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Trends in hospitalised injury, Australia

1999–00 to 2010–11

Sophie Pointer

Flinders UNIVERSITY

INJURY RESEARCH AND STATISTICS SERIES NO. 86

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Authoritative information and statistics to promote better health and wellbeing

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Contents

Abbreviations

ABS	Australian Bureau of Statistics
ACHI	Australian Classification of Health Interventions
ACT	Australian Capital Territory
AIHW	Australian Institute of Health and Welfare
ARIA	Accessibility/Remoteness Index of Australia
ASGC	Australian Standard Geographical Classification
CI	confidence interval
ERP	estimated resident population
HTTL	high threat to life
ICD-10-AM	International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification
LOS	length of stay
METeOR	Metadata Online Registry
MLOS	mean length of stay
NCCH	National Centre for Classification in Health
NHMD	National Hospital Morbidity Database
NISU	National Injury Surveillance Unit
NMDS	National Minimum Data Set
NPHP	National Public Health Partnership
NSW	New South Wales
NT	Northern Territory
Qld	Queensland
SA	South Australia
SLA	Statistical Local Area
Tas	Tasmania
Vic	Victoria
WA	Western Australia
WHO	World Health Organization

Symbols

n.a.	not applicable
n.p.	not publishable because of small numbers, confidentiality or other concerns about the quality of the data
%	per cent
p	probability

Summary

This report describes trends in the occurrence of injuries requiring hospitalisation in Australia from 1 July 1999 to 30 June 2011. The annual number of cases rose from about 327,000 to 438,000 during this period.

Injuries in 2010–11

Overall, injuries were more common among males (249,455 cases) compared with females (188,921 cases). Case numbers and population-based rates were higher for males than females for all age groups to 60–64, the largest difference being for ages 15–24. Rates were higher for females than males for age groups 65–69 and older. The oldest group had the highest rates.

The average length of stay in hospital as a result of an injury was 4 days (more than 1.7 million days for 438,382 cases). Length of stay in hospital increased with age to an average of 9 days for people aged 65+. About 1 in 6 injury cases were classified as high threat to life. The percentage of high threat to life cases increased with age to 32% of cases at 65+.

Two of the main causes of injury in 2010–11 were falls (39%) and transport accidents (12%). Over 170,000 people were hospitalised as a result of a fall in 2010–11, 53% of the cases occurring at ages 65+. Of fall cases at ages 0–64, 42% were females, while 69% of cases at older ages were females. Transport injuries were more common in males (35,658 cases) than females (17,331 cases) and rates were highest for age group 15–24.

Trends in injury hospitalisations

The age-standardised rate of hospitalised injury increased from 1999–00 to 2010–11 by an average of 1% per year. The rate of injury was 1,724 cases per 100,000 population at the beginning of the period and by the end the rate was 1,897 per 100,000.

Increases in age-standardised rates across the period were found for injuries due to: falls (2% increase per year), intentional self-harm (1% increase per year), assaults (1% increase per year) and the residual group other unintentional injuries (1.4% increase per year). Significant decreases occurred in the rate of hospitalisations due to poisoning by pharmaceuticals (5% per year) and by other substances (4% per year), and drowning and near drowning (1% decrease per year, and 3% for children 0–4). Significant trends were not observed for transport, or exposure to smoke, fire, heat and hot substances.

Trends in injury among Indigenous people

Analysis of the trends in hospitalised injury among Indigenous people is complicated by a break in series from 2007–08 when Indigenous identification improved to allow the inclusion of two additional states and territories, New South Wales and Victoria, to cases from Western Australia, South Australia, Northern Territory and Queensland.

Rates of injury among Indigenous people increased from 3,370 cases per 100,000 population in 2007–08 to 3,838 per 100,000 in 2010–11. Analysis of different injury types revealed increases in rates of poisoning by pharmaceuticals, falls, intentional self-harm and other unintentional injuries during this time.

1 Introduction

This report describes trends in the occurrence of injuries requiring hospitalisation in Australia from 1 July 1999 to 30 June 2011. Hospitalised injury is described according to major types of external cause of injury. Most injuries occur in settings such as car crashes, inter-personal violence, sporting and recreational activities, and work. Injuries that occurred in these types of community settings were the focus of this report.

Injury prevention and control is a National Health Priority Area. Injury is also the subject of three national prevention plans: the National Injury Prevention and Safety Promotion Plan: 2004–14 (NPHP 2005a); the National Falls Prevention for Older People Plan: 2004 Onwards (NPHP 2004); and the National Indigenous Safety Promotion Strategy (NPHP 2005b).

1.1 Structure of this report

The broad topics in the report were:

- An overview of hospitalised injury in 2010–11
- trends in hospitalised injury (the number and rate of separations and estimated cases over time by age and sex)
- trends in the severity of hospitalised injury (high threat to life (HTTL) and length of stay indicators)
- trends in external causes of hospitalised injury (number and rate of estimated cases over time by age and sex for each major external cause).

Chapter 2 presents an overview of hospitalised injury in Australia including time series information.

Chapter 3 presents time series information on measures of the severity of hospitalised injury using proportions of high threat to life and length of stay.

Chapters 4 to 12 presents time series analysis on each major external cause of hospitalised injury.

Appendix A: Data issues provides summary information on the NHMD, notes on the presentation of data, the population estimates used to calculate population rates and analysis methods.

Appendix B: Additional tables consists of tables underpinning results presented in the chapters.

1.2 Chapter structure

In this report, chapters were structured to address a common set of questions concerning the source data for each chapter, with section titles that include:

- What data were reported?—which describes the data presented in the chapter
- What methods were used?—which outlines issues such as inclusions and exclusions of records and calculation methods.

The data presentations that follow these sections address, where possible, the following questions:

- How many hospitalisations for injury were there in 2010–11?
- How have hospitalisations for injury changed over time?
- How have hospitalisations for injury varied by age and sex?
- How have hospitalisations for injury varied by remoteness of usual residence?
- How have hospitalisations for injury among Aboriginal and Torres Strait Islander people changed over time? How does this compare with trends for Other Australians?

Generally, summary tables and figures were placed immediately below the discussion in related text. Where appropriate, tables and figures within the chapter were accompanied by footnotes referring readers to additional statistical tables in Appendix B: Additional tables. Further information about the methods used in this report can be found in Appendix A: Data issues.

1.3 Methods

This report used data from the National Hospital Morbidity Database (NHMD) covering the years 1 July 1999 to 30 June 2011 to provide information on trends in hospitalised injury in Australia. This period was chosen as it covers the time after the transition from ICD–9–CM to ICD–10–AM to the most recent year of data available.

Diagnosis and external cause information for the hospital separations reported here were coded according to seven editions of the *International statistical classification of diseases and related health problems, 10th revision, Australian modification* (ICD–10–AM) that were current during parts of the period 1999 to 2011.

What data were reported?

The data presented include hospital separations data for all causes of hospitalisation and hospitalisations due to injury. Information is provided on:

- Age
- Sex
- External cause of injury
- Remoteness of the patient's area of usual residence
- Indigenous status.

Selection criteria

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

- Hospital separations occurring in Australia 1 July 1999 to 30 June 2011 and
- Principal diagnosis in the ICD-10-AM range S00–T75 or T79 using Chapter XIX *Injury, poisoning and certain other consequences of external causes* codes, and
- Mode of admission was not a transfer from another acute hospital.
  The exclusion of separations where mode of admission was a transfer from another acute hospital is used for injury case estimation (see Appendix A). Other than in indicated sections, this report is focussed on estimated cases of injury hospitalisation.

In tables and charts, unless stated otherwise:

- The patient's age is calculated at the date of admission.

- In tables by age group and sex, separations for which age and sex were not reported were included in totals.
- Rates were age standardised as detailed in Appendix A.
- Trends were analysed using the negative binomial distribution regression technique, as described in Berry and Harrison (2006, see also Appendix A).

Important terms regarding the data used in this report are summarised in Box 1.1. All chapters on specific external causes have used this methodology supplemented by selection criteria based on the relevant external cause.

Box 1.1: Summary of terms relating to hospitalised injury

Statistics on admitted patients are compiled when an **admitted patient** (a patient who undergoes a hospital's formal admission process) completes an episode of admitted patient care and 'separates' from the hospital. This is because most of the data on the use of hospitals by admitted patients are based on information provided at the end of the patients' episodes of care, rather than at the beginning. The length of stay and the procedures carried out are then known and the diagnostic information is more accurate.

Separation is the term used to refer to the episode of admitted patient care, which can be a total hospital stay (from admission to discharge, transfer or death) or a portion of a hospital stay beginning or ending in a change of type of care (for example, from acute care to rehabilitation). 'Separation' also means the process by which an admitted patient completes an episode of care by being discharged, dying, transferring to another hospital or changing type of care.

The **principal diagnosis** is the diagnosis established after study to be chiefly responsible for occasioning the patient's episode of admitted patient care.

An **external cause** is defined as the environmental event, circumstance or condition that was the cause of injury or poisoning. Whenever a patient has a principal or additional diagnosis of an injury or poisoning, an external cause code should be recorded.

Injuries can be classified according to the likelihood that a patient with that injury will die in hospital. The method used refers to cases with predicted mortality risk of about 6% or higher as having a **high threat to life** (Stephenson et al. 2003). Injuries of this severity are likely to have a large impact on the patient, often with persisting problems and ongoing need for health care services. This report contains information on the proportion of cases of hospitalised injury that were classified as high threat to life.

Box 1.2 Aboriginal and Torres Strait Islander reporting

In this report, the terms 'Aboriginal and Torres Strait Islander people' and 'Indigenous people' were used to refer to persons identified as such in Australian hospital separations data and population data collections. For hospitals data, the term 'Other Australians' includes all records for persons identified as not Indigenous as well as separations where Aboriginal and Torres Strait Islander status was not stated.

Indigenous status data in the NHMD were deemed to be of sufficient quality for statistical reporting purposes in this report for the following jurisdictions: New South Wales, Victoria, Queensland, South Australia, Western Australia and the Northern Territory (public hospitals only) from data year 2007–08. Data for separations in earlier years are of sufficient quality for statistical reporting purposes for the following jurisdictions: Queensland, South Australia, Western Australia and the Northern Territory (public hospitals only).

The two sub-national regions differ in terms of the total population count and distribution by remoteness area. Information about how the improvements in Indigenous identification effects patterns of injury can be found in the report *Impact of improvements to Indigenous identification in hospital data on patterns of hospitalised injury* (Pointer 2013).

For the latest information on the quality of Indigenous status in the NHMD and recommendations for future reporting practices see *Indigenous identification in hospital separations data: Quality report* (AIHW 2013).

Injury rates vary with age and the Indigenous population has a different age distribution to the non-Indigenous population. Because of this, rates were age-standardised to 65+ (not 85+ as in the rest of the report) by the direct method.

Further information is available in Appendix A.

2 Overview of hospitalised injury

2.1 What was the profile of hospitalised injury cases in 2010–11?

There were 471,898 hospital separations due to injury and poisoning for public and private hospitals in Australia during 2010–11 (Table 2.1). Excluding inward transfers, there were an estimated 438,382 injury cases. More males than females (1.3:1) were hospitalised as a result of an injury in 2010–11. The age-standardised rate of injury was also higher for males than for females.

Table 2.1: Key indicators for hospitalised injury cases, Australia, 2010–11

Indicators	Males	Females	Persons
Separations from hospital due to injury	268,462	203,430	471,898
Estimated injury cases	249,455	188,921	438,382
Age-standardised rate/100,000 population	2,235	1,526	1,897

Age and sex

The largest proportion of hospitalised injuries occurred in people aged 65 and older (27%). This was also true for females but not for males (Table 2.2). For males, the largest proportion of hospitalised injuries occurred at 25–44 years (29%) compared with 18% for females of the same age.

Table 2.2: Hospitalised injury cases by age, Australia, 2010–11

	Males		Females		Persons	
Age group	Number	Per cent	Number	Per cent	Number	Per cent
0–4	11,912	4.8	8,708	4.6	20,620	4.7
5–14	24,683	9.9	13,417	7.1	38,101	8.7
15–24	50,467	20.2	20,567	10.9	71,035	16.2
25–44	71,152	28.5	34,118	18.1	105,271	24.0
45–64	48,512	19.4	34,593	18.3	83,105	19.0
65+	42,729	17.1	77,518	41.0	120,247	27.4
Total	**249,455**	**100.0**	**188,921**	**100.0**	**438,382**	**100.0**

In 2010–11, the rates of hospitalised injury were much higher in the older age groups from about 65 years (Figure 2.1). Males had a higher rate of injury across all age groups up to about 65–69; thereafter females had much higher rates (Figure 2.1). The highest rate of injury for males occurred at 15–19 years with 3,180 cases per 100,000 population compared with 1,448 for females at the same age.

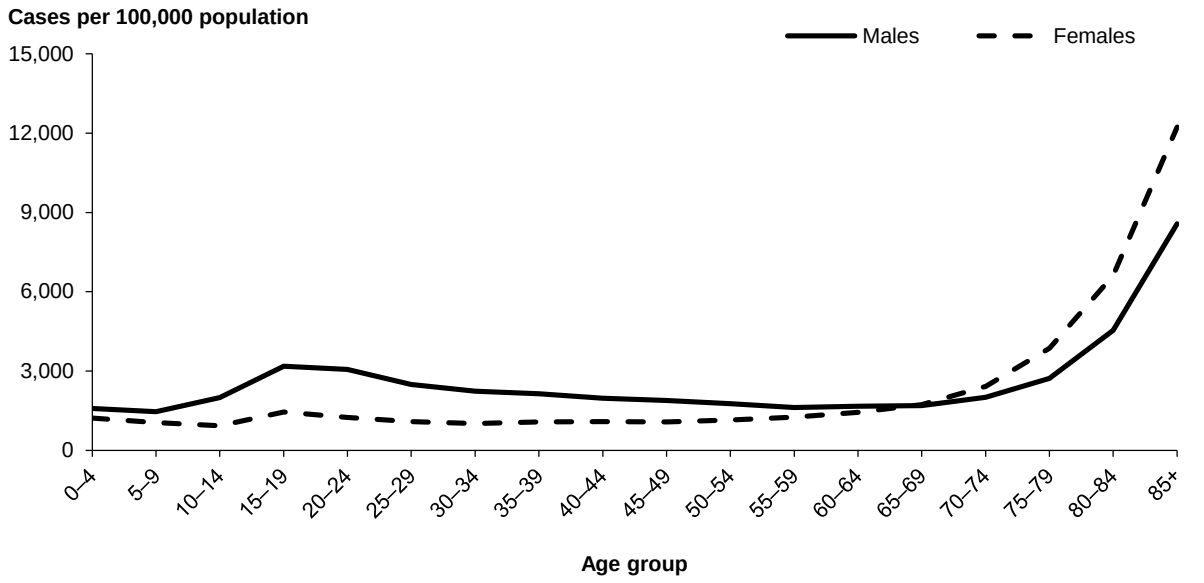


Figure 2.1: Age-specific rates of hospitalised injury, by sex, Australia, 2010–11

Remoteness of usual residence

The age-standardised rate of injury in 2010–11 increased with increasing remoteness. The rate of injury in *Very remote* (3,893 per 100,000 population) regions was more than double the rate in the *Major cities* (1,782 per 100,000 population) (Table 2.3).

Table 2.3: Hospitalised injury cases by remoteness of usual residence, Australia, 2010–11

	Remoteness of usual residence					
Indicators	**Major cities**	**Inner regional**	**Outer regional**	**Remote**	**Very remote**	**Total[(a)]**
Estimated injury cases	281,667	89,933	44,472	9,974	7,221	438,382
Per cent	64.3	20.5	10.1	2.3	1.6	100.0
Age-standardised rate/100,000 population	1,782	2,038	2,196	3,172	3,893	1,897

(a) Includes 5,115 cases where remoteness was not reported or residence was reported as an external territory.

Aboriginal and Torres Strait Islander people

There were 21,292 hospital separations due to injury and poisoning for Indigenous people during 2010–11 (Table 2.4). Excluding inward transfers, there were an estimated 19,555 injury cases. More males than females were hospitalised (1.3:1). For Indigenous people, rates of injury were twice those of Other Australians.

Table 2.4: Key indicators for hospitalised injury cases, Aboriginal and Torres Strait Islander people and Other Australians, Australia[(a)], 2010–11

	Aboriginal and Torres Strait Islander people			Other Australians		
Indicators	**Males**	**Females**	**Persons**	**Males**	**Females**	**Persons**
Separations from hospital due to injury	12,172	9,119	21,292	245,612	186,788	432,402
Estimated injury cases	11,074	8,480	19,555	228,067	173,197	401,266
Age-standardised rate/100,000 population	4,305	3,382	3,838	2,206	1,561	1,897

(a) Excludes data for Tasmania and the Australian Capital Territory (see Box 1.2).

Table 2.5 presents the distribution of hospitalised injury cases by age and sex. For Indigenous people the largest proportion of injury cases occurred at ages 25–44 for both males and females; a higher proportion of cases occurred among Indigenous females (43%) at that age compared with males (37%). The greatest difference between Indigenous females (5%) and Other Australian females (43%) was seen at 65+.

Table 2.5: Hospitalised injury cases, by age and sex, Aboriginal and Torres Strait Islander people and Other Australians, Australia[(a)], 2010–11

	Aboriginal and Torres Strait Islander people		Other Australians	
	Number	**Per cent**	**Number**	**Per cent**
Males				
0–4	850	7.7	10,710	4.7
5–14	1,479	13.4	22,293	9.8
15–24	2,800	25.3	45,026	19.7
25–44	4,130	37.3	63,773	28.0
45–64	1,522	13.7	45,204	19.8
65+	293	2.6	41,061	18.0
Total	**11,074**	**100.0**	**228,067**	**100.0**
Females				
0–4	641	7.6	7,777	4.5
5–14	894	10.5	12,024	6.9
15–24	1,742	20.5	17,793	10.3
25–44	3,601	42.5	29,093	16.8
45–64	1,209	14.3	31,952	18.4
65+	393	4.6	74,558	43.0
Total	**8,480**	**100.0**	**173,197**	**100.0**

(a) Excludes data for Tasmania and the Australian Capital Territory (see Box 1.2).

Causes of injury

Falls constituted the largest proportion of injury hospitalisations in 2010–11 (39%), and was the leading external cause for females (Table 2.6). Transport (14%) was the second most common specific cause of injury in males followed by assault (7%).

Other unintentional injuries is a broad category which includes, for example, *Exposure to inanimate mechanical forces* (W20–W49) and *Contact with venomous animals and plants* (X20–X2). Because it is so diverse and non-specific, this residual group has not been included in assessments of the rank order of external causes. The other unintentional injuries category is described more fully in Chapter 12.

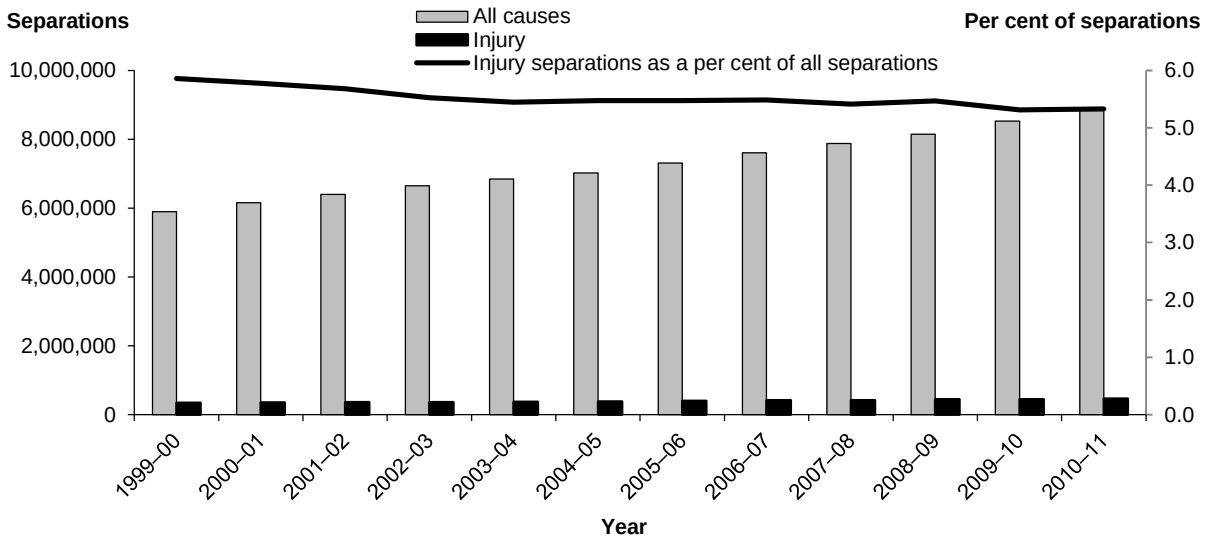
Table 2.6: Major external cause groups for hospitalised injury cases, by sex, Australia, 2010–11

	Males		Females		Persons	
External cause	**Number**	**Per cent**	**Number**	**Per cent**	**Number**	**Per cent**
Unintentional injuries						
Transport	35,658	14.3	17,331	9.2	52,989	12.1
Drowning and submersion	311	0.1	184	0.1	495	0.1
Poisoning, pharmaceuticals	3,297	1.3	3,301	1.7	6,598	1.5
Poisoning, other substances	1,400	0.6	842	0.4	2,242	0.5
Falls	75,795	30.4	96,819	51.2	172,616	39.4
Smoke, fire, heat and hot substances	3,923	1.6	2,135	1.1	6,058	1.4
Other unintentional injuries	98,462	39.5	42,386	22.4	140,850	32.1
Intentional injuries						
Intentional self -harm	9,748	3.9	16,314	8.6	26,062	5.9
Assault	16,470	6.6	6,144	3.3	22,616	5.2
Undetermined intent	3,001	1.2	2,472	1.3	5,473	1.2
Other or missing	1,390	0.6	993	0.5	2,383	0.5
Total	**249,455**	**100.0**	**188,921**	**100.0**	**438,382**	**100.0**

2.2 How have hospitalisations for injury cases changed over time?

Separations from hospital as a result of an injury accounted for about 6% of all separations from hospital due to any cause in each year. Injury separations accounted for 6% (345,710 cases) in 1999-00 and 5% (471,898 cases) in 2010–11 (Figure 2.2).

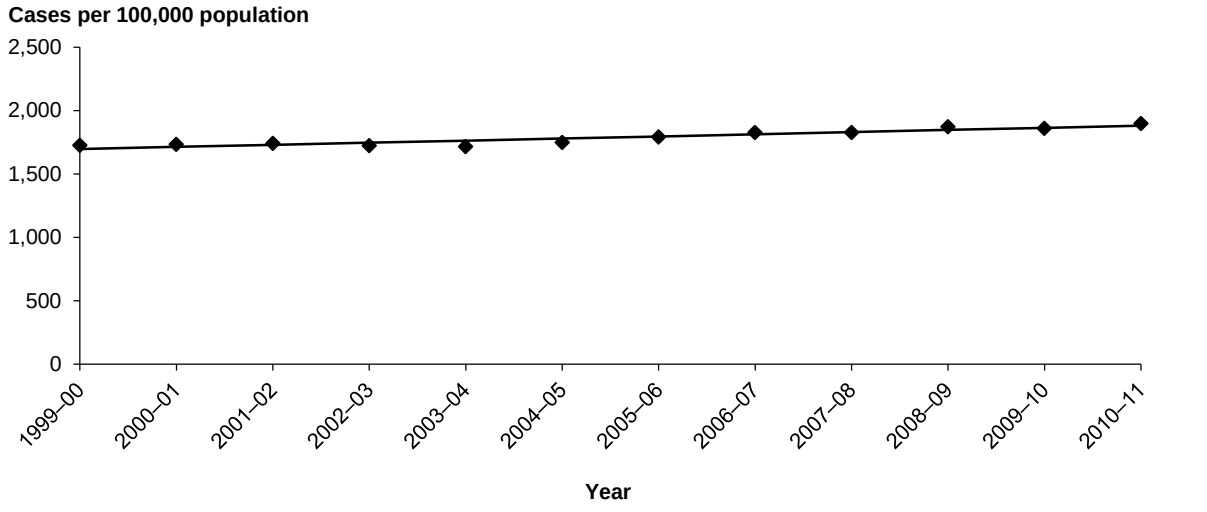
This summary of injury in relation to all causes of hospitalisation is presented in terms of separations and not in terms of estimated cases, because the latter measure is specific to injury.



Note: Information on all cause separations from relevant editions of Australian Hospital Statistics.

Figure 2.2: Number of separations for hospitalised injury and hospitalisations for all causes, Australia, 1999–00 to 2010–11

The population-based age-standardised rate of cases of hospitalised injury tended to rise during the 11 years to 2010–11 (Figure 2.3). The rate was 1,724 per 100,000 population in 1999–00 and 1,897 in 2010–11. The rise in the modelled rate averaged 0.9% per year and was statistically significant (95% CI: 0.7%, 1.2%).



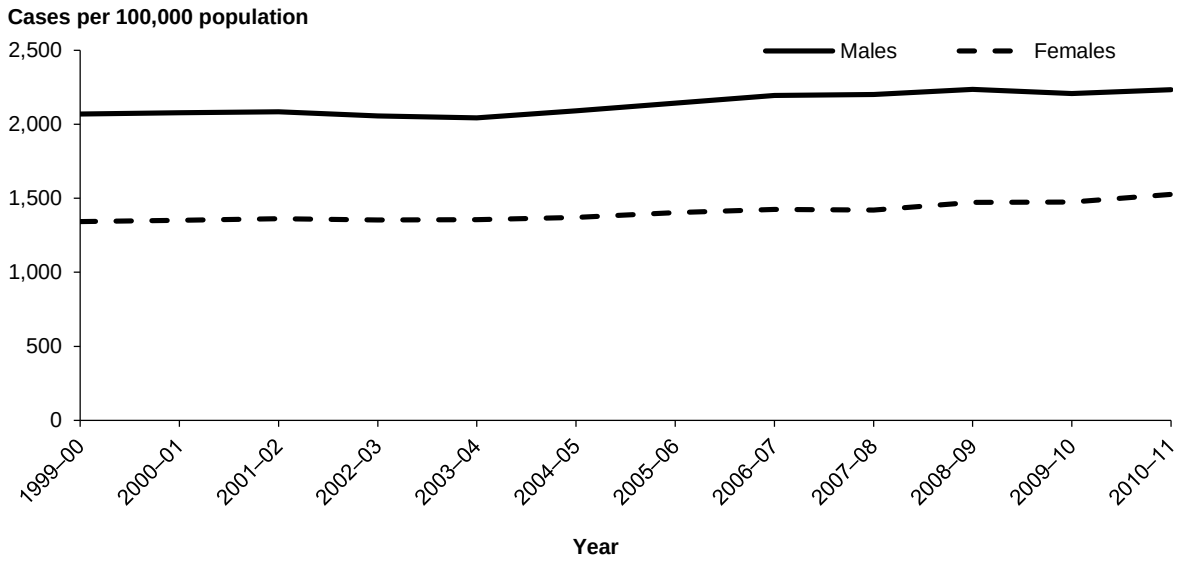
Notes

1. The line represents the modelled rate over the period, while symbols represent the actual age-standardised rate value for each year.
2. Data underpinning this figure are available in Table B.1 in Appendix B.

Figure 2.3: Modelled age-standardised rates of hospitalised injury, Australia, 1999–00 to 2010–11

2.3 How have injury cases varied by age and sex over time?

Age-standardised rates for males and females increased over the period (Figure 2.4). For females, the lowest rate occurred in 1999–00 (1,343 per 100,000 population) and the highest in the most recent year 2010–11 (1,526 per 100,000). For males, the lowest and highest rates were in 2003–04 (2,043 per 100,000) and 2008–09 (2,236 per 100,000) respectively.



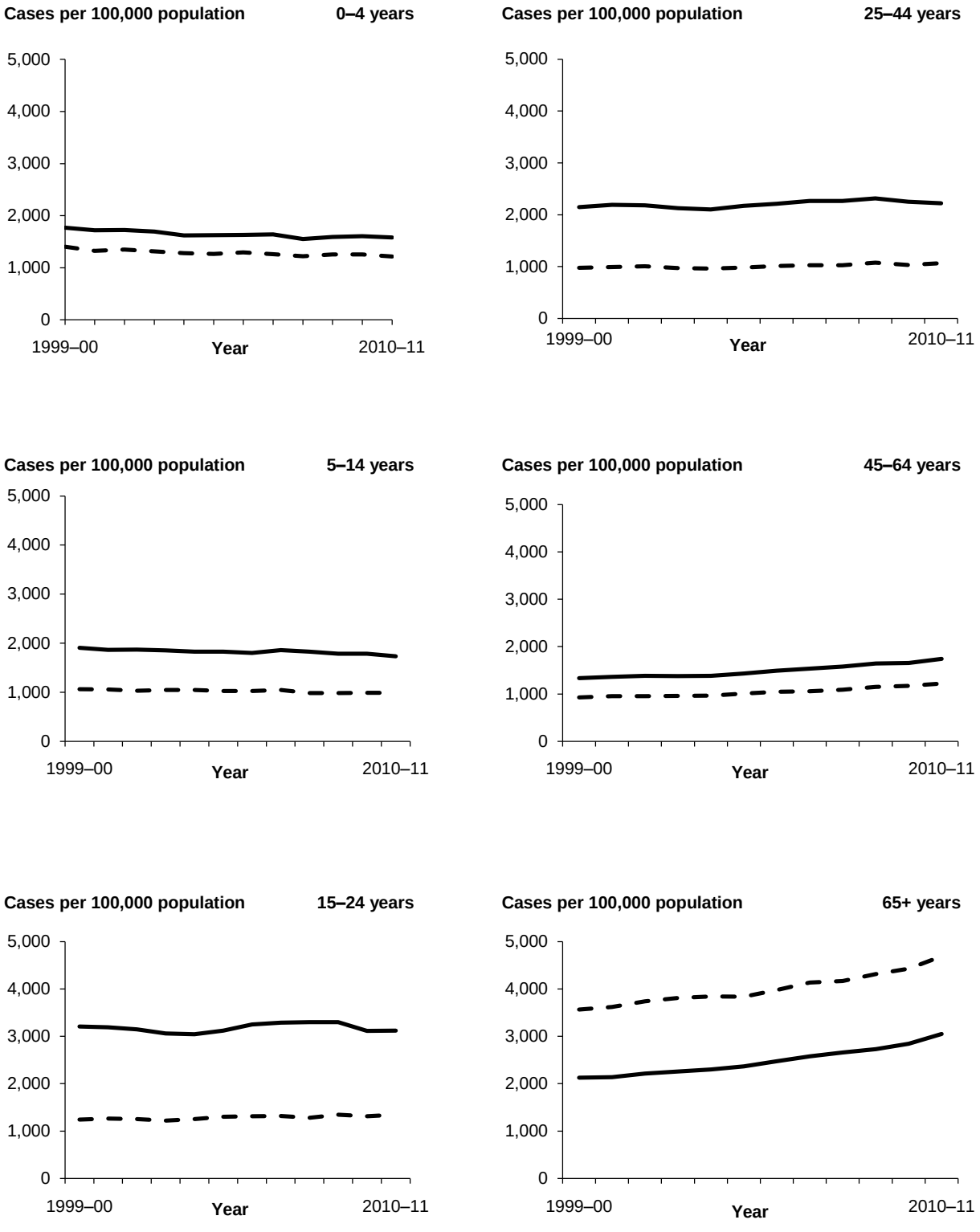
Note: Data underpinning this figure are available in Table B.1and B2 in Appendix B.

Figure 2.4: Age-standardised rates of hospitalised injury, by sex, Australia, 1999–00 to 2010–11

Changes over time in hospitalised injury rates, stratified by age as well as by sex, are shown in Figure 2.5. Note that the rates in Figure 2.5 have not been age-standardised.

Crude rates of injury were much higher for females compared with males in the 65+ group in contrast to all other age groups. Rates rose over the period for both males and females. The crude rate for males in 1999–00 was 2,125 cases per 100,000 population rising to 3,048 in 2010–11. For females, the rate was 3,565 in 1999-00 rising to 4,687 in 2010–11.

Rates of injury in children aged 0–4 decreased over time. For males, the rate was 1,768 cases per 100,000 in 1999–00 increasing to 1,579 in 2010–11. For females, the rate was 1,403 in 1999–00 and 1,217 in 2010–11.



Notes

1. Rates for males are indicated by the solid line and rates for females by the broken line in all charts.
2. Data underpinning this figure are available in Tables B.2 and B.3 in Appendix B.

Figure 2.5: Age-specific rates of hospitalised injury by age and sex, Australia, 1999–00 to 2010–11

2.4 How have injury cases varied by remoteness of usual residence over time?

Rates of hospitalised injury were consistently higher over time for residents of *Very remote* and *Remote* areas compared with other areas. Rates were lowest for residents of *Major cities* (Figure 2.6). The rank order of remoteness area from lowest rate of injury to highest rate of injury did not change over time.

The high rate of injury for residents of the more remote areas may be partly attributable to higher injury risk among Indigenous Australians, who comprise a relatively large proportion of the remote area populations. The fluctuation in rate of injury in the *Very remote* and *Remote* regions of Australia is a reflection of the small population and number of incidents occurring each year.

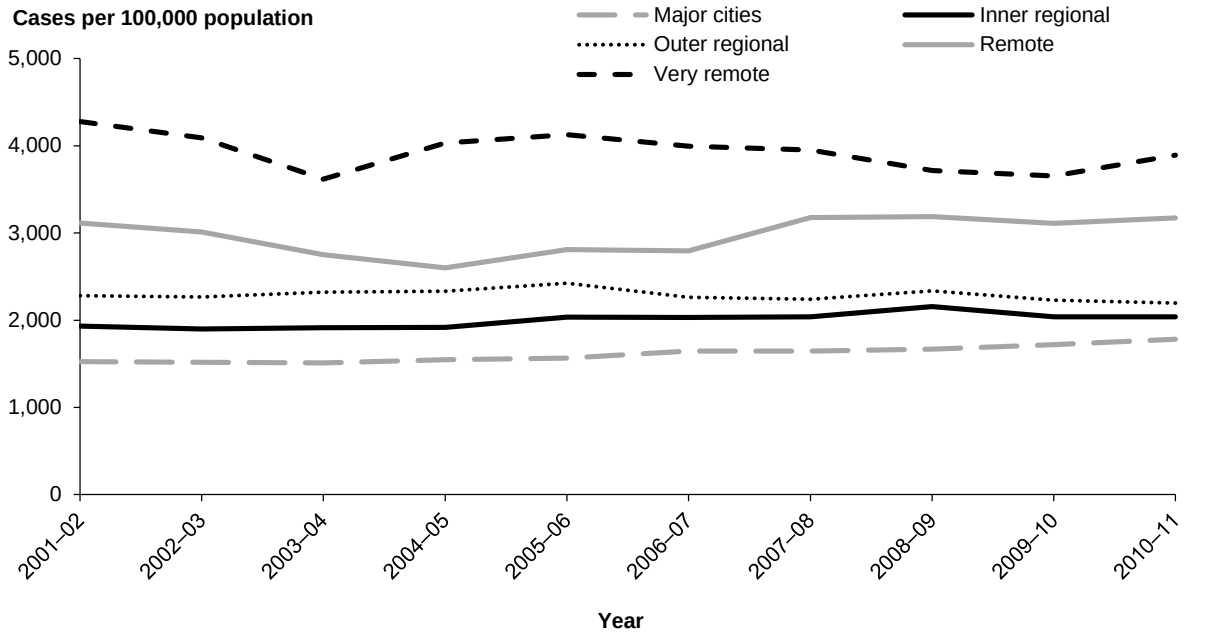


Figure 2.6: Age-standardised rates of hospitalised injury, by remoteness of usual residence, Australia, 2001–02 to 2010–11

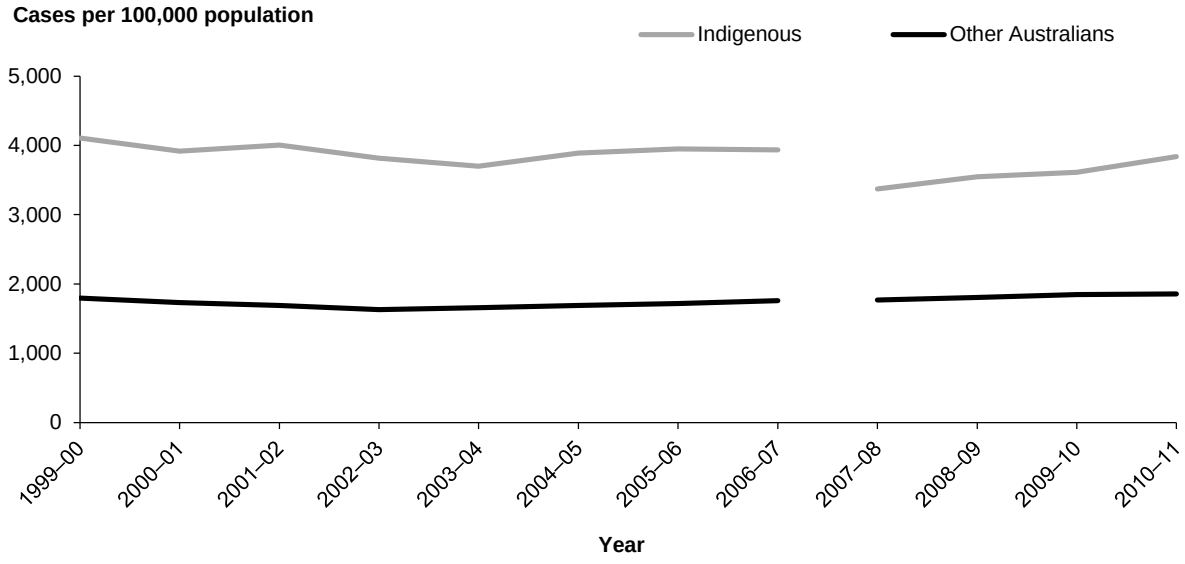
2.5 How have hospitalised injury cases in Indigenous people changed over time?

Age–standardised rates of injury among Indigenous and Other Australians are shown in Figure 2.7. The period in which data was included from New South Wales and Victoria begins in 2007–08 and this change in scope is highlighted in the figure by the break in age-standardised rate lines.

Rates for Indigenous people were much higher than rates for Other Australians (Figure 2.7). No noteworthy difference in trend between these populations was evident in the 4 jurisdictions in the period to 2005–06.

In the period 2007–08 to 2010–11, the rate of injury for Indigenous people increased from 3,370 cases per 100,000 population to 3,838. For Other Australians, the rate of injury was 1,766 cases per 100,000 in 2007–08 and 1,858 in 2010–11.

At face value, the rates for the 6 jurisdictions suggest an upward trend for Aboriginal and Torres Strait Islander people in the most recent 4 years reported, rising more rapidly than rates for Other Australians. Caution should be exercised in coming to that conclusion because of the small number of years of data for the 6-state region and because improvement of Indigenous identification in hospital data could contribute to the apparent rise. The rate for Indigenous people in the 4 jurisdictions was much the same in 2007–08 as in 2006–07, and increased a little in the last three years of the study period (data not shown).



Notes

1. Four jurisdictions (WA, SA, NT, Qld) were included between 1999–00 and 2006–07. Six jurisdictions (WA, SA, NT, Qld, NSW and Vic) were included between 2007–08 and 2010–11. The different jurisdictional groupings are indicated by the break in series.
2. Data underpinning this figure are available in Table B.23 in Appendix B.

Figure 2.7: Age-standardised rates of hospitalised injury, Aboriginal and Torres Strait Islander people and Other Australians, Australia, 1999–00 to 2010–11

2.6 How have the causes of hospitalised injury cases varied over time?

Changes in the age-standardised rates of injury for various causes over the period are summarised in Table 2.7. More information on trends in each of the causes of injury listed in the table is available in subsequent chapters of this report. Two specific causes of injury showed statistically significant increases in age-standardised rates: falls (1.7% increase per year), and intentional self-harm (0.5% increase per year). Three of the causes (transport; exposure to smoke, fire, heat and hot substances; and assault) showed little or no trend over time. Significant downward trends were seen in the rate of hospitalisations due to poisoning by pharmaceuticals (–4.6% per year) and poisoning by other substances (–3.7% per year), and cases due to drowning and near drowning (–0.9% per year).

Table 2.7: Trends in age-standardised rates of hospitalised injury cases, by type of external cause, Australia, 1999–2011

External cause	Trend	Per cent change per year	Per cent of all injuries 2010–11
Unintentional injuries			
Transport	↔	**	12.0
Drowning and submersion	↓	-0.9*	0.1
Poisoning, pharmaceuticals	↓	-4.6*	1.5
Poisoning, other substances	↓	-3.7*	0.5
Falls	↑	1.7*	39.4
Smoke, fire, heat and hot substances	↔	**	1.4
Other unintentional injuries	↑	1.4*	32.1
Intentional injuries			
Intentional self -harm	↑	0.5*	5.9
Assault	↔	0.5	5.2

Notes

*Average per cent change per year differed from zero to a statistically significant extent ($p < 0.05$).

** Average per cent change per year was small (<0.1%) and did not differ significantly from zero ($p \geq 0.05$)

3 Severity of injury

Two measures of severity for hospitalisations for injury are length of stay and the proportion of high threat to life cases. This chapter presents information on how length of stay in hospital and the proportion of high threat to life cases have varied over time.

Length of stay provides an approximate indication of case severity because severe injuries are more likely to result in long episodes of care than minor injuries. However some severe cases have relatively short lengths of stay because the injured person dies in hospital. Estimates of length of stay are likely to be underestimates of the total amount of time an individual spends in hospital as a result of their injury. Length of stay information presented here is based on the 'acute care' phase and does not include additional time spent in hospital (for example, for rehabilitation).

What data were reported?

Information is presented in this chapter for hospitalised injury in terms of:

- Case numbers
- Mean length of stay
- Total patient days
- Proportion of high threat to life cases.

Results are presented by age, sex, Indigenous status and year of separation.

What methods were used?

The mean length of stay (MLOS) is the average number of days each patient stays in hospital in acute care. This was calculated by dividing the total number of patient days for a reporting period (including inward transfers) by the estimated number of cases for the same period. Patient days were the number of full and partial days a patient was in hospital. One patient day is counted for same day patients (admitted and discharged from hospital on the same day).

Injuries can be classified according to the likelihood that a patient with that injury will die in hospital. The method used refers to cases with predicted mortality risk of about 6% or higher as having a high threat to life (Stephenson et al. 2003). Injuries of this severity may well have a large impact on the patient, often with persisting problems and ongoing need for health care services.

3.1 Length of stay

In 2010–11, the overall MLOS for hospitalised injury was 3.9 days (more than 1.7 million days for 438,382 cases) (Table 3.1). MLOS was shorter for males overall than for females (3.3 days compared with 4.7). However, age-specific MLOS was very similar for both sexes. Hence, the overall difference is due to the different age distribution of male and female cases. Discharge occurred on the same day of admission for one-third of all injury cases (34%; 157,963 separations). More males (37%; 98,147 separations) were discharged on the same day compared with females (29%; 59,812).

Table 3.1: Length of stay for hospitalised injury: case counts, total patient days, and mean length of stay, Australia, 2010–11

	Males			Females			Persons		
	Cases	Total patient days	MLOS	Cases	Total patient days	MLOS	Cases	Total patient days	MLOS
0–4	11,912	20,792	1.7	8,708	13,990	1.6	20,620	34,782	1.7
5–14	24,683	41,829	1.7	13,417	22,935	1.7	38,101	64,765	1.7
15–24	50,467	109,651	2.2	20,567	42,363	2.1	71,035	152,015	2.1
25–44	71,152	179,321	2.5	34,118	82,879	2.4	105,271	262,201	2.5
45–64	48,512	164,397	3.4	34,593	119,016	3.4	83,105	283,413	3.4
65+	42,729	308,823	7.2	77,518	608,347	7.8	120,247	917,170	7.6
Total	**249,455**	**824,813**	**3.3**	**188,921**	**889,530**	**4.7**	**438,382**	**1,714,355**	**3.9**

MLOS was much higher for ages 65+ in 2010–11 (Figure 3.1). The average stay for people aged 85+ (8.9 days) was almost twice that for those aged 65–69 (4.9 days).

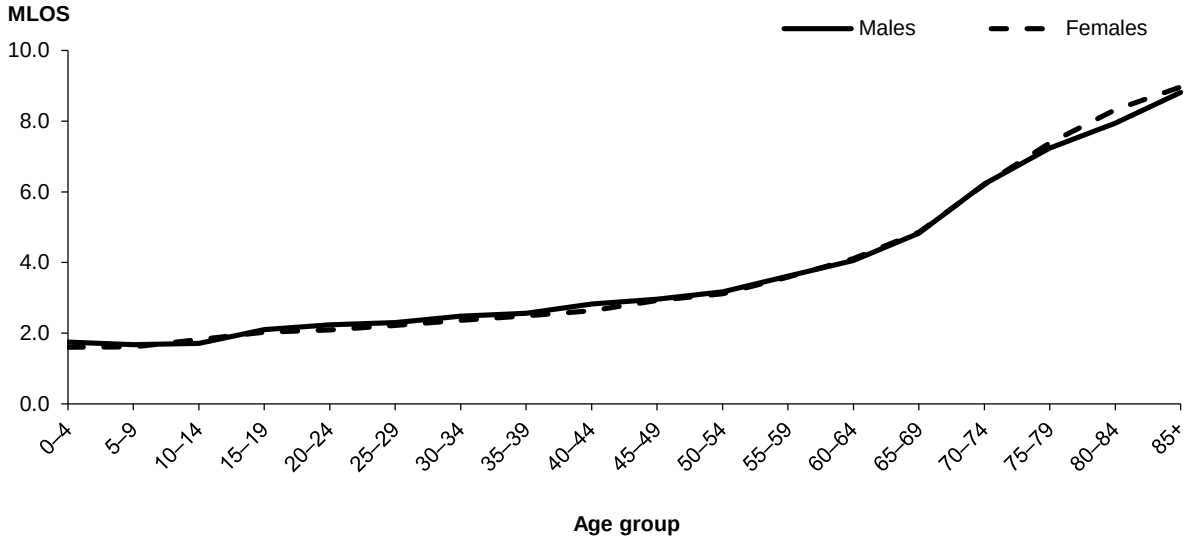
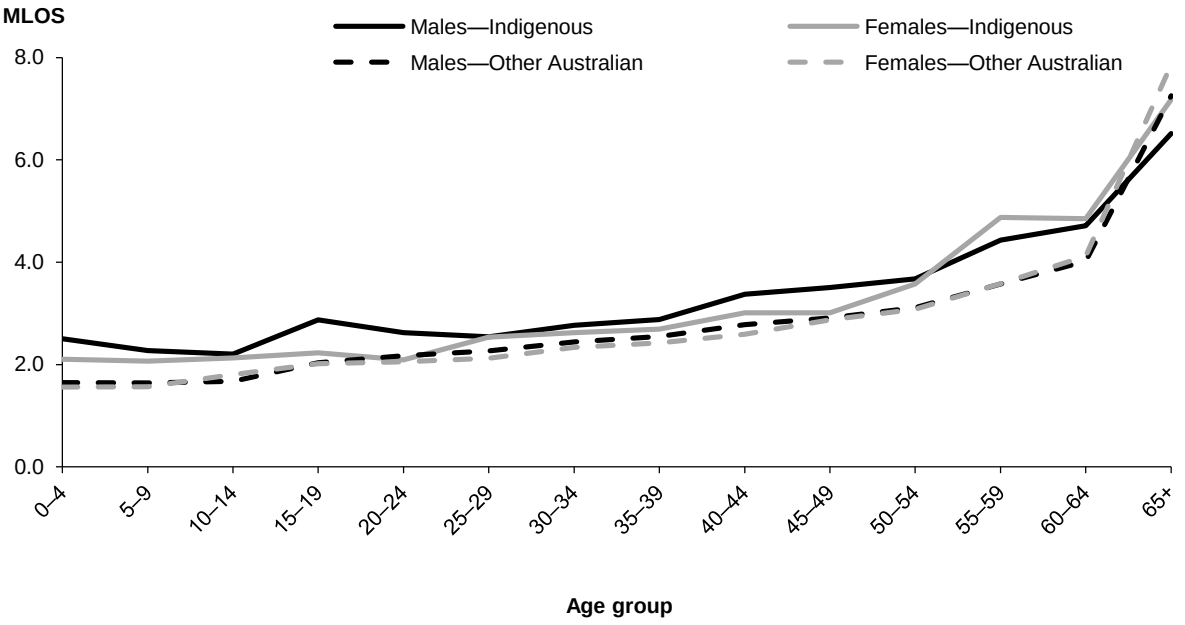


Figure 3.1: Mean length of stay for hospitalised injury, by age and sex, Australia, 2010–11

Aboriginal and Torres Strait Islander people

As for Other Australians, MLOS for Indigenous people generally increased with age (Figure 3.2). The average stay was shortest for Indigenous children aged 0–14 (2.2 days), and highest for people aged 65+ (6.9 days). Mean lengths of stay were a little higher among Indigenous males compared with Other Australian males. While this was also true of Indigenous females the difference in MLOS at each age was very small.



Note: Excludes data for Tasmania and the Australian Capital Territory (see Box 1.2).

Figure 3.2: Mean length of stay for hospitalised injury, by age and sex, Aboriginal and Torres Strait Islander people and Other Australians, Australia, 2010–11

Table 3.2 presents information on length of stay for Indigenous people and Other Australians. In 2010–11, the overall MLOS for hospitalised injury among Indigenous people was 2.9 days (more than 50,000 days for 19,555 cases). Discharge occurred on the same day of admission for one-third of all injury cases among Indigenous people (35%; 7,359 separations), similar to Other Australians (34%; 144,910). A larger proportion of Indigenous females (35%) were discharged on the same day compared with Other Australian females (29%).

Table 3.2: Length of stay for hospitalised injury: case counts, total patient days, and mean length of stay, Aboriginal and Torres Strait Islander people and Other Australians, Australia[(a)], 2010–11

	Aboriginal and Torres Strait Islander people			Other Australians		
	Cases	Total patient days	MLOS	Cases	Total patient days	MLOS
0–4	1,491	3,475	2.3	18,487	29,999	1.6
5–14	2,373	5,174	2.2	34,318	57,105	1.7
15–24	4,543	11,454	2.5	62,819	131,498	2.1
25–44	7,731	21,528	2.8	92,867	228,217	2.5
45–64	2,731	10,289	3.8	77,156	261,314	3.4
65+	686	4,728	6.9	115,619	884,047	7.6
Total	**19,555**	**56,648**	**2.9**	**401,266**	**1,592,180**	**4.0**

(a) Excludes data for Tasmania and the Australian Capital Territory (see Box 1.2).

How has length of stay changed over time?

There was little change over the period in the MLOS for hospitalised injury (Figure 3.3). Females had longer mean lengths of stay compared with males in each of the years examined. The difference was at its smallest in 2010–11 (3.3 for males; 4.7 for females).

Although MLOS is only an approximate indication of case severity, the consistency over time in MLOS suggests that the overall severity of injuries treated in hospital has not increased or decreased markedly.

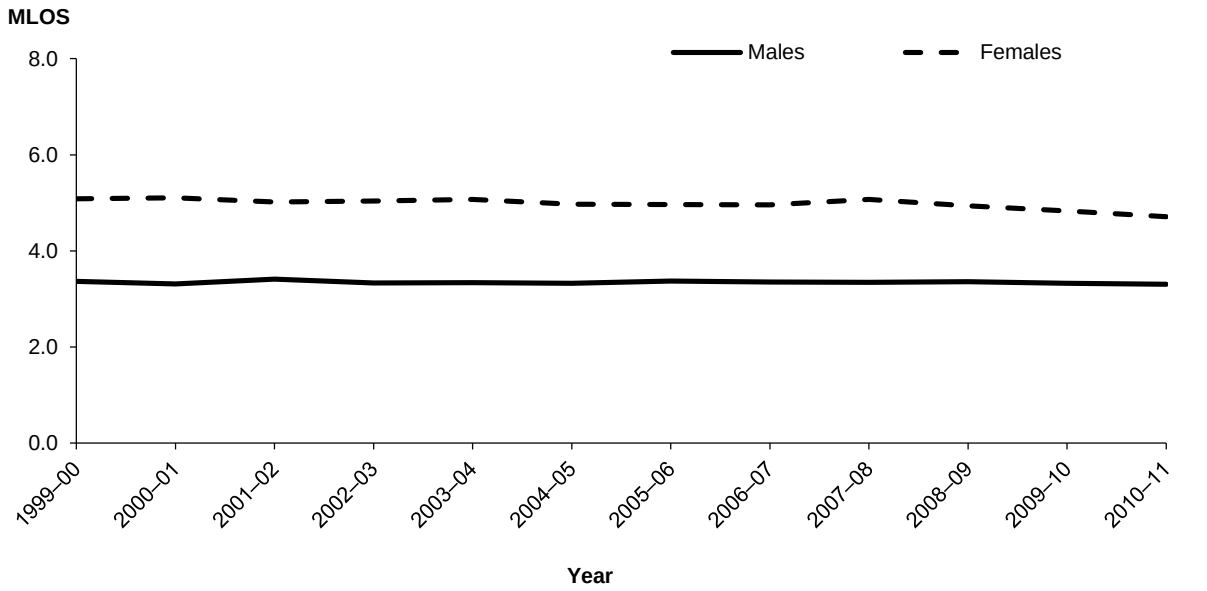
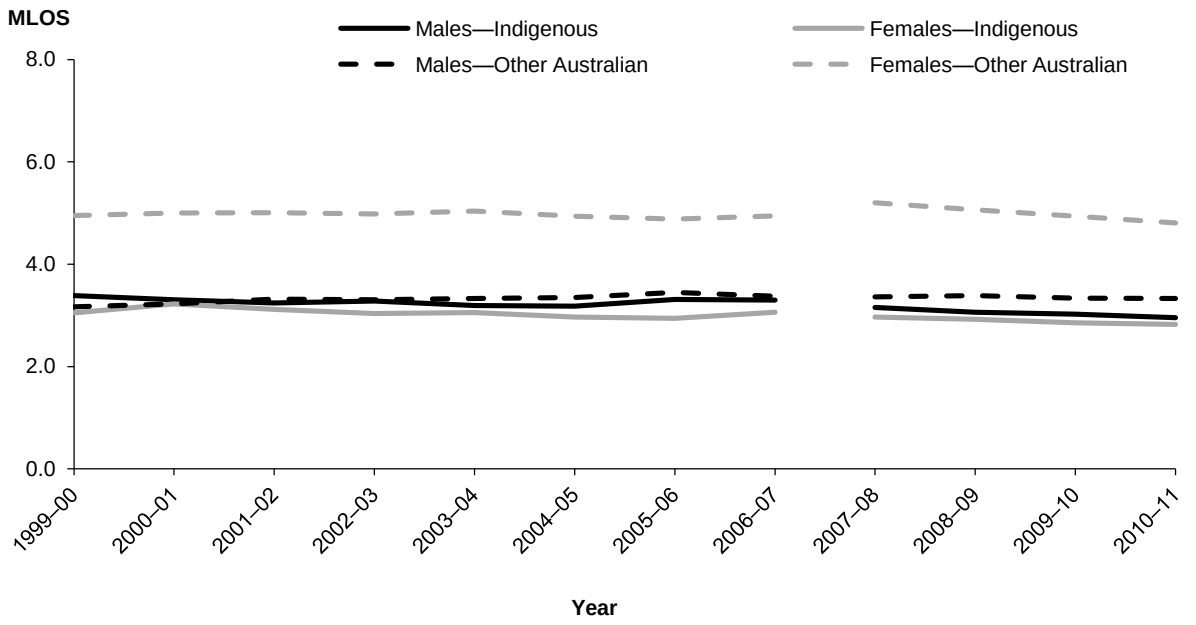


Figure 3.3: Mean length of stay for hospitalised injury cases, by sex, Australia, 1999–00 to 2010–11

Analysis of MLOS excluding same-day admissions was also undertaken. Averaged over the period, the MLOS for males was 4 days and for females 6 days. The trend over time showed little change, similar to Figure 3.3 (data not shown).

