

1.20 Perinatal mortality

The number of Aboriginal and Torres Strait Islander babies who die in the perinatal period, expressed as a rate (per 1,000 births).

Data sources

Data for this measure come from the Australian Bureau of Statistics (ABS) Deaths Registration Database and the National Perinatal Data Collection.

ABS Deaths Registration Database

The ABS Deaths Registration Database contains details of all deaths registered in Australia. This includes information on foetal (stillbirths) and neonatal deaths (deaths occurring in live births up to 28 days of age), by age of the baby, sex, state/territory of birth, Indigenous status and cause of death (ICD-10).

The National Perinatal Data Collection also contains data on foetal and neonatal deaths, by sex, state/territory of birth and the Indigenous status of the mother. However, it does not collect information on cause of death for all jurisdictions. Work is underway for this collection to include data on obstetric antecedent factors that initiated the sequence of events leading to death. This is based on the Perinatal Society of Australia and New Zealand Perinatal Death Classification for all jurisdictions.

Data from the ABS Deaths Registration Database have been used in this measure, as cause of death can be ascertained and neonatal deaths are more comprehensively captured in this database.

Data are presented by state/territory of usual residence rather than state/territory of death. Although identification of Indigenous deaths is incomplete in all state and territory registration systems, the ABS and the Australian Institute of Health and Welfare (AIHW) have assessed four jurisdictions (Queensland since 1998, Western Australia, South Australia and the Northern Territory) as having adequate identification. These four jurisdictions represent approximately 60% of the Indigenous population of Australia.

Several years of data have been combined because of the small number of deaths from some conditions each year. The latest year for which mortality data are currently available is 2008.

The ABS defines perinatal mortality rate as the number of foetal deaths (babies of at least 400 grams birthweight or a gestational age of at least 20 weeks) and neonatal deaths (death of a live birth which occurs during the first 28 days of life), and is expressed as number of deaths per 1,000 live births during a given period. This definition of perinatal mortality is used in this report.

National Perinatal Data Collection

Data for this measure come from the AIHW National Perinatal Epidemiology and Statistics Unit National Perinatal Data Collection (NPDC).

Data on birthweight is collected as part of the Perinatal National Minimum Data Set. Each state and territory has a perinatal collection based on birth notifications completed by midwives and other staff, using information obtained from mothers and from hospital and

other records. Some of these data are provided in electronic format annually to the AIHW National Perinatal Epidemiology and Statistics Unit. Perinatal notification forms are completed in Australia for all births of 20 weeks or more gestation, or a birthweight of 400 grams or more.

All jurisdictions collect the Indigenous status of the mother of the baby. However, this data element does not provide the Indigenous status of the baby. Therefore, Indigenous births will be underestimated as babies born to Indigenous fathers and non-Indigenous mothers are not included in the data collection. Over the period 2005–2007 there were approximately 11,100 ABS registered births to Indigenous fathers only, which represented 31% of registered Indigenous births (ABS 2008, 2007a, 2006a).

Earlier years data are not available for Tasmania, as the 'not stated' category for Indigenous status was unable to be distinguished from the 'non-Indigenous' until 2005.

Data on mothers for whom Indigenous status was 'not stated' have been excluded from analysis. In 2007, there were 282 births with a 'not stated' Indigenous status (0.1%) in the NPDC.

The World Health Organization (WHO) defines low birthweight as less than 2,500 grams.

Analyses

Mortality

Mortality by sex

- Over the period 2004–2008, there were 777 deaths (447 male, 330 female) of Indigenous perinatal infants and 8,282 deaths (4,472 male, 3,810 female) of other perinatal infants in New South Wales, Queensland, Western Australia, South Australia and the Northern Territory combined.
- The perinatal mortality rate for Indigenous infants was around 13 per 1,000 births compared with 9 per 1,000 births for Other infants.
- Perinatal mortality rates were higher for males than females for both Indigenous and Other infants. The perinatal mortality rate for Indigenous males was 15 per 1,000 births compared with 11 per 1,000 births for Indigenous females. The perinatal mortality rate for Other males was 9.4 per 1,000 births compared with 8.5 per 1,000 births for Other females (Table 1.20.1)

Table 1.20.1: Perinatal^(a) mortality rates per 1,000 births^(b), by Indigenous status and sex^(c), NSW, Qld, WA, SA & NT combined, 2004–2008^{(d)(e)(f)(g)(h)}

	Indigenous		Other ⁽ⁱ⁾	
	Deaths	Number per 1,000 births ^(b)	Deaths	Number per 1,000 births ^(b)
Males ^(c)	447	14.7	4,472	9.4
Females	330	11.4	3,810	8.5
Persons	777	13.1	8,282	9.0

- (a) Perinatal deaths are all foetal deaths (at least 20 weeks gestation or at least 400 grams birthweight) plus all neonatal deaths.
- (b) Foetal death rates and perinatal death rates are calculated per 1,000 all births for the calendar year. Neonatal death rates are calculated per 1,000 live births for the calendar year.
- (c) Males deaths include those perinatal deaths of sex indeterminate.
- (d) Deaths prior to 2007 are by year of registration and state/territory of usual residence. Deaths from 2007 onwards are by reference year and state/territory of usual residence. Registration year prior to 2007 is equivalent to reference year from 2007 onwards.
- (e) Causes of death data for 2008 are preliminary and subject to a revisions process.
- (f) 2008 data have been subject to process improvements which have increased the quality of these data.
- (g) Causes of death data for 2007 have been revised and are subject to further revisions.
- (h) Data are reported for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory. These jurisdictions are considered to have adequate levels of Indigenous identification in mortality data. They do not represent a quasi-Australian figure.
- (i) Includes Indigenous status not stated.

Source: ABS Deaths Registration database.

Mortality by state/territory

Perinatal mortality rates per 1,000 births among Indigenous and non-Indigenous babies are presented in Table 1.20.2 for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory for the period 2004–2008.

- Over the period 2004–2008, the perinatal mortality rate for Indigenous babies in New South Wales, Queensland, Western Australia, South Australia and the Northern Territory combined was 13 per 1,000 live births compared with 9 for non-Indigenous babies.
- In 2004–08 Indigenous babies in the Northern Territory died in the perinatal period at nearly three times the rate of non-Indigenous babies. In Western Australia and Queensland, Indigenous babies died in the perinatal period at 1.6 and 1.4 times respectively the rate of non-Indigenous babies. In South Australia and New South Wales there was no statistically significant difference between Indigenous and non-Indigenous perinatal death rates.
- The majority of perinatal deaths were foetal deaths. In 2004–2008, the foetal death rate was 8 per 1,000 births among Indigenous Australians in New South Wales, Queensland, Western Australia, South Australia and the Northern Territory combined compared to 6 among non-Indigenous Australians. The neonatal death rate among Indigenous babies for the same period was 6 per 1,000 live births compared with 3 among non-Indigenous babies.

