenous Rate (per 1,000)[g]	Non-Indigenous Per cent[f]	Non-Indigenous Rate (per 1,000)[g]	Not stated Per cent[f]	Rate ratio[h]	Rate difference[i]
	Vic						
Diseases of the respiratory system (J00-J99)	20.1	52.9	19.2	39.5	5.8	1.3	13.4
Certain conditions originating in the perinatal period (P00-P96)	23.2	61.0	18.8	38.7	61.0	1.6	22.3
Certain infectious and parasitic diseases (A00-B99)	5.9	15.6	5.1	10.5	0.9	1.5	5.0
Injury and poisoning and certain other consequences of external causes (S00-T98)	8.7	22.8	7.6	15.6	2.3	1.5	7.2
Symptoms, signs and abnormal clinical and laboratory findings n.e.c. (R00-R99)	6.1	16.1	7.2	14.9	4.2	1.1	1.3
Diseases of the digestive system (K00-K93)	7.7	20.1	5.8	12.0	3.2	1.7	8.1
Diseases of the skin and subcutaneous tissue (L00-L99)	2.4	6.3	2.0	4.2	0.3	1.5	2.1
Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)	4.8	12.6	5.7	11.7	3.8	1.1	0.9
Diseases of the ear and mastoid process (H60-H95)	4.0	10.6	6.3	13.1	4.5	0.8	–2.4
Factors influencing health status and contact with health services (Z00-Z99)	7.7	20.4	7.2	14.8	9.6	1.4	5.6
Diseases of the genitourinary system (N00-N99)	2.2	5.8	2.4	5.0	0.6	1.2	0.9
Diseases of the nervous system (G00-G99)	3.0	7.9	5.8	11.9	1.2	0.7	–4.0
Other[j]	4.1	10.9	6.7	13.8	2.2	0.8	–2.9
Total hospitalisations[k]	**100.0**	**263.2**	**100.0**	**205.8**	**100.0**	**1.3**	**57.4**

(continued)

Table A18 (continued): Hospital separation rates for children under 5, by principal diagnosis, Indigenous status and state/territory, 2009–10 and 2010–11[a][b][c][d][e]

	Indigenous		Non-Indigenous		Not stated		
Principal diagnoses[b]	**Per cent[f]**	**Rate (per 1,000)[g]**	**Per cent[f]**	**Rate (per 1,000)[g]**	**Per cent[f]**	**Rate ratio[h]**	**Rate difference[i]**
	Qld						
Diseases of the respiratory system (J00-J99)	26.8	72.6	22.9	47.1	16.8	1.5	25.5
Certain conditions originating in the perinatal period (P00-P96)	16.1	43.7	15.2	31.2	42.8	1.4	12.5
Certain infectious and parasitic diseases (A00-B99)	8.8	23.8	6.3	13.0	4.7	1.8	10.8
Injury and poisoning and certain other consequences of external causes (S00-T98)	9.4	25.3	10.2	20.9	5.5	1.2	4.4
Symptoms, signs and abnormal clinical and laboratory findings n.e.c. (R00-R99)	6.8	18.3	6.8	13.9	4.6	1.3	4.4
Diseases of the digestive system (K00-K93)	5.4	14.5	5.8	12.0	4.2	1.2	2.5
Diseases of the skin and subcutaneous tissue (L00-L99)	5.6	15.1	1.8	3.7	1.2	4.0	11.3
Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)	3.3	8.8	4.9	10.0	2.6	0.9	–1.2
Diseases of the ear and mastoid process (H60-H95)	3.5	9.5	5.2	10.6	3.4	0.9	–1.1
Factors influencing health status and contact with health services (Z00-Z99)	6.3	17.1	8.2	16.9	8.2	1.0	0.2
Diseases of the genitourinary system (N00-N99)	2.4	6.5	2.6	5.4	1.3	1.2	1.2
Diseases of the nervous system (G00-G99)	1.6	4.5	4.3	8.8	1.8	0.5	–4.3
Other[j]	4.1	11.1	5.9	12.1	3.0	0.9	–1.0
Total hospitalisations[k]	**100.0**	**270.8**	**100.0**	**205.7**	**100.0**	**1.3**	**65.1**

(continued)

Table A18 (continued): Hospital separation rates for children under 5, by principal diagnosis, Indigenous status and state/territory, 2009–10 and 2010–11[a][b][c][d][e]

	Indigenous		Non-Indigenous		Not stated		
Principal diagnoses[b]	**Per cent**[f]	**Rate (per 1,000)**[g]	**Per cent**[f]	**Rate (per 1,000)**[g]	**Per cent**[f]	**Rate ratio**[h]	**Rate difference**[i]
	WA						
Diseases of the respiratory system (J00-J99)	29.5	127.6	17.5	39.5	n.p.	3.2	88.1
Certain conditions originating in the perinatal period (P00-P96)	12.9	55.9	18.0	40.8	n.p.	1.4	15.1
Certain infectious and parasitic diseases (A00-B99)	10.6	45.9	7.1	16.0	0.0	2.9	29.9
Injury and poisoning and certain other consequences of external causes (S00-T98)	9.1	39.2	8.1	18.3	n.p.	2.1	20.9
Symptoms, signs and abnormal clinical and laboratory findings n.e.c. (R00-R99)	7.5	32.6	8.0	18.0	n.p.	1.8	14.6
Diseases of the digestive system (K00-K93)	3.8	16.6	6.5	14.7	0.0	1.1	1.9
Diseases of the skin and subcutaneous tissue (L00-L99)	6.2	26.6	1.6	3.6	0.0	7.4	23.1
Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)	2.6	11.1	4.6	10.4	n.p.	1.1	0.7
Diseases of the ear and mastoid process (H60-H95)	3.9	17.0	5.8	13.1	n.p.	1.3	3.9
Factors influencing health status and contact with health services (Z00-Z99)	5.3	23.0	7.7	17.4	0.0	1.3	5.5
Diseases of the genitourinary system (N00-N99)	1.9	8.1	3.2	7.3	0.0	1.1	0.8
Diseases of the nervous system (G00-G99)	1.5	6.3	6.2	14.0	0.0	0.5	–7.7
Other[j]	5.2	22.4	5.8	13.0	n.p.	1.7	9.3
Total hospitalisations[k]	**100.0**	**432.1**	**100.0**	**226.1**	**100.0**	**1.9**	**206.0**

