

1.22 All-causes age-standardised death rates

The number of Aboriginal and Torres Strait Islander Australian deaths, expressed as a rate by age group, age-standardised rate and rate ratio

Data sources

National Mortality Database

The National Mortality Database is a national collection of de-identified unit record level data. It comprises most of the information recorded on death registration forms and medical (cause of death) certificates, including Indigenous status. The Australian Institute of Health and Welfare (AIHW) maintains the database. The Registrars of Births, Deaths and Marriages provide information on the characteristics and causes of death of the deceased and the Australian Bureau of Statistics (ABS) codes this nationally. The medical practitioner certifying the death, or a coroner, supplies information on the cause of death. The data are updated each calendar year and are presented by state/territory of usual residence rather than state/territory where death occurs.

It is considered likely that most deaths of Aboriginal and Torres Strait Islander people are registered. However, a proportion of these deceased are not reported as Aboriginal or Torres Strait Islander by the family, health worker or funeral director during the death registration process. That is, while data are provided to the ABS for the Indigenous status question for 99% of all deaths, there are concerns regarding the accuracy of the data. The funeral director does not always directly ask the Indigenous status question of relatives and friends of the deceased. Detailed breakdowns of Aboriginal and Torres Strait Islander deaths are therefore only provided for five jurisdictions – New South Wales, Queensland, South Australia, Western Australia and the Northern Territory (AIHW 2010).

Deaths for which the Indigenous status of the deceased was not reported have been excluded from the analysis.

The ABS supplied additional revised 2007 and preliminary 2008 mortality data for this indicator from the ABS Cause of Death database. For further information see *Causes of death, Australia, 2008* (ABS 2010).

Data have been combined for the 5-year period 2004–2008 because of the small number of deaths from some conditions each year. Data have been analysed using the year of registration of death for all years. Note that the 2006 edition of this report used year of occurrence of death for all years of analysis except for the latest year of available data for which year of registration of death was used. Data published in this report may therefore differ slightly from those published in the previous edition for comparable years of data.

Analyses

Age-standardised rates and ratios have been used as a measure of mortality in the Indigenous population relative to non-Indigenous Australians. Ratios of this type illustrate

differences between the rates of mortality among Indigenous people and those of non-Indigenous Australians, taking into account differences in age distributions.

Mortality

- For the period 2004–2008, there were 478,092 deaths in Queensland, Western Australia, South Australia and the Northern Territory, 10,840 (2.3%) of which were deaths of people who identified as Aboriginal or Torres Strait Islander origin (Table 1.22.1).

Mortality by age and sex

Figure 1.22.1 and Table 1.22.1 present the age distribution of deaths among Aboriginal and Torres Strait Islander people compared with non-Indigenous Australians, and Table 1.22.2 presents age-specific mortality rates for the period 2004–2008 for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory combined.

- The age distribution of deaths among Aboriginal and Torres Strait Islander people is very different from that for non-Indigenous Australians. The Indigenous population has a high proportion of deaths occurring in the lower and middle age groups. In comparison, the non-Indigenous population has the large majority of deaths occurring in the older age groups (Figure 1.22.1; Table 1.22.1). Approximately 66% of deaths among Indigenous Australians occur before the age of 65 years compared with 20% of deaths among non-Indigenous Australians.
- For the period 2004–2008, in New South Wales, Queensland, Western Australia, South Australia and the Northern Territory combined, Indigenous males and females had higher mortality rates than non-Indigenous males and females across all age groups (Table 1.22.2).
- The greatest difference in rates occurred in the 45–54, 35–44 and 25–34 year age groups where Indigenous people died at five, four and four times the rate respectively of non-Indigenous males and females in these age groups (Table 1.22.2).