Table 1.20.2: Foetal, neonatal and perinatal mortality^{(a)(b)(c)(d)} rates per 1,000 births, by Indigenous status, NSW, Qld, WA, SA and NT, 2004–2008^{(e)(f)(g)(h)(i)}

	Number	Number per 1,000 ^(d)	LCL 95% ^(j)	UCL 95% ^(k)	Rate ratio ^(l)
Foetal deaths^(a)					
NSW					
Indigenous	89	4.9	3.9	7.3	0.9
Non-Indigenous	2,315	5.4	5.2	9.5	..
Qld					
Indigenous	160	8.2	6.9	11.7	1.2*
Non-Indigenous	1,768	6.8	6.5	11.4	..
WA					
Indigenous	79	7.8	6.1	10.3	1.4*
Non-Indigenous	700	5.6	5.2	9.5	..
SA					
Indigenous	23	5.9	3.5	6.3	1.1
Non-Indigenous	459	5.6	5.1	9.3	..
NT					
Indigenous	97	12.4	9.9	15.5	2.3*
Non-Indigenous	60	5.4	4.0	7.4	..
NSW, Qld, WA, SA & NT^(m)					
Indigenous	448	7.5	6.8	11.7	1.3*
Non-Indigenous	5,302	5.8	5.6	10.2	..
Neonatal deaths^(b)					
NSW					
Indigenous	84	4.7	3.7	7.0	1.4*
Non-Indigenous	1,386	3.3	3.1	6.5	..
Qld					
Indigenous	116	6.0	4.9	8.8	1.8*
Non-Indigenous	857	3.3	3.1	6.4	..
WA					
Indigenous	49	4.9	3.5	6.7	2.2*
Non-Indigenous	267	2.2	1.9	4.5	..
SA					
Indigenous	15	3.9	1.9	3.8	1.7*
Non-Indigenous	202	2.3	2.0	4.5	..
NT					
Indigenous	65	8.4	6.4	10.7	3.4*
Non-Indigenous	28	2.5	1.6	3.5	..

(continued)

Table 1.20.2 (continued): Foetal, neonatal and perinatal mortality^{(a)(b)(c)(d)} rates per 1,000 births, by Indigenous status, NSW, Qld, WA, SA and NT, 2004–2008^{(e)(f)(g)(h)(i)}

	Number	Number per 1,000 ^(d)	LCL 95% ^(j)	UCL 95% ^(k)	Rate ratio ^(l)
NSW, Qld, WA, SA & NT^(m)					
Indigenous	329	6.0	5.6	10.1	2.1*
Non-Indigenous	2,738	2.8	3.0	6.5	..
Perinatal deaths^(c)					
NSW					
Indigenous	173	9.6	8.2	13.3	1.1
Non-Indigenous	3,701	8.7	8.4	14.0	..
Qld					
Indigenous	276	14.1	12.4	18.9	1.4*
Non-Indigenous	2,625	10.2	9.8	15.8	..
WA					
Indigenous	128	12.7	10.5	16.3	1.6*
Non-Indigenous	967	7.8	7.3	12.4	..
SA					
Indigenous	38	9.7	6.6	10.8	1.3
Non-Indigenous	661	7.5	6.9	11.9	..
NT					
Indigenous	162	20.7	17.5	25.1	2.6*
Non-Indigenous	88	7.9	6.2	10.6	..
NSW, Qld, WA, SA & NT^(m)					
Indigenous	777	13.1	12.2	18.8	1.5*
Non-Indigenous	8,042	8.8	8.6	14.3	..

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

- (a) Foetal deaths of at least 20 weeks gestation or with a birth weight of at least 400 grams.
- (b) Neonatal death is death of a live-born baby within 28 days of birth.
- (c) Perinatal deaths are all foetal deaths (at least 20 weeks gestation or at least 400 grams birth weight) plus all neonatal deaths.
- (d) Foetal death rates and perinatal death rates are calculated per 1,000 all births for the calendar year. Neonatal death rates are calculated per 1,000 live births for the calendar year.
- (e) Deaths prior to 2007 are by year of registration and state/territory of usual residence. Deaths from 2007 onwards are by reference year and state/territory of usual residence. Registration year prior to 2007 is equivalent to reference year from 2007 onwards.
- (f) 2008 data have been subject to process improvements which have increased the quality of these data.
- (g) Causes of death data for 2007 have been revised and are subject to further revisions.
- (h) Causes of death data for 2008 are preliminary and subject to a revisions process.
- (i) Data are presented in 5-year groupings due to variability of the small numbers involved.
- (j) LCL = lower confidence limit.
- (k) UCL = upper confidence limit.
- (l) Rate ratio Indigenous: Non-Indigenous.
- (m) Data are reported for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory. These jurisdictions are considered to have adequate levels of Indigenous identification in mortality data. They do not represent a quasi-Australian figure.

Source: ABS Deaths Registration Database.

Mortality by state/territory time series

Perinatal mortality rates per 1,000 births among Indigenous and other babies are presented in Table 1.20.3 for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory for the years 1999–2003 and 2004–2008.

- In New South Wales, Queensland, Western Australia, South Australia and the Northern Territory combined, there were 832 perinatal deaths of Indigenous babies in 1999–2003 and 777 perinatal deaths of Indigenous babies in 2004–2008.
- Between 1999–2003 and 2004–2008 there was a drop in the Indigenous to other Australian rate ratio of perinatal deaths in New South Wales and South Australia.

Table 1.20.3: Foetal, neonatal and perinatal mortality rates^{(a)(b)(c)(d)} per 1,000 births, by Indigenous status, NSW, Qld, WA, SA and NT, 1999–2003 to 2004–2008^{(e)(f)(g)(h)(i)}

	1999–2003 ^{(e)(i)}					2004–2008 ^{(e)(f)(g)(h)(i)}				
	Number	Number per 1,000 ^(d)	LCL 95% ^(j)	UCL 95% ^(k)	Rate ratio ^(l)	Number	Number per 1,000 ^(d)	LCL 95% ^(j)	UCL 95% ^(k)	Rate ratio ^(l)
Foetal deaths^(a)										
NSW										
Indigenous	111	7.0	5.7	8.3	1.3*	89	4.9	3.9	5.9	0.9
Other ^(m)	2,241	5.4	5.2	5.6	..	2,362	5.5	5.3	5.7	..
Qld										
Indigenous	151	9.2	7.7	10.7	1.4*	160	8.2	6.9	9.5	1.2*
Other ^(m)	1,479	6.6	6.3	6.9	..	1,777	6.8	6.5	7.1	..
WA										
Indigenous	84	10.3	8.1	12.5	1.4*	79	7.8	6.1	9.5	1.2
Other ^(m)	827	7.2	6.7	7.7	..	835	6.4	6.0	6.8	..
SA										
Indigenous	36	11.3	7.6	15.0	1.6*	23	5.9	3.5	8.3	1.1
Other ^(m)	596	7.0	6.4	7.6	..	465	5.2	4.7	5.7	..
NT										
Indigenous	95	12.0	9.6	14.4	1.6*	97	12.4	9.9	14.9	2.3*
Other ^(m)	80	7.4	5.8	9.0	..	60	5.4	4.0	6.8	..
Qld, WA, SA & NT⁽ⁿ⁾										
Indigenous	366	10.3	9.2	11.4	1.5*	359	8.7	7.8	9.6	1.4*
Other ^(m)	2,982	6.9	6.7	7.1	..	3,137	6.4	6.2	6.6	..

(continued)

Table 1.20.3 (continued): Foetal, neonatal and perinatal mortality rates^{(a)(b)(c)(d)} per 1,000 births, by Indigenous status, NSW, Qld, WA, SA and NT, 1999–2003 to 2004–2008^{(e)(f)(g)(h)(i)}

	1999–2003 ^{(e)(i)}					2004–2008 ^{(e)(f)(g)(h)(i)}				
	Number	Number per 1,000 ^(d)	LCL 95% ^(j)	UCL 95% ^(k)	Rate ratio ^(l)	Number	Number per 1,000 ^(d)	LCL 95% ^(j)	UCL 95% ^(k)	Rate ratio ^(l)
Foetal deaths^(a) (continued)										
NSW, Qld, WA, SA & NT^(o)										
Indigenous	477	9.3	8.5	10.1	1.5*	448	7.5	6.8	8.2	1.3*
Other ^(m)	5,223	6.1	5.9	6.3	..	5,499	6.0	5.8	6.2	..
Neonatal deaths^(b)										
NSW										
Indigenous	88	5.6	4.4	6.8	1.6*	84	4.7	3.7	5.7	1.4*
Other ^(m)	1,441	3.5	3.3	3.7	..	1,401	3.3	3.1	3.5	..
Qld										
Indigenous	106	6.5	5.3	7.7	1.9*	116	6.0	4.9	7.1	1.8*
Other ^(m)	775	3.5	3.3	3.7	..	874	3.4	3.2	3.6	..
WA										
Indigenous	59	7.3	5.4	9.2	3.0*	49	4.9	3.5	6.3	2.3*
Other ^(m)	272	2.4	2.1	2.7	..	275	2.1	1.9	2.3	..
SA										
Indigenous	17	5.4	2.8	8.0	1.9*	15	3.9	1.9	5.9	1.7*
Other ^(m)	241	2.8	2.4	3.2	..	205	2.3	2.0	2.6	..
NT										
Indigenous	85	10.9	8.6	13.2	2.6*	65	8.4	6.4	10.4	3.4*
Other ^(m)	45	4.2	3.0	5.4	..	28	2.5	1.6	3.4	..

