Life expectancy and mortality

6

Key points

Life expectancy

- In 2010–2012, estimated life expectancy at birth was:
  - 69.1 years for Indigenous males—10.6 years lower than for non-Indigenous males (79.7 years)
  - 73.7 years for Indigenous females—9.5 years lower than for non-Indigenous females (83.1 years).
- Between 2005–2007 and 2010–2012, the life expectancy gap is estimated to have narrowed by 0.8 years for males and 0.1 years for females.

Mortality rates

- Two-thirds (65%) of deaths among Indigenous people occurred before the age of 65, compared with 19% of deaths among non-Indigenous people during the 5-year period 2008–2012.
- The mortality rate for Indigenous people was 1.6 times that of non-Indigenous people in 2008–2012 (age-standardised rates of 981 and 596 deaths per 100,000 population, respectively).
- The largest difference between Indigenous and non-Indigenous mortality rates in 2008–2012 was for people aged 35–44, with male and female Indigenous death rates 3.9 and 4.5 times the non-Indigenous rates, respectively.

Causes of death

- The most common broad cause of death among Indigenous Australians was cardiovascular disease (25% of deaths), with Indigenous people dying from this condition at 1.5 times the rate of non-Indigenous people in 2008–2012. Almost one-quarter (24%) of the mortality gap between Indigenous and non-Indigenous people was due to this disease.
- Cancer was the second most common cause of death among Indigenous people (20%), with lung cancer being the most common cause of such deaths (4.9% of all deaths).
- The next most common causes of death among Indigenous people in 2008–2012 were:
  - external causes of injury and poisoning (15%)
  - endocrine, metabolic and nutritional disorders (including diabetes) (9.1%)
  - respiratory diseases (7.6%)
  - digestive diseases (5.6%).

Mortality trends

- Between 1998 and 2012, there was a significant decline (16%) in the age-standardised mortality rate for Indigenous Australians, with the mortality gap between Indigenous and non-Indigenous people narrowing significantly (by 17%).
- Between 1998 and 2012, there was a significant decline in age-standardised mortality rates for Indigenous people for cardiovascular disease (40%) and respiratory diseases (26%), but an increase in rates for cancer (16%) and no significant change in rates for external causes.
- Infant deaths represented 4.2% of deaths of Indigenous people compared with 0.8% of deaths of non-Indigenous people in 2008–2012. The mortality rate for Indigenous infants fell by 64% between 1998 and 2012 (from 13.5 to 5.0 deaths per 1,000 live births), while it fell by 25% for non-Indigenous infants (from 4.4 to 3.3 per 1,000 live births); over this period, the gap narrowed by 83%.

6.1 Introduction

While there have been some improvements in mortality rates for Indigenous people over recent decades, a notable gap between Indigenous and non-Indigenous people remains. This difference results in lower estimated life expectancies for Indigenous Australians.

This chapter looks at life expectancy for Indigenous people, as well as patterns and trends in Indigenous mortality. Mortality data presented in this report:

- relate to the 5 jurisdictions for which the quality of Indigenous identification is considered to be adequate—namely, New South Wales, Queensland, Western Australia, South Australia and the Northern Territory
- pertain to the underlying cause of death, unless otherwise indicated
- were sourced from the AIHW National Mortality Database.

Due to the small number of Indigenous deaths from some conditions each year, grouped data for the 5-year period 2008–2012 are shown to allow for the reporting of various conditions by age and sex. See Appendix A.4 for further information about mortality data and its quality.

6.2 Life expectancy

Life expectancy is a measure of how long, on average, a person is expected to live; it is often expressed as the number of years of life remaining for a person at a given age, usually at birth (ABS 2013l). For the 3-year period 2010–2012, estimated life expectancy at birth was:

- 69.1 years for Indigenous males—10.6 years lower than that of non-Indigenous males (79.7 years)
- 73.7 years for Indigenous females—9.5 years lower than that of non-Indigenous females (83.1 years) (ABS 2013l).

Between 2005–2007 and 2010–2012, estimated life expectancy at birth increased by:

- 1.6 years for Indigenous males compared with 0.8 years for non-Indigenous males
- 0.6 years for Indigenous females compared with 0.5 years for non-Indigenous females.

As shown in Box 6.1, this has resulted in a small decline in the life expectancy gap between Indigenous and non-Indigenous Australians.

Box 6.1: COAG target for life expectancy

Target: Close the gap in life expectancy within a generation (by 2031)

Between 2005–2007 and 2010–2012, the gap between Indigenous and non-Indigenous life expectancy at birth narrowed by 0.8 years for males and 0.1 years for females (Table 6.1).

Table 6.1: Life expectancy at birth, by sex and Indigenous status, 2005–2007 and 2010–2012 (years)

	Males		Females	
Indigenous status	**2005–2007**	**2010–2012**	**2005–2007**	**2010–2012**
Indigenous	67.5	69.1	73.1	73.7
Non-Indigenous	78.9	79.7	82.6	83.1
Difference	*11.4*	*10.6*	*9.6*	*9.5*

Source: ABS 2013l.