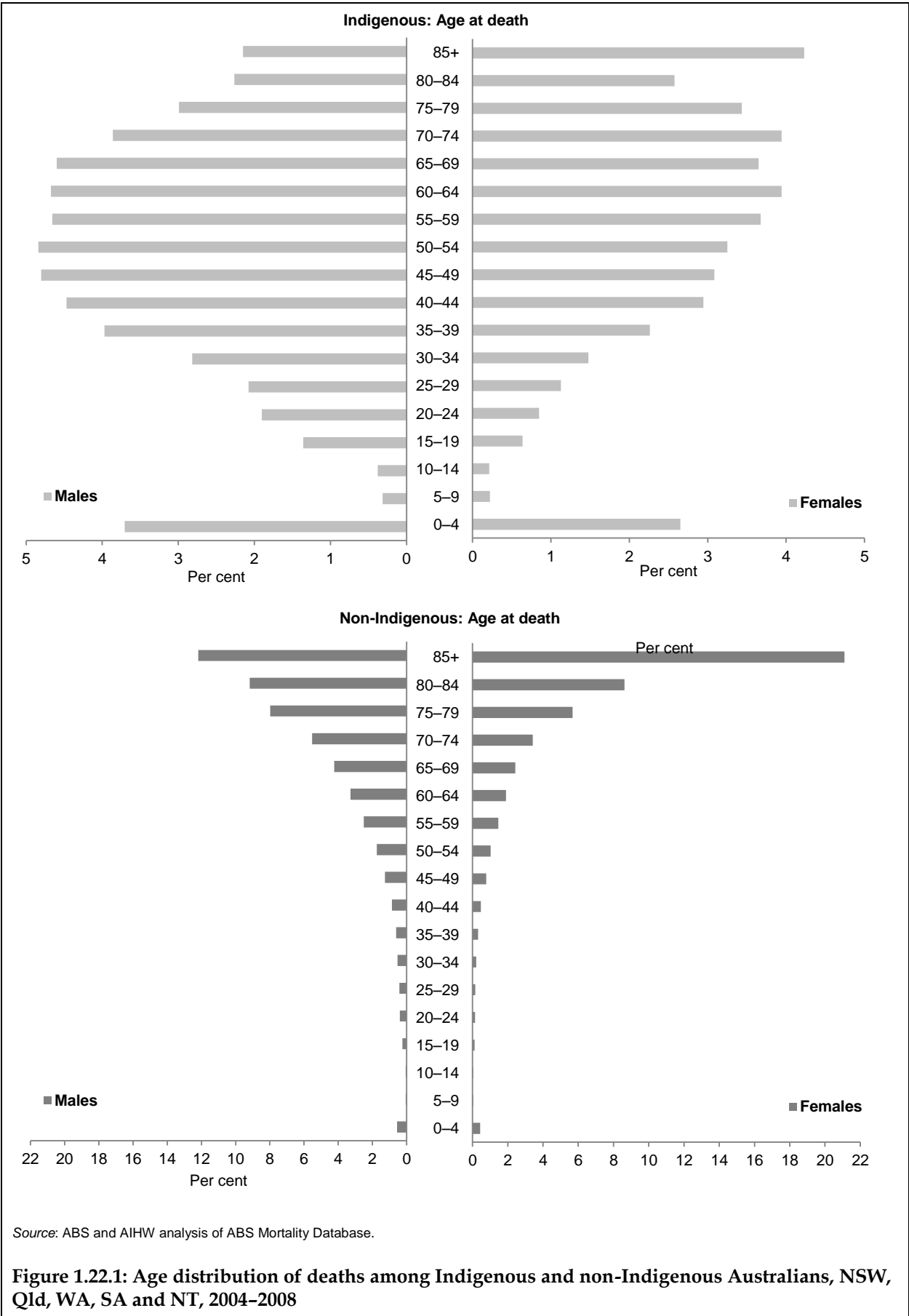


Table 1.22.1: Number and percentage of deaths by age group, by Indigenous status and sex, NSW, Qld, WA, SA and NT, 2004–2008^{(a)(b)(c)(d)(e)(f)}

Age group	Number of deaths				Percentage of deaths			
	Indigenous		Non-Indigenous		Indigenous		Non-Indigenous	
	Males	Females	Males	Females	Males	Females	Males	Females
<1	334	232	2,166	1,680	5.5	4.8	0.9	0.7
1-4	67	55	455	322	1.1	1.1	0.2	0.1
0-4	401	287	2,621	2,002	6.6	6.0	1.1	0.9
5-9	34	24	255	188	0.6	0.5	0.1	0.1
10-14	41	23	275	177	0.7	0.5	0.1	0.1
1-14	142	102	985	687	2.3	2.1	0.4	0.3
15-19	147	69	1,151	534	2.4	1.4	0.5	0.2
20-24	206	92	1,855	641	3.4	1.9	0.8	0.3
25-29	225	122	1,994	717	3.7	2.5	0.8	0.3
30-34	305	160	2,496	981	5.0	3.3	1.0	0.4
35-39	430	245	2,888	1,440	7.1	5.1	1.2	0.6
40-44	484	319	4,045	2,234	8.0	6.7	1.7	1.0
45-49	520	334	5,901	3,643	8.6	7.0	2.4	1.6
50-54	524	352	8,139	4,805	8.7	7.4	3.4	2.1
55-59	504	398	11,696	6,854	8.3	8.3	4.8	3.0
60-64	506	427	15,334	8,898	8.4	8.9	6.4	3.9
65-69	498	395	19,766	11,367	8.2	8.3	8.2	5.0
70-74	418	427	25,836	15,998	6.9	8.9	10.7	7.1
75-79	324	372	37,263	26,518	5.4	7.8	15.4	11.7
80-85	245	279	42,882	40,291	4.0	5.8	17.8	17.8
85+	233	458	56,910	98,633	3.8	9.6	23.6	43.7
Not stated	10	2	19	5	0.2	0.0	0.0	0.0
Total	6,055	4,785	241,326	225,926	100.0	100.0	100.0	100.0

- (a) Data are reported for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. These five jurisdictions are considered to have adequate levels of Indigenous identification in mortality data. They do not represent a quasi-Australian figure.
- (b) Data are presented in 5-year groupings because of small numbers each year.
- (c) Although most deaths of Indigenous Australians are registered, it is likely that some are not accurately identified as Indigenous. Therefore, these statistics are likely to underestimate the Indigenous all-causes mortality rate. It is also difficult to exactly identify the difference between the Indigenous and non-Indigenous mortality rates because of these data quality issues.
- (d) These data exclude 5,756 registered deaths where the Indigenous status is not stated.
- (e) Although most deaths of Indigenous Australians are registered, it is likely that some are not accurately identified as Indigenous. Therefore, these statistics are likely to underestimate the Indigenous all-causes mortality rate.
- (f) Deaths are by year of registration.

Source: ABS and AIHW analysis of ABS Mortality Database.

Table 1.22.2: All-causes age-specific mortality rates per 100,000, by Indigenous status and sex, NSW, Qld, WA, SA and NT, 2004–2008^{(a)(b)(c)(d)(e)}

Age group	Males			Females			Persons		
	Indig. rate ^(f)	Non-Indig. rate ^(f)	Rate ratio ^(g)	Indig. rate ^(f)	Non-Indig. rate ^(f)	Rate ratio ^(g)	Indig. rate ^(f)	Non-Indig. rate ^(f)	Rate ratio ^(g)
Less than 1	1,115.6	463.2	2.4	796.2	378.1	2.1	958.0	421.7	2.3
1–4	57.3	25.2	2.3	49.0	18.9	2.6	53.2	22.1	2.4
0–4 years	273.0	115.3	2.4	203.0	93.1	2.2	238.7	104.5	2.3
5–14	25.2	11.1	2.3	16.7	8.1	2.1	21.1	9.6	2.2
1-14 years	34.3	15.0	2.3	25.9	11.0	2.3	30.2	13.1	2.3
15–24	156.0	60.0	2.6	74.5	24.5	3.0	116.2	42.6	2.7
25–34	328.3	90.2	3.6	169.4	34.3	4.9	247.6	62.4	4.0
35–44	658.2	131.7	5.0	373.6	69.4	5.4	510.0	100.5	5.1
45–54	1,089.2	282.6	3.9	663.8	168.2	3.9	868.5	225.1	3.9
55–64	2,011.6	673.3	3.0	1,466.3	397.7	3.7	1,723.4	536.4	3.2
65–74	4,368.1	1,872.8	2.3	3,070.0	1,083.3	2.8	3,640.2	1,470.8	2.5
75 and over	9,374.6	7,452.3	1.3	8,056.7	6,247.1	1.3	8,561.8	6,741.0	1.3
Total (crude)	528.2	678.8	0.8	413.7	629.8	0.7	470.7	654.2	0.7
Total (age-standardised)^(h)	1,381.1	711.7	1.9	1,021.2	520.8	2.0	1,183.3	609.5	1.9
Total (age-standardised) Australia^(h)	1,278.4	705.9	1.8	954.6	521.9	1.8	1,101.6	607.2	1.8