(continued)

Table 1.20.3 (continued): Foetal, neonatal and perinatal mortality^{(a)(b)(c)(d)} rates per 1,000 births, by Indigenous status, NSW, Qld, WA, SA and NT, 1999–2003 to 2004–2008^{(e)(f)(g)(h)(i)}

	1999–2003 ^{(e)(i)}					2004–2008 ^{(e)(f)(g)(h)(i)}				
	Number	Number per 1,000	LCL 95% ^(j)	UCL 95% ^(k)	Rate ratio ^(l)	Number	Number per 1,000 ^(d)	LCL 95% ^(j)	UCL 95% ^(k)	Rate ratio ^(l)
Neonatal deaths^(b) (continued)										
Qld, WA, SA & NT⁽ⁿ⁾										
Indigenous	267	7.6	6.7	8.5	2.5*	245	6.0	5.2	6.8	2.1*
Other ^(m)	1,333	3.1	2.9	3.3	..	1,382	2.8	2.7	2.9	..
NSW, Qld, WA, SA & NT^(o)										
Indigenous	355	7.0	6.3	7.7	2.1*	329	5.6	5.0	6.2	1.9*
Other ^(m)	2,774	3.3	3.2	3.4	..	2,783	3.0	2.9	3.1	..
Perinatal deaths^(c)										
NSW										
Indigenous	199	12.5	10.8	14.2	1.4*	173	9.6	8.2	11.0	1.1
Other ^(m)	3,682	8.8	8.5	9.1	..	3,763	8.8	8.5	9.1	..
Qld										
Indigenous	257	15.7	13.8	17.6	1.6*	276	14.1	12.4	15.8	1.4*
Other ^(m)	2,254	10.1	9.7	10.5	..	2,651	10.2	9.8	10.6	..
WA										
Indigenous	143	17.6	14.7	20.5	1.8*	128	12.7	10.5	14.9	1.5*
Other ^(m)	1,099	9.6	9.0	10.2	..	1,110	8.5	8.0	9.0	..

(continued)

Table 1.20.3 (continued): Foetal, neonatal and perinatal mortality^{(a)(b)(c)(d)} rates per 1,000 births, by Indigenous status, NSW, Qld, WA, SA and NT, 1999–2003 to 2004–2008^{(e)(f)(g)(h)(i)}

	1999–2003 ^{(e)(i)}					2004–2008 ^{(e)(f)(g)(h)(i)}				
	Number	Number per 1,000 ^(d)	LCL 95% ^(j)	UCL 95% ^(k)	Rate ratio ^(l)	Number	Number per 1,000 ^(d)	LCL 95% ^(j)	UCL 95% ^(k)	Rate ratio ^(l)
Perinatal deaths^(c) (continued)										
SA										
Indigenous	53	16.7	12.2	21.2	1.7*	38	9.7	6.6	12.8	1.3
Other ^(m)	837	9.8	9.1	10.5	..	670	7.5	6.9	8.1	..
NT										
Indigenous	180	22.8	19.5	26.1	2.0*	162	20.7	17.5	23.9	2.6*
Other ^(m)	125	11.5	9.5	13.5	..	88	7.9	6.2	9.6	..
Qld, WA, SA & NT⁽ⁿ⁾										
Indigenous	633	17.8	16.4	19.2	1.8*	604	14.6	13.4	15.8	1.6*
Other ^(m)	4,315	9.9	9.6	10.2	..	4,519	9.2	8.9	9.5	..
NSW, Qld, WA, SA & NT^(o)										
Indigenous	832	16.2	15.1	17.3	1.7*	777	13.1	12.2	14.0	1.5*
Other ^(m)	7,997	9.4	9.2	9.6	..	8,282	9.0	8.8	9.2	..

(continued)

Table 1.20.3 (continued): Foetal, neonatal and perinatal mortality^{(a)(b)(c)(d)} rates per 1,000 births, by Indigenous status, NSW, Qld, WA, SA and NT, 1999–2003 to 2004–2008^{(e)(f)(g)(h)(i)}

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

- (a) Foetal deaths of at least 20 weeks gestation or with a birth weight of at least 400 grams
- (b) Neonatal death is death of a live-born baby within 28 days of birth.
- (c) Perinatal deaths are all foetal deaths (at least 20 weeks gestation or at least 400 grams birth weight) plus all neonatal deaths.
- (d) Foetal death rates and perinatal death rates are calculated per 1,000 all births for the calendar year. Neonatal death rates are calculated per 1,000 live births for the calendar year.
- (e) Deaths prior to 2007 are by year of registration and state/territory of usual residence. Deaths from 2007 onwards are by reference year and state/territory of usual residence. Registration year prior to 2007 is equivalent to reference year from 2007 onwards.
- (f) 2008 data have been subject to process improvements which have increased the quality of these data.
- (g) Causes of death data for 2007 have been revised and are subject to further revisions.
- (h) Causes of death data for 2008 are preliminary and subject to a revisions process.
- (i) Data are presented in 5-year groupings due to variability of the small numbers involved.
- (j) LCL = lower confidence limit.
- (k) UCL = upper confidence limit.
- (l) Rate ratio Indigenous: Other.
- (m) Other includes non-Indigenous and Indigenous status not stated.
- (n) Data are reported for Queensland, Western Australia, South Australia and the Northern Territory. These jurisdictions are considered to have adequate levels of Indigenous identification in mortality data. They do not represent a quasi-Australian figure.
- (o) Data are reported for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory. These jurisdictions are considered to have adequate levels of Indigenous identification in mortality data. They do not represent a quasi-Australian figure.

Source: ABS Deaths Registration Database.

Mortality by cause of death

Table 1.20.4 presents foetal, neonatal and total perinatal deaths of Indigenous and Other babies by main underlying cause of death. Note that perinatal cause of death data should be used with caution as the level of identification by cause is unknown and may not be suitable for the calculation of rates.

- Over the period 2004–2008, in New South Wales, Queensland, Western Australia, South Australia and the Northern Territory combined, of conditions which originate in the foetus or infant, the most common cause of perinatal death among Indigenous babies was ‘other conditions originating in the perinatal period’ (such as birth trauma) which were reported as an underlying or associated cause of death in 37% of deaths of Indigenous babies. For 33% of Indigenous babies, ‘disorders relating to length of gestation and foetal growth’ were reported as the main underlying cause of death.
- Of conditions which originate in the mother, the most common cause of perinatal death among Indigenous babies was the ‘foetus or newborn affected by complications of the placenta, cord and membranes’ (18%). For approximately 13% of Indigenous babies, the ‘foetus and newborn affected by maternal complications of pregnancy’ was reported as the main underlying cause of death.
- For foetal deaths, the most common causes of death among Indigenous babies were ‘other conditions originating in the perinatal period’ (53%) and ‘disorders related to length of gestation and foetal growth’ (30%). For neonatal deaths, the most common cause of death among Indigenous babies were ‘disorders related to length of gestation and foetal growth’ (37%). This was followed by ‘congenital malformations, deformations and chromosomal abnormalities’ (18%) and, for conditions which originate in the mother, ‘foetus and newborn affected by maternal complications of pregnancy’ (18%).