6.3 Mortality

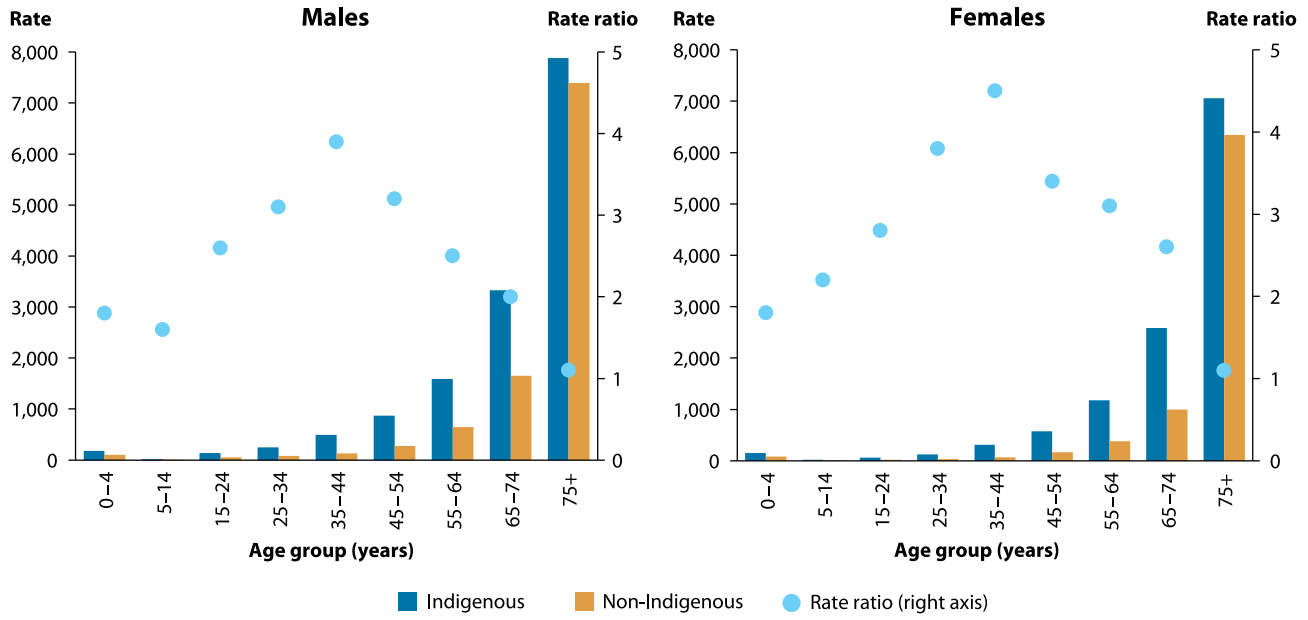
During the 5-year period 2008–2012, there were 11,612 deaths registered for Indigenous people in New South Wales, Queensland, Western Australia, South Australia and the Northern Territory combined, representing 2.3% of all deaths in these 5 jurisdictions. Males accounted for just over half (55%) of these deaths. The age-standardised mortality rate for Indigenous people was 1.6 times that of non-Indigenous people (981 and 596 deaths per 100,000 population, respectively) (Table S6.1).

Differences by age

A relatively large proportion of Indigenous deaths occur before 'old age'—during 2008–2012, 65% of deaths among Indigenous people occurred before the age of 65, compared with 19% of deaths among non-Indigenous people.

Infant deaths (that is, deaths of children aged under 1 year) represented 4.2% of deaths of Indigenous people in 2008–2012, compared with 0.8% of deaths of non-Indigenous people. The death rate for Indigenous infants was higher than the rate for non-Indigenous infants—6 per 1,000 live births compared with 4 per 1,000 live births. Infant mortality and low birthweight are strongly associated—that is, the lower the birthweight, the higher the risk of a baby dying; see Section 4.3 for more information about the birthweight of Indigenous babies.

Age-specific patterns of mortality in 2008–2012 are shown in Figure 6.1. Across all age groups, death rates for Indigenous males and females were consistently higher than the rates for their non-Indigenous counterparts. The largest differences were for people aged 35–44, with male and female Indigenous death rates 3.9 and 4.5 times the non-Indigenous rates, respectively.



Notes

1. Rates are expressed as deaths per 100,000 population.
2. Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory.
3. Data for this figure are shown in Table S6.1.

Source: AIHW National Mortality Database.

Figure 6.1: Age-specific mortality rates, by sex and Indigenous status, 2008–2012

Differences by state and territory

During 2008–2012, age-standardised mortality rates for Indigenous people were significantly higher than those for non-Indigenous people in each of the 5 jurisdictions reported (Table 6.2). The differences were particularly large in Western Australia and the Northern Territory with Indigenous death rates in both jurisdictions 2.3 times the non-Indigenous rates.

Table 6.2: Mortality, by jurisdiction and Indigenous status, 2008–2012

Jurisdiction[(a)]	Number of deaths			Age-standardised death rate[(b)]		Rate ratio[(c)]	Rate difference[(c)]
	Indigenous	Non-Indigenous	Not stated	Indigenous	Non-Indigenous		
New South Wales	3,133	238,629	1,914	786.1	594.3	1.3	191.8
Queensland	3,160	130,300	2,813	947.6	603.0	1.6	344.6
Western Australia	2,258	61,322	521	1,287.9	562.8	2.3	725.1
Northern Territory	2,321	2,640	16	1,460.5	625.3	2.3	835.2
South Australia	740	62,891	253	806.8	617.7	1.3	189.1
Total[(d)]	**11,612**	**495,782**	**5,517**	**980.5**	**595.6**	**1.6**	**384.9**

(a) Care should be taken when comparing mortality rates across states and territories due to jurisdictional differences in the level of Indigenous under-identification in death registrations data (ABS 2013l).
(b) Rates have been directly age-standardised to the 2001 Australian standard population and are expressed as deaths per 100,000 population.
(c) Based on age-standardised rates. See Appendix B for information on interpreting rate ratios and rate differences.
(d) Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory.