Aboriginal and Torres Strait Islander people

As with all Australians, there was little change over the period in the MLOS among Indigenous people (Figure 3.4). Other Australian females had longer mean lengths of stay compared with all other groups in each of the years examined. A large contributing factor to this trend is the high number of falls in older females.



Note: Four jurisdictions (WA, SA, NT, Qld) were included between 1999–00 and 2006–07. Six jurisdictions (WA, SA, NT, Qld, NSW and Vic) were included between 2007–08 and 2010–11. The different jurisdictional groupings are indicated by the break in series.

Figure 3.4: Mean length of stay for hospitalised injury cases, Aboriginal and Torres Strait Islander people and Other Australians, Australia, 1999–00 to 2010–11

3.2 High threat to life

About 1 in 6 injury cases (15%; 65,999) were classified as high threat to life (HTTL) in 2010–11 (Table 3.3). There were 32,757 high threat to life cases reported for males; however, as more males were hospitalised for injury overall, this represented a smaller proportion of male injury cases (13%) compared with 18% high threat to life cases for females.

Table 3.3: High threat to life[(a)] hospitalised injury cases, Australia, 2010–11

	Males		Females		Persons	
Age group	**Number**	**Per cent HTTL**	**Number**	**Per cent HTTL**	**Number**	**Per cent HTTL**
0–4	826	6.9	560	6.4	1,386	6.7
5–14	1,152	4.7	477	3.6	1,629	4.3
15–24	4,816	9.5	1,437	7.0	6,253	8.8
25–44	6,929	9.7	2,278	6.7	9,207	8.7
45–64	6,435	13.3	3,190	9.2	9,625	11.6
65+	12,599	29.5	25,300	32.6	37,899	31.5
Total	**32,757**	**13.1**	**33,242**	**17.6**	**65,999**	**15.1**

(a) High threat to life cases defined as ICISS < 0.941 (Stephenson et al. 2003).

Aboriginal and Torres Strait Islander people

The pattern of high threat to life cases is somewhat similar between Indigenous people and Other Australians (Table 3.4). The highest proportion of cases of high threat to life occurred at 65+ for male and female Indigenous people and Other Australians. One notable difference was the higher proportion of high threat to life cases for Indigenous females (33%) at 65+ compared with males (23%).

Table 3.4: High threat to life[(a)] hospitalised injury cases, Aboriginal and Torres Strait Islander people and Other Australians, Australia[(b)], 2010–11

	Males		Females		Persons	
	Number	Per cent HTTL	Number	Per cent HTTL	Number	Per cent HTTL
Aboriginal and Torres Strait Islander people						
0–4	74	8.7	39	6.1	113	7.6
5–14	76	5.1	50	5.6	126	5.3
15–24	323	11.5	151	8.7	474	10.4
25–44	489	11.8	329	9.1	818	10.6
45–64	210	13.8	123	10.2	333	12.2
65+	67	22.9	128	32.6	195	28.4
Total	**1,239**	**11.2**	**820**	**9.7**	**2,059**	**10.5**
Other Australians						
0–4	718	6.7	494	6.4	1,212	6.6
5–14	1,035	4.6	409	3.4	1,444	4.2
15–24	4,174	9.3	1,197	6.7	5,371	8.5
25–44	6,067	9.5	1,831	6.3	7,898	8.5
45–64	5,963	13.2	2,914	9.1	8,877	11.5
65+	12,110	29.5	24,213	32.5	36,323	31.4
Total	**30,067**	**13.2**	**31,058**	**17.9**	**61,125**	**15.2**

(a) High threat to life cases defined as ICISS < 0.941 (Stephenson et al. 2003).

(b) Excludes data for Tasmania and the Australian Capital Territory (see Box 1.2).

How have high threat to life hospitalisations for injury varied over time?

The proportion of high threat to life cases was fairly stable over the period (Figure 3.5). At the beginning of the period, the proportion of high threat to life cases was 14.8% and at the end it was 15.1%. A greater proportion of female cases were classified as high threat to life in each year compared with males.

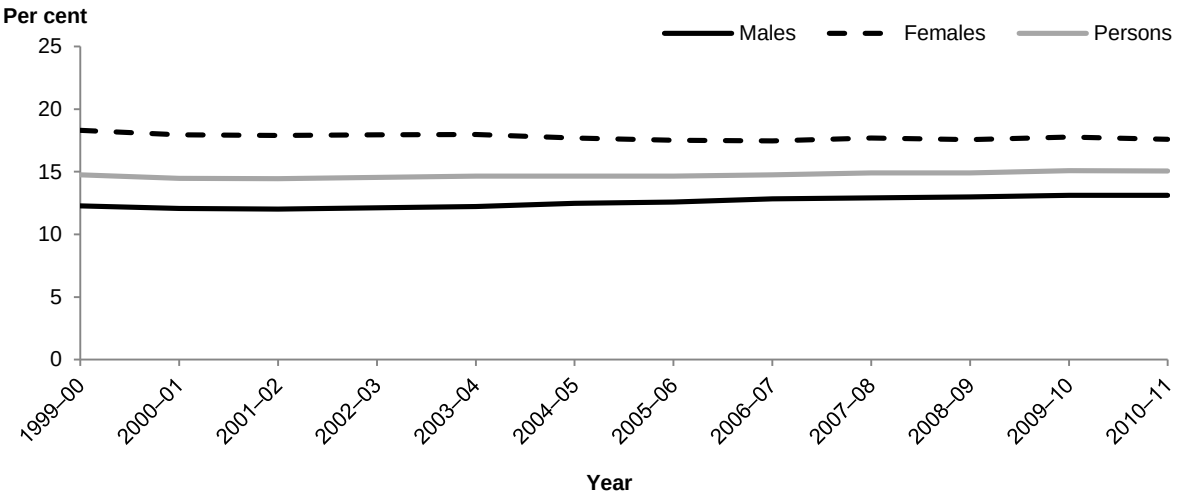
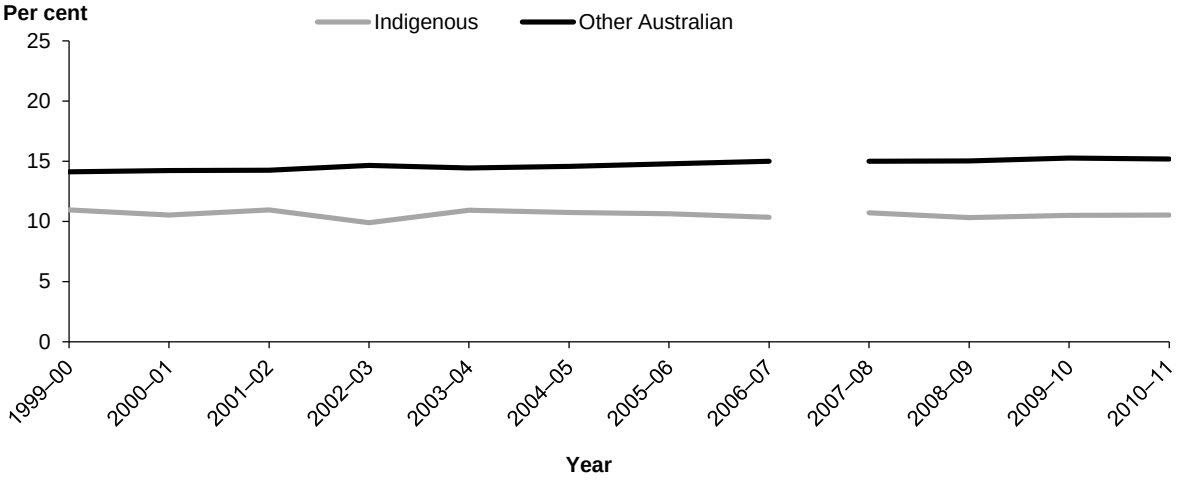


Figure 3.5: High threat to life hospitalised injury cases as a proportion of all injury cases, by sex, Australia, 1999–00 to 2010–11

Aboriginal and Torres Strait Islander people

The proportion of high threat to life cases was fairly stable over the period, averaging 11% for Indigenous people compared with 15% for Other Australians (Figure 3.6). The difference is largely due to the higher proportion of cases at older ages for Other Australians (that is, these proportions have not been age-adjusted). A greater proportion of Indigenous females were classified as high threat to life in each year (18% on average) compared with males (13%).



Notes

(a) High threat to life cases defined as ICISS < 0.941 (Stephenson et al. 2003).

(b) Four jurisdictions (WA, SA, NT, Qld) were included between 1999–00 and 2006–07. Six jurisdictions (WA, SA, NT, Qld, NSW and Vic) were included between 2007–08 and 2010–11. The different jurisdictional groupings are indicated by the break in series.

Figure 3.6: High threat to life[(a)] hospitalised injury cases as a proportion of all injury cases, Aboriginal and Torres Strait Islander people and Other Australians, Australia[(b)], 1999–00 to 2010–11

4 Transport

This chapter draws on data from the NHMD covering the years 1 July 1999 to 30 June 2011 to present an overview of trends in hospitalised unintentional transport injury in Australia. It excludes transport-related injury cases that were coded as *Intentional self-harm by crashing of motor vehicle*, *Intentional self-harm by jumping or lying before a moving object*, *Assault by pushing or placing victim before moving object* and *Assault by crashing of motor vehicle*, *Falling, lying or running before or into moving object, undetermined intent* and *Crashing of motor vehicle, undetermined intent* and *Sequelae of transport accidents*. More detailed information on transport injuries, including trend information can be found in publications on the AIHW website, for example *Trends in serious injury due to land transport accidents, Australia 2000–01 to 2008–09* (Henley & Harrison 2012).

What methods were used?

This chapter includes injury cases meeting the criteria set out in section 1.3, providing that the first reported external cause code was in the ICD-10-AM range V01–V99 (*Transport accidents*) in Chapter *XX External causes of morbidity and mortality*.

Relevant terms and information regarding the data used in this chapter are summarised in Boxes 1.1, 1.2 and 4.1. Further information on methods is provided in Appendix A.

Box 4.1 External causes of transport injury

This chapter focuses on the **Transport accidents** (V01–V99) section of Chapter *XX External causes of morbidity and mortality* which contains 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).

4.1 How many hospitalised transport injury cases were there in 2010–11?

There were an estimated 52,989 transport injury cases during 2010–11 (Table 4.1). Twice as many males as females were hospitalised. The age-standardised rate was also higher for males than for females.

Table 4.1: Key indicators for transport injury cases, Australia, 2010–11

Indicators	Males	Females	Persons
Estimated transport injury cases	35,658	17,331	52,989
Per cent of all injury cases	14.3	9.2	12.1
Age-standardised rate/100,000 population	319	152	236

Age and sex

One-quarter of transport injuries occurred at ages 15–24 (25%) and almost another third at ages 25–44 (32%) (Table 4.2). These proportions are much higher than for the same age groups for hospitalised injury due to all external causes combined (Table 2.3). The proportion of transport cases occurring at these ages was larger for males (59%) than for females (51%).

Table 4.2: Transport injury cases by age, Australia, 2010–11

	Males		Females		Persons	
Age group	Number	Per cent	Number	Per cent	Number	Per cent
0–4	515	1.4	299	1.7	814	1.5
5–14	3,541	9.9	1,594	9.2	5,135	9.7
15–24	9,197	25.8	3,918	22.6	13,115	24.8
25–44	11,887	33.3	4,829	27.9	16,716	31.5
45–64	7,648	21.4	3,841	22.2	11,489	21.7
65+	2,870	8.0	2,850	16.4	5,720	10.8
Total	**35,658**	**100.0**	**17,331**	**100.0**	**52,989**	**100.0**

Males had a higher rate of transport injury across all age groups (Figure 4.1). The rate for males was highest at age 15–19 (609 per 100,000 population) and for females (276 per 100,000). A rise in rates with age group was seen for both sexes at older ages, but this is much less marked than for hospitalised injury overall.

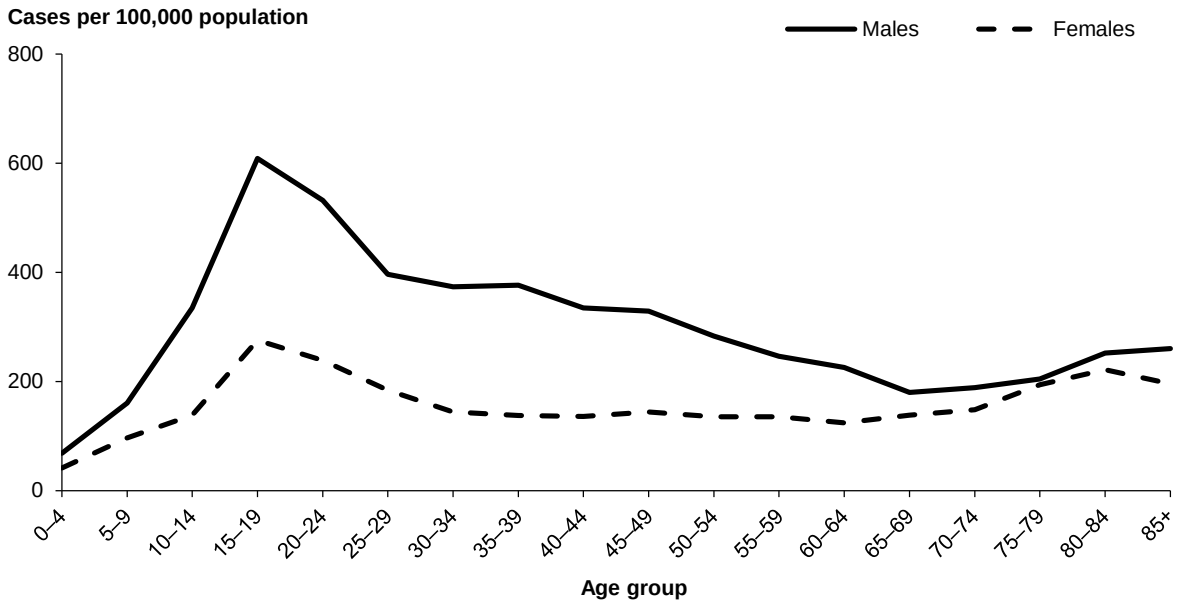


Figure 4.1: Age-specific rates of transport injury cases, by sex, Australia, 2010–11

Remoteness of usual residence

The age-standardised rate of transport injury in 2010–11 increased with increasing remoteness. The rate of injury in *Very remote* regions (451 per 100,000 population) was more than double the rate in the *Major cities* (200 per 100,000) (Table 4.3). Further information on transport injury in relation to remoteness can be found in *Serious injury due to land transport accidents, Australia 2008–09* (Henley & Harrison, 2012).

Table 4.3: Transport injury cases by remoteness of usual residence, Australia, 2010–11

	Remoteness of usual residence					
Indicators	**Major cities**	**Inner regional**	**Outer regional**	**Remote**	**Very remote**	**Total[(a)]**
Estimated transport injury cases	31,038	12,226	6,508	1,449	870	52,091
Per cent	59.6	23.5	12.5	2.8	1.7	100.0
Age-standardised rate/100,000 population	200	296	335	458	451	236

(a) Excludes 898 cases where remoteness was not reported or residence was reported as an external territory.

Aboriginal and Torres Strait Islander people

There were an estimated 1,751 cases of Indigenous people hospitalised as a result of a transport injury in 2010–11 (Table 4.4). More than twice as many males were hospitalised as females. Transport injury among Indigenous people made up a smaller proportion (9%) of all hospitalised injury compared with Other Australians (12%). The age-standardised rates of transport injury were higher for Indigenous for males and females compared with Other Australians.

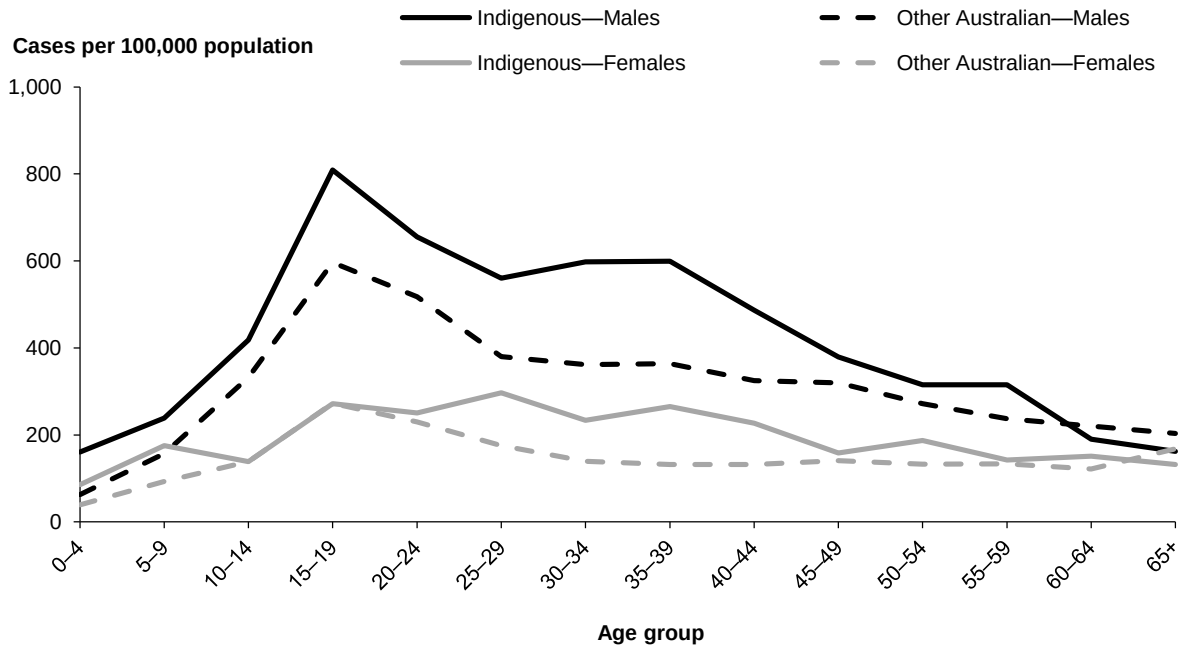
Table 4.4: Key indicators for transport injury cases, Aboriginal and Torres Strait Islander people and Other Australians, Australia[(a)], 2010–11

	Aboriginal and Torres Strait Islander people			Other Australians		
Indicators	**Males**	**Females**	**Persons**	**Males**	**Females**	**Persons**
Estimated transport injury cases	1,216	535	1,751	32,792	15,975	48,767
Per cent of all cases of hospitalisations for injury	11.0	6.3	9.0	14.7	9.4	12.4
Age-standardised rate/100,000 population	418	194	305	318	152	236

(a) Excludes data for Tasmania and the Australian Capital Territory (see Box 1.2).

The pattern of transport injury rates by age was similar for Aboriginal and Torres Strait Islander males and females compared with Other Australians (Figure 4.2). While rates for Indigenous males were higher than for other males at nearly all ages, the excess was greatest from teen years to about age 40–44. For Indigenous females a noteworthy excess was present from 25–29 to 40–44.

Transport injury rates for Aboriginal and Torres Strait Islander and Other Australian males were highest at age 15–19 (809 and 596 per 100,000 population respectively) as was the rate for Other Australian females (273 per 100,000). For Aboriginal and Torres Strait Islander females the highest rate occurred at 25–29 (297 per 100,000).



Note: Excludes data for Tasmania and the Australian Capital Territory (see Box 1.2).

Figure 4.2: Age-specific rates of transport injury cases, by sex, Aboriginal and Torres Strait Islander people and Other Australians, Australia, 2010–11

Type of land transport injury

This section contains information on land transport accidents (restricted to external cause codes V01–V89) (50,775) that occurred in 2010–11. Thirty-six per cent of people hospitalised due to land transport accidents were car occupants (18,265); 28% (12,933) were motorcyclists; 18% (9,001) were pedal cyclists; and 8% (4,124) were pedestrians (Table 4.5).

A traffic accident is any vehicle accident occurring on a public highway. A non-traffic accident is any vehicle accident that occurs entirely in any place other than a public highway. Of all people hospitalised due to land transport accidents, 65% were injured in traffic accidents.

For traffic accident cases (33,076), the most frequent mode of transport of the injured person was a car (50%; 16,485). There were gender differences; 71% of females injured in traffic accidents were car occupants (8,067) whereas 39% of males were car occupants (8,418).

For non-traffic accidents (12,655), the most frequent mode of transport was a motorcycle (42%; 5,345) followed by a pedal cycle (29%; 3,657). There were gender differences; the most common mode of transport for females injured in non-traffic accidents were pedal cycles (29%; 692), whereas the most common for males were motorcycles (47%; 4,865).

Of accidents unspecified as to whether they occurred in traffic or non-traffic, more than 60% (3,037 cases) involved an animal rider or occupant of an animal-drawn vehicle.

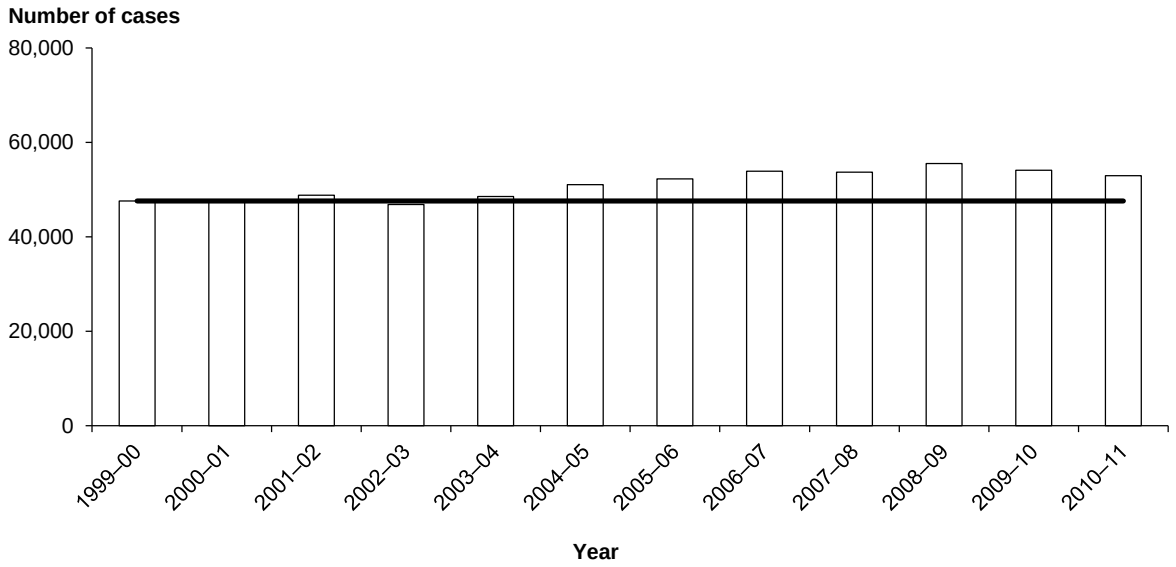
Further information on types of transport injury can be found in *Serious injury due to land transport accidents, Australia 2008-09* (Henley & Harrison, 2012).

Table 4.5: Mode of transport for land transport injury cases, Australia, 2010–11

Injured person's mode of transport	Non-traffic accident	Traffic accident	Unspecified	Total
Males				
Car	650	8,418	264	9,332
Motorcycle	4,865	6,646	186	11,697
Pedal cycle	2,965	4,092	119	7,176
Pedestrian	443	1,729	221	2,393
Animal or animal-drawn vehicle	n.a.	n.a.	961	961
Heavy transport vehicle	132	474	74	680
Pick-up truck or van	62	196	30	288
Bus	22	82	67	171
Three-wheeled motor vehicle	29	17	5	51
Other land transport	1,127	68	124	1,319
Total	**10,295**	**21,722**	**2,051**	**34,068**
Females				
Car	475	8,067	391	8,933
Motorcycle	480	727	29	1,236
Pedal cycle	692	1,086	47	1,825
Pedestrian	353	1,239	139	1,731
Animal or animal-drawn vehicle	n.a.	n.a.	2,076	2,076
Heavy transport vehicle	8	29	10	47
Pick-up truck or van	n.p.	50	n.p.	66
Bus	39	138	175	352
Three-wheeled motor vehicle	n.p.	6	n.p.	15
Other land transport	293	12	121	426
Total	**2,360**	**11,354**	**2,993**	**16,707**
Persons				
Car	1,125	16,485	655	18,265
Motorcycle	5,345	7,373	215	12,933
Pedal cycle	3,657	5,178	166	9,001
Pedestrian	796	2,968	360	4,124
Animal or animal-drawn vehicle	n.a.	n.a.	3,037	3,037
Heavy transport vehicle	140	503	84	727
Pick-up truck or van	74	246	34	354
Bus	61	220	242	523
Three-wheeled motor vehicle	37	23	6	66
Other land transport	1,420	80	245	1,745
Total	**12,655**	**33,076**	**5,044**	**50,775**

4.2 How have hospitalisations for transport injury changed over time?

Figure 4.3 compares the number of cases of transport injury each year with the baseline number of cases (47,599 in 1999–00). From about 2004–05, the number has been higher than the baseline period. The largest difference was in 2008–09 when there were an additional 7,626 cases (55,525 in total) of hospitalised transport injury.

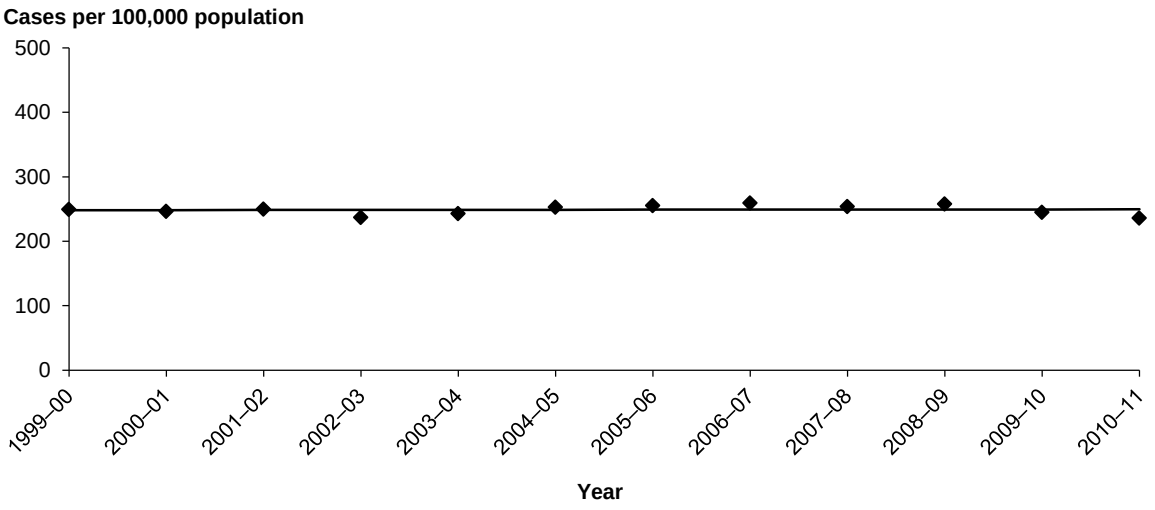


Note: The single line represents the number of cases of transport injury that occurred in 1999–00. It is referred to as the baseline.

Figure 4.3: Number of cases of transport injury, Australia, 1999–00 to 2010–11

4.3 How have rates of transport injury changed over time?

Age-standardised rates of transport injury showed little change from the beginning of the period. In 1999–00, the base rate was 249 cases per 100,000 population (Figure 4.4). No significant trend in age-standardised annual rates occurred over the period (95% CI: –0.4%, 0.5%).



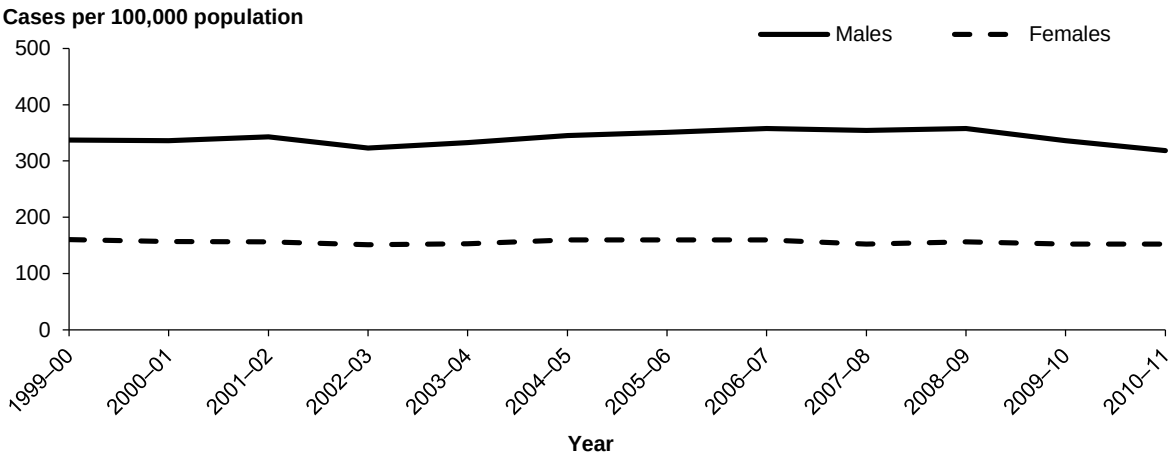
Notes

1. The line represents the modelled rate over the 12-year period, while symbols represent the actual age-standardised rate value for each year.
2. Data underpinning this figure are available in Table B.4 in Appendix B.

Figure 4.4: Modelled age-standardised rates of transport injury cases, Australia, 1999–00 to 2010–11

4.4 How have rates of transport injury varied by sex and age?

Age-standardised rates for males were consistently higher than for females at all times throughout the period (Figure 4.5). Rates were more variable for males than for females but neither sex evidenced any substantial change in transport injury rate over the period.



Note: Data underpinning this figure are available in Table B.5 in Appendix B.

Figure 4.5: Age-standardised rates of transport injury cases, by sex, Australia, 1999–00 to 2010–11

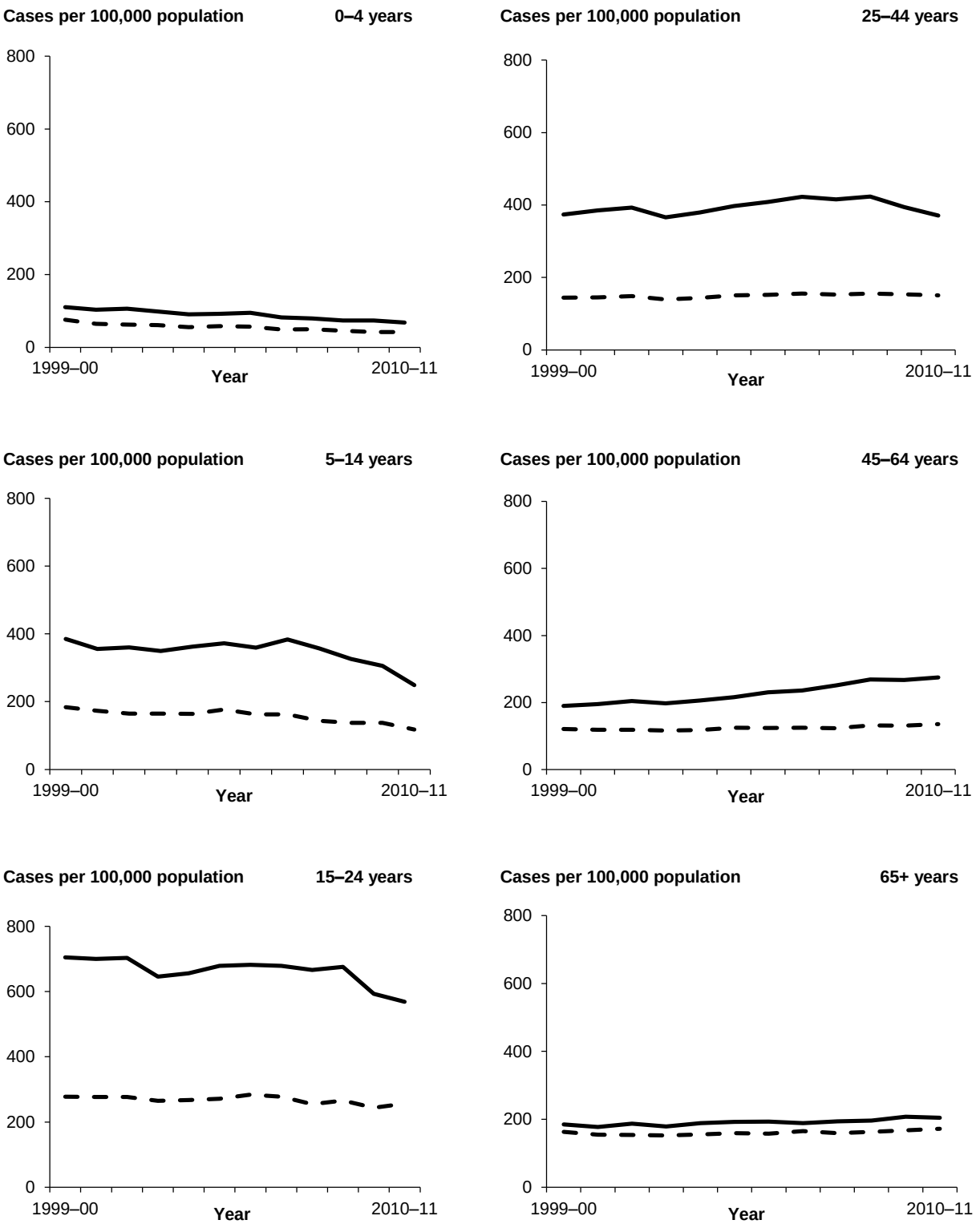
An examination of changes in rates of hospitalised injury over time by broad age group as well as sex is shown in Figure 4.6.

In contrast to the lack of strong trend in age-standardised rates, age-specific rates for males show noteworthy trends that differ with age group. Age-specific rates for females show less marked trends.

Rates of transport injury were low and declining in the youngest age group (0–4).

Rates for 5–14 and 15–24 year old males declined in the last few years. The decline began in 2006–07 for 5–14 year olds and in 2008–09 for 15–24 year olds. A much smaller decline was noted in 25–44 year old males from about 2008–09.

In contrast to the declines in younger age groups, rates of transport injury increased steadily for 45–64 year old males over the period. Much of this rise was accounted for by increasing rates of motorcycle and pedal cycle related injury (Henley & Harrison 2013).



Notes

1. Rates for males are indicated by the solid line and rates for females by the broken line in all charts.
2. Data underpinning this figure are available in Tables B.5 and B.6 in Appendix B.

Figure 4.6: Age-specific rates of transport injury cases, by age and sex, Australia, 1999–00 to 2010–11

4.5 How have rates of transport injury varied by remoteness?

Rates of transport injury by remoteness of usual residence showed little consistent change over the period taking into account year on year fluctuation (Figure 4.7).

Rates generally rose with increasing remoteness. Rates were highest for residents of *Very remote* and *Remote* areas. Rates for these two areas fluctuated more than rates for other areas, reflecting the small population and number of cases per year. Rates for the other areas fluctuated slightly and did not show marked trends.

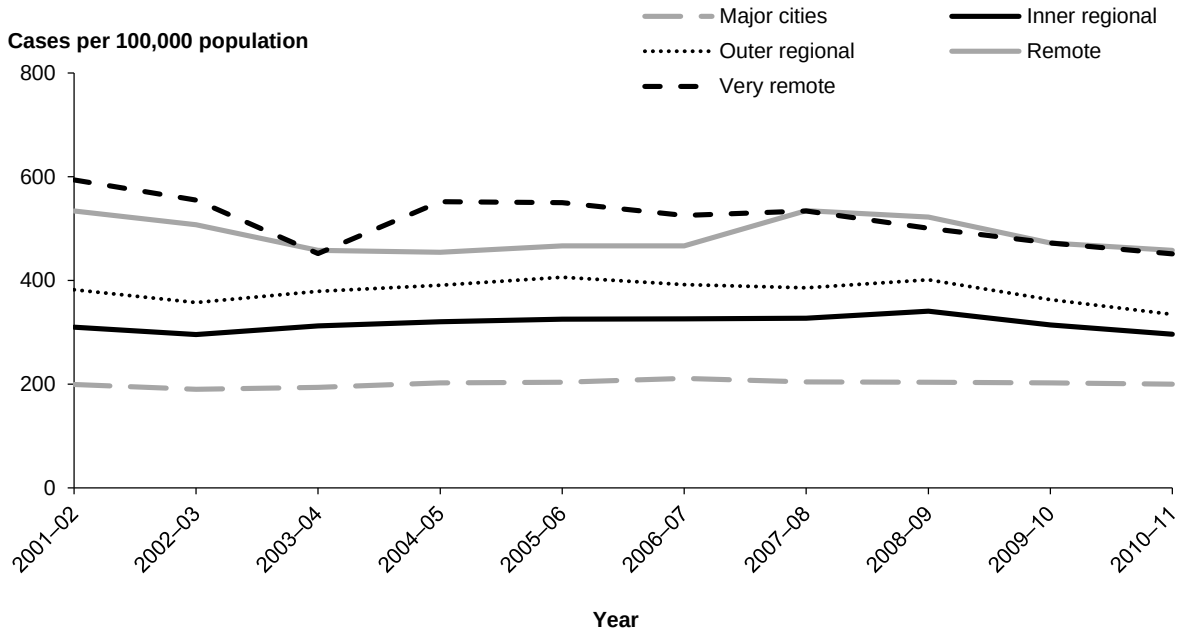
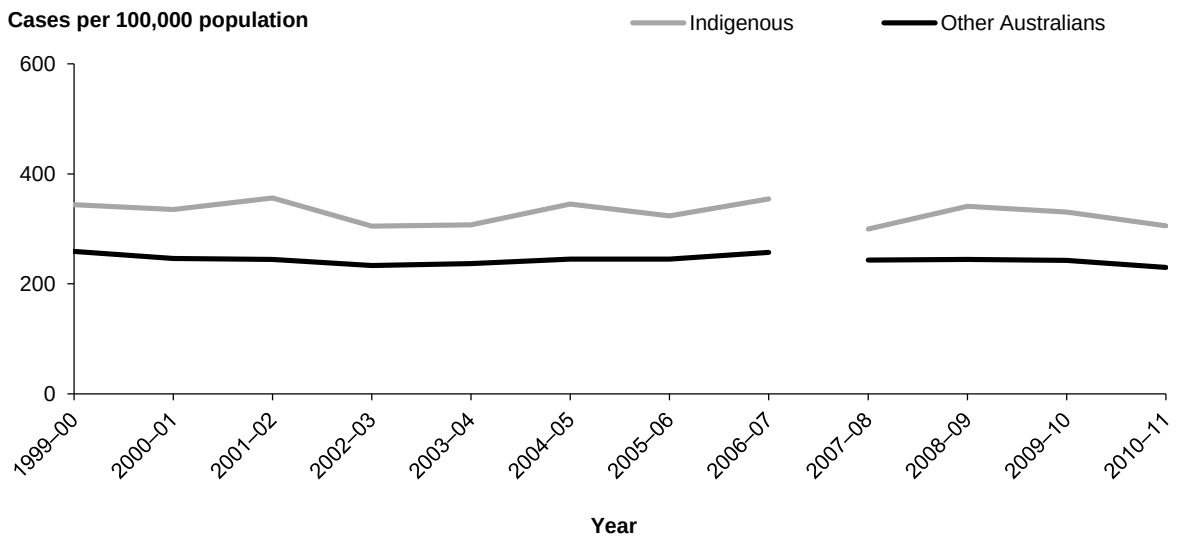


Figure 4.7: Age-standardised rates of transport injury cases, by remoteness of usual residence, Australia, 2001–02 to 2010–11

4.6 How have rates of transport injury in Indigenous people changed over time?

Age-standardised rates of transport injury fluctuated more for Indigenous people than for Other Australians (Figure 4.8). Neither series changes greatly over time, and rates were consistently higher for Indigenous people compared with Other Australians.

The change in states and territories with sufficient quality of Indigenous ascertainment during the period is indicated by the break in series in Figure 4.8. Before 2007–08, 4 jurisdictions (WA, SA, NT, Qld) were included. After this, cases from New South Wales and Victoria were added.



Notes

1. Four jurisdictions (WA, SA, NT, Qld) were included between 1999–00 and 2006–07. Six jurisdictions (WA, SA, NT, Qld, NSW and Vic) were included between 2007–08 and 2010–11. The different jurisdictional groupings are indicated by the break in series.

2. Data underpinning this figure are available in Table B.24 in Appendix B.

Figure 4.8: Age-standardised rates of transport injury cases, Aboriginal and Torres Strait Islander people and Other Australians, Australia, 1999–00 to 2010–11

5 Drowning and submersion

This chapter draws on data from the NHMD covering the years 1 July 1999 to 30 June 2011 to present an overview of trends in hospitalised unintentional drowning and submersion injury in Australia.

The term 'drowning' is used to refer to 'the process of experiencing respiratory impairment from submersion/immersion in liquid' (van Beek et al. 2005). Drowning can have various outcomes: death, survival with lasting effects of greater or lesser severity, or survival with no detectable consequences. 'Near-drowning' or submersion is less well defined. It can refer to survived episodes of respiratory impairment from submersion/immersion in liquid. It can also refer to episodes in which a person nearly, but not quite, experiences respiratory impairment from submersion/immersion in liquid (for example, a person who becomes exhausted while swimming, but manages to reach a shore, perhaps with assistance).

What methods were used?

This chapter includes injury cases meeting the criteria set out in section 1.3, providing that the first reported external cause code was in the ICD-10-AM range W65–W74 (*Accidental drowning and submersion*) in Chapter *XX External causes of morbidity and mortality*.

Relevant terms and information regarding the data used in this chapter are summarised in Boxes 1.1, 1.2 and 5.1. Further information on methods is provided in Appendix A.

Box 5.1: External causes of drowning and submersion injury

This chapter focuses on the **Accidental drowning and submersion** (W65–W74) section of Chapter XX *External causes of morbidity and mortality* which contains the following groups:

- Drowning and submersion while in bath-tub (W65)
- Drowning and submersion following fall into bath-tub (W66)
- Drowning and submersion while in swimming-pool (W67)
- Drowning and submersion following fall into swimming-pool (W68)
- Drowning and submersion while in natural water (W69)
- Drowning and submersion following fall into natural water (W70)
- Other specified drowning and submersion (W73)
- Unspecified drowning and submersion (W74).

5.1 How many hospitalised drowning and submersion cases were there in 2010–11?

There were an estimated 495 drowning and submersion cases during 2010–11 (Table 5.1). More males than females were hospitalised with a male to female ratio of 1.7:1. The age-standardised rate was also higher for males compared with females.

Table 5.1: Key indicators for drowning and submersion cases, Australia, 2010–11

Indicators	Males	Females	Persons
Estimated drowning and submersion cases	311	184	495
Per cent of all injury cases	0.12	0.10	0.11
Age-standardised rate/100,000 population	2.8	1.7	2.2

Age and sex

The largest proportion of drowning and submersion injuries occurred in children aged 0–4 (43%) (Table 5.2). In contrast, just 5% of all external cause injuries occurred in this age group (Table 2.2). A greater proportion of hospitalisations for drowning were for girls (51%) than for boys (38%) aged 0–4. Drowning and near drowning injuries were more common in men aged 15+ than in women.

Table 5.2: Drowning and submersion cases, by age, Australia, 2010–11

	Males		Females		Persons	
Age group	Number	Per cent	Number	Per cent	Number	Per cent
0–4	119	38.3	93	50.5	212	42.8
5–14	29	9.3	27	14.7	56	11.3
15–24	39	12.5	14	7.6	53	10.7
25–44	60	19.3	19	10.3	79	16.0
45–64	46	14.8	16	8.7	62	12.5
65+	18	5.8	15	8.2	33	6.7
Total	**311**	**100.0**	**184**	**100.0**	**495**	**100.0**

Age-specific rates were presented for the 6 age groups due to small cases numbers, particularly at older ages (Figure 5.1). Males had a higher rate of drowning and submersion across all age groups except 5–14 where the rates for males and females were the same (2 cases per 100,000 population each). The rate for males was highest at age 0–4 (16 per 100,000), and similarly for females (13 per 100,000).

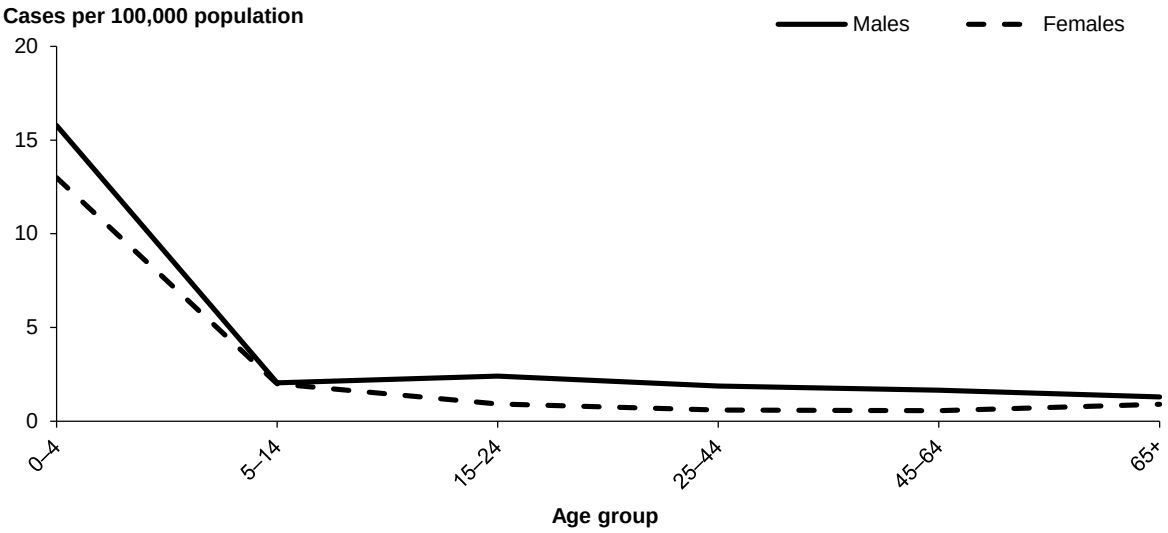


Figure 5.1: Age-specific rates of drowning and submersion cases, by sex, Australia, 2010–11

Remoteness of usual residence

The age-standardised rate of injury increased with increasing remoteness (Table 5.3). The rate of drowning and submersion in *Very remote* areas was double the rate in the *Major cities*. Caution should be exercised in interpreting these results because of low case numbers, particularly outside the *Major cities*.

Table 5.3: Drowning and submersion cases by remoteness of usual residence, Australia, 2010–11

	Remoteness of usual residence					
Indicators	**Major cities**	**Inner regional**	**Outer regional**	**Remote**	**Very remote**	**Total[(a)]**
Estimated drowning and submersion cases	298	103	51	10	9	471
Per cent	63.3	21.9	10.8	2.1	1.9	100.0
Age-standardised rate/100,000 population	2.0	2.4	2.5	2.9	4.0	2.2

(a) Excludes 24 cases where remoteness was not reported or residence was reported as an external territory.

Aboriginal and Torres Strait Islander people

There were an estimated 36 cases of Indigenous people hospitalised as a result of drowning and submersion in 2010–11 (Table 5.4). More males than females were hospitalised. As a proportion of all injury cases, drowning and submersion cases among Indigenous people (0.2%) was double that of Other Australians (0.1%). The age-standardised rates of drowning and submersion were higher among Indigenous people, for males and females, compared with Other Australians. Caution should be exercised in interpreting these results because of low case numbers among Indigenous people in particular.

Table 5.4: Key indicators for drowning and submersion cases, Aboriginal and Torres Strait Islander people and Other Australians, Australia[(a)], 2010–11

	Aboriginal and Torres Strait Islander people			Other Australians		
Indicators	**Males**	**Females**	**Persons**	**Males**	**Females**	**Persons**
Estimated drowning and submersion cases	22	14	36	272	154	426
Per cent of all cases of hospitalisations for injury	0.2	0.2	0.2	0.1	0.1	0.1
Age-standardised rate/100,000 population	5.4	4.0	4.7	2.6	1.5	2.1

(a) Excludes data for Tasmania and the Australian Capital Territory (see Box 1.2).

As can be seen in Table 5.5, relatively few Aboriginal and Torres Strait Islander children aged 0–4 were hospitalised as a result of drowning and submersion injury compared to their Other Australian counterparts. About two-thirds of all cases occurred among Aboriginal and Torres Strait Islander children aged 0–4 compared with just under half of all cases for Other Australians aged 0–4. The age-specific rates of drowning and submersion among Aboriginal and Torres Strait Islander children were much higher than for Other Australians; this was true for boys and girls.

Table 5.5: Key indicators for drowning and submersion cases in 0–4 year olds, Aboriginal and Torres Strait Islander people and Other Australians, Australia[(a)], 2010–11

	Aboriginal and Torres Strait Islander people			Other Australians		
Indicators	**Males**	**Females**	**Persons**	**Males**	**Females**	**Persons**
Estimated drowning and submersion cases	15	8	23	104	81	185
Per cent of all ages drowning and submersions cases	68.2	57.1	63.9	38.2	52.6	43.4
Age-specific rate/100,000 population	44	25	34	15	13	14

(a) Excludes data for Tasmania and the Australian Capital Territory (see Box 1.2).

Location of drowning incident

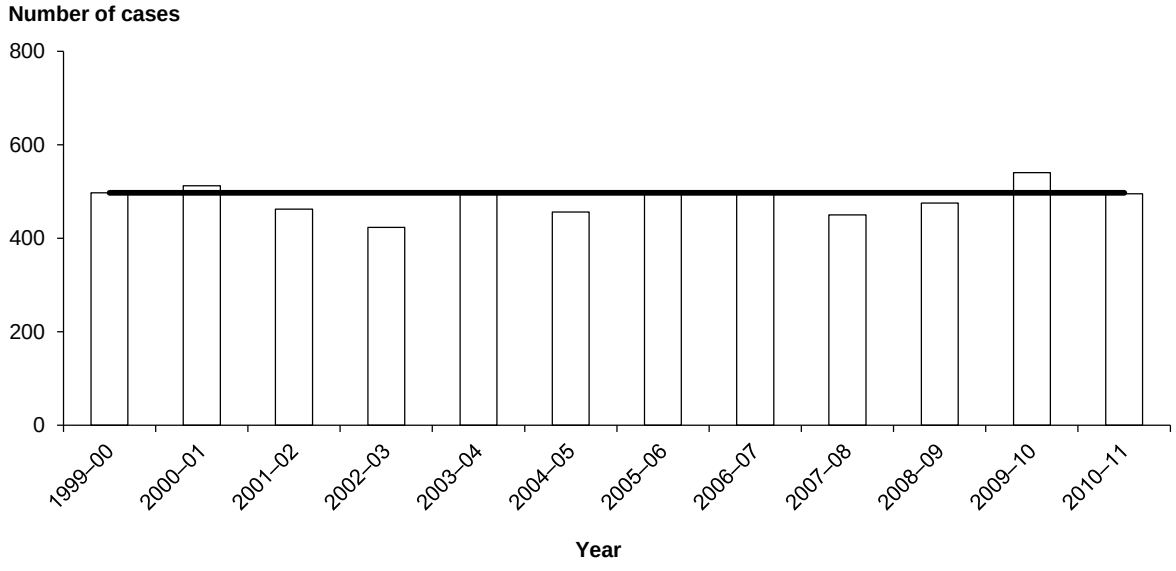
Place of occurrence information is contained within the drowning and submersion external cause categories, for example W65 *Drowning and submersion while in bath-tub*. Nearly one-third of all drowning-related cases in Australia in 2010–11 occurred in a swimming pool (29%, 145 cases) (Table 5.6). Children under 15 accounted for 80% of all swimming pool drowning–related cases; those aged 0–4 constituted 68% of these alone. Almost all cases of bathtub drowning-related injuries occurred in young children aged 0–4 (92%). The second most common setting for drowning and submersion cases overall was a body of natural water (including rivers, lakes and the ocean) (20%), and it was the principal setting for adults.

Table 5.6: Drowning and submersion cases, by age and location, Australia, 2010–11

	Swimming pool		Natural water		Bathtub		Other or unspecified		Total	
Age group	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
0–4	99	68.3	11	11.0	48	92.3	54	27.3	212	42.8
5–14	17	11.7	n.p.	n.p.	n.p.	n.p.	27	13.6	56	11.3
15–24	n.p.	n.p.	19	19.0	n.p.	n.p.	28	14.1	53	10.7
25–44	n.p.	n.p.	31	31.0	n.p.	n.p.	39	19.7	79	16.0
45–64	n.p.	n.p.	21	21.0	n.p.	n.p.	35	17.7	62	12.5
65+	8	5.5	n.p.	n.p.	n.p.	n.p.	15	7.6	33	6.7
Total	**145**	**100.0**	**100**	**100.0**	**52**	**100.0**	**198**	**100.0**	**495**	**100.0**

5.2 How have hospitalisations for drowning and submersion changed over time?

Figure 5.2 compares the number of cases of drowning and submersion each year with the baseline number of cases (497 in 1999–00). Case numbers have generally stayed below the baseline except in 2001–02 (512) and more recently in 2009–10 (540).

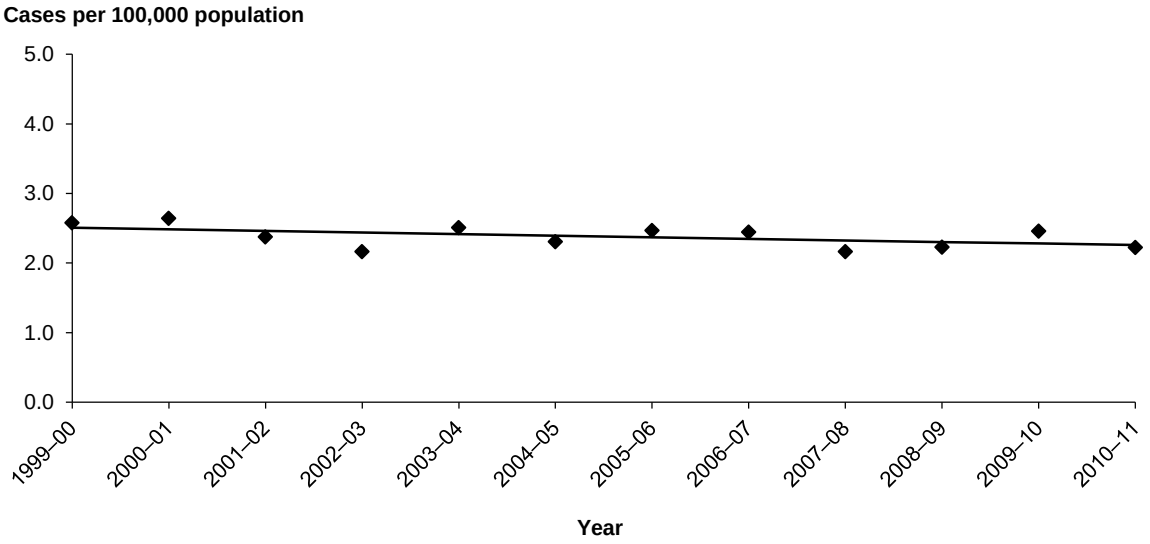


Note: The single line represents the number of cases of drowning and submersion injury that occurred in 1999–00. It is referred to as the baseline.

Figure 5.2: Number of cases of drowning and submersion, Australia, 1999–00 to 2010–11

5.3 How have rates of drowning and submersion changed over time?

Age-standardised annual rates of drowning and submersion cases showed a small decrease from the beginning of the period. In 1999–00, the rate was 2.6 cases per 100,000 population and in 2010–11 it was 2.2 (Figure 5.3). The decrease in modelled rates averaged 0.9% per year and was statistically significant (95% CI: –1.8%, –0.040%).

