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Hospital separations due to injury and poisoning, Australia 2008–09

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INJURY RESEARCH AND STATISTICS SERIES No. 65



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Abbreviations

ABS	Australian Bureau of Statistics
ACT	Australian Capital Territory
AIHW	Australian Institute of Health and Welfare
ASGC	Australian Standard Geographical Classification
CI	Confidence interval
ICD-9	International Classification of Diseases, 9th Revision
ICD-10-AM	International Classification of Diseases, 10th Revision Australian Modification
LOS	Length of stay
MLOS	Mean length of stay
NHMD	National Hospital Morbidity Database
NISU	National Injury Surveillance Unit
NPHP	National Public Health Partnership
NSW	New South Wales
NT	Northern Territory
Qld	Queensland
SA	South Australia
Tas	Tasmania
Vic	Victoria
WA	Western Australia

Symbols

n	number
n.p.	Not published. Small cell counts have been suppressed to prevent patient identification.

Summary

This report, covering injuries resulting in admission to Australian hospitals in the financial year 2008–09, is the seventh in the series which started in 2001–02 (Berry & Harrison 2006).

The focus of the report is analysis of community injury (that is, injuries typically sustained in the home, workplace, street, etc.). The report also includes short sections on work and sports related injury, complications of surgical and medical care and residual injury such as adverse effects not elsewhere classified.

An estimated 412,985 community injury cases required hospitalisation during the twelve-month period 2008–09 (239,345 males and 173,637 females).

A total of 1,662,148 patient days were attributed to hospitalised community injury equating to a mean length of stay of 3.2 days per hospitalised case.

The leading cause of hospitalised injury was an unintentional fall, accounting for 38% of all community injury cases. Unlike for most other types of community injury, females outnumbered males (56% to 44%) and rates were highest for older Australians.

The second most common cause of hospitalised injury was transport accidents (14% or 60,886 cases). Males had a higher rate of transport injury hospitalisations than females across all age groups, with the highest rates among those aged 15–24.

For very young children aged 0–4, the most common specific causes of injury were falls (40%), smoke, fire, heat and hot substances (8%) and poisoning by drugs (7%). Falls were also the most common cause of injury for older children aged 5–14 (45%), followed by transport accidents (17%). The most common causes of injury for young adults aged 15–24 were transport accidents (20%), falls (14%), assault (12%) and intentional self-harm (10%). A similar pattern was seen in adults aged 25–44 where transport accidents accounted for 17% of hospitalisations, falls for 15%, intentional self-harm for 11% and assault for 11%. For adults aged 45–64, falls were prominent, accounting for 31% of hospitalisations, followed by transport accidents (14%) and intentional self-harm (7%). For those aged 65 and over, well over three-quarters of hospitalisations were the result of falls (76%).

Just over a quarter of all hospitalised injury cases occurred at home. A higher percentage of females than males were injured at home (35% vs. 19%) or in a residential institution (4% vs. 1%). Males were more likely than females to have been injured on a street or highway, as well as in sports and athletics areas, trade and construction areas, and farms.

Rates of community injury increased with geographical remoteness. The lowest rate of 1,661 per 100,000 was found for major cities while the highest rate was found for Very remote regions (3,795 per 100,000 population).

The upward trend in the age-standardised rates of community injury continued from 1,724 cases per 100,000 population in 1999–00 to 1,827 in 2007–08 and to 1,865 cases per 100,000 in 2008–09. This trend was observed for both males and females.

1 Introduction

This report describes the occurrence of injuries requiring hospitalisation in Australia during 2008–09. It uses data for episodes of inpatient care that ended (separations) between 1 July 2008 and 30 June 2009 and that were due to injury and poisoning. It continues the series begun with the first report on hospital separations from 2001–02 (Berry & Harrison 2006). Hospitalised injury is described according to major types of injury and poisoning and detailed analysis of the external causes of injury is undertaken.

A small proportion of all incident injury cases result in admission to a hospital. For each hospital admission, many more cases present to emergency departments and are not admitted, or are seen by a general practitioner (Harrison & Steenkamp 2002). A larger number of generally minor cases do not receive medical treatment. In addition, a smaller number of severe injuries that quickly result in death go unrecorded in terms of hospital separations, but are captured in mortality data (Kreissfeld et al. 2004). Although injury cases admitted to hospital comprise a small proportion of the number of incident cases of injury, they account for a large proportion of estimated costs of injury (Watson & Ozanne-Smith 1997).

Hospital separations data

National hospital separations data were provided by the Australian Institute of Health and Welfare (AIHW) National Hospital Morbidity Database (NHMD). A separation is defined as:

A formal, or statistical process, by which an episode of care for an admitted patient ceases (AIHW 2001).

Hospital separations reported here were coded according to the 6th edition of ICD-10-AM (NCCH 2006).

Selecting injury and poisoning cases

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

- Hospital separations occurring in Australia 1 July 2008 to 30 June 2009 and
- Principal Diagnosis in the ICD-10-AM range S00–T98 using Chapter XIX *Injury, poisoning and certain other consequences of external causes* codes.

Cases referred to as ‘injury’ can be defined in many ways, usually on the basis of the presence of certain types of injury diagnosis. The presence of information about the external causes of injury may also be required, especially if analysis focuses on causes and prevention of injury. The starting point for this report was a file containing records of all separations from Australian hospitals in the study period that contain any ICD-10-AM diagnosis code in the range S00–T98 or any external cause code. Since some injuries result in more than one episode in hospital due to transfers and readmissions, a file of separations is likely to overestimate the number of new cases of injury. Australian hospital data files, at national level, lack direct means to avoid such over-counting.