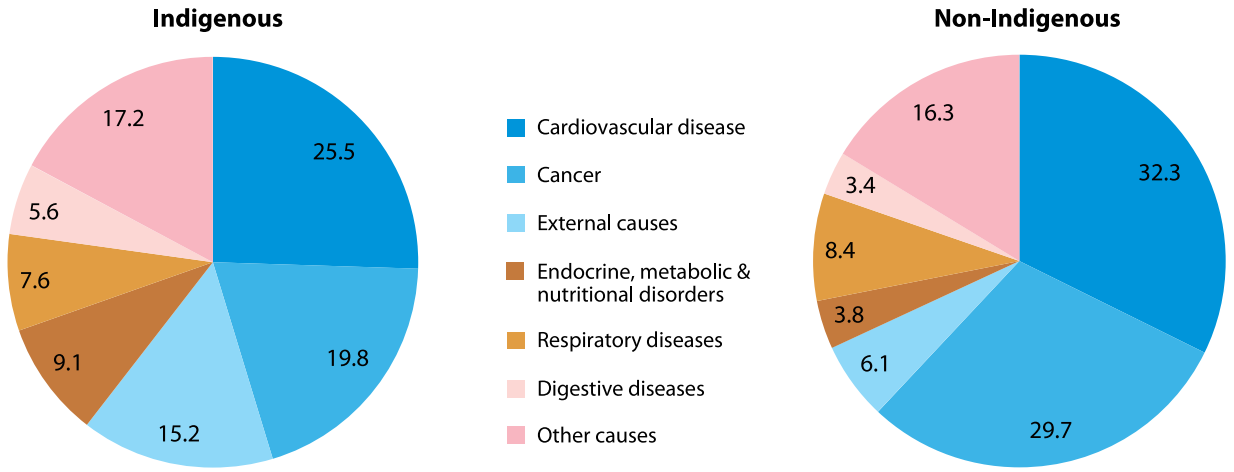
Note: See notes in Table S6.1 for additional information regarding the data and analyses shown in this and other mortality tables.

Source: AIHW National Mortality Database.

6.4 Causes of death

Broad causes of death

The 6 most common broad causes of Indigenous death during the period 2008–2012 in the 5 jurisdictions are shown in Figure 6.2. These 6 diseases groups accounted for 83% of deaths of Indigenous Australians.



Notes

1. Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory.
2. Data for this figure are shown in Table S6.2.

Source: AIHW National Mortality Database.

Figure 6.2: Leading broad causes of death, by Indigenous status, 2008–2012 (per cent)

The most common broad cause of death among Indigenous Australians was cardiovascular disease (25% of deaths), with Indigenous people dying from this condition at 1.5 times the rate of non-Indigenous people in 2008–2012.

The second most common cause was cancer (20%), followed by external causes of injury and poisoning (15%), with the latter including suicide (4.8%) and transport accidents (3.9%). Endocrine, metabolic and nutritional disorders (9.1%), respiratory diseases (7.6%) and digestive diseases (5.6%) were the next most common broad causes (Table S6.2).

Patterns of mortality in the Indigenous population differ somewhat to those in the non-Indigenous population:

- while cardiovascular disease and cancer were the leading causes of death for both Indigenous and non-Indigenous people in 2008–2012, these diseases accounted for a smaller proportion of Indigenous deaths (25% and 20%, respectively) than non-Indigenous deaths (32% and 30%)
- in contrast, more common causes of death for Indigenous Australians than for non-Indigenous Australians were external causes (15% and 6.1%, respectively), and endocrine, metabolic and nutritional disorders (9.1% compared with 3.8%), with the latter difference due mostly to diabetes (7.9% and 2.6%) (Table S6.2).

The largest gaps between Indigenous and non-Indigenous people in age-standardised death rates in 2008–2012 were due to:

- cardiovascular disease (24% of the mortality gap between Indigenous and non-Indigenous people)
- endocrine, metabolic and nutritional disorders (21% of the mortality gap, with diabetes alone explaining 19% of the gap)
- respiratory diseases (12% of the gap)
- cancer (11% of the gap) (Table 6.3).

Table 6.3: Mortality rates due to leading broad causes of death, by Indigenous status, 2008–2012

	Age-standardised death rate[(a)]			
Broad cause of death	**Indigenous**	**Non-Indigenous**	**Rate ratio[(b)]**	**Proportion of mortality gap[(c)] (%)**
Cardiovascular disease	284.2	191.4	1.5	24.1
Endocrine, metabolic & nutritional disorders	102.7	22.6	4.5	20.8
Respiratory diseases	95.7	49.7	1.9	12.0
Cancer	219.2	175.6	1.2	11.3
External causes	74.9	38.1	2.0	9.6
Digestive diseases	47.2	20.5	2.3	6.9
All causes[(d)]	**980.5**	**595.6**	**1.6**	**100.0**

(a) Rates have been directly age-standardised to the 2001 Australian standard population and are expressed as deaths per 100,000 population.
(b) Based on age-standardised rates. See Appendix B for information on interpreting rate ratios.
(c) Equals the proportion of the rate difference for all deaths that is attributed to the broad cause of death.
(d) Includes causes of death not shown in this table (see Table S6.2).

