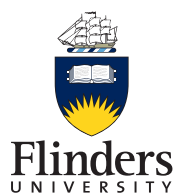




Australian Government

Australian Institute of
Health and Welfare



Indigenous injury deaths

2011–12 to 2015–16



Australian Government

**Australian Institute of
Health and Welfare**

Injury Research and Statistics Series

Number 130

Indigenous injury deaths

2011–12 to 2015–16

Australian Institute of Health and Welfare
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Summary

Indigenous Australians have a relatively high level of mortality with injury being the leading cause of the fatal disease burden (24%). Injury also accounted for 15% of the fatal gap between Indigenous and non-Indigenous Australians. Most injury related deaths are preventable.

Over the 5-year period 2011–12 to 2015–16, it is estimated that at least 2,145 Indigenous Australians who lived in 5 Australian jurisdictions with adequate Indigenous identification levels (New South Wales, Queensland, Western Australia, South Australia and the Northern Territory) died as the result of an injury—an annual average of 429 deaths. The rate of injury death for Indigenous males was nearly double that for females.

The age-standardised rate of injury death for Indigenous Australians was nearly twice that of non-Indigenous Australians.

The Australian Bureau of Statistics (ABS) and Australian Institute of Health and Welfare (AIHW) have assessed the 5 included jurisdictions as having adequate identification of Indigenous deaths from at least 2001 onwards.

Among cases from these jurisdictions, the highest age-specific injury death rates for Indigenous males and females in the 5-year period were for those aged 65 and older (167 and 144 deaths per 100,000 population, respectively).

The highest age-standardised rates of Indigenous injury death were for residents of *Remote* and *Very remote* areas.

The 3 most frequent external causes of death for Indigenous Australians were *Suicide* (706 deaths in 5 years; 33% of all injury deaths), *Transport crashes* (430 deaths; 20%) and *Unintentional poisoning by pharmaceuticals* (301 deaths; 14%). These three causes of death were responsible for a total of 1,437 (67%) deaths. Other frequent causes of death were *Homicide* and *Falls* (204 and 172 deaths, respectively, during the 5-year period).

Suicide

Over the 5-year period, 706 Indigenous Australians died as the result of suicide—an average of 141 per year. *Suicide* accounted for around one-third of all injury deaths of Indigenous Australians.

Suicide deaths among Indigenous Australians were 2.4 times as common for males as for females. For both sexes, over 8 in 10 of these deaths occurred between the ages of 15 and 44. For children aged 5–14, suicide rates for Indigenous boys and girls were 9 and 7 times as high, respectively, as those of their non-Indigenous children.

The highest rate for Indigenous male suicide was in *Remote* areas, where the age-standardised rate of 61 deaths per 100,000 population was around twice the rate in other remoteness areas.

Over the period 2001–02 to 2015–16, suicide rates for Indigenous males were relatively stable, while rates for Indigenous females rose by an annual average of 6%.

Transport crashes

Over the 5-year period, 430 Indigenous Australians died as the result of *Transport crashes*—an annual average of 86 deaths. This cause of death represented one-fifth of all Indigenous

injury deaths. Around two-thirds of transport deaths involved males and, for both sexes, around 4 in 10 deaths occurred between the ages of 25 and 44.

The most frequently reported specific injury sustained in deaths due to *Unintentional transport crashes* for males and females was an injury to the head (28% and 30%, respectively).

Rates of transport-related death generally rose with the remoteness of the person's place of usual residence.

Over time, deaths due to this cause fell for both Indigenous males and females by an average of 3% per year.

Unintentional poisoning by pharmaceuticals

There were 301 deaths of Indigenous Australians due to this cause over the 5-year period—an average of 60 per year. These poisoning deaths accounted for 14% of all Indigenous injury deaths. Around 6 in 10 of these deaths involved males and, for both sexes, they were most frequent between the ages of 25 and 44.

The drug type most frequently involved in these deaths was *Narcotics and psychodysleptics [hallucinogens]*, which were recorded in nearly three-quarters of the male deaths and over two-thirds of the female deaths. *Psychotropic drugs* were also commonly recorded in the data, more so for females (48% of female deaths) than for males (28% of male deaths).

Unlike some other causes of injury death among Indigenous Australians, *Unintentional poisoning* rates for males and females were highest for residents of *Major cities*.

Between 2001–02 and 2015–16, male rates rose by an annual average of 6%. Female rates rose by an annual average of 8%, though this trend estimate value may be less reliable due to low annual case numbers in the early part of the period.

1 Introduction

A comprehensive picture of the health and welfare of Australia's Indigenous population was last published in 2015 (AIHW 2015). One of the main findings from that report was that Indigenous Australians have relatively high levels of mortality, illness and injury (AIHW 2015). A year later the AIHW published the *Australian Burden of Disease Study: Impact and causes of illness and death in Aboriginal and Torres Strait Islander people 2011* (AIHW 2016a), that showed injuries were responsible for 15% of the gap in fatal burden between Indigenous and non-Indigenous Australians.

This report focuses on Indigenous injury deaths and their causes that occurred over a 5-year period (2011–12 to 2015–16) following the period covered by *The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples* report (AIHW 2015) and the Indigenous burden of disease report (AIHW 2016a). The report also examines long-term trends in injury deaths over a 15-year period.

This report primarily makes comparisons within the Indigenous population while some comparisons are also made with the non-Indigenous population on a selective basis. As pointed out in *The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples* report, discussion of the health and welfare of Australia's Aboriginal and Torres Strait Islander people often results in highlighting the significant gaps between Indigenous and non-Indigenous Australians. This report, by focusing on comparisons within the Indigenous population, aims to describe causes of death within Indigenous communities, highlighting where possible the disparities between Indigenous males and females and identifying areas where improvements are continuing or emerging.

Six of the main causes of death among Indigenous Australians were examined in more detail in this report, including *Unintentional deaths due to transport*, *Poisoning by pharmaceuticals*, *Poisoning by other substances* and *Falls*, as well as intentional deaths due to *Suicide* and *Homicide*. Each of these causes contributes substantially to mortality among Indigenous Australians.

This report provides an overview of the number and nature of injury-related deaths of Indigenous Australians in Australia over the 5-year period 2011–12 to 2015–16 in 5 states/territories where the identification of Indigenous Australians was assessed as being of sufficient quality to support analysis (see Box 1.1). The results are presented as 5-year aggregates unless otherwise indicated.

1.1 Methods

Most injuries occur in circumstances such as car crashes; inter-personal violence; home maintenance; sporting and recreational activities; and work. Injury deaths that occurred in these types of community settings are the focus of this report. This report includes all cases that were coded to the “injury” or “external causes of injury” chapters of ICD-10 except the small number that were coded as late effects of injury, or as complications of surgical and medical care.

What data were reported?

The source for the injury deaths data reported here is the series of ABS Cause of Death Unit Record Files (CODURF) for reference years 2001 to 2016. CODURF data are provided to the AIHW by the Registries of Births, Deaths and Marriages and the National Coronial Information System (NCIS) and are coded by the ABS. The data are held by the AIHW in the National Mortality Database (NMD). Underlying cause of death (UCoD) and multiple causes of death (MCoD) information for deaths presented in this report were coded by the ABS according to the International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10).

Which deaths were included?

Although the identification of Indigenous Australians in deaths data is incomplete in all state and territory registration systems, 5 jurisdictions (New South Wales, Queensland, Western Australia, South Australia and the Northern Territory) have been assessed by the ABS and the AIHW as having 'adequate' identification from at least 2001 onwards (AIHW 2014).

Deaths were regarded as being due to *Injury and poisoning* and included in this report if they met the following selection criterion:

- the death occurred between 1 July 2011 and 30 June 2016, or for trends analysis the death occurred between 1 July 2001 and 30 June 2016, and had been registered by 31 December 2016; and
- the person lived in 1 of the following 5 jurisdictions: New South Wales, Queensland, Western Australia, South Australia and the Northern Territory; and
- the UCoD was an external cause code in the range V01–Y36, or at least 1 MCoD was an external cause code in the range V01–Y36 and at least 1 other MCoD was a code for injury (S00–T75 or T79).

Details on selection criteria for each separately analysed cause of death are given at the start of each chapter.

How were data presented?

Data are reported according to the year in which each death occurred, which is more directly relevant to the subject of the report than the date of death registration and is also less susceptible to fluctuation because of variations in time from death to registration. 'Years' are the 12-month periods ending on 30 June.

The data are presented by:

- age
- sex
- external cause of death
- state or territory of usual residence
- remoteness of the patient's area of usual residence.

Additional information

Important terms relating to the data used in this report are summarised in boxes 1.1 and 1.2. Further information on data and methods is provided in 'Appendix A: Data issues'.

In tables and charts, unless stated otherwise:

- the age is as at the date of death
- in tables presenting cases by age group and by sex, deaths for which age and sex were not reported were included in totals
- rates were age-standardised, as detailed in 'Appendix A: Data issues'.

Both small numbers and variability in the data from year to year can make it difficult to detect significant changes over time and can have an impact on any conclusions reached from a trend analysis. This is a problem when analysing trends for small populations, such as the Indigenous populations in smaller jurisdictions. Care should therefore be taken when assessing apparent changes over time, particularly those involving small numbers and a small number of data points.

In order to reduce variability due to small numbers, many of the results presented in this report are based on the cases that occurred in the 5 years from 1 July 2011 to 30 June 2016. Case counts are generally presented as the total number of deaths that occurred during the 5-year period and also as the average number per year. Population-based rates with 5 years of cases as the numerator were calculated with the sum of 5 mid-year population estimates as the denominator.

The data underpinning the figures in the body of the report are provided in accompanying online supplementary tables .

Box 1.1: Aboriginal and Torres Strait Islander reporting

Although the identification of Indigenous Australians in deaths data is incomplete in all state and territory registration systems, 5 jurisdictions (New South Wales, Queensland, Western Australia, South Australia and the Northern Territory) have been assessed by the ABS and the AIHW as having 'adequate' identification from at least 2001 onwards (AIHW 2014). Hence, trends data in this report in relation to Indigenous Australians are presented from 2001–02 to 2015–16. Mortality data for these 5 jurisdictions should not be assumed to represent the experience in other jurisdictions. Data for these 5 jurisdictions over-represent Indigenous populations in less urbanised and more remote locations.

In this report, the terms 'Indigenous' and 'non-Indigenous' are used to refer to persons identified as such in Australian deaths data and population data collections. The 681 injury deaths with Indigenous status recorded as *Not stated* were not included in this report.

In the 2016 Census, 649,171 people across Australia identified as being of Aboriginal and/or Torres Strait Islander origin, the majority (81%) of whom lived in non-remote areas of Australia. Although most Indigenous Australians live in non-remote areas, they make up a greater proportion (25%) of the remote population. In 2016, almost 1 in 5 Indigenous Australians lived in *Remote* (6%) and *Very remote* (12%) areas, while around 1 in 100 non-Indigenous Australians lived in these areas (1% and 0.4%, respectively) (ABS 2018a).

Differences in rates of injury death by remoteness could be associated with remoteness factors such as distance or access to services, or the lower socioeconomic status of people who live in remote areas (AIHW 2016b, ABS 2018b).

Injury death rates also tend to rise with remoteness of residence for non-Indigenous Australians. However, a larger proportion of Indigenous than non-Indigenous Australians live in the more remote areas, and so the high rates experienced by residents of remote areas have a greater effect on the overall injury rate for Indigenous than for other Australians.

Box 1.2: Summary of terms relating to injury deaths

An **external cause** is the environmental event, circumstance or condition that was the cause of injury or poisoning. The **multiple causes of death** (MCoD) code is a code representing a disease, condition or external cause recorded on the death certificate. For injury deaths, the **underlying cause of death** (UCoD) code is a code representing the external cause of the injury which initiated the train of morbid events leading directly to a person's death, according to information available to the coder.

The diseases or conditions recorded on the death certificate consist of:

- the cause that led to the death (the UCoD)
- causes that gave rise to the underlying cause of death
- causes of death that contributed to the death but were not related to the disease or condition causing it.

Coding is according to the 10th revision of the International Classification of Diseases (ICD-10), which includes a chapter for injury and another for external causes of injuries and other conditions. Rules that form part of the ICD determine which of the reported causes should be coded as the UCoD.

The term '**Aboriginal and Torres Strait Islander people**' is preferred in AIHW publications when referring to Indigenous Australians. However, the term 'Indigenous' is used interchangeably with 'Aboriginal and Torres Strait Islander' in order to assist readability. Because of the different age structures of the Indigenous and non-Indigenous populations, **age-standardised rates** are often used in this report when comparing Indigenous to non-Indigenous Australians—because such rates remove the influence of age on the comparisons. As well, **rate differences** and **rate ratios** are frequently provided in order to more readily compare the rates for Indigenous and non-Indigenous Australians.

A **rate difference** measures the literal, or absolute, gap between 2 population rates; in this report, it is calculated as the rate for Indigenous Australians minus the rate for non-Indigenous Australians. A **rate ratio** measures the relative difference between populations by taking scale into account; in this report, it is calculated as the rate for Indigenous Australians divided by the rate for non-Indigenous Australians and is interpreted as follows:

- a rate ratio of 1 indicates there is no difference between the rates
- a ratio less than 1 indicates the rate is lower in the Indigenous population
- a ratio greater than 1 indicates the rate is higher in the Indigenous population.

A large rate ratio does not necessarily imply that an event has a large absolute impact. Events that are rare in the comparative population (the non-Indigenous population in this report) can produce large rate ratios, even if the prevalence of that event in the population of interest (the Indigenous population) is relatively low. For an explanation of how to interpret these statistics and for other technical notes, see Appendix A. Key concepts and terms are explained in the **Glossary**.

For more information about injury deaths overall, see *Trends in injury deaths, Australia, 1999–00 to 2016–17* (AIHW 2019b: Henley & Harrison).

2 Overview

This chapter provides an overview of the number and nature of the deaths of Indigenous Australians in Australia over the 5-year period 2011–12 to 2015–16. The results are presented as 5-year aggregates unless otherwise indicated. Selected trends are also reported for the period 2001–02 to 2015–16.

Key findings

Over 2,140 Indigenous Australians died as the result of an injury over the 5-year period 2011–12 to 2015–16.

Sex and age

More Indigenous males (1,395 deaths) than females (750 deaths) died because of an injury, with the largest proportion of deaths occurring between the ages of 25 and 44 for both males and females.

Place of occurrence

The Northern Territory and Western Australia had the highest rates of injury death for Indigenous residents (143 and 131 deaths per 100,000 population, respectively). The overall rate for the 5 included jurisdictions was 95 deaths per 100,000. Rates of death were much higher in *Remote* and *Very remote* areas compared to *Major cities*.

Cause of death

The largest number of injury deaths among Indigenous Australians were due to *Suicide* (706 deaths) followed by transport related deaths (430).

Trends in injury

While a rise in *Suicide* was noted among females (6% annual average increase), males did not show an increase over the 5-year period. Rates of transport death for males and females decreased over the period (3% annual average decrease for males and females).

2.1 How many Indigenous Australians died as a result of injury?

Over the 5-year period 2011–12 to 2015–16, 2,145 Indigenous Australians died as a result of an injury; an average of 429 deaths per year (Table 2.1). The age-standardised rate of injury death was much higher overall among Indigenous Australians (95 per 100,000 population) compared with non-Indigenous Australians (46 per 100,000 population). More Indigenous males (1,395 deaths) than females (750 deaths) died because of an injury. The rate of death for Indigenous males (122 per 100,000) was substantially higher than that for Indigenous females (70 per 100,000).

Table 2.1: Key indicators for all injury deaths, by Indigenous status and sex, 2011–12 to 2015–16

Indicator	Indigenous			Non-Indigenous		
	Males	Females	Persons	Males	Females	Persons
Deaths	1,395	750	2,145	24,928	16,524	41,452
Annual average (5 years)	279	150	429	4,986	3,305	8,290
Age-standardised rate (deaths per 100,000 population)	121.9	69.5	95.2	61.8	31.5	46.3
Rate ratio ^(a)	2.0	2.2	2.1	..	..	..
Rate difference ^(b)	60.1	38.1	48.9	..	..	..

(a) Rate ratios are standardised rates for Indigenous males, females and persons, divided by standardised rates for non-Indigenous males, females and persons.

(b) Rate differences are standardised rates for Indigenous males, females and persons, minus standardised rates for non-Indigenous males, females and persons.

Notes

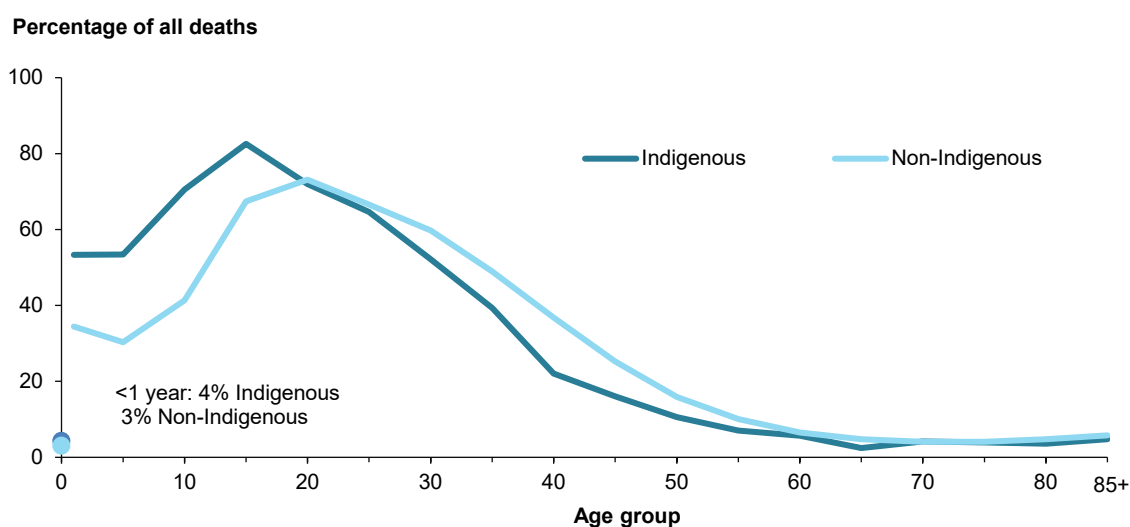
1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.
3. Counts for males plus females may not sum to the persons count due to rounding.

Source: AIHW National Mortality Database.

Age and sex

Deaths due to injury comprise a higher proportion of all deaths for Indigenous children and young people than for their non-Indigenous counterparts (Figure 2.1). From about 30 to 60 years of age, injury deaths account for a smaller proportion of all deaths of Indigenous Australians than of non-Indigenous Australians. In older age groups, the proportion of injury deaths is similar for both populations.

Figure 2.1: Injury deaths as a proportion of all deaths, by Indigenous status and age, 2011–12 to 2015–16



Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Values in this figure are a 5-year aggregate over the period 2011–12 to 2015–16.
3. Data underpinning this figure can be found in Table S2.1 in the accompanying supplementary spreadsheet.

Source: AIHW National Mortality Database.

For Indigenous Australians, the largest proportions of injury deaths occurred between the ages of 25 and 44 for both males (44%) and females (37%; Table 2.2). In contrast, the greatest proportions of deaths among non-Indigenous males and females were found among people aged 65 and over. A comparatively small proportion of injury deaths of Indigenous Australians were at ages 65 and over (males 6% and females 12%).

Table 2.2: All injury deaths, by Indigenous status, age and sex, 2011–12 to 2015–16

Age group (years)	Indigenous		Non-Indigenous	
	Number	Percentage	Number	Percentage
Males				
0–4	38	2.7	184	0.7
5–14	56	4.0	176	0.7
15–24	291	20.9	1,914	7.7
25–44	613	43.9	6,335	25.4
45–64	310	22.2	5,898	23.7
65+	87	6.2	10,420	41.8
Total	1,395	100.0	24,928	100.0
Females				
0–4	39	5.2	138	0.8
5–14	38	5.1	126	0.8
15–24	142	19.0	667	4.0
25–44	279	37.2	1,943	11.8
45–64	159	21.2	2,311	14.0
65+	92	12.3	11,337	68.6
Total	750	100.0	16,524	100.0

Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.
3. Totals include cases for which age was not specified: 1 Indigenous female, 1 non-Indigenous male and 2 non-Indigenous females.