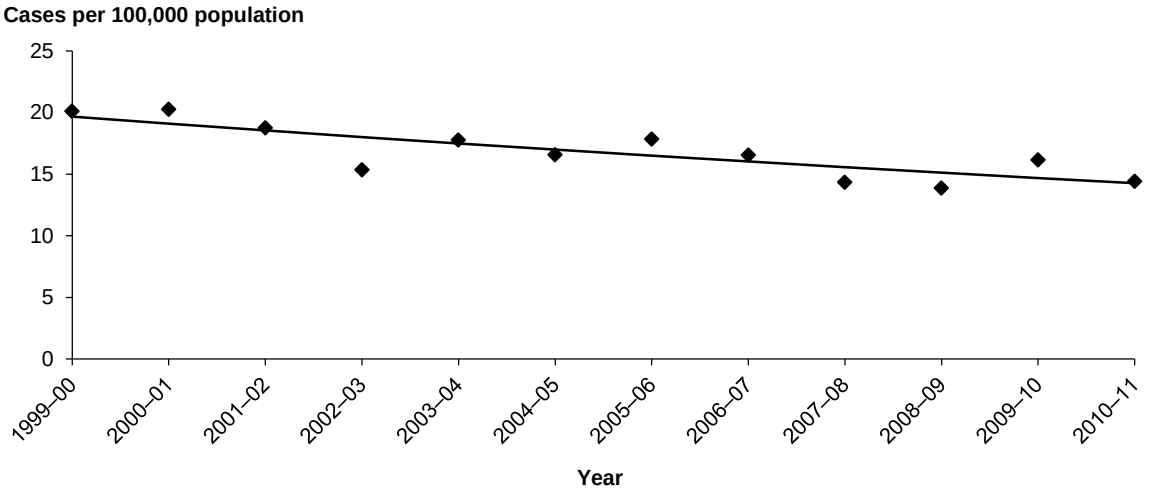


Notes

1. The line represents the modelled rate over the twelve-year period, while symbols represent the actual age-standardised rate value for each year.
2. Data underpinning this figure are available in Table B.4 in Appendix B.

Figure 5.3: Modelled age-standardised rates of drowning and submersion cases, Australia, 1999–00 to 2010–11

As the great majority of drowning and submersion cases occur at 0–4 years, a separate trend analysis was undertaken (Figure 5.4). A steeper decline in rates of drowning and submersion was evident in young children over the period than in all-ages rates. The decrease in rate averaged 2.9% per year and was statistically significant (95% CI: –1.8%, –4.0%).

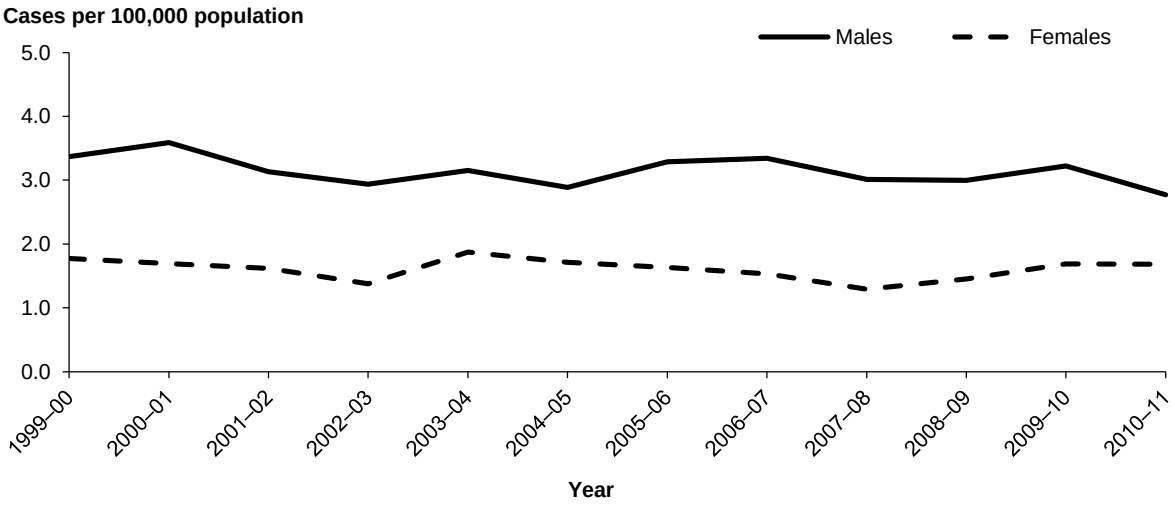


Note: The line represents the modelled rate over the 12-year period, while symbols represent the actual age-standardised rate value for each year.

Figure 5.4: Modelled age-standardised rates of drowning and submersion cases, 0–4 year olds, Australia, 1999–00 to 2010–11

5.4 How have rates of drowning and submersion varied by sex and age?

The age-standardised rate of drowning and submersion fluctuated primarily due to small case numbers (Figure 5.5). Age-standardised rates for males were consistently higher than for females at all times.

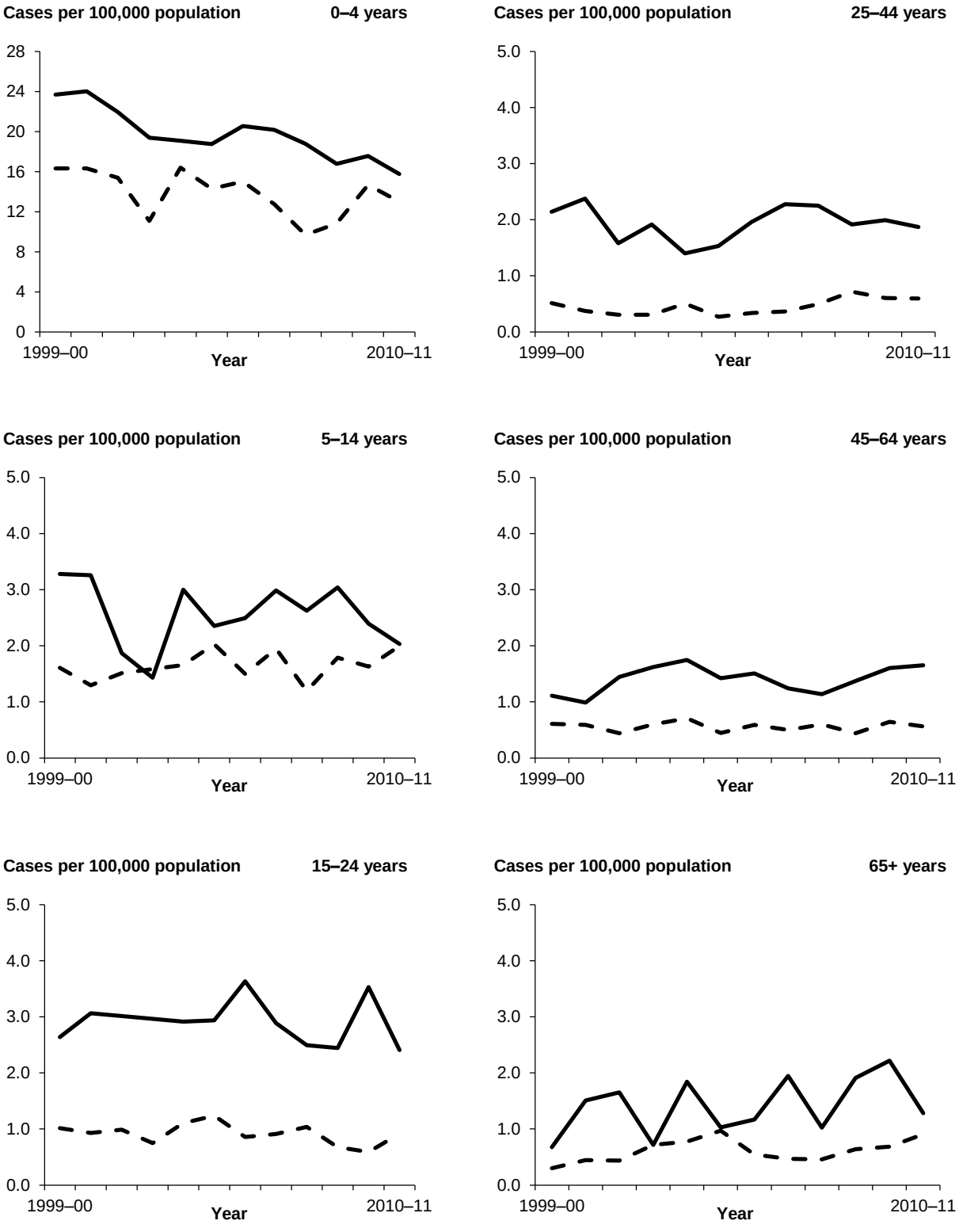


Note: Data underpinning this figure are available in Table B.7 in Appendix B.

Figure 5.5: Age-standardised rates of drowning and submersion cases, by sex, Australia, 1999–00 to 2010–11

An examination of the changes in drowning and submersion over time, by age and sex, is shown in Figure 5.6. As with the overall age-standardised rates, age-specific rates fluctuated. Due to the small number of cases each year in all age groups, particularly in age groups other than 0–4, caution should be exercised in interpreting the charts.

Overall the decrease in age-specific rates of drowning and submersion in 0–4 year olds can be seen clearly for both males and females, with the rate of decline steeper in males. The rate of injury at the beginning of the period for boys was 24 cases per 100,000 population and 16 for girls. In 2010–11, the rate for boys was 16 and for girls it was 13.



Notes

1. Rates for males are indicated by the solid line and rates for females by the broken line in all charts.
2. Data underpinning this figure are available in Tables B.7 and B.8 in Appendix B.

Figure 5.6: Age-specific rates of drowning and submersion injury cases, by age and sex, Australia, 1999–00 to 2010–11

5.5 How have rates of drowning and submersion varied by remoteness?

Age-standardised rates of drowning and submersion fluctuated with remoteness of usual residence and over time (Figure 5.7). Generally speaking, rates were lower over time in *Major cities* and *Inner regional* areas and highest in *Very remote* areas. Fluctuations in the rates by year reflect the small case numbers involved and were more prominent in *Remote* and *Very remote* areas where fewer cases of drowning and near drowning occur each year.

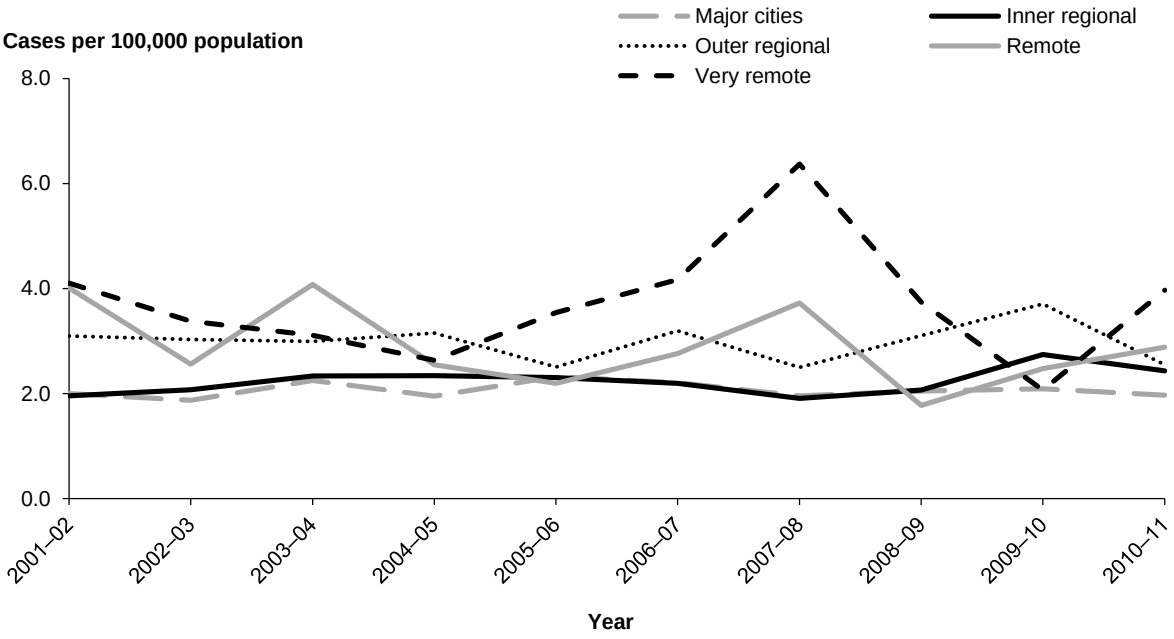
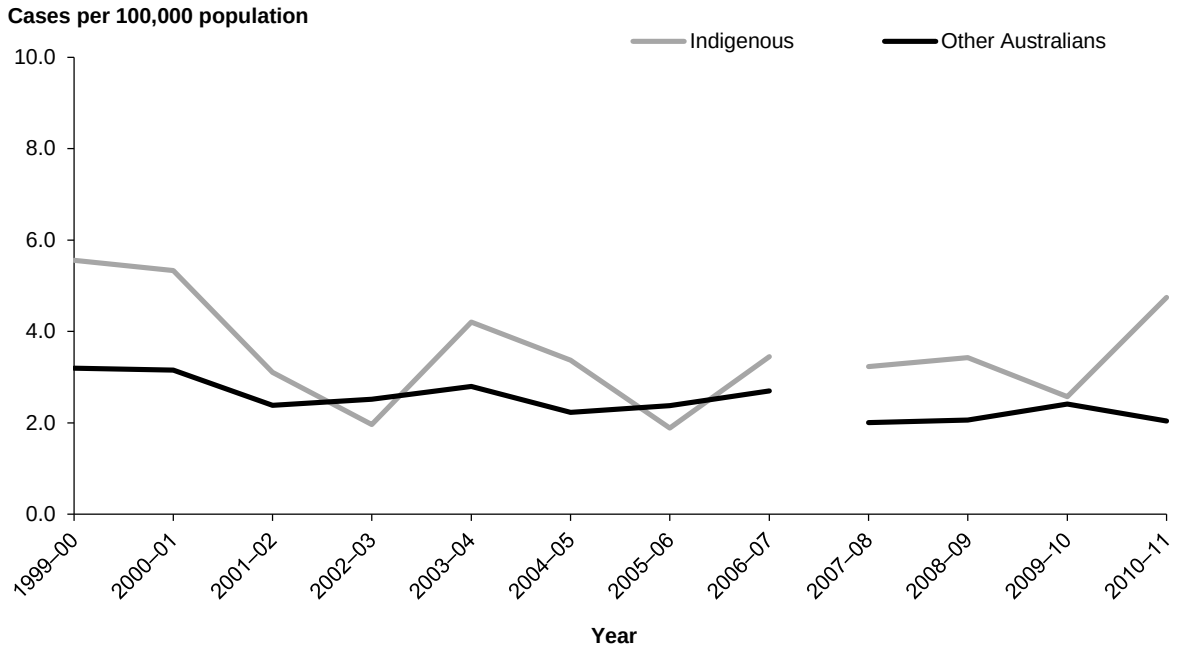


Figure 5.7: Age-standardised rates of drowning and submersion cases, by remoteness of usual residence, Australia, 2001–02 to 2010–11

5.6 How have rates of drowning and submersion in Indigenous people changed over time?

The change in states and territories with sufficient quality of Indigenous ascertainment is indicated by the break in series in Figure 5.8. Before 2007–08, 4 jurisdictions (WA, SA, NT, Qld) were included. After this, cases from New South Wales and Victoria were added.

During the period the age-standardised rate of drowning and submersion fluctuated for Indigenous people, largely as a consequence of small numbers of cases (Figure 5.8); the number of cases ranged between 10 and 36. Age-standardised rates for Other Australians also fluctuated but not to the same degree. Rates were mostly higher for Indigenous people compared with Other Australians in each year but again caution must be exercised in interpreting differences due to small case numbers.



Notes

1. Four jurisdictions (WA, SA, NT, Qld) were included between 1999–00 and 2006–07. Six jurisdictions (WA, SA, NT, Qld, NSW and Vic) were included between 2007–08 and 2010–11. The different jurisdictional groupings are indicated by the break in series.

2. Data underpinning this figure are available in Table B.25 in Appendix B.

Figure 5.8: Age-standardised rates of drowning and submersion cases, Aboriginal and Torres Strait Islander people and Other Australians, Australia, 1999–00 to 2010–11

6 Poisoning, pharmaceuticals

This chapter draws on data from the NHMD covering the years 1 July 1999 to 30 June 2011 to present an overview of trends in hospitalised unintentional poisoning by pharmaceuticals in Australia. This chapter describes admissions where the first reported external cause code refers to accidental poisoning by a drug or medicament. It includes drugs given or taken in error or inadvertently, and accidental over-dosage. This chapter does not include poisoning from non-pharmaceutical substances, intentional self-poisoning by drugs, assault by drug-related poisoning, or poisoning of undetermined intent.

What methods were used?

This chapter includes injury cases meeting the criteria set out in section 1.3, providing that the first reported external cause code is in the ICD-10-AM range X40–X44 (within *Accidental poisoning by and exposure to noxious substances*) in Chapter *XX External causes of morbidity and mortality*.

Relevant terms and information regarding the data used in this chapter are summarised in Boxes 1.1, 1.2 and 6.1. Further information on methods is provided in Appendix A.

Box 6.1: External causes of poisoning by pharmaceuticals

This chapter focuses on the **Accidental poisoning by and exposure to noxious substances** (X40–X49) section of Chapter XX *External causes of morbidity and mortality* and is restricted to the first five of those groups (X40–X44) (the remaining groups are the focus of Chapter 7 of this report):

- 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).

6.1 How many hospitalised poisoning by pharmaceuticals cases were there in 2010–11?

There were an estimated 6,598 poisoning by pharmaceuticals cases during 2010–11 (Table 6.1). Males and females were hospitalised in similar numbers, and the age-standardised rate was also similar for males and females.

Table 6.1: Key indicators for poisoning by pharmaceuticals cases, Australia, 2010–11

Indicators	Males	Females	Persons
Estimated poisoning by pharmaceuticals cases	3,297	3,301	6,598
Per cent of all injury cases	1.3	1.7	1.5
Age-standardised rate/100,000 population	29	29	29

Age and sex

The largest proportion of poisoning by pharmaceuticals cases was in people aged 25–44 (29%); this was also true of males and females (Table 6.2). However, the proportion of poisoning by pharmaceuticals cases in young children aged 0–4 (17%) was much higher than all external cause injuries in this age group (5%) (Table 2.2). Females had higher proportions of poisoning by pharmaceuticals cases than males at ages 15–24 and 65+.

Table 6.2: Poisoning by pharmaceuticals cases, by age, Australia, 2010–11

	Males		Females		Persons	
Age group	Number	Per cent	Number	Per cent	Number	Per cent
0–4	615	18.7	534	16.2	1,149	17.4
5–14	93	2.8	98	3.0	191	2.9
15–24	422	12.8	541	16.4	963	14.6
25–44	1,051	31.9	832	25.2	1,883	28.5
45–64	559	17.0	568	17.2	1,127	17.1
65+	557	16.9	728	22.1	1,285	19.5
Total	**3,297**	**100.0**	**3,301**	**100.0**	**6,598**	**100.0**

Age-specific rates were highest for the youngest and oldest age groups (Figure 6.1). Rates for males and females were similar, except between 15–19 and 40–44 years. The greatest difference in rates occurred at 15–19 where there were higher rates for females than for males (35 and 20 per 100,000 population, respectively).

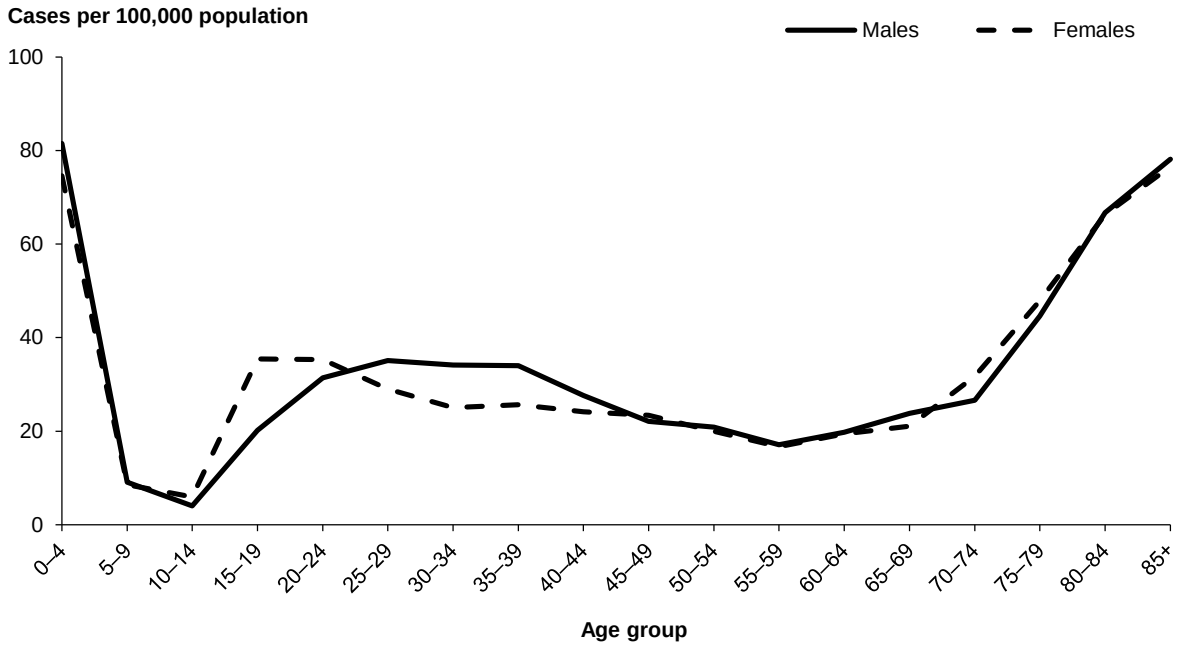


Figure 6.1: Age-specific rates of poisoning by pharmaceuticals cases, by sex, Australia, 2010–11

Remoteness of usual residence

The age-standardised rate of hospitalised poisoning by pharmaceuticals in 2010–11 generally increased with remoteness (Table 6.3). The lowest rate was observed for residents of *Very remote* areas (26 cases per 100,000 population) and the highest for residents of *Remote* areas (37). Caution should be exercised in interpreting these results because of low numbers of cases in *Remote* and *Very remote* areas.

Table 6.3: Poisoning by pharmaceuticals cases, by remoteness of usual residence, Australia, 2010–11

	Remoteness of usual residence					
Indicators	Major cities	Inner regional	Outer regional	Remote	Very remote	Total[(a)]
Estimated poisoning by pharmaceuticals cases	4,423	1,229	686	116	52	6,506
Per cent	68.0	18.9	10.5	1.8	0.8	100.0
Age-standardised rate/100,000 population	28	29	34	37	26	29

(a) Excludes 92 cases where remoteness was not reported or residence was reported as an external territory.

Aboriginal and Torres Strait Islander people

There were an estimated 349 cases of Indigenous people hospitalised as a result of poisoning by pharmaceuticals in 2010–11 (Table 6.4). Almost exactly the same number of males were hospitalised as females. Poisoning by pharmaceuticals among Indigenous people made up a similar proportion (1.8%) of all hospitalised injury cases compared with Other Australians (1.5%). The age-standardised rates of poisoning by pharmaceuticals among Indigenous people were more than twice that of Other Australians.

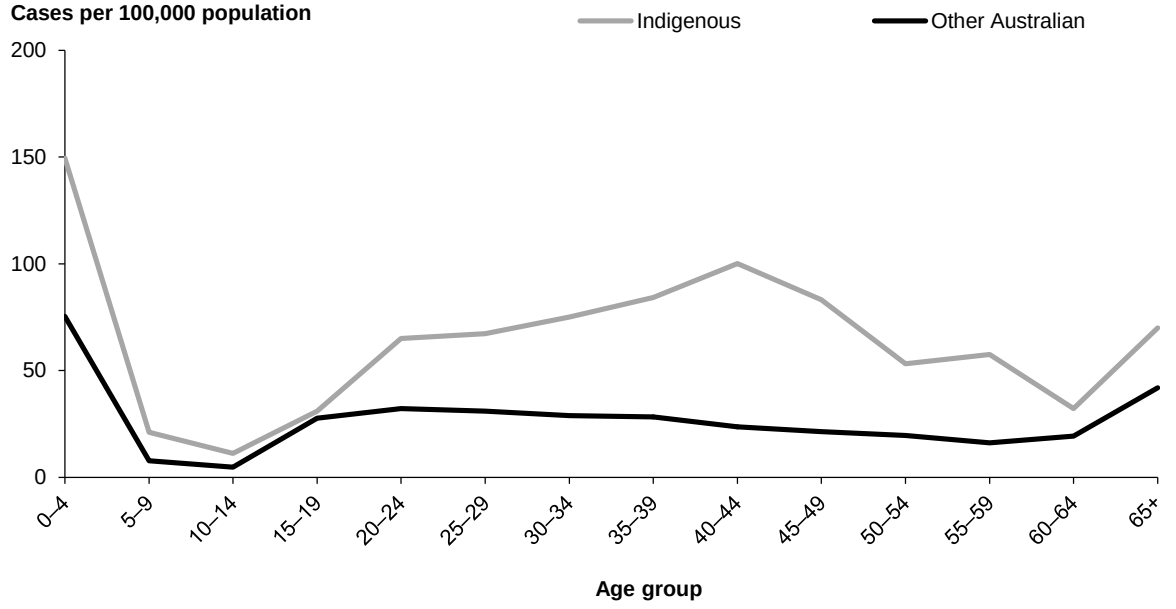
Table 6.4: Key indicators for poisoning by pharmaceuticals cases, Aboriginal and Torres Strait Islander people and Other Australians, Australia[(a)], 2010–11

	Aboriginal and Torres Strait Islander people			Other Australians		
Indicators	**Males**	**Females**	**Persons**	**Males**	**Females**	**Persons**
Estimated poisoning by pharmaceuticals cases	174	175	349	3,017	3,021	6,038
Per cent of all cases of hospitalisations for injury	1.6	2.1	1.8	1.4	1.8	1.5
Age-standardised rate/100,000 population	69	64	66	29	29	29

(a) Excludes data for Tasmania and the Australian Capital Territory (see Box 1.2).

Overall, rates of poisoning by pharmaceuticals were higher in all age categories among Aboriginal and Torres Strait Islander people compared with Other Australians, although the difference was much smaller from about 5–9 to 15–19 years (Figure 6.2). Due to small case numbers among Aboriginal and Torres Strait Islander people from about 20–24 years, the fluctuation and difference in rates compared with Other Australians should not be over interpreted.

The rates for Aboriginal and Torres Strait Islander children aged 0–4 were much higher than for Other Australians (146 and 79 per 100,000 population respectively). A much greater proportion of all cases of poisoning by pharmaceuticals occurred among Aboriginal and Torres Strait Islander children aged 0–4 (29%, 100 cases) compared with Other Australians (17%, 1,016 cases).



Note: Excludes data for Tasmania and the Australian Capital Territory (see Box 1.2).

Figure 6.2: Age-specific rates of poisoning by pharmaceuticals cases, by age, Aboriginal and Torres Strait Islander people and Other Australians, Australia, 2010–11

Type of pharmaceutical

In this chapter, external causes were tabulated to describe the groups of drugs responsible for poisoning cases (see Box 6.1). However, principal diagnoses can offer a more detailed description of the substances involved for each of these groups. In Table 6.5 and accompanying text, the top three principal diagnosis categories associated with the major external causes for poisoning by pharmaceuticals have been presented.

Table 6.5: Poisoning by pharmaceuticals cases and drug type, Australia, 2010–11

Accidental poisoning by and exposure to:	Number	Per cent
Nonopioid analgesics, antipyretics and antirheumatics	916	13.9
4-Aminophenol derivatives	*746*	*81.4*
Other nonsteroidal anti-inflammatory drugs (NSAID)	*120*	*13.1*
Salicylates	*37*	*4.0*
Antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs	2,377	36.0
Benzodiazepines	*919*	*38.7*
Other and unspecified antipsychotics and neuroleptics	*340*	*14.3*
Psychostimulants with potential for use disorder	*257*	*10.8*
Narcotics and psychodysleptics (hallucinogens)	1,138	17.2
Other opioids (codeine and morphine)	*437*	*38.4*
Heroin	*277*	*24.3*
Other synthetic narcotics (pethidine)	*141*	*12.4*
Other drugs acting on the autonomic nervous system	249	3.8
ß-Adrenoreceptor antagonists, NEC	*131*	*52.6*
Other parasympatholytics (anticholinergics and antimuscarinics) and spasmolytics, NEC	*55*	*22.1*
a-Adrenoreceptor antagonists, NEC	*17*	*6.8*
Other and unspecified drugs, medicaments and biological substances	1,918	29.1
Insulin and oral hypoglycaemic [antidiabetic] drugs	*338*	*17.6*
Other and unspecified drugs, medicaments and biological substances	*192*	*10.0*
Anticoagulants	*181*	*9.4*
Total	**6,598**	**100**

Note: The external cause groups are presented in bold. Information about the specific drugs types taken from the principal diagnosis codes are presented in italics.

- Fourteen per cent of cases (916 cases) were *Accidental poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics* Most of these (81%) involved 4-aminophenol derivatives such as paracetamol and other non-steroidal anti-inflammatory drugs (Table 6.5).
- Thirty-six per cent (2,377 cases) were *Accidental poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs*. This category includes benzodiazepines (39%), other and unspecified antipsychotics and neuroleptics (14%), and psychostimulants with potential for use disorder (11%).
- Seventeen per cent (1,138 cases) were *Accidental poisoning by and exposure to narcotics and psychodysleptics (hallucinogens), not elsewhere classified*—of which 38% were 'other' opioids

such as codeine and morphine, 24% were heroin and 12% were other synthetic narcotics including pethidine.

- Four per cent (131 cases) were *Accidental poisoning by and exposure to other drugs acting on the autonomic nervous system*, just over half (53%) of which were *ß-Adrenoreceptor antagonists, not elsewhere classified,* also known as beta-blockers.
- Twenty-nine per cent (1,918 cases) were *Accidental poisoning by and exposure to other and unspecified drugs, medicaments, and biological substances*. This is a diverse group that includes insulin and oral hypoglycaemic (antidiabetic) drugs (18%) and anticoagulants (9%).

Males (20%) had a higher proportion of poisoning by narcotics and psychodysleptics than females (14%) (Table 6.6). In contrast, females (16%) had higher proportions of poisoning by nonopioid analgesics compared with males (12%).

The age distribution of cases differed between types of pharmaceutical (Figure 6.3). Compared with the other types shown, cases of poisoning involving narcotics and psychodysleptic substances were less likely to involve children and more likely to involve adults aged 25–64.

Table 6.6: Poisoning by pharmaceuticals cases and drug type, by sex, Australia, 2010–11

	Males		Females		Persons	
Accidental poisoning by and exposure to:	**Number**	**Per cent**	**Number**	**Per cent**	**Number**	**Per cent**
Nonopioid analgesics, antipyretics and antirheumatics	385	11.7	531	16.1	916	13.9
Antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs	1,141	34.6	1,236	37.4	2,377	36.0
Narcotics and psychodysleptics (hallucinogens)	674	20.4	464	14.1	1,138	17.2
Other drugs acting on the autonomic nervous system	126	3.8	123	3.7	249	3.8
Other and unspecified drugs, medicaments and biological substances	971	29.5	947	28.7	1,918	29.1
Total	**3,297**	**100.0**	**3,301**	**100.0**	**6,598**	**100.0**

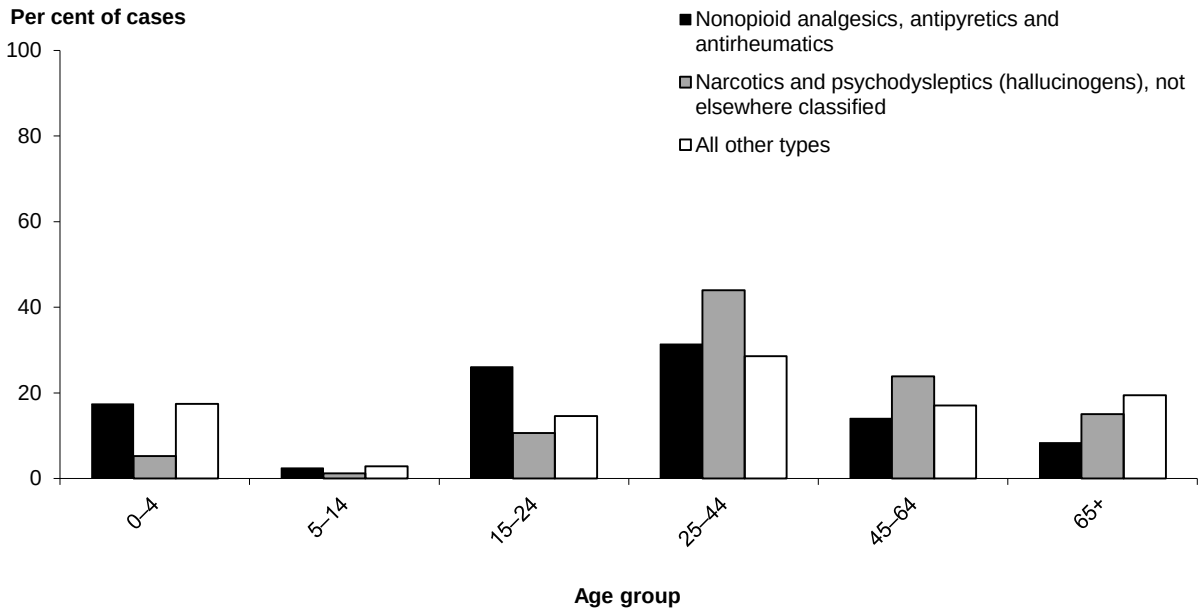
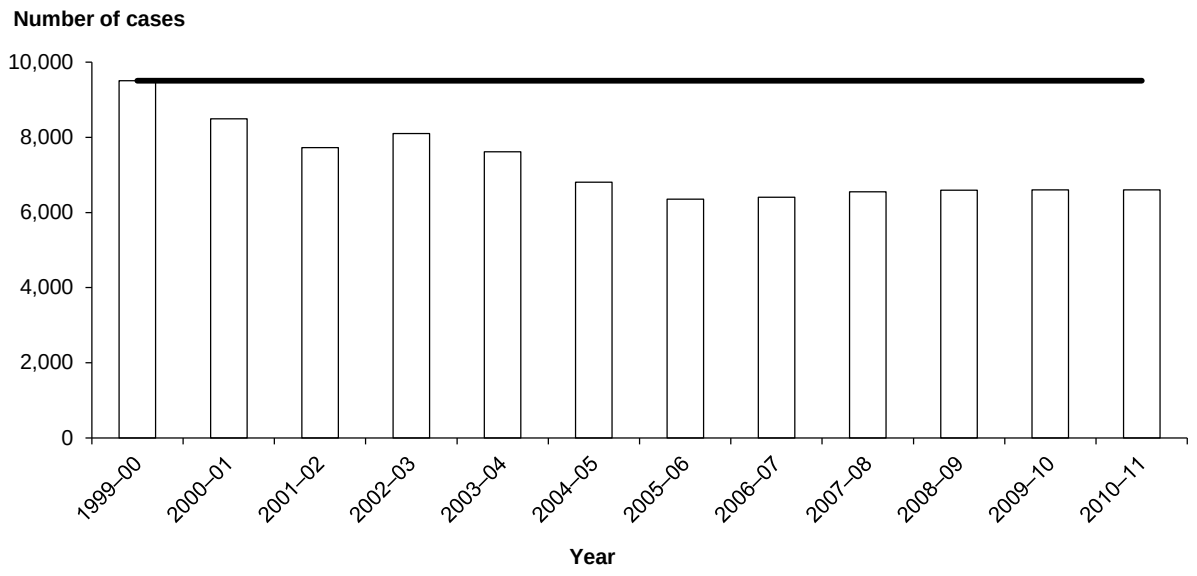


Figure 6.3: Proportion of poisoning by pharmaceutical cases, by drug type and age, Australia, 2010–11

6.2 How have hospitalisations for poisoning by pharmaceuticals changed over time?

Figure 6.4 compares the number of cases of poisoning by pharmaceuticals occurring each year with the baseline number of cases (9,503 in 1999–00). From 2000–01, the number of cases was lower than the baseline period. The largest difference occurred in 2005–06 when there were 3,145 fewer cases (6,358 in total) of hospitalised poisoning by pharmaceuticals. The beginning of the period under study corresponds with a period of decline in the availability of heroin in Australia (Topp, Day & Degenhardt 2003). As can be seen in Figure 6.5, the number of cases of poisoning by *Nonopioid analgesics, antipyretics and antirheumatics* (which includes heroin) halved in three years from 1999–00 (577 cases) to 2001–02 (255 cases). Neither of the other two types of drugs shown in Figure 6.4 demonstrated such a steep decline.



Note: The single line represents the number of cases of transport injury that occurred in 1999–00. It is referred to as the baseline.

Figure 6.4: Number of cases of poisoning by pharmaceuticals, Australia, 1999–00 to 2010–11

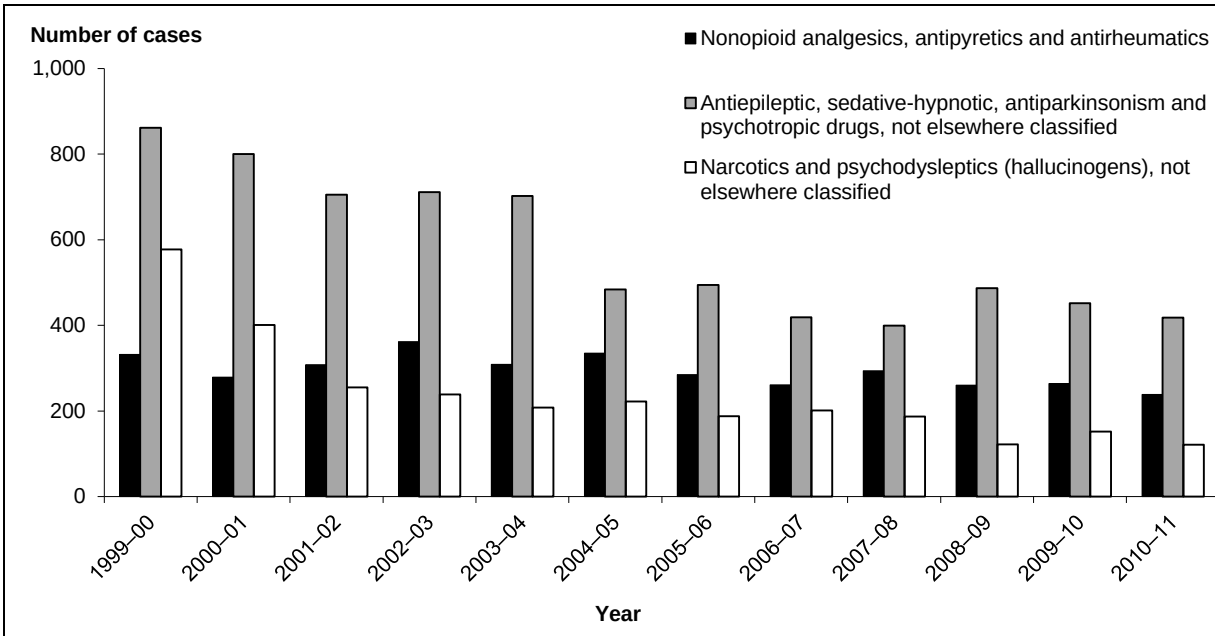
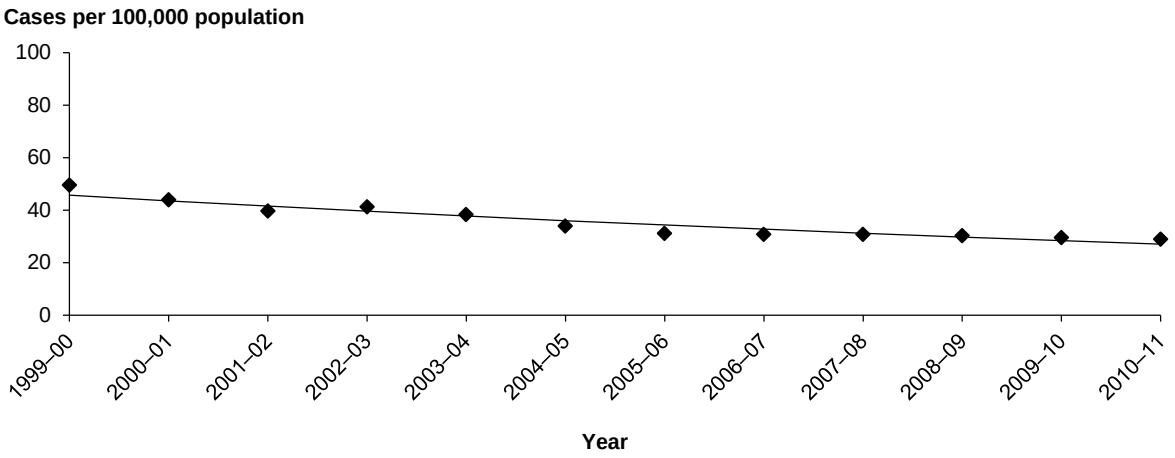


Figure 6.5: Selected types of poisoning by pharmaceuticals cases, Australia, 1999–00 to 2010–11

6.3 How have rates of poisoning by pharmaceuticals changed over time?

Rates of estimated cases of poisoning by pharmaceuticals decreased from 50 cases per 100,000 population in 1999–00 to 31 in 2005–06, after which there was little change (Figure 6.6). The decrease in rate over the entire 12-year period averaged –4.6% per year and was statistically significant (95% CI: –3.8%, –5.5%).



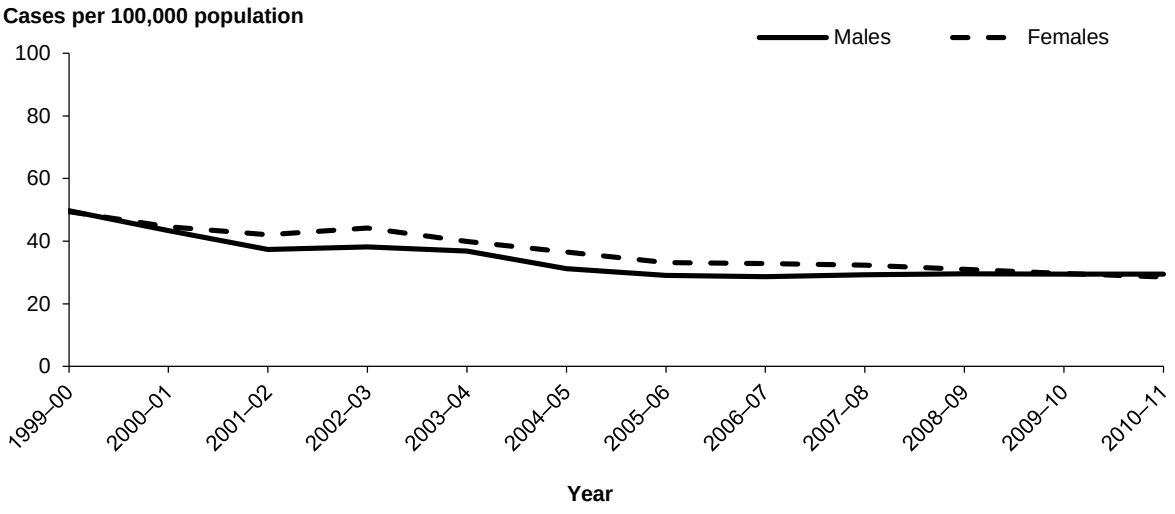
Notes

1. The line represents the modelled rate over the 12-year period, while symbols represent the actual age-standardised rate value for each year.
2. Data underpinning this figure are available in Table B.4 in Appendix B.

Figure 6.6: Modelled age-standardised rates of poisoning by pharmaceuticals cases, Australia, 1999–00 to 2010–11

6.4 How have rates of poisoning by pharmaceuticals varied by sex and age?

A decline in the age-standardised rate of poisoning by pharmaceuticals was evident for both males and females. The steepness of the decline was more pronounced in the earlier years and appeared to level out from about 2006–07 (Figure 6.7). Age-standardised rates for females were generally slightly higher than for males, except at the beginning and end of the period.



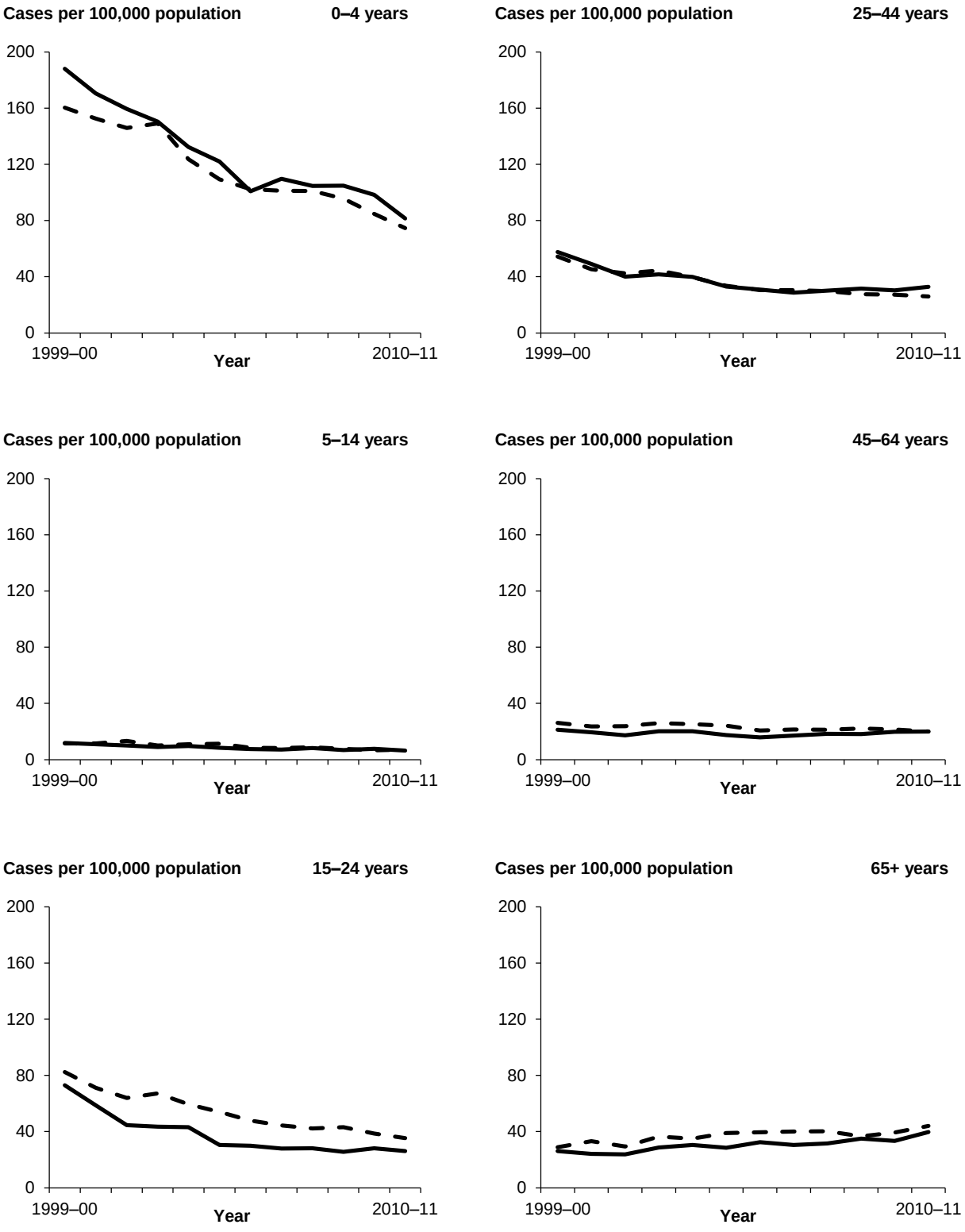
Note: Data underpinning this figure are available in Table B.9 in Appendix B.

Figure 6.7: Age-standardised rates of poisoning by pharmaceuticals cases, by sex, Australia, 1999–00 to 2010–11

An examination of the changes in age-specific rates of poisoning by pharmaceuticals over time, by age and sex, is shown in Figure 6.8. The decline in age-standardised rates shown in Figure 6.7 was evident in all age groups except 5–14, 45–64, and 65+ where a small rise in rates over the period is evident.

Rates in very young children aged 0–4 years declined throughout the period. An examination of the trend by type of substance shows steep declines in poisoning by *Antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs* and *Narcotics and psychodysleptics (hallucinogens).* In 1999–00, the number of cases of poisoning by *Antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs* was 3,866, decreasing to 2,377 in 2010–11. For poisoning by *Narcotics and psychodysleptics (hallucinogens)*, the number of cases in 1999–00 was 1,782 and in 2001–02 had almost halved to 948 cases.

Rates for 15–24 year olds declined more steeply at the beginning of the period to about 2001–02. Almost all of this early decrease was due to reductions in poisoning by *Antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs* and *Narcotics and psychodysleptics (hallucinogens).* Poisoning by *Antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs* reduced from 861 cases in 1999–00 to 418 cases in 2010–11. Even larger reductions were seen in poisoning by *Narcotics and psychodysleptics (hallucinogens)* where the number of cases decreased from 577 in 1999–00 to just 121 in 2010–11.



Notes

1. Rates for males are indicated by the solid line and rates for females by the broken line in all charts.
2. Data underpinning this figure are available in Tables B.9 and B.10 in Appendix B.

Figure 6.8: Age-specific rates of poisoning by pharmaceuticals cases, by age and sex, Australia, 1999–00 to 2010–11

6.5 How have rates of poisoning by pharmaceuticals varied by remoteness?

Rates of poisoning by pharmaceuticals declined over the period for all remoteness areas (Figure 6.9). Age-standardised rates fluctuated over time in all areas other than *Major cities,* making a clear pattern of the effect of remoteness difficult to discern. Much of the fluctuation was due to small case numbers, particularly in the more remote areas.

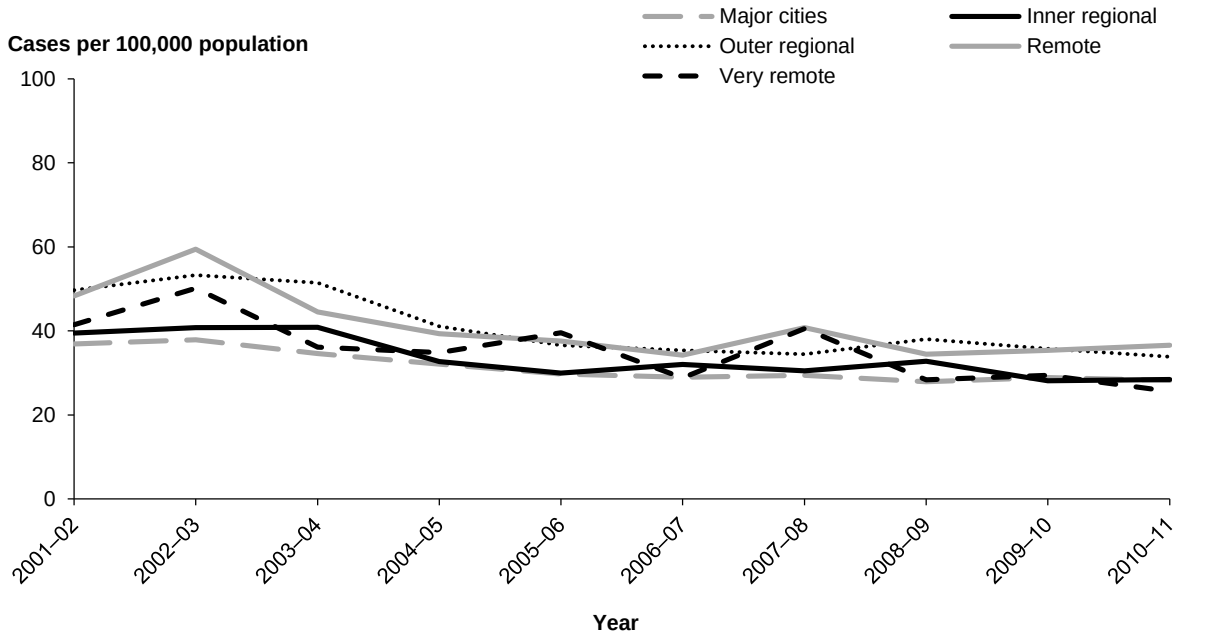


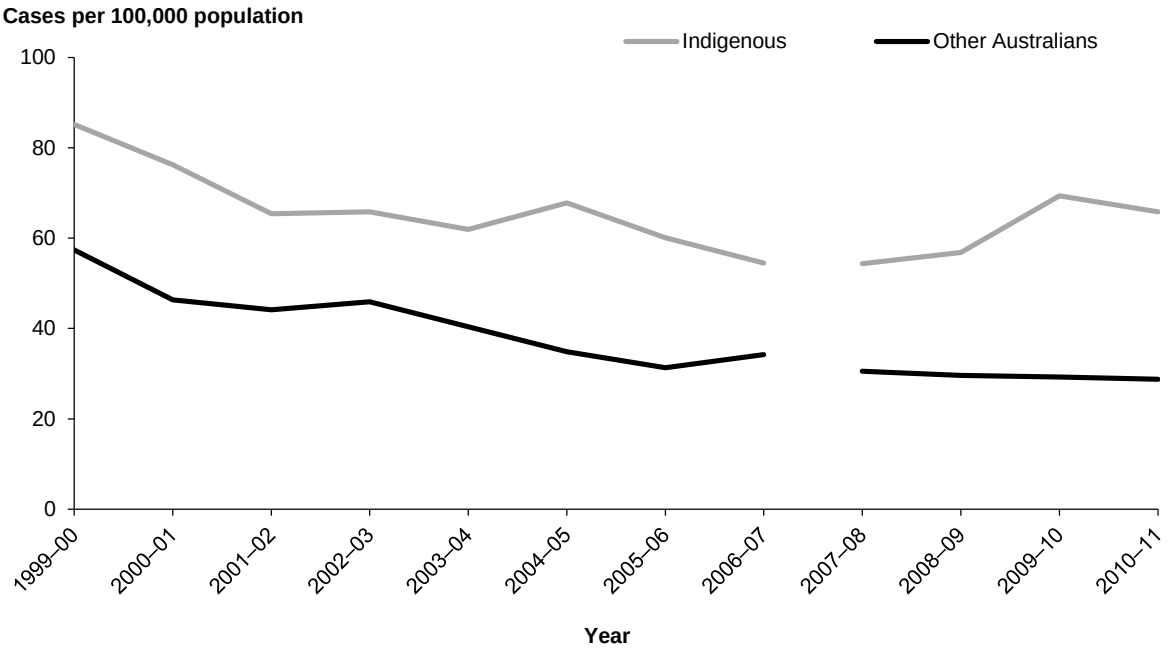
Figure 6.9: Age-standardised rates of poisoning by pharmaceuticals cases, by remoteness of usual residence, Australia, 2001–02 to 2010–11

6.6 How have rates of poisoning by pharmaceuticals in Indigenous people changed over time?

The change in states and territories with sufficient quality of Indigenous ascertainment during the period is indicated by the break in series in Figure 6.10. Before 2007–08, 4 jurisdictions (WA, SA, NT, Qld) were included; cases from New South Wales and Victoria were added after this.

Age-standardised rates of poisoning by pharmaceuticals were higher among Indigenous people than for Other Australians over the period. During the time in which 4 jurisdictions had sufficient ascertainment of Indigenous status to be included in the analysis (1999–00 to 2006–07), the age-standardised rates of poisoning by pharmaceuticals decreased for Indigenous people and Other Australians (Figure 6.10). From the period beginning 2007–08 however, rates increased for Indigenous people from 54 cases per 100,000 to 66 in 2010–11. A similar increase was not seen in Other Australians.

At face value, the rates for the 6-state region suggest an upward trend for Aboriginal and Torres Strait Islander people in the most recent 4 years reported. Caution should be exercised in coming to that conclusion because of the small number of years of data for the 6-state region and because improvement of Indigenous identification in hospital data could contribute to the apparent rise.



Notes

1. Four jurisdictions (WA, SA, NT, Qld) were included between 1999–00 and 2006–07. Six jurisdictions (WA, SA, NT, Qld, NSW and Vic) were included between 2007–08 and 2010–11. The different jurisdictional groupings are indicated by the break in series.