Table 1.20.4: Main underlying cause of death for perinatal babies, by Indigenous status, NSW, Qld, WA, SA and NT, 2004–2008^{(a)(b)(c)(d)(e)(f)(g)(h)}

Cause of death	Foetal deaths ⁽ⁱ⁾				Neonatal deaths ⁽ⁱ⁾				Perinatal deaths ^(k)			
	Total number		Per cent		Total number		Per cent		Total number		Per cent	
	Indig.	Other ^(l)	Indig.	Other ^(l)	Indig.	Other ^(l)	Indig.	Other ^(l)	Indig.	Other ^(l)	Indig.	Other ^(l)
Main condition in the foetus/infant												
Disorders related to length of gestation and foetal growth (P05–P08)	135	1,548	30.1	28.2	123	875	37.4	31.4	258	2,423	33.2	29.3
Respiratory and cardiovascular disorders specific to the perinatal period (P20–P29)	29	336	6.5	6.1	45	396	13.7	14.2	74	732	9.5	8.8
Infections specific to the perinatal period (P35–P39)	n.p.	52	n.p.	0.9	19	105	5.8	3.8	n.p.	157	n.p.	1.9
Other conditions originating in the perinatal period (P10–P15 and P50–P96)	235	2,721	52.5	49.5	54	490	16.4	17.6	289	3,211	37.2	38.8
Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99)	42	817	9.4	14.9	58	723	17.6	26.0	100	1,540	12.9	18.6
Other conditions ^(m)	n.p.	25	n.p.	0.5	30	194	9.1	7.0	n.p.	219	n.p.	2.6
Total deaths	448	5,499	100.0	100.0	329	2,783	100.0	100.0	777	8,282	100.0	100.0
Main condition in the mother												
Foetus and newborn affected by complications of placenta, cord and membranes (P02)	93	1,038	20.8	18.9	48	366	14.6	13.2	141	1,404	18.1	17.0
Foetus and newborn affected by maternal complications of pregnancy (P01)	38	565	8.5	10.3	59	523	17.9	18.8	97	1,088	12.5	13.1
Foetus and newborn affected by maternal conditions that may be unrelated to present pregnancy (P00)	52	474	11.6	8.6	19	123	5.8	4.4	71	597	9.1	7.2
Foetus and newborn affected by other complications of labour and delivery and noxious influences transmitted via placenta or breast milk (P03–P04)	14	224	3.1	4.1	11	114	3.3	4.1	25	338	3.2	4.1
Total deaths	448	5,499	100.0	100.0	329	2,783	100.0	100.0	777	8,282	100.0	100.0

(continued)

Table 1.20.4 (continued): Main underlying cause of death for perinatal babies, by Indigenous status, NSW, Qld, WA, SA and NT, 2004–2008^{(a)(b)(c)(d)(e)(f)(g)(h)}

- (a) Data based on state of usual residence of mother.
- (b) Data are reported for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. These jurisdictions are considered to have adequate levels of Indigenous identification in mortality data. They do not represent a quasi-Australian figure.
- (c) Deaths prior to 2007 are by year of registration and state/territory of usual residence. Deaths from 2007 onwards are by reference year and state/territory of usual residence. Registration year prior to 2007 is equivalent to reference year from 2007 onwards.
- (d) 2008 data have been subject to process improvements which have increased the quality of these data.
- (e) Causes of death data for 2008 are preliminary and subject to a revisions process.
- (f) Data cells with small values have been randomly assigned to protect the confidentiality of individuals. As a result, some totals will not equal the sum of their components. It is important to note that cells with a zero value have not been affected by confidentialisation.
- (g) Causes of death data for 2007 have been revised and are subject to further revisions.
- (h) Data are presented in 5-year groupings due to variability of the small numbers involved.
- (i) Foetal deaths of at least 20 weeks gestation or with a birth weight of at least 400 grams.
- (j) Neonatal death is death of a live-born baby within 28 days of birth.
- (k) Perinatal deaths are all foetal deaths (at least 20 weeks gestation or at least 400 grams birth weight) plus all neonatal deaths.
- (l) Other includes non-Indigenous and Indigenous status not stated.
- (m) Includes all other causes of death not already included in the table.

Source: ABS Deaths Registration Database.

Time series analysis

Perinatal mortality rates

As there is a consistent time series of population estimates from 1999, data for the period 1999–2008 have been used for the analysis of Indigenous mortality in this indicator.

Fluctuations in the level of Indigenous mortality over time partly reflect changing levels of identification of Indigenous deaths and population estimates. Given the variability in the measures of Indigenous mortality, caution should be exercised in assessing trends in Indigenous mortality over time and comparisons between jurisdictions and with the Other population.

Perinatal mortality rates, rate ratios and rate differences between Indigenous and other babies over the period 1999–2008 are presented in Table 1.20.5 and Figure 1.20.1.

- Over the period 1999–2008, there were significant declines in perinatal mortality rates of Indigenous babies in New South Wales, Queensland, Western Australia, South Australia and the Northern Territory combined. The fitted trend implies an average yearly decline in the rate of around 0.6 deaths per 1,000 births, which is equivalent to a 34% decline in the rate over this period.
- Over the same period, there were also significant declines in perinatal mortality rates of other babies, with an average yearly decline in the rate of around 0.1 deaths per 1,000 births, which is equivalent to an 11% decline in the rate over this period.
- There were significant declines in both the mortality rate ratios and mortality rate differences between Indigenous and other babies between 1999 and 2008 (25% decline in the rate ratio and 63% decline in the rate difference).
- There were large declines in the number of Indigenous perinatal deaths in Western Australia in 2002 and 2004, which have resulted in a decline in the perinatal mortality rate for Indigenous infants in the five jurisdictions combined for that year (Figure 1.20.1). It is not known why there were so few Indigenous perinatal deaths in Western Australia in these years.

Table 1.20.5: Perinatal mortality rates^{(a)(b)}, rate ratios and rate differences, NSW, Qld, WA, SA and NT, 1999–2008^{(c)(d)(e)(f)}

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Annual change ^(g)	Per cent change over period ^(h)
Indigenous rate (number per 1,000 births)												
Number	164	196	179	139	154	125	160	172	175	145	-1.93	-10.6
Rate	16.9	19.3	17.1	13.3	14.5	11.5	14.7	15.2	13.6	10.7	-0.63*	-33.6*
Other⁽ⁱ⁾ rate (number per 1,000 births)												
Number	1,621	1,627	1,676	1,568	1,505	1,599	1,721	1,624	1,643	1,695	6.49	3.6
Rate	9.5	9.5	10.0	9.2	8.8	9.3	9.8	9.0	8.6	8.4	-0.11*	-10.9*
Rate ratio^(j)	1.8	2.0	1.7	1.4	1.6	1.2	1.5	1.7	1.6	1.3	-0.05*	-24.7*
Rate difference^(k)	7.4	9.8	7.1	4.1	5.7	2.2	4.9	6.2	5.0	2.3	-0.52*	-62.7*

* Represents statistically significant increases or decrease over the period 1999–2008 at the $p < 0.05$ level.

(a) Perinatal deaths are all foetal deaths (at least 20 weeks gestation or at least 400 grams birth weight) plus all neonatal deaths.

(b) Perinatal death rates are calculated per 1,000 all births for the calendar year.