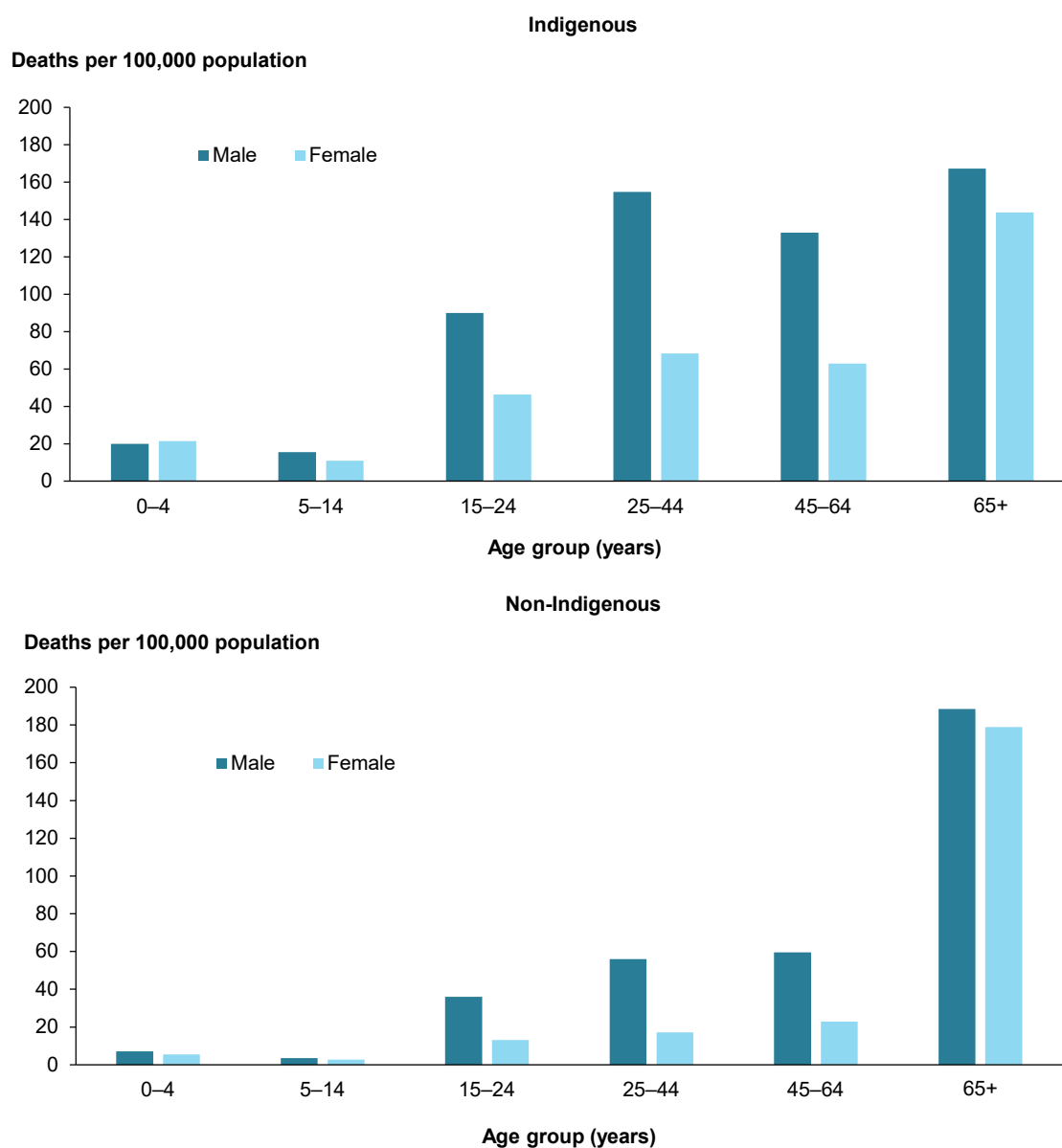
Source: AIHW National Mortality Database.

For Indigenous males, the highest age-specific rate of injury death occurred in those aged 65 and over (167 deaths per 100,000 population) (Figure 2.2). The next highest rate for males was for those aged between 25 and 44 (155 per 100,000). The highest age-specific rate for females was for those aged 65 and over (144 per 100,000).

There were noteworthy differences between Indigenous and non-Indigenous age-specific rates. For example, Indigenous children aged 0–14 had substantially higher rates than their non-Indigenous counterparts. The injury death rates for Indigenous boys aged 0–4 and 5–14 were 2.8 and 4.4 times higher than those of non-Indigenous boys. For girls in these age groups, the rate ratios were 3.9 and 4.1.

Indigenous females aged between 25 and 44 had 4 times the age-specific rate of injury, compared with non-Indigenous females (68 and 17 deaths per 100,000 population, respectively).

Figure 2.2: Age-specific rates of injury deaths, by Indigenous status and sex, 2011–12 to 2015–16



Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Values in this figure are a 5-year aggregate over the period 2011–12 to 2015–16.
3. Data underpinning this figure can be found in Table S2.2 in the accompanying supplementary spreadsheet.

Source: AIHW National Mortality Database.

State or territory of usual residence

Table 2.3 shows estimated annual average populations by jurisdiction for the 5-year period 2011–12 to 2015–16.

Table 2.3: Estimated resident populations, Australia, 2011–12 to 2015–16

	5 jurisdictions used in this report					Rest of Australia	Whole of Australia
	NSW	QLD	WA	SA	NT		
Annual average Australian population	7,461,707	4,675,974	2,485,094	1,678,420	240,751	6,741,883	23,283,830
Annual average Indigenous population	218,910	200,768	92,885	39,415	71,686	82,868	706,531
Percentage Indigenous	2.9	4.3	3.7	2.3	29.8	1.2	3.0

Source: ABS cat 3238.0 (2014)

The highest age-standardised rates for all injury deaths in the Indigenous population were found in the Northern Territory and Western Australia (143 and 131 deaths per 100,000 population, respectively) (Table 2.4). These rates were 1.5 and 1.4 times the national rate of 95 injury deaths per 100,000. New South Wales had the lowest rate (77 deaths per 100,000). The remaining jurisdictions for which suitable data were available had rates that were more similar to the national rate.

Table 2.4: All injury deaths in the Indigenous population, by state or territory of usual residence, 2011–12 to 2015–16

Indicator	State or territory of usual residence					
	NSW	Qld	WA	SA	NT	Total
Deaths	553	558	488	126	420	2,145
Percentage of all Indigenous injury deaths	25.8	26.0	22.8	5.9	19.6	100.0
Age-standardised rate (deaths per 100,000 population)	77.4	83.1	131.0	83.3	143.1	95.2

Note: Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.

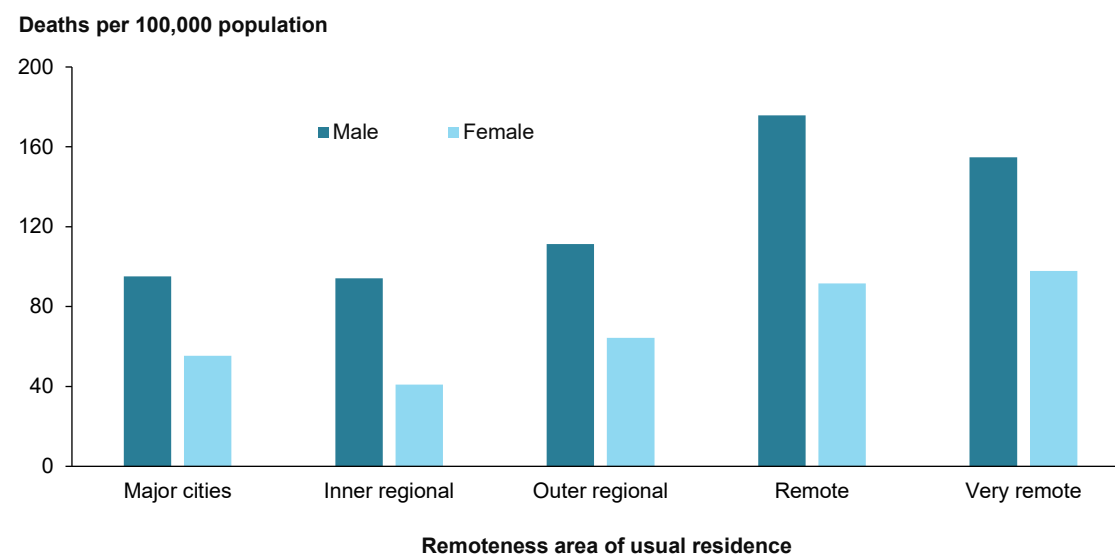
Source: AIHW National Mortality Database.

Remoteness of usual residence

Rates of injury deaths were higher for Indigenous residents of *Remote* and *Very remote* areas than for those who lived in less remote places (Figure 2.3). Rates for Indigenous males were around twice as high as those for females across all remoteness areas. The highest rates for Indigenous males were for residents of *Remote* areas (176 deaths per 100,000 population) and *Very remote* areas (155 per 100,000). The highest rates for Indigenous females were also in *Remote* and *Very remote* areas (92 and 98 per 100,000, respectively).

Rates for Indigenous injury mortality by remoteness areas need to be treated with caution, due to limitations of population data.

Figure 2.3: All injury deaths in the Indigenous population, by remoteness of usual residence and sex, 2011–12 to 2015–16



Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Values in this figure are a 5-year aggregate over the period 2011–12 to 2015–16.
3. Data underpinning this figure can be found in Table S2.3 in the accompanying supplementary spreadsheet.

Source: AIHW National Mortality Database.

Type of injury

Cause of death records provide information on 2 aspects of cause for nearly all deaths included in this report: (i) the injury or injuries that lead to death and (ii) the external cause or causes of the injuries.

Much of the report considers external causes. Table 2.5 summarises the deaths in terms of types of injury. Assignment of records to a type of injury is complicated by the fact that some records include more than one injury code, but the data file does not specify which of these is the main injury.

Over two-thirds (68%) of the cases have only 1 injury code, which has been used to tabulate them (Table 2.5). Another 14% have more than 1 injury code, but all the codes refer to the same type of injury (for example, *Injury of head*). In some other cases (about 6%), the external cause recorded in the *Underlying cause* code indicates the probable main type of injury (for example, asphyxia, drowning, poisoning, burn).

The remaining 12% have injury codes corresponding to two or more of the categories in Table 2.5. They have been assigned to the first category in the table that applies, given the ICD-10 injury codes in each record. Over one-third of these have a head injury code (plus another type or types), and they were assigned to *Injury of head*. About half of the remainder have a code for *Injury of another body part* and they were assigned to that category in Table 2.5.

Asphyxiation was the most common type of fatal injury for both males and females, reflecting the prominence of *Intentional self-harm* among injury deaths and that hanging was the most common means of suicide. Most of the poisoning and toxic effects cases involved *Unintentional poisoning by drugs* (72%). *Head injury* most commonly occurred in transport crashes (39%), followed by *Homicide* (23%) and *Falls* (17%).

Table 2.5: Type of injury sustained by Indigenous Australians, by sex, 2011–12 to 2015–16

Type of injury	Males		Females		Persons	
	Number	%	Number	%	Number	%
Injury of head	208	14.9	104	13.9	312	14.5
Injury of another body part	168	12.0	121	16.1	289	13.5
Injury of multiple or unspecified parts of body	215	15.4	110	14.7	325	15.2
Poisoning or toxic effect	248	17.8	160	21.3	408	19.0
Asphyxiation	449	32.2	196	26.1	645	30.1
Foreign body in airway	48	3.4	31	4.1	79	3.7
Drowning	42	3.0	11	1.5	53	2.5
Burn	10	0.7	12	1.6	22	1.0
Other or unspecified type of injury	7	0.5	5	0.7	12	0.6
Total	1,395	100.0	750	100.0	2,145	100.0

Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.

Source: AIHW National Mortality Database.

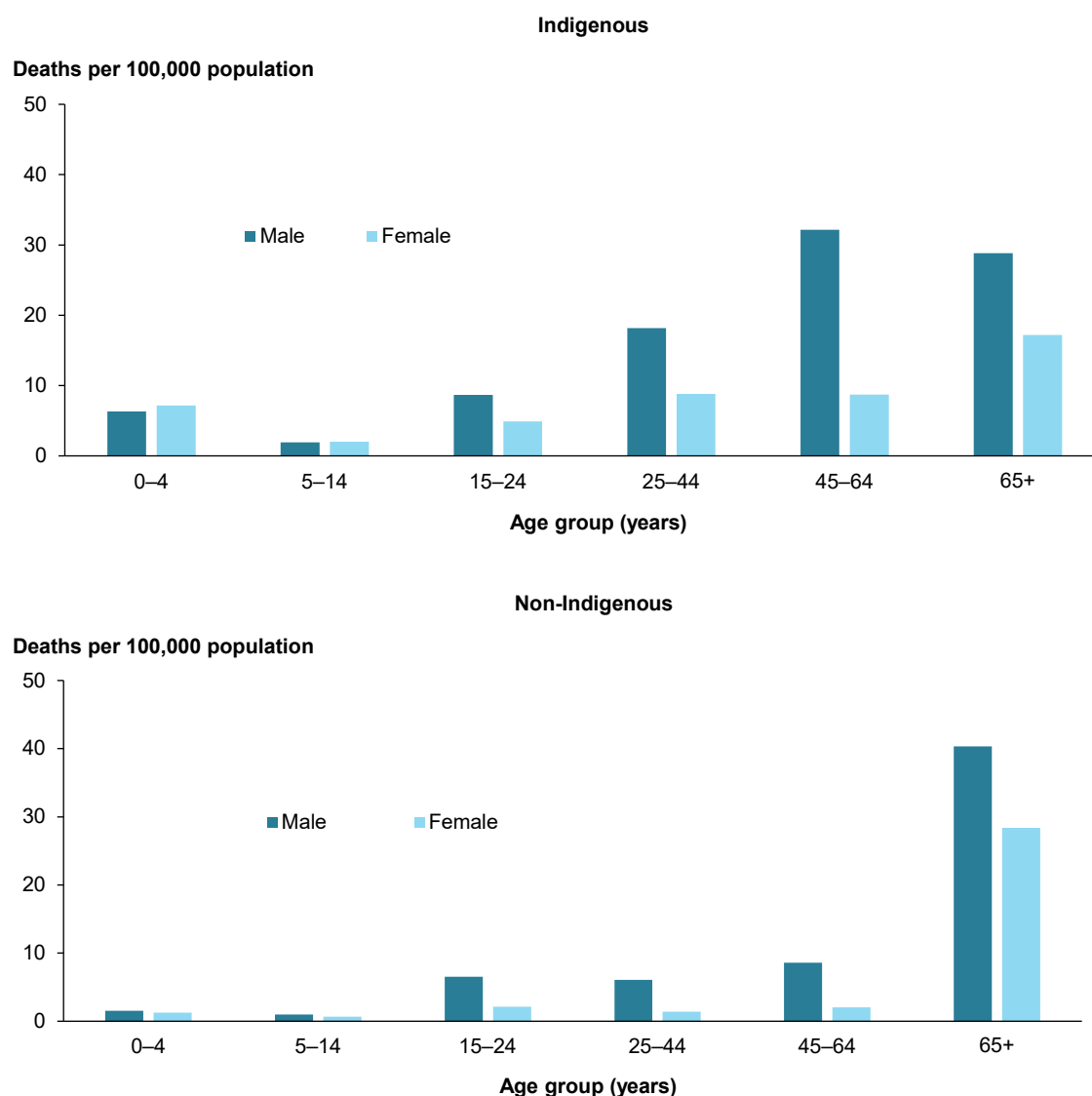
Rates of particular types of injury vary with demographic characteristics (such as age and sex) and other factors. For example, in the Indigenous population, from the age of 15, males had higher rates of head injury than females in every age group (Figure 2.4). From 15 onwards, male rates of head injury were at least double those for females, and in the 45–64 group, the male-to-female rate ratio was 3.7.

When compared with the non-Indigenous population, Indigenous males and females had higher rates of head injury in all age groups, with the exception of people aged 65 and over.

Indigenous boys aged 0–4 had 4 times the rate of head injury of non-Indigenous boys in the same age group. The rate ratio for Indigenous to non-Indigenous girls aged 0–4 was 5.7.

Age-specific rates of *Head injury* for Indigenous males aged 25–44 and 45–64 were 3.0 and 3.7 times as high as their non-Indigenous counterparts in those age groups, respectively. The rate for Indigenous females aged 25–44 was 6.4 times that of non-Indigenous females.

Figure 2.4: Age-specific rates of deaths due to head injury by Indigenous status and sex, 2011–12 to 2015–16



Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Values in this figure are a 5-year aggregate over the period 2011–12 to 2015–16.
3. Data underpinning this figure can be found in Table S2.4 the accompanying supplementary spreadsheet.

Source: AIHW National Mortality Database.

2.2 Causes of death

Often, more than 1 of the factors involved in bringing about an injury death is recorded and made the subject of ICD-10 codes in the data collection on which this report is based. By long convention, and following rules that form part of the ICD, 1 of these is designated the underlying cause of death (UCoD), while others, if present, are recorded as multiple causes of death codes (MCoD). What follows is an explanation of the method for counting the different causes of death using MCoD and UCoD, the differences that result and a description of the types of causes of deaths covered in this report.

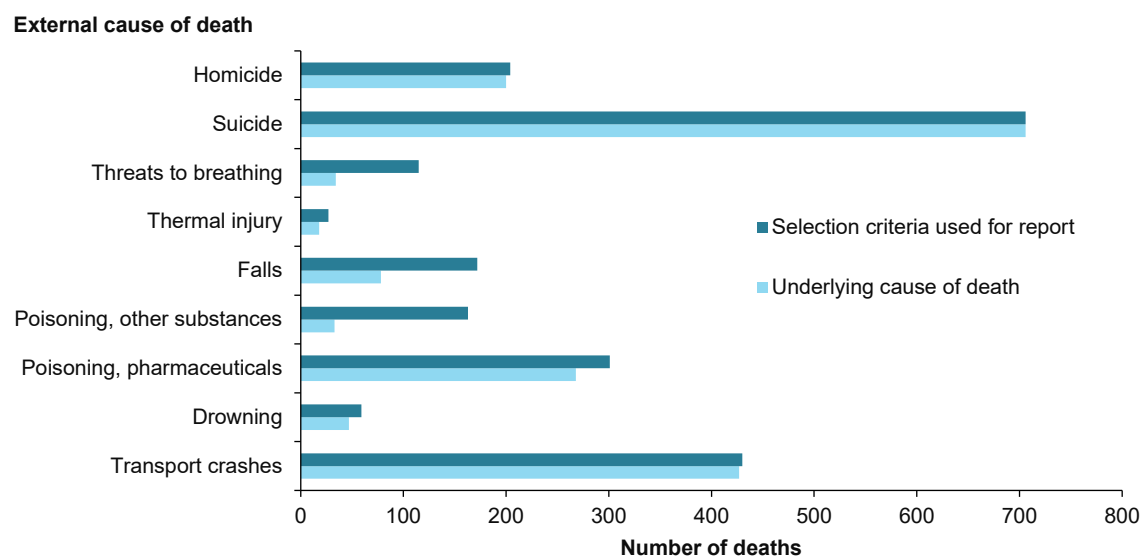
Methods of identifying cause of death

Most of the deaths were included on the basis of the UCoD. If case selection had been based only on UCoD, however, some deaths that involved injury would have been omitted. For example, ICD-10 rules assigned a non-injury UCoD code, for conditions such as epilepsy and drug dependence syndromes, to some deaths that also involved poisoning, a fall, burns, drowning or choking. Case selection for this report included inspection of the MCoD fields for injury and external cause codes, and 199 (9%) of the 2,145 deaths were included on that basis.

Analysis of the included deaths also benefits from consideration of the MCoD fields as well as of the UCoD. The injury conditions are only recorded in MCoDs, never the UCoD. Also, some records mention a second or third external cause, or more than 1 injury condition. For example, exposure to 1 or more drugs or other substances is sometimes mentioned as well as a transport crash, fall or other event. The analysis in this report takes account of that by including such deaths in each of the sections to which they are relevant. Each death is counted only once in the Overview section.

An overview of the effect of taking account of MCoD fields, as well as of the UCoD, on reporting of major types of external cause for the period 2011–12 to 2015–16 is shown in Figure 2.5. The effect is greatest for deaths involving a *Fall*, *Poisoning by substances other than pharmaceuticals* and *Accidental threats to breathing*. The data elsewhere in this report are based on UCoD and MCoD codes and should be interpreted in the light of this information.

Figure 2.5: Number of injury deaths of Indigenous Australians, by selection criterion and external cause, 2011–12 to 2015–16



Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Values in this figure are a 5-year aggregate over the period 2011–12 to 2015–16.
3. Data underpinning this figure can be found in Table S2.5 in the accompanying supplementary spreadsheet.