2. Data underpinning this figure are available in Table B.26 in Appendix B.

Figure 6.10: Age-standardised rates of poisoning by pharmaceuticals cases, Aboriginal and Torres Strait Islander people and Other Australians, Australia, 1999–00 to 2010–11

7 Poisoning, other substances

This chapter draws on data from the NHMD covering the years 1 July 1999 to 30 June 2011 to present an overview of trends in hospitalised unintentional poisoning by substances other than pharmaceuticals in Australia. This chapter includes hospitalisations arising from the toxic effects of accidental contact with substances that are chiefly non-medicinal. It does not include intentional self-poisoning by drugs, assault by drug-related poisoning, or poisoning of undetermined intent.

What methods were used?

This chapter includes injury cases meeting the criteria set out in section 1.3, providing that the first reported external cause code is in the ICD-10-AM range X45–X49 (within *Accidental poisoning by and exposure to noxious substances*) in Chapter *XX External causes of morbidity and mortality*.

Relevant terms and information regarding the data used in this chapter are summarised in Boxes 1.1, 1.2 and 7.1. Further information on methods is provided in Appendix A.

Box 7.1: External causes of poisoning by other substances

This chapter focuses on the **Accidental poisoning by and exposure to noxious substances** (X40–X49) section of Chapter XX *External causes of morbidity and mortality* and is restricted to the last five of those groups (X45–X49) (the first groups were the focus of Chapter 6 of this report):

- 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).

7.1 How many hospitalised poisoning by other substances cases were there in 2010–11?

There were an estimated 2,242 poisoning by other substances cases during 2010–11 (Table 7.1). More males than females were hospitalised. The age-standardised rate was also higher for males compared with females.

Table 7.1: Key indicators for poisoning by other substances cases, Australia, 2010–11

Indicators	Males	Females	Persons
Estimated poisoning by other substances cases	1,400	842	2,242
Per cent of all injury cases	0.6	0.4	0.5
Age-standardised rate/100,000 population	12.4	7.4	9.9

Age and sex

The proportion of cases of poisoning by other substances in children aged 0–4 (Table 7.2) was much higher than the proportion of all external cause injuries in this age group (Table 2.2). Higher proportions of cases of poisoning by other substances occurred in females in 4 out of the 6 age groups.

Table 7.2: Poisoning by other substances cases, by age, Australia, 2010–11

	Males		Females		Persons	
Age group	Number	Per cent	Number	Per cent	Number	Per cent
0–4	221	15.8	161	19.1	382	17.0
5–14	44	3.1	44	5.2	88	3.9
15–24	240	17.1	114	13.5	354	15.8
25–44	466	33.3	200	23.8	666	29.7
45–64	302	21.6	194	23.0	496	22.1
65+	127	9.1	129	15.3	256	11.4
Total	**1,400**	**100.0**	**842**	**100.0**	**2,242**	**100.0**

Age-specific rates of poisoning by other substances were highest in young children for males and females (29 and 23 per 100,000 population, respectively) (Figure 7.1). At ages greater than 10–14, rates for males were higher than females up to about 65+. The greatest difference in rates occurred at 20–24 where rates of poisoning by other substances were higher for males than females (17 and 8 per 100,000, respectively).

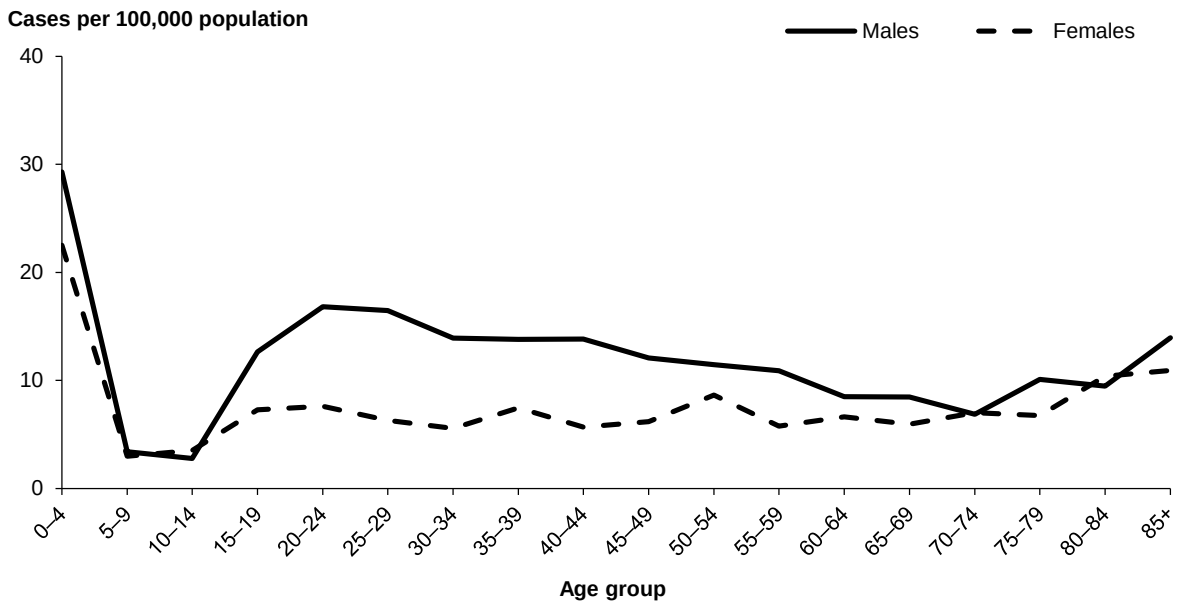


Figure 7.1: Age-specific rates of poisoning by other substances cases, by sex, Australia, 2010–11

Remoteness of usual residence

The age-standardised rate of hospitalised poisoning by other substances in 2010–11 increased according to remoteness (Table 7.3). The lowest rate was observed for residents of *Major cities* (8 per 100,000 population) and the highest for residents of *Very remote* areas (22). Caution should be exercised in interpreting these results because of low numbers of cases in *Remote* and *Very remote* areas.

Table 7.3: Poisoning by other substances cases, by remoteness of usual residence, Australia, 2010–11

	Remoteness of usual residence					
Indicators	Major cities	Inner regional	Outer regional	Remote	Very remote	Total[(a)]
Estimated poisoning by other substances cases	1,290	479	327	65	43	2,204
Per cent	58.5	21.7	14.8	2.9	2.0	100.0
Age-standardised rate/100,000 population	8.3	11.3	16.3	19.2	22.2	9.9

(a) Excludes 38 cases where remoteness was not reported or residence was reported as an external territory.

Aboriginal and Torres Strait Islander people

There were an estimated 106 cases of Indigenous people hospitalised as a result of poisoning by other substances in 2010–11 (Table 7.4). More males were hospitalised than females. When compared with Other Australians, poisoning by other substances among Indigenous people made up the same proportion (0.5%) of all hospitalised injury. The age-standardised rates of poisoning by other substances among Indigenous people were higher than that of Other Australians.

Table 7.4: Key indicators for poisoning by other substances cases, Aboriginal and Torres Strait Islander people and Other Australians, Australia[(a)], 2010–11

	Aboriginal and Torres Strait Islander people			Other Australians		
Indicators	**Males**	**Females**	**Persons**	**Males**	**Females**	**Persons**
Estimated poisoning by other substances cases	67	39	106	1,282	776	2,058
Per cent of all cases of hospitalisations for injury	0.6	0.5	0.5	0.6	0.5	0.5
Age-standardised rate/100,000 population	23.6	11.6	17.4	12.3	7.4	9.9

(a) Excludes data for Tasmania and the Australian Capital Territory (see Box 1.2).

Due to the very small numbers of cases in age categories other than 0–4, further examination of the difference in rates of poisoning by other substances by age among Aboriginal and Torres Strait Islander people is not presented. Age-specific rates for Aboriginal and Torres Strait Islander people and Other Australians for children aged 0–4 were 64 and 26 per 100,000 population respectively.

Substance type

As in the previous chapter, external causes were tabulated to describe the groups of substances responsible for poisoning cases (see Box 7.1). However, principal diagnoses can offer a more detailed description of the substances involved for each of these groups. For example, more detailed information about the type of drug covered by *Accidental poisoning by and exposure to alcohol* (X4) can be found in the principal diagnosis code for the patient (for example, whether it was attributable to ethanol or methanol). In Table 7.5 and accompanying text, the top three principal diagnosis categories associated with the major external causes for poisoning by pharmaceuticals have been presented.

Nine per cent of cases (206) resulted from *Accidental poisoning by and exposure to alcohol* (Table 7.3). The most commonly reported substance was ethanol (76%).

Seven per cent of cases resulted from *Accidental poisoning by and exposure to organic solvents and halogenated hydrocarbons and their vapours*. *Petroleum products* (41%) and *Other organic solvents* (27%) were commonly reported.

Nineteen per cent of cases resulted from *Accidental poisoning by and exposure to other gases and vapours*. This category includes poisoning by carbon monoxide (22%) and chlorine gas (9%).

Five per cent of cases resulted from *Accidental poisoning by and exposure to pesticides*. *Organophosphate and carbamate insecticides* were the most commonly reported substances (22%).

More than half the cases were a result of *Accidental poisoning by and exposure to other and unspecified chemicals and noxious substances* (60%; 1,343 cases). This is a diverse category that includes corrosive and caustic agents, glues and adhesives, paints, dyes, soaps and detergents, poisonous foodstuffs and poisonous plants, among others.

Table 7.5: Poisoning by other substances cases and substance type, Australia, 2010–11

Accidental poisoning by and exposure to:	Number	Per cent
Alcohol	206	9.2
Ethanol	*157*	*76.2*
Alcohol, unspecified	*18*	*8.7*
Methanol	*16*	*7.8*
Organic solvents and halogenated hydrocarbons and their vapours	155	6.9
Petroleum products	*63*	*40.6*
Other organic solvents	*41*	*26.5*
Halogen derivative of aliphatic and aromatic hydrocarbons, unspecified	*12*	*7.7*
Other gases and vapours	426	19.0
Other specified gases, fumes and vapours	*225*	*52.8*
Toxic effect of carbon monoxide	*92*	*21.6*
Chlorine gas	*36*	*8.5*
Pesticides	112	5.0
Organophosphate and carbamate insecticides	*52*	*46.4*
Herbicides and fungicides	*15*	*13.4*
Rodenticides	*15*	*13.4*
Other and unspecified chemicals and noxious substances	1,343	59.9
Noxious substance eaten as food, unspecified	*301*	*22.4*
Corrosive alkalis and alkali-like substances	*65*	*4.8*
Toxic effect of unspecified substance	*62*	*4.6*
Total	**2,242**	**100.0**

Note: The external cause groups are presented in bold. Information about the specific substance types taken from the principal diagnosis codes are presented in italics.

Males (21%) had a higher proportion of poisoning by *Other gases and vapours* compared with females (15%) (Table 7.6). In contrast females (11%) had a slightly higher proportion of poisoning by alcohol cases compared to males (8%).

Table 7.6: Poisoning by other substances cases and drug type, by sex, Australia, 2010–11

	Males		Females		Persons	
Accidental poisoning by and exposure to:	**Number**	**Per cent**	**Number**	**Per cent**	**Number**	**Per cent**
Alcohol	118	8.4	88	10.5	206	9.2
Organic solvents and halogenated hydrocarbons and their vapours	114	8.1	41	4.9	155	6.9
Other gases and vapours	300	21.4	126	15.0	426	19.0
Pesticides	75	5.4	37	4.4	112	5.0
Other and unspecified chemicals and noxious substances	793	56.6	550	65.3	1,343	59.9
Total	**1,400**	**100.0**	**842**	**100.0**	**2,242**	**100.0**

The age distribution of cases differed by drug type (Figure 7.2). Compared with the other types shown, cases of poisoning by alcohol were more prominent among 15–24 to 25-44 age groups.

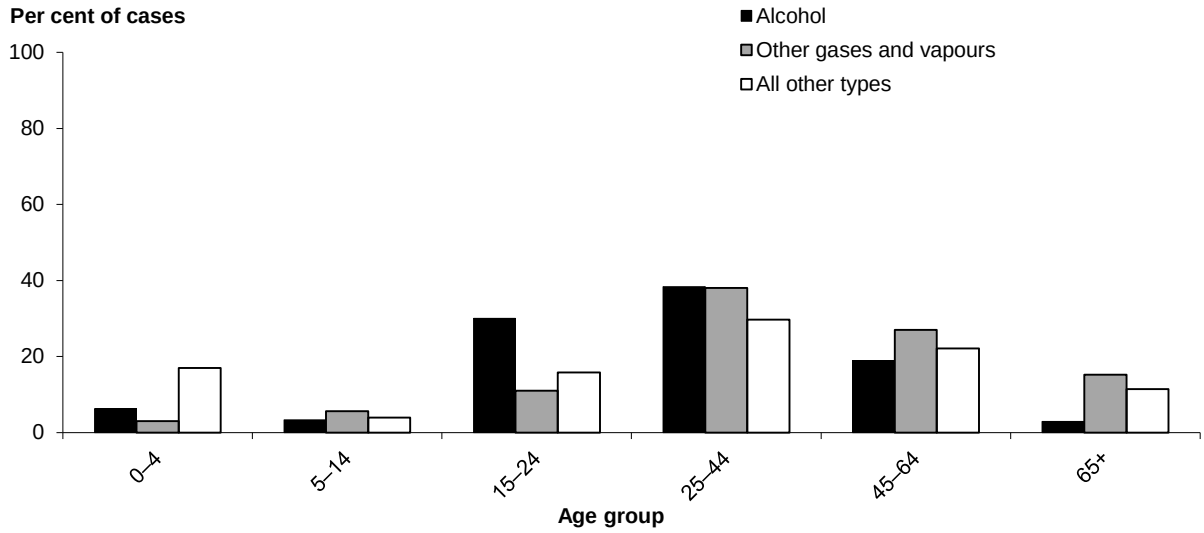
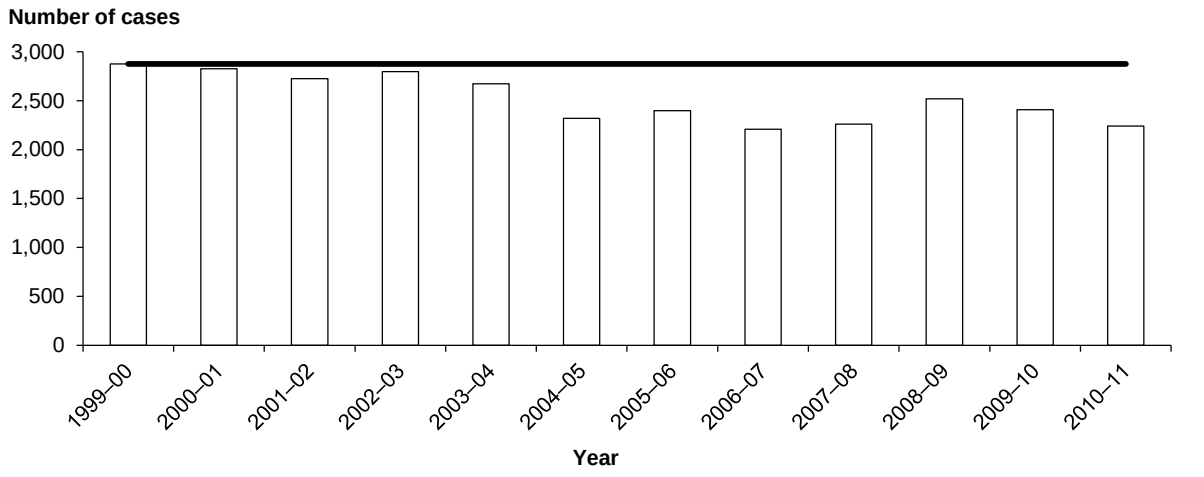


Figure 7.2: Proportion of poisoning by other substances cases, by drug type and age, Australia, 2010–11

7.2 How have hospitalisations for poisoning by other substances changed over time?

Figure 7.3 compares the number of cases of poisoning by other substances occurring each year with the baseline number of cases (2,877 in 1999–00). From 2000–01, the number of cases was lower than the baseline. The largest difference was in 2006–07 when there were 670 fewer cases of hospitalised poisoning by other substances.

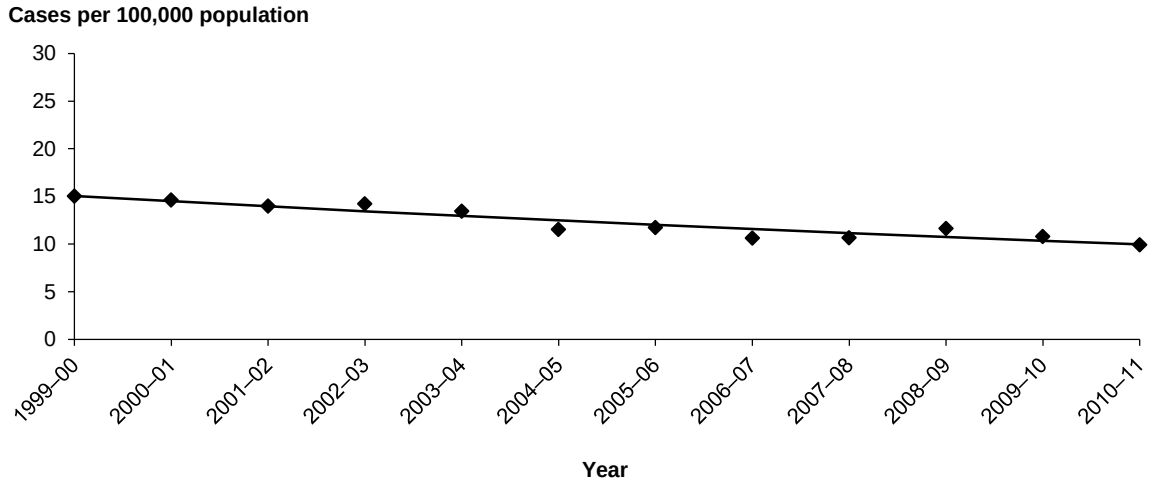


Note: The single line represents the number of cases of transport injury that occurred in 1999–00. It is referred to as the baseline.

Figure 7.3: Number of cases of poisoning by other substances cases, Australia, 1999–00 to 2010–11

7.3 How have rates of poisoning by other substances changed over time?

Rates of estimated cases of poisoning by other substances decreased from 15 cases per 100,000 population in 1999–00 to 10 in 2010–11 (Figure 7.4). The decrease averaged 3.7% per year and was statistically significant (95% CI: –2.9%, –4.4%).



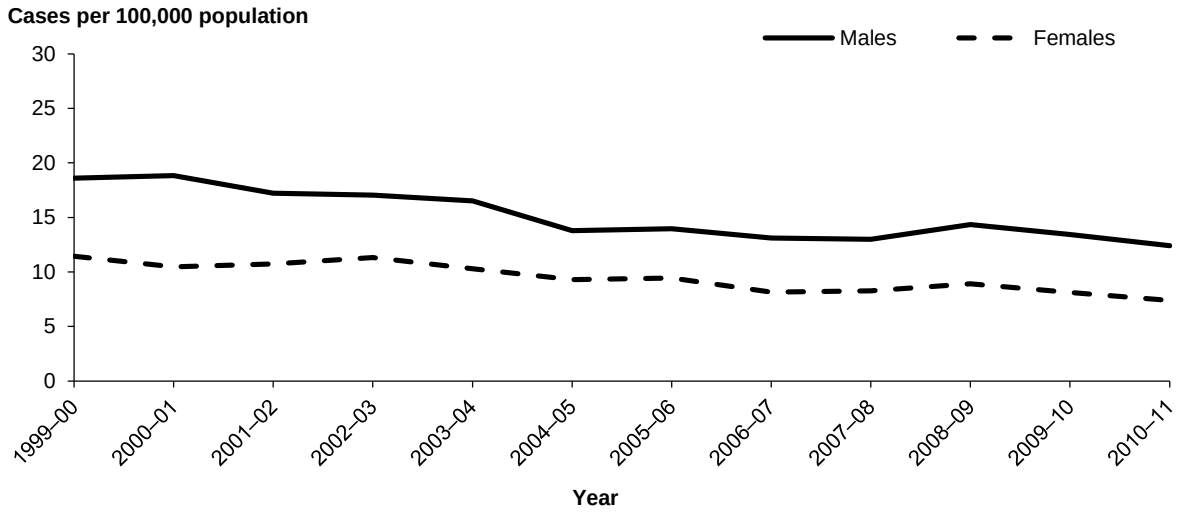
Notes

1. The line represents the modelled rate over the 12-year period, while symbols represent the actual age-standardised rate value for each year.
2. Data underpinning this figure are available in Table B.4 in Appendix B.

Figure 7.4: Modelled age-standardised rates of poisoning by other substances cases, Australia, 1999–00 to 2010–11

7.4 How have rates of poisoning by other substances varied by sex and age?

During the period, the age-standardised rates of poisoning by other substances decreased for males and females (Figure 7.5). Age-standardised rates for males were consistently higher than for females.



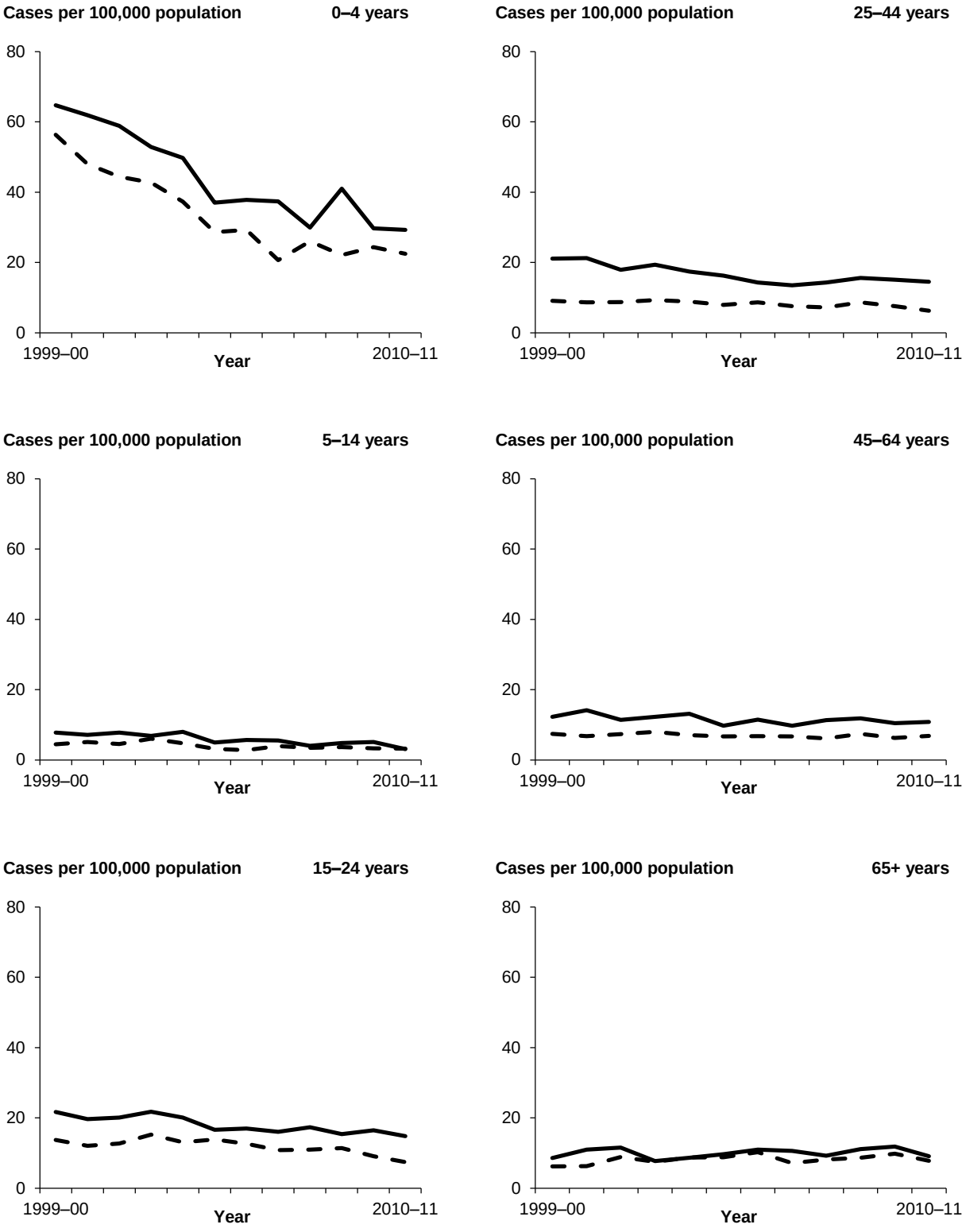
Note: Data underpinning this figure are available in Table B.11 in Appendix B.

Figure 7.5: Age-standardised rates of poisoning by other substances cases, by sex, Australia, 1999–00 to 2010–11

An examination of changes in the rate of poisoning by other substances over time, by age and sex, is shown in Figure 7.6. The gradual decline in age-standardised rates was similar to the age-specific rates for all age groups other than 0–4.

The decline in rates in children aged 0–4 is similar to that seen in poisoning by pharmaceutical substances.

Underpinning the rates were declines in all the major categories of poisoning by other substances in children aged 0–4. For example, alcohol poisoning fell from 36 cases in 1999–00 to 13 in 2010–11, poisoning by *Organic solvents and halogenated hydrocarbons and their vapours* decreased from 144 cases (1999–00) to 68 (2010–11), and poisonings as a result of pesticides decreased from 168 cases (1999–00) to 46 (2010–11) (data not shown).



Notes

1. Rates for males are indicated by the solid line and rates for females by the broken line in all charts.
2. Data underpinning this figure are available in Tables B.11 and B.12 in Appendix B.

Figure 7.6: Age-specific rates of poisoning by other substances cases, by age and sex, Australia, 1999–00 to 2010–11

7.5 How have rates of poisoning by other substances varied by remoteness?

Age-standardised rates of poisoning by other substances generally increased by remoteness (Figure 7.7). In each year, rates were lower for *Major cities* and *Inner regional* areas than all other areas.

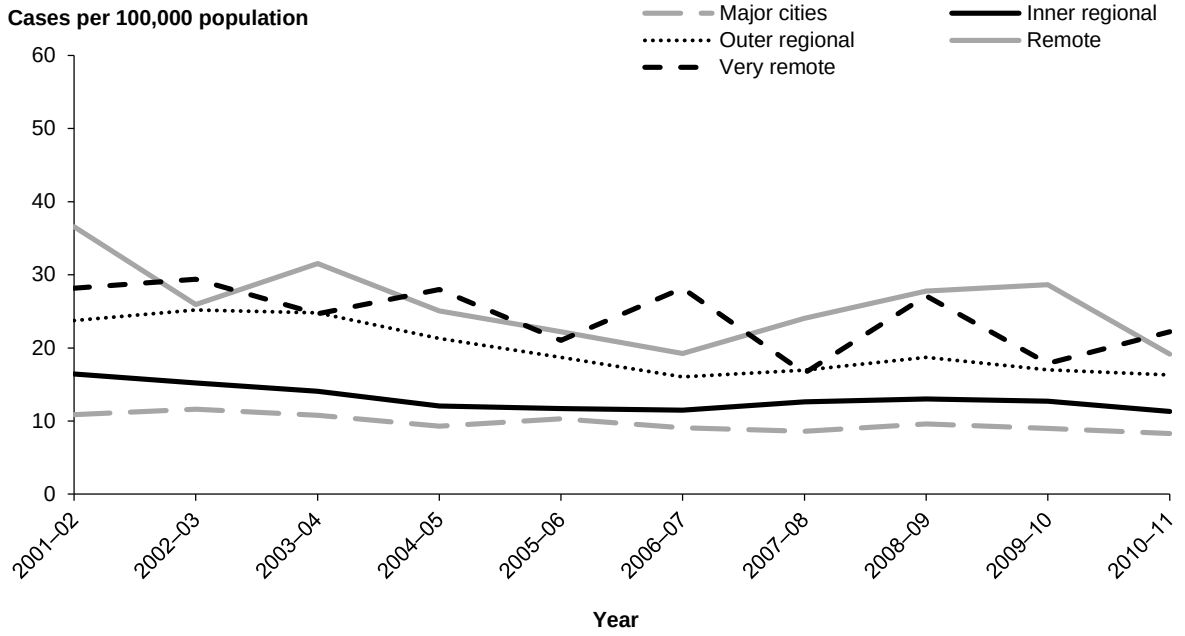


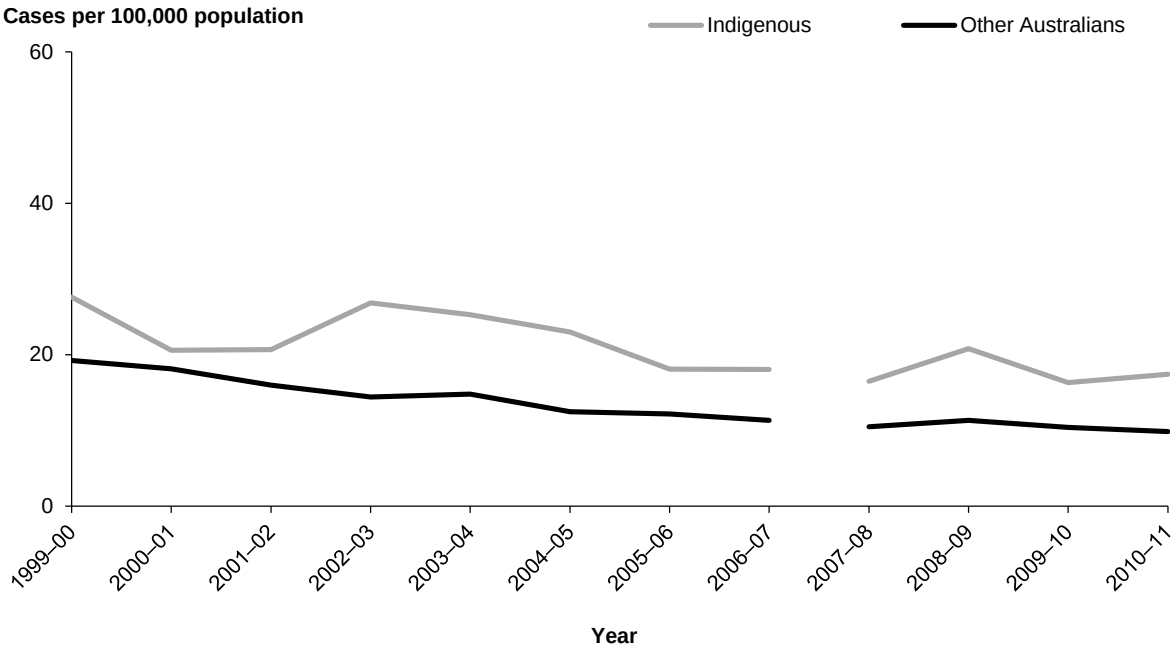
Figure 7.7: Age-standardised rates of poisoning by other substances cases, by remoteness of usual residence, Australia, 2001–02 to 2010–11

7.6 How have rates of poisoning by other substances in Indigenous people changed over time?

The change in states and territories with sufficient quality of Indigenous ascertainment during the period is indicated by the break in series in Figure 7.8. Before 2007–08, 4 jurisdictions (WA, SA, NT, Qld) were included; New South Wales and Victoria were added after this.

Age-standardised rates of poisoning by other substances were higher among Indigenous people than Other Australians. During the time in which 4 jurisdictions had sufficient ascertainment of Indigenous status to be included in the analysis (1999–00 to 2006–07), the age-standardised rates decreased for Other Australians and Indigenous people although the latter showed much more variation over the period (Figure 7.8). The trend in rates from 2007–08 is generally similar to the earlier period for both Indigenous people and Other Australians.

Caution should be exercised in interpreting the trend after 2006–07 because of the small number of years of data for the 6-state region and because improvement of Indigenous identification in hospital data could contribute to the apparent rates.



Notes

1. Four jurisdictions (WA, SA, NT, Qld) were included between 1999–00 and 2006–07. Six jurisdictions (WA, SA, NT, Qld, NSW and Vic) were included between 2007–08 and 2010–11. The different jurisdictional groupings are indicated by the break in series.
2. Data underpinning this figure are available in Table B.27 in Appendix B.

Figure 7.8: Age-standardised rates of poisoning by other substances cases, Aboriginal and Torres Strait Islander people and Other Australians, Australia, 1999–00 to 2010–11

8 Falls

This chapter draws on data from the NHMD covering the years 1 July 1999 to 30 June 2011 to present an overview of trends in hospitalised unintentional falls in Australia. Further statistical information on hospitalised fall injuries is available in reports focused on this topic from the AIHW website. This chapter does not include falls due to intentional self-harm, assault and falls of undetermined intent.

What methods were used?

This chapter includes injury cases meeting the criteria set out in section 1.3, providing that the first reported external cause code is in the ICD-10-AM range W00–W19 (*Falls*) in Chapter *XX External causes of morbidity and mortality*.

Relevant terms and information regarding the data used in this chapter are summarised in Boxes 1.1, 1.2 and 8.1. Further information on methods is provided in Appendix A.

Box 8.1: External causes of falls

This chapter focuses on the **Other external causes of accidental injury (W00–X59)** section of Chapter XX *External causes of morbidity and mortality* and is restricted to Falls W00–W19 which include:

- 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).

8.1 How many hospitalised falls cases were there in 2010–11?

There were an estimated 172,616 fall cases during 2010–11 (Table 8.1). More females than males were hospitalised as a result of a fall. The age-standardised rate of falls was also higher for females.

Table 8.1: Key indicators for fall cases, Australia, 2010–11

Indicators	Males	Females	Persons
Estimated fall cases	75,795	96,819	172,616
Per cent of all injury cases	30.4	51.2	39.4
Age-standardised rate/100,000 population	688	717	715

Age and sex

Fifty-three per cent of fall injuries occurred in adults aged 65+ (Table 8.2). More than twice as many women aged 65+ sustained a fall injury compared with their male peers.

Table 8.2: Fall cases by age, Australia, 2010–11

	Males		Females		Persons	
Age group	Number	Per cent	Number	Per cent	Number	Per cent
0–4	4,903	6.5	3,614	3.7	8,517	4.9
5–14	11,480	15.1	6,543	6.8	18,023	10.4
15–24	7,732	10.2	2,508	2.6	10,240	5.9
25–44	10,181	13.4	6,465	6.7	16,646	9.6
45–64	12,507	16.5	14,531	15.0	27,038	15.7
65+	28,992	38.3	63,158	65.2	92,150	53.4
Total	**75,795**	**100.0**	**96,819**	**100.0**	**172,616**	**100.0**

For both sexes, age-specific rates of falls increased exponentially from age 65 (Figure 8.1). Rates for males were higher than females from about 5–9 to 20–24. In contrast, from about 55–59, rates for females were higher than males.

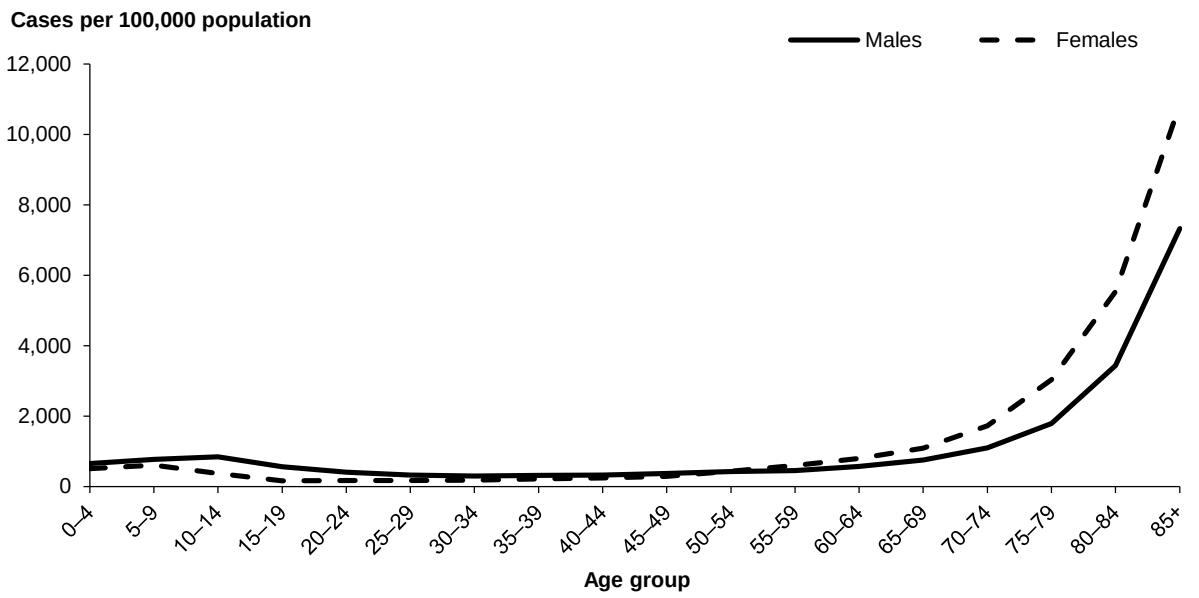


Figure 8.1: Age-specific rates of fall cases, by sex, Australia, 2010–11

Remoteness of usual residence

The age-standardised rate of hospitalised falls in 2010–11 varied somewhat according to remoteness (Table 8.3). The highest rates were in *Remote* and *Very remote* areas (893 and 883 per 100,000 population respectively). The lowest was in *Inner regional* areas (706), although this was not very different from *Major cities* and *Outer regional* areas.

Table 8.3: Fall cases by remoteness of usual residence, Australia, 2010–11

	Remoteness of usual residence					
Indicators	**Major cities**	**Inner regional**	**Outer regional**	**Remote**	**Very remote**	**Total[(a)]**
Estimated fall cases	116,599	34,863	15,673	2,660	1,386	171,181
Per cent	68.1	20.4	9.2	1.6	0.8	100.0
Age-standardised rate/100,000 population	719	706	721	893	883	715

(a) Excludes 898 cases where remoteness was not reported or residence was reported as an external territory.

Aboriginal and Torres Strait Islander people

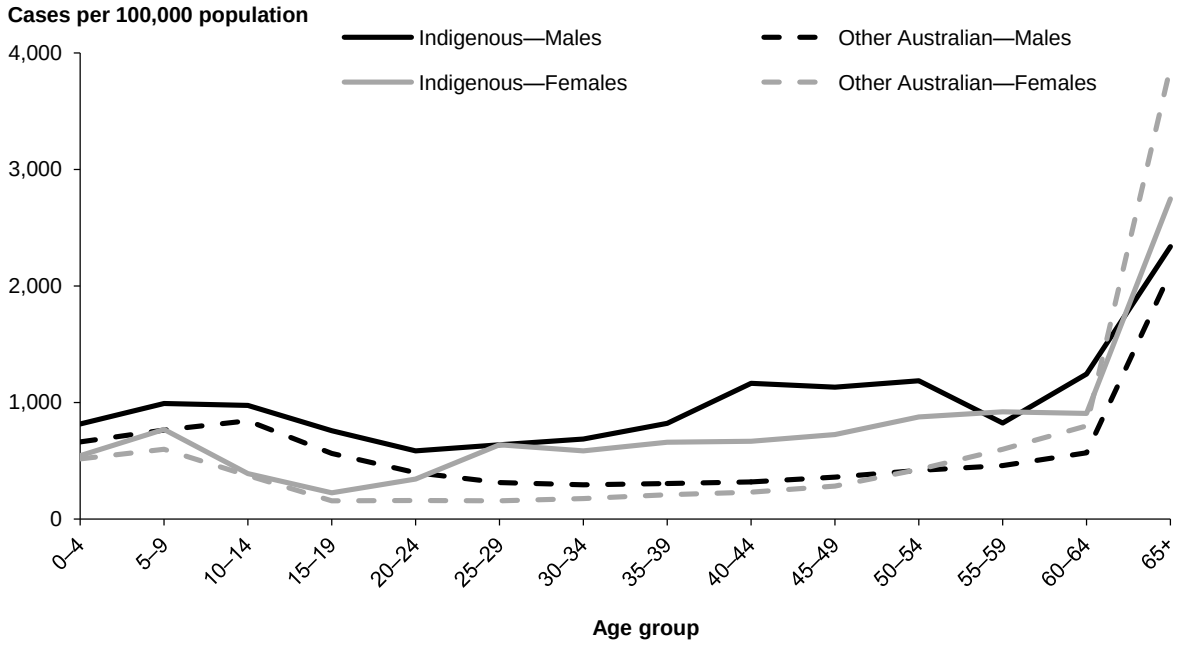
There were an estimated 4,248 cases of Indigenous people hospitalised as a result of a fall in 2010–11 (Table 8.4). In contrast to Other Australians, more Indigenous males than females were hospitalised. Falls among Indigenous people made up a lower proportion (22%) of all hospitalised injury compared with Other Australians (41%). The age-standardised rate of falls among Indigenous people was higher than that of Other Australians.

Table 8.4: Key indicators for fall cases, Aboriginal and Torres Strait Islander people and Other Australians, Australia, 2010–11

	Aboriginal and Torres Strait Islander people[(a)]			Other Australians[(a)]		
Indicators	**Males**	**Females**	**Persons**	**Males**	**Females**	**Persons**
Estimated fall cases	2,461	1,787	4,248	70,489	91,499	161,988
Per cent of all cases of hospitalisations for injury	22.2	21.1	21.7	31.6	53.8	41.2
Age-standardised rate/100,000 population	1,080	888	987	680	781	742

(a) Excludes data for Tasmania and the Australian Capital Territory (see Box 1.2).

Generally speaking, the pattern of falls by age for Aboriginal and Torres Strait Islander males and females was similar to that for Other Australians (Figure 8.2). Up to 60–64 years, rates were higher for Aboriginal and Torres Strait Islander males and females than for Other Australians. . At ages 65+, rates of fall injury in Other Australian females (3,876 cases per 100,000 population) were higher than Aboriginal and Torres Strait Islander females (2,748 cases per 100,000).



Note: Excludes data for Tasmania and the Australian Capital Territory (see Box 1.2).

Figure 8.2: Age-specific rates of fall cases, by sex, Aboriginal and Torres Strait Islander people and Other Australians, Australia, 2010–11

Type of fall

Falls on the same level from slipping, tripping and stumbling accounted for more than a quarter of all hospitalised fall injuries (27%) in 2010–11 (Table 8.5). The next two most commonly reported types of fall were *Other fall on same level* and *Fall on and from stairs and steps,* accounting for 18% and 7% of cases respectively.

Fall injuries where males outnumbered females more than 3:1 were *Other fall on same level due to collision with, or pushing by, another person, Fall on and from ladder, Fall on and from scaffolding, Fall from, out of or through building or structure, Fall from tree* and *Diving or jumping into water causing injury other than drowning or submersion*.

Table 8.5: External causes of fall cases, by sex, Australia, 2010–11

	Males		Females		Persons	
External cause	**No.**	**Per cent**	**No.**	**Per cent**	**No.**	**Per cent**
Fall on same level involving ice and snow	38	0.1	50	0.1	88	0.1
Fall on same level from slipping, tripping and stumbling	15,400	20.3	31,096	32.1	46,496	26.9
Fall involving ice-skates, skis, roller-skates, skateboards, scooters and other pedestrian conveyances	4,187	5.5	1,749	1.8	5,936	3.4
Other fall on same level due to collision with, or pushing by, another person	3,897	5.1	687	0.7	4,584	2.7
Fall while being carried or supported by other persons	306	0.4	330	0.3	636	0.4
Fall involving wheelchair	441	0.6	496	0.5	937	0.5
Fall involving bed	2,185	2.9	3,545	3.7	5,730	3.3
Fall involving chair	1,853	2.4	3,048	3.1	4,901	2.8
Fall involving other furniture	424	0.6	357	0.4	781	0.5
Fall involving playground equipment	3,471	4.6	2,752	2.8	6,223	3.6
Fall on and from stairs and steps	4,368	5.8	6,861	7.1	11,230	6.5
Fall on and from ladder	3,758	5.0	899	0.9	4,657	2.7
Fall on and from scaffolding	245	0.3	7	0.0	252	0.1
Fall from, out of or through building or structure	3,417	4.5	965	1.0	4,382	2.5
Fall from tree	817	1.1	274	0.3	1,091	0.6
Fall from cliff	302	0.4	142	0.1	444	0.3
Diving or jumping into water causing injury other than drowning or submersion	420	0.6	127	0.1	547	0.3
Other fall from one level to another	3,787	5.0	2,101	2.2	5,888	3.4
Other fall on same level	12,607	16.6	18,922	19.5	31,530	18.3
Unspecified fall	13,872	18.3	22,411	23.1	36,283	21
Total	**75,795**	**100.0**	**96,819**	**100.0**	**172,616**	**100**

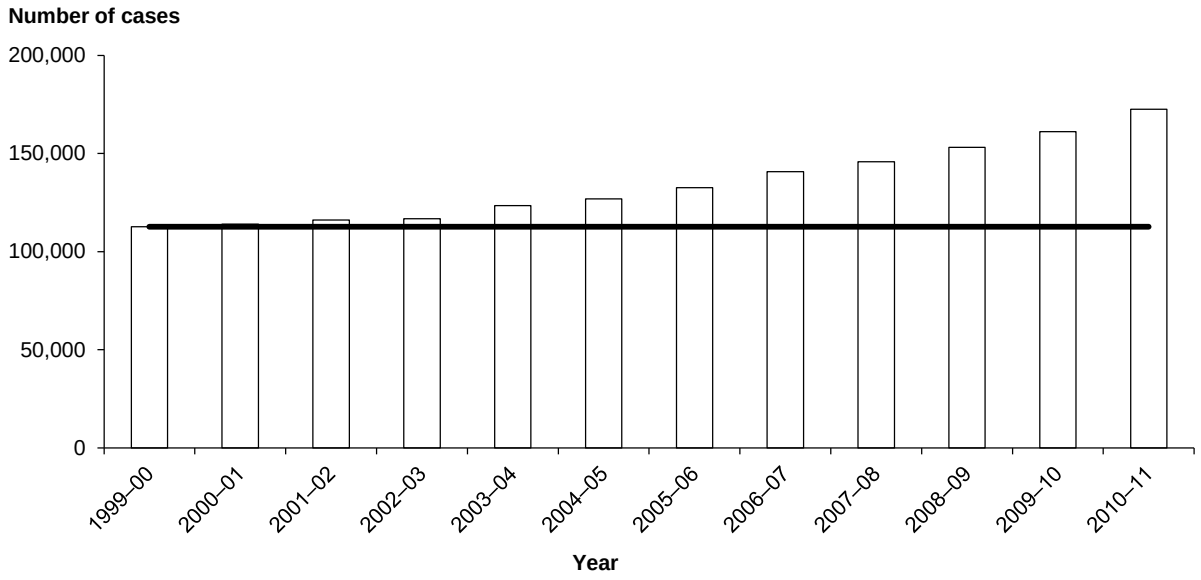
The external cause of fall injury varied by age. For young children (0–4) falls from playground equipment and furniture were common (Table 8.6). Older children (5–14) were also frequently hospitalised as a result of a fall from playground equipment but were also increasingly hospitalised as a result of falling from pedestrian conveyances (for example, skateboards and bicycles). For people aged 65+, falls resulting from slips, trips and stumbles or falls on the same level accounted for more than half of all hospitalised cases.

Table 8.6: Selected external causes of fall cases, by selected age group, Australia, 2010–11

	Number	Per cent
0–4 year olds		
Fall involving playground equipment	1,411	16.6
Fall involving chair	946	11.1
Fall on same level from slipping, tripping and stumbling	907	10.6
Fall involving bed	879	10.3
Total falls in 0–4	**8,517**	
5–14 year olds		
Fall involving playground equipment	4,513	25.0
Fall involving pedestrian conveyances	2,727	15.1
Other fall on same level	2,056	11.4
Fall on same level from slipping, tripping and stumbling	2,012	11.2
Total falls in 5–14	**18,023**	
65+ year olds		
Fall on same level from slipping, tripping and stumbling	30,198	32.8
Unspecified fall	24,399	26.5
Other fall on same level	20,828	22.6
Fall on and from stairs and steps	5,366	5.8
Total falls in 65+	**92,150**	

8.2 How have hospitalisations for falls changed over time?

Figure 8.3 compares the number of hospitalised falls each year with the baseline number of cases (112,747 in 1999–00). From 2000–01, the number of cases has been higher than the baseline, increasing each year. The largest difference was in 2010–11 when there were 59,869 more cases (172,616 in total) of hospitalised falls. This pattern largely reflects the increasing number of older people in the Australian population.

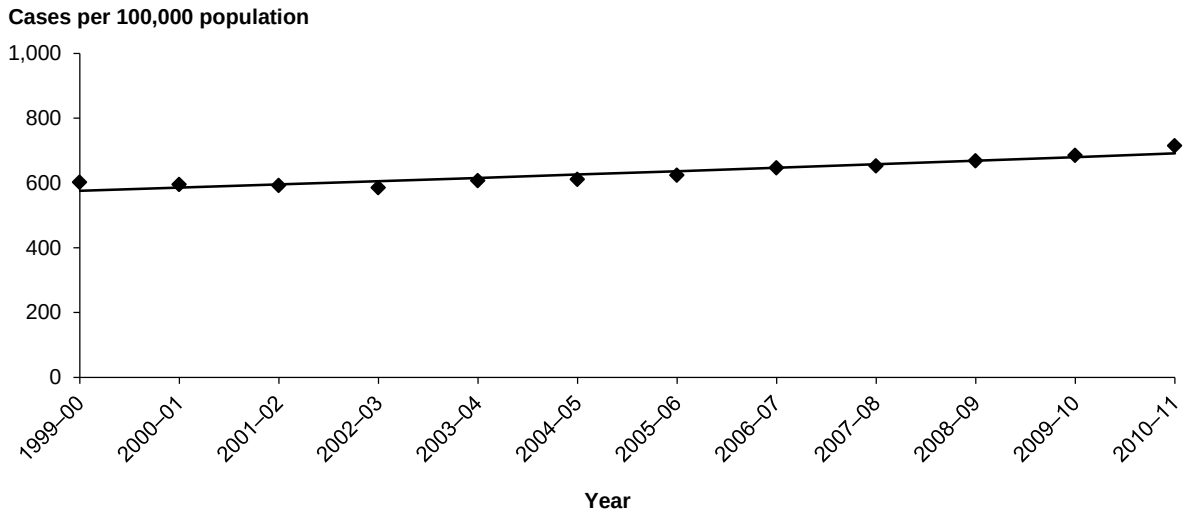


Note: The single line represents the number of cases of transport injury that occurred in 1999–00. It is referred to as the baseline.

Figure 8.3: Number of cases of falls, Australia, 1999–00 to 2010–11

8.3 How have rates of falls changed over time?

Age-standardised rates of falls increased from 602 per 100,000 population in 1999–00 to 715 in 2010–11 (Figure 7.4). The increase averaged 1.7% per year and was statistically significant (95% CI: 1.3%, 2.0%). The rates modelled in Figure 7.4 were standardised to a reference population based on 85+ as its oldest age group. A large proportion of the increase in falls over time is due to Australia's ageing population and the corresponding increase in much older people being at risk of falling. Choosing a reference population with 95+ may have resulted in a higher average increase in rate. See Bradley (2013) for more detailed information on trends in falls among older Australians.



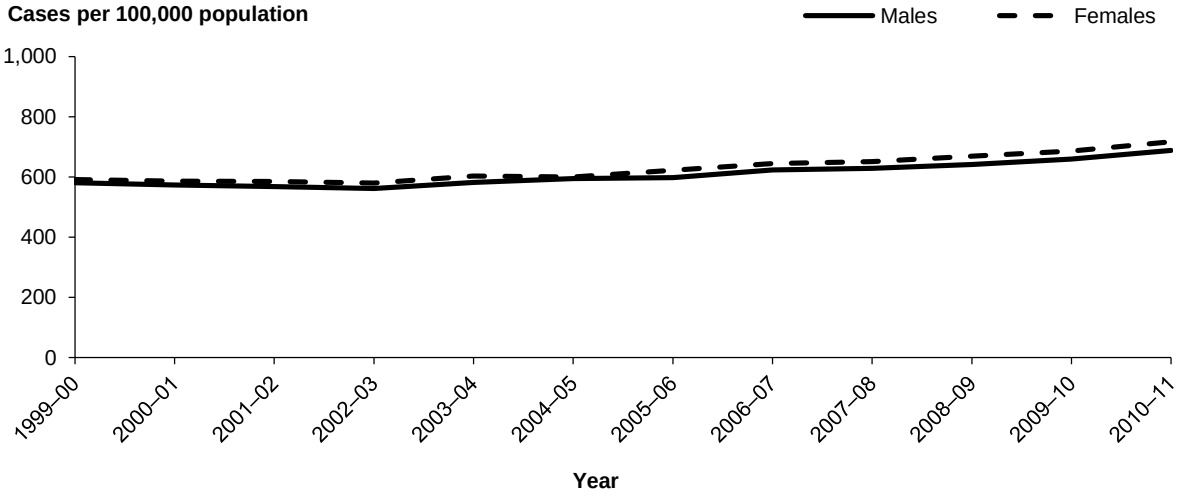
Notes

1. The line represents the modelled rate over the 12-year period, while symbols represent the actual age-standardised rate value for each year.
2. Data underpinning this figure are available in Table B.4 in Appendix B.

Figure 8.4: Modelled age-standardised rates of fall cases, Australia, 1999–00 to 2010–11

8.4 How have rates of falls varied by sex and age?

The age-standardised rate for fall injury increased over the period for males and females (Figure 8.5). Rates were slightly higher for females compared with males.



Note: Data underpinning this figure are available in Table B.13 in Appendix B.

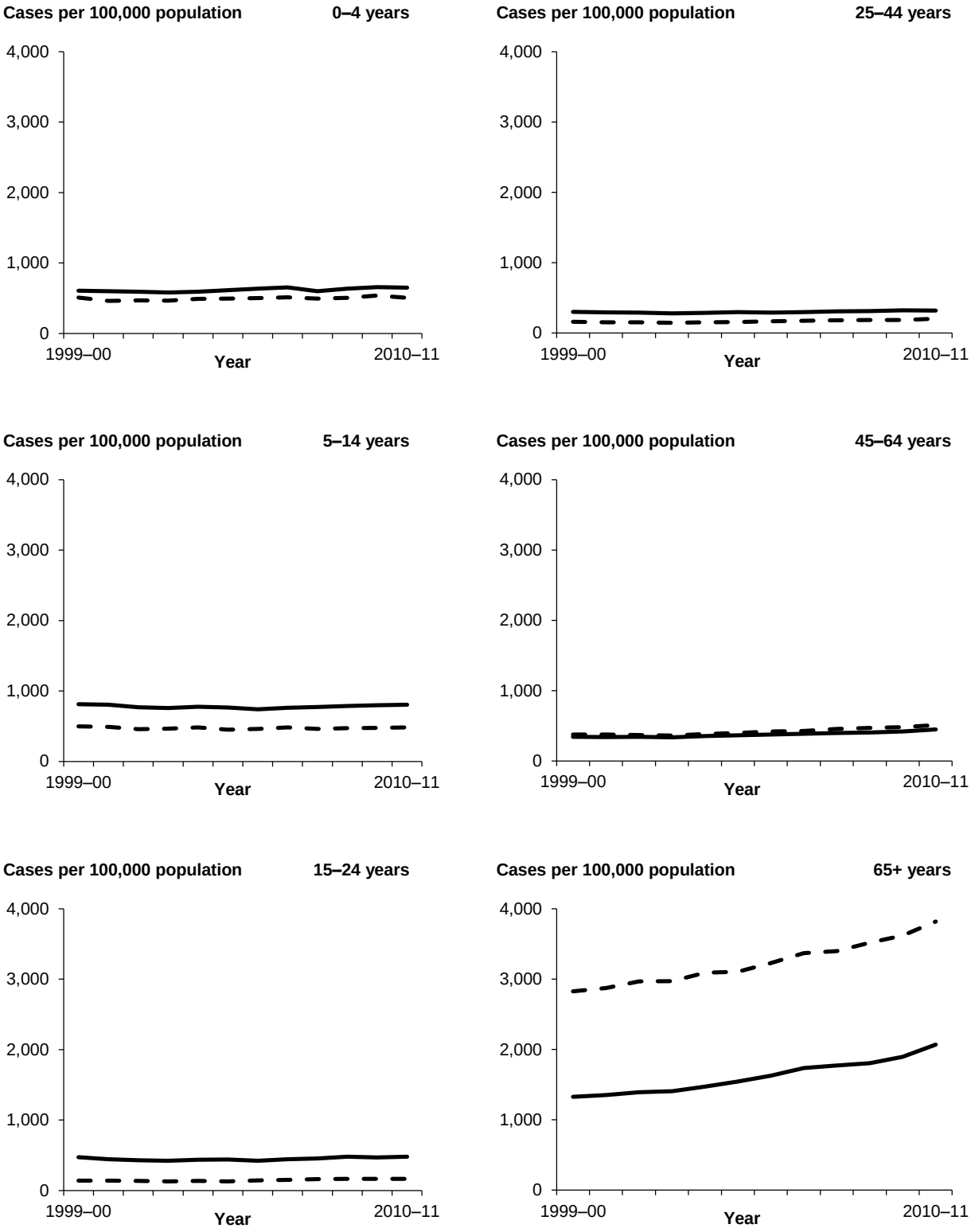
Figure 8.5: Age-standardised rates of fall cases, by sex, Australia, 1999–00 to 2010–11

An examination of the changes in rates over time, by age and sex, is shown in Figure 8.6. Age-specific rates for females and, to a lesser extent, males over 65 showed a marked increase, again reflecting the ageing population within the 65+ age group. Steep rises in age-specific rates were not seen in any other age group.