(c) Deaths prior to 2007 are by year of registration and state/territory of usual residence. Deaths from 2007 onwards are by reference year and state/territory of usual residence. Registration year prior to 2007 is equivalent to reference year from 2007 onwards.

(d) Causes of death data for 2007 have been revised and are subject to further revisions.

(e) 2008 data have been subject to process improvements which have increased the quality of these data.

(f) Causes of death data for 2008 are preliminary and subject to a revisions process.

(g) Average annual change in rates, rate ratios and rate differences determined using linear regression analysis.

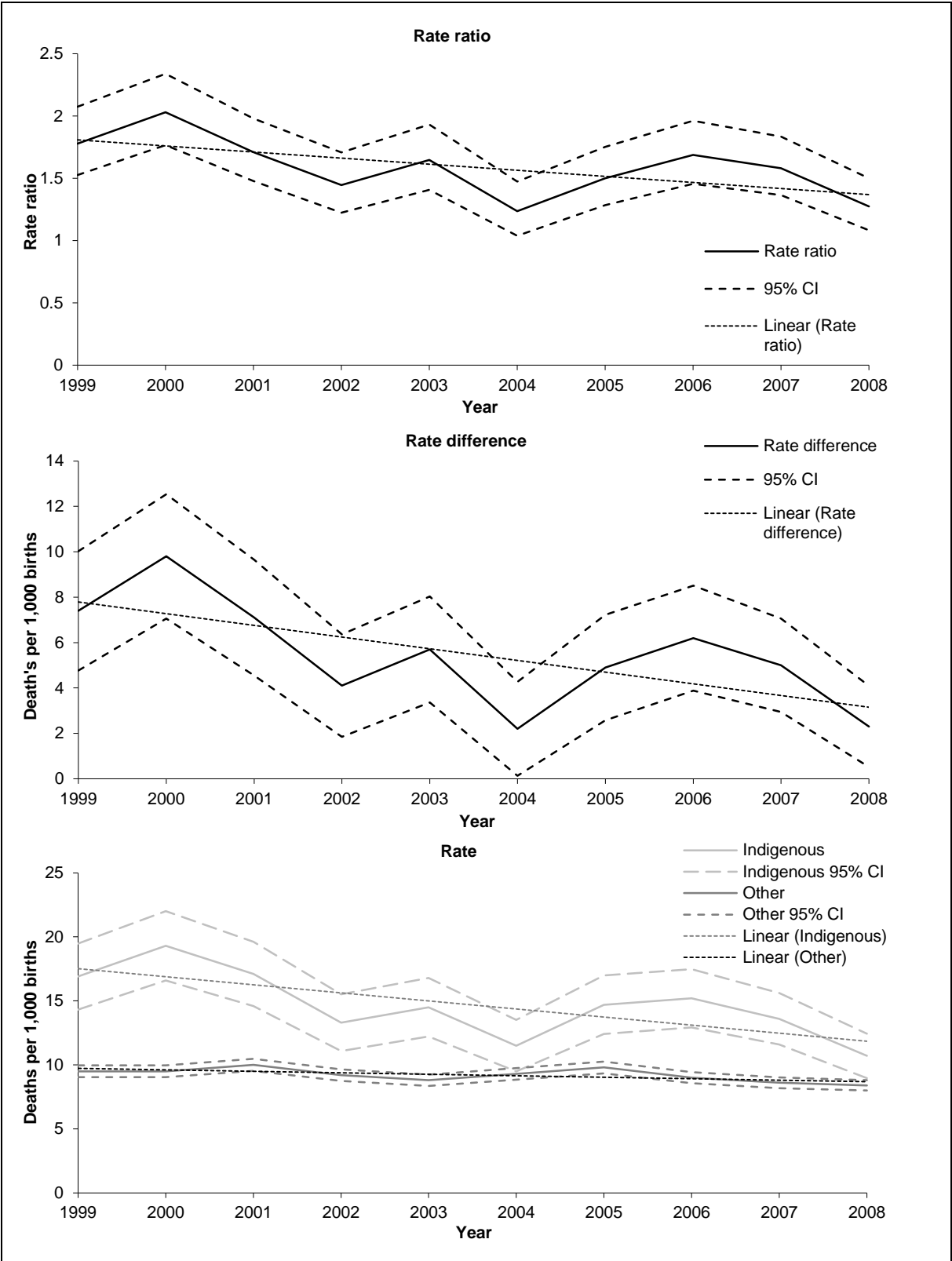
(h) Per cent change between 1999 and 2008 based on the average annual change over the period.

(i) Includes Indigenous status not stated.

(j) Mortality rate for Indigenous Australians divided by the mortality rate for other Australians.

(k) Mortality rate for Indigenous Australians minus the mortality rate for other Australians.

Source: ABS Deaths Registration Database.



Source: ABS Deaths Registration Database.

Figure 1.20.1: Perinatal mortality rates, rate ratios and rate differences between Indigenous and Other Australians, NSW, Qld, WA, SA and NT, 1999–2008

Foetal and neonatal mortality rates

Foetal and neonatal mortality rates for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory combined are available for the period 2001–2008.

- Over this period there was no significant change in the foetal mortality rate for Indigenous babies. Over the same period there was a significant decline in the foetal mortality rate for other babies (10%). There were no significant changes in the mortality rate ratio and mortality rate difference between Indigenous and other foetuses between 2001 and 2008 (Table 1.20.6; Figure 1.20.2a; 1.20.2b).
- Over the period 2001 to 2008 there was a significant decline in the neonatal mortality rate for other babies (14%). There were no significant changes in the foetal mortality rate for Indigenous babies, the mortality rate ratio or mortality rate difference between Indigenous and other foetuses between 2001 and 2008.

Table 1.20.6: Foetal and neonatal deaths^{(a)(b)} by Indigenous Status^(c), NSW, Qld, WA, SA and NT combined, 2001–2008^{(d)(e)(f)(g)}

	2001	2002	2003	2004	2005	2006	2007 ^(e)	2008 ^(f)	Annual change	Per cent change over period
Foetal deaths^(a)										
Indigenous	113	80	91	69	89	103	104	83	–0.4	–2.5
Other ^(c)	1,070	1,029	1,020	1,085	1,135	1,061	1,094	1,124	10.4	6.8
Neonatal deaths^(b)										
Indigenous	66	59	63	56	71	69	71	62	0.8	8.2
Other ^(c)	606	539	485	514	586	563	549	571	1.3	1.5
Foetal mortality number per 1,000 births (live & stillborn)^{(a)(h)}										
Indigenous	10.8	7.6	8.5	6.3	8.2	9.1	8.1	6.1	–0.3	–20.6
Other ^(c)	6.4	6.1	6.0	6.3	6.4	5.9	5.7	5.6	–0.1*	–10.2*
Rate ratio	1.7	1.2	1.4	1.0	1.3	1.5	1.4	1.1	0.0	–13.1
Rate difference	4.4	1.5	2.5	0.0	1.8	3.2	2.4	0.5	–0.2	–35.8
Neonatal mortality number per 1,000 live births^{(b)(h)}										
Indigenous	6.4	5.7	6.0	5.2	6.6	6.2	5.6	4.6	–0.1	–14.5
Other ^(c)	3.6	3.2	2.9	3.0	3.3	3.2	2.9	2.8	–0.1*	–13.7*
Rate ratio	1.8	1.8	2.1	1.7	2.0	1.9	1.9	1.6	0.0	–1.5
Rate difference	2.8	2.5	3.1	2.2	3.3	3.0	2.7	1.8	–0.1	–15.5

* Indicates statistically significant changes at the $p < 0.05$ level.

(a) Foetal deaths of at least 20 weeks gestation or with a birth weight of at least 400 grams.