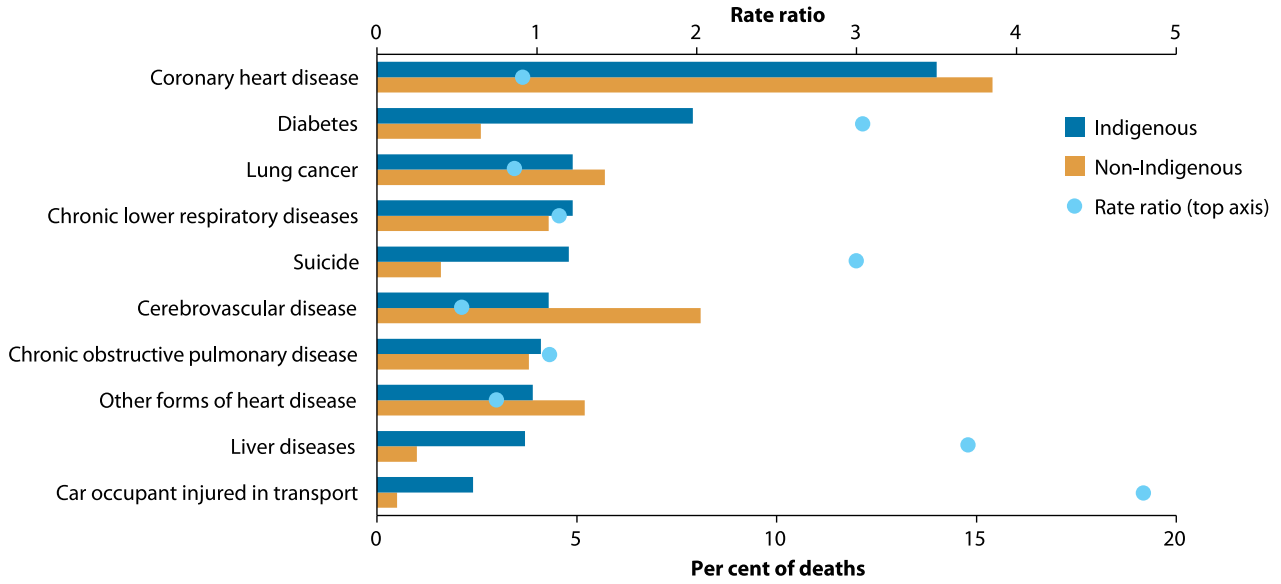
Note: Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory.

Source: AIHW National Mortality Database.

Specific causes of death

The leading specific causes of death for Indigenous Australians are shown in Figure 6.3. In 2008–2012 and among the 5 jurisdictions:

- coronary heart disease (including angina and heart attack) was the leading specific cause of death for both Indigenous (14%; 1,628 people) and non-Indigenous people (15%)
- diabetes was the second leading specific cause of death for Indigenous people (7.9%; 921 deaths) while for non-Indigenous people, diabetes accounted for 2.6% of deaths (see Section 5.3 for further information about deaths due to diabetes)
- of all cancers, lung cancer led to the most deaths, accounting for 4.9% of deaths of Indigenous people and 5.7% of deaths of non-Indigenous people
- another 4.9% of deaths of Indigenous people were due to chronic lower respiratory diseases, while 4.3% of deaths of non-Indigenous people were due to these diseases
- suicide accounted for 4.8% of deaths of Indigenous people, but was a more common cause of death among Indigenous males (6.4%) than Indigenous females (2.9%); among non-Indigenous people, suicide accounted for 1.6% of deaths (see Chapter 5 for further information about suicide).



Notes

1. Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory.
2. Data for this figure are shown in Table S6.3.

Source: AIHW National Mortality Database.

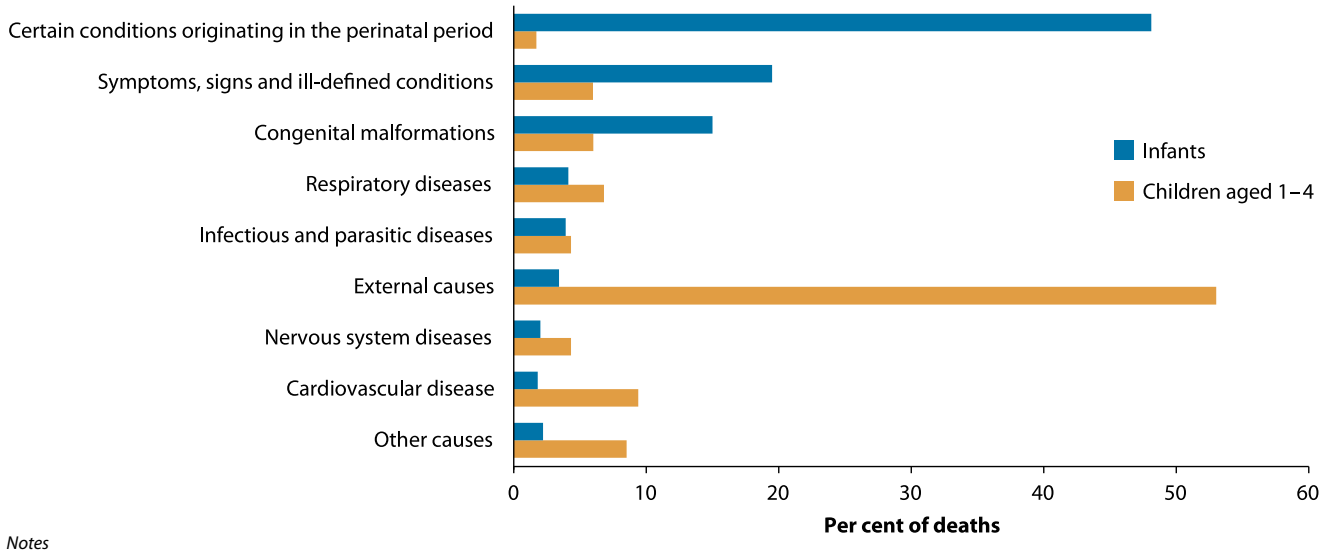
Figure 6.3: Leading specific causes of death, by Indigenous status, 2008–2012