(continued)

Table A18 (continued): Hospital separation rates for children under 5, by principal diagnosis, Indigenous status and state/territory, 2009–10 and 2010–11[a][b][c][d][e]

	Indigenous		Non-Indigenous		Not stated		
Principal diagnoses[b]	**Per cent**[f]	**Rate (per 1,000)**[g]	**Per cent**[f]	**Rate (per 1,000)**[g]	**Per cent**[f]	**Rate ratio**[h]	**Rate difference**[i]
	SA						
Diseases of the respiratory system (J00-J99)	25.5	92.5	23.4	58.2	21.9	1.6	34.3
Certain conditions originating in the perinatal period (P00-P96)	12.8	46.3	13.7	34.1	5.8	1.4	12.2
Certain infectious and parasitic diseases (A00-B99)	9.2	33.5	5.9	14.8	4.9	2.3	18.7
Injury and poisoning and certain other consequences of external causes (S00-T98)	8.3	30.2	6.9	17.3	6.0	1.7	12.9
Symptoms, signs and abnormal clinical and laboratory findings n.e.c. (R00-R99)	6.1	22.2	5.3	13.3	5.1	1.7	8.9
Diseases of the digestive system (K00-K93)	5.7	20.6	5.6	14.0	2.1	1.5	6.6
Diseases of the skin and subcutaneous tissue (L00-L99)	5.1	18.4	1.4	3.5	1.6	5.3	14.9
Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)	3.5	12.6	5.1	12.7	2.7	1.0	–0.2
Diseases of the ear and mastoid process (H60-H95)	4.6	16.5	9.4	23.3	37.9	0.7	–6.8
Factors influencing health status and contact with health services (Z00-Z99)	9.2	33.2	12.1	30.1	3.8	1.1	3.0
Diseases of the genitourinary system (N00-N99)	1.5	5.5	2.4	6.0	2.0	0.9	–0.5
Diseases of the nervous system (G00-G99)	2.1	7.6	3.1	7.8	2.9	1.0	–0.2
Other[j]	6.5	23.6	5.4	13.5	3.4	1.7	10.0
Total hospitalisations[k]	**100.0**	**362.6**	**100.0**	**248.5**	**100.0**	**1.5**	**114.0**

(continued)

Table A18 (continued): Hospital separation rates for children under 5, by principal diagnosis, Indigenous status and state/territory, 2009–10 and 2010–11[(a)(b)(c)(d)(e)]

	Indigenous		Non-Indigenous		Not stated		
Principal diagnoses[(b)]	**Per cent**[(f)]	**Rate (per 1,000)**[(g)]	**Per cent**[(f)]	**Rate (per 1,000)**[(g)]	**Per cent**[(f)]	**Rate ratio**[(h)]	**Rate difference**[(i)]
	NT						
Diseases of the respiratory system (J00-J99)	31.2	147.4	22.1	40.0	0.0	3.7	107.4
Certain conditions originating in the perinatal period (P00-P96)	12.1	57.0	18.2	32.9	15.6	1.7	24.1
Certain infectious and parasitic diseases (A00-B99)	14.4	68.0	8.8	16.0	n.p.	4.3	52.0
Injury and poisoning and certain other consequences of external causes (S00-T98)	6.7	31.6	9.8	17.8	n.p.	1.8	13.8
Symptoms, signs and abnormal clinical and laboratory findings n.e.c. (R00-R99)	5.9	27.7	7.9	14.3	n.p.	1.9	13.5
Diseases of the digestive system (K00-K93)	3.6	17.1	4.7	8.5	n.p.	2.0	8.6
Diseases of the skin and subcutaneous tissue (L00-L99)	9.0	42.6	2.9	5.2	0.0	8.2	37.4
Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)	2.0	9.4	4.6	8.4	18.8	1.1	1.0
Diseases of the ear and mastoid process (H60-H95)	1.9	9.2	3.3	6.1	18.8	1.5	3.1
Factors influencing health status and contact with health services (Z00-Z99)	4.8	22.6	7.4	13.4	0.0	1.7	9.1
Diseases of the genitourinary system (N00-N99)	2.6	12.4	3.5	6.3	n.p.	2.0	6.1
Diseases of the nervous system (G00-G99)	1.0	4.9	2.1	3.9	n.p.	1.3	1.0
Other[(j)]	4.8	22.6	4.7	8.6	n.p.	2.6	14.0
Total hospitalisations[(k)]	**100.0**	**472.5**	**100.0**	**181.4**	**100.0**	**2.6**	**291.1**