Source: AIHW National Mortality Database.

What were the main causes of injury death in Australia in 2011–12 to 2015–16?

For Indigenous males, the 2 most common external causes of death were *Suicide* and *Transport crashes* which comprised 36% and 20% of Indigenous male deaths, respectively (Table 2.6). *Suicide* was also the major external cause of death for Indigenous females although it accounted for a smaller proportion of deaths (27%) than it did for males. Other common causes of death for Indigenous females were *Transport crashes* (19%), *Poisoning by pharmaceuticals* (16%), *Falls* and *Homicide* (both 11%).

The remaining chapters of this report examine the more frequently occurring causes of death among Indigenous people, including *Transport crashes*, *Poisoning by pharmaceuticals*, *Poisoning by other substances*, *Falls*, *Suicides* and *Homicides*.

Table 2.6: Causes of injury deaths of Indigenous Australians by sex, 2011–12 to 2015–16

	Males			Females			Persons		
	Number	% of total number of deaths	Rate (per 100,000 population)	Number	% of total number of deaths	Rate (per 100,000 population)	Number	% of total number of deaths	Rate (per 100,000 population)
Unintentional									
Transport crashes	285	20.4	22.2	145	19.3	10.1	430	20.0	15.9
Poisoning by pharmaceuticals	178	12.8	14.8	123	16.4	10.3	301	14.0	12.5
Poisoning by other substances	109	7.8	9.3	54	7.2	4.4	163	7.6	6.8
Drowning	48	3.4	3.8	11	1.5	0.5	59	2.8	2.1
Thermal injury	14	1.0	1.0	13	1.7	1.2	27	1.3	1.1
Falls	87	6.2	16.4	85	11.3	20.4	172	8.0	19.3
Accidental threats to breathing	70	5.0	11.3	45	6.0	5.6	115	5.4	7.9
Intentional									
Suicide	501	35.9	34.9	205	27.3	12.7	706	32.9	23.4
Homicide	124	8.9	8.8	80	10.7	5.4	204	9.5	7.0

Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Values in this figure are a 5-year aggregate over the period 2011–12 to 2015–16.
3. Total Indigenous injury deaths numbered 1,395 males and 750 females (2,145 persons). This table shows the numbers and percentages of these deaths that involved each of the main external causes. Deaths with multiple causes may be included in more than one row and deaths due to residual causes are not shown in the table (other unintentional causes; undetermined intent). Hence the percentages do not sum to 100%.

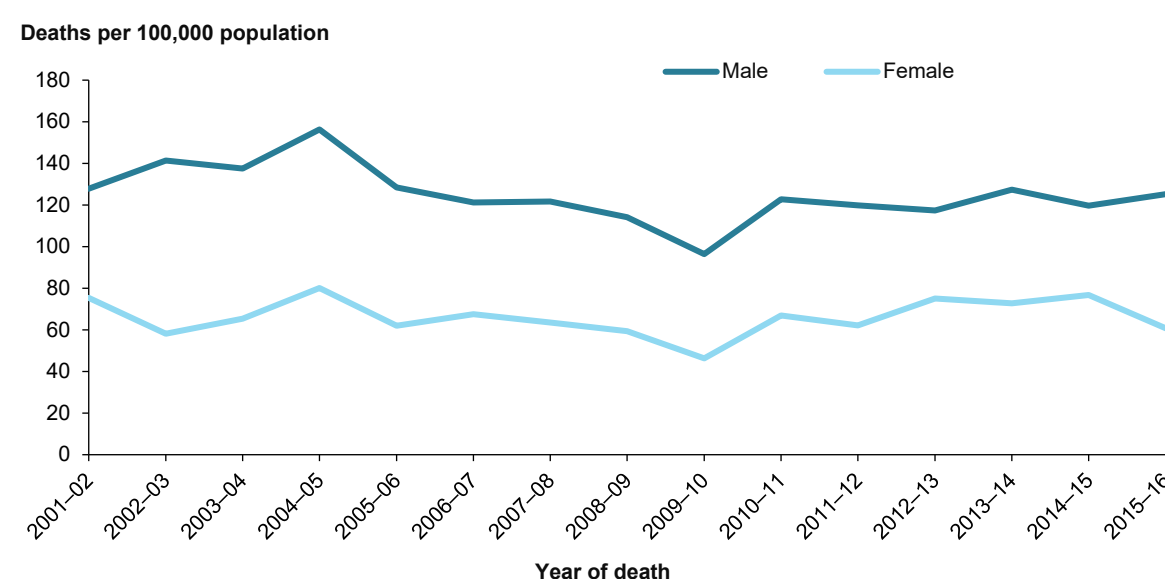
Source: AIHW National Mortality Database.

2.3 How have injury deaths changed over time?

Age-standardised rates of injury death among Indigenous Australians by sex over the period 2001–02 to 2015–16 are shown in Figure 2.6. There was considerable year-to-year fluctuation in rates for both males and females and no strong trend for either sex. However, male rates were consistently higher than female rates with rate ratios ranging from 1.6 to 2.4 over the period.

Negative binomial regression modelling showed a 1.4% average annual decrease in injury deaths for males and an annual increase of 0.5% for females over this period (Table 2.7). However, neither of these trends was statistically significant.

Figure 2.6: Age-standardised rates of all injury deaths in the Indigenous population by sex and year, 2001–02 to 2015–16



Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Data underpinning this figure can be found in Table S2.6 in the accompanying supplementary spreadsheet.

Source: AIHW National Mortality Database.

2.4 How have the causes of injury deaths varied over time?

Changes in the age-standardised rates of injury in the Indigenous community for major external causes over the period from 2001–02 to 2015–16 are summarised in Table 2.7.

Rates of injury deaths fell from 2001–02 to 2015–16 for *Transport injury* deaths (by annual averages of 3.1% and 3.2%, respectively, for Indigenous males and females) (Table 2.7). Over the same period, rates of deaths due to *Unintentional poisoning by pharmaceuticals* rose by an annual average of 5.9% for Indigenous males. The rate also tended to rise for Indigenous females, but the quantitative estimate is less reliable because of relatively small annual case numbers (fewer than 10) in the early part of the period.

Over the period 2001–02 to 2015–16, there was a rise (not statistically significant) in rates of suicide death for males of an annual average of 0.4%. Over the most recent 5-year period

(2011–12 to 2015–16), however, the annual rate for males increased by an average of 6.6% (not statistically significant). For females, over the period 2001–02 to 2015–16, modelling showed a statistically significant annual average rise in rates of suicide death of 5.8%. Over the most recent 5-year period 2011–12 to 2015–16, rates fell by 2.5% per year, although this finding was not statistically significant.

Table 2.7: Trends in age-standardised rates of external cause groups for injury deaths among Indigenous Australians by sex, 2001–02 to 2015–16

	Males			Females		
	Trend	% change per year (95% CI)	95% CI	Trend	% change per year (95% CI)	95% CI
Unintentional injuries						
Transport	↓	–3.1	[–6.5, –0.8]	↓	–3.2	[–5.9, –0.6]
Poisoning, pharmaceuticals	↑	5.9	[1.7, 9.8]	↑	8.1*	[3.6, 11.9]
Poisoning, other substances	↔	0.1	[–3.1, 3.4]	↔	0.0*	[–4.0, 3.9]
Drowning	↔	–2.3*	[–6.2, 1.4]	↔	–6.5*	[–13.5, 0.1]
Thermal injury	↔	–5.9*	[–12.5, 0.4]	↔	–5.1*	[–13.3, 2.9]
Falls	↔	–2.3	[–5.6, 0.9]	↔	0.4*	[–3.2, 4.0]
Accidental threats to breathing	↓	–8.2*	[–12.2, –5.0]	↓	–5.2*	[–9.5, –1.1]
Intentional injuries						
Suicide	↔	0.4	[–3.3, 4.0]	↑	5.8	[1.6, 9.7]
Homicide	↔	–1.3	[–4.6, 2.0]	↔	–1.1*	[–5.1, 2.8]
All injuries	↔	–1.4	[–3.3, 0.5]	↔	0.5	[–1.3, 2.3]

Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Trend is shown as neither a rise nor a fall over the period 2001–02 to 2015–16 (↔) when the 95% confidence interval includes zero.
3. Estimates of trend marked * are based on case numbers that were less than 10 in some years.
4. Data underpinning this table can be found in Table S2.7 in the accompanying supplementary spreadsheet.

Source: AIHW National Mortality Database.

3 Transport crashes

This chapter presents information on Indigenous Australians who died as a result of an *Unintentional transport crash* injury. Information in this chapter includes:

- age group and sex
- place of occurrence by state and territory and remoteness of usual residence
- trends over time.

More detailed information on transport crash injuries and deaths, including trend information, can be found in publications available on the AIHW website: for example, *Injury of Aboriginal and Torres Strait Islander people due to transport, 2010–11 to 2014–15* (AIHW: Henley & Harrison 2019a).

Key findings

Over the 5-year period 2011–12 to 2015–16, 430 Indigenous Australians died as the result of an *Unintentional transport crash* injury.

Age and sex

More Indigenous males (66%) than females died because of an *Unintentional transport crash*. The largest proportion of deaths occurred between the ages of 25 and 44 for both males and females.

Place of occurrence

The Northern Territory and Western Australia had age-standardised rates of unintentional transport related deaths for Indigenous residents that were 2.5 and 1.4 times the overall rate of 16 deaths per 100,000. Rates of death were much higher in *Remote* and *Very remote* areas compared to *Major cities*.

Type of injury

The most frequently specified injury sustained in deaths due to *Unintentional transport crashes* for males and females was an injury to the head (28% and 30%, respectively).

Trends in injury

Age-standardised rates of death from *Unintentional transport crashes* in the Indigenous population decreased for both males (by 3.1% per year) and females (by 3.2% per year) between 2001–02 and 2015–16.

3.1 What methods were used?

Unintentional transport crash injury deaths were identified by the following ICD-10 codes:

- the UCoD was *Transport accident* (V01–V99); or
- the MCoD included codes for *Transport accident* (V01–V99) and for *Injury* (S00–T75 or T79).

Although most transport crash deaths are unintentional, a few were found to be suicides or homicides. These suicide and homicide deaths were not included in this chapter.

Relevant terms and information regarding the data used in this chapter are summarised in boxes 1.1 and 3.1. Further information on methods is provided in Appendixes A and B.

Box 3.1: External causes of *Unintentional transport crash deaths*

The **Transport accidents (V01–V99)** section of Chapter XX *External causes of morbidity and mortality* includes the following 12 groups:

- Pedestrian injured in transport accident (V01–V09)
- Pedal cyclist injured in transport accident (V10–V19)
- Motorcycle rider injured in transport accident (V20–V29)
- Occupant of three-wheeled motor vehicle injured in transport accident (V30–V39)
- Car occupant injured in transport accident (V40–V49)
- Occupant of pick-up truck or van injured in transport accident (V50–V59)
- Occupant of heavy transport vehicle injured in transport accident (V60–V69)
- Bus occupant injured in transport accident (V70–V79)
- Other land transport accidents (V80–V89)
- Water transport accidents (V90–V94)
- Air and space transport accidents (V95–V97)
- Other and unspecified transport accidents (V98–V99).

The way in which a person was travelling when injured (for example, in a car, on a bicycle, riding a horse, walking, travelling in a watercraft) is referred to as their mode of transport, in keeping with the International Classification of Diseases (ICD). Cars, other motor vehicles, pedal cycles and being a pedestrian are the modes involved in the great majority of transport injury deaths. These modes, together with rail and certain special types of vehicles, are referred to as **land transport**.

Water transport and air transport are the main modes of transport that are not land transport.

Land transport deaths that involved at least 1 vehicle and occurred at least partly on a road accessible to the public, are referred to as **traffic deaths**, in keeping with the ICD. Non-traffic deaths involved at least 1 vehicle and occurred entirely off-road. Traffic and non-traffic deaths are distinguished for the most frequently reported modes of transport.

In the 5-year period, 421 (98%) of Indigenous deaths due to *Unintentional transport crash* injury involved land transport (Table 3.1). Of these, 379 (88%) involved crashes occurring in traffic.

Table 3.1: Unintentional transport crash injury deaths in the Indigenous population, by setting, 2011–12 to 2015–16

Indicator	Land transport			Other ^(b)
	Traffic deaths	Non-traffic deaths	Unspecified ^(a)	
Deaths	379	33	9	9
Percentage of all unintentional transport-crash injury deaths	88.1	7.7	2.1	2.1
Age-standardised rate (deaths per 100,000 population)	14.2	0.9	0.4	0.4

(a) Land transport deaths unspecified as to whether they occurred in an on-road (traffic) or off-road (non-traffic) setting.

(b) Includes water, air and space transport-related deaths.

Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.

2. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.

Source: AIHW National Mortality Database.

3.2 How many deaths were there from 2011–12 to 2015–16?

There were 430 Indigenous deaths due to an *Unintentional transport crash* injury in the period (2011–12 to 2015–16), an annual average of 86 deaths. The age-standardised injury death rate for Indigenous males was twice that of Indigenous females (22 and 10 deaths per 100,000 population, respectively) (Table 3.2). The rate for Indigenous Australians was more than 3 times the rate for non-Indigenous Australians.

Table 3.2: Key indicators for Unintentional transport crash injury deaths, by Indigenous status and sex, 2011–12 to 2015–16

Indicator	Indigenous			Non-Indigenous		
	Males	Females	Persons	Males	Females	Persons
Deaths	285	145	430	3,732	1,271	5,003
Annual average (5 years)	57	29	86	746	254	1,001
Age-standardised rate (deaths per 100,000 population)	22.2	10.1	15.9	9.3	3.0	6.1
Rate ratio ^(a)	2.4	3.4	3.4	..	..	..
Rate difference ^(b)	12.9	7.2	9.8	..	..	..

(a) Rate ratios are standardised rates for Indigenous males, females and persons, divided by standardised rates for non-Indigenous males, females and persons.

(b) Rate differences are standardised rates for Indigenous males, females and persons, minus standardised rates for non-Indigenous males, females and persons.

Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.

2. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.

3. Counts for males plus females may not sum to the persons count due to rounding.

Source: AIHW National Mortality Database.

Age and sex

In the Indigenous population, around two-thirds (66%) of deaths due to an unintentional transport crash injury were of males. Around 4 in 10 unintentional transport-related deaths, for both males and females, occurred in the 25–44 age group (Table 3.3).

The highest age-specific rates for Indigenous males were for those aged 25–44 and 65 and over (29 and 27 deaths per 100,000 population, respectively). The highest rates for Indigenous females were for those in the 25–44 and 45–64 age groups (14 and 13 per 100,000, respectively).

When compared with the non-Indigenous population, some noteworthy differences were apparent. While almost one-quarter of non-Indigenous deaths were among those aged 65 and over, only 4% of Indigenous deaths occurred in this age group. *Unintentional transport crash* injury deaths among children were also over-represented in the Indigenous population. Rate ratios for Indigenous boys aged 0–4 and 5–14 were 4.1 and 3.3, respectively. For Indigenous girls in these age groups, the rate ratios were 6.4 and 2.3.

Table 3.3: Age-specific rates of Unintentional transport crash injury deaths, by Indigenous status, age and sex, 2011–12 to 2015–16

Age group (years)	Indigenous			Non-Indigenous		
	Number	%	Rate (per 100,000 population)	Number	%	Rate (per 100,000 population)
Males						
0–4	12	4.2	6.3	40	1.1	1.5
5–14	21	7.4	5.8	87	2.3	1.8
15–24	67	23.5	20.7	638	17.1	12.0
25–44	116	40.7	29.3	1,196	32	10.6
45–64	55	19.3	23.6	948	25.4	9.6
65+	14	4.9	26.9	823	22.1	14.9
Total	285	100.0		3,732	100.0	
Females						
0–4	17	11.8	9.4	36	2.8	1.5
5–14	8	5.6	2.3	47	3.7	1.0
15–24	26	18.1	8.5	239	18.8	4.7
25–44	56	38.9	13.7	297	23.4	2.6
45–64	33	22.9	13.0	273	21.5	2.7
65+	4	2.8	6.2	379	29.8	6.0
Total	145	100.0		1,271	100.0	

Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.

2. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.

3. Totals include 1 Indigenous female case for which age was not specified.

Source: AIHW National Mortality Database.

State or territory of usual residence

The Northern Territory and Western Australia had age-standardised rates of *Unintentional transport crash* injury death for Indigenous residents that were above the national rate (Table 3.4). Rates for these 2 jurisdictions were 2.5 and 1.4 times the national rate of 16 per 100,000, respectively. Rates for New South Wales, Queensland and South Australia (12, 9 and 10 per 100,000, respectively) were substantially lower than the national rate.

Table 3.4: Unintentional transport crash injury deaths in the Indigenous population, by state or territory of usual residence, 2011–12 to 2015–16

Indicator	State or territory of usual residence					Total
	NSW	Qld	WA	SA	NT	
Deaths	109	85	96	14	126	430
Percentage	25.4	19.8	22.3	3.3	29.3	100.0
Age-standardised rate (deaths per 100,000 population)	12.2	8.7	22.1	9.5	39.4	15.9

Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.

Source: AIHW National Mortality Database.

Remoteness of usual residence

The rate of *Unintentional transport crash* injury deaths in the Indigenous population generally increased with greater remoteness of usual residence (Figure 3.1). Indigenous males had higher rates of death than females in all remoteness areas. The highest rate of *Unintentional transport crash* injury death for males was in *Very remote* areas (49 deaths per 100,000 population), which was over 6 times that for Indigenous male residents of *Major cities* (7 per 100,000). The highest rates for Indigenous females were in *Remote* and *Very remote* areas (23 deaths per 100,000 in each area). Rates for these areas were 10 times higher than the Indigenous female rate for *Major cities* (3 deaths per 100,000).

Rates of Indigenous transport crash injury mortality by remoteness areas should be treated with caution, due to the relatively low numbers of deaths and limitations of population data.

Figure 3.1: Unintentional transport crash injury deaths in the Indigenous population, by remoteness of usual residence and sex, 2011–12 to 2015–16



Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Values in this figure are a 5-year aggregate over the period 2011–12 to 2015–16.
3. Data underpinning this figure can be found in Table S3.1 in the accompanying supplementary spreadsheet.

Source: AIHW National Mortality Database.

Type of injury

The most frequently specified injury sustained in deaths due to *Unintentional transport crash* injury for males and females was an injury to the head (28% and 30%, respectively) (Table 3.5).

Table 3.5: Unintentional transport crash injury deaths in the Indigenous population, by the nature of the injury sustained and sex, 2011–12 to 2015–16

Type of injury	Males		Females	
	Number	%	Number	%
Injury of head	78	27.4	43	29.7
Injury of other body part	43	15.1	30	20.7
Injury of multiple or unspecified parts of body	151	53.0	66	45.5
Other or unspecified type of injury	13	4.6	6	4.1
Total	285	100.0	145	100.0

Notes

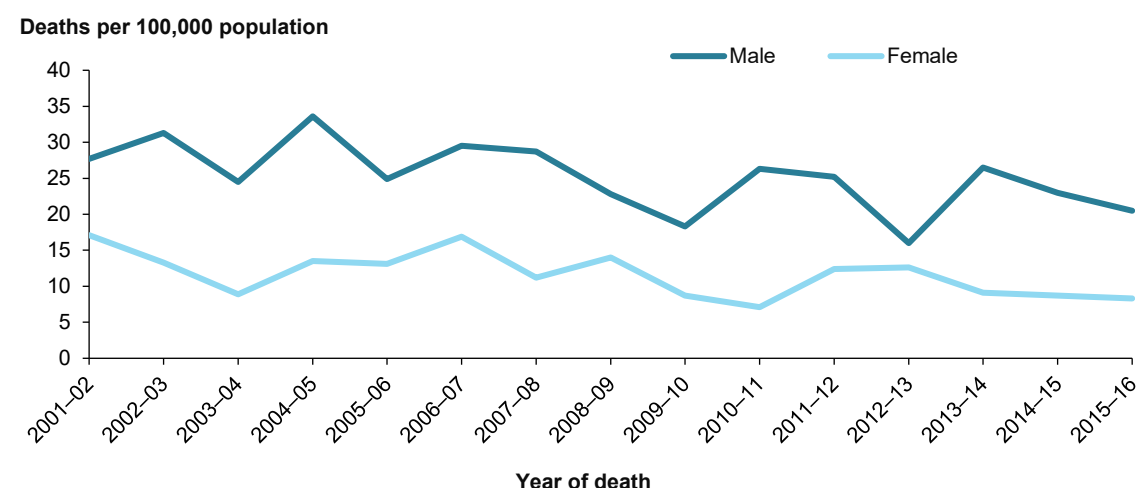
1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.