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

- (a) Data are reported for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. These five jurisdictions are considered to have adequate levels of Indigenous identification in mortality data. They do not represent a quasi-Australian figure.
- (b) Data are presented in 5-year groupings because of small numbers each year.
- (c) These data exclude 7,665 registered deaths where the Indigenous status is not stated.
- (d) Although most deaths of Indigenous Australians are registered, it is likely that some are not accurately identified as Indigenous. Therefore, these statistics are likely to underestimate the Indigenous all-causes mortality rate. It is also difficult to exactly identify the difference between the Indigenous and non-Indigenous mortality rates because of these data quality issues..
- (e) Deaths are by year of reference.
- (f) Age-specific rate per 100,000 population.
- (g) Rate ratio Indigenous:non-Indigenous.
- (h) Total rates have been directly age-standardised using the 2001 Australian standard population. Age-standardised death rates enable the comparison of death rates between populations with different age structures by relating them to a standard population. The current ABS standard population is all persons in the Australian population at 30 June 2001. SDRs are expressed per 100,000 persons. Age-standardised rates in this table have been calculated using the direct method, age-standardised by 5 year age group to 75+.

Source: ABS and AIHW analysis of ABS Mortality Database.

Mortality by state/territory

Table 1.22.3 presents the number of deaths and mortality rates for the five-year period 2004–2008 for Indigenous and non-Indigenous Australians in New South Wales, Queensland, Western Australia, South Australia and the Northern Territory.

- In New South Wales, Queensland, Western Australia, South Australia and the Northern Territory combined, Indigenous Australians died at twice the rate of non-Indigenous Australians.
- In Queensland, South Australia and the Northern Territory Indigenous Australians died at around twice the rate of non-Indigenous Australians. In Western Australia, Indigenous Australians died at three times the rate of non-Indigenous Australians.

Table 1.22.3: All-causes mortality, by Indigenous status, NSW, Qld, WA, SA, NT and Australia, 2004–2008^{(a)(b)(c)(d)(e)}

State/territory	Number of deaths			Number per 100,000 ^(f)		Ratio ^(g)
	Indigenous	Non-Indigenous	Not stated	Indigenous	Non-Indigenous	
NSW	2,687	228,242	1,980	946.6	614.6	1.5
Qld	2,838	120,913	1,956	1,062.9	609.3	1.7
WA	2,356	56,394	409	1,673.0	580.0	2.9
SA	676	59,166	653	1,022.5	615.2	1.7
NT	2,283	2,537	32	1,582.3	679.2	2.3
NSW, Qld, WA, SA & NT ^(a)	10,840	467,252	5,030	1,184.2	609.3	1.9
Australia	11,449	659,647	7,665	1,102.3	607.0	1.8

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

- (a) Data are reported for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. These five jurisdictions are considered to have adequate levels of Indigenous identification in mortality data. They do not represent a quasi-Australian figure.
- (b) Data are presented in 5-year groupings because of small numbers each year.
- (c) Although most deaths of Indigenous Australians are registered, it is likely that some are not accurately identified as Indigenous. Therefore, these statistics are likely to underestimate the Indigenous all-causes mortality rate.
- (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) Rates exclude 7,665 registered deaths where the Indigenous status is not stated.
- (f) Age-standardised death rates enable the comparison of death rates between populations with different age structures by relating them to a standard population. The current ABS standard population is all persons in the Australian population at 30 June 2001. SDRs are expressed per 100,000 persons. Age-standardised rates in this table have been calculated using the direct method, age-standardised by 5-year age group to 75+. These rates exclude 7,665 registered deaths where the Indigenous status is not stated.
- (g) Rate ratio Indigenous: non-Indigenous.

Note: 2008 mortality data preliminary.

Source: ABS and AIHW analysis of ABS Mortality Database.

Time series analysis

Longer term mortality trend data are limited to three jurisdictions – Western Australia, South Australia and the Northern Territory, which have over 10 years of adequate identification of Indigenous deaths in their recording systems.

As there is a consistent time series of population estimates from 1991, data for the period 1991–2008 have been used for the analysis of Indigenous mortality in this measure.

Because of the late inclusion of a 'not stated' category of Indigenous status in 1998 (before which 'not stated' responses were included with non-Indigenous deaths), Indigenous mortality rates have been compared with the mortality rates of other Australians (which include deaths of both non-Indigenous people and people for whom Indigenous status was not stated).

Mortality rates, rate ratios and rate differences between Indigenous and other Australians over the period 1991–2008 are presented in Table 1.22.4 and Figure 1.22.2.

- In the period 1991–2008, there were significant declines in recorded mortality rates in Western Australia, South Australia and the Northern Territory combined for Indigenous Australians. The fitted trend implies an average yearly decline in the rate of around 32 per 100,000 (equivalent to a 25% reduction in the rate over this period). The fitted trend showed significant declines in recorded deaths for Indigenous males and females of 31 per 100,000 (equivalent to a 23% and 27% reduction in the rate over this period) (Table 1.22.4). Most of the observed declines are attributable to significant declines in Indigenous mortality in Western Australia and the Northern Territory.
- There were also significant declines in recorded mortality rates for other males and females between 1991 and 2008. The fitted trend implies an average yearly decline in the rate of around 13 per 100,000 for other Australians (equivalent to a 28% reduction in the rate over this period).
- There were significant increases in the mortality rate ratios between Indigenous and other Australians males over the period 1991–2008. There were no significant changes in the rate ratios between Indigenous and other Australian females and persons over the same period.
- There was a significant decrease in the mortality rate difference for males, females and persons over period 1991–2008.