(continued)

Table A18 (continued): Hospital separation rates for children under 5, by principal diagnosis, Indigenous status and state/territory, 2009–10 and 2010–11[a][b][c][d][e]

	Indigenous		Non-Indigenous		Not stated		
Principal diagnoses[b]	Per cent[f]	Rate (per 1,000)[g]	Per cent[f]	Rate (per 1,000)[g]	Per cent[f]	Rate ratio[h]	Rate difference[i]
	Total[l]						
Diseases of the respiratory system (J00-J99)	27.6	89.9	21.1	46.9	15.3	1.9	42.9
Certain conditions originating in the perinatal period (P00-P96)	14.8	48.2	16.0	35.4	37.3	1.4	12.8
Certain infectious and parasitic diseases (A00-B99)	9.7	31.5	6.3	14.0	3.9	2.2	17.4
Injury and poisoning and certain other consequences of external causes (S00-T98)	8.2	26.7	7.6	16.9	4.5	1.6	9.8
Symptoms, signs and abnormal clinical and laboratory findings n.e.c. (R00-R99)	6.8	22.0	7.7	17.1	5.0	1.3	4.8
Diseases of the digestive system (K00-K93)	4.9	15.9	5.5	12.2	3.8	1.3	3.7
Diseases of the skin and subcutaneous tissue (L00-L99)	5.5	17.7	1.8	3.9	1.1	4.5	13.8
Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)	3.4	10.9	5.2	11.6	3.3	0.9	–0.7
Diseases of the ear and mastoid process (H60-H95)	3.3	10.8	5.7	12.7	8.7	0.9	–1.9
Factors influencing health status and contact with health services (Z00-Z99)	7.4	23.9	10.1	22.4	10.2	1.1	1.5
Diseases of the genitourinary system (N00-N99)	2.1	7.0	2.6	5.8	1.4	1.2	1.2
Diseases of the nervous system (G00-G99)	1.7	5.6	4.2	9.4	1.7	0.6	–3.8
Other[j]	4.6	15.1	6.0	13.4	3.7	1.1	1.7
Total hospitalisations[k]	**100.0**	**325.3**	**100.0**	**221.9**	**100.0**	**1.5**	**103.4**

(continued)

Table A18 (continued): Hospital separation rates for children under 5, by principal diagnosis, Indigenous status and state/territory, 2009–10 and 2010–11[(a)(b)(c)(d)(e)]

Principal diagnoses[(b)]	Indigenous Per cent[(f)]	Indigenous Rate (per 1,000)[(g)]	Non-Indigenous Per cent[(f)]	Non-Indigenous Rate (per 1,000)[(g)]	Not stated Per cent[(f)]	Rate ratio[(h)]	Rate difference[(i)]
	Tas[(m)]						
Diseases of the respiratory system (J00-J99)	19.1	24.4	17.6	26.8	8.8	0.9	–2.4
Certain conditions originating in the perinatal period (P00-P96)	15.4	19.7	17.1	26.0	36.0	0.8	–6.2
Certain infectious and parasitic diseases (A00-B99)	4.5	5.7	4.5	6.8	2.2	0.8	–1.1
Injury and poisoning and certain other consequences of external causes (S00-T98)	10.7	13.6	7.5	11.4	4.5	1.2	2.2
Symptoms, signs and abnormal clinical and laboratory findings n.e.c. (R00-R99)	7.8	10.0	6.9	10.5	1.7	1.0	–0.5
Diseases of the digestive system (K00-K93)	7.3	9.4	6.9	10.5	3.5	0.9	–1.1
Diseases of the skin and subcutaneous tissue (L00-L99)	2.4	3.1	1.9	2.9	n.p.	1.0	0.1
Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)	6.5	8.3	7.8	11.8	2.3	0.7	–3.4
Diseases of the ear and mastoid process (H60-H95)	2.9	3.7	2.6	4.0	0.8	0.9	–0.3
Factors influencing health status and contact with health services (Z00-Z99)	11.8	15.1	15.3	23.3	36.5	0.6	–8.2
Diseases of the genitourinary system (N00-N99)	2.7	3.5	3.4	5.1	n.p.	0.7	–1.7
Diseases of the nervous system (G00-G99)	3.0	3.9	1.8	2.7	n.p.	1.4	1.2
Other[(j)]	6.0	7.7	6.7	10.2	2.3	0.8	–2.5
Total hospitalisations[(k)]	**100.0**	**128.1**	**100.0**	**152.0**	**100.0**	**0.8**	**–23.9**

(continued)

Table A18 (continued): Hospital separation rates for children under 5, by principal diagnosis, Indigenous status and state/territory, 2009–10 and 2010–11(a)(b)(c)(d)(e)