Source: AIHW National Mortality Database.

3.3 How have deaths changed over time?

Despite year-to-year fluctuations, age-standardised rates of death from unintentional transport crash injury in the Indigenous population decreased for both males and females between 2001–02 and 2015–16 (Figure 3.2). Negative binomial regression indicates that male and female rates fell by an annual average of 3.1% and 3.2%, respectively. Both decreases were statistically significant.

Figure 3.2: Age-standardised rates of unintentional transport crash injury deaths in the Indigenous population, by sex and year, 2001–02 to 2015–16



Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Data underpinning this figure can be found in Table S3.2 in the accompanying supplementary spreadsheet.

Source: AIHW National Mortality Database.

4 Poisoning by pharmaceuticals

This chapter provides a summary of all unintentional poisoning deaths involving pharmaceuticals during the 5-year period 2011–12 to 2015–16 that are identifiable in the deaths data; a summary of unintentional poisoning deaths involving pharmaceuticals in the same period; and a description of trends in unintentional poisoning deaths involving pharmaceuticals from 2001–02 to 2015–16.

Key findings

Over the 5-year period 2011–12 to 2015–16, 301 Indigenous Australians died as the result of *Unintentional poisoning by pharmaceuticals*.

Age and sex

More Indigenous males (59%) than females died as the result of *Unintentional poisoning by pharmaceuticals*. The largest proportion of deaths occurred in the 25–44 age group for both males and females.

Place of occurrence

The highest rate of *Unintentional poisoning by pharmaceuticals* deaths in the Indigenous population was in New South Wales with 16 deaths per 100,000 population (1.3 times the overall rate of 13 deaths per 100,000).

Types of pharmaceuticals

Opioids (heroin, methadone and other opioids) were present in half of the cases (149 deaths, or 50%). Although benzodiazepines were the main substance present in only 9 deaths, they were mentioned as an additional drug in 79 of the 126 deaths in which more than 1 drug was coded.

Trends in injury

Age-standardised rates of death from *Unintentional poisoning by pharmaceuticals* in the Indigenous population increased for both males (by 5.9% per year) and females (8.1% per year) between 2001–02 and 2015–16.

Most of the substances included in this chapter are predominantly used in medical care, either requiring a medical prescription to be dispensed or available without a prescription. Some of the substances are also used recreationally and are illegally manufactured or produced such as heroin, cocaine, and cannabis. The data presented here do not provide information on how the person obtained or accessed the substance. Appendix B: Variations in causes of death by intent also provides information on the types of substances included in each of the ICD-10 categories covered in this chapter.

4.1 What methods were used?

Unintentional poisoning by pharmaceuticals deaths were identified by the following ICD-10 codes:

- the UCoD was *Accidental poisoning by and exposure to noxious substances* (X40–X44); or
- the MCoDs include codes for *Accidental poisoning by and exposure to noxious substances* (X40–X44) and for *Injury* (S00–T75 or T79); or

- the MCoDs include codes for *Poisoning by drugs, medicaments and biological substances* (T36–T50) and for *Unintentional external cause of injury* (V01–X59).

A few poisoning by pharmaceuticals deaths were found to be suicides or homicides. These *Suicide* and *Homicide* deaths were not included in this chapter.

Relevant terms and information regarding the data used in this chapter are summarised in boxes 1.1 and 4.1. Further information on methods is provided in Appendix A and B.

Box 4.1: External causes of poisoning by pharmaceuticals

Accidental poisoning by and exposure to noxious substances (X40–X49) is the subject of a section of Chapter XX *External causes of morbidity and mortality* of ICD-10. The first 5 categories in this section refer to *Poisoning by and exposure to drugs, medicaments and biological substances* (X40–X44):

- Accidental poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics (X40)
- Accidental poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified (X41)
- Accidental poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified (X42)
- Accidental poisoning by and exposure to other drugs acting on the autonomic nervous system (X43)
- Accidental poisoning by and exposure to other and unspecified drugs, medicaments and biological substances (X44).

Additional information on the types of substances included in each category can be found in Appendix B: Variations in causes of death by intent.

4.2 How many deaths were there from 2011–12 to 2015–16?

Unintentional poisoning involving pharmaceuticals accounted for 301 injury deaths in the Indigenous population and 4,000 injury deaths in the non-Indigenous population between 2011–12 and 2015–16 (Table 4.1). This was 14% of all Indigenous injury deaths for this period. The age-standardised rate of *Unintentional poisoning involving pharmaceuticals* deaths was 13 deaths per 100,000 among Indigenous Australians compared with 5 deaths per 100,000 among non-Indigenous Australians.

Table 4.1: Key indicators for Unintentional poisoning deaths involving pharmaceuticals, by Indigenous status and sex, 2011–12 to 2015–16

Indicator	Indigenous			Non-Indigenous		
	Males	Females	Persons	Males	Females	Persons
Deaths	178	123	301	2,662	1,338	4,000
Annual average (5 years)	36	25	60	532	268	800
Age-standardised rate (deaths per 100,000 population)	14.8	10.3	12.5	6.8	3.2	5.0
Rate ratio ^(a)	2.2	3.2	2.5	..	..	..
Rate difference ^(b)	7.9	7.0	7.5	..	..	..

(a) Rate ratios are standardised rates for Indigenous males, females and persons, divided by standardised rates for non-Indigenous males, females and persons.

(b) Rate differences are standardised rates for Indigenous males, females and persons, minus standardised rates for non-Indigenous males, females and persons.

Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.

2. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.

3. Counts for males plus females may not sum to the persons count due to rounding.

Source: AIHW National Mortality Database.

Age and sex

In the Indigenous population, deaths due to *Unintentional poisoning by pharmaceuticals* more frequently involved males than females (59% and 41%, respectively) (Table 4.2). Nearly 6 in 10 deaths, for both males and females, were of persons aged 25–44 (59% and 58%, respectively). In this age group, age-specific rates for Indigenous males and females were 2.1 and 3.8 times their non-Indigenous counterparts.

Table 4.2: Unintentional poisoning deaths involving pharmaceuticals, by Indigenous status, age and sex, 2011–12 to 2015–16

Age group (years)	Indigenous			Non-Indigenous		
	Number	%	Rate (per 100,000 population)	Number	%	Rate (per 100,000 population)
Males						
0–4	0	0.0	0.0	1	0.0	0.0
5–14	0	0.0	0.0	0	0.0	0.0
15–24	10	5.6	3.1	139	5.2	2.6
25–44	105	59.0	26.5	1,431	53.8	12.7
45–64	61	34.3	26.2	924	34.7	9.3
65+	2	1.1	3.8	166	6.2	3.0
Total	178	100.0		2,662	100.0	

(continued)

Table 4.2 (continued): Unintentional poisoning deaths involving pharmaceuticals, by Indigenous status, age and sex, 2011–12 to 2015–16

Age group (years)	Indigenous			Non-Indigenous		
	Number	%	Rate (per 100,000 population)	Number	%	Rate (per 100,000 population)
Females						
0–4	0	0.0	0.0	1	0.1	0.0
5–14	1	0.8	0.3	1	0.1	0.0
15–24	10	8.1	3.3	56	4.2	1.1
25–44	71	57.7	17.4	511	38.2	4.5
45–64	36	29.3	14.2	572	42.8	5.7
65+	5	4.1	7.8	197	14.7	3.1
Total	123	100.0		1,338	100.0	

Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.
3. Totals include 1 Indigenous male case for which age was not specified.

Source: AIHW National Mortality Database.

State or territory of usual residence

Indigenous people in all jurisdictions, with the exception of the Northern Territory, had rates of *Unintentional poisoning by pharmaceuticals* that were fairly similar to the national rate of 13 deaths per 100,000 population (Table 4.3). The rate for the Northern Territory was half that of the national rate.

Table 4.3: Unintentional poisoning deaths involving pharmaceuticals in the Indigenous population, by state or territory of usual residence, 2011–12 to 2015–16

Indicator	State or territory of usual residence					
	NSW	Qld	WA	SA	NT	Total
Deaths	135	79	51	22	14	301
Percentage of all unintentional poisoning deaths involving pharmaceuticals	44.9	26.3	16.9	7.3	4.7	100.0
Age-standardised rate (deaths per 100,000 population)	15.9	11.1	13.4	14.0	6.1	12.5

Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.

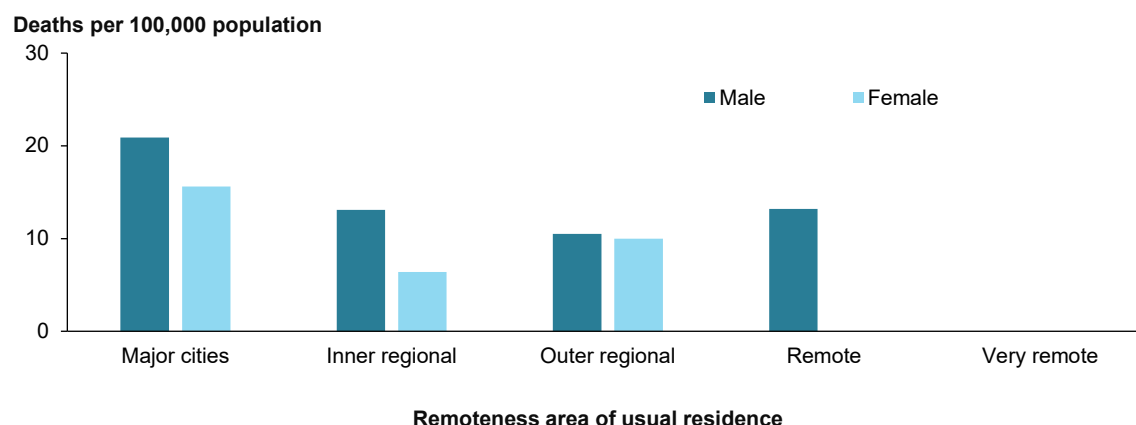
Source: AIHW National Mortality Database.

Remoteness of usual residence

In contrast to some other causes of death, rates of unintentional poisoning by pharmaceuticals for both Indigenous males and females, generally fell with increasing remoteness of the person's usual place of residence (Figure 4.1). Males had higher rates of death than females in all remoteness areas displayed in Figure 4.1, although the differential in the *Outer regional* area was small. The rates for both males and females were highest in *Major cities* (21 and 16 deaths per 100,000 population, respectively).

Rates of Indigenous injury mortality by remoteness areas should be treated with caution, due to the relatively low numbers of deaths and limitations of population data.

Figure 4.1: Unintentional poisoning deaths involving pharmaceuticals in the Indigenous population, by remoteness of usual residence and sex, 2011–12 to 2015–16



Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Values in this figure are a 5-year aggregate over the period 2011–12 to 2015–16.
3. Age-standardised rates have been omitted where total case numbers were fewer than 10. See Appendix A: Data information and issues.
4. Data underpinning this figure can be found in Table S4.1 in the accompanying supplementary spreadsheet.

Source: AIHW National Mortality Database.

Types of pharmaceuticals

NMD deaths data are derived from the information contained on death certificates. These certificates can include multiple factors that contributed to the death (MCoDs). It is common, in drug-related deaths, for more than 1 pharmaceutical agent to have been involved. A total of 550 drug-related MCoD codes for pharmaceutical agents were assigned to the 301 deaths due to *Unintentional poisoning deaths involving pharmaceuticals* in the Indigenous population (Table 4.4) in the 5-year period 2011–12 to 2015–16. The most frequent of these was *Unintentional poisoning deaths by pharmaceuticals* involved narcotics.

Table 4.4: Unintentional poisoning deaths involving pharmaceuticals in the Indigenous population, by type of substance and sex, 2011–12 to 2015–16

Type of substance	Males		Females	
	Deaths No. (%)	MCoDs No. (%)	Deaths No. (%)	MCoDs No. (%)
Narcotics & psychodysleptics (T40)	130 (73)	162 (55)	85 (69)	111 (43)
Antiepileptic, sedative-hypnotic & antiparkinsonism drugs (T42)	41 (23)	44 (15)	49 (40)	51 (20)
Psychotropic drugs not elsewhere classified (T43)	50 (28)	56 (19)	59 (48)	66 (26)
Other or unspecified drugs medicaments and biological substances	30 (17)	30 (10)	29 (24)	30 (12)
Total poisoning by drugs medicaments and biological substances (T36 to T50)	178 (100)	292 (100)	123 (100)	258 (100)

Notes

1. *Deaths* means the number of cases with one or more MCoDs of the values specified in row titles and *MCoDs* means the number of those Codes.
2. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
3. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.
4. Counts of deaths sum to more than totals because some involved more than one type of substance. *Other or unspecified drugs* includes 3 cases (1 male, 2 female) with ICD-10 external cause codes in the range X40 to X44 but no code in the range T36 to T50.

Source: AIHW National Mortality Database.

Of the 301 deaths, 126 (42%) had more than 1 code for drugs. In addition to the external cause codes X40–X44, more specific information on the type of drug involved in a death can be found among MCoDs using the *Poisoning by drugs, medicaments and biological substances* (T36–T50) category of the ICD-10.

In these deaths, 1 code was selected for presentation by following a priority list that forms part of the instructions for use of ICD-10 (<https://www.who.int/classifications/icd/icdonlineversions/en/>). The 301 deaths are presented in Table 4.5 according to the sole cause code for drugs (if only 1 is present in the record), or according to the type of drug with the highest priority according to ICD-10.

Opioids (heroin, methadone and other opioids), accounted for half of the deaths (149, 50%), with *Other and unspecified narcotics* accounting for another 54 deaths (18%). Similar proportions of male (48%) and female (51%) deaths involved opioids, while other narcotics (*Other synthetic narcotics* and *Other and unspecified narcotics*) accounted for a smaller proportion of female than male deaths 12% and 22%, respectively).

Psychostimulants, which include amphetamines, accounted for 12% of deaths (males 13%, females 11%).

Although benzodiazepines were the highest priority substance in only 9 deaths in Table 4.5, they were often mentioned as an additional drug, being recorded in 79 of the 126 deaths in which more than 1 drug was coded. Overall, 87 (29%) of the 301 deaths included a code for benzodiazepines. Of the 49 cases in which methadone was reported, benzodiazepines were also reported in 23 (51%).

Alcohol was mentioned along with drugs in 16% of the 301 deaths (males 20%, females 10%).

Table 4.5: Unintentional poisoning deaths involving pharmaceuticals in the Indigenous population, by type of drug and sex, 2011–12 to 2015–16

Type of drug	Males		Females	
	Number	%	Number	%
Heroin	26	14.6	15	12.2
Methadone	25	14.0	17	13.8
Other opioids	35	19.7	31	25.2
Other synthetic narcotics	37	20.8	11	8.9
Other & unspecified narcotics	2	1.1	4	3.3
Psychostimulants	23	12.9	13	10.6
Benzodiazepines	5	2.8	4	3.3
Other specified drugs	11	6.2	21	17.1
Unspecified drugs	14	7.9	7	5.7
Total	178	100.0	123	100.0

Notes

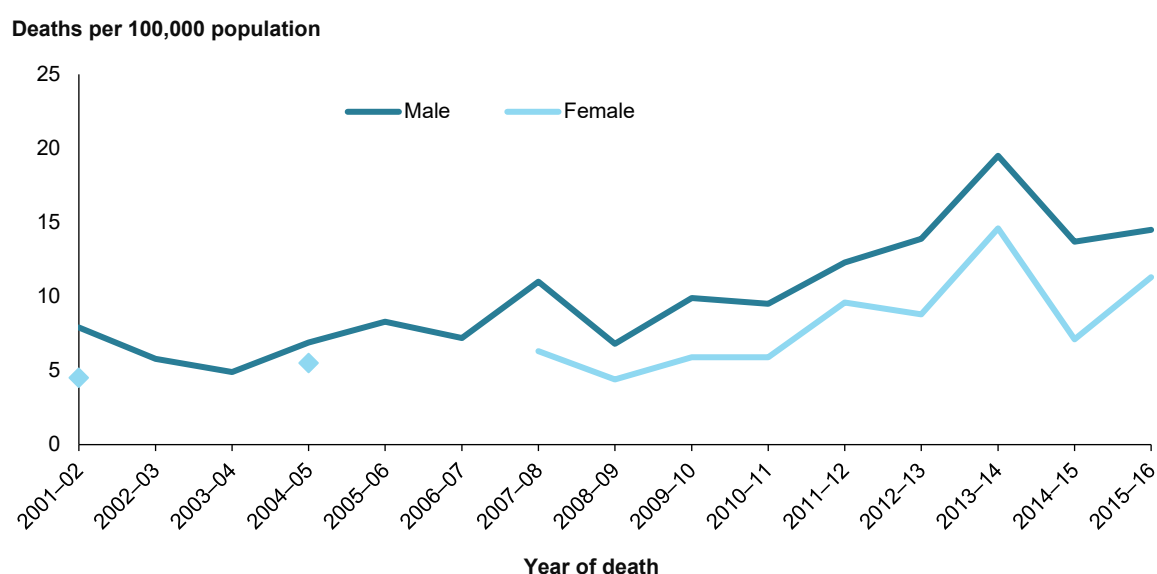
1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.
3. Where more than 1 drug was coded, selection of the one reported in the table followed the ICD-10 'Special instructions on poisoning by drugs, medicaments and biological substances'.

Source: AIHW National Mortality Database.

4.3 How have deaths changed over time?

Despite year-to-year fluctuations, age-standardised rates of death from *Unintentional poisoning by pharmaceuticals* rose for Indigenous males between 2001–02 and 2015–16 (Figure 4.2). Female rates also rose between 2007–08 and 2015–16, the period for which annual case numbers were 10 or more (Figure 4.2). Negative binomial regression indicates that male rates rose by an annual average of 5.9% from 2001–02 to 2015–16. The annual average rise in male rates was statistically significant. Calculated in the same way female rates rose by 8.1% per year from 2001–02 and 2015–16. However, female case numbers were low (less than 10) in most early years in this period, reducing reliability of the estimate. Female rates rose by 1.9% per year from 2007–08 to 2015–16.

Figure 4.2: Age-standardised rates of unintentional poisoning deaths involving pharmaceuticals in the Indigenous population by sex and year, 2001–02 to 2015–16



Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Data underpinning this figure can be found in Table S4.2 in the accompanying supplementary spreadsheet.
3. Age-standardised rates for Indigenous females have been omitted for years in which total case numbers were fewer than 10. See Appendix A: Data information and issues.

Source: AIHW National Mortality Database.

5 Poisoning by other substances

This chapter provides a summary of all poisoning deaths involving substances other than pharmaceuticals between 2011–12 and 2015–16 that are identifiable in the deaths data; a statistical summary of *Unintentional poisoning deaths involving substances other than pharmaceuticals* in that period; and a description of trends in *Unintentional poisoning deaths involving substances other than pharmaceuticals* from 2001–02 to 2015–16.

Key findings

Over the 5-year period 2011–12 to 2015–16, 163 Indigenous Australians died as the result of *Unintentional poisoning deaths involving other substances*.

Age and sex

More Indigenous males (67%) than females died as the result of *Unintentional poisoning deaths involving other substances*. The largest proportion of deaths occurred between 25 and 44 for both males and females.

Place of occurrence

The highest rate of *Unintentional poisoning deaths involving other substances* deaths in the Indigenous population was in the Northern Territory (25 deaths per 100,000 population); 3.6 times the overall rate of 7 deaths per 100,000.

Types of substances

In the 5-year period 2011–12 to 2015–16, most of the *Unintentional poisoning deaths involving other substances* involved the *Toxic effect of alcohol* (males 87%, females 85%).

Trends in injury

Age-standardised rates of death from *Unintentional poisoning deaths involving other substances* in the Indigenous population showed no consistent trend for either males or females between 2001–02 and 2015–16.

Most of the substances included in this chapter are readily available and contain or consist of products in household use. The data presented do not provide information on how the person obtained or accessed the substance. Appendix B: Variations in causes of death by intent also provides information on the types of substances included in each of the ICD-10 categories covered in this chapter.

5.1 What methods were used?

Unintentional poisoning by substances other than pharmaceuticals deaths were identified by the following ICD-10 codes:

- the UCoD was *Accidental poisoning by and exposure to noxious substances* (substances other than pharmaceuticals) (X45–X49); or
- the MCoDs included codes for *Accidental poisoning by and exposure to noxious substances* (substances other than pharmaceuticals) (X45–X49) and for *Injury* (S00–T75 or T79); or
- the MCoDs included codes for *Toxic effects of substances chiefly nonmedicinal as to source* (T51–T65) and for unintentional external cause of injury (V01–X59).