Fluctuations in the level of Indigenous mortality over time partly reflect changing levels of coverage 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 non-Indigenous population.

Table 1.22.4: Age-standardised mortality rates^(a), rate ratios and rate differences, WA, SA and NT, 1991–2008

	Indigenous number per 100,000			Other Australian ^(b) number per 100,000			Rate ratio ^(c)			Rate difference ^(d)		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
1991	2,299.1	1,947.6	2,114.9	974.4	626.6	779.5	2.4	3.1	2.7	1,324.6	1,321.0	1,335.4
1992	2,206.6	1,668.9	1,915.3	950.5	621.3	766.5	2.3	2.7	2.5	1,256.1	1,047.5	1,148.9
1993	2,104.1	1,710.8	1,888.6	971.8	639.6	786.6	2.2	2.7	2.4	1,132.4	1,071.2	1,102.0
1994	2,145.0	1,802.4	1,967.1	971.5	623.5	776.5	2.2	2.9	2.5	1,173.4	1,179.0	1,190.6
1995	2,181.6	1,581.4	1,857.0	913.7	602.9	741.2	2.4	2.6	2.5	1,267.9	978.6	1,115.8
1996	1,984.9	1,277.2	1,603.9	930.3	615.0	755.6	2.1	2.1	2.1	1,054.5	662.2	848.3
1997	2,147.1	1,471.8	1,774.0	885.3	599.3	727.3	2.4	2.5	2.4	1,261.7	872.5	1,046.7
1998	2,019.0	1,351.0	1,656.5	858.3	575.5	703.2	2.4	2.3	2.4	1,160.7	775.5	953.3
1999	1,777.3	1,370.2	1,560.9	824.8	555.6	676.9	2.2	2.5	2.3	952.5	814.5	884.0
2000	1,939.2	1,453.7	1,673.4	810.2	547.6	666.1	2.4	2.7	2.5	1,129.1	906.1	1,007.3
2001	1,900.8	1,105.8	1,456.2	777.5	548.0	652.5	2.4	2.0	2.2	1,123.3	557.8	803.7
2002	1,623.0	1,235.3	1,405.5	771.2	552.7	652.3	2.1	2.2	2.2	851.8	682.6	753.2
2003	1,756.0	1,021.7	1,347.0	760.6	541.9	641.8	2.3	1.9	2.1	995.4	479.8	705.1
2004	1,703.5	1,348.4	1,514.6	716.8	512.4	606.9	2.4	2.6	2.5	986.6	836.0	907.8
2005	1,632.6	1,156.2	1,372.9	717.6	507.1	605.0	2.3	2.3	2.3	915.1	649.1	767.9
2006	1,694.7	1,243.6	1,450.1	692.6	510.8	595.6	2.4	2.4	2.4	1,002.1	732.8	854.4
2007	1,843.5	1,364.6	1,577.9	712.3	514.3	606.6	2.6	2.7	2.6	1,131.2	850.3	971.3
2008	1,998.2	1,554.8	1,753.7	699.9	526.7	608.6	2.9	3.0	2.9	1,298.3	1,028.1	1,145.1
Annual change^(e)	-31.2*	-31.1*	-31.6*	-19.0*	-8.2*	-12.6*	0.02*	-0.02	0.00	-12.2*	-22.9*	-19.0*
Per cent change^(f)	-23.1*	-27.2*	-25.4*	-33.2*	-22.1*	-27.5*	12.5*	-9.1	0.1	-15.6*	-29.5*	-24.2*

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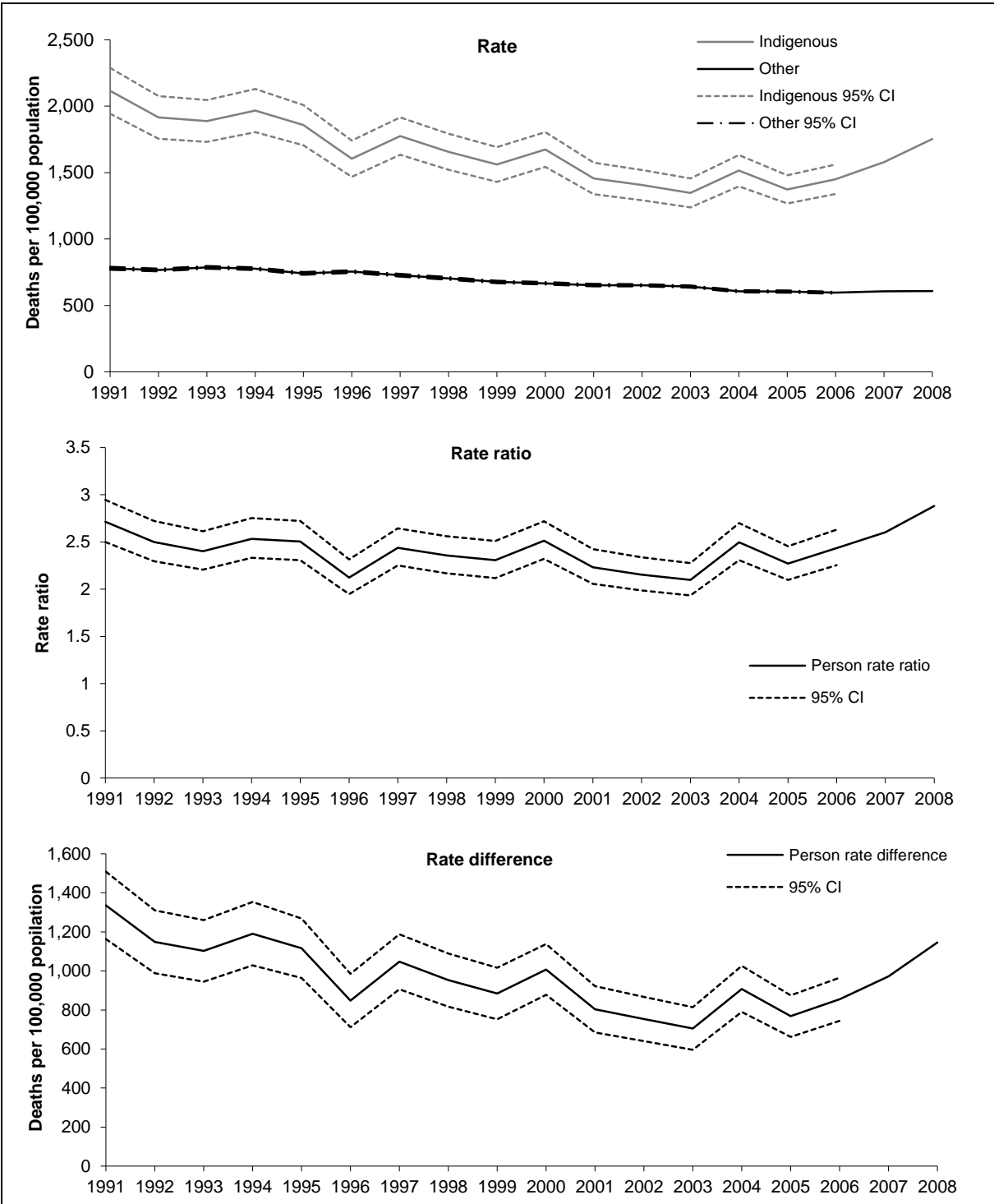
Table 1.22.4 (continued): Age-standardised mortality rates^(a), rate ratios and rate differences, WA, SA and NT, 1991–2008