Causes of death by life stage

The proportion of deaths due to various causes differs substantially with age.

For Indigenous infants, the 2 main causes of death in 2008–2012 were:

- 'Certain conditions originating in the perinatal period'—such as birth trauma, disorders related to fetal growth, and complications of pregnancy, labour and delivery (48% of infant deaths)
- 'Symptoms, signs and ill-defined conditions' (19% of infant deaths), which mainly includes deaths due to sudden infant death syndrome (SIDS) (Figure 6.4).



Notes

1. Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory.
2. Data for this figure are shown in Table S6.4.

Source: AIHW National Mortality Database.

Figure 6.4: Leading broad causes of death among Indigenous infants and children, 2008–2012

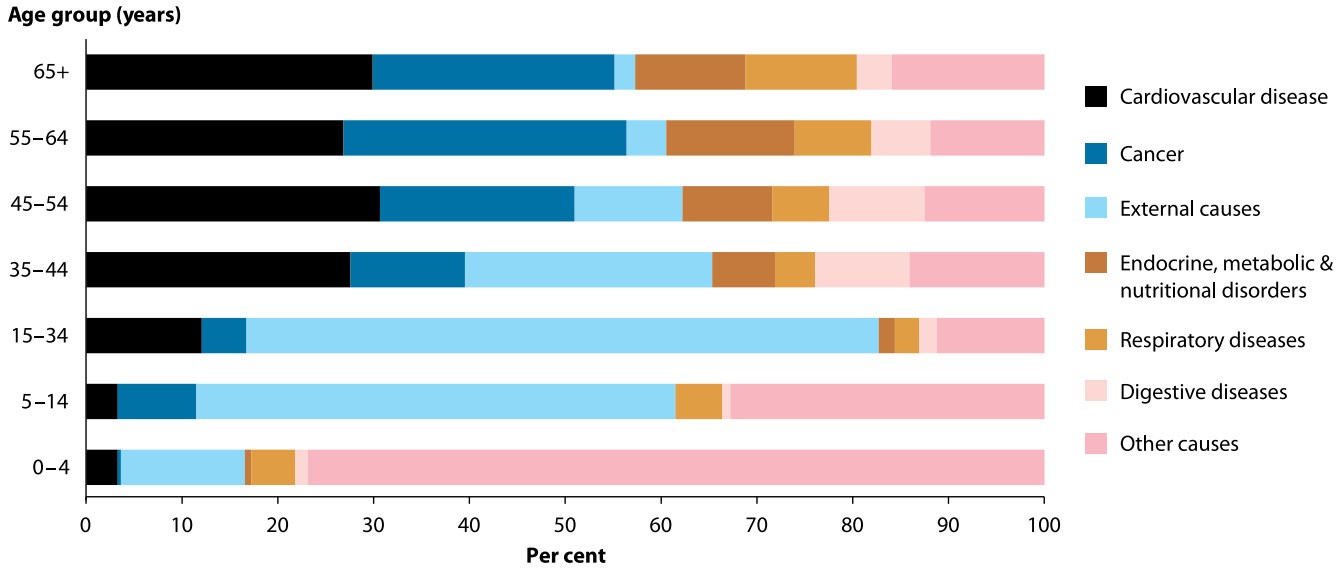
Among Indigenous children aged 1–4, external causes accounted for over half (53%) of deaths (Figure 6.4)—with these deaths mainly due to transport accidents (18% of deaths), and accidental drowning or accidental threats to breathing (17%).

Among Indigenous people aged 5 to 34, external causes was also the most common underlying cause of death. As shown in Figure 6.5:

- half (50%) of deaths among Indigenous children aged 5–14 were due to external causes, with these deaths mainly due to transport accidents (22%), followed by intentional self-harm/suicide (11%) and accidental drowning or threats to breathing (7%)
- 66% of deaths among Indigenous people aged 15–34 were due to external causes; these deaths were mainly due to suicide (29%), followed by transport accidents (18%) and assault (6%) (Figure 6.5).

Among Indigenous people aged 35–44, cardiovascular disease was the most common cause of death (28%), followed closely by external causes (26%).

Among Indigenous people aged 45 and over, the leading causes of death were chronic diseases—in particular, cardiovascular disease (mainly coronary heart disease), and cancer (mainly lung and bowel cancer).



Notes

1. For further details about broad causes of death among those aged under 5, see Figure 6.4. For children aged 5–14, the most common 'Other causes' were nervous system diseases, congenital malformations, and infectious and parasitic diseases.
2. Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory.
3. Data for this figure are shown in Table S6.5.