In this report, a method has been used to reduce over-counting of cases, by omitting records in which the mode of admission is recorded as being by transfer from another acute-care hospital, on the grounds that such cases are likely to result in more than one separation record that meets the operational definition of injury. It should be recognised that this

method for avoiding multiple counting of cases is approximate. It should allow for cases involving transfer between or within hospitals. It cannot allow for readmissions which meet the project's selection criteria. All records for cases involving hospital transfers are however included in the calculation of the number of patient days.

Most injuries occur in settings such as car crashes, inter-personal violence, sporting and recreational activities, and work. In this report, these are referred to as 'Community injury'. Community injury is the main subject of this report. Other injuries occur in the context of surgical and medical care, where they are often referred to as complications. These are considered briefly in this report, and are referred to here as *Complications of surgical and medical care*. The remaining injuries are referred to as 'Residual Injuries' which comprise only a small number of separations including adverse effects not elsewhere described.

Since Australian hospital separations records should include a Principal diagnosis code and, for 2008–09, could include up to 50 additional diagnosis codes, Community injury and complications of surgical and medical care can be specified in various ways.

Table 1.1 provides summary counts where selection is based solely on Principal Diagnosis and the mode of admission excludes cases where transfer from another acute-care hospital has occurred. Table A1 further expands on these counts to take account of additional diagnosis codes.

We have used Principal Diagnosis as the basis of case inclusion (Table 1.1). The case selection criteria used in this report have the effect of almost completely restricting the cases included to the acute care type. That is, care for rehabilitation and other sub-acute care is not generally included.

Confidence Intervals are provided in some figures and tables to show non-sampling variation, which is largest where case counts are small. Further information is provided in Data Issues.

Injury hospitalisations 2008–09 overview

For public and private hospitals combined, episodes of care separating from hospital between 1 July 2008 and 30 June 2009 attributed to *Injury and poisoning and certain other consequences of external causes* (S00–T98) ranked 5th in the total number of hospitalisations after *Factors influencing health status & contact with health services* (Z00–Z99), *Diseases of the digestive system* (K00–K93), *Symptoms, signs and abnormal clinical and laboratory findings* (R00–R99) and *Neoplasms* (C00–D48) when records are grouped as in (AIHW 2009). About half a million hospital separations were directly attributed to injury and poisoning in 2008–09 (Table 1.1). These separations accounted for 7% of all episodes of care in Australian hospitals in this year. Over one and a half million hospital patient days were utilised by injury separations in 2008–09. These patient days accounted for a higher proportion of all hospital patient days (9%) than injury separations contributed to all separations. This difference was most apparent for injuries involving females; injury separations accounted for 6% of all hospital separations involving females but the episodes of care associated with these injuries accounted for 8% of all hospital patient days.

Table 1.1: Injury hospitalisations overview: males, females and persons, Australia, 2008–09

	Males	Females	Persons^(a)
Total number of hospital separations for any cause^(b)	3,854,100	4,292,291	8,148,448
Total number of hospital patient days ^(b)	12,110,369	13,671,630	25,782,111
Separations due to injury and poisoning (S00–T98)^(c)	307,732	235,494	543,229
Percentage of all separations	8.0	5.5	6.7
Patient days due to injury and poisoning	1,076,383	1,111,246	2,187,472
Percentage of all patient days	8.9	8.1	8.5
Community injury separations (S00–T75 or T79)^(c)	257,933	187,665	445,601
Percentage of all injury separations	83.8	79.7	82.0
Patient days due to community injury	804,439	857,706	1,662,148
Percentage of injury patient days	74.7	77.2	76.0
Complications of surgical & medical care separations (T80–T88)^(c)	46,644	44,363	91,007
Percentage of all injury separations	15.2	18.8	16.8
Patient days due to complications injury	259,459	239,252	498,713
Percentage of injury patient days	24.1	21.5	22.8
Residual injury separations (T78, T89 or T90–T98)^(c)	3,155	3,466	6,621
Percentage of all injury separations	1.0	1.5	1.2
Patient days due to residual injury separations	4,379	4,786	9,165
Percentage of injury patient days	0.4	0.4	0.4

(a) Includes separations where sex was not reported.

(b) Source: Australian Hospital Statistics 2007–08 (AIHW 2009) pp. 135–136.

(c) Separations defined according to Principal Diagnosis.

Unit records classed as Community injury separations (Principal Diagnosis S00–T75 or T79) accounted for 82% ($n = 445,601$) of all injury separations in 2008–09. More Community injury separations involved males (257,933 vs. 187,665 for females), but more patient days were utilised by females due to Community injury (857,706 vs. for 804,439 males). Conversely, males and females were involved in relatively similar numbers of separations and hospital patient days due to injuries defined as complications of surgical and medical care. The patient days utilised by complications separations accounted for a much higher proportion of all hospital patient days due to injury and poisoning (23%) than the number of complications separations proportionately contributed to all injury and poisoning separations (17%).

Residual injury separations accounted for a very small proportion of both all injury separations and patient days due to injury (1.2% and 0.4%, respectively).

Profiles of priority injury areas

The National Injury Prevention and Safety Promotion Plan: 2004–14 has identified seven national injury prevention areas for action (NPHP 2005; Pointer et al. 2003); children (0–14), youth and young people (15–24), adults (25–64), older people (65+), Aboriginal and Torres Strait Islander people, rural and remote populations, and alcohol and injury. Where appropriate, results have been presented to highlight the impact of injury on the targeted age groups. Aboriginal and Torres Strait Islander cases are not distinguished in this report, largely because limitations of identification of Indigenous status necessitate a special approach. Injury among Aboriginal and Torres Strait Islander Australians have been the subject of separate reports (Helps & Harrison 2004, 2006). Results for rural and remote populations, according to the Australian Standard Geographical Classification (ASGC) remoteness structure, are presented in this report.