While the trend in falls in very young children aged 0-4 increased to a much smaller extent (from 559 cases per 100,000 in 1999–00 to 579 in 2010-11) compared with falls in older people, falls in children make up a large proportion (about 40% each year) of all hospitalisations for injury at that age. Large increases in certain types of falls were noted over the period, for example falls involving pedestrian conveyances increased from 21 cases in 1999–00 to 367 in 2010-11 and falls while being carried increased from 264 cases (1999–00) to 403 (2010–11).

From 65+, rates of fall injury were much higher in females and grew more steeply compared with males. The difference in rates between males and females also increased over the period. The rate of injury at the beginning of the period for males was 1,327 cases per 100,000 population and 2,825 for females. In 2010–11, the rate for males was 2,068 and for females it was 3,819.

Further information on falls in older Australians can be found in *Trends in hospitalisations due to falls by older people, Australia 1999–00 to 2010–11* (Bradley, 2013).



Notes

1. Rates for males are indicated by the solid line and rates for females by the broken line in all charts.
2. Data underpinning this figure are available in Tables B.13 and B.14 in Appendix B.

Figure 8.6: Age-specific rates of fall cases, by age and sex, Australia, 1999–00 to 2010–11

8.5 How have rates of falls varied by remoteness?

Age-standardised rates of falls generally increased with increasing remoteness (Figure 8.7). Rates were higher in most years for *Remote* and *Very remote* areas than all other areas. In *Major cities* and *Inner regional* areas, rates were lower for most of the period although they converged in the latest year. Rises in rates of falls were seen in most remoteness areas over the period.

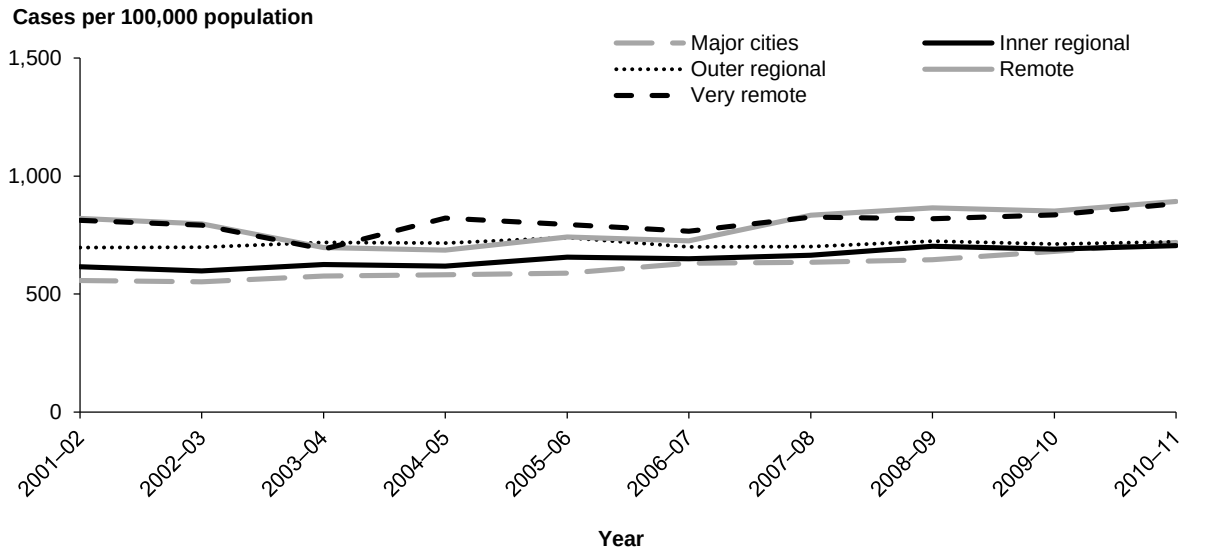


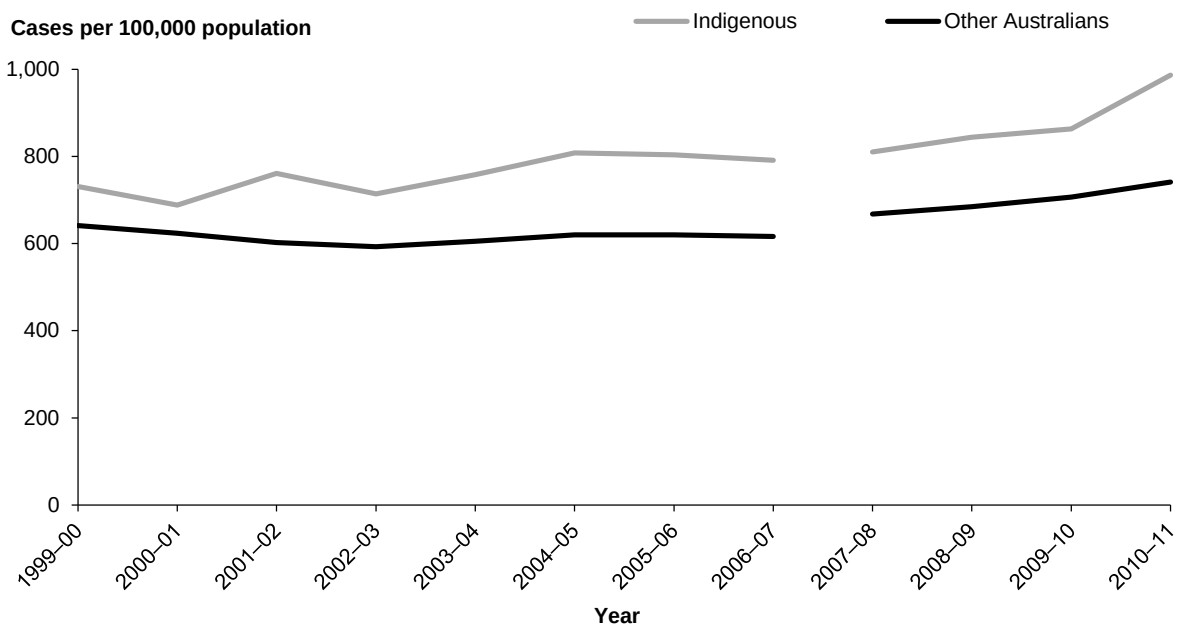
Figure 8.7: Age-standardised rates of fall cases, by remoteness of usual residence, Australia, 2001–02 to 2010–11

8.6 How have rates of falls in Indigenous people changed over time?

The change in states and territories with sufficient quality of Indigenous ascertainment during the period is indicated by the break in series in Figure 8.8. Before 2007–08, 4 jurisdictions (WA, SA, NT, Qld) were included; cases from New South Wales and Victoria were added after this.

Age-standardised rates of falls were higher among Indigenous people than Other Australians over the period. During the time in which 4 jurisdictions had sufficient ascertainment of Indigenous status to be included in the analysis (1999–00 to 2006–07), the age-standardised rate of falls increased for Indigenous people (Figure 8.8). From the period beginning 2007–08, rates continued to increase for both Indigenous people and Other Australians. For Indigenous people, the rate of fall injury in 2007–08 was 811 cases per 100,000 population and in 2010–11 it was 987.

At face value, the rates for the 6 jurisdictions suggest an upward trend for Aboriginal and Torres Strait Islander people in the most recent 4 years reported, rising more rapidly than rates for Other Australians in the most recent year. Caution should be exercised in coming to that conclusion because of the small number of years of data for the 6 jurisdictions and because improvement of Indigenous identification in hospital data could have contribute to the apparent rise.



Notes

1. Four jurisdictions (WA, SA, NT, Qld) were included between 1999–00 and 2006–07. Six jurisdictions (WA, SA, NT, Qld, NSW and Vic) were included between 2007–08 and 2010–11. The different jurisdictional groupings are indicated by the break in series.

2. Data underpinning this figure are available in Table B.28 in Appendix B.

Figure 8.8: Age-standardised rates of fall cases, Aboriginal and Torres Strait Islander people and Other Australians, Australia, 1999–00 to 2010–11

9 Smoke, fire, heat and hot substances

This chapter draws on data from the NHMD covering the years 1 July 1999 to 30 June 2011 to present an overview of trends in hospitalised unintentional exposure to smoke, fire, heat and hot substances injuries in Australia. This chapter includes injury cases in which the first reported external cause is unintentional *Exposure to smoke, fire and flames* (ICD-10-AM X00–X09) or *Contact with heat and hot substances* (X10–X19). To improve readability, in places, cases of exposure to smoke, fire, heat and hot substances are referred to as thermal injury.

This chapter does not include injuries due to *Explosion and rupture of boilers*, *Explosion and rupture of gas cylinder*, *Discharge of fireworks*, *Explosion of other materials* (for example, munitions, blasting material), *Exposure to electric current*, *Exposure to excessive heat of man-made origin*, *Exposure to sunlight*, or *Exposure to lightning*. Injuries attributable to *Intentional self-harm by smoke, fire and flames*, *Intentional self-harm by steam, hot vapours and hot objects*, *Assault by means of explosive material*, *Assault by smoke, fire and flames*, *Assault by steam, hot vapours and hot objects*, *Events of undetermined intent – exposure to smoke, fire and flames and steam, hot vapours and hot objects* were also not included.

What methods were used?

This chapter includes injury cases meeting the criteria set out in section 1.3, providing that the first reported external cause code was in the ICD-10-AM range X00–X19 (*Other external causes of accidental injury*) in Chapter *XX External causes of morbidity and mortality*.

Relevant terms and information regarding the data used in this chapter are summarised in Boxes 1.1, 1.2 and 9.1. Further information on methods is provided in Appendix A.

Box 9.1: External causes of exposure to smoke, fire, heat and hot substances injury

This chapter focuses on the **Other external causes of accidental injury (W00–X59)** section of Chapter XX *External causes of morbidity and mortality* and is restricted to *Exposure to smoke, fire and flames* (X00–X09) and *Contact with heat and hot substances* (X10–X19) which include:

Exposure to smoke, fire and flames (X00–X09)

- Exposure to uncontrolled fire in building or structure (X00)
- Exposure to uncontrolled fire, not in building or structure (X01)
- Exposure to controlled fire in building or structure (X02)
- Exposure to controlled fire, not in building or structure (X03)
- Exposure to ignition of highly flammable material (X04)
- Exposure to ignition or melting of nightwear (X05)
- Exposure to ignition or melting of other clothing and apparel (X06)
- Exposure to other specified smoke, fire and flames (X07)
- Exposure to unspecified smoke, fire and flames (X09).
- Contact with hot drinks, food, fats and cooking oils (X10)

(continued)

Box 9.1 (continued)

Contact with heat and hot substances (X10–X19)

- Contact with hot tap-water (X11)
- Contact with other hot fluids (X12)
- Contact with steam and hot vapours (X13)
- Contact with hot air and gases (X14)
- Contact with hot household appliances (X15)
- Contact with hot heating appliances, radiators and pipes (X16)
- Contact with hot engines, machinery and tools (X17)
- Contact with other hot metals (X18)
- Contact with other and unspecified heat and hot substances (X19).

9.1 How many hospitalised thermal injury cases were there in 2010–11?

There were an estimated 6,058 cases of exposure to smoke, fire, heat and hot substances during 2010–11 (Table 9.1). More males than females were hospitalised. The age-standardised rate was also higher for males than females.

Table 9.1: Key indicators for exposure to smoke, fire, heat and hot substances cases, Australia, 2010–11

Indicators	Males	Females	Persons
Estimated exposure to smoke, fire, heat and hot substances cases	3,923	2,135	6,058
Per cent of all injury cases	1.6	1.1	1.4
Age-standardised rate/100,000 population	35	19	27

Age and sex

More than one-third of those injured by exposure to smoke, fire, heat and hot substances in 2010–11 were children aged 0–14 (Table 9.2). A slightly higher proportion of females (29%) aged 0–4 were injured compared with males (22%). Slightly less than one-quarter of injuries occurred in adults aged 25–44 (1,430 cases) and less than 10% occurred in older people aged 65+.

Table 9.2: Exposure to smoke, fire, heat and hot substances cases by age, Australia, 2010–11

	Males		Females		Persons	
Age group	Number	Per cent	Number	Per cent	Number	Per cent
0–4	871	22.2	617	28.9	1,488	24.6
5–14	433	11.0	235	11.0	668	11.0
15–24	693	17.7	258	12.1	951	15.7
25–44	984	25.1	446	20.9	1,430	23.6
45–64	676	17.2	326	15.3	1,002	16.5
65+	266	6.8	253	11.9	519	8.6
Total	**3,923**	**100.0**	**2,135**	**100.0**	**6,058**	**100.0**

Rates of injury by exposure to smoke, fire, heat and hot substances were highest for young children aged 0–4. The incidence rate for boys aged 0–4 was 116 per 100,000 population compared with 86 for girls of the same age (Figure 9.1). Caution should be exercised in interpreting rates over the age of about 65 due to smaller case numbers.

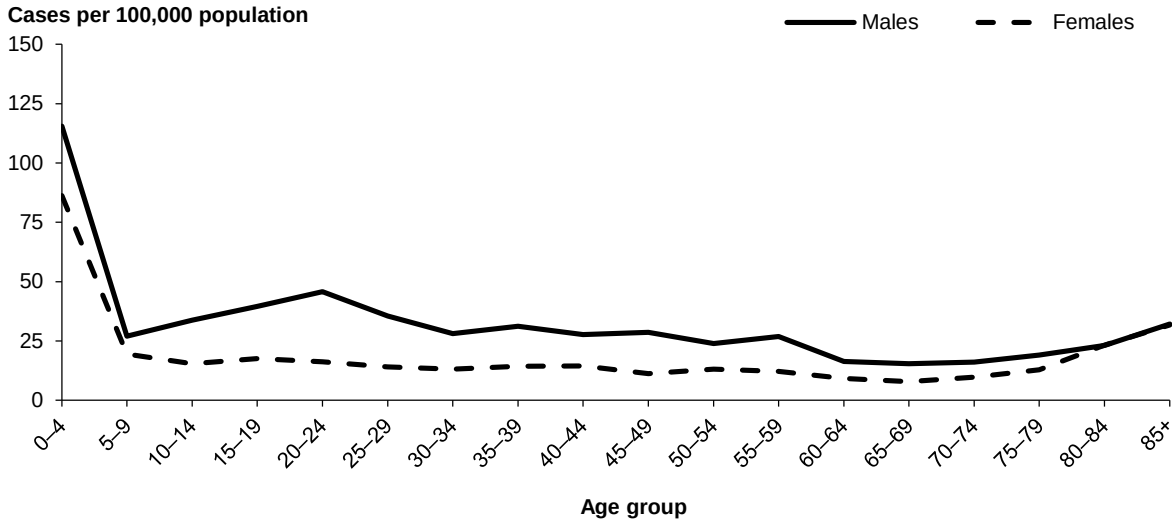


Figure 9.1: Age-specific rates of exposure to smoke, fire, heat and hot substances cases, by sex, Australia, 2010–11

Remoteness of usual residence

The age-standardised rate of hospitalised exposure to smoke, fire, heat and hot substances in 2010–11 increased with increasing remoteness (Table 9.3). The lowest rate was in *Major cities* (22 per 100,000 population) and the highest in *Very remote* areas (97).

Table 9.3: Exposure to smoke, fire, heat and hot substances cases by remoteness of usual residence, Australia, 2010–11

	Remoteness of usual residence					
Indicators	Major cities	Inner regional	Outer regional	Remote	Very remote	Total[(a)]
Estimated exposure to smoke, fire, heat and hot substances cases	3,302	1,385	862	240	194	5,983
Per cent	55.2	23.1	14.4	4.0	3.2	100.0
Age-standardised rate/100,000 population	22	34	43	72	97	27

(a) Excludes 75 cases where remoteness was not reported or residence was reported as an external territory.

Aboriginal and Torres Strait Islander people

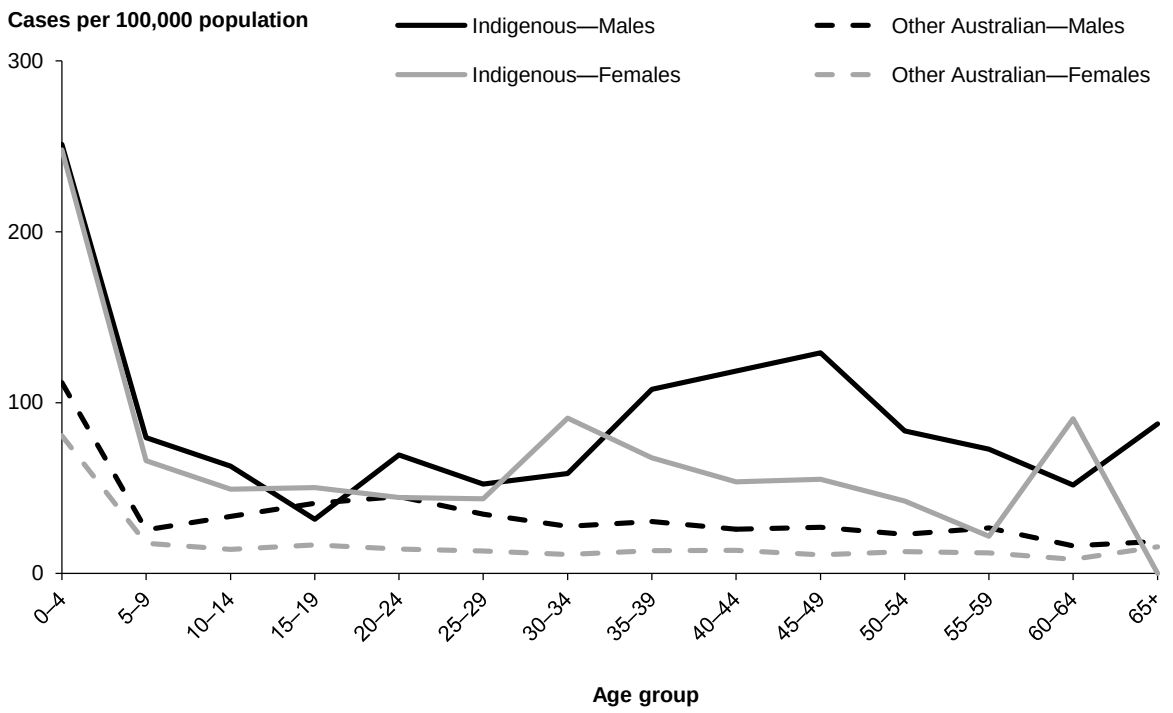
There were an estimated 467 cases of Indigenous people hospitalised as a result of exposure to smoke, fire, heat and hot substances in 2010–11 (Table 9.4). More males than females were hospitalised. Exposure to smoke, fire, heat and hot substances injuries among Indigenous people made up a slightly higher proportion (2.4%) compared with Other Australians (1.4%). The age-standardised rates of exposure to smoke, fire, heat and hot substances among Indigenous people were more than twice that of Other Australians.

Table 9.4: Key indicators for exposure to smoke, fire, heat and hot substances cases, Aboriginal and Torres Strait Islander people and Other Australians, Australia[(a)], 2010–11

	Aboriginal and Torres Strait Islander people			Other Australians		
Indicators	Males	Females	Persons	Males	Females	Persons
Estimated exposure to smoke, fire, heat and hot substances cases	258	209	467	3,514	1,850	5,364
Per cent of all cases of hospitalisations for injury	2.3	2.5	2.4	1.6	1.1	1.4
Age-standardised rate/100,000 population	91	62	75	34	18	26

(a) Excludes data for Tasmania and the Australian Capital Territory (see Box 1.2).

In nearly all age groups, but especially so in very young children, rates of exposure to smoke, fire, heat and hot substances were higher among Indigenous people than Other Australians (Figure 9.2). The rates of injury for Indigenous boys and girls (0–4) (251 and 248 per 100,000 population respectively) were much higher than for other Australian boys and girls in the same age group (112 and 81 per 100,000 population respectively).



Note: Excludes data for Tasmania and the Australian Capital Territory (see Box 1.2).

Figure 9.2: Age-specific rates of exposure to smoke, fire, heat and hot substances cases, by sex, Aboriginal and Torres Strait Islander people and Other Australians, Australia, 2010–11

Mechanism

Contact with hot drinks, food, fats and cooking oils was the leading cause of injury for exposure to smoke, fire, heat and hot substances hospitalisations (20%), followed by *Contact with other hot fluid, (for example, water heated on stove)* (15%), and *Exposure to ignition of highly flammable material (for example, gasoline, kerosene, petrol)* (10%) (Table 9.5).

There were some notable differences between the sexes: 26% of females experienced an injury from *Contact with hot drinks, food, fats and cooking oils* compared with 17% of males. Similarly, females were more likely to experience a scald from *Contact with other hot fluids* than males (20% versus 12%). The converse was true for males, with higher proportions of burn injuries from *Exposure to ignition of highly flammable material* (for example, gasoline, kerosene, petrol) and *Exposure to controlled fire, not in building or structure (for example camp-fire)* (14% versus 4% and 10% versus 6% respectively).

Table 9.5: External causes of exposure to smoke, fire, heat and hot substances cases, by sex, Australia, 2010–11

	Males		Females		Persons	
External cause	**Count**	**Per cent**	**Count**	**Per cent**	**Count**	**Per cent**
Exposure to uncontrolled fire in building or structure	67	1.7	36	1.7	103	1.7
Exposure to uncontrolled fire, not in building or structure (for example, forest fire)	50	1.3	7	0.3	57	0.9
Exposure to controlled fire in building or structure (for example, fireplace, stove)	104	2.7	56	2.6	160	2.6
Exposure to controlled fire, not in building or structure (for example, camp-fire)	378	9.6	130	6.1	508	8.4
Exposure to ignition of highly flammable material (for example, gasoline, kerosene, petrol)	541	13.8	88	4.1	629	10.4
Exposure to ignition or melting of nightwear	9	0.2	5	0.2	14	0.2
Exposure to ignition or melting of other clothing and apparel	50	1.3	32	1.5	82	1.4
Exposure to other specified smoke, fire and flames	231	5.9	57	2.7	288	4.8
Exposure to unspecified smoke, fire and flames	266	6.8	96	4.5	362	6.0
Contact with hot drinks, food, fats and cooking oils	660	16.8	558	26.1	1,218	20.1
Contact with hot tap-water	191	4.9	162	7.6	353	5.8
Contact with other hot fluids (for example, water heated on stove)	468	11.9	428	20.0	896	14.8
Contact with steam and hot vapours	87	2.2	38	1.8	125	2.1
Contact with hot air and gases	13	0.3	7	0.3	20	0.3
Contact with hot household appliances	201	5.1	165	7.7	366	6.0
Contact with hot heating appliances, radiators and pipes	171	4.4	105	4.9	276	4.6
Contact with hot engines, machinery and tools	162	4.1	37	1.7	199	3.3
Contact with other hot metals	80	2.0	11	0.5	91	1.5
Contact with other and unspecified heat and hot substances	194	4.9	117	5.5	311	5.1
Total	**3,923**	**100.0**	**2,135**	**100.0**	**6,058**	**100.0**

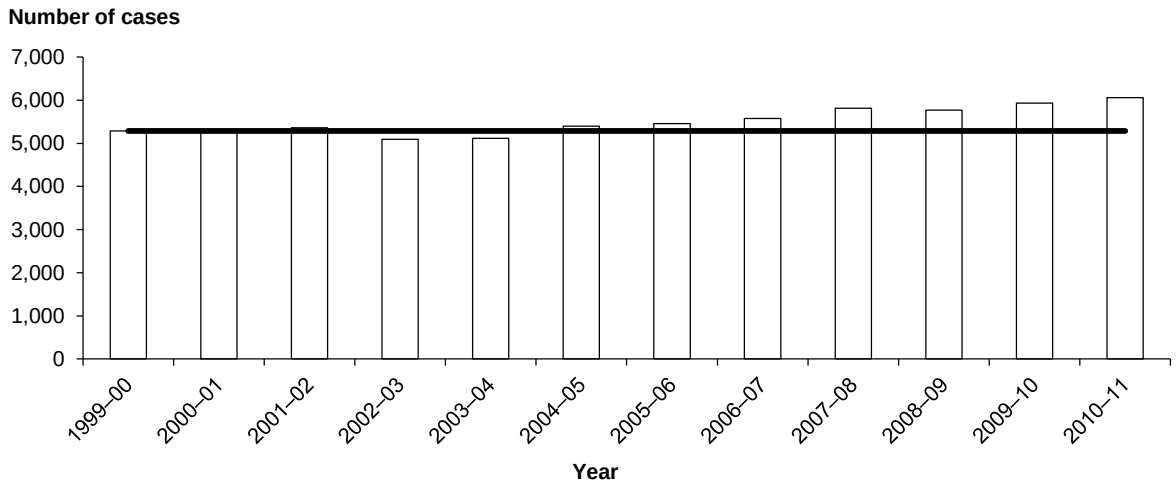
The causes of smoke, fire, heat and hot substances injury varied by age. For young children aged 0–4, who make up a quarter of all cases, *Contact with hot drinks, food, fats and cooking oils* and *Contact with other hot fluids* scalds were common, comprising a total of 49% of all causes in that age group (Table 9.6). For adults aged 24-44, the most common cause of hospitalisation was a burn caused by *Exposure to ignition of highly flammable material* (15%) closely followed by scalds caused by *Contact with hot drinks, food, fats and cooking oils* (15%).

Table 9.6: Selected external causes of exposure to smoke, fire, heat and hot substances cases, by selected age group, Australia, 2010–11

	Number	Per cent
0–4 year olds		
Contact with hot drinks, food, fats and cooking oils	483	32.5
Contact with other hot fluids	243	16.3
Contact with hot household appliances	218	14.7
Contact with hot tap-water	143	9.6
All smoke, fire, heat and hot substances cases in 0–4 year olds	**1,488**	**24.6**
24–44 year olds		
Exposure to ignition of highly flammable material	219	15.3
Contact with hot drinks, food, fats and cooking oils	207	14.5
Contact with other hot fluids	158	11.0
Exposure to controlled fire, not in building or structure	156	10.9
All smoke, fire, heat and hot substances cases in 24–44 year olds	**1,430**	**23.6**

9.2 How have hospitalisations for thermal injury changed over time?

Figure 9.3 compares the number of cases of exposure to smoke, fire, heat and hot substances each year with the baseline (5,284 cases in 1999–00). From about 2004–05, the number of cases of exposure to smoke, fire, heat and hot substances has been higher than the baseline and rising. The largest difference was in 2010–11 when there were 774 more cases (6,058 in total) of hospitalised exposure to smoke, fire, heat and hot substances.

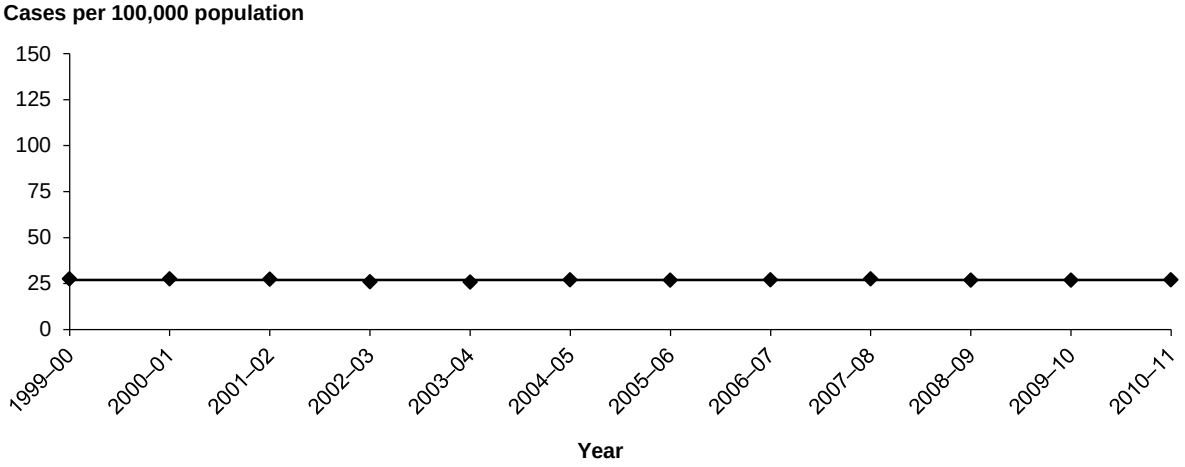


Note: The single line represents the number of cases of transport injury that occurred in 1999–00. It is referred to as the baseline.

Figure 9.3: Number of cases of exposure to smoke, fire, heat and hot substances, Australia, 1999–00 to 2010–11

9.3 How have rates of thermal injury changed over time?

Age-standardised rates of cases of hospitalized burns and other injuries due to exposure to smoke, fire, heat and hot substances have changed little in the period (Figure 7.4). The rate was 28 cases per 100,000 population in 1999–00 and a statistically significant trend was not present (95% CI: –0.4%, 0.3%).



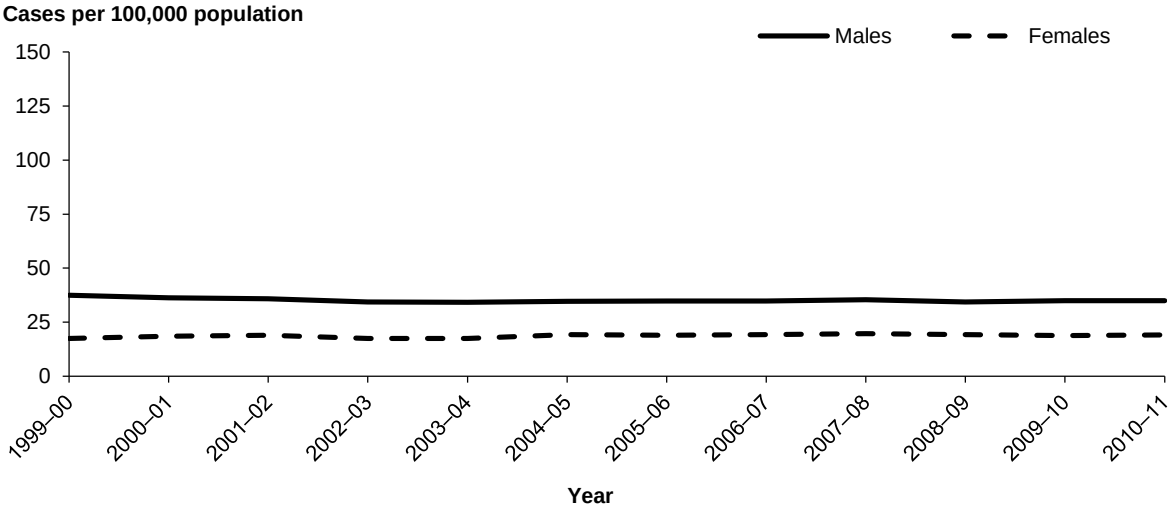
Notes

1. The line represents the modelled rate over the 12-year period, while symbols represent the actual age-standardised rate value for each year.
2. Data underpinning this figure are available in Table B.4 in Appendix B.

Figure 9.4: Modelled age-standardised rates of exposure to smoke, fire, heat and hot substances cases, Australia, 1999–00 to 2010–11

9.4 How have rates of thermal injury varied by sex and age?

The age-standardised rate for exposure to smoke, fire, heat and hot substances was consistently higher for males than females and showed little change for either sex over time (Figure 9.5).



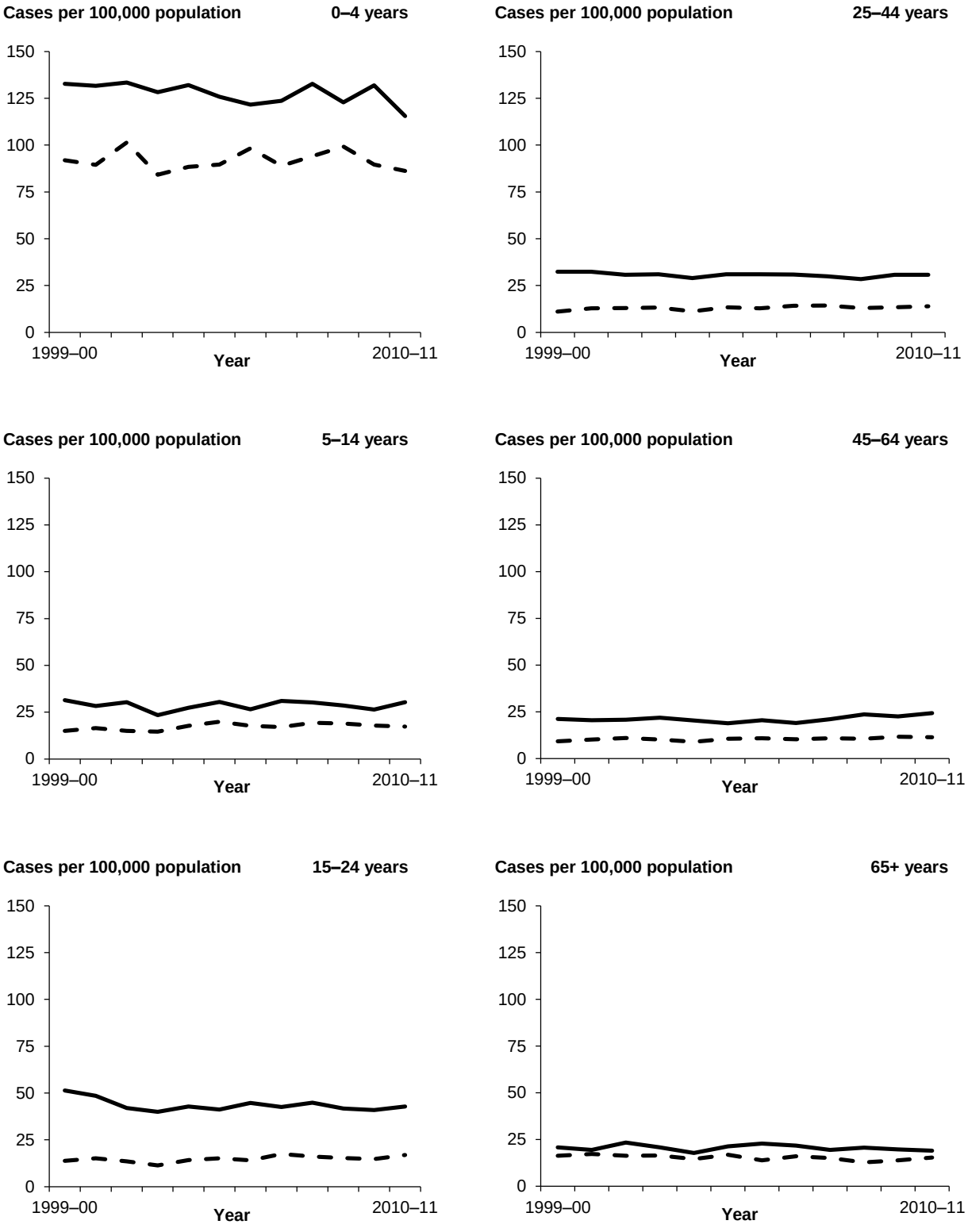
Note: Data underpinning this figure are available in Table B.15 in Appendix B.

Figure 9.5: Age-standardised rates of exposure to smoke, fire, heat and hot substances cases, by sex, Australia, 1999–00 to 2010–11

An examination of the changes in the rate of exposure to smoke, fire, heat and hot substances over time, by age and sex, is shown in Figure 9.6. Age-specific rates were highest over time in young children aged 0–4 although there was some fluctuation over the period. Rates did not change much for most of the other age groups. Caution should be exercised in interpreting rates in people over 65+ due to small numbers of cases.

For children aged 0-4, increases and decreases were noted in terms of the number of hospitalisations for different causes. An increase in the number of cases of *Contact with hot household appliances* was seen, from 115 in 1999–00 to 218 in 2010–11. A similar rise was noted for *Exposure to controlled fire, not in building or structure*; 48 cases in 1999–00 and 99 in 2010–11. In contrast, a decrease in scalds associated with *Contact with hot tap water* was noted, from 236 cases (1999–00) to 143 (2010–11).

Rates of exposure to smoke, fire, heat and hot substances in 15–24 year olds were the second highest of all the age groups. In terms of the external causes of burns and scalds, increases were seen for *Exposure to controlled fire, not in building or structure* (54 to 143) and *Contact with hot drinks, food, fats and cooking oils* (109 to 150), and a decrease noted for burns caused by *Exposure to ignition of highly flammable material* (212 to 161) from the beginning to the end of the period.



Notes

1. Rates for males are indicated by the solid line and rates for females by the broken line in all charts.
2. Data underpinning this figure are available in Tables B.15 and B.16 in Appendix B.

Figure 9.6: Age-specific rates of exposure to smoke, fire, heat and hot substances cases, by age and sex, Australia, 1999–00 to 2010–11

9.5 How have rates of thermal injury varied by remoteness?

Age-standardised rates of exposure to smoke, fire, heat and hot substances increased with increasing remoteness (Figure 9.7). Rates in *Very remote* and *Remote* areas rose and fell over the period, probably as a result of small case numbers.

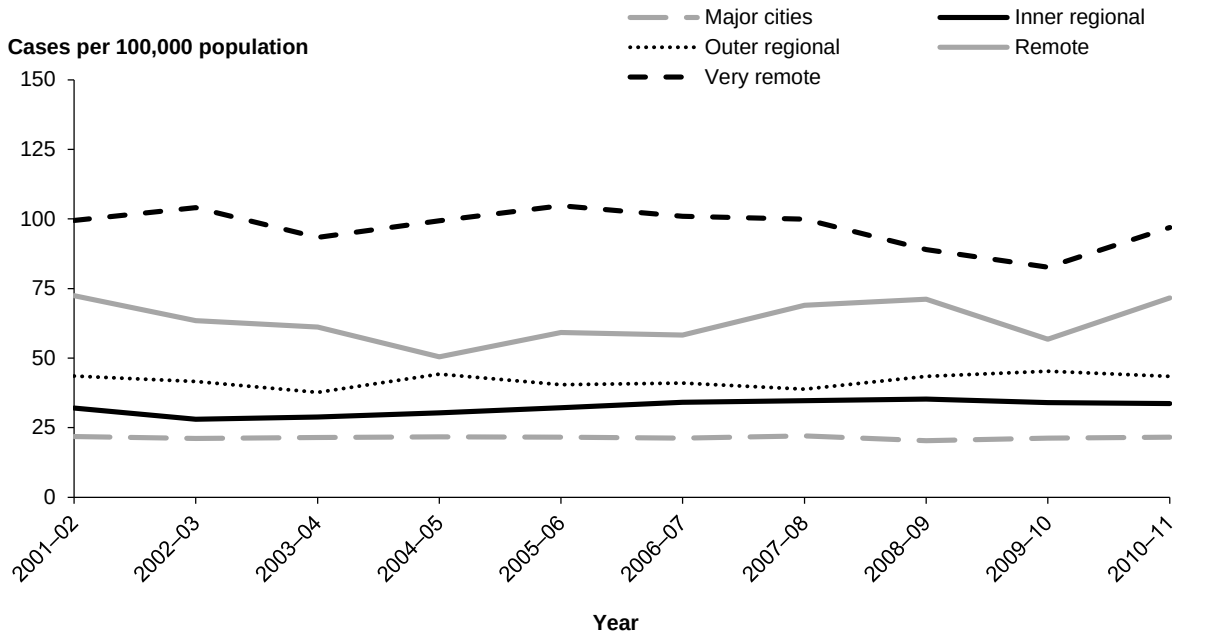
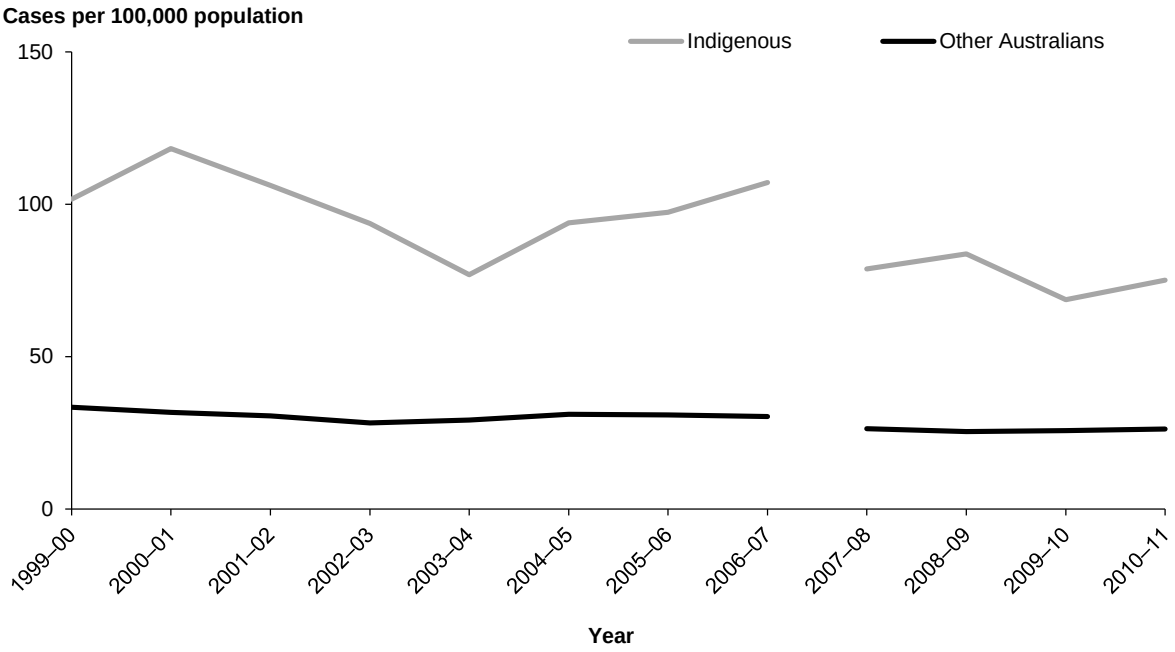


Figure 9.7: Age-standardised rates of exposure to smoke, fire, heat and hot substances cases, by remoteness of usual residence, Australia, 2001–02 to 2010–11

9.6 How have rates of thermal injury in Indigenous people changed over time?

The change in states and territories with sufficient quality of Indigenous ascertainment during the period is indicated by the break in series in Figure 9.8. Before 2007–08, 4 jurisdictions (WA, SA, NT, Qld) were included; New South Wales and Victoria were added after this.

Age-standardised rates of hospitalisations due to exposure to smoke, fire, heat and hot substances were higher among Indigenous people than Other Australians. Rates of exposure to smoke, fire, heat and hot substances fluctuated for Indigenous people but not for Other Australians, largely due to small case numbers (Figure 9.8). Due to the large fluctuations, no trend is discernible.



Notes

1. Four jurisdictions (WA, SA, NT, Qld) were included between 1999–00 and 2006–07. Six jurisdictions (WA, SA, NT, Qld, NSW and Vic) were included between 2007–08 and 2010–11. The different jurisdictional groupings are indicated by the break in series.

2. Data underpinning this figure are available in Table B.29 in Appendix B.

Figure 9.8: Age-standardised rates of exposure to smoke, fire, heat and hot substances cases, Aboriginal and Torres Strait Islander people and Other Australians, Australia, 1999–00 to 2010–11

10 Intentional self-harm

This chapter draws on data from the NHMD covering the years 1 July 1999 to 30 June 2011 to present an overview of trends in hospitalised intentional self-harm injury in Australia. It includes injury cases in which the first reported external cause is *Intentional self-harm* (ICD-10-AM X60–X84).

This chapter includes suicide and attempts to suicide, as well as cases where persons have intentionally hurt themselves, but not necessarily with the intention of suicide—for example, acts of self-mutilation. This chapter does not include cases where the intent was unspecified, unstated or could not be determined.

What methods were used?

This chapter includes injury cases meeting the criteria set out in section 1.3, providing that the first reported external cause code was in the ICD-10-AM range X60–X84 (*Intentional self-harm*) in Chapter *XX External causes of morbidity and mortality*.

Relevant terms and information regarding the data used in this chapter are summarised in Boxes 1.1, 1.2 and 10.1. Further information on methods is provided in Appendix A.

Box 10.1: External causes of intentional self-harm

This chapter focuses on the **Intentional self-harm** (X60–X84) section of Chapter XX *External causes of morbidity and mortality* which includes the following:

- 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)

(continued)

Box 10.1 (continued)

- Intentional self-harm by handgun discharge (X72)
- 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).

Ascertainment of intentional self-harm

According to inclusion notes in ICD-10-AM, cases should be assigned codes in the range X60–X84 if they were purposely self-inflicted poisoning or injury, suicide or attempted suicide (NCCH 2010). Determining whether an injury is due to intentional self-harm is not always straightforward. Cases may appear to be intentional self-harm, but inconclusiveness of available information may preclude them being coded as such. In this situation, the case can be coded to an 'undetermined intent' category (for example, Y30 *Falling, jumping or pushed from a high place, undetermined intent* or Y32 *Crashing of motor vehicle, undetermined intent*).

Some patients may choose not to disclose that their injuries resulted from intentional self-harm, or may be unable to do so due to the nature of the injuries, or because their motives were ambiguous. In very young children, ascertaining whether an injury was due to intentional self-harm can be difficult and may involve a parent or care giver's perception of the intent. Ability to form an intention to inflict self-harm and to understand the implications of doing so requires a degree of maturation that is absent in infancy and early childhood. The age at which self-inflicted acts can be interpreted as intentional self-harm is not well-defined and is the subject of debate. Such sources of uncertainty about the assignment of intent limit the certainty of any estimates of intentional self-harm based on routine hospital data.

10.1 How many hospitalised intentional self-harm cases were there in 2010–11?

There were an estimated 26,062 cases of intentional self-harm during 2010–11 (Table 10.1). More females than males were hospitalised and the age-standardised rate was also higher for females.

Table 10.1: Key indicators for intentional self-harm cases, Australia, 2010–11

Indicators	Males	Females	Persons
Estimated intentional self-harm cases	9,748	16,314	26,062
Per cent of all injury cases	3.9	8.6	5.9
Age-standardised rate/100,000 population	87	148	117

Age and sex

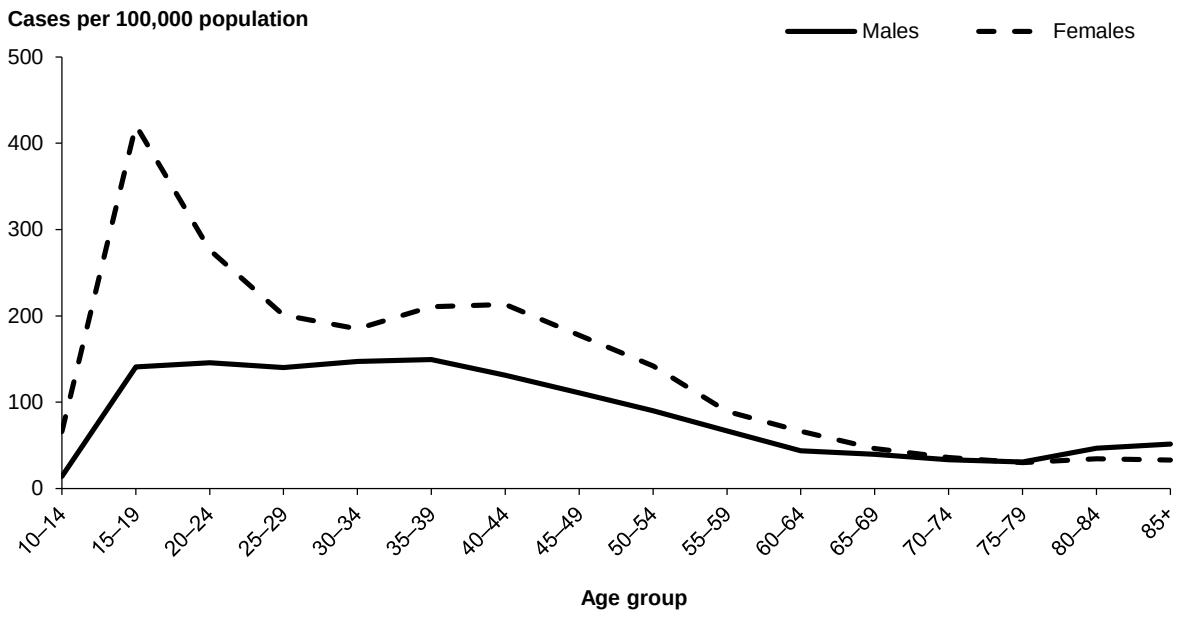
Cases of intentional self-harm in very young children may be subject to misinterpretation given the difficulties in assigning intent to the actions of young children. With this in mind and due to the small number of cases of intentional self-harm in children, the youngest age groups have been combined.

Almost half (42%) of all cases of intentional self-harm occurred in the 25–44 age group (Table 10.2). Higher proportions of males (47%) were hospitalised as a result of self-harm in this age group compared with females (40%). In contrast, among 15–24 year olds, higher proportions of females were hospitalised as a result of intentional self-harm compared with males.

Table 10.2: Intentional self-harm cases by age, Australia, 2010–11

	Males		Females		Persons	
Age group	Number	Per cent	Number	Per cent	Number	Per cent
0–14	108	1.1	457	2.8	565	2.2
15–24	2,319	23.8	5,278	32.4	7,597	29.1
25–44	4,551	46.7	6,479	39.7	11,030	42.3
45–64	2,230	22.9	3,487	21.4	5,717	21.9
65+	540	5.5	613	3.8	1,153	4.4
Total	**9,748**	**100.0**	**16,314**	**100.0**	**26,062**	**100.0**

Age-specific rates of intentional self-harm differ by sex. Up to 70–74 years, rates were higher for females than males. The difference was substantial at 15–19 years where the rate for females (421 cases per 100,000 population) was almost three times that of males (141 cases per 100,000).



Note: Excludes data for 0–9 year olds due to small case numbers.

Figure 10.1: Age-specific rates of intentional self-harm cases, by sex, Australia, 2010–11

Remoteness of usual residence

The age-standardised rate of hospitalised intentional self-harm in 2010–11 increased with increasing remoteness (Table 10.3). The lowest was in *Major cities* (112 per 100,000 population) and the highest in *Very remote* areas (166).

Table 10.3: Intentional self-harm cases by remoteness of usual residence, Australia, 2010–11

	Remoteness of usual residence					
Indicators	**Major cities**	**Inner regional**	**Outer regional**	**Remote**	**Very remote**	**Total[(a)]**
Estimated intentional self-harm cases	17,325	5,237	2,332	486	335	25,715
Per cent	67.4	20.4	9.1	1.9	1.3	100.0
Age-standardised rate/100,000 population	112	132	124	152	166	117

(a) Excludes 347 cases where remoteness was not reported or residence was reported as an external territory.

Aboriginal and Torres Strait Islander people

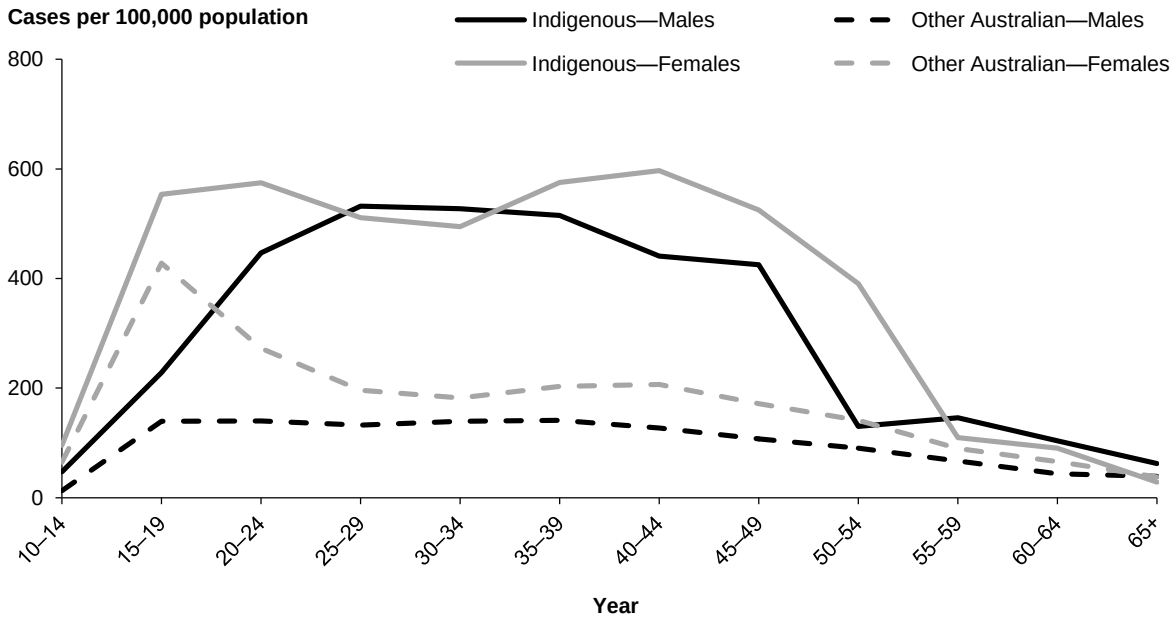
There were an estimated 1,526 cases of Indigenous people hospitalised as a result of intentional self-harm in 2010–11 (Table 10.4). More females than males were hospitalised. Intentional self-harm cases among Indigenous people made up a slightly higher proportion (8%) of all hospitalised injury compared with Other Australians (6%). The age-standardised rates of intentional self-harm among Indigenous people were more than twice that of Other Australians.

Table 10.4: Key indicators for intentional self-harm cases, Aboriginal and Torres Strait Islander people and Other Australians, Australia[(a)], 2010–11

	Aboriginal and Torres Strait Islander people			Other Australians		
Indicators	**Males**	**Females**	**Persons**	**Males**	**Females**	**Persons**
Estimated intentional self-harm cases	652	874	1,526	8,703	14,817	23,520
Per cent of all cases of hospitalisations for injury	5.9	10.3	7.8	3.9	8.7	6.0
Age-standardised rate/100,000 population	259	325	292	85	146	115

(a) Excludes data for Tasmania and the Australian Capital Territory (see Box 1.2).

The pattern of age and sex-specific rates of intentional self-harm for Indigenous people was very different from that for Other Australians (Figure 10.2). Rates of intentional self-harm were higher for both male and female Indigenous people in the 15–19 to 45–49 age groups than for Other Australians in the same age groups.



Notes

1. Excludes data for Tasmania and the Australian Capital Territory (see Box 1.2).
2. Excludes data for 0–9 year olds due to small case numbers.

Figure 10.2: Age-specific rates of intentional self-harm cases, by sex, Aboriginal and Torres Strait Islander people and Other Australians, Australia, 2010–11

Mechanism

Intentional self-poisoning (X60–X69) accounted for 82% of all cases of self-harm in 2010–11 (Table 10.5), with female case numbers (13,975) almost twice as high as males (7,355). The second most common mechanism overall was *Intentional self-harm by sharp object* (13%) and again, there were more cases for females than males.