(b) Neonatal death is death of a live-born baby within 28 days of birth.

(c) Includes Indigenous status not stated.

(d) Deaths prior to 2007 are by year of registration and state/territory of usual residence. Deaths from 2007 onwards are by reference year and state/territory of usual residence. Registration year prior to 2007 is equivalent to reference year from 2007 onwards.

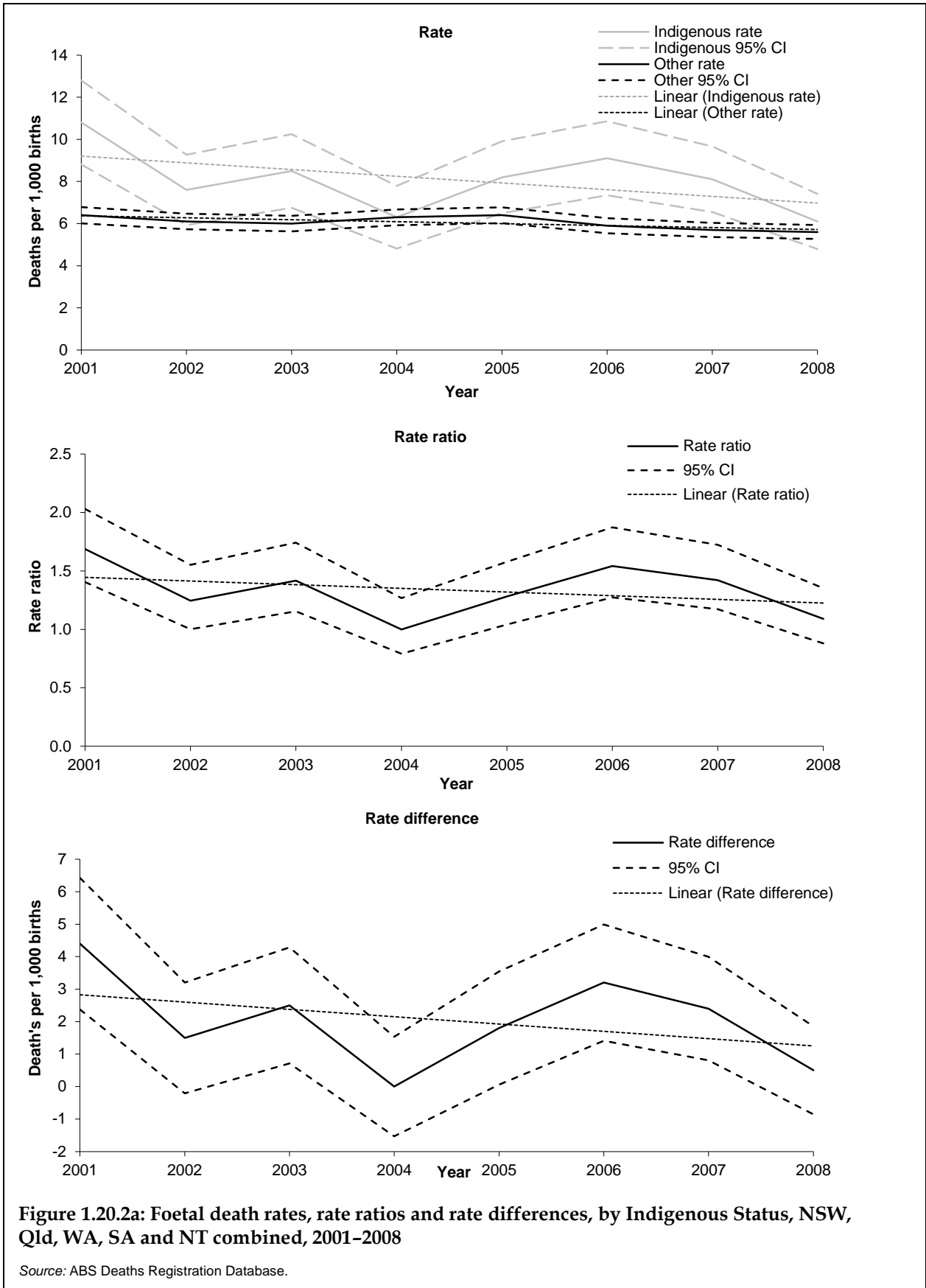
(e) Causes of death data for 2007 have been revised and are subject to further revisions.

(f) 2008 data have been subject to process improvements which have increased the quality of these data.

(g) Causes of death data for 2008 are preliminary and subject to a revisions process.

(h) Foetal death rates are calculated per 1,000 all births for the calendar year. Neonatal death rates are calculated per 1,000 live births for the calendar year.

Source: ABS Deaths Registration Database.



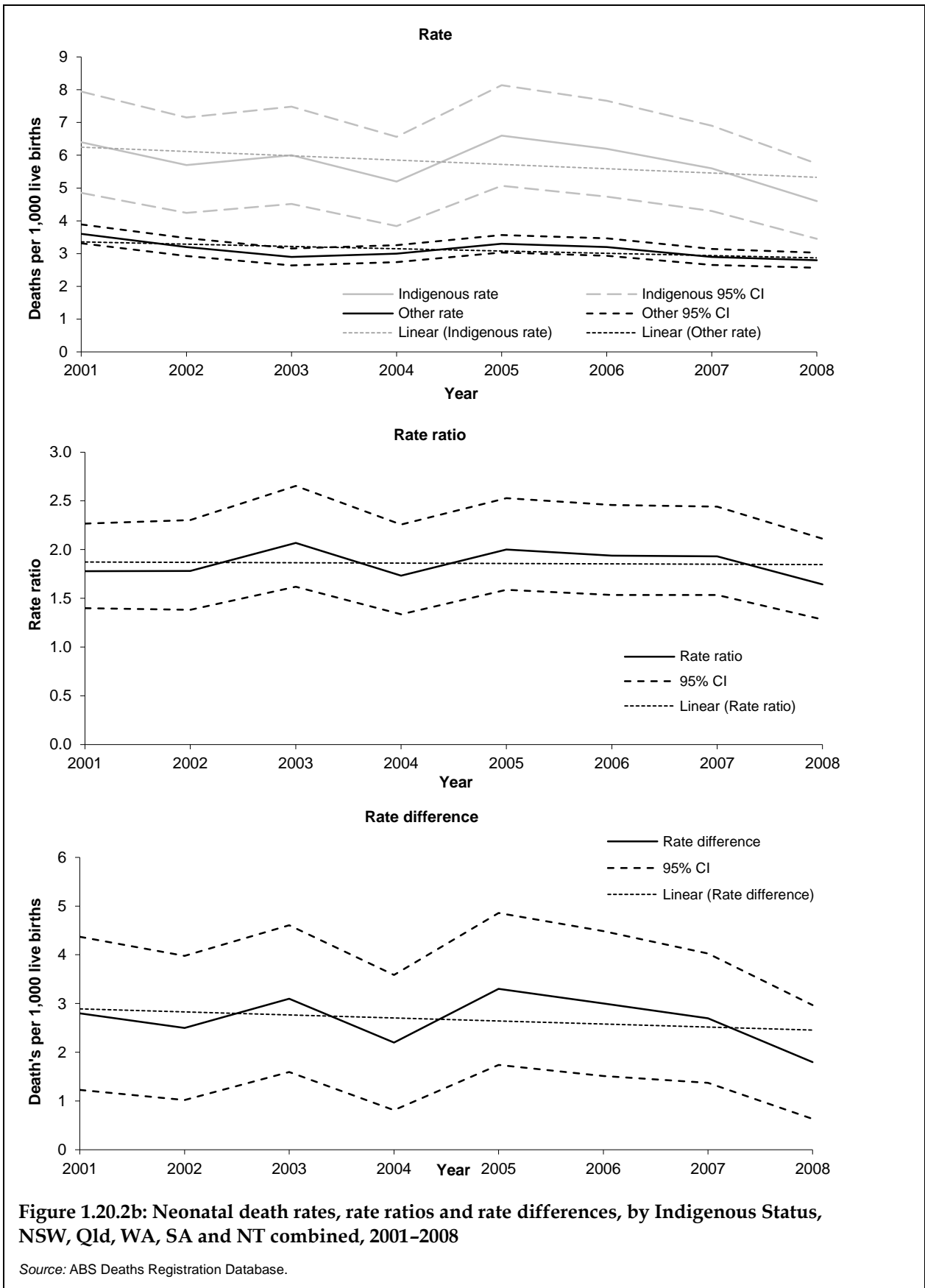


Figure 1.20.2b: Neonatal death rates, rate ratios and rate differences, by Indigenous Status, NSW, Qld, WA, SA and NT combined, 2001-2008

Source: ABS Deaths Registration Database.