2 Community injury, Australia

ICD-10-AM case inclusion

Principal Diagnosis: S00–T75, T79, *Injury, poisoning and certain other complications of external causes*

2.1 All community injury hospitalisations

Table 2.1.1: Key indicators for all community injury cases, Australia, 2008–09

Indicator	Males	Females	Persons ^(a)
Total number of hospital separations due to injury and poisoning	307,732	235,494	543,229
Separations from hospital due to community injury	257,933	187,665	445,601
Percentage of all separations due to injury and poisoning	83.8	79.7	82.0
Estimated community injury cases ^(b)	239,345	173,637	412,985
Crude rate/100,000 population	2,213.3	1,591.1	1,900.8
Age-standardised rate/100,000 population ^(c)	2,225.4	1,469.2	1,824.5
Total patient days ^(d)	804,439	857,706	1,662,148
Mean length of stay (days)	2.6	3.6	3.1
Estimated cases with a high threat to life	31,093	30,525	61,618
Percentage of cases with a high threat to life	13	17.6	14.9

(a) Includes separations where sex was not reported.

(b) Excludes records with a mode of admission of 'transfer from another acute hospital'.

(c) Standardised to the Australian estimated resident population 30 June 2001.

(d) Includes records with a mode of admission of 'transfer from another acute hospital' as contributing to hospital burden due to injury.

Overview

For public and private hospitals combined, Injury, poisoning and certain other consequences of external causes ranked fifth in the number of separations after *Factors influencing health status and contact with health services*, *Diseases of the digestive system*, *Neoplasms* and *Symptoms, signs and abnormal clinical findings, not elsewhere classified* (AIHW 2009).

In 2008–09, Community injury accounted for 445,601 hospital separations, 82% of a total of 543,229 hospital separations due to injury and poisoning from public, private and psychiatric hospitals in Australia (Table 2.1.1) (AIHW 2009). There were an estimated 412,985 incident injury cases in 2008–09. Community injury accounted for around 1.6 million patient days, at an average of 3.1 days per episode (Table 2.1.1).

The six most commonly reported identifiable causes of Community injury were:

- Falls (38%)
- Transportation (14%)
- Intentional self-harm (6%)
- Assault (6%)
- Poisoning, pharmaceuticals (2%)
- Smoke, fire, heat and host substances (2%).

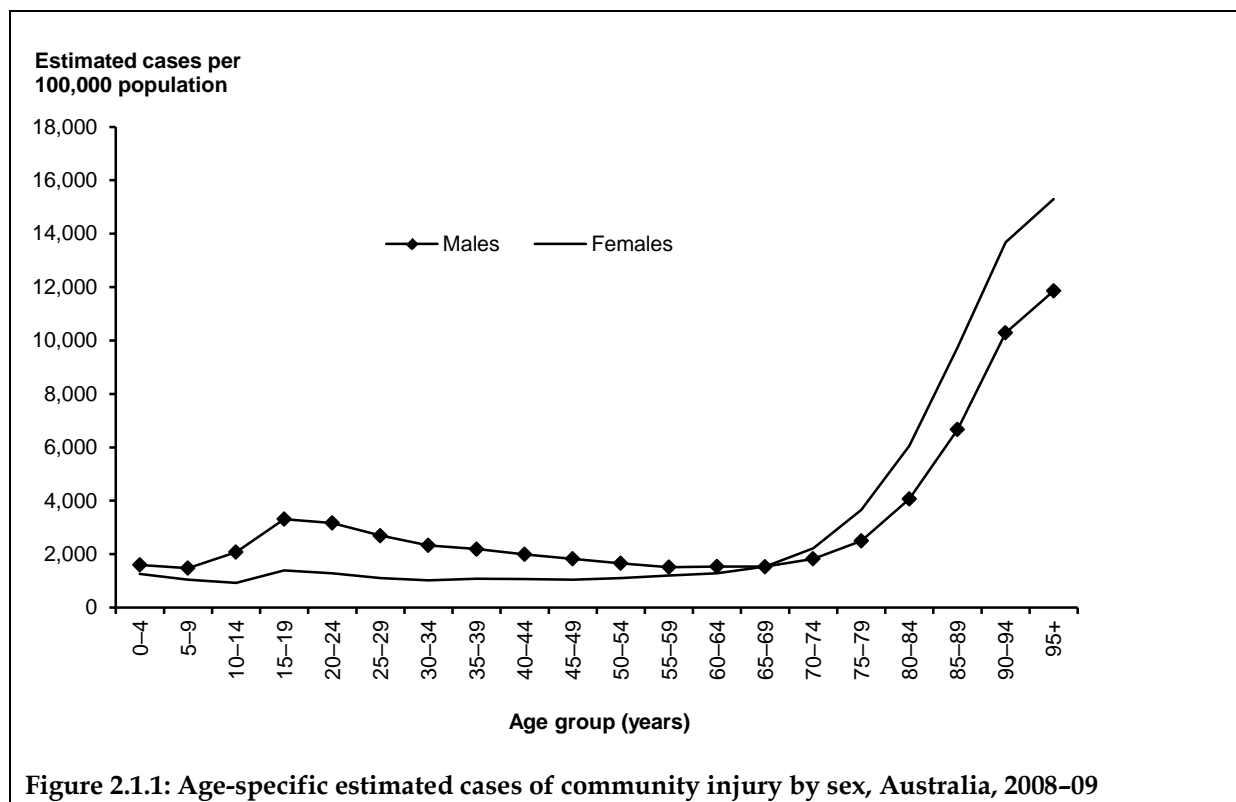
The male to female rate ratio (M:F rate ratio), based on age-standardised rates, was 1.5:1 indicating that more males than females were hospitalised for Community injury.