A few *Poisoning by substances other than pharmaceuticals* deaths were found to be suicides or homicides. These *Suicide* and *Homicide* deaths were not included in this chapter.

Relevant terms and information regarding the data used in this chapter are summarised in boxes 1.1 and 5.1. Further information on methods is provided in Appendix A and B.

Box 5.1: External causes of poisoning by other substances

Accidental poisoning by and exposure to noxious substances (X40–X49) is the subject of a section of Chapter XX *External causes of morbidity and mortality* of ICD-10. The second set of categories in this section refer to *Accidental poisoning by and exposure to noxious substances* (X45–X49):

- Accidental poisoning by and exposure to alcohol (X45)
- Accidental poisoning by and exposure to organic solvents and halogenated hydrocarbons and their vapours (X46)
- Accidental poisoning by and exposure to other gases and vapours (X47)
- Accidental poisoning by and exposure to pesticides (X48)
- Accidental poisoning by and exposure to other and unspecified chemicals and noxious substances (X49).

5.2 How many deaths were there from 2011–12 to 2015–16?

In the 5-year period 2011–12 to 2015–16, 163 Indigenous Australians died as the result of *Unintentional poisoning deaths involving other substances*.

Indigenous males had a higher age-standardised rate than did Indigenous females (9 and 4 deaths per 100,000 population, respectively) (Table 5.1). The age-standardised rate for Indigenous Australians was 4 times the rate for non-Indigenous Australians.

Table 5.1: Key indicators for unintentional poisoning deaths involving other substances, by Indigenous status and sex, 2011–12 to 2015–16

Indicator	Indigenous			Non-Indigenous		
	Males	Females	Persons	Males	Females	Persons
Deaths	109	54	163	984	394	1,378
Annual average (5 years)	22	11	33	197	79	276
Age-standardised rate (deaths per 100,000 population)	9.3	4.4	6.8	2.5	0.9	1.7
Rate ratio ^(a)	3.8	4.7	4.0	..	..	..
Rate difference ^(b)	6.8	3.5	5.1	..	..	..

(a) Rate ratios are standardised rates for Indigenous males, females and persons, divided by standardised rates for non-Indigenous males, females and persons.

(b) Rate differences are standardised rates for Indigenous males, females and persons, minus standardised rates for non-Indigenous males, females and persons.

Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.

2. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.

Source: AIHW National Mortality Database.

Age and sex

For Indigenous Australians, around half of all unintentional poisoning deaths involving other substances occurred in the 25–44 age group for both males and females (Table 5.2). From 15 onwards, Indigenous males had higher age-specific rates than females in all age groups. In the 4 oldest age groups, age-specific rates were 2–4 times as high for males as for females.

Table 5.2: Unintentional poisoning deaths involving other substances, by Indigenous status, age and sex, 2011–12 to 2015–16

Age group (years)	Indigenous			Non-Indigenous		
	Number	%	Rate (per 100,000 population)	Number	%	Rate (per 100,000 population)
Males						
0–4	2	1.8	1.1	4	0.4	0.2
5–14	0	0.0	0.0	4	0.4	0.1
15–24	14	12.8	4.3	59	6.0	1.1
25–44	51	46.8	12.9	381	38.7	3.4
45–64	39	35.8	16.7	349	35.5	3.5
65+	3	2.8	5.8	187	19.0	3.4
Total	109	100.0		984	100.0	
Females						
0–4	1	1.9	0.6	1	0.3	0.0
5–14	2	3.7	0.6	3	0.8	0.1
15–24	3	5.6	1.0	18	4.6	0.4
25–44	27	50.0	6.6	120	30.5	1.1
45–64	19	35.2	7.5	170	43.1	1.7
65+	2	3.7	3.1	82	20.8	1.3
Total	54	100.0		394	100.0	

Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.

Source: AIHW National Mortality Database.

State of territory of usual residence

In the Indigenous population, the Northern Territory had a rate of *Unintentional poisoning by other substances* that was more than 3 times the national rate of 7 deaths per 100,000 population (Table 5.3). Much lower rates were found in New South Wales and Queensland (4 and 3 per 100,000, respectively). The 2 remaining jurisdictions for which suitable data were available had rates that were similar to the national rate.

Table 5.3: Unintentional poisoning deaths involving other substances in the Indigenous population, by state or territory of usual residence, 2011–12 to 2015–16

Indicator	State or territory of usual residence					Total
	NSW	Qld	WA	SA	NT	
Deaths	33	21	27	10	72	163
Percentage of all deaths in this category	20.3	12.9	16.6	6.1	44.2	100.0
Age-standardised rate (deaths per 100,000 population)	3.7	3.0	8.1	5.7	24.6	6.8

Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.

Source: AIHW National Mortality Database.

Remoteness of usual residence

The highest rate for males was in the *Very remote* area (19 deaths per 100,000 population) (Figure 5.1). The highest rate for females was in *Remote* areas where the rates for females and males were the same (12 deaths per 100,000).

Rates of Indigenous injury mortality by remoteness areas should be treated with caution, due to the relatively low numbers of deaths and limitations of population data.

Figure 5.1: Unintentional poisoning deaths involving other substances in the Indigenous population, by remoteness of usual residence and sex, 2011–12 to 2015–16



Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Values in this figure are a 5-year aggregate over the period 2011–12 to 2015–16.
3. Age-standardised rates have been omitted where total case numbers were fewer than 10. See Appendix A: Data information and issues.
4. Data underpinning this figure can be found in Table S5.1 in the accompanying supplementary spreadsheet.

Source: AIHW National Mortality Database.

Types of substances

NMD deaths data are derived from the information contained on death certificates. These certificates can include multiple factors that contributed to the death (MCoDs). A total of 167 MCoD codes relating to non-pharmaceutical poisoning agents were assigned to the 163 deaths due to *Unintentional poisoning deaths involving other substances* in the Indigenous population.

In the 5-year period 2011–12 to 2015–16, most of the *Unintentional poisoning deaths involving other substances* included an MCoD for *Toxic effect of alcohol* (males 86%, females 83%) (Table 5.4).

Table 5.4: Unintentional poisoning deaths involving other substances in the Indigenous population, by type of substance and sex, 2011–12 to 2015–16

Type of substance	Males		Females	
	Deaths No. (%)	MCoDs No. (%)	Deaths No. (%)	MCoDs No. (%)
Alcohol (T51)	94 (86.2)	94 (84.7)	45 (83.3)	45 (80.4)
Organic solvents (T52)	4 (3.7)	4 (3.6)	0 (0)	0 (0)
Carbon monoxide (T58)	4 (3.7)	4 (3.6)	4 (7.4)	4 (7.1)
Other gases, fumes & vapours (including aerosol propellants; T59)	7 (6.4)	7 (6.3)	5 (9.3)	5 (8.9)
Other & unspecified substances	3 (2.8)	2 (1.8)	3 (5.6)	2 (3.6)
Total toxic effects of substances in the range T51 to T65	109 (100)	111 (100)	54 (100)	56 (100)

Notes

1. *Deaths* means the number of cases with one or more MCoDs of the values specified in row titles and *MCoDs* means the number of those codes.
2. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
3. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.
4. Counts of deaths sum to more than totals because some involved more than one type of substance. *Other or unspecified substances* includes 2 cases (1 male, 1 female) with ICD-10 external cause codes in the range X45 to X49 but no code in the range T51 to T65.

Source: AIHW National Mortality Database.

5.4 How have deaths changed over time?

Age-standardised rates of unintentional poisoning deaths involving other substances for Indigenous Australians fluctuated from year to year over the period from 2001–02 to 2015–16 (Figure 5.2). Negative binomial regression showed no statistically significant trends for male or female deaths due to this cause. Note, however, that annual case numbers for females were low (below 10) for most years in the period.

Figure 5.2: Age-standardised rates of unintentional poisoning deaths involving other substances in the Indigenous population, by sex and year, 2001–02 to 2015–16



Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Data underpinning this figure can be found in Table S5.2 in the accompanying supplementary spreadsheet.
3. Age-standardised rates for Indigenous females have been omitted for years in which total case numbers were fewer than 10. See Appendix A: Data information and issues.

Source: AIHW National Mortality Database.

6 Fall deaths

This chapter provides a summary of all *Unintentional fall* injury deaths during the 5-year period 2011–12 to 2015–16 that are identifiable in the deaths data; a summary of fall injury deaths in the same period; and a description of trends in fall injury deaths from 2001–02 to 2015–16.

Key findings

Over the 5-year period 2011–12 to 2015–16, 172 Indigenous Australians died as the result of an *Unintentional fall*.

Age and sex

Almost equal numbers of Indigenous males (87) and females (85) died as the result of an *Unintentional fall*. The largest proportion of deaths occurred for those aged 65 and over for both males and females.

Place of occurrence

The overall rate of *Unintentional fall* deaths in the Indigenous population was 19 deaths per 100,000 population. Higher rates occurred in Western Australia and the Northern Territory (25 and 24 deaths per 100,000, respectively).

Types of fall

For both Indigenous males and females, the most common type of fall identified was a *Fall on same level from slipping, tripping and stumbling* (22% and 7% of fall deaths, respectively).

Trends in injury

Age-standardised rates of death from fall injury in the Indigenous population showed no consistent trend for either males or females between 2001–02 and 2015–16.

6.1 What methods were used?

Unintentional fall deaths were identified by the following ICD-10 codes:

- the UCoD was an *Unintentional fall* (W00–W19); or
- the UCoD was coded as *Exposure to unspecified factor* (X59) and the MCoDs included a code for *Fracture*; or
- the MCoDs included codes for *Unintentional fall* (W00–W19) and for *Injury* (S00–T75 or T79); or
- the MCoDs included codes for *Exposure to unspecified factor* (X59) and for *Fracture*.

The codes for fractures are S02, S12, S22, S32, S42, S52, S62, S72, S82, S92, T02, T08, T10, T12 and T14.2.

These criteria are the same as in previous reports (AIHW: Henley & Harrison 2009, 2015). Deaths with a UCoD of X59 and a fracture code as an MCoD have been included routinely when reporting fall injury deaths because of indications that most involve falls (Kreisfeld & Harrison 2005).

It is possible that some of the deaths included using the X59 code in combination with a fracture code may not be fall-related. However, the inclusion of these 2 criteria provides a

more accurate estimate of fall injury deaths than if they were excluded. For further information, see the sections on falls in previous reports (AIHW: Harrison & Henley 2015; AIHW: Henley & Harrison 2015).

Suicide and *Homicide* deaths (UCoD X60–Y09) were excluded.

Relevant terms and information regarding the data used in this chapter are summarised in boxes 1.1 and 6.1. Further information on methods is provided in Appendixes A and B and from a previously published report covering the period from 1999 to 2010 (AIHW: Harrison & Henley 2015).

Box 6.1: External causes of falls

The **Falls (W00–W19)** section of Chapter XX *External causes of morbidity and mortality* of ICD-10 includes:

- Fall on same level involving ice and snow (W00)
- Fall on same level from slipping, tripping and stumbling (W01)
- Fall involving ice-skates, skis, roller-skates or skateboards (W02)
- Other fall on same level due to collision with, or pushing by, another person (W03)
- Fall while being carried or supported by other persons (W04)
- Fall involving wheelchair (W05)
- Fall involving bed (W06)
- Fall involving chair (W07)
- Fall involving other furniture (W08)
- Fall involving playground equipment (W09)
- Fall on and from stairs and steps (W10)
- Fall on and from ladder (W11)
- Fall on and from scaffolding (W12)
- Fall from, out of or through building or structure (W13)
- Fall from tree (W14)
- Fall from cliff (W15)
- Diving or jumping into water causing injury other than drowning or submersion (W16)
- Other fall from one level to another (W17)
- Other fall on same level (W18)
- Unspecified fall (W19).

6.2 How many deaths were there between 2011–12 and 2015–16?

Unintentional falls were involved in 172 deaths in the Indigenous community between 2011–12 and 2015–16 (Table 6.1). This was 11% of all Indigenous female injury deaths and 6% of all Indigenous male injury deaths for this period. During the 5-year period, the numbers

and rates of unintentional fall-related deaths were fairly similar for Indigenous males and females. The age-standardised rate for Indigenous Australians was similar to that for non-Indigenous Australians.

Table 6.1: Key indicators for Unintentional fall-related deaths, by Indigenous status and sex, 2011–12 to 2015–16

Indicator	Indigenous			Non-Indigenous		
	Males	Females	Persons	Males	Females	Persons
Deaths	87	85	172	6,443	8,716	15,159
Annual average (5 years)	17	17	34	1,289	1,743	3,032
Age-standardised rate (deaths per 100,000 population)	16.4	20.3	19.3	15.7	13.9	14.8
Rate ratio ^(a)	1.1	1.5	1.3	..	..	..
Rate difference ^(b)	0.8	6.6	4.6	..	..	..

(a) Rate ratios are standardised rates for Indigenous males, females and persons, divided by standardised rates for non-Indigenous males, females and persons.

(b) Rate differences are standardised rates for Indigenous males, females and persons, minus standardised rates for non-Indigenous males, females and persons.

Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.

2. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.

Source: AIHW National Mortality Database.

Age and sex

The number of deaths due to *Unintentional falls* in the Indigenous community were similar for males and females (Table 6.2). The frequency of fall-related deaths tended to increase with age. Deaths of this type were very uncommon in childhood.

For Indigenous and non-Indigenous males and females, population-based rates of death involving this cause rose strongly with age (Table 6.2). However, the proportion of cases that occurred in old age, where rates are highest, was lower for Indigenous than non-Indigenous people. The 85-and-over age group included 7% of the fall-related deaths of Indigenous men compared with 52% for non-Indigenous men. The equivalent proportions for women were 28% and 70%. This largely reflects the fact that a smaller proportion of Indigenous people than non-Indigenous people in the population are in the oldest age groups.

Table 6.2: Unintentional fall-related injury deaths, by Indigenous status, age and sex, 2011–12 to 2015–16

Age group (years)	Indigenous			Non-Indigenous		
	Number	%	Rate (per 100,000 population)	Number	%	Rate (per 100,000 population)
Males						
0–4	0	0.0	0	3	0.0	0.1
5–14	3	3.4	0.8	6	0.1	0.1
15–24	3	3.4	0.9	54	0.8	1.0
25–44	9	10.3	2.3	112	1.7	1.0
45–64	40	46.0	17.2	466	7.2	4.7
65–74	14	16.1	36.6	669	10.4	20.3
75–84	12	13.8	102.1	1809	28.1	108.1
85+	6	6.9	296.6	3324	51.6	596.9
Total	87	100.0		6,443	100.0	
Females						
0–4	1	1.2	0.6	3	0.0	0.1
5–14	0	0.0	0	3	0.0	0.1
15–24	2	2.4	0.7	4	0.0	0.1
25–44	3	3.5	0.7	36	0.4	0.3
45–64	13	15.3	5.1	199	2.3	2.0
65–74	16	18.8	36.3	460	5.3	13.7
75–84	26	30.6	161.0	1944	22.3	98.0
85+	24	28.2	631.3	6067	69.6	607.2
Total	85	100.0		8,716	100.0	

Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.

Source: AIHW National Mortality Database.

State or territory of usual residence

Rates of fall-related death were highest for Indigenous residents of Western Australia and the Northern Territory (25 and 24 deaths per 100,000 population, respectively) (Table 6.3). The lowest age-standardised rate was for South Australia (13 per 100,000).

Table 6.3: Unintentional fall-related deaths in the Indigenous population, by state or territory of usual residence, 2011–12 to 2015–16

Indicator	State or territory of usual residence					Total
	NSW	Qld	WA	SA	NT	
Deaths	49	50	36	9	28	172
Percentage	28.5	29.1	20.9	5.2	16.3	100.0
Age-standardised rate (deaths per 100,000 population)	16.3	20.2	24.5	13.3	24.1	19.3

Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.
3. Age-standardised rates have been omitted where total case numbers were fewer than 10. See Appendix A: Data information and issues.

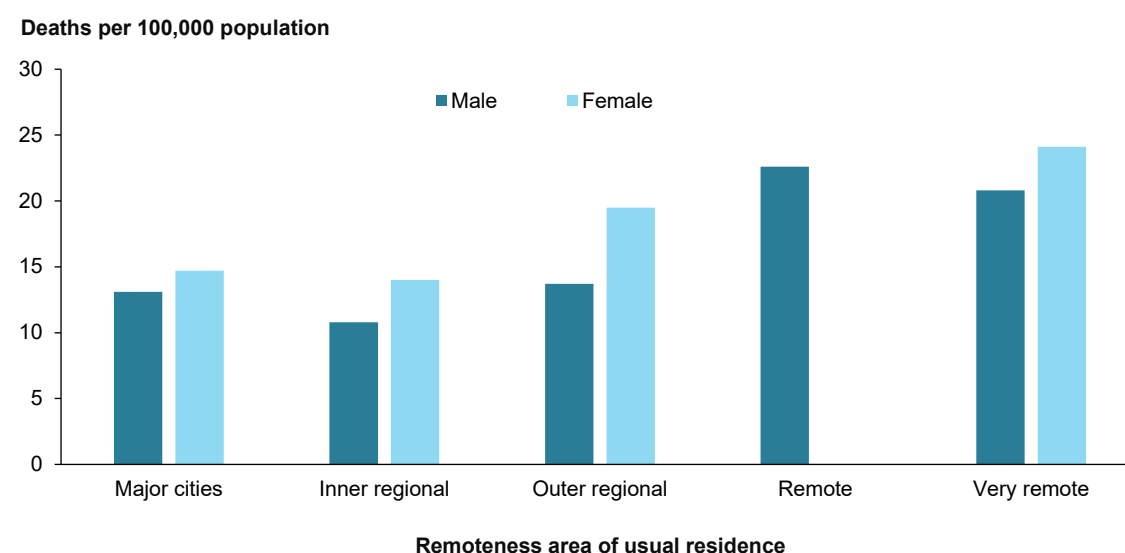
Source: AIHW National Mortality Database.

Remoteness of usual residence

In contrast to most other causes of death, rates of fall-related deaths for Indigenous females were higher than, or similar to, those for males in all remoteness areas (Figure 6.1). The highest rates for Indigenous males were in *Remote* and *Very remote* areas (23 and 21 deaths per 100,000 population, respectively). The highest rate for females was in *Very remote* areas (24 per 100,000).

Rates of Indigenous injury mortality by remoteness areas should be treated with caution, due to the relatively low numbers of deaths and limitations of population data.

Figure 6.1: Unintentional fall-related deaths, by remoteness of usual residence and sex, 2011–12 to 2015–16



Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Values in this figure are a 5-year aggregate over the period 2011–12 to 2015–16.
3. Age-standardised rates have been omitted where total case numbers were fewer than 10. See Appendix A: Data information and issues.
4. Data underpinning this figure can be found in Table S6.1 in the accompanying supplementary spreadsheet.

Source: AIHW National Mortality Database.

Types of falls

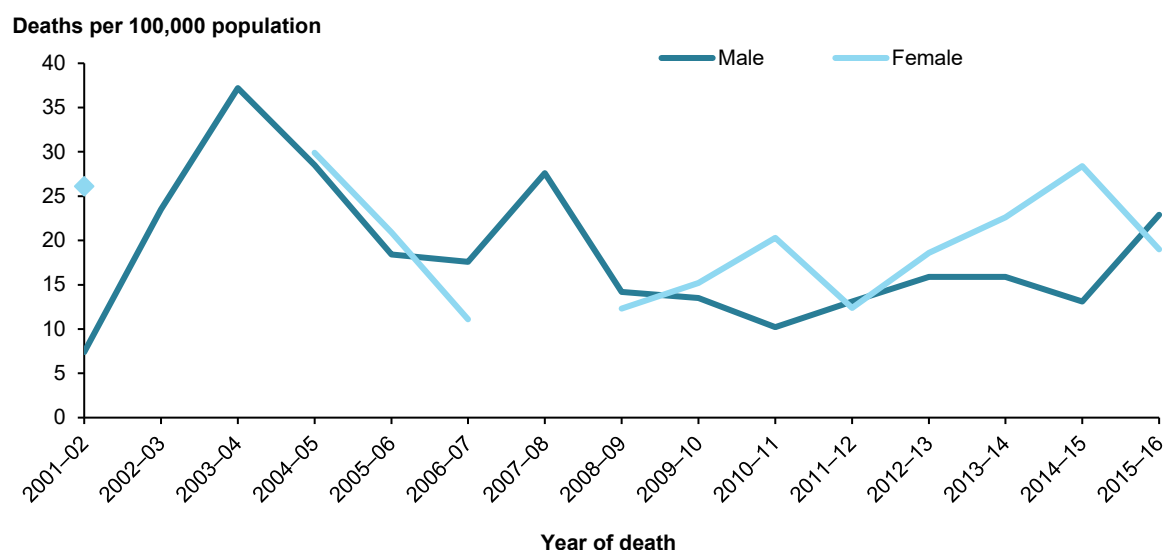
Providing an insight into the types of falls that lead to death is problematic for 2 main reasons. Firstly, a proportion of the deaths included in this chapter were selected because they had a UCoD or MCoD of X59 *Exposure to unspecified factor* in combination with a code for *Fracture*. This combination has been shown in previous research to identify cases that were fall-related but does not identify the type of fall. Secondly, for both Indigenous males and females, the main type of fall was coded as W19 *Unspecified fall* (25% and 29% of deaths, respectively).