	Indigenous		Non-Indigenous		Not stated		
Principal diagnoses(b)	**Per cent**(f)	**Rate (per 1,000)**(g)	**Per cent**(f)	**Rate (per 1,000)**(g)	**Per cent**(f)	**Rate ratio**(h)	**Rate difference**(i)
	ACT(m)						
Diseases of the respiratory system (J00-J99)	13.0	28.4	18.2	25.4	10.8	1.1	3.0
Certain conditions originating in the perinatal period (P00-P96)	17.8	38.8	24.4	33.9	53.7	1.1	4.8
Certain infectious and parasitic diseases (A00-B99)	4.0	8.6	6.1	8.4	4.8	1.0	0.2
Injury and poisoning and certain other consequences of external causes (S00-T98)	7.1	15.5	6.7	9.3	3.8	1.7	6.2
Symptoms, signs and abnormal clinical and laboratory findings n.e.c. (R00-R99)	6.3	13.8	5.5	7.7	3.2	1.8	6.1
Diseases of the digestive system (K00-K93)	5.5	12.1	6.0	8.3	1.9	1.5	3.8
Diseases of the skin and subcutaneous tissue (L00-L99)	n.p.	n.p.	2.0	2.8	2.5	n.p.	n.p.
Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)	6.3	13.8	6.9	9.6	4.4	1.4	4.2
Diseases of the ear and mastoid process (H60-H95)	4.0	8.6	2.7	3.8	n.p.	2.3	4.9
Factors influencing health status and contact with health services (Z00-Z99)	27.3	59.4	8.3	11.6	10.2	5.1	47.8
Diseases of the genitourinary system (N00-N99)	2.0	4.3	3.1	4.3	1.9	1.0	—
Diseases of the nervous system (G00-G99)	n.p.	n.p.	2.8	3.9	n.p.	n.p.	n.p.
Other(j)	5.1	11.2	7.3	10.2	1.6	1.1	1.0
Total hospitalisations(k)	**100.0**	**217.9**	**100.0**	**139.2**	**100.0**	**1.6**	**78.7**

(continued)

Table A18 (continued): Hospital separation rates for children under 5, by principal diagnosis, Indigenous status and state/territory, 2009–10 and 2010–11(a)(b)(c)(d)(e)

(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) Categories are based on the ICD-10-AM 6th 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.

(e) Data exclude private hospitals in Tasmania, the Australian Capital Territory, and the Northern Territory.

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

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

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

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

(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 6 jurisdictions for which the quality of Indigenous identification in hospitalisation data is considered acceptable (New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory only).

(m) Data for Tasmania and the Australian Capital Territory should be interpreted with caution due to the relatively small number of separations for Indigenous children in these jurisdictions.

Notes

1. Rates are calculated using population estimates based on the 2006 Census.
2. Indigenous rates are calculated using population estimates based on the 2006 Census (Series B).

Source: AIHW National Hospital Morbidity Database.

Table A19: Hospital separation rates for children under 5, by principal diagnosis, NSW, Vic, Qld, WA, SA and the NT combined, 2004–05 to 2010–11[(a)(b)(c)(d)(e)]

Principal diagnoses(b)	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	Per cent change (2004–05 to 2010–11)(f)
Indigenous children (rate—per 1,000 persons)(g)								
Diseases of the respiratory system (J00-J99)	80.9	85.5	81.8	88.4	88.9	90.3	89.4	11.2
Certain conditions arising during the perinatal period (P00-P96)	38.8	42.1	44.0	43.6	47.1	47.7	48.7	24.3
Certain infectious and parasitic diseases (A00-B99)	37.5	44.5	43.2	39.3	33.3	33.4	29.7	–31.8
Injury, poisoning and other consequences of external causes (S00-T98)	23.5	23.9	24.0	23.6	26.5	26.9	26.6	16.1
Symptoms, signs and abnormal findings	19.2	19.8	19.0	21.0	19.2	22.2	21.8	14.0
Factors influencing health status and contact with health services (Z00-Z99)	16.3	16.4	17.1	17.0	25.8	27.4	20.5	57.2
Other(h)	71.8	72.7	75.3	76.8	82.9	80.7	85.3	19.3
Total hospitalisations(i)	**288.2**	**305.2**	**304.4**	**309.7**	**323.6**	**328.7**	**322.0**	**12.5**
Other children (rate—per 1,000 persons)(g)(j)								
Diseases of the respiratory system (J00-J99)	45.9	45.2	43.7	50.3	48.2	48.1	47.5	7.2
Certain conditions arising during the perinatal period (P00-P96)	40.7	41.6	41.9	42.5	40.2	38.3	37.0	–10.3
Certain infectious and parasitic diseases (A00-B99)	18.8	22.2	22.3	16.9	14.6	13.8	14.7	–42.0
Injury, poisoning and other consequences of external causes (S00-T98)	17.1	17.4	17.3	16.7	17.2	17.2	17.1	–0.6
Symptoms, signs and abnormal findings	17.6	18.6	18.7	18.7	17.1	17.2	17.7	–5.1
Factors influencing health status and contact with health services (Z00-Z99)	18.1	17.8	18.2	19.4	24.9	25.0	21.0	35.4
Other(h)	74.6	71.0	69.9	72.2	71.5	69.3	71.5	–3.1
Total hospitalisations(i)	**233.0**	**233.9**	**232.2**	**236.9**	**233.6**	**229.1**	**226.7**	**–2.5**

(continued)

Table A19 (continued): Hospital separation rates for children under 5, by principal diagnosis, NSW, Vic, Qld, WA, SA and the NT combined, 2004–05 to 2010–11(a)(b)(c)(d)(e)