Cases with a Principal Diagnosis of S00–T75, T79 are included in Table 2.1.1, even if they lack an external cause or have a first reported external cause code of complications of surgical and medical care. Such cases ($n = 2,193$ in 2008–09) make up a small proportion of Community injury (0.5%).

These cases meet the Principal Diagnosis definition of Community injury but lack a meaningful external cause which necessitates coding of these cases as ‘other/missing’ for analysis of external cause.

Age and sex distribution

The age and sex profile of Community injury in 2008–09 (Figure 2.1.1) has followed a characteristic pattern for the past six reports, including this one (Berry & Harrison 2006; Berry & Harrison 2007; Bradley & Harrison 2008; Helps et al. 2002; Kreisfeld & Harrison 2010; Norton & Harrison 2012). Male age-specific rates were low through childhood with a peak between the ages of 15–24. This was followed by a decrease in injury rates to age 65 and then a steep increase from 70+. Female age-specific rates followed a similar pattern with a small peak in the late teens, after which age-specific rates were relatively constant up to age 65 when injury rates then increased steeply overtaking the male rates.



The percentage of community injury hospitalisations attributed to the age groups identified in the National Injury Prevention and Safety Promotion Plan: 2004-05 (NPHP 2005) were 14% ($n = 58,531$) for children aged 0-14, 17% ($n = 71,170$) for youth and young adults aged 15-24, 44% ($n = 180,089$) for adults aged 25-64 and 25% ($n = 103,195$) for older people aged 65 and over (Table 2.1.2).

External cause

Falls constituted the largest proportion of Community injury hospitalisations (38%, $n = 153,170$) and was the predominant external cause for most age groups except for those aged 15-44. Transportation was the second most common specific external cause type (14%, $n = 55,457$) and was the leading cause of injury for persons aged 15-44 (Table 2.1.2). Intentional injuries accounted for 14% ($n = 56,656$) of Community injury hospitalisations.

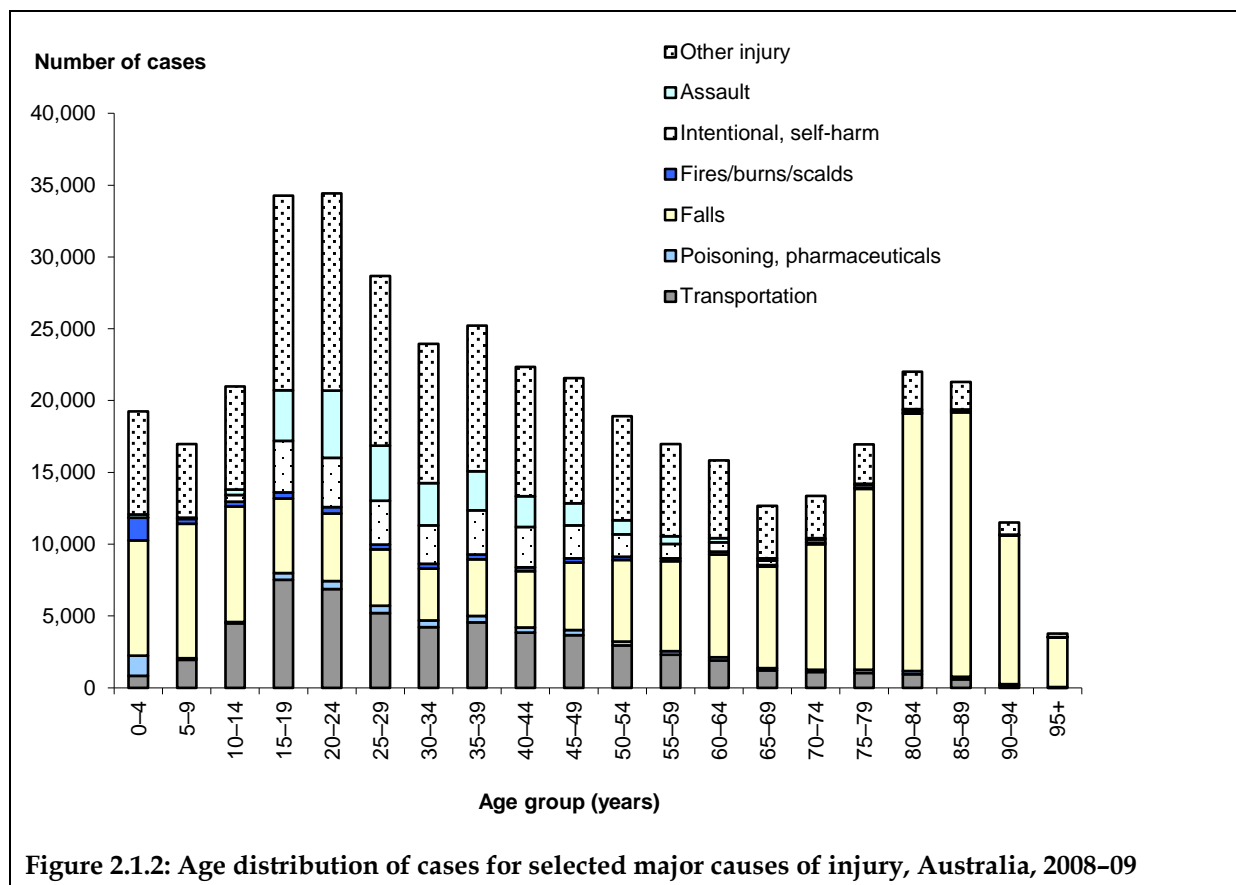
Table 2.1.2: Major external cause groups for community injury cases by age, Australia, 2008–09