For both Indigenous males and females, the most commonly coded type of fall was W01 *Fall on same level from slipping, tripping and stumbling* (22% and 7% of deaths, respectively).

6.3 How have deaths changed over time?

There was considerable variation in year-to-year rates. Negative binomial regression found no statistically significant trends in relation to deaths due to *Unintentional falls* for either males or females (Figure 6.2). Note that annual case numbers for females were low (below 10) for some years in the early part of the period.

Figure 6.2: Age-standardised rates of unintentional fall-related deaths in the Indigenous population, by sex and year, 2001–02 to 2015–16



Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Data underpinning this figure can be found in Table S6.2 in the accompanying supplementary spreadsheet.
3. Age-standardised rates for Indigenous females have been omitted for years in which total case numbers were fewer than 10. See Appendix A: Data information and issues.

Source: AIHW National Mortality Database.

7 Suicide deaths

This chapter provides a brief overview of suicide deaths in the 5-year period 2011–12 to 2015–16 and trends in deaths from this cause from 2001–02 to 2015–16. Trends in suicide have been the subject of much attention, and recognition of problems resulting in under-identification of cases was the main reason for the introduction of the ABS revisions process and other changes that were made during the period covered by this report (see Appendix A and AIHW: Harrison & Henley 2014).

Key findings

There were 706 *Suicide* deaths of Indigenous Australians over the 5-year period 2011–12 to 2015–16.

Age and sex

More than twice as many Indigenous males (501) as females (205) died as the result of a suicide. The largest proportion of deaths occurred between 25 and 44 for both males and females.

Place of occurrence

The highest rate of *Suicide* deaths in the Indigenous population were in Western Australia (40 deaths per 100,000 population compared with an overall rate of 23 deaths per 100,000).

Mechanism of suicide

The most common mechanism of suicide in the Indigenous population was *Hanging, strangulation and suffocation* which was the method used in nearly 9 in 10 deaths.

Trends in injury

Rates of *Suicide* death for Indigenous Australians fluctuated over the period from 2001–02 to 2015–16. An upward trend of 5.8% per year was seen in rates for Indigenous females. No trend evident for Indigenous males over the full period from 2001–02, though rates were relatively high in the most recent years included.

7.1 What methods were used?

Suicide deaths were identified by the following ICD-10 codes:

- the UCoD was *Intentional self-harm* (X60–X84); or
- the MCoDs included codes for *Intentional self-harm* and for *Injury* (S00–T75 or T79).

The title of ICD-10 code block X60–X84 is *Intentional self-harm*. Deaths coded to this range are commonly referred to as *Suicide*, a practice followed here, although the scope of inclusion of the code block includes purposely self-inflicted poisoning or injury, suicide and attempted suicide. That is, it could include deaths due to intentional self-harm where a fatal outcome was not intended.

Relevant terms and information about the data used in this chapter are summarised in boxes 1.1, 7.1 and 7.2). Further information on methods is provided in Appendix A and B.

Box 7.1: External causes of intentional self-harm (suicide)

The **Intentional self-harm (X60–X84)** section of Chapter XX *External causes of morbidity and mortality* of ICD-10 includes the following categories:

- Intentional self-poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics (X60)
- Intentional self-poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified (X61)
- Intentional self-poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified (X62)
- Intentional self-poisoning by and exposure to other drugs acting on the autonomic nervous system (X63)
- Intentional self-poisoning by and exposure to other and unspecified drugs, medicaments and biological substances (X64)
- Intentional self-poisoning by and exposure to alcohol (X65)
- Intentional self-poisoning by and exposure to organic solvents and halogenated hydrocarbons and their vapours (X66)
- Intentional self-poisoning by and exposure to other gases and vapours (X67)
- Intentional self-poisoning by and exposure to pesticides (X68)
- Intentional self-poisoning by and exposure to other and unspecified chemicals and noxious substances (X69)
- Intentional self-harm by hanging, strangulation and suffocation (X70)
- Intentional self-harm by drowning and submersion (X71)
- Intentional self-harm by handgun discharge (X72)
- Intentional self-harm by rifle, shotgun and larger firearm discharge (X73)
- Intentional self-harm by other and unspecified firearm discharge (X74)
- Intentional self-harm by explosive material (X75)
- Intentional self-harm by smoke, fire and flames (X76)
- Intentional self-harm by steam, hot vapours and hot objects (X77)
- Intentional self-harm by sharp object (X78)
- Intentional self-harm by blunt object (X79)
- Intentional self-harm by jumping from a high place (X80)
- Intentional self-harm by jumping or lying before moving object (X81)
- Intentional self-harm by crashing of motor vehicle (X82)
- Intentional self-harm by other specified means (X83)
- Intentional self-harm by unspecified means (X84).

Box 7.2: Suicide deaths in children

Deaths of children by suicide is an extremely sensitive issue. The number of deaths of children attributed to suicide can be influenced by coronial reporting practices. Reporting practices may lead to differences in counts across jurisdictions and this should be taken into account when interpreting these data. In its reports, the ABS combines data on suicide at ages 5 to 14 years.

For more information on issues associated with the compilation and interpretation of suicide data, see ABS 3303.0 - Causes of Death, Australia, 2011 explanatory notes 92–95. See

<https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/3303.0Appendix12011>.

7.2 How many deaths were there between 2011–12 and 2015–16?

Suicide accounted for 706 injury deaths of Indigenous Australians in Australia from 2011–12 to 2015–16—33% of all Indigenous injury deaths in this period (Table 7.1). There were around 2.5 times as many suicide deaths of males (501) as of females (205) during this 5-year period. The age-standardised suicide rate for Indigenous Australians was about twice as high as the rate for non-Indigenous Australians (Table 7.1).

Table 7.1: Key indicators for Suicide deaths, by Indigenous status and sex, 2011–12 to 2015–16

Indicator	Indigenous			Non-Indigenous		
	Males	Females	Persons	Males	Females	Persons
Deaths	501	205	706	7,118	2,317	9,435
Annual average (5 years)	100	41	141	1,424	463	1,887
Age-standardised rate (deaths per 100,000 population)	34.9	12.7	23.4	17.8	5.7	11.6
Rate ratio ^(a)	2.0	2.2	2.0	..	..	..
Rate difference ^(b)	17.1	7.0	11.8	..	..	..

(a) Rate ratios are standardised rates for Indigenous males, females and persons, divided by standardised rates for non-Indigenous males, females and persons.

(b) Rate differences are standardised rates for Indigenous males, females and persons, minus standardised rates for non-Indigenous males, females and persons.

Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.

2. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.

Source: AIHW National Mortality Database.

Age and sex

Suicide was a considerably more frequent cause of death for males, both Indigenous and non-Indigenous Australians (Table 7.2). For both sexes, 84% of Indigenous suicide deaths occurred between the ages of 15 and 44.

Age-specific rates of suicide death for males and females were higher for Indigenous than for non-Indigenous Australians under 45. The differential was most marked in age-specific rates for children aged 5–14. Rates in this age group were 3.6 and 3.4 per 100,000 for Indigenous boys and girls, respectively, compared with 0.4 and 0.5 for non-Indigenous boys and girls.

Table 7.2: Suicide deaths, by Indigenous status, age and sex, 2011–12 to 2015–16

Age group (years)	Indigenous			Non-Indigenous		
	Number	%	Rate (per 100,000 population)	Number	%	Rate (per 100,000 population)
Males						
5–14	13	2.6	3.6	20	0.3	0.4
15–24	171	34.1	52.9	805	11.3	15.1
25–44	248	49.5	62.6	2,714	38.1	24.0
45–64	61	12.2	26.2	2,399	33.7	24.2
65+	8	1.6	15.4	1,180	16.6	21.3
Total	501	100.0		7,118	100.0	
Females						
5–14	12	5.9	3.4	24	1.0	0.5
15–24	82	40.0	26.8	302	13.0	5.9
25–44	90	43.9	22.0	828	35.8	7.3
45–64	20	9.8	7.9	814	35.2	8.1
65+	1	0.5	1.6	347	15.0	5.5
Total	205	100.0		2,317	100.0	

Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.
3. Not included in the table are 2 non-Indigenous female cases for which age was not reported.
4. Totals include 2 non-Indigenous female cases for which age was not specified.
5. Age group 0–4 is not shown because suicide does not occur at these ages.

Source: AIHW National Mortality Database.

State of territory of residence

The highest rate of *Suicide* death in the Indigenous population was in Western Australia (40 deaths per 100,000 population) (Table 7.3). This rate was 1.7 times that overall rate of 23 per 100,000. New South Wales had the lowest rate (15 per 100,000).

Table 7.3: Suicide deaths in the Indigenous population, by state or territory of usual residence, 2011–12 to 2015–16

Indicator	State or territory of usual residence					Total
	NSW	Qld	WA	SA	NT	
Deaths	140	223	195	38	110	706
Percentage of all deaths due to suicide	19.8	31.6	27.6	5.4	15.6	100.0
Age-standardised rate (deaths per 100,000 population)	15.3	23.3	39.5	22.6	27.4	23.4

Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.

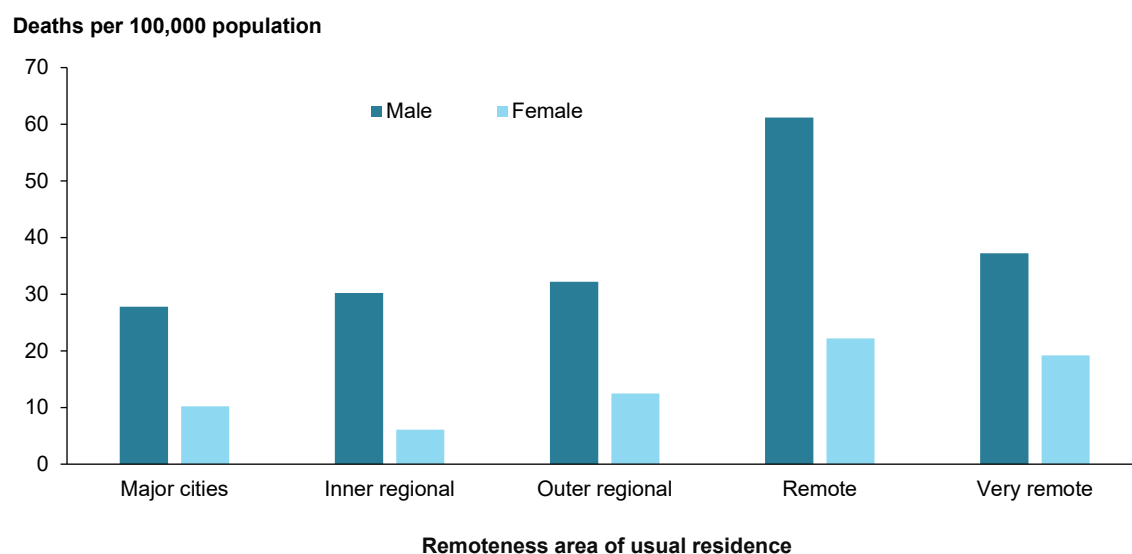
Source: AIHW National Mortality Database.

Remoteness of usual residence

Rates of suicide death for Indigenous males were substantially higher than those for females in all remoteness areas (Figure 7.1). The highest male rate (61 deaths per 100,000 population) was in the *Remote* area. Male rates in the other remoteness areas were fairly similar, ranging from 28 to 37 deaths per 100,000 population. The highest rates for females were in *Remote* and *Very remote* areas (22 and 19 per 100,000, respectively).

Rates of Indigenous injury mortality by remoteness areas should be treated with caution, due to the relatively low numbers of deaths and limitations of population data.

Figure 7.1: Suicide deaths in the Indigenous population, by remoteness of usual residence and sex, 2011–12 to 2015–16



Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Values in this figure are a 5-year aggregate over the period 2011–12 to 2015–16.
3. Data underpinning this figure can be found in Table S7.1 in the accompanying supplementary spreadsheet.

Source: AIHW National Mortality Database.

Mechanism of suicide death

The most common mechanism of suicide in the Indigenous population was *Hanging, strangulation and suffocation* which was the method used in nearly 9 in 10 deaths (Table 7.4). This ranged from 76% in *Major cities* to 91% in *Very remote* areas.

Self-poisoning, although accounting for comparatively small proportions of deaths among both males and females, was the next most common mechanism (males 5% and females 6%, respectively). The use of a firearm was uncommon, used in only 1.4% of *Suicide* deaths overall.

Table 7.4: Mechanism of suicide in the Indigenous population, by sex, 2011–12 to 2015–16

Mechanism of suicide	Males		Females	
	Number	%	Number	%
Self-poisoning	27	5.4	12	5.9
Hanging, strangulation and suffocation	427	85.2	180	87.8
Firearms	10	2.0	0	0.0
Cutting or piercing	18	3.6	3	1.5
Jumping or lying before a moving object	9	1.8	5	2.4
Other or unspecified mechanisms	10	2.0	5	2.4
Total	501	100.0	205	100.0

Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.

2. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.

Source: AIHW National Mortality Database.

7.3 How have deaths changed over time?

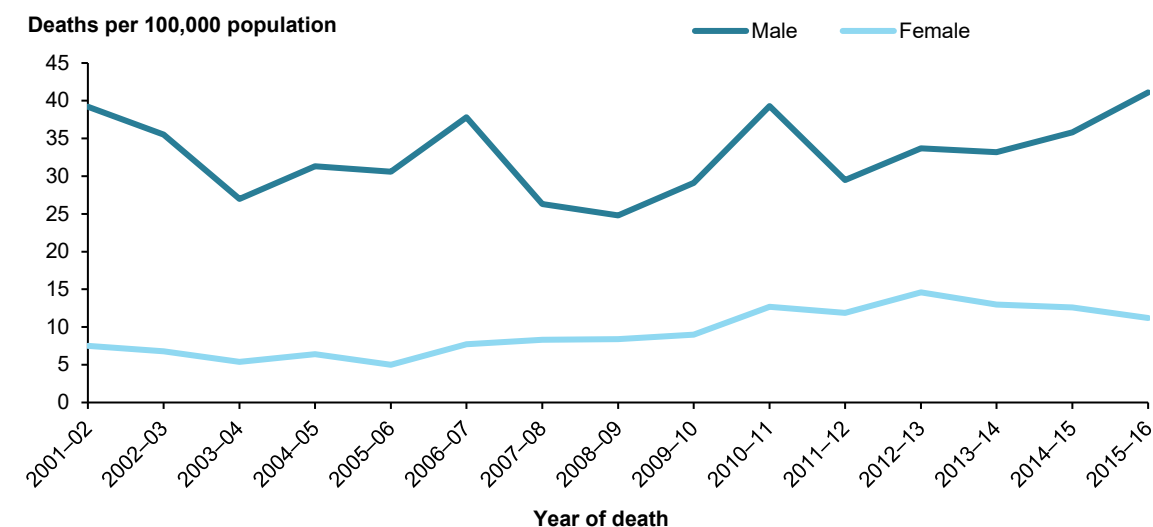
Rates of suicide death for Indigenous Australians fluctuated over the period from 2001–02 to 2015–16 (Figure 7.2). Negative binomial regression showed a rise (not statistically significant) in rates for Indigenous males of an annual average of 0.4% over the period. Over the most recent 5-year period 2011–12 to 2015–16, the annual rate for males increased by an average of 6.6% per year (also not statistically significant, reflecting the relatively small absolute numbers of cases and the small number of years).

For the period 2001–02 to 2015–16, modelling showed a statistically significant annual average rise in rates of female *Suicide* death of 5.8%. However, over the most recent 5-year period—2011–12 to 2015–16—female rates fell by 2.5% per year, although this finding was not statistically significant.

Rates of *Suicide* over the period were consistently higher for males than for females.

Previous work has shown that underestimation of suicide mortality occurred in Australia until method changes were applied to deaths registered in 2006 and, with enhancements, to data for later years (AIHW 2015). Comparison of CODURF data (on which this report is based) with data from the National Coronial Information System showed underestimation of the suicide rate by about 17% in 2004–05 and by smaller proportions in nearby years (AIHW: Henley & Harrison 2018). These findings were for suicide mortality in general and were not specific to Indigenous deaths.

Figure 7.2: Age-standardised rates of suicide deaths in the Indigenous population, by sex and year, 2001–02 to 2015–16



Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Data underpinning this figure can be found in Table S7.2 in the accompanying supplementary spreadsheet.

Source: AIHW National Mortality Database.

8 Homicide deaths

This chapter provides a summary of all *Homicide* deaths during the 5-year period 2011–12 to 2015–16 that are identifiable in the deaths data; a summary of homicide deaths in the same period; and a description of trends in *Homicide* deaths from 2001–02 to 2015–16.

Key findings

Over the 5-year period 2011–12 to 2015–16, 204 Indigenous Australians died by homicide.

Age and sex

More Indigenous males (61%) than females died by homicide. The largest proportion of deaths occurred between 25 and 44 for both males and females.

Place of occurrence

The highest rate of homicide in the Indigenous population was in the Northern Territory (16 deaths per 100,000 population); more than double the national rate of 7 deaths per 100,000.

Mechanism of death

The most common mechanism of *Homicide* deaths for Indigenous males was an *Assault by sharp object* (52%) while for females it was *Assault by bodily force* (34%).

Trends in injury

Age-standardised rates of *Homicide* death in the Indigenous population showed no consistent trend for either males or females between 2001–02 and 2015–16.

8.1 What methods were used?

Homicide deaths were identified by the following ICD-10 codes:

- the UCoD was *Assault* (X85–Y09) or *Legal intervention and operations of war* (Y35–Y36); or
- the MCoDs included any of these codes and a code for *Injury* (S00–T75 or T79).

Deaths due to legal intervention were also included. Very few deaths were attributed to operations of war, reflecting the practice that deaths overseas of members of Australian armed forces are not normally registered in Australia (AIHW: Harrison & Henley 2015). The title of ICD-10 code block X60–X84 is *Assault*. Deaths coded to this range are commonly referred to as ‘Homicide’, a practice followed here.

Relevant terms and information regarding the data used in this chapter are summarised in boxes 1.1 and 8.1. Further information on methods is provided in Appendix A and B.

Box 8.1: External causes of assault (homicide) injury

The sections of Chapter XX *External causes of morbidity and mortality* of ICD-10 on **Assault (X85–Y09)** and **Legal intervention and operations of war (Y35–Y36)** include the following categories:

(continued)

Box 8.1 (continued): External causes of assault (homicide) injury**Assault (X85–Y09)**

- Assault by drugs, medicaments and biological substances (X85)
- Assault by corrosive substance (X86)
- Assault by pesticides (X87)
- Assault by gases and vapours (X88)
- Assault by other specified chemicals and noxious substances (X89)
- Assault by unspecified chemical or noxious substance (X90)
- Assault by hanging, strangulation and suffocation (X91)
- Assault by drowning and submersion (X92)
- Assault by handgun discharge (X93)
- Assault by other and unspecified firearm discharge (X95)
- Assault by explosive material (X96)
- Assault by smoke, fire and flames (X97)
- Assault by steam, hot vapours and hot objects (X98)
- Assault by sharp object (X99)
- Assault by blunt object (Y00)
- Assault by pushing from high place (Y01)
- Assault by pushing or placing victim before moving object (Y02)
- Assault by crashing of motor vehicle (Y03)
- Assault by bodily force (Y04)
- Sexual assault by bodily force (Y05)
- Neglect and abandonment (Y06)
- Other maltreatment syndromes (Y07)
- Assault by other specified means (Y08)
- Assault by unspecified means (Y09).