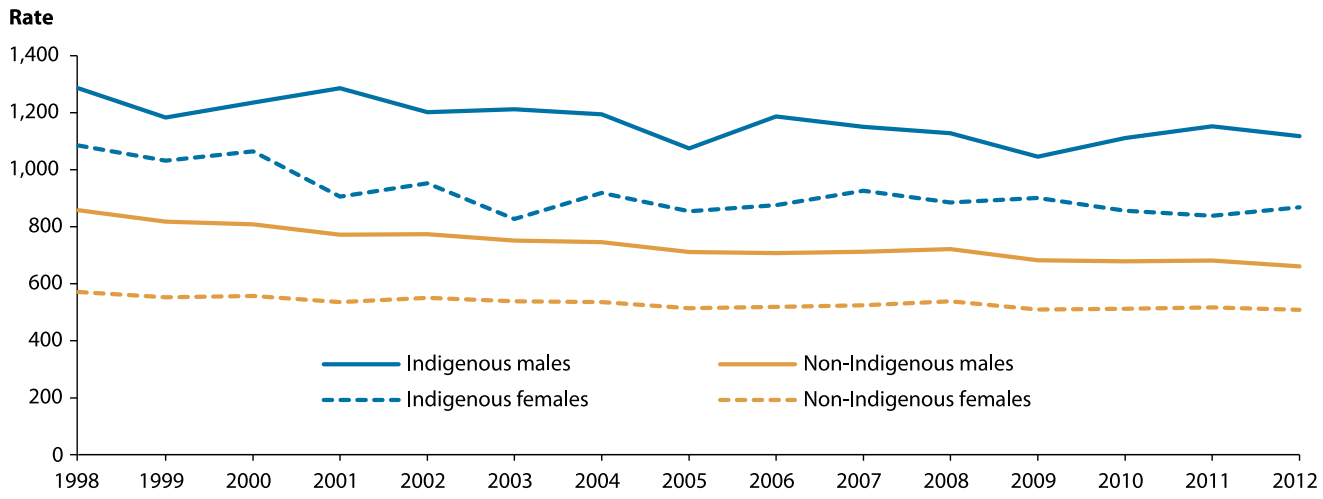
Source: AIHW National Mortality Database.

Figure 6.5: Leading broad causes of death among Indigenous Australians, by age, 2008–2012

6.5 Mortality trends

Between 1998 and 2012, there was a significant fall of 16% in the age-standardised mortality rate for Indigenous Australians. The decline for Indigenous males was 13% while for females, it was 19% (with both statistically significant) (Figure 6.6). There was also a significant decline in mortality rates for the non-Indigenous population (15%) between 1998 and 2012.

Overall, the mortality gap between Indigenous and non-Indigenous Australians narrowed significantly (by 17%, based on rate difference) between 1998 and 2012. The reduction in the gap was mostly due to a significant narrowing of the mortality gap between Indigenous and non-Indigenous females (30% decline in the rate difference). By comparison, among males, there was no significant decrease in the mortality gap (Table S6.6).



Notes

1. Rates have been directly age-standardised to the 2001 Australian standard population and are expressed as deaths per 100,000 population.
2. Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory.
3. Data for this figure are shown in Table S6.6.

Source: AIHW National Mortality Database.

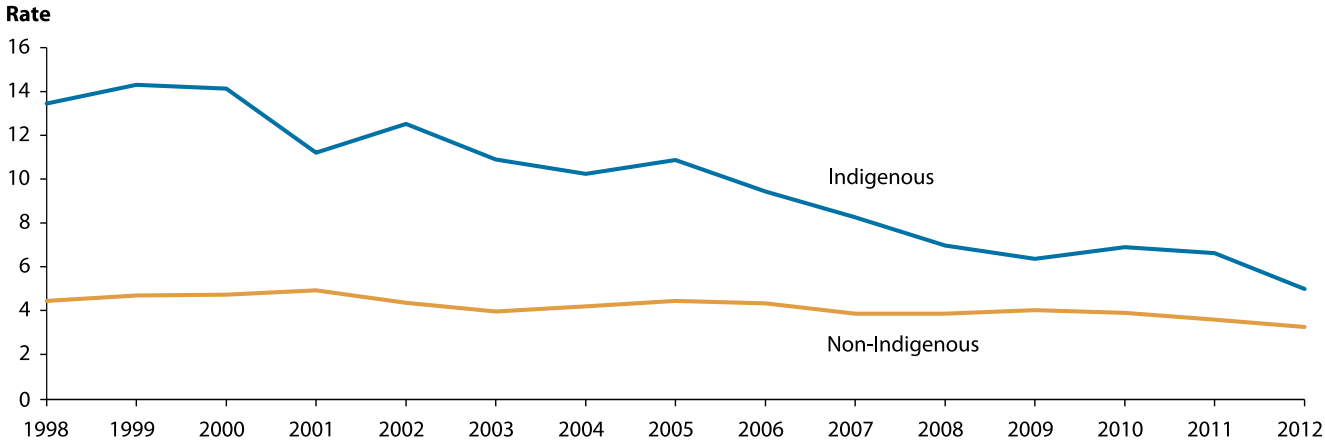
Figure 6.6: Mortality rates, by sex and Indigenous status, 1998 to 2012

Age-specific trends

Infant mortality

The mortality rate for Indigenous infants fell by 64% between 1998 and 2012 (from 13.5 to 5.0 deaths per 1,000 live births); this compares with a 25% decline in the non-Indigenous rate (from 4.4 to 3.3 per 1,000 live births) (Figure 6.7).