External cause	Age group (years)						All ages
	0–4	5–14	15–24	25–44	45–64	65+	
Unintentional injuries							
Transportation	841	6,441	14,405	17,823	10,845	5,102	55,457
Drowning	195	67	48	81	49	35	475
Poisoning, pharmaceuticals	1,411	199	1,032	1,820	1,096	1,033	6,591
Poisoning, other substances	447	117	407	745	522	281	2,519
Falls	8,025	17,433	9,907	15,397	23,802	78,606	153,170
Fires, burns & scalds	1,564	657	875	1,274	926	471	5,767
Other unintentional injuries	7,184	12,314	27,283	40,639	27,790	14,947	130,157
Intentional injuries							
Intentional self -harm	n.p.	n.p.	6,995	11,600	5,522	1,017	25,617
Assault	231	457	8,211	11,652	3,314	444	24,309
Undetermined intent	138	231	1,821	2,918	1,202	420	6,730
Other or missing	n.p.	n.p.	186	395	677	839	2,193
Total community injury cases	20,063	38,468	71,170	104,344	75,745	103,195	412,985

n.p. = Not published. Small cell counts have been suppressed to prevent patient identification.

The pattern of injury hospitalisations by age groups is shown in Figure 2.1.2. Injuries related to transportation peaked at 25–44, as did intentional self-harm and assaults. Falls accounted for a large proportion of injuries for those aged 0–14 and for those over 44, peaking in those aged over 65. Likewise, in children aged 0–4 falls accounted for more than one-third of injury hospitalisations. Smoke, fire, heat and hot substances comprised 8% of injury hospitalisations in 0–4 year olds, followed by poisoning by pharmaceuticals (7%). Hospitalised intentional injuries, both self-inflicted and assaults were most common for Australians aged 15–44.

The Community injury category with the largest number of cases in total after falls was other unintentional injuries. This was a mixed category; it contained a large proportion of work- and sports-related injuries, but not all of them. In this report, other unintentional injuries are the subject of section 2.8. In addition, the overlapping subjects of injury due to work and sport have been made the subjects of separate short Chapters 3 and 4.



Place and activity

Overall, where place of injury was specified, the highest proportions of cases occurred in the home (26%), on a street or highway (10%), in a residential institution (5%) or a sports and athletics area (5%). This pattern for place of injury varied between males and females: just under two times more females than males were injured at home (35% vs. 19%), whereas males were more likely than females to have been injured in a sports and athletics area (7% versus 3%) (Table 2.1.3).

The majority (93%) of cases occurring in residential institutions took place in aged care facilities (not shown in table). The most frequently specified locations for incidents occurring in trade and service areas were cafes, hotels and restaurants (45%) and shops and stores (31%). Of incidents that happened in industrial and construction areas, 37% occurred in a factory or plant and 22% on a construction site. Among other specified places of occurrence, the most frequent were a beach (14%), a large area of water (12%) or a forest (8%).

Place was recorded as 'other specified place of occurrence' or 'unspecified place of occurrence' for 45% of cases. For a small percentage of cases (0.1%) no place of occurrence had been recorded or a place code was not required to be reported (according to standard ICD-10-AM coding rules, place codes are applicable within the range of external cause categories V01-Y89) (Table 2.1.3).

Table 2.1.3: Place of occurrence for all community injury, case counts, Australia, 2008–09

Place of occurrence	Males		Females		Persons	
	Count	Per cent	Count	Per cent	Count ^(a)	Per cent
Home	45,010	18.8	60,548	34.9	105,558	25.6
Residential institution	5,752	2.4	148,94	8.6	20,646	5.0
School	4,546	1.9	2,499	1.4	7,045	1.7
Health Service area	2,381	1.0	3,308	1.9	5,689	1.4
Other specified institution and public administrative area	724	0.3	713	0.4	1,437	0.3
Sports and athletics area	17,256	7.2	4,365	2.5	21,621	5.2
Street and highway	25,958	10.8	15,396	8.9	41,354	10.0
Trade and service area	7,614	3.2	5,113	2.9	12,727	3.1
Industrial and construction area	5,550	2.3	306	0.2	5,856	1.4
Farm	3,136	1.3	881	0.5	4,017	1.0
Other specified place of occurrence	10,837	4.5	5,131	3.0	15,968	3.9
Unspecified place of occurrence	110,375	46.1	60,362	34.8	170,740	41.3
Place not reported/not applicable	206	0.1	121	0.1	327	0.1
Total	239,345	100.0	173,637	100.0	412,985	100.0

(a) Includes separations where sex was not reported.

Overall, where the type of activity was specified, the highest proportions of cases occurred while playing sports (10%) or while working for income (6%). This pattern varied between males and females: three times as many males were injured playing sport than were females (14% compared with 5%). A considerably higher proportion of males were injured while working for income when compared with females (14% vs. 6%). Females were more likely to be injured while resting, sleeping, eating or engaging in other vital activities (7%) compared with males (4%), (Table 2.1.4).

Football was the most frequently reported sporting activity involving injury (27%). For those cases where a football code was specified ($n = 14,458$), the most common were Australian Rules football (34%) and soccer (32%). Among cases that occurred while the person was working for an income, the most commonly specified industries were construction (12%) and agriculture (9%).