Legal intervention and operations of war (Y35–Y36)

- Legal intervention (Y35)
- Operations of war (Y36).

8.2 How many deaths were there between 2011–12 and 2015–16?

Homicides accounted for 204 injury deaths in the Indigenous population between 2011–12 and 2015–16 (Table 8.1). This equated to around 1 in 10 of all Indigenous injury deaths for

this period. There were 1.6 times as many *Homicide* deaths of males (124) as of females (80).

The age-standardised *Homicide* rate for Indigenous Australians was 7 times the rate for non-Indigenous Australians. The rate of *Homicide* death for Indigenous females was nearly 9 times that for non-Indigenous females (Table 8.1).

Table 8.1: Key indicators for Homicide deaths, by Indigenous status and sex, 2011–12 to 2015–16

Indicator	Indigenous			Non-Indigenous		
	Males	Females	Persons	Males	Females	Persons
Deaths	124	80	204	540	253	793
Annual average (5 years)	25	16	41	108	51	159
Age-standardised rate/100,000 population	8.8	5.4	7.0	1.4	0.6	1.0
Rate ratio ^(a)	6.4	8.7	7.1	..	..	..
Rate difference ^(b)	7.4	4.7	6.0	..	..	..

(a) Rate ratios are standardised rates for Indigenous males, females and persons, divided by standardised rates for non-Indigenous males, females and persons.

(b) Rate differences are standardised rates for Indigenous males, females and persons, minus standardised rates for non-Indigenous males, females and persons.

Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.

2. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.

Source: AIHW National Mortality Database.

Age and sex

Deaths of people aged 25–44 accounted for over half of homicides in the Indigenous population during the 5-year period 2011–12 to 2015–16 (Table 8.2). The highest age-specific rates for Indigenous males and females were in this age group (17 and 9 deaths per 100,000 population, respectively).

Age-specific rates were substantially higher for Indigenous males and females than for their non-Indigenous counterparts in all age groups under 65.

Table 8.2: Homicide deaths, by Indigenous status, age and sex, 2011–12 to 2015–16

Age group (years)	Indigenous			Non-Indigenous		
	Number	%	Rate (per 100,000 population)	Number	%	Rate (per 100,000 population)
Males						
0–4	6	4.8	3.2	22	4.1	0.8
5–14	5	4.0	1.4	9	1.7	0.2
15–24	22	17.7	6.8	76	14.1	1.4
25–44	68	54.8	17.2	230	42.6	2.0
45–64	23	18.5	9.9	155	28.7	1.6
65+	0	0.0	0.0	48	8.9	0.9
Total	124	100.0		540	100.0	

(continued)

Table 8.2 (continued): Homicide deaths, by Indigenous status, age and sex, 2011–12 to 2015–16

Age group (years)	Indigenous			Non-Indigenous		
	Number	%	Rate (per 100,000 population)	Number	%	Rate (per 100,000 population)
Females						
0–4	3	3.8	1.7	11	4.3	0.4
5–14	8	10.0	2.3	11	4.3	0.2
15–24	16	20.0	5.2	20	7.9	0.4
25–44	37	46.3	9.1	99	39.1	0.9
45–64	16	20.0	6.3	65	25.7	0.6
65+	0	0.0	0.0	47	18.6	0.7
Total	80	100.0		253	100.0	

Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.

Source: AIHW National Mortality Database.

State or territory of usual residence

The rate of homicide death was highest for Indigenous residents of the Northern Territory (16 deaths per 100,000) who had a rate that was more than double the national rate of 7 per 100,000 (Table 8.3). The lowest rates were for New South Wales and Queensland (4 and 5 per 100,000, respectively).

Table 8.3: Homicide deaths in the Indigenous population, by state or territory of usual residence, 2011–12 to 2015–16

Indicator	State or territory of usual residence					Total
	NSW	Qld	WA	SA	NT	
Deaths	34	45	50	18	57	204
Percentage of all deaths due to homicide	16.7	22.1	24.5	8.8	27.9	100.0
Age-standardised rate (deaths per 100,000 population)	3.6	4.5	11.5	9.2	16.0	7.0

Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.

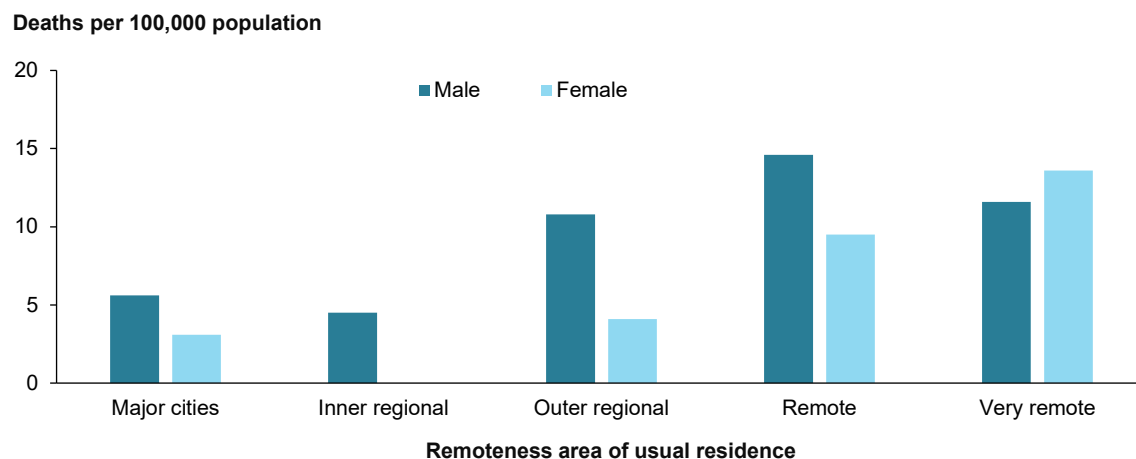
Source: AIHW National Mortality Database.

Remoteness of usual residence

Indigenous males had higher rates of homicide death than females in all remoteness areas except the *Very remote* area (Figure 8.1). In general, rates tended to increase with increasing remoteness. The highest rate for Indigenous males was in the *Remote* area (15 deaths per 100,000 population)—more than twice as high as the rate for male residents of *Major cities* (6 per 100,000). The highest rate for Indigenous females was in the *Very remote* area (14 deaths per 100,000), over 4 times the rate for female residents of the *Major cities* area (3 deaths per 100,000).

Rates of Indigenous injury mortality by remoteness areas should be treated with caution, due to the relatively low numbers of deaths and limitations of population data.

Figure 8.1: Homicide deaths in the Indigenous population, by remoteness of usual residence and sex, 2011–12 to 2015–16



Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Values in this figure are a 5-year aggregate over the period 2011–12 to 2015–16.
3. Age-standardised rates have been omitted where total case numbers were fewer than 10. See Appendix A: Data information and issues.
4. Data underpinning this figure can be found in Table S8.1 in the accompanying supplementary spreadsheet.

Source: AIHW National Mortality Database.

Mechanisms of homicide death

In over half of deaths due to *Homicide* for Indigenous males, the mechanism of injury was an *Assault by a sharp object* (52%) (Table 8.4). The next most frequent mechanism in male homicides was *Assault by bodily force* (23%).

For female victims of *Homicide*, *Assault by a sharp object* and *Assault by bodily force* were also the 2 most frequent mechanisms, accounting for 29% and 34% of deaths, respectively.

Table 8.4: Mechanism of Homicide deaths in the Indigenous population, by sex, 2011–12 to 2015–16

Mechanism of homicide death	Males		Females	
	Number	%	Number	%
Assault by a sharp object	64	51.6	23	28.8
Bodily force	29	23.4	27	33.8
Blunt object	13	10.5	12	15.0
Hanging, strangulation and suffocation	3	2.4	6	7.5
Firearms	7	5.6	1	1.3
Other and unspecified mechanisms	8	6.5	11	13.8
Total	124	100.0	80	100.0

Notes

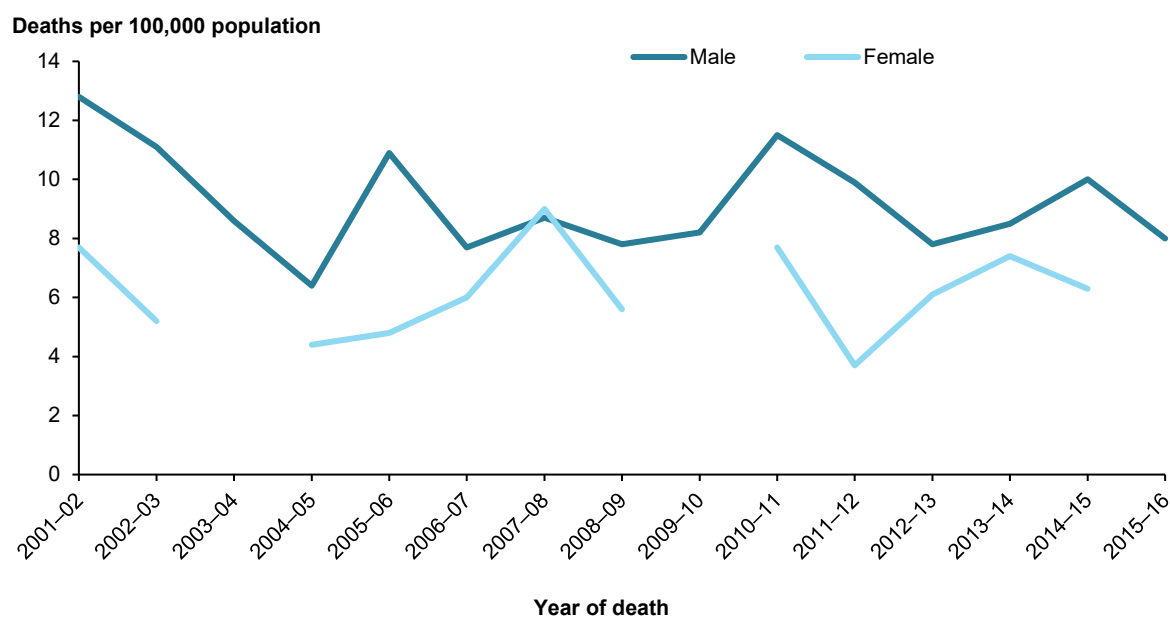
1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.

Source: AIHW National Mortality Database.

8.3 How have deaths changed over time?

There were marked year-to-year fluctuations in rates of *Homicide* death for Indigenous Australians over the period from 2001–02 to 2015–16 reflecting small case numbers, and no trend was evident for either males or females. Note that annual case numbers for females were relatively low (9 cases) in three years in the period.

Figure 8.2: Age-standardised rates of homicide deaths in the Indigenous population, by sex and year, 2001–02 to 2015–16



Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Data underpinning this figure can be found in Table S8.2 in the accompanying supplementary spreadsheet.
3. Age-standardised rates for Indigenous females have been omitted for years in which total case numbers were fewer than 10. See Appendix A: Data information and issues.

Source: AIHW National Mortality Database.

Appendix A: Data information and issues

This appendix provides information on the data used in the report and on issues relevant to interpreting the data.

Selection criteria

Data in this report on injury deaths are from the AIHW National Mortality Database (NMD). The NMD comprises CODURF data, which are provided to the AIHW by the Registries of Births, Deaths and Marriages and the NCIS, and include causes of death coded by the ABS.

Records that met the following criteria were included in this report:

Most analyses

- The death occurred between 1 July 2011 and 30 June 2016 and had been registered by 31 December 2016, and
- The person lived in 1 of the following 5 jurisdictions: New South Wales, Queensland, Western Australia, South Australia and the Northern Territory, and
 - the UCoD was an external cause code in the range V01–Y36, or
 - at least 1 MCoD was an external cause code in the range V01–Y36 and at least 1 other MCoD was a code for injury (S00–T75 or T79).

Selected trends

- The death occurred between 1 July 2001 and 30 June 2016 and had been registered by 31 December 2016, and
- The death occurred in one of the following 5 jurisdictions: New South Wales, Queensland, Western Australia, South Australia and the Northern Territory, and
 - the UCoD was an external cause code in the range V01–Y36, or
 - at least 1 MCoD was an external cause code in the range V01–Y36 and at least 1 other MCoD was a code for injury (S00–T75 or T79).

The codes are from the WHO International Statistical Classification of Diseases and Related Health Problems, 10th revision (WHO 2016). The external cause codes are from Chapter XX *External causes of morbidity and mortality* and the injury codes are from Chapter XIX *Injury, poisoning and certain other consequences of external causes*.

The Chapter XX code range V01–Y36 includes unintentional (accidental) external causes, intentional self-harm (suicide), homicide and cases where intent remained undetermined. Records with a UCoD code in this range generally also include one or more Chapter XIX codes, to describe the injury or injuries that resulted from the external cause. Chapter XIX codes in the range S00–T75 represent traumatic injuries (such as fractures and lacerations); burns; poisoning and toxic effects of substances; and certain other effects of external causes, such as drowning, asphyxiation, effects of radiation, heat, pressure, deprivation and maltreatment syndromes, and T79 represents certain early complications of trauma.

Excluded are most cases with an external cause UCoD in the ranges Y40–Y84 *Complications of medical and surgical care* and Y85–Y89 *Sequelae of external causes of morbidity and mortality*.

Box A.1: Multiple causes of death (MCoD)

MCoD codes in this report relate to the causes of death that contributed to death and may or may not have been related to the underlying cause. For example, an elderly person may fall and fracture their hip. This person's advanced age, frailty and perhaps other comorbid conditions may limit their capacity to tolerate injury, leading to death. In this instance, this record should be assigned an UCoD of an external cause code for *Fall* (W00–W19) and a MCoD code for *Hip fracture* (S72). In another example, an elderly person might suffer a heart attack that results in a fall and subsequently a hip fracture. As with the first example, a combination of factors may lead to death. In this instance, this record would most likely be assigned an UCoD code for *Acute myocardial infarction* (I21) and a MCoD of an external cause code for *Fall* (W00–W19) and a MCoD code for *Hip injury* (S72). Both of these deaths would be included in this report.

Coding of deaths data

The ABS obtains deaths registration data from the state and territory death registers, which, in turn, obtain information from the doctor or coroner who certifies each death.

The ABS codes causes of death according to the 10th revision of the International Classification of Diseases (ICD-10) and, after de-identification, creates the Cause of Death Unit Record File (CODURF).

If a death was due to an injury, the ICD-10 requires coding of the 'external cause' of the injury (such as a car crash of a particular type) as the underlying cause of death (UCoD). Most injury deaths are certified by a coroner, although coroners certify a higher proportion of Indigenous than non-Indigenous deaths (see Table 2.6). For these deaths, the ABS seeks the additional information required to code external causes from the NCIS.

Some injury deaths, and most deaths from other causes, are certified by a medical practitioner. In these instances, ABS coders rely on information about causes of death that was entered onto the death certificate. Of the deaths included in this report, the most common type of injury in doctor-certified deaths is 'Fall'.

The result of this process is an annual ABS mortality data file—CODURF—that summarises characteristics of the person who died (for example, age, sex and Indigenous status) and characteristics of his or her death (for example, causes, date and place at which the person usually lived).

Certain aspects of the method used by the ABS have differed according to the registration year of deaths for the period covered in this report. Reasons for making the changes and their nature have been reported by the ABS (ABS 2009). The changes are described here because of their potential to affect injury death statistics, including those in this report. For more information, see AIHW: Harrison and Henley (2015).

Certification of death

During the 5-year period 2011–12 to 2015–16, 9 in 10 Indigenous injury deaths were certified by a coroner. This contrasts with non-Indigenous injury deaths, of which only about two-thirds were certified by a coroner (Table A.1). This difference results from the interaction of 2 things: (1) while nearly all injury deaths for ages up to 50 are certified by a coroner, injury deaths at older ages are less likely to be coroner-certified, and (2) a smaller proportion of

injury deaths of Indigenous Australians (compared with non-Indigenous Australians) occurred in old age.

Of the injury deaths included in this report that occurred at ages below 65, 96% were certified by a coroner, whether the person was Indigenous or not. Considering the deaths that occurred at ages 65 years and older, 37% were certified by a coroner where the person was Indigenous and 38% where the persons was non-Indigenous. However, more than 90% of all the injury deaths of Indigenous Australians had occurred before age 65, while less than half of injury deaths of non-Indigenous Australians had occurred before that age.

Deaths related to falls are the main type of fatal injury in old age. Special provisions allow doctors to certify most deaths of this type, which is reflected in the lower proportion of injury deaths in old age that are certified by a coroner (Cordner 2013; Neate et al. 2013).

Table A.1: Whether death was certified by a doctor or coroner, by Indigenous status, 2011–12 to 2015–16

Death certified by	Indigenous		Non-Indigenous	
	Number	%	Number	%
Doctor	194	9.0	14,235	34.3
Coroner/Government Medical Officer	1,951	91.0	27,217	65.7
Total	2,145	100.0	41,452	100.0

Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory. See Box 1.1.
2. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.

Source: AIHW National Mortality Database.

Indigenous status data

Ideally, the report would cover the whole of Australia. However, the quality of the identification of Indigenous status in the mortality data source on which the work depends—the AIHW National Mortality Database—varies between jurisdictions and is considered to be insufficient for reporting in some parts of Australia in the period covered by this report. Accordingly, the geographic scope of the report for fatal injury is to use mortality data from New South Wales, Queensland, Western Australia, South Australia and the Northern Territory to provide indicative national information for Indigenous Australians (AIHW 2014). The *Place of usual residence* variables in the case data sources were used to apply this restriction, for consistency with population data.

The included jurisdictions account for 88% of the national Indigenous population and for 71% of the national non-Indigenous population.

Mortality data for these 5 jurisdictions should not be assumed to represent the experience in other jurisdictions. Indigenous Australians in the included jurisdictions are more likely to live in less urbanised and more remote locations than those in the other jurisdictions.

The data as presented are likely to underestimate fatal injury of Indigenous Australians, due to the incomplete identification of Indigenous Australians in the AIHW National Mortality Database. Under-ascertainment of Indigenous Australians is expected to result in over-estimated counts of fatal injury for non-Indigenous Australians because some people who would correctly be recorded as Indigenous will in fact have been recorded as non-Indigenous (see next section). The effect of this on rates for non-Indigenous Australians will be small overall—because Indigenous Australians comprise a small proportion of the population of

Australia—but could be larger for remote areas, where Indigenous Australians make up a larger proportion of the population.

Adjustment of injury deaths

The extent of under-identification of Indigenous deaths in death registrations has been estimated in the ABS Census Data Enhancement Indigenous Mortality Quality Study, by linking 2011 Census data with deaths registered from 10 August 2011 to 27 September 2012 (ABS 2013a). The methodology described in this report has been used as a basis for adjusting for under-identification of Indigenous deaths in some reports.

Indigenous injury deaths in this report are as reported and have not been adjusted for under-identification for 2 main reasons:

- The coverage estimates are for deaths from all causes. Injury deaths differ from most deaths in the way data are collected, which might affect the number of deaths recorded as Indigenous: most deaths are certified by a doctor, while the great majority of injury deaths are reported by police to a coroner. No adjustment factors are specific to coroner-certified deaths (or injury deaths).
- Comparable adjustment factors are not available for years before 2011–12, due to differences in the methodology used. This report covers the period to 2001–02 to 2015–16, for which coverage of Indigenous deaths is likely to vary.

Population data and the calculation of rates

General population

Rates were calculated using as the denominator the estimated resident population (ERP) as at 31 December in the relevant year (for example, 31 December 2006 for 2006–07 data).

Indigenous population

Numbers and rates of injury death of Indigenous Australians are provided in this report for the period from 2001–02 to 2015–16, using data for 5 jurisdictions (New South Wales, Queensland, Western Australia, South Australia and the Northern Territory). Data were selected on the basis of place of usual residence. Restriction of inclusion to these 5 jurisdictions reflects assessments of the quality of identification of Indigenous status. The values are from the ABS estimates and projections (series B) of the Indigenous population as calculated following the 2011 Census (ABS 2014).

For reasons given in the next section, many of the values in the report are for case counts that are the sum of deaths that occurred in each of the 5 years in the period from 1 July 2011 to 30 June 2016. Rates for these 5-year case counts are based on population values that are the sum of the relevant estimate at 31 December (that is, the mid-point) in each of the 5 years.

The ABS Indigenous population estimates and projections do not provide values by jurisdiction and remoteness area. Rates by remoteness area for the 5-year period 2011–12 to 2015–16 were calculated using values that are 5 times the mean of Census-based values for mid-2011 and mid-2016, by age group, sex and indigenous status and restricted to residents of the 5 jurisdictions for which case data were included (ABS 2013b, ABS 2018c).