International comparisons

International data are available for New Zealand, the United States and Canada using the World Health Organization (WHO) definition of perinatal mortality. However, the WHO definition differs significantly from the Australian definition of the perinatal period. Australian data include babies of at least 400 grams (or at least 20 weeks if birthweight is unavailable) whereas the WHO definition starts at 500 grams (22 weeks if birthweight is unavailable). In addition, the WHO defines perinatal deaths as less than 7 days whereas Australia includes deaths up to 28 days. Perinatal mortality rates of Aboriginal and Torres Strait Islander babies are therefore not comparable to rates for Indigenous populations in the other countries. Therefore, international comparisons have not been presented here.

Additional information

Influencing factors

The main risk factors for perinatal mortality are low birthweight and pre-term birth. Other factors which may be associated with perinatal mortality are smoking during pregnancy, infection, maternal nutrition and underutilisation of antenatal services. Data on these influencing factors are available from the National Perinatal Data Collection and the state and territory perinatal data collections.

Low birthweight

- Over the period 2005–2007, babies born to Indigenous mothers were around twice as likely to have low birthweight as babies born to non-Indigenous mothers (13% compared with 6%) (see Measure 1.01 for more information on low birthweight infants).

Smoking during pregnancy

- Data on smoking during pregnancy show that in 2007 Indigenous mothers were three times more likely to smoke during pregnancy than non-Indigenous mothers (51% compared with 15%). Smoking during pregnancy rates in Indigenous mothers were highest in South Australia (62%), followed by Western Australia (54%) (see indicator 2.19 for more information on smoking during pregnancy).

Underutilisation of antenatal care services

- In 2007, in the two jurisdictions where data are collected on the duration of pregnancy at first antenatal visit (New South Wales and the Northern Territory), Indigenous mothers were two to five times as likely as non-Indigenous mothers to be in their third trimester of pregnancy at their first antenatal session and less likely to be in their first trimester.
- In the three jurisdictions where data were collected in 2007 on the number of antenatal sessions attended during pregnancy (Queensland, South Australia and the Northern Territory), Indigenous mothers were less likely to have attended five or more antenatal sessions during pregnancy than non-Indigenous mothers (see Measure 3.01 for more information on antenatal care).

Data quality issues

ABS Deaths Registration Database

Deaths

The mortality rate for Indigenous Australians can be influenced by late registration of deaths, identification of Indigenous deaths and changes to death forms and/or processing systems. Because of the small size of the Indigenous population, these factors can significantly affect trends over time and between jurisdictions.

Indigenous status question

All jurisdictions comply with the standard wording for the Indigenous status question and categories for their death registration forms. However, New South Wales, Victoria, South Australia, the Northern Territory and the Australian Capital Territory all have slightly different wording from the national standard for the instruction on those with both Aboriginal and Torres Strait Islander origin (ABS & AIHW 2005). Although the wording is only slightly different, it would be ideal to have all jurisdictions asking the question in exactly the same way. The National Perinatal Data Collection has more significant problems with compliance with the standard wording.

Under-identification

Almost all deaths in Australia are registered. However, the Indigenous status of the deceased is not always recorded or recorded correctly. The incompleteness of Indigenous identification means the number of deaths registered as Indigenous is an underestimate of deaths occurring in the Aboriginal and Torres Strait Islander population (ABS 1997). As a result, the observed differences between Indigenous and non-Indigenous mortality are underestimates of the true differences.

Although the identification of Indigenous deaths is incomplete in all state and territory registration systems, four jurisdictions (Queensland, Western Australia, South Australia and the Northern Territory) have been assessed by the ABS and the AIHW as having adequate identification. Longer term mortality trend data are limited to three jurisdictions (Western Australia, South Australia and the Northern Territory) with over 10 years of adequate identification of Indigenous deaths in their recording systems. The quality of the time series data is also influenced by the late inclusion of a 'not stated' category for Indigenous status in 1998. Before this time, the 'not stated' responses were probably included with the non-Indigenous. The ABS calculated the implied coverage (identification) of Indigenous deaths for the period 2002–2006 using population estimates: New South Wales 45%, Victoria 32%, Queensland 51%, South Australia 62%, Western Australia 72%, the Northern Territory 90%, Australia 55% (Tasmania and the Australian Capital Territory were not calculated because of small numbers) (ABS 2007b).

Note that different causes may have levels of under-identification that differ from the all-cause coverage estimates. Note also that the quality of the cause of death data depends on every step of the process of recording and registering deaths (including the documentation available at each step of the process) from certification to coding of cause of death.

There are also current concerns about data quality for causes of death, especially relating to external causes of death of all Australians (not just Indigenous) (ABS 2006b).

Indigenous mortality rate for NSW is lower than the non-Indigenous mortality rate due to quality issue with Indigenous data for this state (ABS 2010).

Numerator and denominator

The perinatal mortality rate also relies on birth registration data. Unfortunately, as with deaths, some Indigenous births are not correctly identified as Indigenous. The estimated identification of births as Indigenous in 2002–06 was 95%. Identification for the states and territories ranged from 83% for the Australian Capital Territory to 107% for the Northern Territory (ABS 2007a). Given that the identification is higher in births than deaths, it is likely that Indigenous perinatal mortality rates are underestimated.

Data quality issues

The numerator and denominator are not based on the same collection or the same method of collection. Births are registered by the parents whereas death registration forms are completed by doctors and funeral directors. Therefore there would be inconsistency of Indigenous identification between the numerator and denominator.

Cause of death coding

Causes of death are based on the 10th revision of the International Classification of Diseases (ICD-10). Mortality coding using ICD-10 was introduced into Australia on 1 January 1997.

International data

International data are available for New Zealand, the United States and Canada using the WHO definition of perinatal mortality. However, the WHO definition differs markedly from the Australian definition of the perinatal period (see above) which was developed to be relevant for the Australian context. Therefore, Australian data include babies of at least 400 grams (at least 20 weeks if birthweight is unavailable) whereas the WHO definition starts at 500 grams (22 weeks if birthweight is unavailable). In addition, the WHO defines perinatal deaths as less than 7 days whereas Australia includes deaths up to 28 days (Laws & Sullivan 2004). It would be possible to analyse Australian data on the WHO definitional basis, but it is not recommended for this performance measure.

National Perinatal Data Collection

Births

Birth notification forms are completed for all births of 20 weeks or more gestation, or a birthweight of 400 grams or more. The Perinatal National Minimum Data Set includes all births in Australia in hospitals, birth centres and the community.