For a high proportion of cases (72%) the type of activity being undertaken at the time of injury was recorded as 'other specified activity' or 'unspecified activity'. For a small percentage of cases (0.5%) no activity had been recorded or the case was not eligible to receive an activity code (according to standard ICD-10-AM coding rules, activity codes are applicable within the range of external cause categories V01–Y34) (Table 2.1.4).

The large number of injury cases lacking detail on the activity code limits meaningful interpretation of these counts. For this reason, activity data are not reported extensively in this report. Coding was more complete for place of occurrence, but more than 40% did not specify useful information on where the injury occurred. Variability may exist in the completeness of the coding of the activity being undertaken at the time of injury and the place of occurrence.

For example, injuries that occur at work or while working for income may be better coded than other injuries. The activity and place of occurrence codes may have a different distribution for cases not given a code compared with injury cases that have a specified activity or place of occurrence.

Table 2.1.4: Activity when injury occurred for all community injury, case counts, Australia, 2008–09

Activity	Males	Percentage of male cases	Females	Percentage of female cases	Persons ^(a)	Percentage of all cases
While engaged in sports	32,539	13.6	9,622	5.5	42,161	10.2
While engaged in leisure	6,941	2.9	4,257	2.5	11,198	2.7
While working for income	21,602	9.0	3,765	2.2	25,367	6.1
While engaged in other types of work	8,557	3.6	6,437	3.7	14,995	3.6
While resting, sleeping, eating, etc.	8,281	3.5	12,921	7.4	21,202	5.1
Other specified activity	28,626	12.0	28,889	16.6	57,515	13.9
Unspecified activity	131,648	55.0	106,859	61.5	238,509	57.8
Activity not reported/not applicable	1,151	0.5	887	0.5	2,038	0.5
Total	239,345	100.0	173,637	100.0	412,985	100.0

(a) Includes separations where sex was not reported.

Principal Diagnosis and body part injured

Body part injured is classified here and in similar tables elsewhere in this report according to Principal Diagnosis. If a patient is admitted due to injury and has injuries to more than one body part, then the most serious injury is normally coded as the Principal Diagnosis and others as additional diagnoses.

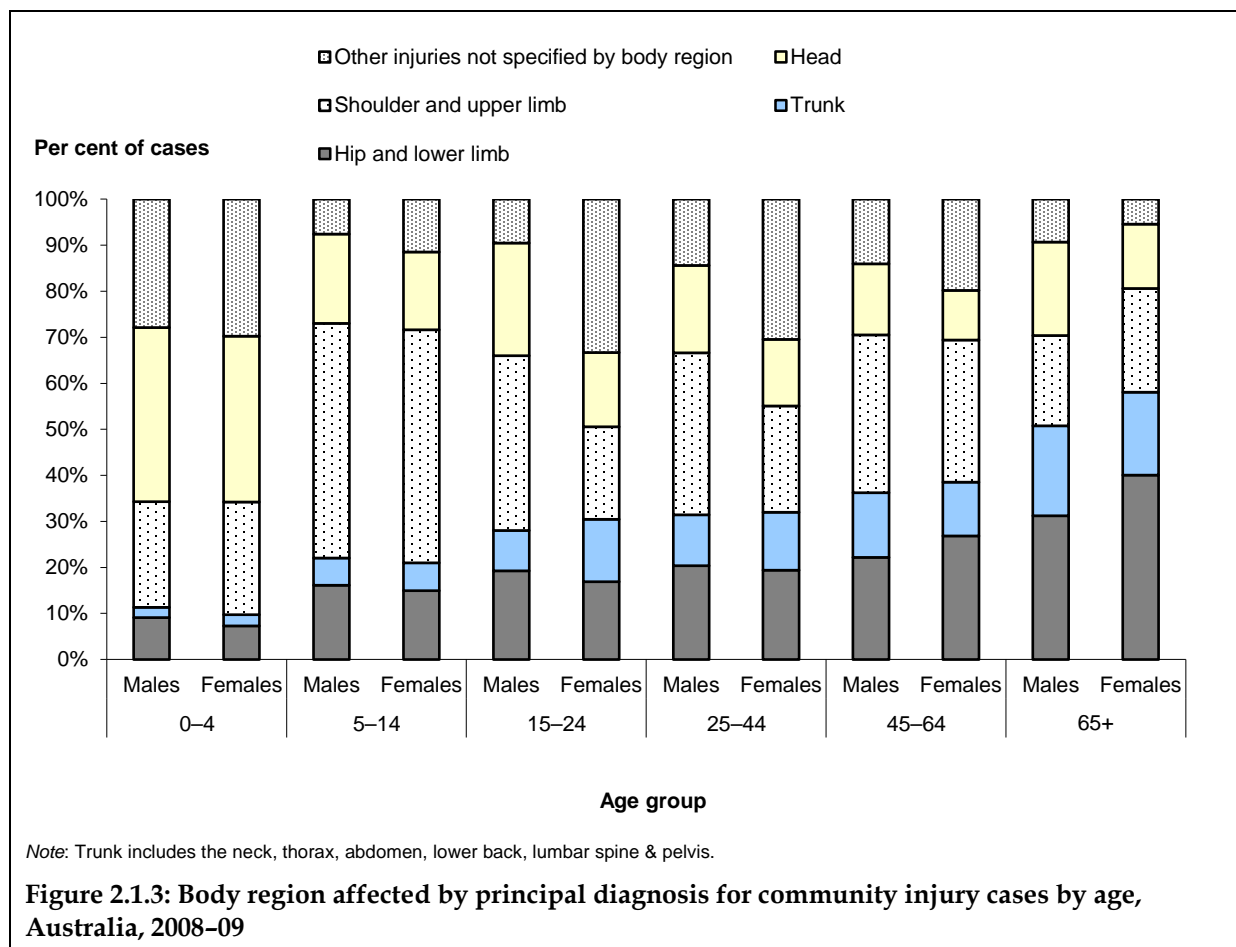
The head was the most commonly injured body region overall (Table 2.1.5). For males, injuries to the wrist and hand were the second most common Principal Diagnosis. More than three-quarters of wrist and hand injuries were attributed to males (77%, $n = 43,211$). For females, injuries to the hip and thigh constituted the second most common diagnostic category ($n = 21,499$). Sex specific data can be found in Figure 2.1.3.