For non-Indigenous Australians, population denominators were derived by subtracting the Indigenous population from the total Australian estimated resident population (of the states and territories eligible for inclusion), as at 31 December of the relevant year. Current practice in AIHW reports is to omit deaths where Indigenous status was *Not-stated* or *Unknown*.

Case counts, rates and change in rates

Due to small annual numbers of some case types warranting attention, fatal injury data for the 5 included jurisdictions were combined for a 5-year period, except in the sections that present trends in rates per year for broad types of deaths.

Case counts for the study period are the number of deaths that occurred in the 5-year period from 1 July 2011 to 30 June 2016. The denominators used to calculate rates for the 5-year study period are the sum of the relevant estimated population at the mid-point (that is, 31 December) of each of the 5 years 2011–12 to 2015–16. Rates have been age-standardised by the direct method unless they are age-specific, or are stated to be crude rates.

Directly age-standardised rates were calculated using the Australian population in 2001 as the standard (ABS 2002). Estimated trends in age-standardised rates were reported as average annual percentage changes obtained using negative binomial regression modelling, performed in Stata.

In situations in which the number of cases being assessed is small it is more difficult than otherwise to reliably detect and measure rates, differences between rates and changes in rates over time (that is, trends). Small case numbers are present in many aspects of the analysis presented in this report and readers should interpret results with that in mind. Efforts have been made to avoid very small numbers by combining cases in a 5-year period and by grouping cases in other ways. Certain types of statistics have not been reported where case numbers are small (as discussed in the next paragraph). Where trends are reported, assessment of whether they reached statistical significance has been provided.

Directly age-standardised rates adjust for different age distributions in different populations so that the rates of such populations can be compared (for example, comparing rates of injury death between Indigenous and non-Indigenous Australians). Age-standardised rates can be misleading when based on very small numbers of cases. In this report, age-standardised rates have not been reported if they are based on fewer than 10 cases (Morris et al. 2018).

Quantifying variability

The data presented in this report are subject to 2 types of statistical error: non-random and random. (A third type of statistical error, sampling error, does not apply here because none of the data sources used involved probability sampling.)

Non-random error

Some non-random error is to be expected in administrative data collections such as the NMD, on which this report relies. For example, non-random error could occur if the approach to assigning cause codes to deaths were to differ systematically between jurisdictions or over time. Systems are in place to encourage uniform data collection, and coding and scrutiny of data during analysis includes checking for patterns that might reflect non-random error. Nevertheless, some non-random error can be expected to remain.

Random error

The values presented in the report are subject to random error, or variation. Variation is relatively large when the case count is small (especially if less than about 10)—and small enough to be unimportant in most circumstances when the case count is larger (that is, more than a few tens of deaths).

Some of the topics for which results are reported compare groups that vary widely in case count, largely due to differences in population size (for example, the population of New South Wales is more than 30 times as large as the Northern Territory population and the population of *Major cities* remoteness areas is nearly 90 times that of *Very remote* areas). In this situation, year-to-year changes in counts or rates for the smaller-population groups may be subject to large random variation. There is potential to misinterpret such fluctuations as meaningful rises or falls in occurrence.

Classification of remoteness area

'Remoteness area' in this report refers to the place of usual residence of the person who died. The remoteness areas were specified according to the ABS Australian Statistical Geography Standard (ASGS).

Australian Statistical Geography Standard (ASGS)

The ASGS is a hierarchical classification system of geographical regions and consists of a number of interrelated structures. The ASGS brings all the regions for which the ABS publishes statistics within the 1 framework and has been used by the ABS for the collection and dissemination of geographically classified statistics from 1 July 2011. It provides a common framework of statistical geography and enables the production of statistics that are comparable and can be spatially integrated.

Australian Statistical Geography Standard (ASGS) volume 1—main structure and greater capital city statistical areas (ABS 2010) is the first in a series of volumes that detail the various structures and regions of the ASGS. Its purpose is to outline the conceptual basis of the regions of the main structure and of the greater capital city statistical areas, and their relationship to each other. This product contains several elements, including the ASGS manual, maps, codes and names and the digital boundaries current for the ASGS Edition 2011 (date of effect 1 July 2011). The digital boundaries for Volume 1 of the ASGS are the spatial units for the main structure and the Greater Capital City Statistical Areas. These spatial units are:

- Mesh Blocks (MB)
- Statistical Area Level 1 (SA1)
- Statistical Area Level 2 (SA2)
- Statistical Area Level 3 (SA3)
- Statistical Area Level 4 (SA4)
- Greater Capital City Statistical Areas (GCCSA)
- State and Territory (S/T).

Each case is allocated to 1 of 5 remoteness areas on the basis of the place of usual residence of the person who died, according to Statistical Area Level 2 (SA2). Most SA2s lie entirely within 1 of the 5 areas. If this was so for all SA2s, then each record could simply be assigned to the area in which its SA2 lies. However, some SA2s overlap 2 or more of the

areas. Records with these SA2s were assigned to remoteness areas in proportion to the area-specific distribution of the resident population of the SA2 according to the 2011 Census. For death registrations, each record in the set having a particular SA2 code was assigned to 1 or other of the areas probabilistically, in proportion to the resident population of that SA2. The resulting values are integers. A SA2 to remoteness area map can be found at the ABS website (ABS 2012).

Appendix B: Causes of death by intent

Transport-related injury deaths

Table B.1 summarises all transport-related injury deaths from 2011–12 to 2015–16 that can be identified by means of the ICD-coded injury death data that are in-scope for this report. Unintentional transport-related deaths accounted for 99% of all transport-related injury deaths from 2011–12 to 2015–2016.

Table B.1: All identifiable Transport crash injury deaths in the Indigenous population, 2011–12 to 2015–2016

Coverage in this report	Number of deaths	Percentage of all transport-related injury deaths	ICD-10 codes	ICD-10 terminology
Transport crashes (Chapter 3)	430	99.3	UCoD V01–V99; or MCoD V01–V99 and S00–T75, T79	Transport accident
Suicide (Chapter 7)	1	0.2	UCoD X82; or MCoD X82 and S00–T75, T79	Intentional self-harm by crashing of motor vehicle
Homicide (Chapter 8)	2	0.5	UCoD Y03; or MCoD Y03 and S00–T75, T79	Assault by crashing of motor vehicle
Undetermined intent	0	0.0	UCoD Y32; or MCoD Y32 and S00–T75, T79	Crashing of motor vehicle, undetermined intent
Total transport-related deaths	433	100.0		

Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.

Source: AIHW National Mortality Database.

Poisoning deaths involving pharmaceuticals

Table B.2 summarises all poisoning deaths involving pharmaceuticals from 2011–12 to 2015–16 that can be identified by means of the ICD-coded injury death data that are in-scope for this report. *Unintentional poisoning deaths involving pharmaceuticals* in the Indigenous population accounted for 83% of all deaths due to poisoning by drugs.

Counts of deaths involving poisoning by pharmaceuticals included in this report will differ from those published by the ABS. This is because the ABS inclusion criteria select deaths only on the basis of underlying cause of death (UCoD) codes, and include codes for mental and behavioural disorders (F11–F16, F19) as well as a code for *Abuse of non-dependence-producing substances* (F55).

Table B.2: All identifiable Indigenous poisoning deaths involving pharmaceuticals, 2011–12 to 2015–16

Coverage in this report	Number of deaths 2011–12 to 2015–16	Percentage of all poisoning by drugs deaths	ICD-10 codes	ICD-10 terminology
Poisoning, pharmaceuticals (Chapter 4)	301	83.1	UCoD X40–X44; or MCoD X40–X44 and S00–T75, T79; or MCoD V01–X59 and T36–T50.	Unintentional poisoning by drugs
Suicide (Chapter 7)	38	10.5	UCoD X60–X64; or MCoD X60–X64 and S00–T75, T79	Intentional self-harm by drug poisoning
Homicide (Chapter 8)	0	0.0	UCoD X85; or MCoD X85 and S00–T75, T79	Assault by drug poisoning
Undetermined intent	23	6.4	UCoD Y10–Y14; or MCoD Y10–Y14 and S00–T75, T79	Drug poisoning, undetermined intent
Total deaths involving poisoning by drugs	362	100.0		

Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.
2. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.

Source: AIHW National Mortality Database.

Table B.3 presents the ICD-10 categories included in X40–X44 *Accidental poisoning by and exposure to noxious substances* block in the External Causes chapter along with a lay description of each category and some examples of types of pharmaceuticals covered by that category.

Table B.3: Explanation and examples of substances included in ICD-10 categories X40–X44

ICD-10 code	Accidental poisoning by and exposure to	Lay description/purpose	Examples
X40	Non-opioid analgesics, antipyretics and antirheumatics	These substances variously reduce pain, fever inflammation and blood clotting.	– 4-aminophenol derivatives (for example, paracetamol) – nonsteroidal anti-inflammatory drugs [NSAID] (for example, aspirin, ibuprofen) – pyrazolone derivatives (for example, dipyrone, antipyrine) – salicylates (for example, bismuth subsalicylate)

(continued)

Table B.3 (continued): Explanation and examples of substances included in ICD-10 categories X40–X44

ICD-10 code	Accidental poisoning by and exposure to	Lay description/purpose	Examples
X41	Antiepileptic, sedative-hypnotic, and antiparkinsonism drugs, and psychotropic drugs n.e.c.	Includes substances used to prevent seizures, convulsions and tremors, to reduce anxiety and to induce sleep. Psychotropic or psychoactive substances act on the brain and can alter mood, perception, behaviour and consciousness. This category includes drugs used to treat clinical depression, schizophrenia and other mental illnesses. Some substances in this category are chiefly used non-medically for their psychoactive effects.	– antidepressants – barbiturates – hydantoin derivatives – iminostilbenes – methaqualone compounds – neuroleptics – psychostimulants – succinimides and oxazolidinediones – tranquillisers
X42	Narcotics and psychodysleptics (hallucinogens)	Substances with various effects on the brain. Narcotics, mostly opioid analgesics, are used medically to reduce pain, for anaesthesia, to control coughing and for other reasons. They are also addictive, have high potential for fatal overdose and are restricted legally. This category also includes cannabis and related substances and hallucinogens.	– cannabis (derivatives) – cocaine – codeine – heroin – lysergide [LSD] – mescaline – methadone – morphine – opium (alkaloids)
X43	Other drugs acting on the autonomic nervous system	The autonomic nervous system regulates functions such as breathing, heart rate and digestion. Substances included in this category stimulate or suppress aspects of autonomic activity.	– parasympatholytics [anticholinergics and antimuscarinics] and spasmolytics – parasympathomimetics [cholinergics] – sympatholytics [antiadrenergics] – sympathomimetics [adrenergics]
X44	Other and unspecified drugs, medicaments and biological substances	This group includes substances used as medications to cause muscles to contract (for example, contract the uterus to start labour) or relax (for example, under anaesthesia), or which affect the respiratory system (for example, cough suppressant, asthma medications).	– anaesthetics (general)(local) – anti-infectives – drugs affecting the: – cardiovascular system – gastrointestinal system – hormones and synthetic substitutes – systemic and haematological agents – systemic antibiotics and other anti-infectives – therapeutic gases – topical preparations – vaccines – water-balance agents and drugs affecting mineral and uric acid metabolism

Poisoning deaths involving other substances

Table B.4 summarises all *Poisoning deaths involving other substances* from 2011–12 to 2015–16 that can be identified by means of the ICD-coded injury death data that are in-scope for this report. Unintentional cases accounted for 80% of all *Poisoning deaths involving other substances* among Indigenous people. Another 16% of the deaths were by *Intentional self-harm*; these and deaths due to *Assault* or with *Undetermined intent*.

Table B.4: All identifiable poisoning deaths involving other substances in the Indigenous population, 2011–12 to 2015–16

Coverage in this report	Number of deaths	Percentage of all poisoning, other substances deaths	ICD-10 codes	Terminology in this report
Poisoning, other substances (Chapter 5)	163	79.5	UCoD X45–X49; or MCoD X45–X49 and S00–T75, T79; or MCoD T51–T65 and V01–X59	Unintentional poisoning by other substances
Suicide (Chapter 7)	32	15.6	UCoD X65–X69; or MCoD X65–X69 and S00–T75, T79	Intentional self-harm, poisoning by other substances
Homicide (Chapter 8)	2	1.0	UCoD X86–X90; or MCoD X86–X90 and S00–T75, T79	Assault, poisoning by other substances
Undetermined intent	8	3.9	UCoD Y15–Y19; or MCoD Y15–Y19 and S00–T75, T79	Poisoning by other substances, undetermined intent
Total deaths involving poisoning by other substances	205	100.0		

Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.

2. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.

Source: AIHW National Mortality Database.

Table B.5 presents the ICD-10 categories included in the X45–X49 *Accidental poisoning by and exposure to noxious substances* block in the External Causes chapter, along with a lay description of each category and some examples of types of pharmaceuticals covered by that category.

Table B.5: Explanation and examples of substances included in ICD-10 categories X45–X49

ICD-10 code	Accidental poisoning by and exposure to	Lay description/purpose	Examples
X45	Alcohol	An alcoholic drink is a drink that contains ethanol, a type of alcohol produced by fermentation of grains, fruits, or other sources of sugar.	– beer – wine – spirits
X46	Organic solvents and halogenated hydrocarbons and their vapours	A solvent is a substance that dissolves a solute, resulting in a solution. A solvent is usually a liquid but can also be a solid, a gas, or a supercritical fluid. Organic solvents are widely used in everyday living, from disinfectant treatment to removing tough grease stains.	– benzene and homologues (for example, phenol) – carbon tetrachloride [tetrachloromethane] (Formerly widely used in fire extinguishers, as a precursor to refrigerants and as a cleaning agent but has since been phased out because of toxicity and safety concerns.) – chlorofluorocarbons. (Used in the manufacture of aerosol sprays, blowing agents for foams and packing materials, as solvents, and as refrigerants.) – petroleum (derivatives)
X47	Other gases and vapours	This category excludes poisoning deaths occurring as a result of poisoning by and exposure to metal fumes and vapours (X49).	– motor vehicle exhaust – liquefied petroleum gas [LPG] and bottled LPG – other specified utility gas – other specified gas and vapours – carbon monoxide – helium (nonmedicinal) NOS – lacrimogenic gas [tear gas] – nitrogen oxides – sulphur dioxide – unspecified gas and vapours
X48	Pesticides	This category excludes poisoning deaths occurring as a result of poisoning by and exposure to plant foods and fertilisers (X49).	– fumigants – fungicides – herbicides – insecticides – rodenticides – wood preservatives
X49	Other and unspecified chemicals and noxious substances	This category excludes poisoning deaths occurring as a result of poisoning by and exposure to contact with venomous animals and plants (X20–X29).	– corrosive aromatics, acids and caustic alkalis – glues and adhesives – metals including fumes and vapours – paints and dyes – plant foods and fertilisers – poisoning NOS – poisonous foodstuffs and poisonous plants – soaps and detergents

Fall deaths

Table B.6 summarises all fall-related injury deaths from 2011–12 to 2015–16 that can be identified by means of the ICD-coded injury death data that are in-scope for this report. Unintentional fall-related deaths accounted for 95% of all transport-related injury deaths from 2011–12 to 2015–2016.

Table B.6: Deaths involving falls in the Indigenous population, 2011–12 to 2015–2016

Coverage in this report	Number of deaths	Percentage of all fall-related deaths in 2016–17	ICD-10 codes	Terminology in this report
Falls (Chapter 6)	172	95.0	UCoD W00–W19; or UCoD X59 and MCoD fracture; or MCoD W00–W19 and S00–T75, T79 or MCoD X59 and fracture	Unintentional falls
Suicide (Chapter 7)	7	3.9	UCoD X80	Intentional self-harm involving fall
Homicide (Chapter 8)	0	0.0	UCoD Y01	Assault involving fall
Undetermined intent	2	1.1	UCoD Y30	Undetermined intent involving fall
Total fall injury deaths	181	100.0		

Notes

1. Includes data for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory only. See Box 1.1.

2. Values in this table are a 5-year aggregate over the period 2011–12 to 2015–16.

Source: AIHW National Mortality Database.

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Abbreviations

ABS	Australian Bureau of Statistics
AIHW	Australian Institute of Health and Welfare
CI	confidence interval
CODURF	cause of death unit record file
ICD-10	International Classification of Diseases, 10th revision
MCoD	multiple cause of death
n.e.c.	not elsewhere classified
NT	Northern Territory
NMD	AIHW National Mortality Database
NSW	New South Wales
Qld	Queensland
SA	South Australia
SES	socioeconomic status
UCoD	underlying cause of death
WA	Western Australia
WHO	World Health Organization

Symbols

..	not applicable
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Glossary

Aboriginal or Torres Strait Islander: A person of Aboriginal and/or Torres Strait Islander descent who identifies as an Aboriginal and/or Torres Strait Islander. See also **Indigenous**.

age-standardisation: A method of removing the influence of age when comparing populations with different age structures. This is usually necessary because the rates of many diseases vary strongly (usually increasing) with age. The age structures of the different populations are converted to the same 'standard' structure, and then the disease rates that would have occurred with that structure are calculated and compared.

associated causes of death: All causes listed on the death certificate, other than the **underlying cause of death**. They include the immediate cause, any intervening causes, and conditions which contributed to the death but were not related to the disease or condition causing the death.

cause of death: From information reported on the medical certificate of cause of death, each death is classified by the underlying cause of death according to rules and conventions of the 10th revision of the International Classification of Diseases and Related Health Problems. The underlying cause is defined as the disease that initiated the train of events leading directly to death. Deaths from injury or poisoning are classified according to the circumstances of the fatal injury, rather than to the nature of the injury. See also **underlying cause of death**.

crude death rate: The number of deaths in a given period divided by the size of the corresponding population (typically expressed per 1,000 or per 100,000 population).

external cause: The term used in disease classification to refer to an event or circumstance in a person's external environment that is regarded as a cause of injury or poisoning.

Indigenous: A person of Aboriginal and/or Torres Strait Islander descent who identifies as an Aboriginal and/or Torres Strait Islander. See also **Aboriginal or Torres Strait Islander**.

International Statistical Classification of Diseases and Related Health Problems: The World Health Organization's internationally accepted classification of death and disease. The 10th revision (ICD-10) is currently in use.

multiple causes of death: All causes listed on the death certificate. This includes the **underlying cause of death** and all **associated causes of death**.

population estimates: Official population numbers compiled by the Australian Bureau of Statistics at both state and territory and statistical local area (SLA) levels by age and by sex, at 30 June each year. These estimates allow comparisons to be made between geographical areas of differing population sizes and age structures.

statistical modelling: A simplified, mathematically-formalised way to approximate reality (that is, what generates observed data) and allows predictions to be made from this approximation. The statistical model is the mathematical equation that is used for the modelling process.

remoteness classification: Each state and territory is divided into several regions based on their relative accessibility to goods and services (such as general practitioners, hospitals and specialist care), as measured by road distance. These regions are based on the Accessibility/Remoteness Index of Australia (ARIA) and defined as Remoteness Areas by either the Australian Standard Geographical Classification (before 2011) or the Australian Statistical Geographical Standard (from 2011 onwards) in each Census year.

underlying cause of death: The disease or injury which initiated the train of morbid events leading directly to a person's death or the circumstances of the accident or violence which produced the fatal injury.

usual residence: The area of the address at which the deceased lived or intended to live, for 6 months or more prior to death.

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Related publications

AIHW: Henley G & Harrison JE 2018. Trends in injury deaths, Australia, 1999–00 to 2014–15. Injury research and statistics series no. 112. Cat. no. INJCAT 192. Canberra: AIHW.

AIHW: Pointer SC 2019. Hospitalised injury among Aboriginal and Torres Strait Islander people, 2011–12 to 2015–16. Injury research and statistics series no. 118. Cat. no. INJCAT 198. Canberra:

AIHW. AIHW: Henley G & Harrison JE 2019. Injury of Aboriginal and Torres Strait Islander people due to transport, 2010–11 to 2014–15. Injury research and statistics series no. 103. Cat. no. INJCAT 179. Canberra: AIHW.



Over the 5-year period 2011–12 to 2015–16, 2,145 Indigenous Australians died as the result of an injury—an annual average of 429 deaths. The rate of injury death for Indigenous males was 1¾ times that for females. The rate of injury death for Indigenous Australians was more than twice that of non-Indigenous Australians. The 3 most frequent external causes of death for Indigenous Australians were *Suicide, Transport crashes* and *Unintentional poisoning by pharmaceuticals*.

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