Over that period, there was a significant decline in the mortality rate difference between Indigenous and non-Indigenous infants such that the gap decreased by 83% (Table S6.7). The large decline in infant mortality in recent decades is likely due to large falls in deaths from sudden unexpected death in infancy (which includes SIDS), and deaths from conditions originating in the perinatal period (AIHW 2013a).



Notes

1. Rates are expressed as deaths per 1,000 live births.
2. Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory.
3. Data for this figure are shown in Table S6.7.

Source: AIHW National Mortality Database.

Figure 6.7: Infant mortality, by Indigenous status, 1998 to 2012

Child mortality

Given that four-fifths (81%) of deaths of Indigenous children were infant deaths, it is not surprising that the mortality trends for children aged 0–4 followed a similar pattern to that of infant mortality (although the decline for Indigenous children was not as great as for infants). The COAG target is to halve the gap in mortality rates for children under 5 between 2008 and 2018—see Box 6.2.

Box 6.2: COAG target for mortality of young children

Target: Halve the gap in mortality rates for children under 5 within a decade (by 2018)

Between 1998 and 2012:

- there was a significant decline of 33% in mortality rates for Indigenous children aged 0–4 compared with a 25% decline for non-Indigenous children (Figure 6.8)
- the gap in mortality rates for children aged 0–4 declined significantly by 41% (Table S6.8).

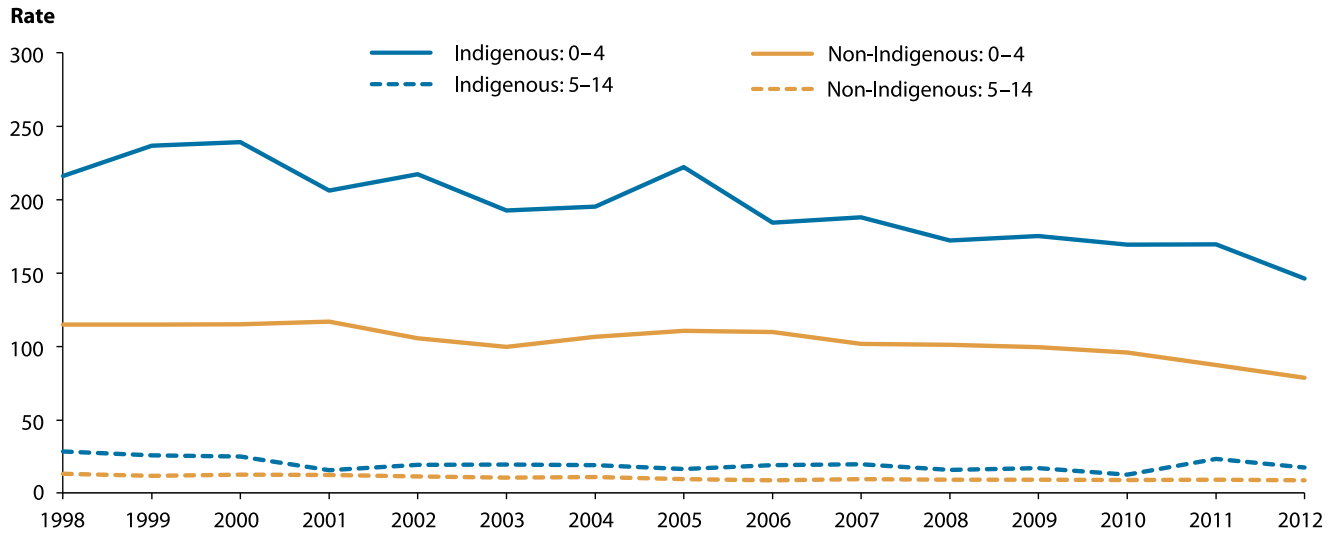
Between 2008 and 2012:

- the gap in mortality rates for children aged 0–4 changed from 71 to 67 deaths per 100,000 population (Table S6.9), but the decrease was not statistically significant.

The ABS recently released 2013 mortality data. Analysis of those data show that:

- between 1998 and 2013, there was a significant decline of 31% in mortality rates for Indigenous children aged 0–4, compared with a 27% decline for non-Indigenous children; the gap in mortality declined significantly by 35%
- between 2008 and 2013, there was no significant change in the mortality gap for children aged 0–4 (AIHW forthcoming 2015).

The mortality rate for Indigenous children aged 5 to 14 also fell between 1998 and 2012, by 33%; however, there was no significant change in the mortality gap (Figure 6.8; Table S6.8).