* Represents results with statistically significant increases or declines at the $p < 0.05$ level over the period 1991–2008.

- (a) Rates have been directly age-standardised using the 2001 Australian standard population.
- (b) 'Other' includes deaths of non-Indigenous people and those for whom Indigenous status was not stated.
- (c) Mortality rate for Indigenous Australians divided by the mortality rate for other Australians.
- (d) Mortality rate for Indigenous Australians minus the mortality rate for other Australians.
- (e) Average annual change in rates, rate ratios and rate differences determined using linear regression analysis.
- (f) Per cent change between 1991 and 2008 based on the average annual change over the period.

Note: Rates presented in this table may differ from those presented in the 2006 edition of this report for comparable years because of a change from using year of occurrence of death to year of registration of death for mortality analyses.

Source: ABS and AIHW analysis of ABS Mortality Database.



Source: ABS and AIHW analysis of ABS Mortality Database.

Note: Confidence intervals for 2007 and 2008 data have not been presented due to data limitations.

Figure 1.22.2: Age-standardised mortality rates, rate ratios and rate differences between Indigenous and other Australians, WA, SA and NT, 1991-2008

Additional trends analysis is presented for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory combined from 2001 to 2008 for Indigenous and non-Indigenous Australians in Table 1.22.5 and Figure 1.22.3.

- Over the period 2001–2008, there were no significant increases in recorded mortality rates in New South Wales, Queensland, Western Australia, South Australia and the Northern Territory combined for Indigenous Australians.
- Over the same period, there were significant declines in recorded mortality rates for non-Indigenous males and persons in the five jurisdictions. The fitted trend implies an average yearly decline in the rate of around 6 per 100,000 for non-Indigenous persons (equivalent to a 6% reduction in the rate over this period).
- There were significant increases in the mortality rate ratios between Indigenous and non-Indigenous Australians over the period 2001–2008 (9% increase), and no significant changes in the mortality rate differences over the same period.

Table 1.22.5: Age-standardised mortality rates^(a), rate ratios and rate differences, NSW, Qld, WA, SA and NT, 2001–2008

	Indigenous rate per 100,000			Non-Indigenous Australian ^(b) rate per 100,000			Rate ratio ^(c)			Rate difference ^(d)		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
2001	1,523.7	963.1	1,213.3	765.3	531.4	638.1	2.0	1.8	1.9	758.4	431.7	575.2
2002	1,415.7	1,042.3	1,209.4	766.7	545.8	646.8	1.8	1.9	1.9	649.0	496.5	562.7
2003	1,432.2	907.3	1,143.5	743.8	533.2	630.1	1.9	1.7	1.8	688.4	374.0	513.4
2004	1,407.1	1,022.2	1,194.1	738.1	530.5	626.3	1.9	1.9	1.9	669.0	491.7	567.8
2005	1,266.2	952.5	1,099.2	702.7	508.5	598.6	1.8	1.9	1.8	563.5	443.9	500.6
2006	1,391.0	976.1	1,160.9	699.1	512.6	599.2	2.0	1.9	1.9	691.9	463.5	561.8
2007	1,409.3	1,084.4	1,231.4	702.7	518.4	604.1	2.0	2.1	2.0	706.6	566.0	627.3
2008	1,431.0	1,112.0	1,256.6	711.1	531.8	615.7	2.0	2.1	2.0	719.9	580.2	640.9
Annual change^(e)	-11.3	16.5	4.4	-10.3*	-2.6	-5.8*	0.01	0.04*	0.03*	-0.9	19.1*	10.3
Per cent change^(f)	-5.2	12.0	2.5	-9.5*	-3.4	-6.4*	4.3	15.7*	9.3*	-0.8	31.0*	12.5

* Represents results with statistically significant increases or declines at the $p < 0.05$ level over the period 2001–2008.

(a) Rates have been directly age-standardised using the 2001 Australian standard population.

(b) Excludes deaths of those for whom Indigenous status was not stated.

(c) Mortality rate for Indigenous Australians divided by the mortality rate for non-Indigenous Australians.