Table 2.1.5: Principal Diagnosis groups for community injury cases by age, Australia, 2008–09

	0–4	5–14	15–24	25–44	45–64	65+	All ages
Injuries to the head	7,863	7,439	152,90	17,712	9,797	17,258	75,359
Injuries to the neck	97	735	2,009	2,711	1,796	1,582	8,930
Injuries to the thorax	60	290	1,728	3,629	4,136	6,970	16,813
Injuries to the abdomen, lower back, lumbar spine & pelvis	235	1,303	3,464	5,153	3,905	10,507	24,567
Injuries to the shoulder & upper arm	1,021	3,022	3,796	5,921	6,020	8,644	28,424
Injuries to the elbow & forearm	1,654	12,218	5,811	8,215	7,811	8,933	44,642
Injuries to the wrist & hand	1,857	4,150	14,296	20,106	11,501	4,242	56,152
Injuries to the hip & thigh	525	892	1,478	2,061	3,486	25,525	33,967
Injuries to the knee & lower leg	529	3,401	8,641	14,088	11,370	10,152	48,181
Injuries to the ankle & foot	612	1,726	3,070	4,662	3,397	2,076	15,543
Injuries involving multiple body regions	n.p	n.p	n.p	n.p	n.p	n.p	327
Injuries to unspecified parts of trunk, limb or body region	87	197	404	636	504	1,026	2,854
Effects of foreign body entering through natural orifice	1,458	916	587	1,279	1,705	1,373	7,318
Burns	1,743	849	1,225	1,865	1,297	573	7,552
Frostbite	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	5
Poisoning by drugs, medicaments & biological substances	1,449	634	7,580	12,918	6,536	2,194	31,311
Toxic effects of non-medical substances	509	443	1,059	2,030	1,465	644	6,150
Other & unspecified effects of external causes	336	159	492	897	711	1,020	3,615
Certain early complications of trauma	22	76	183	364	256	374	1,275
Total	20,063	38,468	71,170	104,344	75,745	103,195	412,985

n.p. = Not published. Small cell counts have been suppressed to prevent patient identification.

Patterns of injury by body region and age are presented in Figure 2.1.3. The distribution of body region injured is similar for both males and females in the 0–4 age group, head injuries predominate (40% of male cases and 38% of female cases). In the 5–14 age group half of all injuries were shoulder and upper limb (50% of male and 51% of female cases). In males aged 15–44 the shoulder and upper limb was also the most commonly injured body region. While for females in the same 15–44 age group ‘other injuries not specified by body region’ was the most common category. This group includes poisoning by drugs, medicaments and biological substances and toxic effects of non-medical substances. The hip and lower limbs were the major body region injured in both males and females over the age of 65 (31% of males and 40% of females).



High threat to life

Hospitalised injuries with an International Classification of Diseases-based injury severity score (ICISS) of less than 0.941 are considered to present a high threat to life (Stephenson et al. 2004).

In 2008-09, one in seven Community injury cases ($n = 61,618$) were classed as high threat to life cases (Table 2.1.6). A greater number of high threat to life cases involved males ($n = 31,093$) than females ($n = 30,515$). As more males than females were hospitalised due to Community injury overall, high threat to life cases represented a smaller proportion of all cases involving males (13%) than for females (18%).

Falls and transportation-related injuries were the most common causes of high threat to life cases for both males and females, and accounted for more than three-quarters of high threat to life community injuries for persons overall (60%, $n = 49,489$). Almost a quarter of all transportation-related and falls-related Community injury cases were considered to represent a high threat to life (Table 2.1.6). Nearly all cases of drowning and submersion were considered of high threat (82%). Intentional injuries inflicted by another person were classified as high threat to life in one-sixth of cases (18%). More self-harm cases involving males were classed as being of high threat to life even though more females were hospitalised due to self-harm; 7% of male, self-harm cases were a high threat to life, compared with 5% of female cases (Table 2.1.6).