Principal diagnoses(b)	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	Per cent change (2004–05 to 2010–11)(f)
	Rate ratio(k)							
Diseases of the respiratory system (J00-J99)	1.8	1.9	1.9	1.8	1.8	1.9	1.9	3.6
Certain conditions arising during the perinatal period (P00-P96)	1.0	1.0	1.1	1.0	1.2	1.2	1.3	37.9
Certain infectious and parasitic diseases (A00-B99)	2.0	2.0	1.9	2.3	2.3	2.4	2.0	13.3
Injury, poisoning and other consequences of external causes (S00-T98)	1.4	1.4	1.4	1.4	1.5	1.6	1.6	16.6
Symptoms, signs and abnormal findings	1.1	1.1	1.0	1.1	1.1	1.3	1.2	19.2
Factors influencing health status and contact with health services (Z00-Z99)	0.9	0.9	0.9	0.9	1.0	1.1	1.0	16.1
Other(h)	1.0	1.0	1.1	1.1	1.2	1.2	1.2	23.6
Total hospitalisations(i)	**1.2**	**1.3**	**1.3**	**1.3**	**1.4**	**1.4**	**1.4**	**15.4**
	Rate difference(l)							
Diseases of the respiratory system (J00-J99)	35.0	40.3	38.1	38.1	40.8	42.2	41.9	16.5
Certain conditions arising during the perinatal period (P00-P96)	–2.0	0.5	2.2	1.0	6.9	9.4	11.7	–689.4
Certain infectious and parasitic diseases (A00-B99)	18.7	22.3	20.9	22.4	18.7	19.5	14.9	–21.6
Injury, poisoning and other consequences of external causes (S00-T98)	6.4	6.5	6.7	6.9	9.3	9.7	9.4	60.6
Symptoms, signs and abnormal findings	1.6	1.3	0.3	2.3	2.1	5.0	4.1	228.5
Factors influencing health status and contact with health services (Z00-Z99)	–1.8	–1.4	–1.2	–2.3	0.9	2.4	–0.5	–161.8
Other(h)	–2.9	1.7	5.3	4.6	11.4	11.4	13.8	–561.6
Total hospitalisations(i)	**55.1**	**71.3**	**72.2**	**72.8**	**90.0**	**99.6**	**95.3**	**75.8**

(continued)

Table A19 (continued): Hospital separation rates for children under 5, by principal diagnosis, NSW, Vic, Qld, WA, SA and the NT combined, 2004–05 to 2010–11(a)(b)(c)(d)(e)

(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) Categories are based on the ICD-10-AM 6th 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 Tasmania, the Australian Capital Territory, and the Northern Territory.

(e) Data are presented for the 6 jurisdictions for which the quality of Indigenous identification in hospitalisation data is considered acceptable (New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory only).

(f) Percentage change is based on the average annual change over the period.

(g) The rate is per 1,000 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 children rate divided by the rate for other children.

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

Notes

1. Rates are calculated using population estimates based on the 2006 Census.
2. Rates for Indigenous are calculated using population estimates based on the 2006 Census (Series B).
3. Rates might differ slightly from those published in the previous edition of this report for comparable years of data due to the use of updated total population estimates (ABS 2013).

Source: AIHW National Hospital Morbidity Database.

Table A20: Hospital separation rates for children under 5, by state/territory, 2004–05 to 2010–11[(a)(b)(c)(d)]

	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	Per cent change (2004–05 to 2010–11)[(e)]
			NSW					
Indigenous children (rate—per 1,000 persons)	226.4	252.8	255.1	264.0	305.0	298.7	272.9	26.6
Other children (rate—per 1,000 persons)[(f)]	223.5	229.8	231.1	236.6	251.8	250.1	237.0	9.7
Rate ratio[(g)]	1.0	1.1	1.1	1.1	1.2	1.2	1.2	15.1
Rate difference[(h)]	2.8	23.0	24.0	27.4	53.2	48.6	35.8	1,365.0
			Vic					
Indigenous children (rate—per 1,000 persons)	188.9	203.3	226.0	241.7	254.8	245.9	280.1	44.0
Other children (rate—per 1,000 persons)[(f)]	244.6	243.9	243.5	247.6	219.2	207.5	213.2	–16.7
Rate ratio[(g)]	0.8	0.8	0.9	1.0	1.2	1.2	1.3	71.1
Rate difference[(h)]	–55.7	–40.7	–17.5	–6.0	35.6	38.4	66.8	–222.7
			Qld					
Indigenous children (rate—per 1,000 persons)	250.7	268.6	256.0	258.9	259.8	272.3	269.3	5.7
Other children (rate—per 1,000 persons)[(f)]	222.2	220.0	215.5	221.4	222.3	218.9	213.7	–2.0
Rate ratio[(g)]	1.1	1.2	1.2	1.2	1.2	1.2	1.3	8.0
Rate difference[(h)]	28.6	48.6	40.5	37.4	37.5	53.4	55.7	65.9
			WA					
Indigenous children (rate—per 1,000 persons)	414.3	402.2	395.9	408.4	397.2	409.2	454.7	7.1
Other children (rate—per 1,000 persons)[(f)]	232.4	224.9	215.0	219.6	214.0	216.1	236.0	–0.7
Rate ratio[(g)]	1.8	1.8	1.8	1.9	1.9	1.9	1.9	7.9
Rate difference[(h)]	182.0	177.3	180.9	188.8	183.2	193.1	218.7	17.0

(continued)

Table A20 (continued): Hospital separation rates for children under 5, by state/territory, 2004–05 to 2010–11[a][b][c][d]