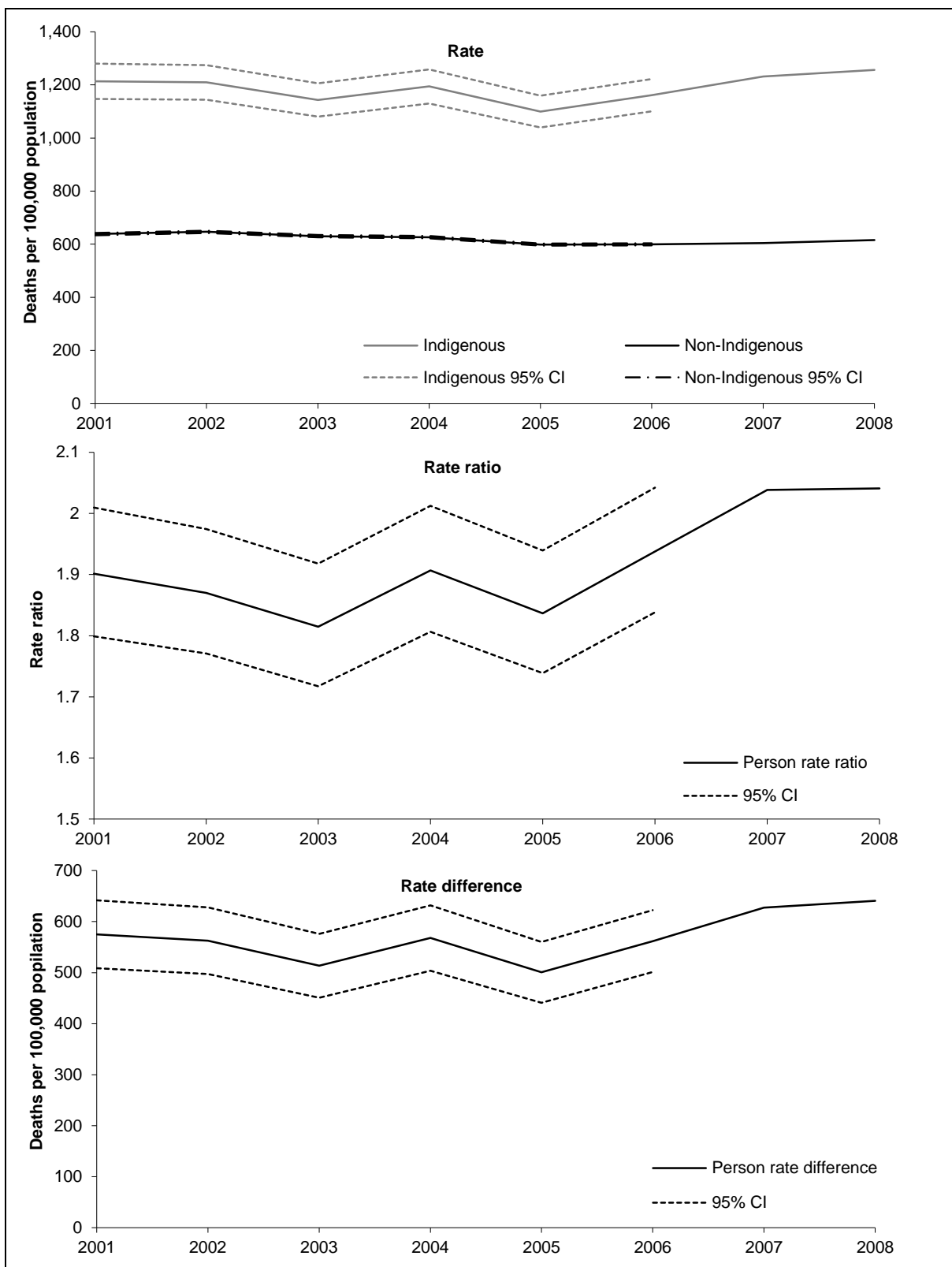
(d) Mortality rate for Indigenous Australians minus the mortality rate for non-Indigenous Australians.

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

(f) Per cent change between 1991 and 2008 based on the average annual change over the period.

Note: Rates presented in this table may differ from those presented in the 2006 edition of this report for comparable years because of a change from using year of occurrence of death to year of registration of death for mortality analyses.

Source: ABS and AIHW analysis of ABS Mortality Database.



Source: ABS and AIHW analysis of ABS Mortality Database.

Note: Confidence intervals for 2007 and 2008 data have not been presented due to data limitations.

Figure 1.22.3: Age- standardised mortality rates, rate ratios and rate differences between Indigenous and non-Indigenous Australians, NSW, Qld, WA, SA and NT, 2001-2008

International comparisons

Numerous studies have indicated that the gap between Indigenous and non Indigenous people's life expectancy in Australia is greater than in New Zealand, Canada and the United States of America (USA).

However, difficulties related to concepts, data and methods behind such estimates throw doubt on conclusions drawn from country comparison studies. This suggests that the uncertainty associated with indigenous life expectancy estimates could be quite large.

Australia, New Zealand, Canada, and the USA differ in how they define and measure their Indigenous population. The two main differences relate to the 'inclusiveness' of the underlying Indigenous population and the accuracy of Indigenous deaths recorded.

- Australian estimates of the Indigenous population are based on self-identification of Indigenous status from the Census. While Indigenous status is reported in the national mortality database, there are known problems with non-reporting and incorrect reporting of Indigenous deaths.
- In New Zealand, Census respondents are asked what 'ethnic group' they belong to and multiple answers are permitted. The Maori life tables from 1990–1992 include all who identify as Maori, including those who identify with other ethnicities. Since 1995, Maori deaths have been identified in a similar way.
- Life expectancy estimates in the USA are restricted to American Indians and Alaska Natives (AI/ ANs) who live 'on or near reservations'. Based on 2002 Census data, this was around 57% of the estimated AI/ AN population. AI/ AN identification is available on official death certificates, however, unlike the Census, multiple race information was not available before 2003. As of 2007, only 27 of the 52 registration areas collected multiple race information.
- Canadian estimates of the Aboriginal population are obtained from a 20% sample of the five-yearly population Census. Aboriginal status is not collected on the death registration form. Data linkages are used to ascertain Aboriginal deaths. Published life expectancy estimates are restricted to Registered Indians, who account for around one-half of the Aboriginal population.

Countries that adopted the least inclusive definitions of 'Indigenous' in their health and population data collection systems, tended to report the best life expectancy estimates.