Hanging, strangulation and suffocation accounted for 2% of all self-harm cases, but substantially more males were admitted for this method than females (404 and 177 cases respectively). More than twice as many males as females were admitted for *Intentional poisoning by other gases and vapours*; this category includes the toxic effects of carbon monoxide.

Forty-six per cent of all cases of intentional self-harm were poisoning by and exposure to *antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs* (11,959). This category includes benzodiazepines, other and unspecified antidepressants—which include selective serotonin reuptake inhibitors, other and unspecified antipsychotics and neuroleptics, other antiepileptic and sedative-hypnotic drugs, tricyclic and tetracyclic antidepressants, phenothiazine antipsychotics and neuroleptics and psychostimulants with potential for use disorder.

Intentional self-poisoning by narcotics and psychodysleptics (hallucinogens) accounted for 5% of self-harm cases. This category includes cannabis (and its derivatives), cocaine, heroin, codeine and LSD among others. *Intentional self-poisoning by alcohol* was reported in 316 cases.

Table 10.5: Mechanism of intentional self-harm injury cases, Australia, 2010–11

	Males		Females		Persons	
External cause	No.	Per cent	No.	Per cent	No.	Per cent
Intentional self-poisoning by and exposure to:						
Nonopioid analgesics, antipyretics and antirheumatics	1,246	12.8	3,621	22.2	4,867	18.7
Antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs	4,159	42.7	7,800	47.8	11,959	45.9
Narcotics and psychodysleptics (hallucinogens)	580	5.9	759	4.7	1,339	5.1
Other drugs acting on the autonomic nervous system	109	1.1	131	0.8	240	0.9
Other and unspecified drugs, medicaments and biological substances	647	6.6	1,107	6.8	1,754	6.7
Alcohol	123	1.3	193	1.2	316	1.2
Organic solvents and their halogenated hydrocarbons and their vapours	25	0.3	23	0.1	48	0.2
Other gases and vapours (for example, carbon monoxide)	231	2.4	83	0.5	314	1.2
Pesticides	88	0.9	49	0.3	137	0.5
Other and unspecified chemicals and noxious substances	147	1.5	209	1.3	356	1.4
Intentional self-harm by hanging, strangulation and suffocation	404	4.1	177	1.1	581	2.2
Intentional self-harm by drowning and submersion	12	0.1	15	0.1	27	0.1
Intentional self-harm by handgun discharge	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Intentional self-harm by other and unspecified firearm discharge	22	0.2	5	0.0	27	0.1
Intentional self-harm by explosive material	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Intentional self-harm by smoke, fire and flames	62	0.6	42	0.3	104	0.4
Intentional self-harm by steam, hot vapours and hot objects	n.p.	n.p.	n.p.	n.p.	16	0.1
Intentional self-harm by sharp object	1,577	16.2	1,811	11.1	3,388	13.0
Intentional self-harm by blunt object	38	0.4	16	0.1	54	0.2
Intentional self-harm by jumping from a high place	56	0.6	70	0.4	126	0.5
Intentional self-harm by jumping or lying before moving object	23	0.2	13	0.1	36	0.1
Intentional self-harm by crashing of motor vehicle	51	0.5	31	0.2	82	0.3
Intentional self-harm by other specified means	98	1.0	82	0.5	180	0.7
Intentional self-harm by unspecified means	49	0.5	60	0.4	109	0.4
Total	**9,748**	**100.0**	**16,314**	**100.0**	**26,062**	**100.0**

The top three causes of intentional self-harm did not vary much by age with *Intentional self-poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs* the most common mechanism followed by poisoning with nonopioid analgesics, antipyretics and antirheumatics and *Intentional self-harm by sharp object* (Table 10.6). The relative proportions of mechanisms did vary with age group.

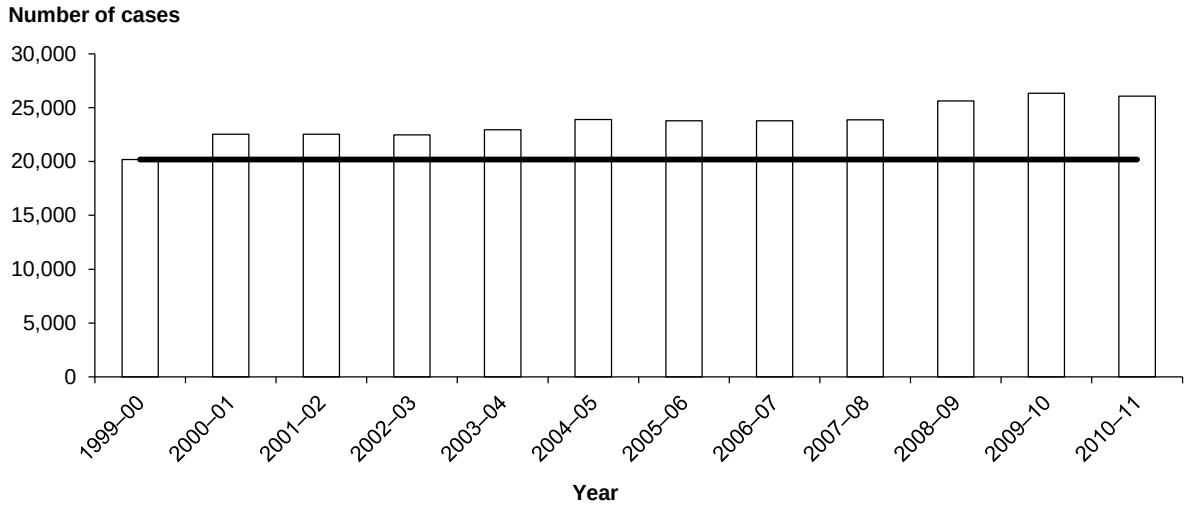
Sex differences were apparent within the age groups. For example, there was a much higher proportion of *Intentional self-poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics* among 15–24 year old females (34%) compared with males (19%).

Table 10.6: Top 3 mechanisms of intentional self-harm cases, by age group, Australia, 2010–11

	Number	Per cent
0–14 year olds		
Intentional self-poisoning by and exposure to:		
Antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs	250	44.4
Nonopioid analgesics, antipyretics and antirheumatics	118	21.0
Intentional self-harm by sharp object	61	10.8
Total intentional self-harm in 0–14	**563**	**2.2**
15–24 year olds		
Intentional self-poisoning by and exposure to:		
Antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs	2,812	37.0
Nonopioid analgesics, antipyretics and antirheumatics	2,238	29.5
Intentional self-harm by sharp object	1,109	14.6
Total intentional self-harm in 15–24	**7,597**	**29.0**
25–44 year olds		
Intentional self-poisoning by and exposure to:		
Antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs	5,372	48.7
Nonopioid analgesics, antipyretics and antirheumatics	1,584	24.4
Intentional self-harm by sharp object	1,588	14.4
Total intentional self-harm in 25–44	**11,030**	**42.3**
45–64 year olds		
Intentional self-poisoning by and exposure to:		
Antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs	3,104	54.3
Nonopioid analgesics, antipyretics and antirheumatics	660	11.5
Intentional self-harm by sharp object	528	9.2
Total intentional self-harm in 45–64	**5,717**	**21.9**
65+ year olds		
Intentional self-poisoning by and exposure to:		
Antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs	552	47.9
Other and unspecified drugs, medicaments and biological substances	146	12.7
Nonopioid analgesics, antipyretics and antirheumatics	135	11.7
Total intentional self-harm in 65+	**1,430**	**4.4**

10.2 How have hospitalisations for intentional self-harm changed over time?

Figure 10.3 compares the number of cases of intentional self-harm each year with the baseline (20,166 cases in 1999–00). From 2000–01, the number of cases of intentional self-harm has been higher than the baseline. The largest difference was in 2009–10 when there were 6,165 more cases (26,331 in total) of hospitalised intentional self-harm.

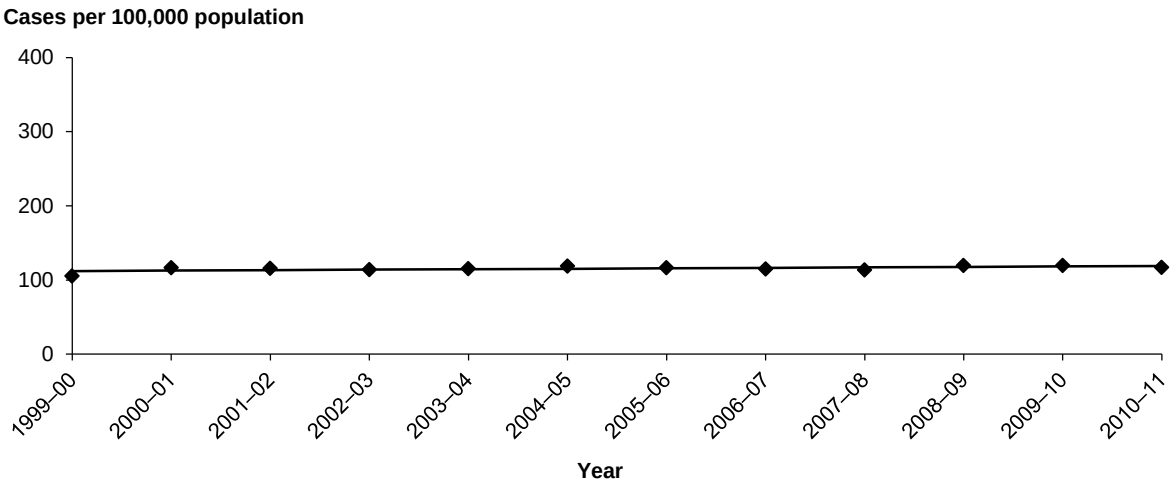


Note: The single line represents the number of cases of transport injury that occurred in 1999–00. It is referred to as the baseline.

Figure 10.3: Number of cases of intentional self-harm, Australia, 1999–00 to 2010–11

10.3 How have rates of intentional self-harm changed over time?

Rates of intentional self-harm increased from 105 cases per 100,000 population in 1999–00 to 117 in 2010–11 (Figure 10.4). The increase in modelled rate averaged 0.5% per year and was statistically significant (95% CI: 0.1%, 1.0%).



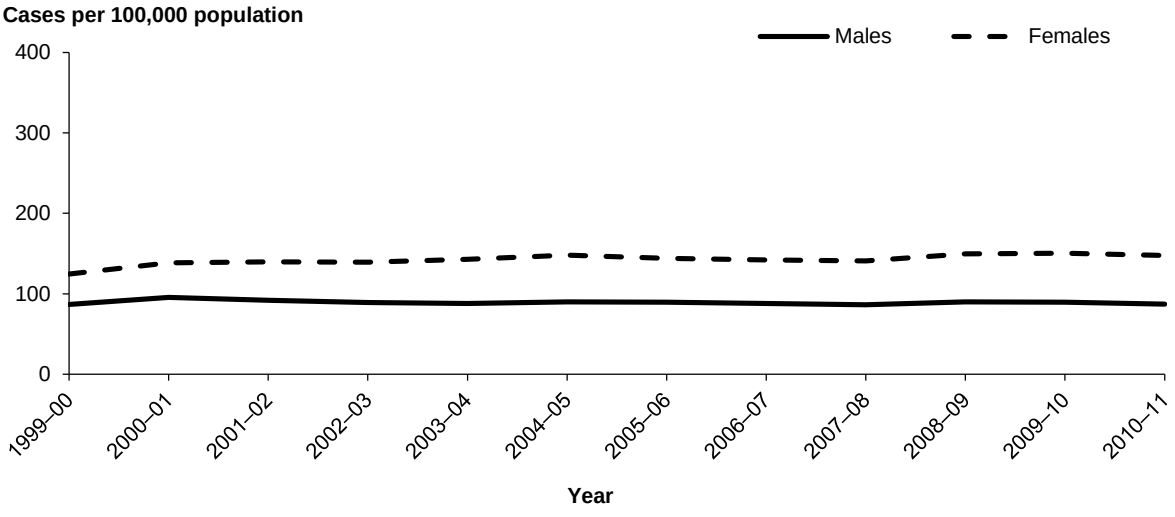
Notes

1. The line represents the modelled rate over the 12-year period, while symbols represent the actual age-standardised rate value for each year.
2. Data underpinning this figure are available in Table B.4 in Appendix B.

Figure 10.4: Modelled age-standardised rates of intentional self-harm cases, Australia, 1999–00 to 2010–11

10.4 How have rates of intentional self-harm varied by sex and age?

During the period, the age-standardised rate of intentional self-harm remained fairly steady for males and females (Figure 10.5). Rates for females were consistently higher than for males.



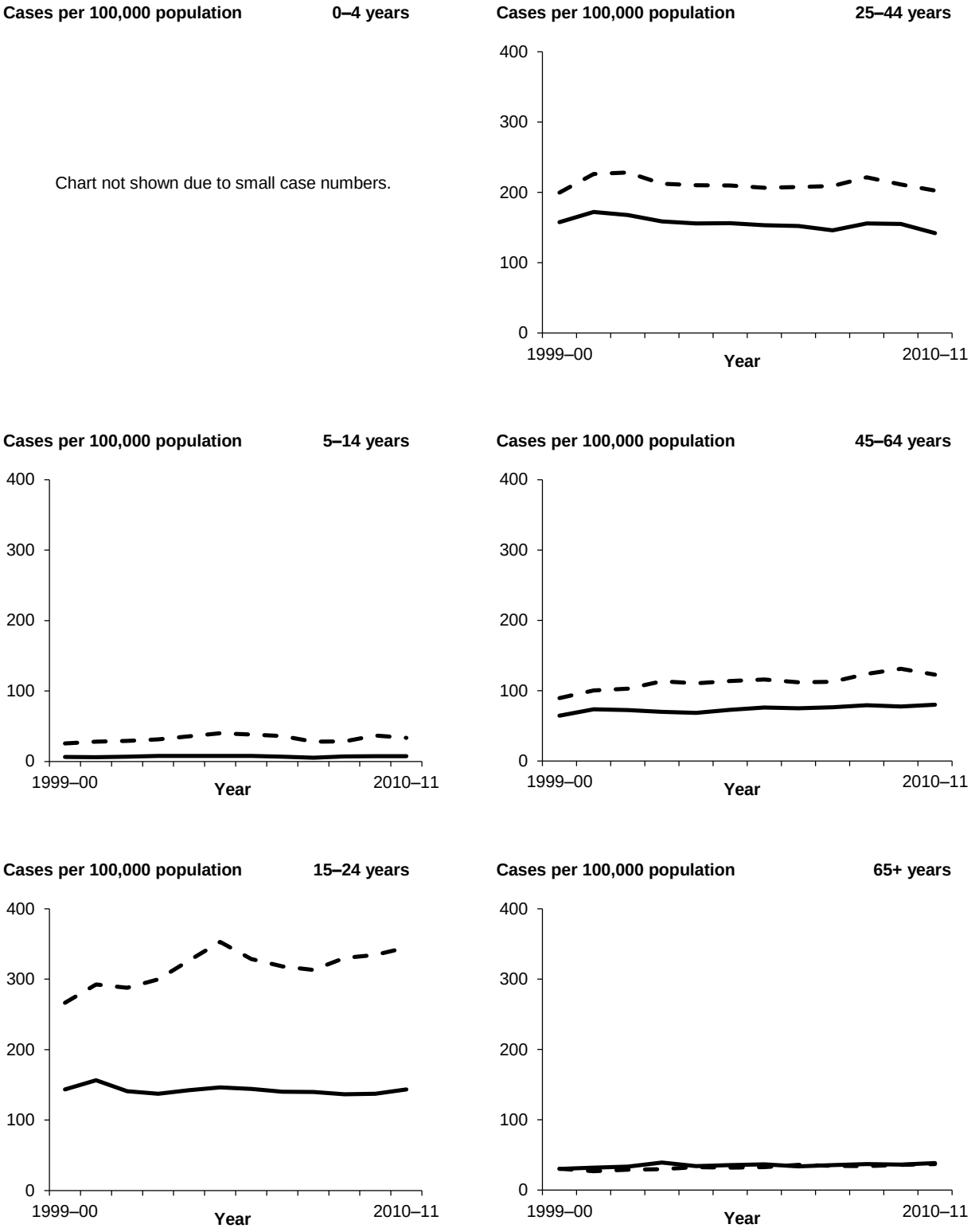
Note: Data underpinning this figure are available in Table B.17 in Appendix B.

Figure 10.5: Age-standardised rates of intentional self-harm cases, by sex, Australia, 1999–00 to 2010–11

An examination of the change in rates of intentional self-harm over time, by age and sex, is shown in Figure 10.6. Age-specific rates for children aged 0-4 were not shown due to small case numbers.

In contrast to the lack of trend in the age-standardised rates, increases in age-specific rates were seen among females aged 15–24. Despite the rise in rates for selected male age groups, the age-specific rates of intentional self-harm were higher for females in all age groups other than 65+.

Trends in the 15–24 age group were marked by large increases in the number of cases of poisoning by *antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs* (1,988 versus 2,812 cases) and *nonopioid analgesics, antipyretics and antirheumatics* drugs (1,252 versus 2,238 cases) from the beginning to the end of the period. The number of cases of *Intentional self-harm by sharp object* also rose substantially with 576 cases in 1999–00 and 1,109 in 2010–11. For females, the number of cases of *Intentional self-harm by sharp object* more than doubled, from 274 in 1999–00 to 640 in 2010–11.



Notes

1. Rates for males are indicated by the solid line and rates for females by the broken line in all charts.
2. Data underpinning this figure are available in Tables B.17 and B.18 in Appendix B.

Figure 10.6: Age-specific rates of intentional self-harm cases, by age and sex, Australia, 1999–00 to 2010–11

10.5 How have rates of intentional self-harm varied by remoteness?

Generally speaking, the age-standardised rates of intentional self-harm increased with increasing remoteness (Figure 10.7). The exception to this is the pattern of rates in *Remote* areas. In the first half of the period, rates of intentional self-harm in *Remote* areas were consistently lower than *Inner regional* and *Very remote* regions, but from 2006–07 rates were generally higher than in all other remoteness areas. It is likely this result is influenced by the inclusion of Indigenous cases from New South Wales and Victoria that occurred after this time.

Lower rates over the period were observed in *Major cities*. There were small increases for *Remote* and *Outer regional* areas.

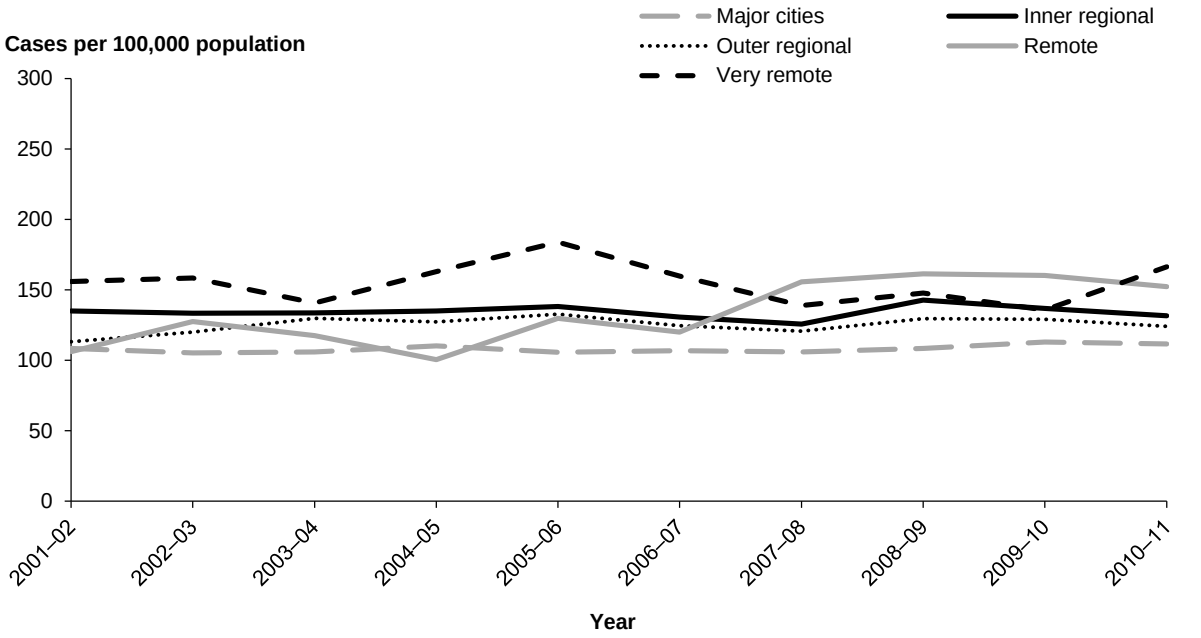


Figure 10.7: Age-standardised rates of intentional self-harm cases, by remoteness of usual residence, Australia, 2001–02 to 2010–11

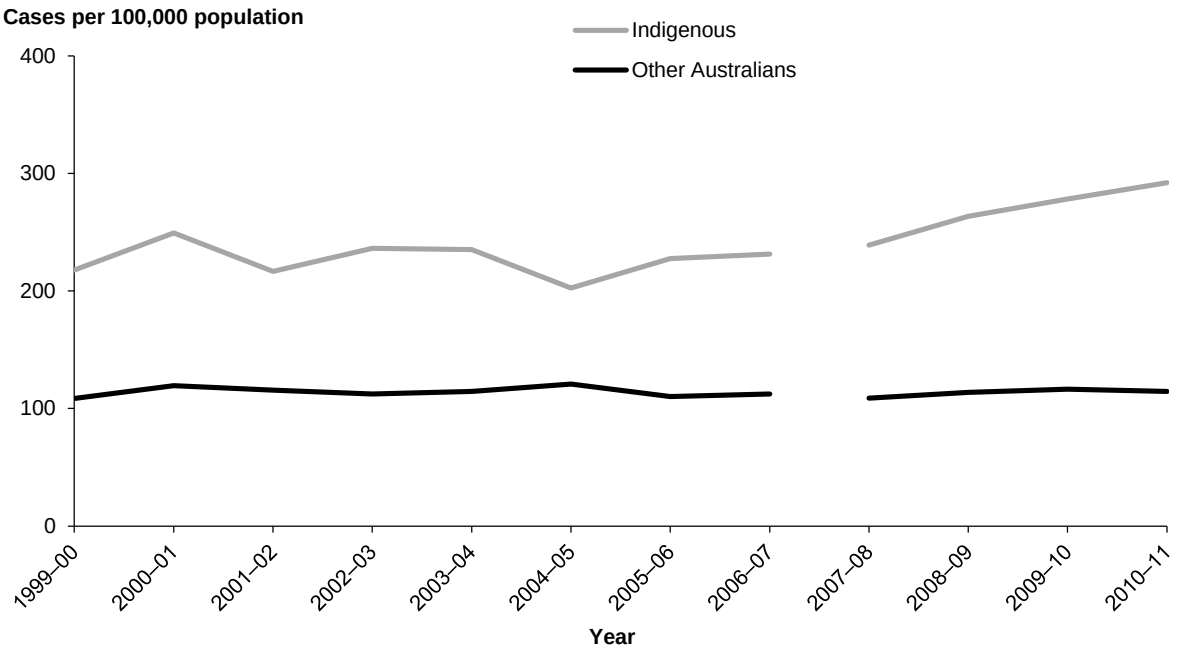
10.6 How have rates of intentional self-harm in Indigenous people changed over time?

The change in states and territories with sufficient quality of Indigenous ascertainment during the period is indicated by the break in series in Figure 10.8. Before 2007–08, 4 jurisdictions (WA, SA, NT, Qld) were included; New South Wales and Victoria were added after this.

Rates of intentional self-harm were much higher among Indigenous people than Other Australians. During the time in which 4 jurisdictions had sufficient ascertainment of Indigenous status to be included in the analysis (1999–00 to 2006–07), the age-standardised rates of intentional self-harm fluctuated for Indigenous people (Figure 10.8). From the period

beginning 2007–08, rates increased steadily for Indigenous people while a similar trend was not seen in Other Australians.

At face value, the rates for the 6 jurisdictions suggest an upward trend for Aboriginal and Torres Strait Islander people in the most recent 4 years reported, rising rapidly compared with the remainder of the population. Caution should be exercised in coming to that conclusion because of the small number of years of data for the 6 jurisdictions and because improvement of Indigenous identification in hospital data could have contributed to the apparent rise.



Notes

1. Four jurisdictions (WA, SA, NT, Qld) were included between 1999–00 and 2006–07. Six jurisdictions (WA, SA, NT, Qld, NSW and Vic) were included between 2007–08 and 2010–11. The different jurisdictional groupings are indicated by the break in series.
2. Data underpinning this figure are available in Table B.30 in Appendix B.

Figure 10.8: Age-standardised rates of intentional self-harm cases, Aboriginal and Torres Strait Islander people and Other Australians, Australia, 1999–00 to 2010–11

11 Assault

This chapter draws on data from the NHMD covering the years 1 July 1999 to 30 June 2011 to present an overview of trends in hospitalised intentional assault injury in Australia. This chapter includes injury cases in which the first reported external cause is *Assault* (ICD-10-AM X85–Y09) or *Legal intervention and operations of war* (Y35–Y36). As defined here, this category includes all cases in which a person, or more than one person, intentionally injured another person. It does not include cases where the intent was unspecified, unstated or could be determined.

What methods were used?

This chapter includes injury cases meeting the criteria set out in section 1.3, providing that the first reported external cause code was in the ICD-10-AM range X85–Y09 (*Assault*) and Y35–Y36 (*Legal intervention and operations of war*) in Chapter *XX External causes of morbidity and mortality*.

Relevant terms and information regarding the data used in this chapter are summarised in Boxes 1.1, 1.2 and 11.1. Further information on methods is provided in Appendix A.

Box 11.1: External causes of assault injury

This chapter focuses on two sections of Chapter XX *External causes of morbidity and mortality; Assault* (ICD-10-AM X85–Y09) and *Legal intervention and operations of war* (Y35–Y36) which include:

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)

(continued)

Box 11.1 (continued)

- 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).

As with intentional self-harm, there are reasons to think that the identification of admitted injury cases as being due to inter-personal violence is not entirely complete. Feelings of shame or embarrassment may underlie reticence to admit to both types of intentional injury. In addition, most injury due to inter-personal violence has potential legal implications. Pressures or incentives not to reveal assault are particularly likely in circumstances such as injury of a child or other dependent person by a care-giver, and injury of one spouse by the other. Cases recognised as possibly being due to assault, but where doubt remains, can be coded as undetermined intent.

11.1 How many hospitalised assault cases were there in 2010–11?

There were an estimated 22,616 cases of assault injury during 2010–11 (Table 11.1). More than twice as many males as females were hospitalised. The age-standardised rate was also higher in males than females.

Table 11.1: Key indicators for hospitalised assault cases, Australia, 2010–11

Indicators	Males	Females	Persons
Estimated hospitalised assault cases	16,470	6,144	22,616
Per cent of all injury cases	6.6	3.3	5.2
Age-standardised rate/100,000 population	146	56	102

Age and sex

Almost half of all assault cases in males (45%) occurred in the 25–44 age group, and a third (33%) in the 15–24 age group (5,811 cases) (Table 11.2). Just over one-quarter of female assault cases involved young women aged 15–24 and 54% involved women aged 25–44. Three per cent involved children under 15.

Table 11.2: Hospitalised assault cases by age and sex, Australia, 2010–11

	Males		Females		Persons	
Age group	Number	Per cent	Number	Per cent	Number	Per cent
0–4	108	0.7	100	1.6	208	0.9
5–14	286	1.7	152	2.5	438	1.9
15–24	5,811	35.3	1,541	25.1	7,353	32.5
25–44	7,483	45.4	3,290	53.5	10,774	47.6
45–64	2,465	15.0	916	14.9	3,381	14.9
65+	317	1.9	145	2.4	462	2.0
Total	**16,470**	**100.0**	**6,144**	**100.0**	**22,616**	**100.0**

Age-specific rates for males were significantly higher than for females between the ages of 15 and 74 (Figure 11.1). Male rates for assault peaked in the 20–24 age group with an age-specific rate of 395 hospitalisations per 100,000 population compared with 113 for females in the same age group.

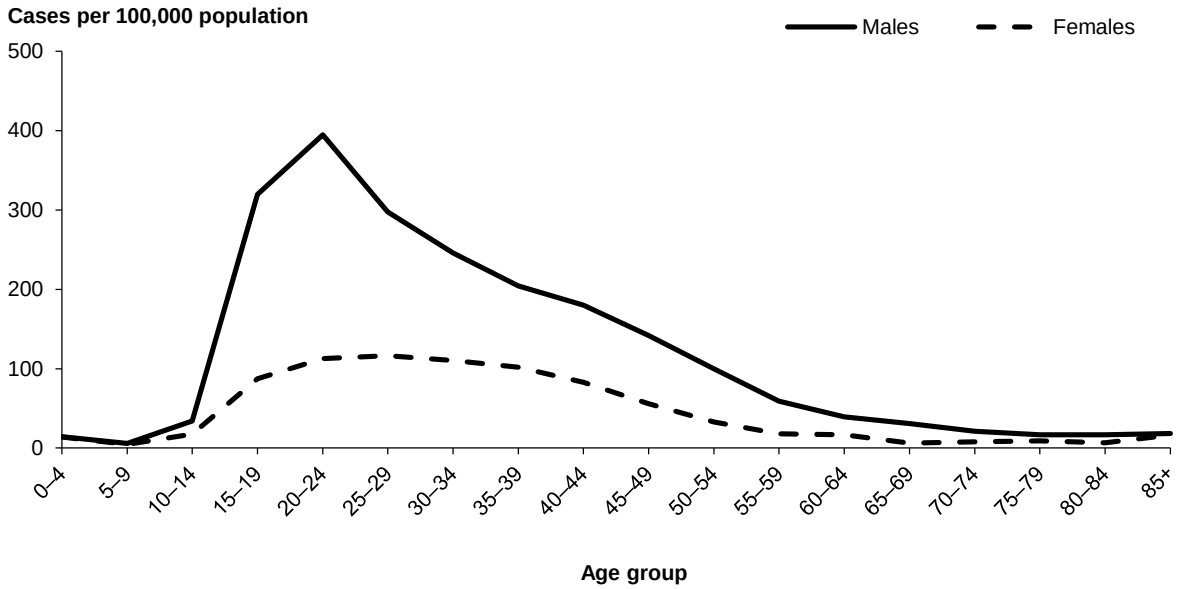


Figure 11.1: Age-specific rates of hospitalised assault cases, by sex, Australia, 2010–11

Remoteness of usual residence

The age-standardised rate of injury increased with increasing remoteness (Table 11.3). The rate of assault in *Very remote* areas (962 cases per 100,000 population) was more than 13 times the rate in *Major cities* (79 cases per 100,000).

Table 11.3: Hospitalised assault cases by remoteness of usual residence, Australia, 2010–11

	Remoteness of usual residence					
Indicators	Major cities	Inner regional	Outer regional	Remote	Very remote	Total[(a)]
Estimated assault cases	12,334	3,580	2,562	1,627	1,943	22,046
Per cent	55.9	16.2	11.6	7.4	8.8	100.0
Age-standardised rate/100,000 population	79	94	141	508	962	102

(a) Excludes 570 cases where remoteness was not reported or residence was reported as an external territory.

Aboriginal and Torres Strait Islander people

There were an estimated 5,391 cases of Indigenous people hospitalised as a result of assault in 2010–11 (Table 11.4). More females were hospitalised than males. Assaults made up a much higher proportion of all hospitalisations among Indigenous people (28%) compared with Other Australians (4%). The age-standardised rates of assault among Indigenous people were more than 13 times that of Other Australians. The rate among Indigenous females was over 36 times higher than Other Australian females.

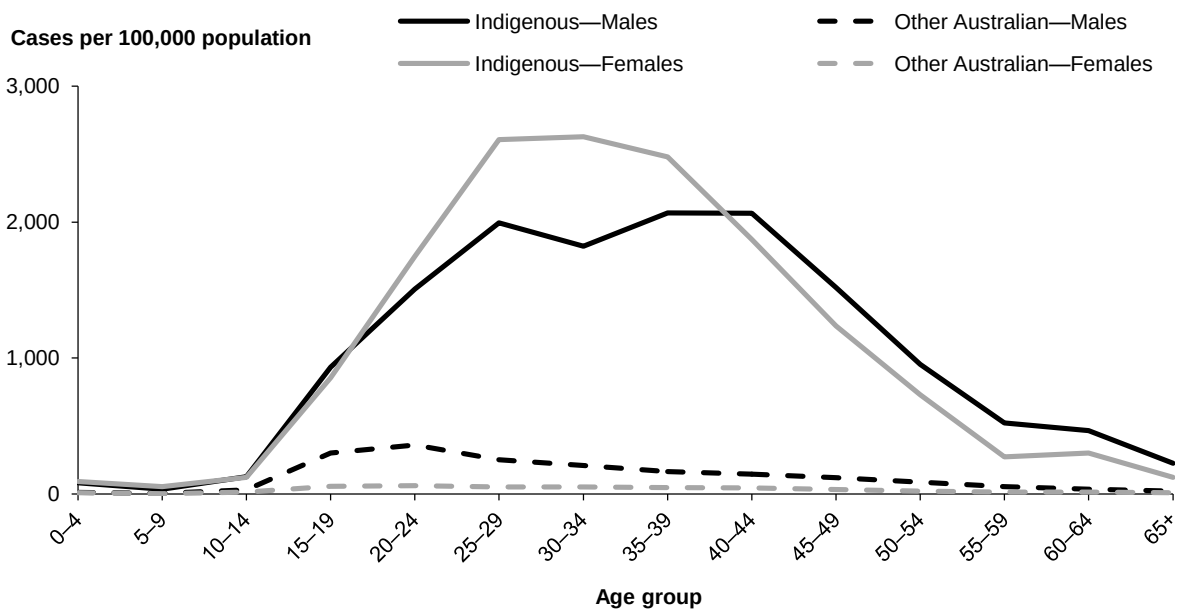
Table 11.4: Key indicators for hospitalised assault cases, Aboriginal and Torres Strait Islander people and Other Australians, Australia[(a)], 2010–11

	Aboriginal and Torres Strait Islander people			Other Australians		
Indicators	Males	Females	Persons	Males	Females	Persons
Estimated assault cases	2,545	2,845	5,391	13,158	3,126	16,285
Per cent of all cases of hospitalisations for injury	23.0	33.5	27.6	5.9	1.8	4.1
Age-standardised rate/100,000 population	1,027	1,094	1,058	127	31	79

(a) Excludes data for Tasmania and the Australian Capital Territory (see Box 1.2).

The pattern by age was very different for Indigenous males and females compared with Other Australians (Figure 11.2). Rates of assault were much higher at 15–19 years of age and were higher for age groups up to about 60–64 for Indigenous people.

The highest rate of cases due to assault occurred at 30–34 for Indigenous females (2,628 cases per 100,000 population). In the same age group for Other Australian females, the rate of assault injury was 53 cases per 100,000. For Indigenous males the highest rate occurred at 35–39 (2,067 cases per 100,000 population); at the same age, the rate in Other Australian males was 165 cases per 100,000.



Note: Excludes data for Tasmania and the Australian Capital Territory (see Box 1.2).

Figure 11.2: Age-specific rates of hospitalised assault cases, by sex, Aboriginal and Torres Strait Islander people and Other Australians, Australia, 2010–11

Mechanism

The most common mechanism by which injury occurred was *Assault by bodily force*, 60% of cases (13,468). Almost three times as many males as females were injured as a result of bodily force (Table 11.5). The second and third most common mechanisms of injury were *Assault by blunt object* (13%) and *Assault by sharp object* (12%) and again more males than females were hospitalised due to these causes. Females were more likely than males to be hospitalised as a result of a sexual assault (14 and 153 cases respectively).

Table 11.5: Mechanism of hospitalised assault cases, by sex, Australia, 2010–11

	Males		Females		Persons	
External cause	**Number**	**Per cent**	**Number**	**Per cent**	**Number**	**Per cent**
Assault by drugs, medicaments and biological substances	15	0.1	32	0.5	47	0.2
Assault by corrosive substance	n.p.	n.p.	n.p.	n.p.	11	0.0
Assault by pesticides	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Assault by gases and vapours	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Assault by other specified chemicals and noxious substances	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Assault by unspecified chemical or noxious substance	6	0.0	7	0.1	13	0.1
Assault by hanging, strangulation and suffocation	27	0.2	42	0.7	69	0.3
Assault by drowning and submersion	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Assault by handgun discharge	17	0.1	1	0.0	18	0.1
Assault by other and unspecified firearm discharge	110	0.7	9	0.1	119	0.5
Assault by explosive material	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Assault by smoke, fire and flames	20	0.1	12	0.2	32	0.1
Assault by steam, hot vapours and hot objects	28	0.2	23	0.4	51	0.2
Assault by sharp object	2,103	12.8	671	10.9	2,774	12.3
Assault by blunt object	2,037	12.4	1,002	16.3	3,040	13.4
Assault by pushing from high place	16	0.1	6	0.1	22	0.1
Assault by pushing or placing victim before moving object	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Assault by crashing of motor vehicle	17	0.1	7	0.1	24	0.1
Assault by bodily force	10,029	60.9	3,438	56.0	13,468	59.6
Sexual assault by bodily force	14	0.1	153	2.5	167	0.7
Neglect and abandonment	10	0.1	23	0.4	33	0.1
Other maltreatment syndromes	88	0.5	156	2.5	244	1.1
Assault by other specified means	294	1.8	125	2.0	419	1.9
Assault by unspecified means	1,536	9.3	419	6.8	1,955	8.6
Legal intervention involving firearm discharge	75	0.5	10	0.2	85	0.4
Operations of war	n.p.	n.p.	n.p.	n.p.	7	0.0
Total	**16,470**	**100.0**	**6,144**	**100.0**	**22,616**	**100.0**

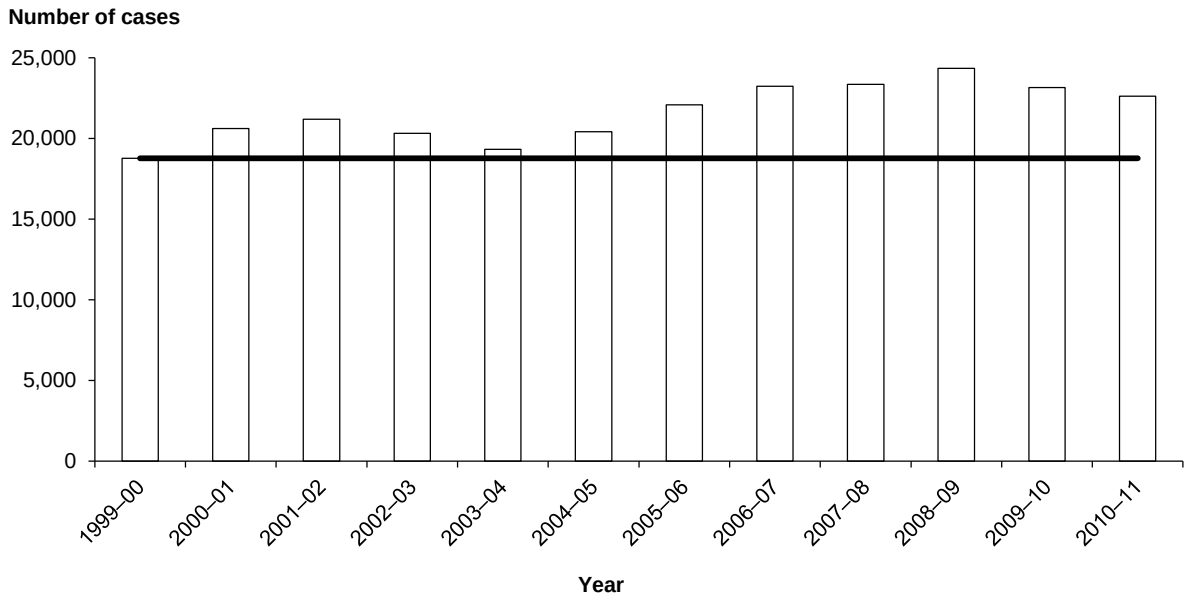
The top 3 causes of hospitalisation as a result of an assault did not vary much by age. Assault by bodily force accounted for well over 50% of all causes of hospitalisation in each age group other than children aged 0–4. For that group, the most common causes were maltreatment syndromes (Table 11.6).

Table 11.6: Top 3 mechanisms of hospitalised assault cases, 0–4 years, Australia, 2010–11

	Number	Per cent
0–4 year olds		
Other maltreatment syndromes	113	54.3
Assault by bodily force	40	19.2
Neglect and abandonment	17	8.2
Total assault in 0–4	**208**	**0.9**

11.2 How have hospitalisations for assault changed over time?

Figure 11.3 compares the number of cases of assault occurring each year with the baseline (18,762 cases in 1999–00). From 2000–01, the number of cases of assault has been higher than the baseline, increasing more sharply from 2003–04. The largest difference was in 2008–09 when there were 5,573 more cases (24,335 in total) of assault compared with the baseline.

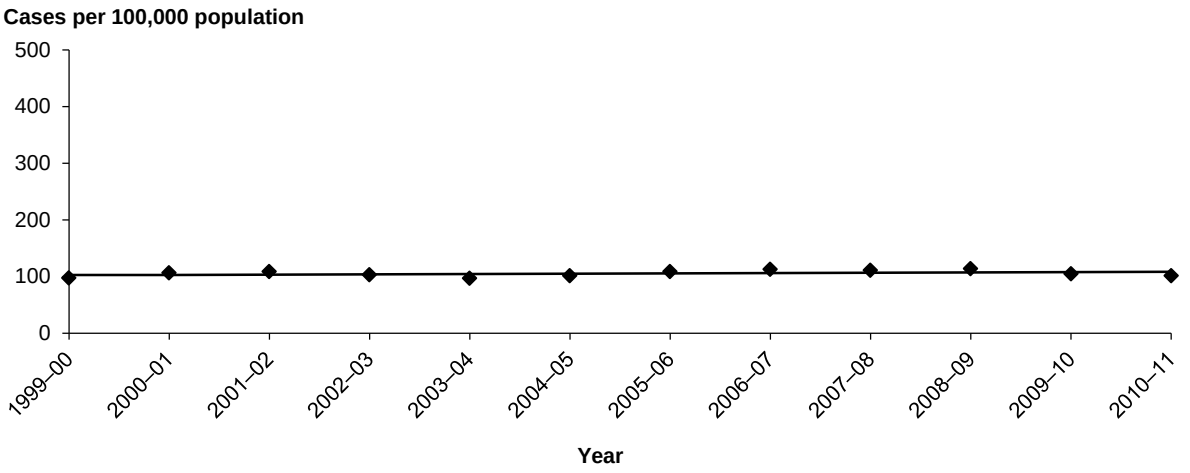


Note: The single line represents the number of cases of transport injury that occurred in 1999–00. It is referred to as the baseline.

Figure 11.3: Number of cases of hospitalised assault, Australia, 1999–00 to 2010–11

11.3 How have rates of assault changed over time?

Age-standardised rates of hospitalised injury cases due to assault fluctuated a little in the period, remaining close to 100 cases per 100,000 population (Figure 11.4). A small but statistically significant upward trend was present in modelled rates, averaging 0.5% per year (95% CI: 0.3%, 1.3%).



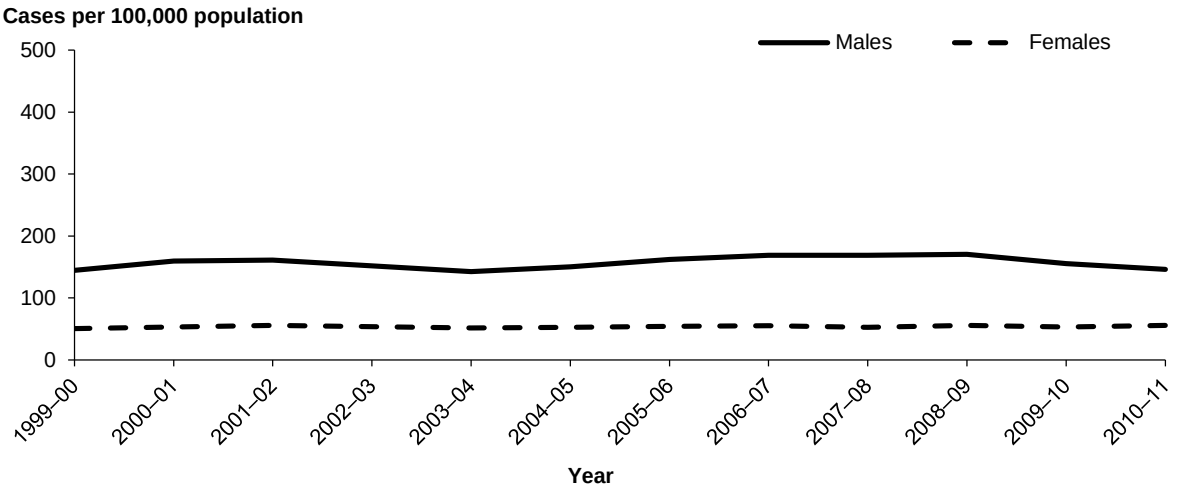
Notes

1. The line represents the modelled rate over the twelve-year period, while symbols represent the actual age-standardised rate value for each year.
2. Data underpinning this figure are available in Table B.4 in Appendix B.

Figure 11.4: Modelled age-standardised rates of hospitalised assault cases, Australia, 1999–00 to 2010–11

11.4 How have rates of assault varied by sex and age?

There was no marked change in age-standardised rates of assault for males or females over the period (Figure 11.5). Age-standardised rates of assault were higher for males in each year than females.



Note: Data underpinning this figure are available in Table B.19 in Appendix B.

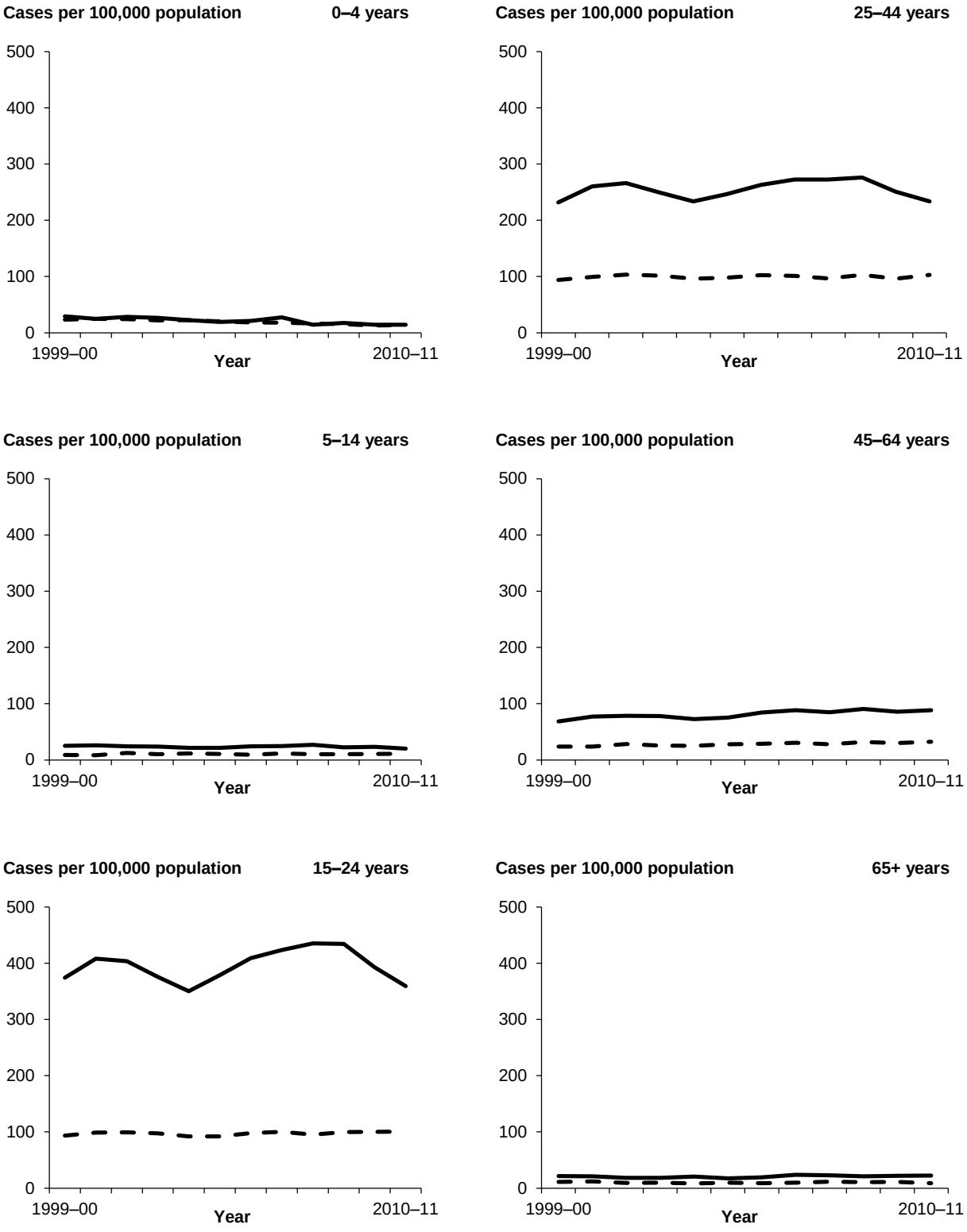
Figure 11.5: Age-standardised rates of hospitalised assault cases, by sex, Australia, 1999–00 to 2010–11

An examination of the change in rates over time, by age and sex, is shown in Figure 11.6. Age-specific rates of assault vary by age and sex, with the highest for both males and females between 15–44 years.

Age-specific rates of assault decreased in very young children (0-4) for both girls and boys. Contributing to this decrease was the decline in the total number of cases of *Other maltreatment syndrome* from 258 in 1999–00 to 113 in 2010–11.

Rates of injury in males aged 15–24, and to a lesser extent males aged 25–44, fluctuated over the period.

A slight increase was seen in the age-specific rate of assault among 45–64 year olds. Within this age group, the number of cases of *Assault by bodily force* increased from 1,049 in 1999–00 to 1,972 in 2010–11. Similarly, the number of cases *of Assault by blunt object* increased from 278 cases (1999–00) to 538 (2010–11).



Notes

1. Rates for males are indicated by the solid line and rates for females by the broken line in all charts.
2. Data underpinning this figure are available in Tables B.19 and B.20 in Appendix B.

Figure 11.6: Age-specific rates of hospitalised assault cases, by age and sex, Australia, 1999–00 to 2010–11

11.5 How have rates of assault varied by remoteness?

Age-standardised rates of assault increased with increasing remoteness (Figure 11.7). Rates of assault were highest in *Very remote* areas. The lowest rates were in *Major cities, Inner regional* and *Outer regional* areas, where no change over time was evident.

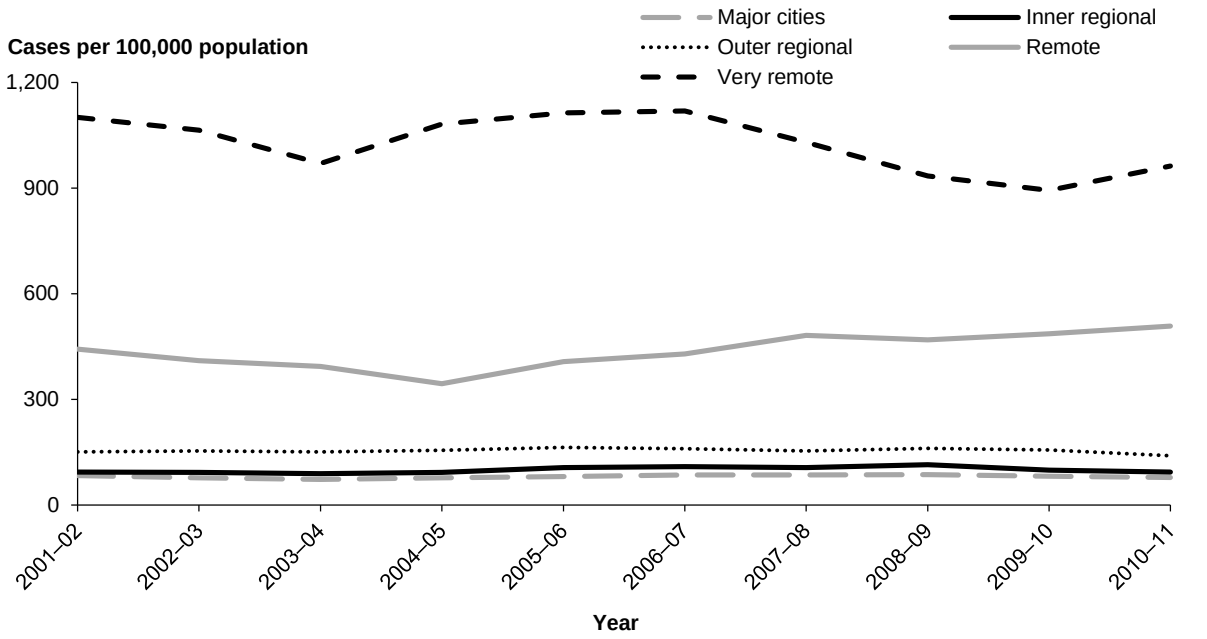


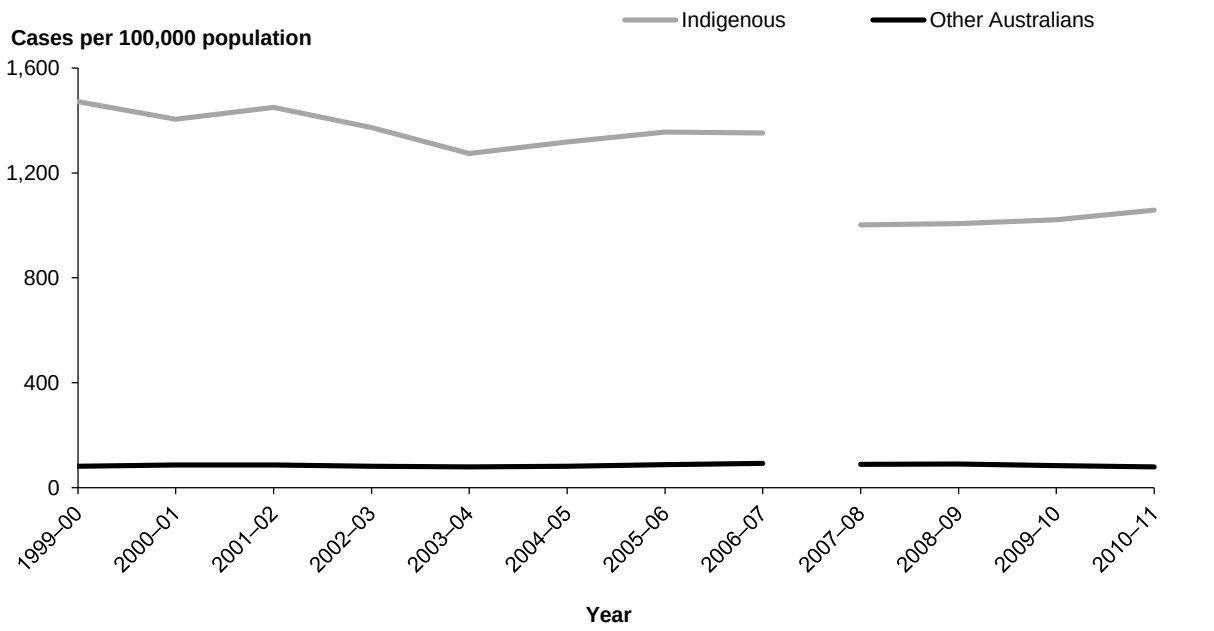
Figure 11.7: Age-standardised rates of hospitalised assault cases, by remoteness of usual residence, Australia, 2001–02 to 2010–11

11.6 How have rates of assault in Indigenous people changed over time?

The change in states and territories with sufficient quality of Indigenous ascertainment during the period is indicated by the break in series in Figure 11.8. Before 2007–08, 4 jurisdictions (WA, SA, NT, Qld) were included; New South Wales and Victoria were added after this.

Age-standardised rates of assault were much higher among Indigenous people than Other Australians over the period. During the time in which 4 jurisdictions had sufficient ascertainment of Indigenous status to be included in the analysis (1999–00 to 2006–07), the age-standardised rates of assault declined slowly for Indigenous people (Figure 11.8). From the period beginning 2007–08, rates were lower for Indigenous people but no clear downward trend was evident.