Notes

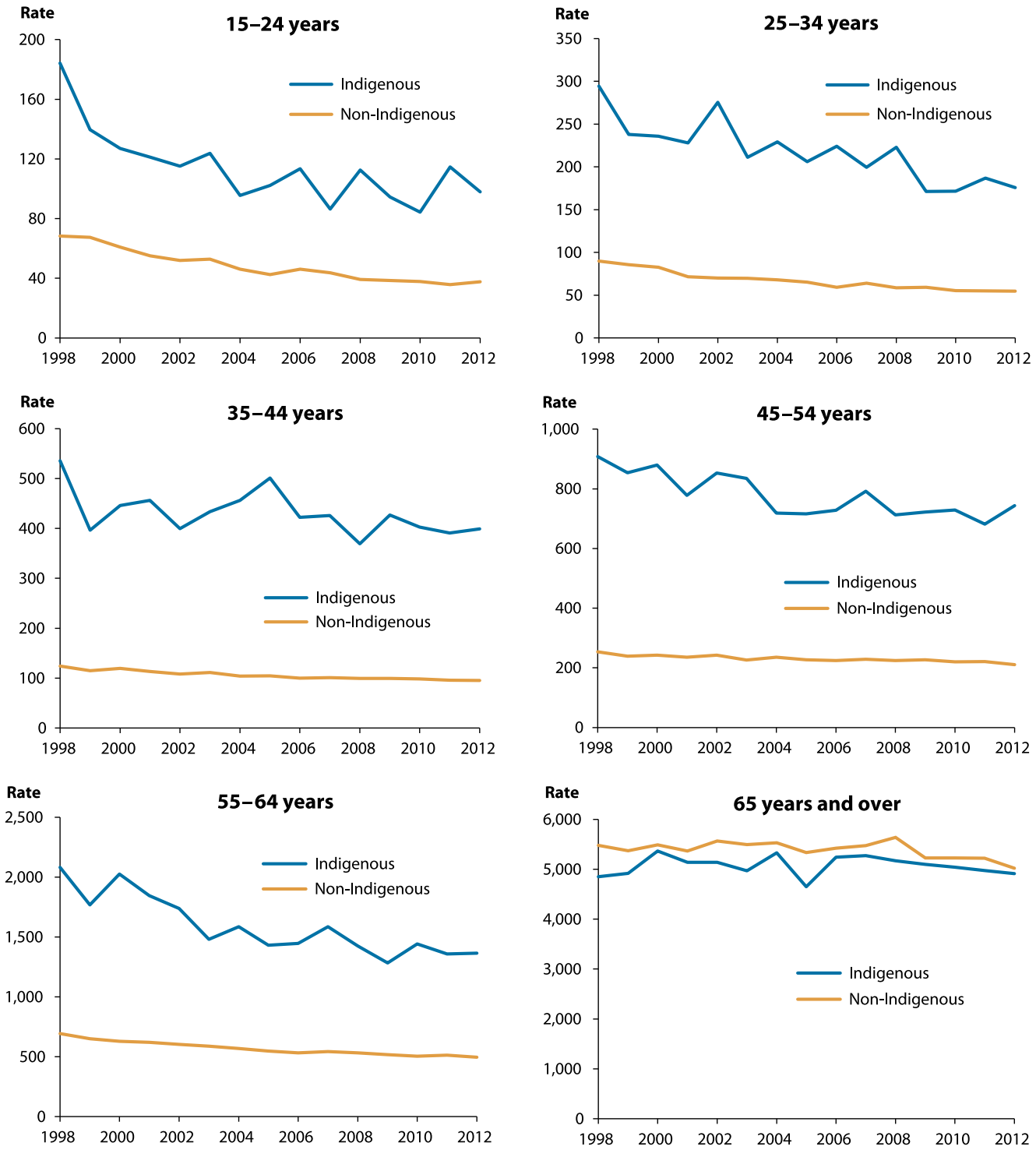
1. Rates are expressed as deaths per 100,000 population.
2. Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory.
3. Data for this figure are shown in Table S6.9; summary statistics about change over the period are shown in Table S6.8.

Source: AIHW National Mortality Database.

Figure 6.8: Child mortality, by age and Indigenous status, 1998 to 2012

Adult mortality

Declines in mortality for Indigenous people were also observed for other age groups (Figure 6.9). Between 1998 and 2012, with the exception of those aged 65 and over, there were significant declines in mortality for Indigenous people among all age groups. The largest percentage decline for Indigenous people was observed for those aged 15–24 (40%); similarly, for non-Indigenous people, the decline was largest for this age group (50%) (Table S6.8).



Notes

1. Rates are expressed as deaths per 100,000 population.
2. Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory.
3. Data for this figure are shown in Table S6.9; summary statistics about change over the period are shown in Table S6.8.

Source: AIHW National Mortality Database.

Figure 6.9: Age-specific mortality rates, by Indigenous status, 1998 to 2012

Between 1998 and 2012, there were statistically significant declines in the mortality gap (based on the rate difference) between Indigenous and non-Indigenous adults for the following 3 age groups:

- among those aged 25–34—a 33% decline
- among those aged 45–54—a 24% decline
- among those aged 55–64—a 39% decline (Table S6.8).

Cause of death trends

Changes in the pattern of causes of death may reflect changes in behaviours, risk exposures, health interventions, social and environmental circumstances, and the effects of medical and technological advances (AIHW 2012d).

Between 1998 and 2012 and based on age-standardised rates:

- death rates due to cardiovascular disease declined significantly (by 40%) for Indigenous people, with a significant decline in the mortality gap over this period of 43% (as measured by the rate difference) between Indigenous and non-Indigenous people (Table S6.10); the main contributors to the decline were decreases in deaths from coronary heart disease and cerebrovascular disease (AIHW 2014n, 2014z)
- death rates from respiratory diseases also declined significantly (by 26%) for Indigenous people, with a significant closing of the gap of 39%
- in contrast, there was a significant increase in the mortality rate for Indigenous people due to cancer (16%) while, over the same period, death rates due to cancer for non-Indigenous people fell significantly (10%)
- mortality rates due to external causes for both Indigenous males and females did not change significantly and there was no significant change in the gap between Indigenous and non-Indigenous people (Table S6.10).