In general, cross-country comparisons give little or no consideration to the level of uncertainty associated with the data and methodologies used.

- Most publications present and discuss differences between country estimates of Indigenous life expectancy as though they represent real differences.
- Only a few publications provide general cautions about drawing conclusions in the presence of uncertainties of largely unknown magnitude.

Based on an informed evaluation, this suggests that the uncertainty associated with Indigenous life expectancy estimates could be quite large.

The mortality rates presented below have been directly age-standardised to the WHO World Standard population 2001–2025 to allow for comparisons to be made between the four countries.

International statistics on all-cause mortality show that indigenous people in the United States have lower mortality rates than the general population, and in Canada and New

Zealand, indigenous people have higher mortality rates than the general population, but the gap is not as great as for Aboriginal and Torres Strait Islander Australians. The all-cause mortality rate for Aboriginal and Torres Strait Islander Australians for the period 2003–2007 is around twice that for non-Indigenous Australians (845 per 100,000 compared with 391 per 100,000 for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory combined when directly age-standardised to the World Standard Population). The latest available data from the United States, New Zealand and Canada are outlined below:

- For the period 2004–2008 in New Zealand, the age-standardised all-cause mortality rate for the Maori population was 714 per 100,000, compared with 427 per 100,000 for the non-Indigenous population (Statistics New Zealand unpublished data).
- For the period 2002–2006 in the United States, the age-standardised all-cause mortality rate for American Indians/Alaskan Natives was 480 per 100,000, which was lower than the age-standardised all-cause mortality rate for non-Indigenous persons over this period (548 per 100,000) (United States Department of Health and Human Services unpublished data).
- For the period 2001–2002 in Canada, the age-standardised all-cause mortality rate for First Nations was 1,062 per 100,000 for males and 754 per 100,000 for females, which was higher than the age-standardised all-cause mortality rate for total Canadian persons over this period (559 per 100,000 for males and 384 per 100,000 for females) (Health Canada unpublished data).

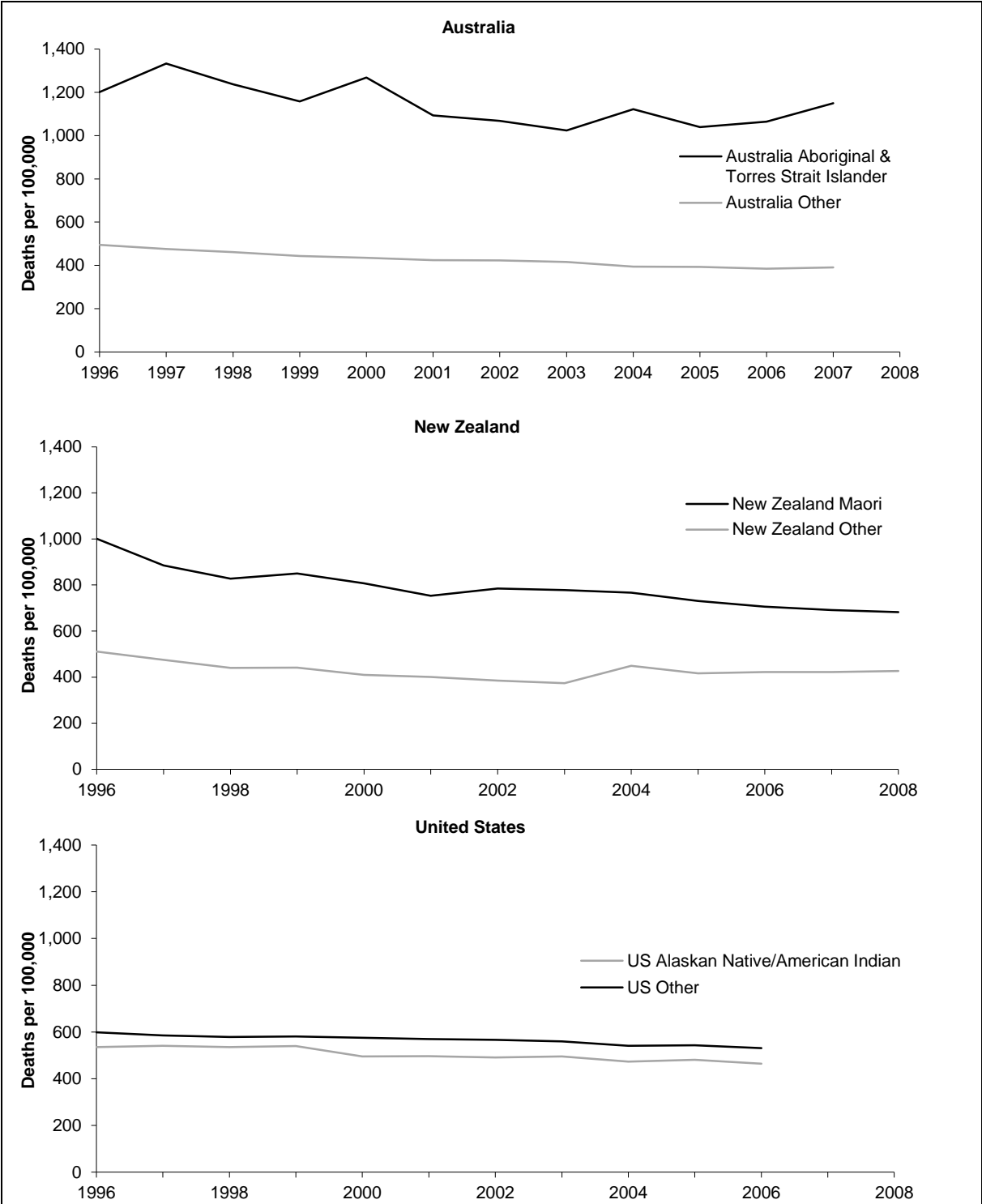
Time series

Mortality data are available from 1996 to 2008 for the Maori population in New Zealand and from 1991 to 2006 for the Alaskan Native/American Indian population in the United States. Reliable time series of mortality data for the First Nations population in Canada is not currently available.