At face value, the rates for the 6-state region suggest a slight upward trend for Aboriginal and Torres Strait Islander people in the most recent 4 years reported. Caution should be exercised in coming to that conclusion because of the small number of years of data for the 6-state region and because improvement of Indigenous identification in hospital data could have contributed to the apparent rise.



Notes

1. Four jurisdictions (WA, SA, NT, Qld) were included between 1999–00 and 2006–07. Six jurisdictions (WA, SA, NT, Qld, NSW and Vic) were included between 2007–08 and 2010–11. The different jurisdictional groupings are indicated by the break in series.

2. Data underpinning this figure are available in Table B.31 in Appendix B.

Figure 11.8: Age-standardised rates of hospitalised assault cases, Aboriginal and Torres Strait Islander people and Other Australians, Australia, 1999–00 to 2010–11

12 Other unintentional injury

This chapter draws on data from the NHMD covering the years 1 July 1999 to 30 June 2011 to present an overview of trends in hospitalised other unintentional injuries in Australia. Other unintentional injury covers a wide range of injury mechanisms coded to categories in the *Other external causes of accidental injury* (W00–X59) section of ICD-10-AM. These external causes were placed in this residual category because they were either non-specific or accounted for relatively small proportions of the cases. Results have been provided for several sub-categories.

What methods were used?

This chapter includes injury cases meeting the criteria set out in section 1.3, providing that the first reported external cause code was in the ICD-10-AM range W20–W64, W75–W99, X20–X39, X50–X59 (*Other external causes of accidental injury*) in Chapter *XX External causes of morbidity and mortality*.

Relevant terms and information regarding the data used in this chapter are summarised in Boxes 1.1, 1.2 and 12.1. Further information on methods is provided in Appendix A.

Box 12.1: External causes of other unintentional injury

This chapter focuses on one section of Chapter XX *External causes of morbidity and mortality; Other external causes of accidental injury* (W00–X59) which includes:

- Exposure to inanimate mechanical forces (W20–W49) includes for example, *Caught, caught, jammed or pinched in or between objects* (W23) and *Contact with sharp glass* (W25)
- Exposure to animate mechanical forces (W50–W64) includes for example, *Striking against or bumped in to by another person* (W51) and *Bitten or struck by other mammals* (W55)
- Other accidental threats to breathing (W75–W84) includes for example, *Other accidental hanging and strangulation* (W76) and *Inhalation of gastric contents* (W78)
- Exposure to electric current, radiation and extreme ambient air temperature and pressure (W85–W99)
- Contact with venomous animals and plants (X20–X29)
- Exposure to forces of nature (X30–X39) includes for example, *Exposure to excessive natural heat* (X30) and *Victim of flood* (X38)
- Overexertion, travel and privation (X50–X57) includes for example, *Over exertion and strenuous or repetitive movements* (X50) and *Lack of water* (X54)
- Accidental exposure to other and unspecified factors (X58–X59).

12.1 How many hospitalisations for other unintentional injuries were there in 2010–11?

There were an estimated 140,850 cases of other unintentional injury during 2010–11 (Table 12.1). More than twice as many males as females were hospitalised. The age-standardised rate was also higher for males than females.

Table 12.1: Key indicators for other unintentional injury cases, Australia, 2010–11

Indicators	Males	Females	Persons
Estimated other unintentional injury cases	98,462	42,386	140,850
Per cent of all injury cases	39.5	22.4	32.1
Age-standardised rate/100,000 population	876	367	624

Age and sex

The highest proportion of other unintentional cases (31%) was in the 25–44 age group (Table 12.2). Similar to the overall distribution of all cause injury hospitalisations by age and sex, females (21%) had a much higher proportion of other unintentional injuries at 65+ than males (9%).

Table 12.2: Other unintentional injury cases by age, Australia, 2010–11

	Males		Females		Persons	
Age group	Number	Per cent	Number	Per cent	Number	Per cent
0–4	4,459	4.5	3,218	7.6	7,677	5.5
5–14	8,513	8.6	4,162	9.8	12,676	9.0
15–24	23,155	23.5	5,650	13.3	28,805	20.5
25–44	32,942	33.5	10,436	24.6	43,378	30.8
45–64	21,067	21.4	9,851	23.2	30,918	22.0
65+	8,326	8.5	9,069	21.4	17,395	12.4
Total	**98,462**	**100.0**	**42,386**	**100.0**	**140,850**	**100.0**

Age-specific rates for males were much higher than females except in the 2 oldest age groups (Figure 12.1). Male rates peaked at 20–24 with an age-specific rate of 1,434 hospitalisations per 100,000 population compared with 347 for females in the same age group.

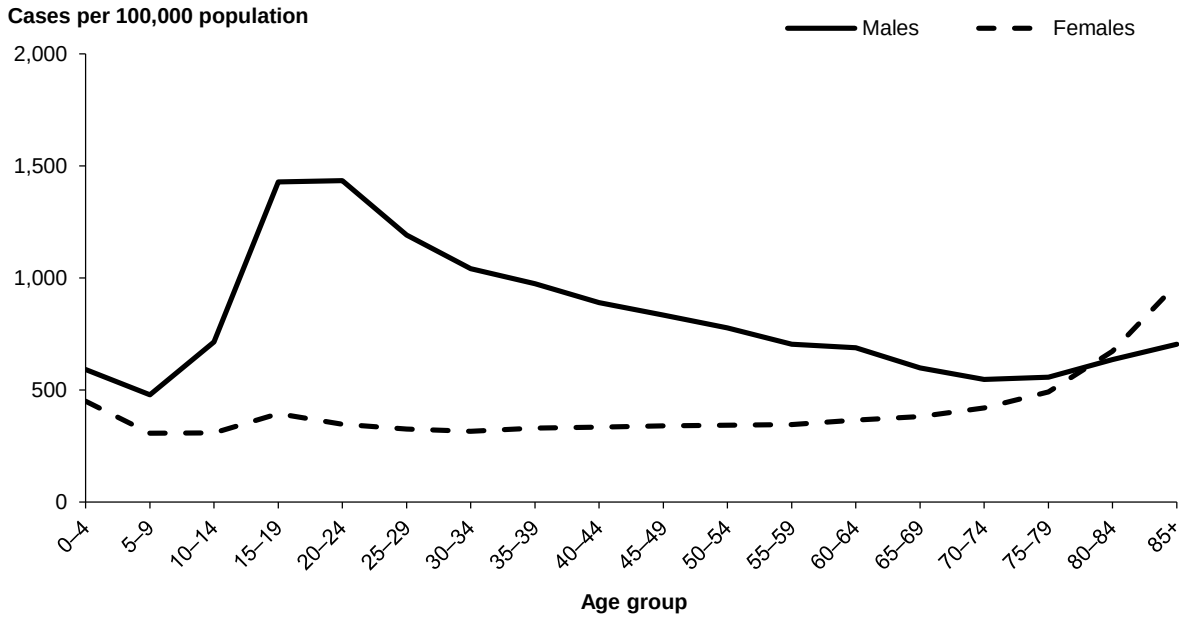


Figure 12.1: Age-specific rates of other unintentional injury cases, by sex, Australia, 2010–11

Remoteness of usual residence

The age-standardised rate of injury increased with increasing remoteness (Table 12.3). The rate of other unintentional injury in *Very remote* areas (1,212 cases per 100,000 population) was more than twice that in *Major cities* (579 cases per 100,000).

Table 12.3: Other unintentional injury cases by remoteness of usual residence, Australia, 2010–11

	Remoteness of usual residence					
Indicators	**Major cities**	**Inner regional**	**Outer regional**	**Remote**	**Very remote**	**Total[(a)]**
Estimated other unintentional injury cases	89,808	29,395	14,770	3,137	2,257	140,850
Per cent	63.8	20.9	10.5	2.2	1.6	100.0
Age-standardised rate/100,000 population	579	701	746	973	1,212	624

(a) Excludes 1,483 cases where remoteness was not reported or residence was reported as an external territory.

Aboriginal and Torres Strait Islander people

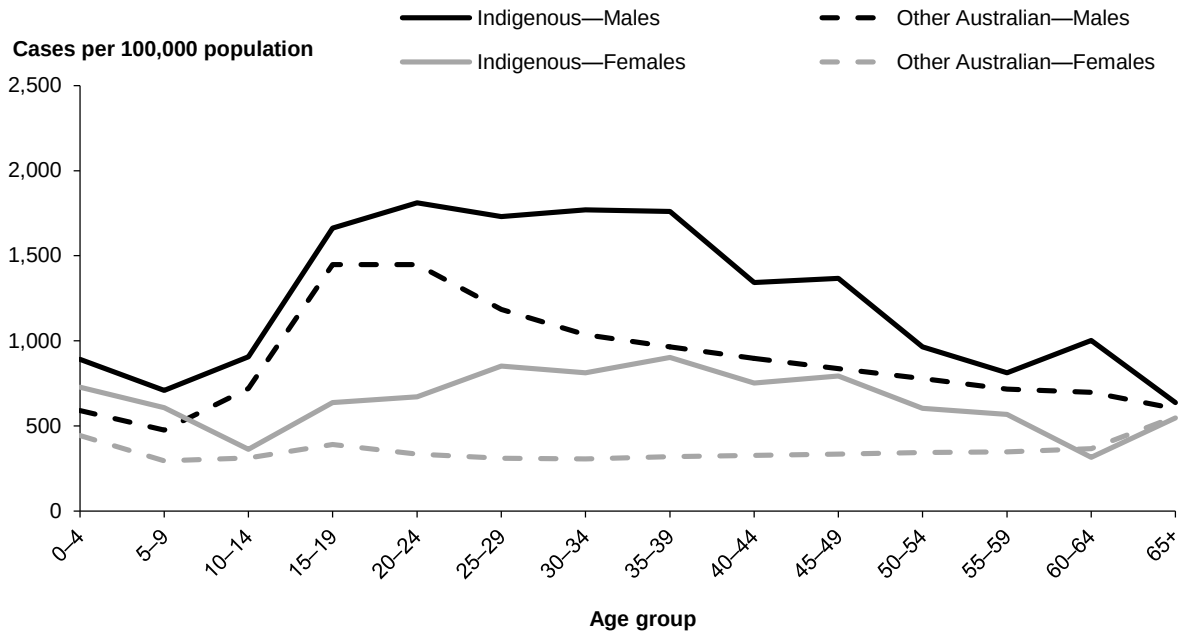
There were an estimated 5,243 cases of Indigenous people hospitalised as a result of other unintentional injury in 2010–11 (Table 12.4). More males than females were hospitalised. Other unintentional injuries made up a much lower proportion of all hospitalisations among Indigenous people (27%) compared with Other Australians (33%). The age-standardised rates of other unintentional injury among Indigenous people were higher than for Other Australians.

Table 12.4: Key indicators for other unintentional injury cases, Aboriginal and Torres Strait Islander people and Other Australians, Australia[(a)], 2010–11

	Aboriginal and Torres Strait Islander people			Other Australians		
Indicators	**Males**	**Females**	**Persons**	**Males**	**Females**	**Persons**
Estimated other unintentional injury cases	3,434	1,809	5,243	90,962	38,907	129,870
Per cent of all cases of hospitalisations for injury	31.0	21.3	26.8	40.8	22.9	33.0
Age-standardised rate/100,000 population	1,230	663	943	880	367	625

(a) Excludes data for Tasmania and the Australian Capital Territory (see Box 1.2).

Age-specific rates of other unintentional injury were generally higher among Indigenous people compared with Other Australians (Figure 12.2). Rates of injury were higher for Indigenous males for age groups from 0–4 to 60–64 compared with Other Australians. Rates among Indigenous females were also higher than their Other Australian counterparts for all age groups from 0–4 to 55–59.



Note: Excludes data for Tasmania and the Australian Capital Territory (see Box 1.2).

Figure 12.2: Age-specific rates of other unintentional injury cases, by sex, Aboriginal and Torres Strait Islander people and Other Australians, Australia, 2010–11

Mechanism

The majority of cases of other unintentional injury occurred as a result of *Exposure to inanimate mechanical forces* (46%) or as a result of unspecified factors (31%) (Table 12.5). Although a large proportion of cases were coded as *Accidental exposure to other and unspecified factors*, the lack of detail about the mechanism responsible for the injuries precludes more detailed analysis and the cases were not considered further in this report.

Exposure to animate mechanical forces, *Overexertion, travel and privation*, and *Contact with venomous animals and plants* also accounted for sizeable proportions of hospitalisations each year. The other categories combined accounted for less than 2% of all cases and were also not considered further in this report.

Table 12.5: Summary of key components of other unintentional injury cases, Australia, 2010–11

External cause	Persons	Per cent
Exposure to inanimate mechanical forces (W20–W49)	64,127	45.5
Exposure to animate mechanical forces (W50–W64)	16,592	11.8
Other accidental threats to breathing (W75–W84)	644	0.5
Exposure to electric current, radiation and extreme ambient air temperature and pressure (W85–W99)	914	0.6
Contact with venomous animals and plants (X20–X29)	3,401	2.4
Exposure to forces of nature (X30–X39)	523	0.4
Overexertion, travel and privation (X50–X57)	11,410	8.1
Accidental exposure to other and unspecified factors (X58–X59)	43,239	30.7
Total	**140,850**	**100.0**

Age-specific rates of injury for the 4 most frequent causes of other unintentional injuries are shown in Figures 12.3 to 12.6. Rates for males were generally higher than females across all types of other unintentional injuries. The peak in rates for young males is evident in all types other than *Contact with venomous animals and plants*.

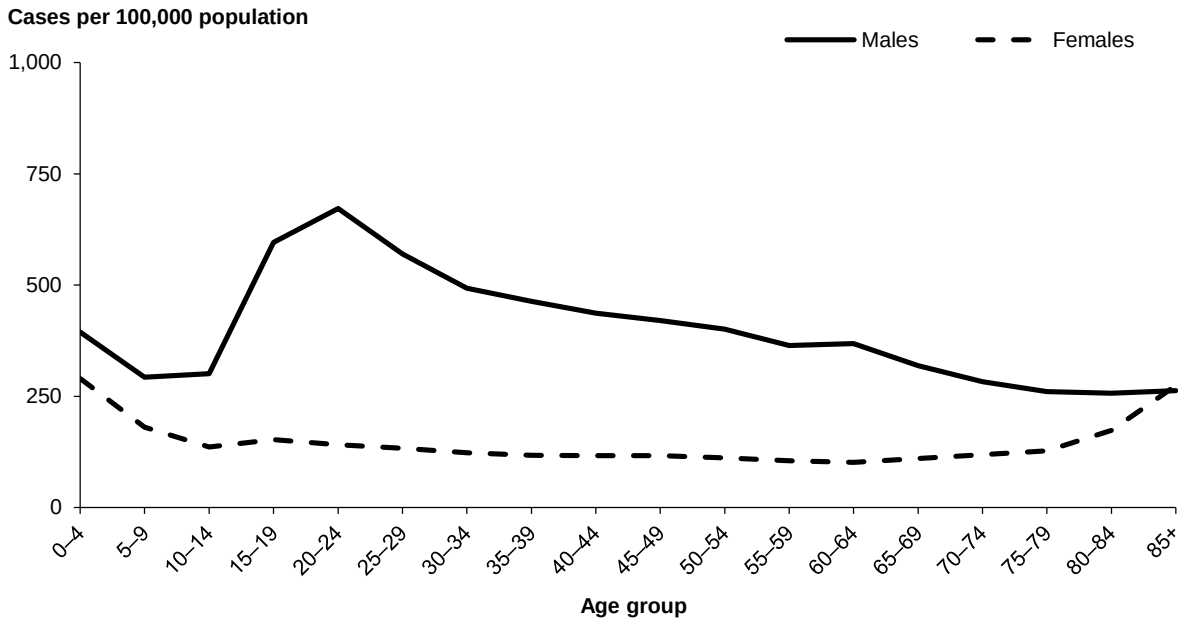


Figure 12.3: Age-specific rates of *Exposure to inanimate mechanical forces* cases, by sex, Australia, 2010–11

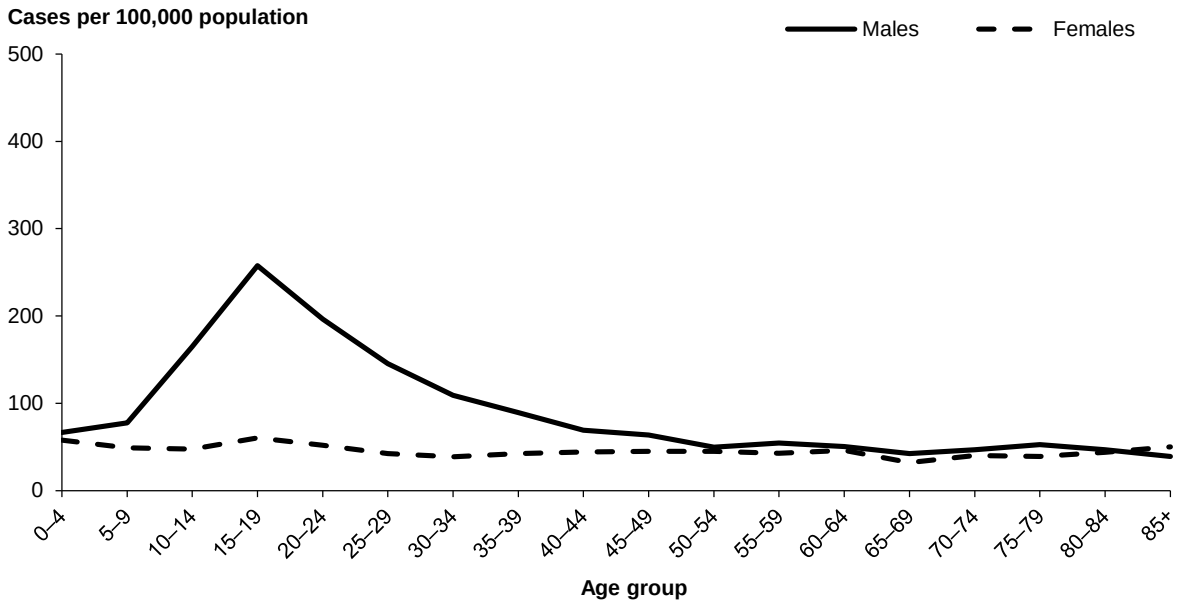


Figure 12.4: Age-specific rates of *Exposure to animate mechanical forces* cases, by sex, Australia, 2010–11

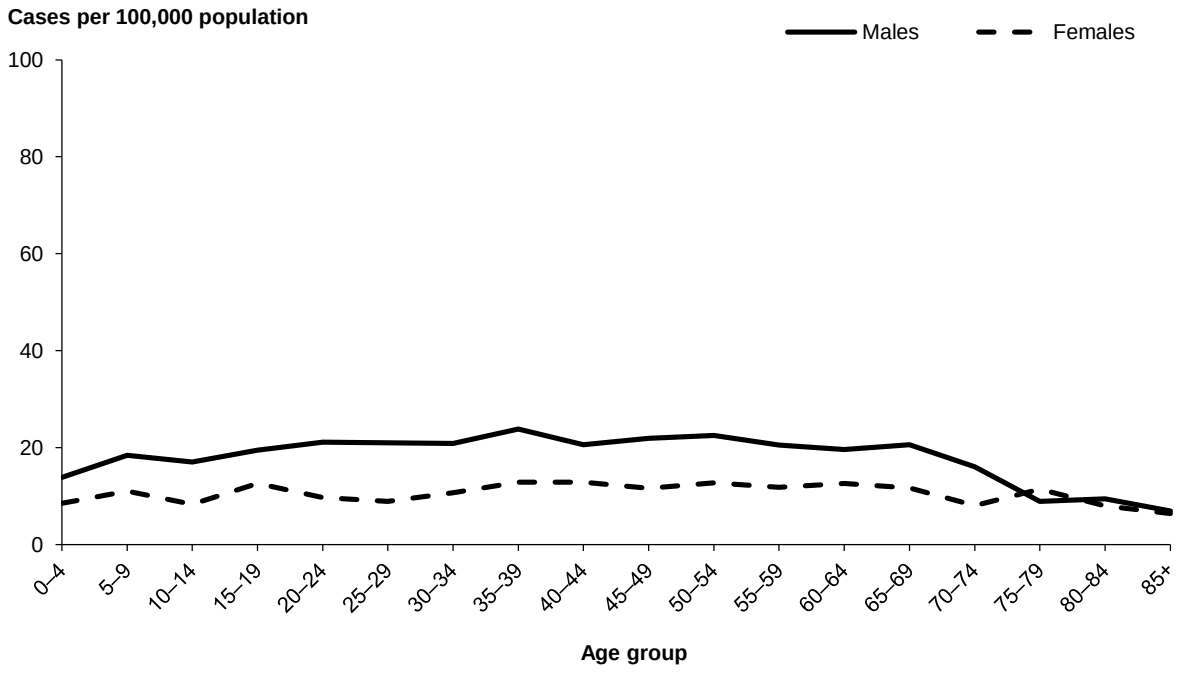


Figure 12.5: Age-specific rates of *Contact with venomous animals and plants* cases, by sex, Australia, 2010–11

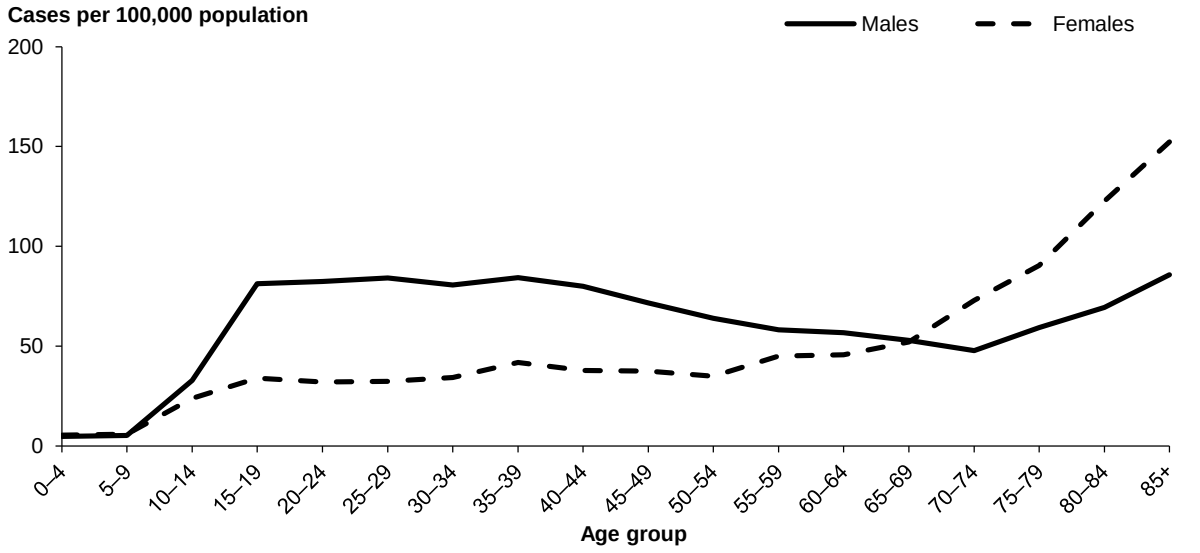
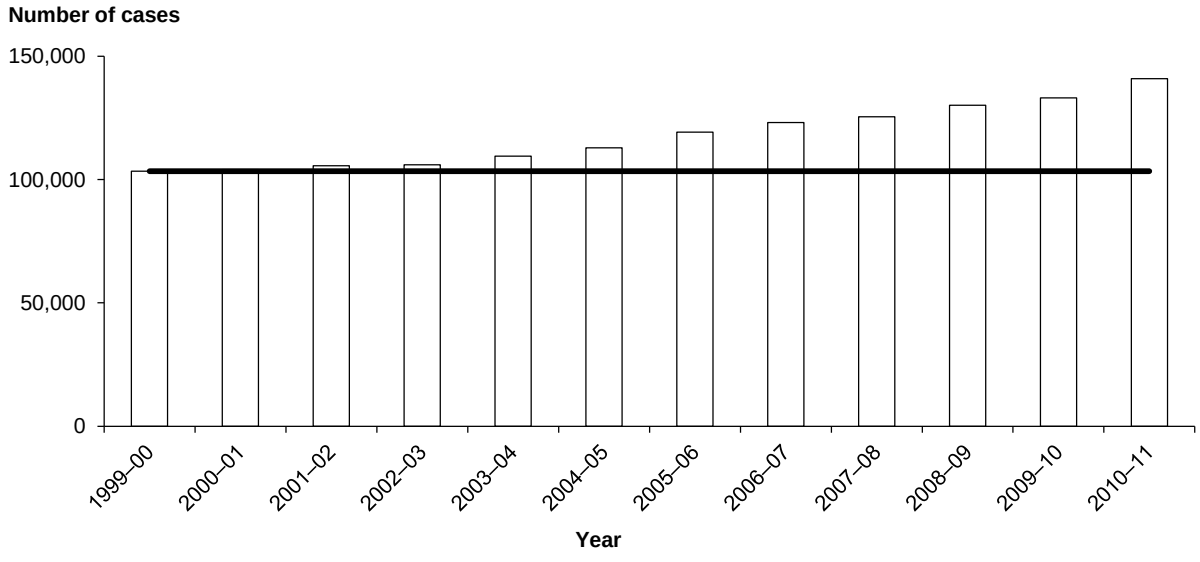


Figure 12.6: Age-specific rates of *Overexertion, travel and privation* cases, by sex, Australia, 2010–11

12.2 How have hospitalisations for other unintentional injury changed over time?

Figure 12.7 compares the number of cases of other unintentional injury each year with the baseline (103,426 cases in 1999–00). From 2000–01, the number of cases has been higher than the baseline, increasing steadily over the period. The largest difference was in 2010–11 when there were 37,424 more cases (140,850 in total) than the baseline.

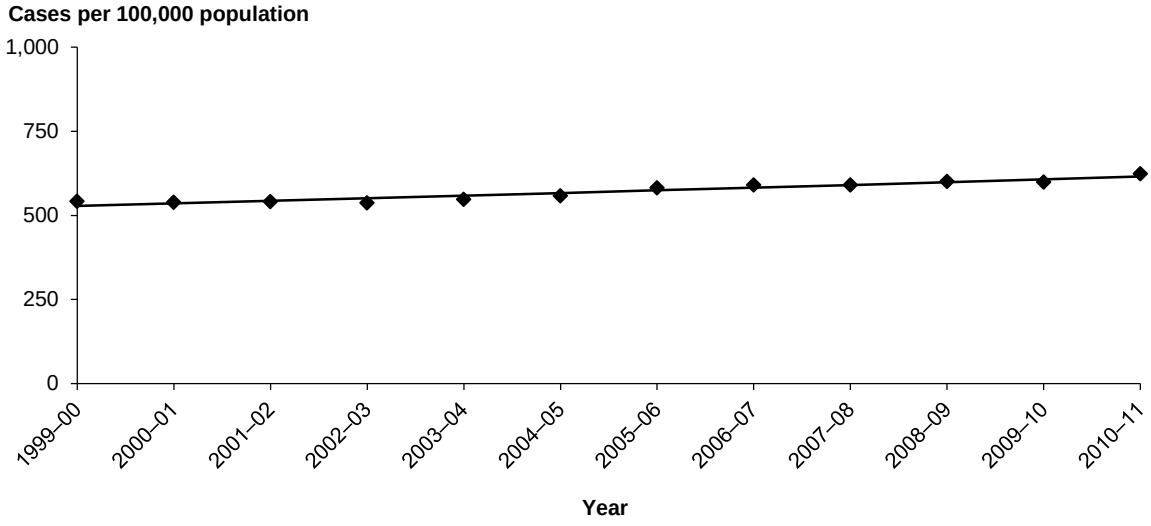


Note: The single line represents the number of cases of transport injury that occurred in 1999–00. It is referred to as the baseline.

Figure 12.7: Number of cases of other unintenional injury, Australia, 1999–00 to 2010–11

12.3 How have rates of other unintentional injury changed over time?

Rates of estimated cases of other unintentional injury increased from 542 cases per 100,000 population in 1999–00 to 624 in 2010–11 (Figure 12.8). The increase in rate averaged 1.4% per year and was statistically significant (95% CI: 1.2%, 1.6%).

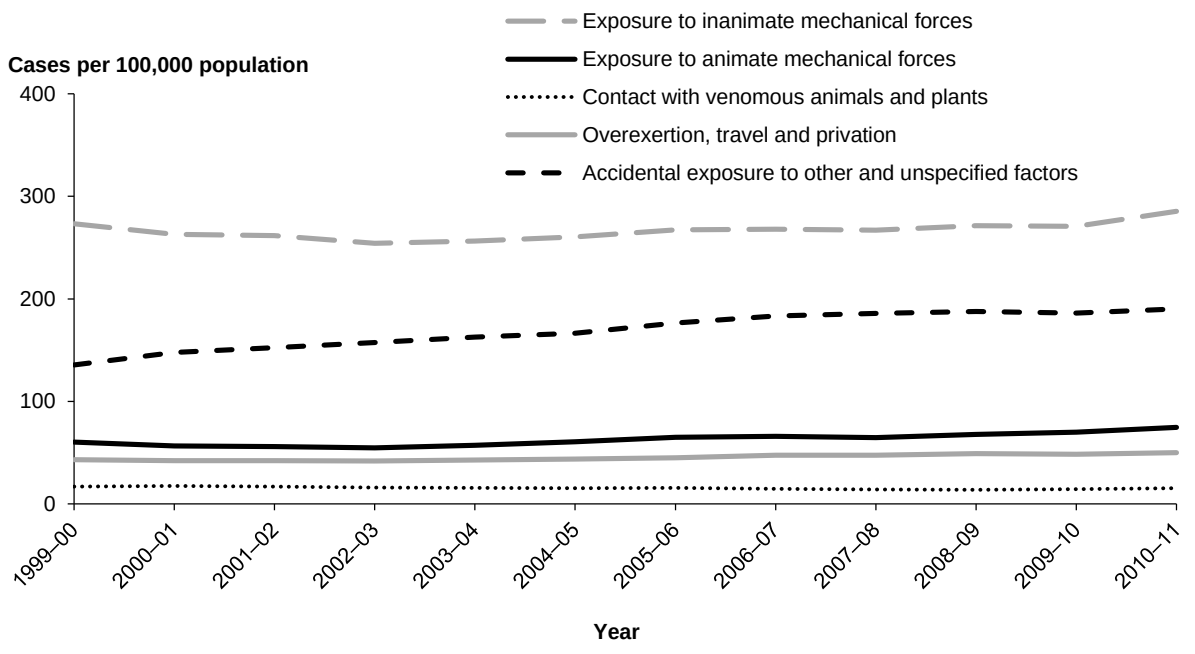


Notes

1. The line represents the modelled rate over the 12-year period, while symbols represent the actual age-standardised rate value for each year.
2. Data underpinning this figure are available in Table B.4 in Appendix B.

Figure 12.8: Modelled age-standardised rates of other unintentional injury cases, Australia, 1999–00 to 2010–11

Figure 12.9 presents age-standardised rates of selected types of other unintentional injuries over the period. A large proportion of the increase for all other unintentional injuries is accounted for by a rise in rates of *Accidental exposure to other and unspecified factors;* 136 cases per 100,000 population in 1999–00 up to 190 cases in 2010–11. Smaller increases were noted for exposure to inanimate and animate forces.

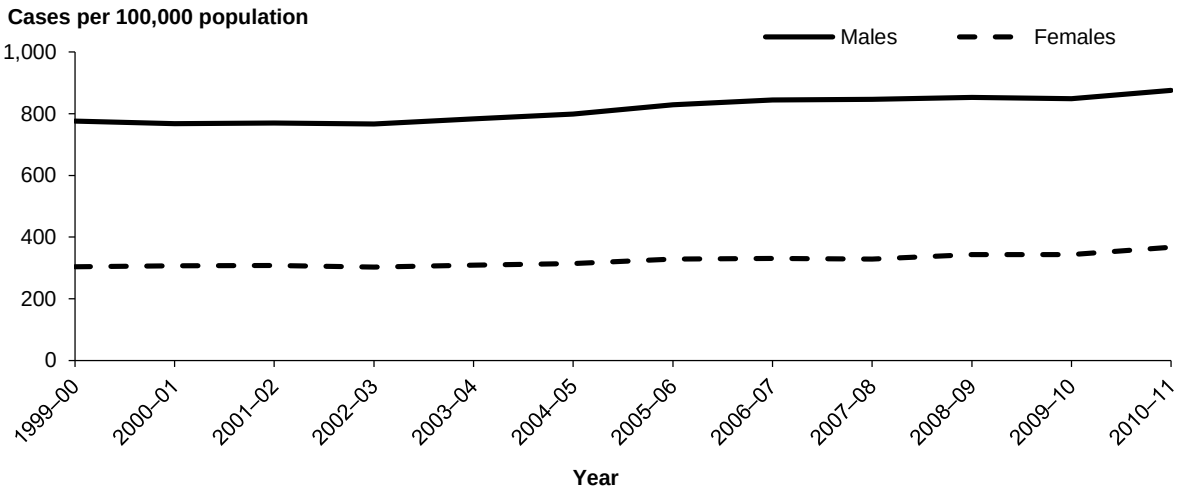


Note: Data underpinning this figure are available in Table B.19 in Appendix B.

Figure 12.9: Age-standardised rates of selected types of other unintentional injury cases, by sex, Australia, 1999–00 to 2010–11

12.4 How have rates of other unintentional injury varied by sex and age?

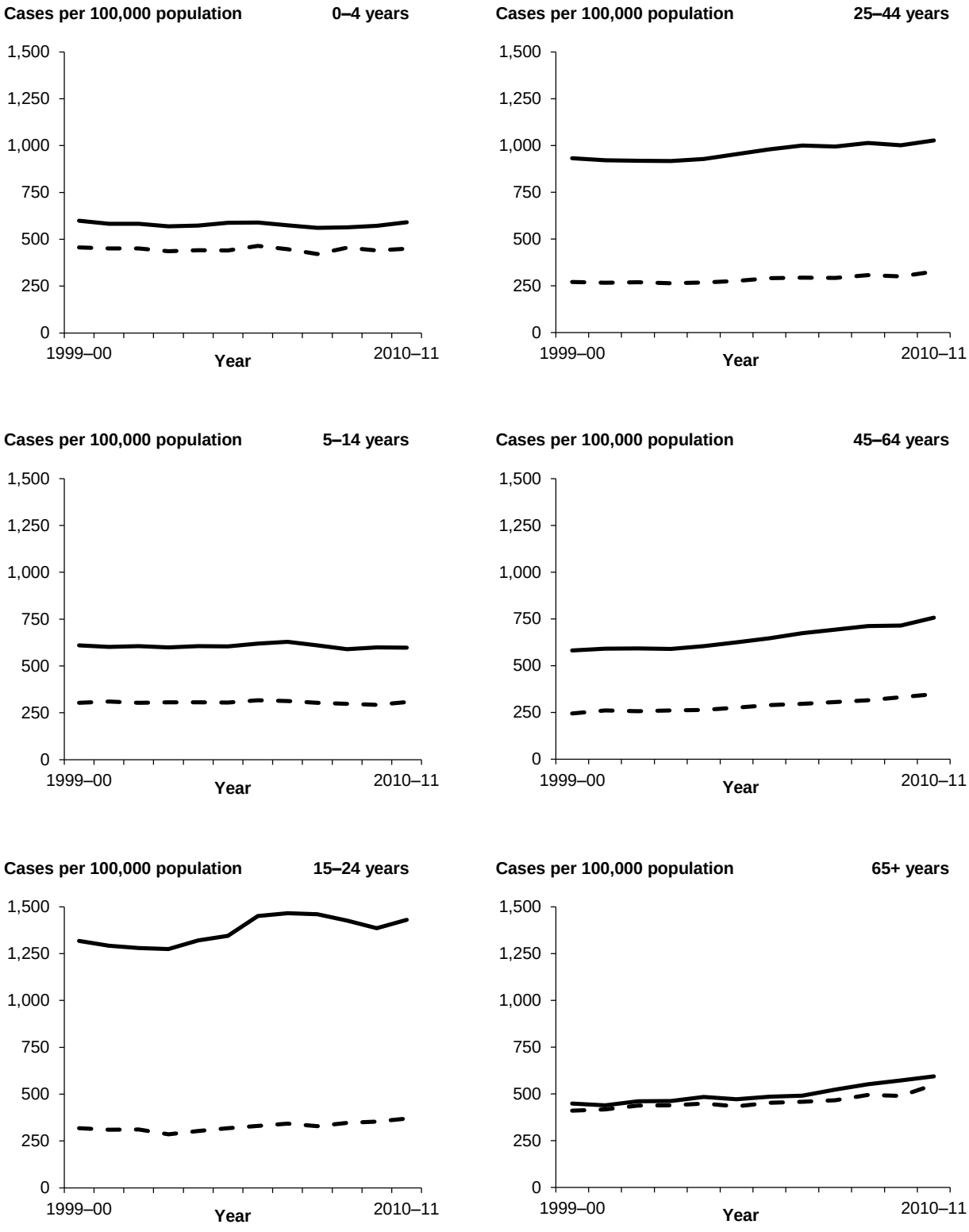
Age-standardised rates of other unintentional injury were consistently twice as high for males as for females over the period (Figure 12.10). An apparent rise in rate over time was seen for males.



Note: Data underpinning this figure are available in Table B.19 in Appendix B.

Figure 12.10: Age-standardised rates of other unintentional injury cases, by sex, Australia, 1999–00 to 2010–11

An examination of the change of rates in other unintentional injury over time, by age and sex, is shown in Figure 12.11. Age-specific rates increased in each age group after 15–24 years for both males and females. Rates were much higher in males at 15–24 and 25–44 years compared with other age groups and females overall.



Notes

1. Rates for males are indicated by the solid line and rates for females by the broken line in all charts.
2. Data underpinning this figure are available in Tables B.19 and B.20 in Appendix B.

Figure 12.11: Age-specific rates of other unintentional injury cases, by age and sex, Australia, 1999–00 to 2010–11

12.5 How have rates of other unintentional injury varied by remoteness?

Age-standardised rates of other unintentional injury increased with increasing remoteness. Rates were highest in *Very remote* and *Remote* areas (Figure 12.12). The lowest were in *Major cities* but a rise was evident. Rates in all other areas fluctuated over the period.

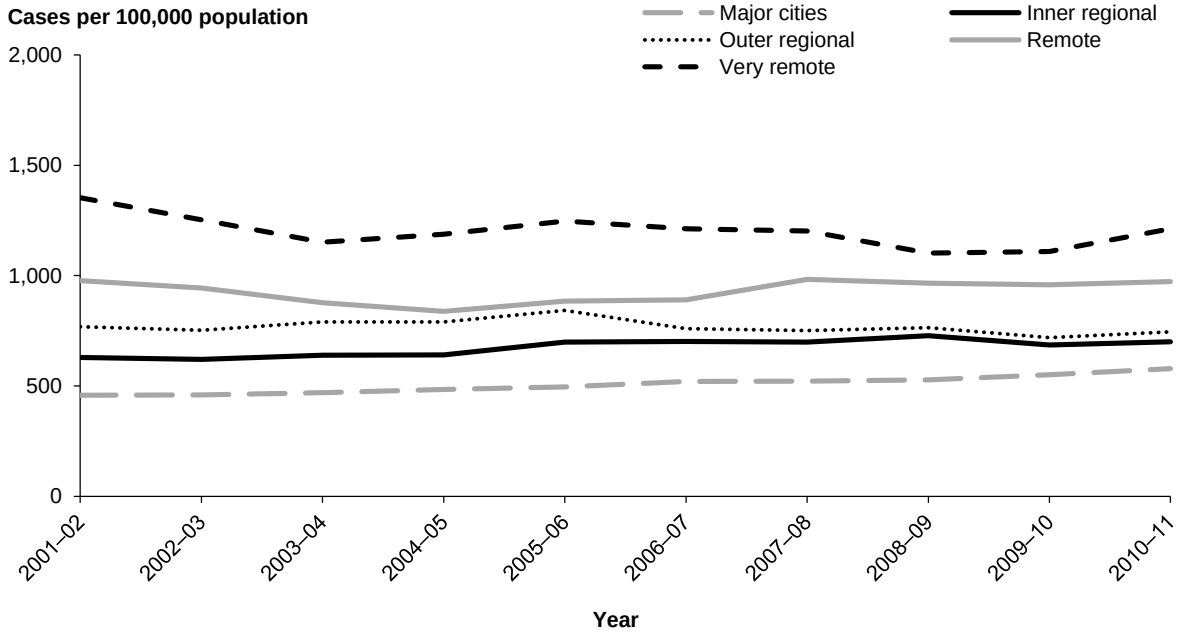


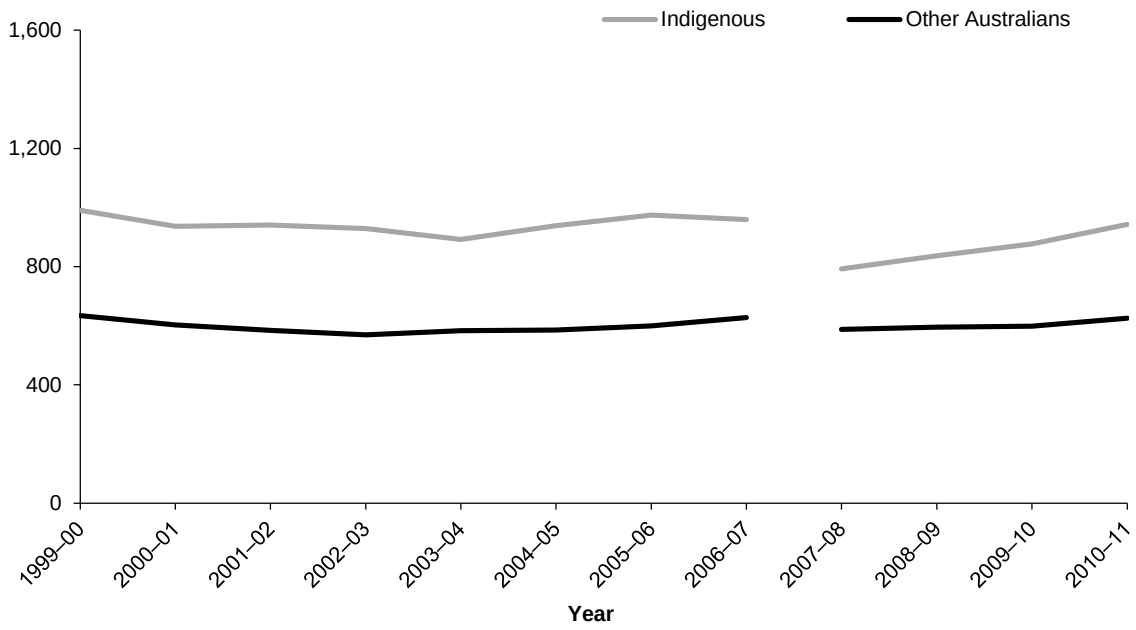
Figure 12.12: Age-standardised rates of other unintentional injury cases, by remoteness of usual residence, Australia, 2001–02 to 2010–11

12.6 How have rates of other unintentional injury in Indigenous people changed over time?

The change in states and territories with sufficient quality of Indigenous ascertainment during the period is indicated by the break in series in Figure 12.3. Before 2007–08, 4 jurisdictions (WA, SA, NT, Qld) were included; New South Wales and Victoria were added after this.

Age-standardised rates of other unintentional injury were much higher among Indigenous people than Other Australians over the period. From 1999–00 to 2006–07, the age-standardised rate fluctuated for Indigenous people, with no consistent change over time evident (Figure 12.13). From the period beginning 2007–08, rates of other unintentional injury have shown an upward trend for Indigenous people compared with Other Australians.

At face value, the rates for the 6 jurisdictions suggest an upward trend for Aboriginal and Torres Strait Islander people in the most recent 4 years reported. Caution should be exercised in coming to that conclusion because of the small number of years of data for the 6 jurisdictions and because improvement of Indigenous identification in hospital data could have contributed to the apparent rise.



Notes

1. Four jurisdictions (WA, SA, NT, Qld) were included between 1999–00 and 2006–07. Six jurisdictions (WA, SA, NT, Qld, NSW and Vic) were included between 2007–08 and 2010–11. The different jurisdictional groupings are indicated by the break in series.

2. Data underpinning this figure are available in Table B.32 in Appendix B.

Figure 12.13: Age-standardised rates of other unintentional injury cases, Aboriginal and Torres Strait Islander people and Other Australians, Australia, 1999–00 to 2010–11

Appendix A: Data issues

Data sources

The data on hospital separations were from the Australian Institute of Health and Welfare's (AIHW) National Hospital Morbidity Database (NHMD). Comprehensive information on the quality of the data for 2010–11 is available in *Australian hospital statistics 2010–11* (AIHW 2012a) and the data quality statement below. Nearly all injury cases admitted to hospitals in Australia are thought to be included in the NHMD data reported.

In 2010–11, diagnoses and external cause injury and poisoning were recorded using the seventh edition of the *International statistical classification of diseases and related health problems, 10th revision, Australia modification* (ICD-10-AM). Data from 1999–2000 were coded to earlier editions of the ICD-10-AM.

Denominators for most age-specific and age-standardised rates are estimated resident population (ERP) values as at 31 December of the relevant year. Australian ERPs for 30 June 2001 (persons, by five-year age groups to the same oldest group present in the population denominator data) were used as the standardising population throughout the report. Data from other sources, mostly based on ERPs, were used as denominators for rates by remoteness of usual residence and Indigenous status (see Rates, below).

Definitions

The principal diagnosis is the diagnosis established after study to be chiefly responsible for occasioning the patient's episode of admitted patient care (AIHW 2012a).

An external cause is defined as the environmental event, circumstance or condition that was the cause of injury or poisoning. Whenever a patient has a principal or additional diagnosis of an injury or poisoning, an external cause code should be recorded.

Selection criteria

This report is intended to describe the population incidence of injuries newly occurring that resulted in admission to a hospital. This section describes the criteria that were used to select cases to achieve this purpose.

Period

This report is restricted to admitted patient episodes that ended in the period 1 July 2010 to 30 June 2011 for the single year analyses, and admitted patient episodes that ended in the period 1 July 1999 to 30 June 2011 for the multi-year and/or trend analyses. Selection was based on the financial year of separation but choice of this time period is arbitrary. Use of calendar year would result in different rates, particularly where case numbers were small.

Injury

Injury separations were defined as records that contained a principal diagnosis in the ICD-10-AM range S00–T75 or T79 using *Chapter XIX Injury, poisoning and certain other consequences of external causes* codes. Nearly all injury separations were thought to be included in the data reported, representing minimal risk of sampling error.

Estimating incident cases

Each record in the NHMD refers to a single episode of care in a hospital. Some injuries result in more than one episode in hospital and, hence, more than one NHMD record. This can occur in two main ways:

- a person is admitted to one hospital, then transferred to another or has a change in care type (for example, acute to rehabilitation) within the one hospital; and
- a person has an episode of care in hospital, is discharged home (or to another place of residence) and is then admitted for further treatment for the same injury, to the same hospital or another one.

The NHMD does not include information designed to enable the set of records belonging to an injury case to be recognised as such. Hence, there is potential for some incident injury cases to be counted more than once, which exists when a single incident injury case results in two or more NHMD records being generated, all of which satisfy the selection criteria being used.

Information in the NHMD enables this problem to be reduced, though not eliminated. The approach used for this report makes use of the Mode of Admission variable, which indicates whether the current episode began with inward transfer from another acute care hospital. Episodes of this type (inward transfers) are likely to have been preceded by another episode that also met the case selection criteria for injury cases, so are omitted from our estimated case counts.

This procedure should largely correct for over-estimation of cases that is due to transfers, but will not correct for over-estimation that is due to readmissions.

Length of stay

The patient days reported during the episodes omitted to reduce overestimation of incident cases were part of the hospital care provided to the incident cases and were retained when calculating mean and total length of stay.

Note that length of stay as presented in this report does not include some patient days potentially attributable to injury. In particular, it does not include days for most aspects of injury rehabilitation, which were difficult to assign correctly without information enabling identification of all admitted episodes associated with an injury case.

Rates

Age-standardisation

Rates were generally age-standardised. Adjustment allows for comparison without distortion due to population age group differences. Direct standardisation was used to age-standardise rates, using the Australian population in 2001 as the standard (ABS 2003) and using 5-year age groups. All age-specific rates in this report were calculated using, as the denominator, the final estimate of the ERP as at 31 December in the relevant year (for example, 31 December 2006 for 2006–07 data).

Age-standardised rates were reported for Indigenous people and Other Australians to age 65+ (not 85+ as for all Australia analyses).

Population denominators

General population

Where possible, rates were calculated using the final estimate of the resident population (ERP) as at 31 December in the relevant year as the denominator (for example, 31 December 2006 for 2006–07 data). Where tables of 31 December ERPs were not available but tables of 30 June ERPs were available, population denominators were calculated as the average of 30 June estimates for adjacent years. This method was used to produce denominators for rates by remoteness of usual residence.

Indigenous population

Rates of injury for Aboriginal and Torres Strait Islander people were calculated using two sources of population denominators: experimental estimates (for the period 1999 to 2006) and projected populations Series B (for the period 2007 to 2011, see ABS 2009). In the first period (1999–00 to 2006–7), the states and territories eligible for inclusion were limited to South Australia, Northern Territory, Western Australia and Queensland. In the second period (2007–08 to 2010–11), the states and territories eligible for inclusion also comprised New South Wales and Victoria (in addition to South Australia, Northern Territory, Western Australia and Queensland).

For Other Australians, population denominators were derived by subtracting the Aboriginal and Torres Strait Islander population from the total Australian estimated resident population (of the states and territories eligible for inclusion) as at 31 December of the relevant year.

Estimated change in rates over time

Estimated trends in rates of separations were reported as annual per cent change obtained using negative binomial regression modelling using Stata 12.1 (StataCorp, College Station, Texas).

The use of the terms 'significant' or 'significantly' throughout this report indicates an outcome that was *statistically* significant ($p < 0.05$ or less).

Population-based rates of injury tend to have a similar value in one year and the next. Exceptions to this can occur (e.g. due to a mass-casualty disaster) but are unusual in Australian injury data. Some year-to-year variation and other short-run fluctuations are to be expected, due to unknown and essentially random factors and so small changes in rates over

a short period of time normally do not provide a firm basis for asserting that a trend is present.

However, the period covered by this report (12 years) is long enough for noteworthy changes to occur. The fundamental questions concerning a series of annual estimates of population-based rate are whether they show statistically significant rise or fall over the period and, if so, the average rate of change. Analysis in this report is limited to those characteristics of change.

For each type of injury for which estimates of change were made:

- Age-adjusted annual case numbers were obtained by multiplying age-adjusted unscaled rates by the Australian population in the corresponding year.
- Negative binomial regression, a method suitable for count-based data, was run with the adjusted case numbers as the dependent variable, year (as an integer, from 0 to the number of years of data) as an independent variable and annual population as the exposure. The relevant outputs are a modelled rate for each year and a model-based estimate of average annual change in rate and its 95% confidence interval (CI).

Interpretation: if the 95% CI around the point estimate for trend is entirely above zero then the rates have tended to rise; if the 95% CI is entirely below zero then the rates have tended to fall; otherwise it cannot be said with useful confidence that the age standardised rates tended to rise or to fall in the period considered.

Classification of remoteness area

Remoteness area in this report refers to the place of usual residence of the person who was admitted to hospital. The remoteness areas were specified according to the ABS Australian Standard Geographical Classification (ASGC). Remoteness categories were defined in a manner based on the Accessibility/Remoteness Index of Australia (ARIA). According to this method, remoteness was an index applicable to any point in Australia, based on road distance from urban centres of five sizes. The categories were:

- *Major cities*, with ARIA index value of 0 to 0.2
- *Inner regional*, with ARIA index value of >0.2 and ≤2.4
- *Outer regional*, with ARIA index value of >2.4 and ≤5.92
- *Remote*, with ARIA index value of >5.92 and ≤10.53
- *Very remote*, with average ARIA index value of >10.53

The period examined in this report is limited to 2001–11 due to changes in the Remoteness Structure at the time of the 2006 Census (see ABS 2006).

Indigenous status

In this report the terms 'Aboriginal and Torres Strait Islander people' and 'Indigenous people' are used to refer to persons identified as such in Australian hospital separations data and population data collections. For hospitals data, the term 'Other Australians' includes all separations for persons identified as not Indigenous as well as separations where Indigenous status was not stated.

Quality of Indigenous status data

The AIHW regularly undertakes studies to assess the accuracy of Indigenous identification in hospital separations data in Australia. The AIHW report *Indigenous identification in hospital separations data: quality report* (AIHW 2010) was the most recent report available at the time of drafting, based on studies of Indigenous identification in public hospitals conducted during 2007 and 2008.

The results of the 2010 report supported expanding national reporting to include data for New South Wales, Victoria, Queensland, South Australia, Western Australia and the Northern Territory (public hospitals only). Levels of Indigenous identification were estimated to be 80% or higher for those jurisdictions.

The latest *Indigenous identification in hospital separations data–quality report* was released in May 2013 (AIHW 2013) and found that an estimated 88% of Indigenous patients were correctly identified in Australian public hospital admission records in 2011–12. The recommendations for analysis and reporting using hospital separations data have changed since the release of the 2010 report and future reports of Indigenous injury will be based on different recommendations.

The data presented on Indigenous status in this report should therefore be interpreted with caution. Patterns of Indigenous hospitalisations in jurisdictions not included may not be the same as in those that are included. Future patterns of Indigenous hospitalisations may be influenced by changes in the recommendations outlined in the 2013 *Indigenous identification in hospital separations data–quality report.*

Suppression of small cell counts in data tables

Cell counts in tables that have fewer than 5 cases have been suppressed as have proportions and rates derived from them, because of confidentiality or other concerns about the quality of the data and because values based on very small numbers are sometimes difficult to interpret. In the instances where only one cell in a row or column has a count of 5 or less, counts of one or more other cells in the same row or column have generally also been suppressed.

Errors, inconsistencies and uncertainties

Due to rounding, the sum of the percentages in tables may not equal 100 per cent.

NHMD data are generally abstracted from records, entered and coded in hospitals, passed to state and territory health departments, then to the AIHW before being provided to the National Injury Surveillance Unit (NISU). Processing occurs at each of these steps. Errors and inconsistencies can arise due to the large number of people and processes involved in providing the data. Some variations occur in reporting and coding although coding standards, national minimum data sets and other mechanisms have reduced this.

Data quality statement: National Hospital Morbidity Database

This section provides a summary of key issues relevant to interpretation of the National Hospital Morbidity Database (NHMD). Further information on the quality of the data for earlier years is available in relevant editions of the AIHW's *Australian hospital statistics*.

The full AIHW Data Quality Statement for the NHMD is accessible at:

<http://meteor.aihw.gov.au/content/index.phtml/itemId/511338>.

Summary of key issues

- The National Hospital Morbidity Database (NHMD) is a comprehensive data set that has records for all separations of admitted patients from essentially all public and private hospitals in Australia.
- For 2010–11, almost all public hospitals provided data for the NHMD. The exception was a mothercraft hospital in the ACT. The great majority of private hospitals also provided data, the exceptions being the private day hospital facilities in the ACT, the single private free-standing day hospital facility in the NT, and a small private hospital in Victoria. Coverage was similar for earlier years, with some more variation in the private sector, which is not expected to impact substantially on the statistics in this report.
- A record is included for each separation, not for each patient, so patients who separated more than once in the year have more than one record in the NHMD.
- The NHMD contains records from 1993–94 to 2010–11. For each reference year, the NHMD includes records for admitted patient separations between 1 July and 30 June.
- The data reported for 2010–11 are broadly consistent with data reported for the NHMD for previous years.
- Although there are national standards for data on admitted patient care, and while the NHMD is a valuable source of information on admitted patient care, the data have limitations. For example, variations in admission practices and policies lead to variation among providers in the number of admissions for some conditions and there is apparent variation between states and territories in the use of statistical discharges and associated assignment of care types.
- States and territories are primarily responsible for the quality of the data they provide. However, the AIHW undertakes extensive validations on receipt of data. Data are checked for valid values, logical consistency and historical consistency. Where possible, data in individual data sets are checked with data from other data sets. Potential errors are queried with jurisdictions, and corrections and resubmissions may be made in response to these edit queries. The AIHW does not adjust data to account for possible data errors or missing or incorrect values, except as stated.
- For 2010–11, principal diagnosis information was not provided for 882 public hospital separations and 3,306 private hospital separations.
- Caution should be used in comparing diagnosis, procedure and external cause data over time, as the ICD-10-AM and ACHI classifications and coding standards used for those data can change over time.
- Not all states provided information on the area of usual residence of the patient in the form of a Statistical Local Area (SLA) code for all presentations. In addition, not all states

and territories provided the version of SLA specified in the NMDS. Where necessary, the AIHW mapped the supplied area of residence data for each presentation to the same SLA and to remoteness area categories based on the ABS ASGC Remoteness Structure for 2006. This mapping was done on a probabilistic basis. Because of the probabilistic nature of the mapping, the SLA and remoteness areas data for individual records may not be accurate; however, the overall distribution of records by geographical area is considered useful.