	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	Per cent change (2004–05 to 2010–11)[e]
SA								
Indigenous children (rate—per 1,000 persons)	341.8	340.3	358.4	375.9	337.3	368.2	357.1	5.1
Other children (rate—per 1,000 persons)[f]	275.3	273.0	275.6	277.0	269.5	265.2	255.9	–6.2
Rate ratio[g]	1.2	1.2	1.3	1.4	1.3	1.4	1.4	12.1
Rate difference[h]	66.4	67.2	82.8	98.9	67.9	103.0	101.2	51.9
NT								
Indigenous children (rate—per 1,000 persons)	415.4	453.2	464.9	454.1	487.4	493.7	451.5	10.9
Other children (rate—per 1,000 persons)[f]	173.2	201.5	179.3	179.8	185.1	179.6	186.1	0.1
Rate ratio[g]	2.4	2.2	2.6	2.5	2.6	2.7	2.4	10.0
Rate difference[h]	242.2	251.8	285.6	274.3	302.3	314.1	265.4	18.7
Total[i]								
Indigenous children (rate—per 1,000 persons)	288.2	305.2	304.4	309.7	323.6	328.7	322.0	12.5
Other children (rate—per 1,000 persons)[f]	233.0	233.9	232.2	236.9	233.6	229.1	226.7	–2.5
Rate ratio[g]	1.2	1.3	1.3	1.3	1.4	1.4	1.4	15.4
Rate difference[h]	55.1	71.3	72.2	72.8	90.0	99.6	95.3	75.8
Tas[j]								
Indigenous children (rate—per 1,000 persons)	60.3	88.1	94.0	115.4	106.8	142.6	113.9	100.5
Other children (rate—per 1,000 persons)[f]	148.4	165.3	157.4	140.2	140.2	173.7	150.4	0.9
Rate ratio[g]	0.4	0.5	0.6	0.8	0.8	0.8	0.8	94.6
Rate difference[h]	–88.1	–77.1	–63.4	–24.8	–33.4	–31.1	–36.4	–67.4

(continued)

Table A20 (continued): Hospital separation rates for children under 5, by state/territory, 2004–05 to 2010–11(a)(b)(c)(d)

	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11	Per cent change (2004/–05 to 2010–11)(e)
			ACT(j)					
Indigenous children (rate—per 1,000 persons)	88.6	124.4	134.6	120.5	152.6	169.1	265.5	154.4
Other children (rate—per 1,000 persons)(f)	138.7	149.4	140.6	143.0	155.5	139.0	152.9	5.7
Rate ratio(g)	0.6	0.8	1.0	0.8	1.0	1.2	1.7	137.1
Rate difference(h)	–50.1	–25.0	–6.0	–22.5	–2.9	30.2	112.6	–257.3

(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 Tasmania, the Australian Capital Territory and the Northern Territory.

(e) Percentage change is 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 children 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 6 jurisdictions for which the quality of Indigenous identification in hospitalisation data is considered acceptable (New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory only).

(j) Data for Tasmania and the Australian Capital Territory should be interpreted with caution due to the relatively small number of separations for Indigenous children in these jurisdictions.

Notes

1. Rates are calculated using population estimates based on the 2006 Census.
2. Rates for Indigenous are calculated using population estimates based on the 2006 Census (Series B).
3. Rates might differ slightly from those published in the previous edition of this report for comparable years of data due to the use of updated total population estimates (ABS 2013).

Source: AIHW National Hospital Morbidity Database.

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 Australian female population who gave birth in the reported year 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.

Measuring the gap

There are 2 methods commonly used for measuring the gap—the absolute difference (rate difference) and relative difference (rate ratio). The rate difference is the Indigenous rate minus the non-Indigenous rate, while the rate ratio is the Indigenous rate divided by the non-Indigenous rate.

For trend analyses in particular, the rate ratio alone can sometimes be misleading. In cases where the non-Indigenous rate is particularly small and the Indigenous rate is particularly high, the situation can arise where there is an improvement in both the Indigenous and non-Indigenous rates, with the rates diverging but the ratio decreasing (or vice versa). In such cases, the rate difference is a more accurate reflection of the pattern in trends.

Throughout this report 'the gap' is used to refer to the rate difference—that is, the Indigenous rate minus the non-Indigenous rate. For trend analyses references to the widening or narrowing of the gap, refer to changes in the rate difference over time. References to significant changes in the gap over time reflect statistically significant changes at the $p < 0.05$ level in the rate difference over the reported time period.

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.

Confidence intervals

A confidence interval is a range of values that is used to describe the uncertainty around an estimate. Generally speaking, confidence intervals describe how much different the estimate could have been if the underlying conditions stayed the same, but chance had led to a different set of data. Confidence intervals are calculated with a stated probability (commonly 95%), and we say that there is a 95% chance that the confidence interval covers the true value.

It is well known that estimates based on a random sample of a population are subject to error due to sampling variability. However, rates and percentages based on a full population count, such as administrative data, are also subject to random variation. When the numbers of events are large, random errors are negligible, and ignoring them has little impact on findings and interpretation. However, random error might be substantial when a rate or percentage has a small number of events in the numerator, especially when the denominator (population) is also relatively small. Typically, rates based on large numbers provide stable estimates from one year to the next. Conversely, rates based on small numbers might fluctuate dramatically from year to year, or differ considerably from one region to another, even when there is no meaningful difference. Meaningful analysis of differences in rates requires that the random variation be quantified; this is especially important when rates or percentages have small numerators.