- In New Zealand between 1996 and 2008 there was a significant decline in all-cause mortality rates for the Maori population. The fitted trend implies an average yearly decline in the rate of around 21 per 100,000 which is equivalent to a 25% reduction in the rate over this period. There was also a significant decline in non-Indigenous all-cause mortality rates in New Zealand between 1996 and 2008 (a reduction of 11%).
- In the United States between 1991 and 2006 there was a significant decline in all-cause mortality rates for American Indians/Alaskan Natives. The fitted trend implies an average yearly decline in the rate of around 6 per 100,000 which is equivalent to a 16% reduction in the rate over this period. There was also a significant decline in non-Indigenous all-cause mortality rates in the United States between 1991 and 2006 (a reduction of 15%).

Figure 1.22.4 and Table 1.22.6 present the age-standardised all cause mortality rates for the Indigenous and non-Indigenous populations in Australia, New Zealand and the United States over the period 1996–2008.

- The age-standardised all-cause mortality rate for Aboriginal and Torres Strait Islander people was higher than that for Maori and Alaskan Natives/American Indians for all years between 1996 and 2007.



Notes
 1. Australia data are for Western Australia, South Australia & the Northern Territory combined.
 2. Rates are directly age-standardised to the World Standard Population 2001–2025.
 Source: AIHW analysis of National Mortality Database; Statistics New Zealand; United States Department of Health and Human Services.

Figure 1.22.4: Age-standardised mortality rates, by Indigenous status, Australia, New Zealand and the United States, 1996–2008

Table 1.22.6: Age-standardised mortality rates, by Indigenous status, Australia^{(a)(b)}, New Zealand and the United States, 1996–2008^(c)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Deaths per 100,000 head of population													
US Alaskan Native/American Indian	535.3	541.0	535.3	539.4	495.9	496.1	491.1	495.3	473.7	480.8	464.3	n.a.	n.a.
US other	598.7	585.3	579.2	581.3	575.0	570.1	566.9	559.3	540.8	542.7	530.9	n.a.	n.a.
New Zealand Maori	1,001.0	885.3	827.7	849.7	807.3	753.6	784.7	777.5	767.1	731.0	706.3	690.8	682.7
New Zealand other	510.5	474.9	440.2	440.8	409.7	400.7	385.4	373.9	449.0	415.8	421.8	422.4	426.2
Australia Aboriginal & Torres Strait Islander	1,200.5	1,332.6	1,237.2	1,157.5	1,268.2	1,093.1	1,067.4	1,023.5	1,121.5	1,039.1	1,064.5	1,148.8	n.a.
Australia other	495.4	475.9	461.9	443.0	435.7	424.8	423.1	416.4	394.2	393.4	384.7	391.4	n.a.

(a) Australia data is for WA, SA & NT combined.

(b) 2008 data for Australia is preliminary.

(c) Rates are directly age-standardised to the World Standard Population 2001–2025.

Source: AIHW analysis of National Mortality Database; Statistics New Zealand; United States Department of Health and Human Services.

Data quality issues

Mortality data

Deaths

The mortality rate for Indigenous Australians can be influenced by identification of Indigenous deaths, late registration of 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. At present, there is considerable variation across the states and territories in the completeness of mortality and hospital data for Indigenous people.

Indigenous status question

All jurisdictions comply with the standard wording for the Indigenous status question and categories for their death registration forms. However, although data are provided to the ABS for the Indigenous status question for 99% of all deaths, there are concerns regarding the accuracy of the data. The Indigenous status question is not always directly asked. Detailed breakdowns of Indigenous deaths are therefore provided for only five jurisdictions – New South Wales, Queensland, South Australia, Western Australia and the Northern Territory.

Indigenous status information from the two sources is kept in the database, although this may not be consistent for an individual.

In 2004, a new range of codes were introduced as part of the effort to standardise and improve Indigenous identification in data collection nationally.

Indigenous Mortality Quality Study

The ABS conducted a number of quality studies based on the 2006 Census of Population and Housing and other data sets as part of the Census Data Enhancement (CDE) project (ABS 2008). The CDE Indigenous Mortality Quality Study linked Census records with death registration records and examined differences in the reporting of Indigenous status across the two data sets.

There were 106,945 registered death records available to be linked in the study. Of these, 1,800 (1.7%) were identified as Indigenous on the death registration. Of the total registered deaths, 98,898 (92%) were linked to a Census record. However, a much lower linkage rate was achieved for Indigenous deaths, with more than one-quarter of all Indigenous death registrations (26% or 473) unable to be linked to a Census record. As a result, Indigenous death records were over-represented in the unlinked death registrations.

As well as being over-represented in unlinked death registrations, unlinked Indigenous death records had different characteristics to linked Indigenous death registrations.

Indigenous death records with older ages at death and from non-remote regions were more likely to be linked.

Under-identification

Almost all deaths in Australia are registered. However, the Indigenous status of the deceased is not always recorded/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 2009a). As a result, the observed differences between Indigenous and non-Indigenous mortality are underestimates of the true differences.

Longer term mortality trend data are limited to three jurisdictions (Western Australia, South Australia and the Northern Territory) with 10 years of adequate identification of

Indigenous deaths in their recording systems (ABS & AIHW 2005). 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%, Northern Territory 90%, Australia 55% (Tasmania and the Australian Capital Territory were not calculated because of small numbers) (ABS 2007).

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 2006).

Problems associated with identification result in an underestimation of deaths and hospital separations for Indigenous people.

Numerator and denominator

Rate and ratio calculations rely on good numerator and denominator data. There are changes in the completeness of identification of Indigenous people in death records. These may take place at different rates from changes in the identification of Indigenous people in other administrative collections and population censuses. Denominators used here are sourced from *Experimental estimates and projections: Aboriginal and Torres Strait Islander Australians 1991 to 2021* (ABS 2009b).

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) 2006. Causes of death 2004. ABS cat. no. 3303.0. Canberra: ABS.

ABS 2007. Deaths Australia 2006. ABS cat. no. 3302.0. Canberra: ABS.

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