- The NHMD does not include episodes of non-admitted patient care provided in outpatient clinics or emergency departments. Patients in these settings may be admitted subsequently, in which case the care provided to them as admitted patients will be included in the NHMD.

Appendix B: Additional tables

Table B.1: Age standardised[(a)] rates for hospitalised injury, by sex, Australia, 1999–00 to 2010–11

	Males	Females	Persons[(b)]	Modelled rate[(c)]
1999–00	2,069.1	1,342.5	1,724.4	1697.2
2000–01	2,078.1	1,351.7	1,732.7	1713.2
2001–02	2,084.5	1,361.5	1,741.5	1729.4
2002–03	2,056.7	1,354.2	1,723.2	1745.7
2003–04	2,043.4	1,355.3	1,716.5	1762.1
2004–05	2,092.4	1,371.3	1,748.0	1778.7
2005–06	2,143.3	1,403.7	1,790.0	1795.5
2006–07	2,195.2	1,425.1	1,826.5	1812.4
2007–08	2,201.8	1,419.9	1,827.1	1829.5
2008–09	2,236.0	1,473.0	1,871.4	1846.8
2009–10	2,208.6	1,475.6	1,858.6	1864.2
2010–11	2,235.1	1,526.2	1,896.6	1881.7

(a) Age-standardised to the 2001 Australian population.

(b) Persons totals include separations for which sex was not reported.

(c) Negative binomial regression modelled rate.

Table B.2: Hospitalised injury cases, by sex, age and year, Australia, 1999–00 to 2010–11

	Males							Females						
	0–4	5–14	15–24	25–44	45–64	65+	Total	0–4	5–14	15–24	25–44	45–64	65+	Total
1999–00	11,634	26,154	42,548	62,219	28,834	22,009	193,399	8,770	13,855	15,884	28,516	19,757	47,029	47,029
2000–01	11,297	25,742	42,676	63,530	30,302	22,671	196,222	8,287	13,907	16,309	29,158	20,958	48,613	48,613
2001–02	11,316	26,023	42,830	63,610	31,579	24,081	199,443	8,420	13,622	16,417	29,637	21,672	51,181	51,181
2002–03	11,092	25,876	42,342	62,234	32,241	25,125	198,917	8,195	13,883	16,308	28,696	22,432	52,990	52,990
2003–04	10,629	25,598	42,861	61,589	33,160	26,224	200,061	7,978	13,878	16,945	28,442	23,201	54,341	54,341
2004–05	10,679	25,627	44,632	63,867	35,205	27,613	207,624	7,866	13,691	17,937	29,046	24,830	55,261	55,261
2005–06	10,865	25,273	47,411	65,420	37,535	29,654	216,158	8,184	13,691	18,371	30,039	26,497	58,351	58,351
2006–07	11,138	26,183	48,993	67,653	39,566	31,764	225,297	8,101	13,953	18,767	30,725	27,470	61,889	61,889
2007–08	10,820	25,722	50,262	68,464	41,682	33,726	230,676	8,061	13,184	18,544	31,108	29,178	63,748	63,748
2008–09	11,474	25,219	51,276	71,324	44,377	35,675	239,345	8,589	13,249	19,894	33,019	31,366	67,520	67,520
2009–10	11,902	25,345	50,350	71,061	45,396	38,424	242,478	8,817	13,368	19,956	32,517	32,715	71,213	71,213
2010–11	11,912	24,683	50,467	71,152	48,512	42,729	249,455	8,708	13,417	20,567	34,118	34,593	77,518	77,518

Table B.3: Hospitalised injury cases, by age and year, persons, Australia, 1999–00 to 2010–11

	Persons						
	0–4	5–14	15–24	25–44	45–64	65+	Total
1999–00	20,404	40,009	58,432	90,736	48,591	69,038	327,211
2000–01	19,584	39,649	58,985	92,692	51,260	71,284	333,461
2001–02	19,736	39,647	59,250	93,248	53,252	75,262	340,405
2002–03	19,289	39,759	58,652	90,931	54,674	78,115	341,432
2003–04	18,608	39,477	59,806	90,032	56,361	80,565	344,849
2004–05	18,545	39,319	62,569	92,913	60,037	82,876	356,260
2005–06	19,051	38,964	65,783	95,461	64,033	88,005	371,297
2006–07	19,239	40,136	67,761	98,381	67,036	93,655	386,208
2007–08	18,881	38,906	68,807	99,576	70,861	97,474	394,505
2008–09	20,063	38,468	71,170	104,344	75,745	103,195	412,985
2009–10	20,719	38,713	70,306	103,578	78,111	109,638	421,065
2010–11	20,620	38,101	71,035	105,271	83,105	120,247	438,382

Table B.4: Age-standardised rates of hospitalised injury, by external cause and year, Australia, 1999–00 to 2010–11

	Transport		Drowning and submersion		Poisoning, pharmaceuticals		Poisoning, other substances		Falls		Exposure to smoke, fire, heat and hot substances		Intentional self-harm		Assault		Other unintentional injury	
	Rate	Mod. rate	Rate	Mod. rate	Rate	Mod. rate	Rate	Mod. rate	Rate	Mod. rate	Rate	Mod. rate	Rate	Mod. rate	Rate	Mod. rate	Rate	Mod. rate
1999–00	249.3	248.3	2.6	2.5	49.5	45.7	15.0	15.0	602.1	575.9	27.6	27.0	105.3	112.1	97.7	102.7	541.9	528.4
2000–01	246.5	248.4	2.6	2.5	44.0	43.6	14.6	14.5	595.0	585.6	27.5	27.0	116.6	112.7	106.7	103.2	539.5	535.8
2001–02	250.0	248.5	2.4	2.5	39.7	41.5	14.0	14.0	592.5	595.4	27.5	27.0	115.5	113.3	108.7	103.7	541.0	543.3
2002–03	237.2	248.6	2.2	2.4	41.2	39.6	14.2	13.4	585.3	605.4	25.9	27.0	113.9	113.9	103.2	104.3	536.8	550.9
2003–04	243.1	248.7	2.5	2.4	38.3	37.8	13.4	12.9	607.3	615.6	25.9	27.0	115.1	114.5	97.2	104.8	548.0	558.6
2004–05	252.8	248.8	2.3	2.4	33.9	36.0	11.5	12.5	611.4	625.9	27.0	27.0	118.5	115.1	101.8	105.4	558.3	566.4
2005–06	255.5	249.0	2.5	2.4	31.1	34.3	11.7	12.0	624.1	636.4	26.9	27.0	116.4	115.7	108.6	105.9	581.4	574.3
2006–07	259.5	249.1	2.4	2.3	30.7	32.7	10.6	11.6	646.6	647.1	27.1	27.0	114.7	116.3	112.6	106.5	590.7	582.3
2007–08	254.1	249.2	2.2	2.3	30.8	31.2	10.6	11.1	652.8	658.0	27.7	27.0	113.2	116.9	111.3	107.0	590.6	590.5
2008–09	257.7	249.3	2.2	2.3	30.3	29.8	11.6	10.7	668.6	669.0	26.9	27.0	119.3	117.6	113.7	107.6	600.7	598.7
2009–10	245.1	249.4	2.5	2.3	29.5	28.4	10.8	10.3	685.6	680.3	26.9	27.0	119.6	118.2	105.1	108.2	598.9	607.1
2010–11	236.1	249.5	2.2	2.3	29.0	27.1	9.9	10.0	715.2	691.7	27.1	26.9	117.0	118.8	101.5	108.7	624.3	615.6

Notes

1. Rate is age-standardised to the 2001 Australian population.
2. Modelled rate is the rate derived using negative binomial regression.

Table B.5: Transport injury cases, by sex, age and year, Australia, 1999–00 to 2010–11

	Males							Females						
	0–4	5–14	15–24	25–44	45–64	65+	Total	0–4	5–14	15–24	25–44	45–64	65+	Total
1999–00	725	5,285	9,339	10,832	4,098	1,914	32,194	477	2,400	3,550	4,231	2,590	2,156	15,404
2000–01	680	4,910	9,361	11,174	4,334	1,885	32,344	404	2,273	3,574	4,265	2,604	2,082	15,202
2001–02	697	5,004	9,559	11,448	4,666	2,042	33,416	390	2,174	3,630	4,379	2,699	2,113	15,386
2002–03	647	4,876	8,924	10,706	4,633	1,992	31,779	379	2,179	3,535	4,114	2,721	2,127	15,055
2003–04	595	5,073	9,221	11,127	4,951	2,151	33,118	345	2,177	3,621	4,241	2,821	2,203	15,408
2004–05	603	5,227	9,713	11,671	5,302	2,252	34,769	363	2,356	3,730	4,461	3,074	2,297	16,281
2005–06	632	5,043	9,935	12,079	5,797	2,316	35,802	358	2,170	3,971	4,521	3,148	2,313	16,481
2006–07	561	5,393	10,109	12,612	6,090	2,326	37,091	316	2,171	3,955	4,664	3,251	2,470	16,827
2007–08	554	5,027	10,148	12,570	6,625	2,459	37,383	330	1,919	3,687	4,642	3,293	2,439	16,310
2008–09	533	4,607	10,490	13,036	7,246	2,570	38,482	311	1,848	3,924	4,794	3,608	2,557	17,042
2009–10	547	4,342	9,570	12,467	7,330	2,812	37,068	296	1,851	3,701	4,847	3,649	2,698	17,042
2010–11	515	3,541	9,197	11,887	7,648	2,870	35,658	299	1,594	3,918	4,829	3,841	2,850	17,331

Table B.6: Transport injury cases, by age and year, Australia, 1999–00 to 2010–11

	Persons						
	0–4	5–14	15–24	25–44	45–64	65+	Total
1999–00	1,202	7,685	12,889	15,064	6,688	4,070	47,599
2000–01	1,084	7,183	12,935	15,439	6,938	3,967	47,546
2001–02	1,087	7,178	13,190	15,827	7,365	4,155	48,803
2002–03	1,026	7,055	12,459	14,820	7,354	4,119	46,834
2003–04	941	7,251	12,842	15,368	7,772	4,354	48,528
2004–05	966	7,583	13,443	16,132	8,377	4,550	51,052
2005–06	991	7,213	13,907	16,600	8,946	4,629	52,286
2006–07	877	7,564	14,065	17,276	9,341	4,796	53,919
2007–08	884	6,946	13,835	17,212	9,918	4,898	53,693
2008–09	844	6,455	14,414	17,830	10,855	5,127	55,525
2009–10	843	6,193	13,271	17,314	10,979	5,510	54,110
2010–11	814	5,135	13,115	16,716	11,489	5,720	52,989

Table B.7: Drowning and submersion cases, by sex, age and year, Australia, 1999–00 to 2010–11

	Males							Females						
	0–4	5–14	15–24	25–44	45–64	65+	Total	0–4	5–14	15–24	25–44	45–64	65+	Total
1999–00	156	45	35	62	24	7	329	102	21	13	15	13	4	168
2000–01	158	45	41	69	22	16	351	102	17	12	11	13	6	161
2001–02	144	26	41	46	33	18	308	96	20	13	9	10	6	154
2002–03	127	20	41	56	38	8	290	69	21	10	9	14	10	133
2003–04	125	42	41	41	42	21	312	102	22	15	15	17	11	182
2004–05	123	33	42	45	35	12	290	89	27	17	8	11	14	166
2005–06	137	35	53	58	38	14	335	95	20	12	10	15	8	160
2006–07	137	42	43	68	32	24	346	82	26	13	11	13	7	152
2007–08	131	37	38	68	30	13	317	64	16	15	15	16	7	133
2008–09	121	43	38	59	37	25	323	74	24	10	22	12	10	152
2009–10	130	34	57	63	44	30	358	103	22	9	19	18	11	182
2010–11	119	29	39	60	46	18	311	93	27	14	19	16	15	184

Table B.8: Drowning and submersion cases, by age and year, Australia, 1999–00 to 2010–11

	Persons						
	0–4	5–14	15–24	25–44	45–64	65+	Total
1999–00	258	66	48	77	37	11	497
2000–01	260	62	53	80	35	22	512
2001–02	240	46	54	55	43	24	462
2002–03	196	41	51	65	52	18	423
2003–04	227	64	56	56	59	32	494
2004–05	212	60	59	53	46	26	456
2005–06	232	55	65	68	53	22	495
2006–07	219	68	56	79	45	31	498
2007–08	195	53	53	83	46	20	450
2008–09	195	67	48	81	49	35	475
2009–10	233	56	66	82	62	41	540
2010–11	212	56	53	79	62	33	495

Table B.9: Poisoning by pharmaceuticals cases, by sex, age and year, Australia, 1999–00 to 2010–11

	Males							Females						
	0–4	5–14	15–24	25–44	45–64	65+	Total	0–4	5–14	15–24	25–44	45–64	65+	Total
1999–00	1,237	162	968	1,667	461	270	4,765	1,003	150	1,054	1,593	557	381	4,738
2000–01	1,121	152	784	1,424	432	256	4,169	954	151	919	1,333	521	445	4,323
2001–02	1,046	139	607	1,169	393	259	3,614	910	176	840	1,249	538	402	4,115
2002–03	985	125	601	1,217	472	319	3,720	928	133	896	1,314	607	507	4,385
2003–04	867	137	606	1,172	484	348	3,614	769	146	805	1,176	607	496	3,999
2004–05	800	117	437	972	429	332	3,087	681	150	742	993	596	561	3,723
2005–06	673	105	437	914	398	390	2,917	647	112	670	905	526	581	3,441
2006–07	745	102	417	858	441	376	2,939	651	110	632	913	560	599	3,465
2007–08	731	115	430	909	485	400	3,070	668	118	612	900	569	616	3,483
2008–09	757	96	397	974	488	458	3,170	654	103	636	846	608	575	3,422
2009–10	727	109	454	956	545	451	3,242	595	88	587	861	599	632	3,362
2010–11	615	93	422	1,051	559	557	3,297	534	98	541	832	568	728	3,301

Table B.10: Poisoning by pharmaceuticals cases, by age and year, Australia, 1999–00 to 2010–11

	Persons						
	0–4	5–14	15–24	25–44	45–64	65+	Total
1999–00	2,240	312	2,022	3,260	1,018	651	9,503
2000–01	2,075	303	1,703	2,757	953	701	8,492
2001–02	1,956	315	1,448	2,418	931	661	7,730
2002–03	1,913	258	1,497	2,531	1,079	826	8,105
2003–04	1,636	283	1,411	2,348	1,091	844	7,613
2004–05	1,481	267	1,179	1,965	1,025	893	6,810
2005–06	1,320	217	1,107	1,819	924	971	6,358
2006–07	1,396	212	1,049	1,771	1,001	975	6,404
2007–08	1,399	233	1,042	1,809	1,054	1,016	6,553
2008–09	1,411	199	1,033	1,820	1,096	1,033	6,592
2009–10	1,322	197	1,041	1,817	1,144	1,083	6,604
2010–11	1,149	191	963	1,883	1,127	1,285	6,598

Table B.11: Poisoning by other substances cases, by sex, age and year, Australia, 1999–00 to 2010–11

	Males							Females						
	0–4	5–14	15–24	25–44	45–64	65+	Total	0–4	5–14	15–24	25–44	45–64	65+	Total
1999–00	426	107	287	611	265	89	1,785	352	58	175	266	159	82	1,092
2000–01	407	99	263	617	314	116	1,816	300	67	156	254	149	84	1,010
2001–02	386	108	273	521	261	126	1,675	277	60	167	258	166	121	1,049
2002–03	346	96	301	565	288	86	1,682	266	80	203	275	187	104	1,115
2003–04	326	112	283	510	316	99	1,646	232	63	177	262	170	123	1,027
2004–05	243	70	238	477	239	113	1,380	178	42	191	236	165	127	939
2005–06	252	80	247	423	289	131	1,422	185	37	177	257	171	150	977
2006–07	254	78	239	404	251	131	1,357	133	53	154	228	175	107	850
2007–08	209	57	264	432	298	117	1,377	172	46	159	219	163	125	884
2008–09	296	68	239	480	320	145	1,548	151	49	168	265	202	136	971
2009–10	220	73	266	476	288	160	1,483	171	44	138	238	175	158	924
2010–11	221	44	240	466	302	127	1,400	161	44	114	200	194	129	842

Table B.12: Poisoning by other substances cases, by age and year, Australia, 1999–00 to 2010–11

	Persons						
	0–4	5–14	15–24	25–44	45–64	65+	Total
1999–00	778	165	462	877	424	171	2,877
2000–01	707	166	419	871	463	200	2,826
2001–02	663	168	440	779	427	247	2,724
2002–03	612	176	504	840	475	190	2,797
2003–04	558	175	460	772	486	222	2,673
2004–05	421	112	429	713	404	240	2,319
2005–06	437	117	424	680	460	281	2,399
2006–07	387	131	393	632	426	238	2,207
2007–08	381	103	423	651	461	242	2,261
2008–09	447	117	407	745	522	281	2,519
2009–10	391	117	404	714	463	318	2,407
2010–11	382	88	354	666	496	256	2,242

Table B.13: Fall injury cases, by sex, age and year, Australia, 1999–00 to 2010–11

	Males							Females						
	0–4	5–14	15–24	25–44	45–64	65+	Total	0–4	5–14	15–24	25–44	45–64	65+	Total
1999–00	3,991	11,152	6,277	8,678	7,487	13,743	51,328	3,179	6,517	1,773	4,642	8,043	37,265	61,419
2000–01	3,932	11,107	5,939	8,558	7,570	14,329	51,435	2,896	6,462	1,818	4,503	8,270	38,611	62,562
2001–02	3,874	10,686	5,834	8,467	7,835	15,165	51,861	2,916	6,063	1,797	4,506	8,395	40,596	64,274
2002–03	3,798	10,569	5,846	8,158	7,931	15,652	51,954	2,886	6,159	1,714	4,345	8,474	41,306	64,886
2003–04	3,879	10,852	6,144	8,437	8,555	16,784	54,651	3,042	6,433	1,832	4,569	9,242	43,726	68,844
2004–05	4,035	10,750	6,273	8,765	9,003	18,038	56,864	3,075	6,013	1,783	4,613	9,846	44,670	70,000
2005–06	4,230	10,388	6,175	8,588	9,476	19,500	58,357	3,165	6,169	1,987	4,993	10,635	47,322	74,271
2006–07	4,449	10,733	6,624	8,922	10,013	21,362	62,103	3,305	6,441	2,141	5,262	11,163	50,426	78,738
2007–08	4,186	10,896	6,936	9,358	10,482	22,481	64,339	3,264	6,153	2,341	5,500	12,194	51,990	81,442
2008–09	4,584	11,112	7,454	9,657	10,956	23,570	67,333	3,441	6,322	2,456	5,744	12,850	55,040	85,853
2009–10	4,856	11,317	7,553	10,156	11,519	25,597	70,998	3,770	6,431	2,504	5,867	13,406	58,171	90,149
2010–11	4,903	11,480	7,732	10,181	12,507	28,992	75,795	3,614	6,543	2,508	6,465	14,531	63,158	96,819

Table B.14: Fall injury cases, by age and year, Australia, 1999–00 to 2010–11

	Persons						
	0–4	5–14	15–24	25–44	45–64	65+	Total
1999–00	7,170	17,669	8,050	13,320	15,530	51,008	112,747
2000–01	6,828	17,569	7,757	13,062	15,840	52,940	113,998
2001–02	6,790	16,750	7,631	12,973	16,230	55,761	116,136
2002–03	6,686	16,728	7,560	12,503	16,405	56,958	116,844
2003–04	6,921	17,285	7,976	13,006	17,797	60,510	123,495
2004–05	7,110	16,764	8,056	13,378	18,849	62,709	126,866
2005–06	7,396	16,557	8,162	13,581	20,111	66,822	132,629
2006–07	7,754	17,174	8,765	14,184	21,176	71,790	140,843
2007–08	7,450	17,049	9,277	14,858	22,676	74,471	145,781
2008–09	8,025	17,434	9,910	15,401	23,806	78,610	153,186
2009–10	8,626	17,748	10,057	16,023	24,925	83,768	161,147
2010–11	8,517	18,023	10,240	16,646	27,038	92,150	172,616

Table B.15: Exposure to smoke, fire, heat and hot substances injury cases, by sex, age and year, Australia, 1999–00 to 2010–11

	Males							Females						
	0–4	5–14	15–24	25–44	45–64	65+	Total	0–4	5–14	15–24	25–44	45–64	65+	Total
1999–00	874	431	681	939	458	216	3,599	575	196	176	325	198	215	1,685
2000–01	866	390	648	940	457	206	3,507	559	216	196	378	225	232	1,806
2001–02	875	421	571	895	475	255	3,492	633	198	178	382	250	224	1,865
2002–03	840	326	553	906	511	232	3,368	524	194	152	393	238	228	1,729
2003–04	865	383	603	850	488	203	3,392	550	235	193	330	215	205	1,728
2004–05	826	428	589	913	466	250	3,472	558	264	208	398	260	242	1,930
2005–06	811	373	652	916	518	273	3,543	622	236	197	382	275	203	1,915
2006–07	840	437	633	920	492	267	3,589	572	228	249	427	269	241	1,986
2007–08	927	425	683	904	555	247	3,741	622	259	233	435	289	231	2,069
2008–09	886	403	649	876	637	271	3,722	678	254	226	398	289	201	2,046
2009–10	976	375	660	971	619	266	3,867	629	240	224	422	327	224	2,066
2010–11	871	433	693	984	676	266	3,923	617	235	258	446	326	253	2,135

Table B.16: Exposure to smoke, fire, heat and hot substances injury cases, by age and year, Australia 1999–00 to 2010–11

	Persons						
	0–4	5–14	15–24	25–44	45–64	65+	Total
1999–00	1,449	627	857	1,264	656	431	5,284
2000–01	1,425	606	844	1,318	682	438	5,313
2001–02	1,508	620	749	1,277	725	479	5,358
2002–03	1,364	520	705	1,299	749	460	5,097
2003–04	1,415	618	796	1,180	703	408	5,120
2004–05	1,384	692	797	1,311	726	492	5,402
2005–06	1,433	609	849	1,298	793	476	5,458
2006–07	1,412	665	882	1,347	761	508	5,575
2007–08	1,549	684	917	1,339	844	478	5,811
2008–09	1,564	657	875	1,274	926	472	5,768
2009–10	1,605	615	884	1,393	946	490	5,933
2010–11	1,488	668	951	1,430	1,002	519	6,058

Table B.17: Intentional self-harm injury cases, by sex, age and year, Australia, 1999–00 to 2010–11

	Males						Females					
	0–14	15–24	25–44	45–64	65+	Total	0–14	15–24	25–44	45–64	65+	Total
1999–00	91	1,903	4,565	1,396	311	8,266	337	3,407	5,843	1,909	404	11,900
2000–01	88	2,095	4,997	1,636	338	9,157	370	3,775	6,642	2,208	360	13,356
2001–02	97	1,917	4,882	1,657	363	8,916	388	3,776	6,726	2,332	396	13,621
2002–03	114	1,900	4,639	1,640	438	8,731	416	3,995	6,270	2,644	415	13,741
2003–04	118	2,004	4,568	1,643	390	8,723	475	4,421	6,224	2,648	462	14,230
2004–05	117	2,095	4,593	1,795	417	9,017	535	4,853	6,214	2,806	458	14,866
2005–06	114	2,102	4,530	1,919	438	9,103	513	4,597	6,144	2,937	478	14,669
2006–07	98	2,090	4,539	1,937	414	9,078	481	4,531	6,231	2,914	535	14,692
2007–08	75	2,133	4,415	2,016	451	9,090	376	4,533	6,334	3,010	527	14,780
2008–09	101	2,122	4,793	2,139	485	9,640	382	4,873	6,809	3,384	532	15,980
2009–10	110	2,219	4,895	2,133	492	9,849	496	5,082	6,667	3,662	575	16,482
2010–11	108	2,319	4,551	2,230	540	9,748	457	5,278	6,479	3,487	613	16,314

Table B.18: Intentional self-harm injury cases, by age and year, Australia, 1999–00 to 2010–11

	Persons					
	0–14	15–24	25–44	45–64	65+	Total
1999–00	428	5,310	10,408	3,305	715	20,166
2000–01	458	5,870	11,639	3,844	698	22,513
2001–02	485	5,693	11,609	3,989	759	22,538
2002–03	530	5,895	10,909	4,284	853	22,472
2003–04	593	6,425	10,792	4,291	852	22,953
2004–05	652	6,948	10,807	4,601	875	23,883
2005–06	627	6,699	10,676	4,856	916	23,774
2006–07	579	6,621	10,773	4,851	949	23,773
2007–08	451	6,666	10,752	5,026	978	23,873
2008–09	483	6,995	11,602	5,523	1,017	25,620
2009–10	606	7,301	11,562	5,795	1,067	26,331
2010–11	565	7,597	11,030	5,717	1,153	26,062

Table B.19: Assault injury cases, by sex, age and year, Australia, 1999–00 to 2010–11

	Males							Females						
	0–4	5–14	15–24	25–44	45–64	65+	Total	0–4	5–14	15–24	25–44	45–64	65+	Total
1999–00	191	343	4,961	6,710	1,485	224	13,914	147	115	1,192	2,741	509	144	4,848
2000–01	162	360	5,460	7,545	1,718	224	15,469	153	111	1,276	2,920	528	162	5,150
2001–02	185	339	5,492	7,758	1,790	200	15,765	150	162	1,304	3,048	638	130	5,432
2002–03	172	331	5,190	7,285	1,825	204	15,008	138	135	1,298	2,996	595	136	5,298
2003–04	147	302	4,924	6,846	1,748	233	14,200	139	155	1,248	2,849	608	122	5,121
2004–05	126	305	5,417	7,250	1,856	205	15,159	126	144	1,269	2,903	683	141	5,266
2005–06	140	341	5,961	7,773	2,129	229	16,573	116	123	1,371	3,045	727	127	5,509
2006–07	186	350	6,308	8,133	2,280	292	17,549	116	155	1,426	3,037	801	146	5,681
2007–08	100	382	6,631	8,238	2,236	288	17,875	108	139	1,377	2,928	748	179	5,479
2008–09	127	319	6,748	8,495	2,448	278	18,415	104	138	1,471	3,170	870	167	5,920
2009–10	107	330	6,340	7,920	2,357	299	17,353	92	146	1,523	3,036	835	177	5,809
2010–11	108	286	5,811	7,483	2,465	317	16,470	100	152	1,541	3,290	916	145	6,144

Table B.20: Assault injury cases, by age and year, Australia, 1999–00 to 2010–11

	Persons						
	0–4	5–14	15–24	25–44	45–64	65+	Total
1999–00	338	458	6,153	9,451	1,994	368	18,762
2000–01	315	471	6,736	10,466	2,246	386	20,620
2001–02	335	501	6,797	10,806	2,428	330	21,198
2002–03	310	466	6,489	10,281	2,420	340	20,307
2003–04	286	457	6,172	9,695	2,356	355	19,321
2004–05	252	449	6,686	10,153	2,539	346	20,425
2005–06	256	464	7,332	10,818	2,856	356	22,082
2006–07	302	505	7,734	11,170	3,081	438	23,230
2007–08	208	521	8,008	11,167	2,984	467	23,355
2008–09	231	457	8,219	11,665	3,318	445	24,335
2009–10	199	476	7,863	10,956	3,192	476	23,162
2010–11	208	438	7,353	10,774	3,381	462	22,616

Table B.21: Other unintentional injury cases, by sex, age and year, Australia, 1999–00 to 2010–11

	Males							Females						
	0–4	5–14	15–24	25–44	45–64	65+	Total	0–4	5–14	15–24	25–44	45–64	65+	Total
1999–00	3,939	8,374	17,478	26,998	12,572	4,641	74,002	2,855	3,959	4,067	7,904	5,224	5,415	29,424
2000–01	3,836	8,316	17,282	26,732	13,126	4,662	73,955	2,820	4,068	3,997	7,840	5,751	5,606	30,082
2001–02	3,825	8,430	17,409	26,757	13,534	5,012	74,969	2,818	4,011	4,086	7,919	5,827	5,993	30,655
2002–03	3,730	8,357	17,616	26,804	13,815	5,142	75,466	2,718	4,052	3,813	7,772	6,080	6,107	30,542
2003–04	3,751	8,483	18,574	27,173	14,498	5,509	77,988	2,751	4,057	4,102	7,938	6,326	6,347	31,521
2004–05	3,855	8,479	19,252	28,021	15,355	5,502	80,464	2,743	4,059	4,386	8,194	6,786	6,231	32,399
2005–06	3,931	8,694	21,154	28,960	16,280	5,815	84,834	2,940	4,228	4,616	8,659	7,335	6,641	34,419
2006–07	3,902	8,848	21,833	29,866	17,381	6,040	87,870	2,875	4,177	4,887	8,788	7,706	6,856	35,289
2007–08	3,918	8,590	22,239	30,077	18,269	6,629	89,722	2,784	4,053	4,774	8,860	8,162	7,127	35,760
2008–09	4,072	8,323	22,156	31,184	19,179	7,214	92,128	3,112	3,992	5,128	9,457	8,610	7,733	38,032
2009–10	4,233	8,499	22,375	31,622	19,626	7,727	94,082	3,086	3,949	5,363	9,491	9,238	7,855	38,982
2010–11	4,459	8,513	23,155	32,942	21,067	8,326	98,462	3,218	4,162	5,650	10,436	9,851	9,069	42,386

Table B.22: Other unintentional injury cases, by age and year, Australia, 1999–00 to 2010–11

	Persons						
	0–4	5–14	15–24	25–44	45–64	65+	Total
1999–00	6,794	12,333	21,545	34,902	17,796	10,056	103,426
2000–01	6,656	12,384	21,279	34,574	18,877	10,268	104,039
2001–02	6,643	12,441	21,495	34,676	19,362	11,005	105,625
2002–03	6,448	12,409	21,430	34,576	19,896	11,249	106,010
2003–04	6,502	12,540	22,676	35,112	20,824	11,856	109,510
2004–05	6,598	12,538	23,638	36,215	22,142	11,733	112,864
2005–06	6,871	12,922	25,770	37,619	23,615	12,456	119,253
2006–07	6,777	13,025	26,720	38,654	25,087	12,896	123,159
2007–08	6,702	12,643	27,013	38,937	26,431	13,756	125,482
2008–09	7,184	12,315	27,284	40,642	27,790	14,947	130,162
2009–10	7,319	12,448	27,738	41,113	28,864	15,583	133,065
2010–11	7,677	12,676	28,805	43,378	30,918	17,395	140,850

Table B.23: Hospitalised injury cases and age-standardised rates, by year and sex, Aboriginal and Torres Strait Islander people and Other Australians, Australia[(a)], 1999–00 to 2010–11

	Aboriginal and Torres Strait Islander people						Other Australians					
	Males		Females		Persons		Males		Females		Persons	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Four states												
1999–00	5,777	4,574.9	4,699	3,667.1	10,476	4,108.1	76,241	2,253.8	48,731	1,477.7	124,973	1,880.5
2000–01	5,653	4,386.9	4,519	3,469.6	10,173	3,916.6	73,450	2,154.3	48,361	1,446.9	121,813	1,814.0
2001–02	6,039	4,548.8	4,598	3,480.8	10,637	4,003.3	72,169	2,088.8	47,585	1,402.3	119,756	1,758.2
2002–03	5,773	4,205.6	4,637	3,431.1	10,410	3,813.1	70,542	2,010.2	47,701	1,381.7	118,248	1,708.4
2003–04	5,628	4,023.2	4,625	3,373.3	10,253	3,698.5	72,980	2,045.5	49,251	1,400.0	122,231	1,734.9
2004–05	6,008	4,309.2	4,851	3,486.4	10,859	3,888.9	75,918	2,091.2	51,143	1,427.6	127,061	1,771.5
2005–06	6,262	4,387.0	5,102	3,536.5	11,364	3,948.5	77,950	2,104.4	52,071	1,425.3	130,021	1,776.8
2006–07	6,348	4,236.7	5,326	3,633.9	11,674	3,934.5	82,049	2,202.5	54,217	1,405.9	136,266	1,818.1
Six states												
2007–08	9,303	3,780.3	6,954	2,960.9	16,257	3,370.2	211,306	2,148.6	149,928	1,435.2	361,239	1,805.8
2008–09	9,982	4,020.2	7,474	3,087.6	17,456	3,548.4	218,168	2,171.8	158,279	1,484.5	376,450	1,842.6
2009–10	10,506	4,092.3	7,788	3,138.3	18,294	3,610.6	221,443	2,169.5	163,350	1,500.5	384,794	1,848.9
2010–11	11,074	4,305.3	8,480	3,381.6	19,555	3,838.0	228,067	2,206.0	173,197	1,560.7	401,266	1,896.6

(a) 1999–00 to 2006–07 includes cases from WA, SA, NT, and Qld. From 2007–08 includes cases from WA, SA, NT, Qld, NSW, and Vic.

Table B.24: Transport injury cases and age-standardised rates, by year and sex, Aboriginal and Torres Strait Islander people and Other Australians, Australia[(a)], 1999–00 to 2010–11

	Aboriginal and Torres Strait Islander people						Other Australians					
	Males		Females		Persons		Males		Females		Persons	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Four states												
1999–00	670	477.5	312	217.0	982	343.9	12,837	373.0	5,483	163.5	18,321	269.6
2000–01	647	465.8	305	210.3	952	335.0	12,295	354.3	5,312	156.3	17,607	256.4
2001–02	740	504.9	319	214.6	1,059	355.9	12,559	358.0	5,017	145.8	17,577	253.0
2002–03	659	439.7	280	177.4	939	304.9	12,013	337.2	5,087	145.6	17,100	242.5
2003–04	602	399.9	333	217.6	935	307.1	12,555	347.0	5,071	142.7	17,626	246.1
2004–05	699	442.5	370	249.2	1,069	344.8	13,259	360.2	5,374	149.0	18,633	255.9
2005–06	710	458.4	318	196.0	1,028	323.7	13,512	360.4	5,364	146.0	18,876	254.6
2006–07	796	486.8	369	228.0	1,165	354.6	14,175	379.8	5,675	152.6	19,850	267.6
Six states												
2007–08	1,127	411.4	501	191.3	1,628	299.6	34,400	349.9	14,909	149.7	49,309	250.6
2008–09	1,299	478.5	564	208.5	1,863	340.8	35,078	349.3	15,461	152.0	50,540	251.5
2009–10	1,227	433.8	590	227.2	1,817	330.4	33,972	334.0	15,539	150.5	49,511	242.9
2010–11	1,216	418.2	535	194.0	1,751	305.2	32,792	318.6	15,975	152.3	48,767	235.9

(a) 1999–00 to 2006–07 includes cases from WA, SA, NT, and Qld. From 2007–08 includes cases from WA, SA, NT, Qld, NSW, and Vic.

Table B.25: Drowning and submersion cases and age-standardised rates, by year and sex, Aboriginal and Torres Strait Islander people and Other Australians, Australia[(a)], 1999–00 to 2010–11

	Aboriginal and Torres Strait Islander people						Other Australians					
	Males		Females		Persons		Males		Females		Persons	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Four states												
1999–00	9	5.8	14	5.5	23	5.6	152	4.4	73	2.2	225	3.3
2000–01	10	6.5	9	4.3	19	5.3	138	4.0	80	2.4	218	3.2
2001–02	n.p.	n.p.	n.p.	n.p.	14	3.1	97	2.8	69	2.1	166	2.4
2002–03	5	2.2	5	1.7	10	2.0	117	3.3	63	1.9	180	2.6
2003–04	7	2.3	14	6.0	21	4.2	137	3.9	63	1.9	200	2.9
2004–05	9	4.2	7	2.6	16	3.4	101	2.8	62	1.8	163	2.3
2005–06	n.p.	n.p.	n.p.	n.p.	11	1.9	108	2.9	66	1.9	174	2.4
2006–07	8	3.3	10	3.6	18	3.4	124	3.5	72	2.1	196	2.8
Six states												
2007–08	13	3.7	6	2.6	19	3.2	284	2.9	119	1.3	403	2.1
2008–09	15	5.2	8	1.9	23	3.4	286	2.9	132	1.4	418	2.1
2009–10	15	3.9	6	1.3	21	2.6	321	3.1	166	1.7	487	2.4
2010–11	22	5.4	14	4.0	36	4.7	272	2.6	154	1.5	426	2.1

(a) 1999–00 to 2006–07 includes cases from WA, SA, NT, and Qld. From 2007–08 includes cases from WA, SA, NT, Qld, NSW, and Vic.

Table B.26: Poisoning by pharmaceuticals cases and age-standardised rates, by year and sex, Aboriginal and Torres Strait Islander people and Other Australians, Australia[(a)], 1999–00 to 2010–11

	Aboriginal and Torres Strait Islander people						Other Australians					
	Males		Females		Persons		Males		Females		Persons	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Four states												
1999–00	108	69.5	141	99.4	249	85.2	1,917	56.0	1,977	58.8	3,894	57.4
2000–01	103	70.8	116	82.0	219	76.3	1,550	45.2	1,597	47.3	3,147	46.3
2001–02	91	59.3	108	71.1	199	65.4	1,405	40.7	1,619	47.5	3,024	44.1
2002–03	98	56.2	101	72.6	199	65.9	1,473	42.1	1,718	49.7	3,191	45.9
2003–04	88	55.6	105	68.3	193	62.0	1,365	38.6	1,481	42.2	2,846	40.4
2004–05	91	61.9	108	73.5	199	67.8	1,136	31.6	1,356	38.1	2,492	34.9
2005–06	72	54.3	114	67.6	186	60.1	1,076	29.5	1,202	33.1	2,278	31.3
2006–07	71	43.9	86	62.1	157	54.5	1,185	32.2	1,328	36.2	2,513	34.2
Six states												
2007–08	136	48.3	139	58.7	275	54.4	2,822	28.8	3,204	32.2	6,026	30.5
2008–09	147	53.8	167	59.8	314	56.8	2,894	28.8	3,102	30.4	5,996	29.6
2009–10	178	73.9	176	66.0	354	69.3	2,969	29.0	3,075	29.5	6,044	29.3
2010–11	174	68.6	175	63.5	349	65.8	3,017	29.1	3,021	28.5	6,038	28.8

(a) 1999–00 to 2006–07 includes cases from WA, SA, NT, and Qld. From 2007–08 includes cases from WA, SA, NT, Qld, NSW, and Vic.

Table B.27: Poisoning by other substances cases and age-standardised rates, by year and sex, Aboriginal and Torres Strait Islander people and Other Australians, Australia[(a)], 1999–00 to 2010–11

	Aboriginal and Torres Strait Islander people						Other Australians					
	Males		Females		Persons		Males		Females		Persons	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Four states												
1999–00	42	26.8	45	28.1	87	27.6	840	24.4	469	14.0	1,309	19.3
2000–01	45	26.6	23	14.9	68	20.6	814	23.7	424	12.6	1,238	18.2
2001–02	40	22.6	27	18.1	67	20.7	671	19.4	426	12.6	1,097	16.0
2002–03	47	31.7	32	22.0	79	26.9	605	17.1	405	11.8	1,010	14.4
2003–04	51	34.3	36	18.2	87	25.3	676	18.9	372	10.7	1,048	14.8
2004–05	44	25.7	26	19.8	70	23.0	569	15.7	327	9.2	896	12.5
2005–06	36	20.2	23	15.5	59	18.1	549	14.8	344	9.5	893	12.2
2006–07	43	22.0	27	14.3	70	18.1	546	14.8	285	7.8	831	11.3
Six states												
2007–08	58	21.4	32	11.9	90	16.5	1,261	12.8	814	8.2	2,075	10.5
2008–09	71	26.0	49	16.3	120	20.8	1,413	14.0	878	8.6	2,291	11.3
2009–10	61	19.6	43	13.2	104	16.4	1,308	12.8	842	8.1	2,150	10.4
2010–11	67	23.6	39	11.6	106	17.4	1,282	12.3	776	7.4	2,058	9.9

(a) 1999–00 to 2006–07 includes cases from WA, SA, NT, and Qld. From 2007–08 includes cases from WA, SA, NT, Qld, NSW, and Vic.

Table B.28: Fall injury cases and age-standardised rates, by year and sex, Aboriginal and Torres Strait Islander people and Other Australians, Australia[(a)], 1999–00 to 2010–11

	Aboriginal and Torres Strait Islander people						Other Australians					
	Males		Females		Persons		Males		Females		Persons	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Four states												
1999–00	972	819.8	683	641.5	1,655	731.4	18,945	584.0	21,897	678.3	40,842	641.0
2000–01	925	758.8	662	615.0	1,587	688.6	18,465	563.9	21,795	665.1	40,261	624.0
2001–02	1,033	828.5	690	681.8	1,723	761.3	17,972	539.6	21,605	647.2	39,577	602.3
2002–03	1,006	757.2	746	659.1	1,752	714.3	17,818	526.4	21,862	642.0	39,682	592.6
2003–04	997	769.1	741	725.9	1,738	758.3	18,511	536.7	22,901	657.8	41,412	605.3
2004–05	1,072	894.9	808	720.7	1,880	807.9	19,499	555.2	23,782	669.1	43,281	619.9
2005–06	1,067	847.2	863	752.7	1,930	803.7	19,592	546.9	24,651	679.2	44,243	620.1
2006–07	1,129	824.6	904	746.8	2,033	791.0	21,047	571.4	25,859	643.9	46,906	616.6
Six states												
2007–08	1,772	814.5	1,498	792.9	3,270	810.7	59,881	613.2	76,765	701.0	136,646	668.0
2008–09	1,988	889.4	1,552	789.9	3,540	844.2	62,389	625.6	80,707	721.5	143,096	684.8
2009–10	2,141	934.1	1,624	787.6	3,765	863.0	65,980	648.7	84,989	742.9	150,969	706.7
2010–11	2,461	1,080.4	1,787	887.7	4,248	986.5	70,489	680.4	91,499	781.3	161,988	741.5

(a) 1999–00 to 2006–07 includes cases from WA, SA, NT, and Qld. From 2007–08 includes cases from WA, SA, NT, Qld, NSW, and Vic.

Table B.29: Exposure to smoke, fire, heat and hot substances cases and age-standardised rates, by year and sex, Aboriginal and Torres Strait Islander people and Other Australians, Australia[(a)], 1999–00 to 2010–11

	Aboriginal and Torres Strait Islander people						Other Australians					
	Males		Females		Persons		Males		Females		Persons	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Four states												
1999–00	179	131.3	106	74.0	285	101.7	1,619	47.2	642	19.3	2,261	33.4
2000–01	181	137.9	123	99.1	304	118.3	1,452	42.2	708	21.1	2,160	31.7
2001–02	192	150.9	94	66.8	286	106.2	1,407	40.4	697	20.6	2,105	30.6
2002–03	171	123.4	104	67.2	275	93.7	1,285	36.4	679	19.8	1,964	28.2
2003–04	156	92.0	88	60.6	244	76.9	1,382	38.6	676	19.6	2,058	29.2
2004–05	181	121.3	100	67.9	281	93.9	1,428	39.3	791	22.5	2,219	31.0
2005–06	195	135.2	108	64.6	303	97.4	1,477	39.8	773	21.7	2,250	30.8
2006–07	221	150.6	115	68.3	336	107.1	1,432	39.1	766	21.4	2,198	30.3
Six states												
2007–08	299	103.1	161	55.2	460	78.8	3,302	33.7	1,827	18.9	5,130	26.4
2008–09	292	110.2	177	59.7	469	83.7	3,285	32.7	1,771	18.0	5,056	25.4
2009–10	269	89.0	146	48.8	415	68.7	3,418	33.5	1,808	17.9	5,226	25.8
2010–11	258	90.5	209	61.9	467	75.1	3,514	34.2	1,850	18.1	5,364	26.2

(a) 1999–00 to 2006–07 includes cases from WA, SA, NT, and Qld. From 2007–08 includes cases from WA, SA, NT, Qld, NSW, and Vic.

Table B.30: Intentional self-harm cases and age-standardised rates, by year and sex, Aboriginal and Torres Strait Islander people and Other Australians, Australia[(a)], 1999–00 to 2010–11

	Aboriginal and Torres Strait Islander people						Other Australians					
	Males		Females		Persons		Males		Females		Persons	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Four states												
1999–00	276	215.1	299	220.8	575	217.6	3,057	88.8	4,403	128.8	7,460	108.6
2000–01	300	228.0	367	270.3	667	249.2	3,397	97.9	4,894	141.7	8,291	119.6
2001–02	262	201.5	323	232.3	585	216.7	3,246	92.7	4,859	139.2	8,105	115.7
2002–03	304	215.7	364	256.3	668	236.4	3,194	89.7	4,817	135.8	8,011	112.5
2003–04	286	202.6	376	266.0	662	235.1	3,192	88.4	5,093	141.7	8,285	114.7
2004–05	264	185.8	325	219.2	589	202.6	3,307	90.0	5,543	152.3	8,850	120.8
2005–06	323	220.1	360	235.7	683	227.6	3,149	84.1	5,074	136.9	8,223	110.1
2006–07	318	223.3	370	240.6	688	231.4	3,198	85.1	5,193	140.3	8,391	112.4
Six states												
2007–08	492	210.7	679	268.0	1,171	239.1	8,132	82.4	13,336	136.1	21,471	108.9
2008–09	554	230.5	764	296.2	1,318	263.6	8,549	84.9	14,302	143.2	22,851	113.7
2009–10	617	251.9	820	305.3	1,437	278.2	8,809	86.4	14,936	147.5	23,745	116.5
2010–11	652	259.3	874	324.5	1,526	292.0	8,703	84.5	14,817	145.6	23,520	114.7

(a) 1999–00 to 2006–07 includes cases from WA, SA, NT, and Qld. From 2007–08 includes cases from WA, SA, NT, Qld, NSW, and Vic.

Table B.31: Assault cases and age-standardised rates, by year and sex, Aboriginal and Torres Strait Islander people and Other Australians, Australia[(a)], 1999–00 to 2010–11

	Aboriginal and Torres Strait Islander people						Other Australians					
	Males		Females		Persons		Males		Females		Persons	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Four states												
1999–00	1,689	1,427.3	2,000	1,525.0	3,689	1,472.0	4,627	133.0	1,005	29.4	5,632	81.7
2000–01	1,714	1,383.3	1,912	1,430.2	3,626	1,405.2	4,901	140.5	1,051	30.5	5,953	85.9
2001–02	1,787	1,432.2	2,047	1,476.8	3,834	1,449.6	4,889	138.6	1,116	32.2	6,005	85.8
2002–03	1,691	1,328.0	1,995	1,426.9	3,686	1,373.1	4,691	131.1	1,042	29.7	5,734	80.9
2003–04	1,576	1,189.3	1,954	1,360.8	3,530	1,274.2	4,575	126.0	1,078	30.2	5,653	78.6
2004–05	1,641	1,213.8	2,065	1,422.5	3,706	1,318.5	4,887	132.3	1,039	28.7	5,926	81.1
2005–06	1,732	1,260.2	2,148	1,454.8	3,880	1,356.3	5,342	141.8	1,171	31.9	6,513	87.5
2006–07	1,722	1,206.6	2,267	1,497.5	3,989	1,351.9	5,675	151.5	1,147	31.3	6,822	92.2
Six states												
2007–08	2,342	1,012.7	2,432	996.0	4,774	1,002.0	14,582	147.6	2,888	29.6	17,471	89.1
2008–09	2,389	1,003.4	2,516	1,012.0	4,905	1,006.5	14,944	147.6	3,164	31.8	18,108	90.3
2009–10	2,471	1,015.2	2,630	1,032.6	5,101	1,022.0	14,006	136.4	3,032	30.0	17,038	83.7
2010–11	2,545	1,026.7	2,845	1,094.0	5,391	1,058.3	13,158	127.3	3,126	30.7	16,285	79.4

(a) 1999–00 to 2006–07 includes cases from WA, SA, NT, and Qld. From 2007–08 includes cases from WA, SA, NT, Qld, NSW, and Vic.

Table B.32: Other unintentional injury cases and age-standardised rates, by year and sex, Aboriginal and Torres Strait Islander people and Other Australians, Australia[(a)], 1999–00 to 2010–11

	Aboriginal and Torres Strait Islander people						Other Australians					
	Males		Females		Persons		Males		Females		Persons	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Four states												
1999–00	1,683	1,257.3	971	734.7	2,654	990.4	31,221	911.7	11,750	352.0	42,971	634.7
2000–01	1,621	1,207.8	928	679.3	2,550	936.4	29,571	856.2	11,638	344.3	41,209	602.7
2001–02	1,803	1,278.9	864	616.7	2,667	940.5	29,073	831.8	11,418	333.0	40,491	584.7
2002–03	1,714	1,193.5	928	674.6	2,642	929.3	28,675	807.3	11,320	325.3	39,997	568.9
2003–04	1,780	1,206.3	908	594.3	2,688	892.2	29,909	828.2	11,797	333.1	41,706	583.3
2004–05	1,885	1,246.0	949	644.0	2,834	938.8	30,659	834.4	11,951	331.8	42,610	585.9
2005–06	2,010	1,289.3	1,067	674.6	3,077	974.1	32,006	853.3	12,490	340.0	44,496	599.8
2006–07	1,954	1,218.8	1,078	703.5	3,032	959.1	33,701	899.4	13,106	349.5	46,807	627.7
Six states												
2007–08	2,880	1,078.4	1,338	513.5	4,218	792.3	83,287	843.3	32,976	327.5	116,263	587.4
2008–09	2,983	1,119.7	1,484	563.3	4,467	836.8	85,237	845.3	34,991	340.7	120,230	595.2
2009–10	3,285	1,175.5	1,566	584.2	4,851	876.7	86,972	849.9	35,858	343.0	122,831	598.4
2010–11	3,434	1,230.4	1,809	662.7	5,243	943.3	90,962	880.0	38,907	366.6	129,870	625.3

(a) 1999–00 to 2006–07 includes cases from WA, SA, NT, and Qld. From 2007–08 includes cases from WA, SA, NT, Qld, NSW, and Vic.

Glossary

Definitions in the *Glossary* contain an identification number from the Metadata Online Registry (METeOR). METeOR is Australia's central repository for health, community services and housing assistance metadata, or 'data about data'. It provides definitions for data for health and community services-related topics and specifications for related national minimum data sets (NMDSs), such as the NMDSs that form the basis of this report. METeOR can be viewed on the AIHW website at <www.aihw.gov.au>. For further information on the terms used in this report, refer to the definitions in the *National health data dictionary,* version 14 (HDSC 2008).

Activity when injured: The type of activity being undertaken by a person at the time of injury. METeOR identifier: 361025.

Acute: Having a short and relatively severe course.

Acute care: See Care type.

Acute care hospital: See Establishment type.

Admitted patient: A patient who undergoes a hospital's formal admission process to receive treatment and/or care. This treatment and/or care is provided over a period of time and can occur in hospital and/or in the person's home (for hospital-in-the-home patients). METeOR identifier: 268957.

Age-standardisation: A set of techniques used to remove, as far as possible, the effects of differences in age when comparing two or more populations.

Episode of care: The period of admitted patient care between a formal or statistical admission and a formal or statistical separation, characterised by only one care type (see Care type and Separation). METeOR identifier: 270174 (Care type). METeOR identifier: 268956 (Episode of admitted patient care).

External cause: The environmental event, circumstance or condition as the cause of injury, poisoning and other adverse effect. METeOR identifier: 361926.

Hospital: A health-care facility established under Commonwealth, state or territory legislation as a hospital or a free-standing day procedure unit and authorised to provide treatment and/or care to patients. METeOR identifier: 268971.

Inpatient: See Admitted patient. METeOR identifier: 268957.

International Classification of Diseases and Related Health Conditions (ICD): The World Health Organization's internationally accepted classification of diseases and related health conditions. The 10th revision, Australian modification (ICD-10-AM) is currently in use in Australian hospitals for admitted patients.

Length of stay: The length of stay of an overnight patient is calculated by subtracting the date the patient is admitted from the date of separation and deducting days the patient was on leave. A same-day patient is allocated a length of stay of 1 day. METeOR identifier: 269982.

Mode of admission: The mechanism by which a person begins an episode of admitted patient care. METeOR identifier: 269976.

Mode of separation: Status at separation of person (discharge/transfer/death) and place to which person is released (where applicable). METeOR identifier: 270094.

Patient days: The total number of days for patients who were admitted for an episode of care and who separated during a specified reference period. A patient who is admitted and separated on the same day is allocated 1 patient day. METeOR identifier: 270045.

Principal diagnosis: The diagnosis established after study to be chiefly responsible for occasioning an episode of admitted patient care. METeOR identifier: 391326.

Private hospital: A privately owned and operated institution, catering for patients who are treated by a doctor of their own choice. Patients are charged fees for accommodation and other services provided by the hospital and relevant medical and paramedical practitioners. Acute care and psychiatric hospitals are included, as are private free-standing day hospital facilities.

Public hospital: A hospital controlled by a state or territory health authority. Public hospitals offer free diagnostic services, treatment, care and accommodation to all eligible patients.

Same-day patient: An admitted patient who is admitted and separated on the same date.

Separation: An episode of care for an admitted patient, which can be a total hospital stay (from admission to discharge, transfer or death) or a portion of a stay beginning or ending in a change of type of care (for example, from acute to rehabilitation). Separation also means the process by which an admitted patient completes an episode of care either by being discharged, dying, transferring to another hospital or changing type of care.

Separation rate: The total number of episodes of care for admitted patients divided by the total number of persons in the population under study. Often presented as a rate per 10,000 or 100,000 members of a population. Rates may be crude or standardised.

Separations: The total number of episodes of care for admitted patients, which can be total hospital stays (from admission to discharge, transfer or death) or portions of hospital stays beginning or ending in a change of type of care (for example, from acute to rehabilitation) that cease during a reference period. METeOR identifier: 270407.

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Related publications

The AIHW has published annual reports on hospitalisations occurring as a result of an injury. Earlier editions and any published subsequently can be downloaded for free from the AIHW website <http://www.aihw.gov.au/publications>. The website also includes information on ordering printed copies.

The following AIHW publications relating to injury might also be of interest:

- Pointer S & Kreisfeld R 2012. Hospitalised interpersonal violence and perpetrator coding, Australia 2002-05. Injury research and statistics series no. 77. Cat. no. INJCAT 153. Canberra: AIHW.
- Pointer S & Helps Y 2012. Trends in hospitalised childhood injury in Australia 1999–07. Injury research and statistics series no. 75. Cat. no. INJCAT 151. Canberra: AIHW.
- Henley G & Harrison JE 2012. Trends in serious injury due to land transport accidents, Australia 2000–01 to 2008–09. Injury research and statistics series no. 66. Cat. no. INJCAT 142. Canberra: AIHW.
- Bradley C 2013. Hospitalisations due to falls by older people, Australia 2009–10. Injury research and statistics series no. 70. Cat. no. INJCAT 146. Canberra: AIHW.

This report focuses on trends in hospitalisations due to injury and poisoning that occurred over the period 1999–00 to 2010–11. Information is also presented on the incidence of hospitalised injury in the financial year 2010–11. Age-standardised rates of injury cases increased from 1999–00 to 2010–11 by an average of 1% per year.

Trends in hospitalised injury, Australia 1999–00 to 2010–11

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