The AIHW assessed the usefulness of confidence intervals to detect statistically significant change in certain performance measures derived from administrative data, and concluded that they were useful for detecting statistically significant change for the National Perinatal Data Collection (NPDC). In this report confidence intervals are presented in some NPDC tables for national rates, but have not been used to indicate statistically significant differences in the Indigenous and non-Indigenous comparisons at the state/territory level. Confidence intervals 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 NPDC data analysed in this report. Confidence intervals have not been presented in tables based on the other administrative data sets included in this report due to a lack of investigative work into the validity of using them for these data sets. For Indigenous and non-Indigenous comparisons, the 95% confidence intervals for the Indigenous and non-Indigenous rates are used to determine statistical significance. If the confidence intervals 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% confidence intervals).

Where a comparison is not significant and the rates are based on small numbers, it could be stated that no statistically significant difference was detected rather than that there was no difference. This analysis does not measure other sources of uncertainty, such as variation in the quality of Indigenous identification, so caution is needed in analysing rate comparisons in the context of other sources of uncertainty.

The Wald method of calculating confidence intervals has been used in this report. Typically in the Wald 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 are:

Crude rate

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

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.

Annual change and percentage 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 percentage change estimate depends heavily on the first data point used in the time series.

Statistical significance for trend analyses

Statistical significance 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 2 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. As a result, any statistical test based on regression results will be more powerful.

A minimum of 4 data points are needed to have an adequate time series for regression analysis (to take into account variability from year to year), and 7 or more data points are recommended to obtain more reliable results. For trend analyses with 4 or more data points, the 95% confidence intervals 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 confidence intervals for the standard error of the slope estimate is:

$$95\%\ CI(x) = x \pm t_{(n-2,\, 0.025)} \times SE(x)$$

Where:

- x is the average annual change (slope estimate)
- n is the number of data points in the trend analyses.

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.

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

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 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 reliable enough 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, which includes information about the deceased person, such as age at death, usual residence, country of birth, and cause or causes of death. Mortality data are provided to the AIHW by the Registries of Births, Deaths and Marriages and the National Coronial Information System, and are coded by the Australian Bureau of Statistics (ABS).

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. Footnotes in tables and figures throughout the report provide information on data issues for specific mortality analyses.

Where Queensland was the deceased person's usual residence, deaths registered in 2010 that occurred before 2007 have been excluded. 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 Australians. Information about the number of Indigenous deaths is limited by the accuracy with which Indigenous Australians are identified in death records. Problems associated with identification result in an underestimation of deaths of Indigenous Australians.

Mortality data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory are considered to have sufficient levels of Indigenous identification, and sufficient numbers of deaths to produce reliable statistics on Indigenous Australian deaths for 2001–2011. Data for the Australian Capital Territory are not included due to the small number of Indigenous deaths each year, not due to data quality issues.

Due to the small numbers of deaths among Indigenous children, 5 years of mortality data have been combined for analysis in this report (2007–2011).

Where Indigenous status is not stated or inadequately described, these deaths have been excluded from the analysis, so the categories used to present 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 are available annually from 2001 onwards.

To access the quality statement for the ABS causes of death collection, go to: <http://meteor.aihw.gov.au/content/index.phtml/itemId/449206>.

AIHW National Perinatal Data Collection

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

The NPDC is a national population-based cross-sectional data collection of pregnancy and childbirth. The data are based on births reported to the perinatal data collection in each state and territory in Australia. Midwives and other staff, using information obtained from mothers and from hospital or other records, complete notification forms for each birth. Selected information is then compiled annually into this national 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 National Minimum Data Set did not include data for the Indigenous status of the baby during the reference years for this report, so reporting of Indigenous status of the baby is based on maternal Indigenous status.

In 2012, this represented about 72% of all Indigenous births, based on data from ABS birth registrations (ABS 2013). 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 National Minimum Data Set in July 2012.

No formal national assessment has been done to determine completeness of the coverage of Indigenous mothers in the Perinatal National Minimum Data Set. But the proportion of Indigenous mothers for 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.

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 are available annually from 1991 onwards.

To access the quality statement for the AIHW national perinatal data collection, go to: <http://meteor.aihw.gov.au/content/index.phtml/itemId/597483>.

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, as well as data on the diagnoses of the patients, the procedures they underwent in hospital, and external causes of injury and poisoning.

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 to classify diagnosis information. The ICD-10-AM is an Australian modification of ICD-10, and has been used in the AIHW National Hospital Morbidity Database since 1998–99. All hospital data presented in this report are based on the principal diagnosis, which is defined as the diagnosis established after study to be chiefly responsible for causing the patient's episode of care in hospital.

Indigenous data

Data are presented for the 6 jurisdictions that the AIHW has assessed as having adequate identification of Indigenous hospitalisations in 2006–08—that is, New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory (public hospitals only) (AIHW 2010). These jurisdictions represent about 95% of the Indigenous population of Australia (ABS 2012). National totals include hospital separations for people who live in these jurisdictions only and do not necessarily represent the jurisdictions not included. Although some data are reported for Tasmania and the Australian Capital Territory (public hospitals only), they are reported with caveats due to the relatively small number of separations for Indigenous children in these jurisdictions, and they are not included in national totals.

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 determining Indigenous status.

It should be noted that the AIHW did a more recent study on the quality of Indigenous identification in hospitalisation records in Australia in 2011–12, for which a report was published in May 2013 (AIHW 2013b). This new data quality report presents revised recommendations for analysis of Indigenous hospital separations data for 2010–11 onwards, as well as estimates of correction factors that can be applied to the total hospitalisation data for analysis purposes at the: national level; national by remoteness level; state and territory level; and remoteness levels within jurisdictions. As the hospital tables presented in this report include data from years before 2010–11, all analyses here are based on the recommendations of the previous AIHW quality report.