The state/territory of birth is provided for all births. Tabulated data in this report are based on births in each state and territory in 2007 meeting the criteria for inclusion in the NPDC. Each state and territory has its own form and/or electronic system for collecting perinatal data. Unless otherwise stated, the data in this report relate to the state or territory of occurrence of births in 2007 rather than to the state or territory of usual residence of the mother. The Australian Capital Territory data contain a relatively high proportion of New South Wales residents who gave birth in the Australian Capital Territory. There are a small number of Aboriginal and Torres Strait Islander mothers who give birth in the Australian Capital Territory, and the proportion fluctuates from year to year, making this jurisdiction less comparable to other jurisdictions. In 2007, 24.1% of Aboriginal or Torres Strait Islander women who gave birth in the Australian Capital Territory were not Australian Capital Territory residents. When interpreting the data it is important to note that these births to non-residents may include a disproportionate number of high risk and multi-foetal pregnancies associated with poorer perinatal outcomes. Therefore, percentages or rates such as those for pre-term birth and perinatal deaths may be inflated for births that occur in the Australian Capital Territory. Because of this and the small numbers involved, care should be taken in interpreting data from the Australian Capital Territory (Laws et al. 2007).

The Perinatal NMDS does not include neonatal or perinatal death data items of information on cause of death. However, this information is collected as part of the NPDC. The data are incomplete. In some jurisdictions, neonatal deaths for babies transferred to another hospital or re-admitted to hospital and those dying at home may not be included. Neonatal deaths for the Northern Territory are considered to be incomplete for 2007 as data do not include deaths occurring outside of the Northern Territory. Due to small number of deaths, interpretation can be limited as to whether differences in mortality rates are due to statistical fluctuations or differential ascertainment.

Indigenous status question

A standard data item for Indigenous status is specified in the Perinatal National Minimum Data Set. However, not all states and territories use this standard wording for the Indigenous status question on their forms. This affects the quality and comparability of the data collected (ABS & AIHW 2005).

Under-identification

All states and territories have a data item to record Indigenous status on their perinatal form, although there are some differences among the jurisdictions. This separately identifies mothers as those of Aboriginal and Torres Strait Islander origin, and non-Indigenous mothers. No information is collected about the father's or baby's Indigenous status.

Since 2005, all jurisdictions collect information on Indigenous status of the mothers in accordance with the NMDS. All jurisdictions are working towards improving the ascertainment of Indigenous status in their perinatal collection. In 2007, the National Perinatal and Epidemiology Statistics Unit, in collaboration with the AIHW's Aboriginal and Torres Strait Islander Health and Welfare Unit, released a report on Indigenous mothers and their babies in each state and territory. This report was based on a survey which was sent to the midwifery managers across Australia to determine how many hospitals in each jurisdiction obtain Indigenous status information of mothers giving birth from admission records and how many collect this information independently. The assessment also involved analysis of the variability in the number and proportion of mothers recorded as Indigenous in the perinatal data collection over time and across jurisdictions for the period 1991–2004. The outcomes of this assessment showed that Indigenous status data from New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory are suitable for trends analysis. Perinatal data from Tasmania, although improving, were deemed to be of insufficient quality. This project included an assessment of Indigenous status data quality (Leeds et al. 2007).

All jurisdictions are working towards improving the quality of the Indigenous status data. Data on Indigenous status are not reported for Tasmania before 2005 because the 'not stated' category for Indigenous status was included with the non-Indigenous category. The 'not stated' category for birthweight was found to be small nationally in the evaluation of the Perinatal National Minimum Data Set (Laws & Sullivan 2009). Therefore, the exclusion of 'not stated' for birthweight will not have a significant impact on these data.

International comparisons

International indigenous data are available for New Zealand, the United States and Canada using the WHO definition of low birthweight. These data are subject to similar data quality issues experienced in Australia around the accuracy of identification. The Canadian data exclude births less than 500 grams because of changes over time in the quality of reporting babies' birthweight less than 500 grams. This definition is different from Australia's criteria – including all live births and stillbirths of at least 400 grams birthweight or at least 20 weeks gestation.

The scope of data collections in Canada and the United States is often limited to the registered or reserve Indigenous populations and therefore does not cover the whole Indigenous population. International comparisons need to take into account that the definition of Indigenous status is specific to each country.

List of symbols used in tables

- n.a. not available
- rounded to zero (including null cells)
- 0 zero
- .. not applicable
- n.e.c. not elsewhere classified
- n.f.d. not further defined
- n.p. not available for publication but included in totals where applicable, unless otherwise indicated

References

- ABS (Australian Bureau of Statistics) 1997. Occasional paper: Mortality of Aboriginal and Torres Strait Islander Australians. ABS cat. no. 3315.0. Canberra: ABS.
- ABS 2006a. Births Australia 2005. ABS cat. no. 3301.0. Canberra: ABS.
- ABS 2006b. Causes of death 2004. ABS cat. no. 3303.0. Canberra: ABS.
- ABS 2007a. Births Australia 2006. ABS cat. no. 3301.0. Canberra: ABS.
- ABS 2007b. Deaths, Australia 2006. ABS cat. no. 3302.0 ABS: Canberra.
- ABS 2008. Births Australia 2007. ABS cat. no. 3301.0. Canberra: ABS.
- ABS 2010: Perinatal deaths Australia 2008. ABS Cat.no. 3304.4
- ABS & AIHW (Australian Institute of Health and Welfare) 2005. The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples 2005. ABS cat. no. 4704.0, AIHW Cat. no. IHW 14. Canberra: ABS & AIHW.
- Laws PJ & Sullivan EA 2004. Australia's mothers and babies 2002. Perinatal statistics series no. 15. Cat. no. PER 28. Sydney: AIHW National Perinatal Epidemiology and Statistics Unit.
- Laws PJ, Abeywardana S, Walker J & Sullivan EA 2007. Australia's mothers and babies 2005. Perinatal statistics series no. 20. Cat. no. PER 40. Sydney: AIHW National Perinatal Statistics Unit.
- Laws PJ & Sullivan EA 2009. Australia's mothers and babies 2007. Perinatal statistics series no. 23. Cat. no. PER 48. Sydney: AIHW National Perinatal Statistics Unit.
- Leeds KL, Gourley M, Laws PJ, Zhang J, Al-Yaman F & EA, S 2007, Indigenous mothers and their babies, Australia 2001–2004. AIHW cat. no. PER 38. Perinatal statistics series no. 19, AIHW, Canberra

List of tables

Table 1.20.1: Perinatal mortality rates per 1,000 births, by Indigenous status and sex, NSW, Qld, WA, SA & NT combined, 2004–2008585

Table 1.20.2: Foetal, neonatal and perinatal mortality rates per 1,000 births, by Indigenous status, NSW, Qld, WA, SA and NT, 2004–2008586

Table 1.20.3: Foetal, neonatal and perinatal mortality rates per 1,000 births, by Indigenous status, NSW, Qld, WA, SA and NT, 1999–2003 to 2004–2008.....589

Table 1.20.4: Main underlying cause of death for perinatal babies, by Indigenous status, NSW, Qld, WA, SA and NT, 2004–2008.....595

Table 1.20.5: Perinatal mortality rates, rate ratios and rate differences, NSW, Qld, WA, SA and NT, 1999–2008.....598

Table 1.20.6: Fetal and neonatal deaths by Indigenous Status, NSW, Qld, WA, SA and NT combined, 2001–2008.....600

List of figures

Figure 1.20.1: Perinatal mortality rates, rate ratios and rate differences between Indigenous and Other Australians, NSW, Qld, WA, SA and NT, 1999–2008.....599

Figure 1.20.2a: Foetal death rates, rate ratios and rate differences, by Indigenous Status, NSW, Qld, WA, SA and NT combined, 2001–2008.....601

Figure 1.20.2b: Neonate death rates, rate ratios and rate differences, by Indigenous Status, NSW, Qld, WA, SA and NT combined, 2001–2008.....602