Data are availability annually from 1993–94 onwards.

To access the quality statement for the AIHW National Hospital Morbidity Database, go to: <http://meteor.aihw.gov.au/content/index.phtml/itemId/511338>.

National Notifiable Diseases Surveillance System

Data on nationally notifiable diseases, including sexually transmissible and bloodborne virus infections, 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 public health legislation in each jurisdiction. For jurisdictions where there are no provisions in this legislation for the transmission of notifiable disease data to the Australian Government, it is covered by the *National Health Security Act 2007*. Computerised, de-identified unit records of notifications are supplied to the Australian Government Department of Health daily 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, as surveillance of communicable diseases varies between jurisdictions. As a result, the proportion of diagnosed cases of a particular disease that is notified to health authorities is not known with certainty and might vary among diseases, between jurisdictions and over time.

Not all notifications of chlamydial infection, gonococcal infection, and syphilis are sexually acquired, but, for these infections, non-sexual acquisitions apply mostly to infants and young children where transmission from the mother during pregnancy or childbirth is possible. The national case definitions for these infections do not specifically distinguish between sites of infection or modes of transmission.

Hepatitis C data included in this report contain notifications classified as either 'newly acquired' or 'unspecified', for all jurisdictions except Queensland. Hepatitis C data for Queensland contain 'unspecified' cases only.

Hepatitis B data included in this report contain notifications classified as either 'newly acquired' or 'unspecified' for all jurisdictions.

Data on syphilis are limited to non-congenital syphilis cases only, including cases of less than 2 years, more than 2 years, and unknown duration.

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 AIHW with data on Indigenous status completeness by disease and jurisdiction.

A cut-off of 50% completeness of Indigenous status reporting for teenagers aged 15–19 was used to determine inclusion for analyses in this report. Adequate Indigenous identification data are not available for other jurisdictions, so it is not possible to comment on sexually transmitted and bloodborne virus infection rates in Indigenous teenagers in those jurisdictions.

Using a cut-off of 50% completeness of Indigenous status reporting for 2010–2012 data for teenagers aged 15–19, Western Australia, South Australia and the Northern Territory were assessed to have adequate identification for chlamydia, gonorrhoea, syphilis, hepatitis C and hepatitis B.

Of the remaining states/territories: Queensland and Tasmania had adequate identification for chlamydia, gonorrhoea, syphilis and hepatitis C; Victoria had adequate identification for gonorrhoea and syphilis, the Australian Capital Territory had adequate identification for gonorrhoea, syphilis 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 sexually transmitted and bloodborne virus infections each year.

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

Data are available annually from 1991 onwards.

National HIV Registry

The Surveillance and Evaluation Program for Public Health at the Kirby Institute (formerly the National Centre in HIV Epidemiology and Clinical Research) maintains the National HIV Registry.

The program, which began in 1982 and is ongoing, develops new initiatives in surveillance—such as monitoring incident HIV infection through the use of specialised laboratory tests—and carries out quality control studies of surveillance data. The program compiled several surveillance reports such as, *HIV, viral hepatitis and sexually transmissible infections in Australia annual surveillance report, Bloodborne viral and sexually transmitted infections in Aboriginal and Torres Strait Islander people: surveillance and evaluation report,* the *Australian HIV surveillance report* and the *National bloodborne virus and sexually transmissible infections surveillance and monitoring report.*

The program also provides the secretariat supporting the activities of the National Blood Borne Virus and Sexually Transmissible Infections Surveillance Committee and other ad hoc sub-committees established to develop new data sources and standardised procedures for data collection across state and territory health jurisdictions in Australia.

The Surveillance and Evaluation Program for Public Health at the Kirby Institute is a research associate of the Australian Institute of Health and Welfare.

Indigenous data

Recording of Indigenous status reported to the National HIV Registry is considered complete in all states and territories.

Data are presented for the 3-year period 2009–2011, because notifications of some diseases are too small to present for a single year.

Data are available annually from 1992 onwards.

National Aboriginal and Torres Strait Islander Social Survey

The ABS conducted the 2002 National Aboriginal and Torres Strait Islander Social Survey (NATSISS) between August 2002 and April 2003. The 2008 NATSISS was done between August 2008 and April 2009. The survey provides information about the Aboriginal and Torres Strait Islander populations of Australia for a wide variety of areas of social concern, including health, education, culture and labour force participation. For the first time, the 2008 NATSISS included children aged under 15. The NATSISS will be done every 6 years, and data collection for the most recent survey started in September 2014, to be complete by April 2015.

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

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

Data are available between 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 means that estimates from the NATSISS are based on a small number of events that are subject to uncertainty, so data disaggregated at the state/territory level is subject to high relative standard errors, so should be interpreted with caution.

Population data

ABS estimated resident population 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 estimated resident population.

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

To access the quality statement for the ABS Indigenous experimental estimates and projections, go to: <http://meteor.aihw.gov.au/content/index.phtml/itemId/449223>.

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This report provides the latest available information, as well as trends on the 6 health-related indicators in the partnership agreement. Key findings include:

- The gap in low birthweight rates between babies of Indigenous and non-Indigenous mothers narrowed substantially between 2000 and 2010.
- Indigenous mothers were more likely than non-Indigenous mothers to have smoked during pregnancy, and accessed antenatal care less often.
- The infant mortality rate for Indigenous infants between 2001 and 2011 declined by 55%, but remained almost twice as high as for non-Indigenous infants.