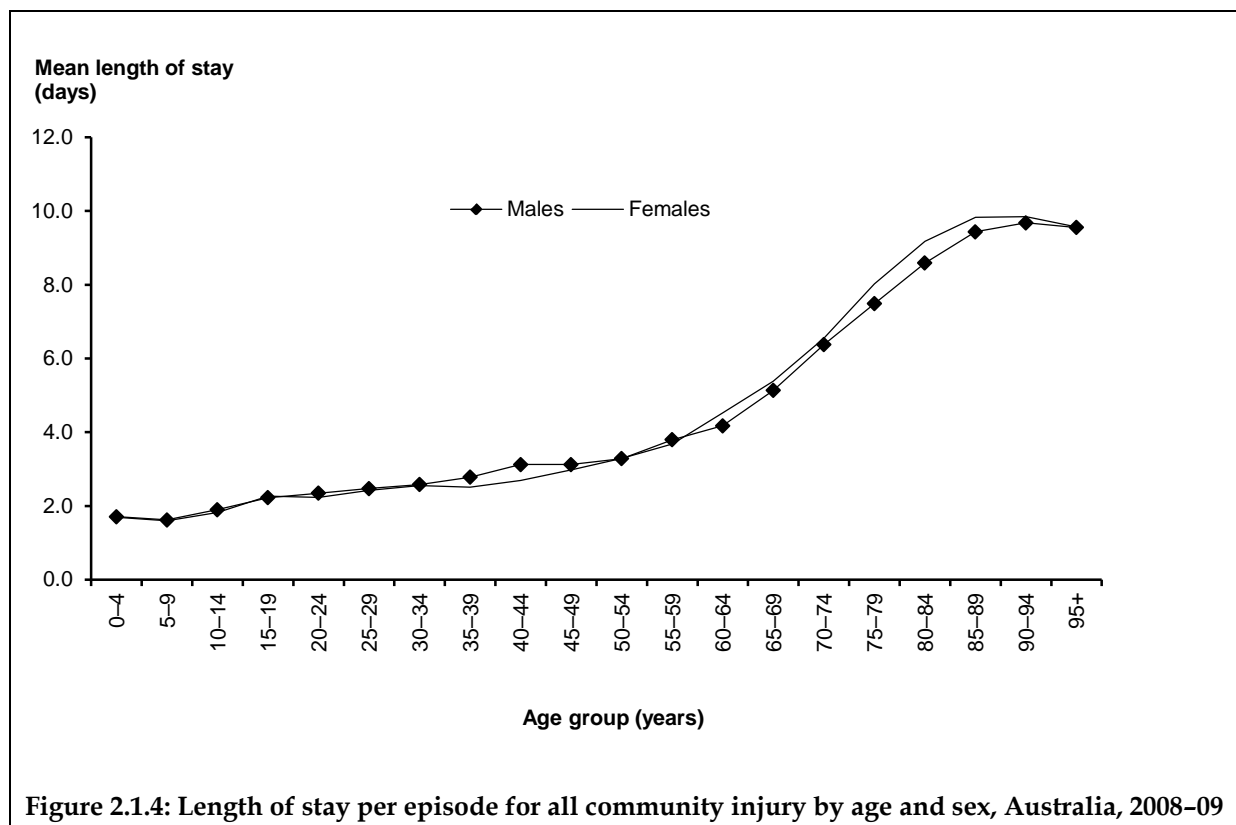
Table 2.1.6: Major external cause groups for high threat to life^(a) community injury cases: males, females and persons, Australia, 2008–09

External cause	Males		Females		Persons	
	Count	Per cent of type	Count	Per cent of type	Count	Per cent of type
Unintentional injuries						
Transportation	9,304	24.2	3,725	21.9	13,029	23.5
Drowning	260	80.5	131	86.2	391	82.3
Poisoning, pharmaceuticals	47	1.5	32	0.9	79	1.2
Poisoning, other substances	76	4.9	26	2.7	102	4.0
Falls	13,373	19.9	23,087	26.9	36,460	23.8
Fires, burns & scalds	540	14.5	273	13.3	813	14.1
Other unintentional injuries	3,066	3.3	1,872	4.9	4,938	3.8
<i>Total unintentional injuries</i>	<i>26,666</i>	<i>12.9</i>	<i>29,146</i>	<i>19.8</i>	<i>55,812</i>	<i>15.8</i>
Intentional injuries						
Intentional, self- inflicted	647	6.7	423	2.6	1,070	4.2
Intentional, inflicted by another	3,482	18.9	777	13.1	4,259	17.5
<i>Total intentional injuries</i>	<i>4,129</i>	<i>14.7</i>	<i>1,200</i>	<i>5.5</i>	<i>5,329</i>	<i>10.7</i>
Undetermined intent	169	4.9	78	2.4	247	3.7
Other and/or missing	129	10.5	101	10.5	230	10.5
Total community injury cases	31,093	13.0	30,525	17.6	61,618	14.9

(a) High threat to life cases defined as ICISS < 0.941 (Stephenson et al. 2004).

Length of stay

Patient days are the number of full and partial days a patient was in hospital during the reporting period, and is summed for all separated hospital patients to give an aggregate of the length of stay (the term LOS is used in tables throughout this report to refer to the count of patient days). Inward transfers and newly admitted cases are included in the calculation of LOS, but only estimated cases are included in the estimation of case counts (as a best available approximation of newly admitted cases). One patient day is counted for same day patients (admitted and discharged from hospital on the same day). LOS provides an approximate indication of case severity, that is, severe injuries are more likely to result in longer episodes of care than minor injuries. The mean length of stay (MLOS), which is a term used throughout this report, is the average number of days each patient stays in hospital. This is 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.



The MLOS for all Community injury was similar for males and females and rose with age (Figure 2.1.4). The average stay was shortest for children aged 0-14 at 1.7 days, followed by 2.3 days for young people aged 15-24. MLOS was 2.7 days for adults aged 25-44, 3.6 days for adults aged 45-64 and 8.3 days for older people aged 65+.

Table 2.1.7 presents an aggregate estimate of LOS and MLOS. In 2008-09 the overall MLOS for Community injury was 4 days (more than 1.6 million patient days for just over 412,985 cases) and was shorter for males (3.4 days) compared with females (4.9 days). There was a high proportion of discharges occurring on the same day as admission, 62% ($n = 277,610$) of these injury cases.

More than half of the Community injury patient days were attributed to falls (55%), followed by transport injuries (15%). Injuries due to falls had the longest MLOS for persons overall (6 days) followed by smoke, fire, heat and hot substances (5.4 days). For males, smoke, fire, heat and hot substances resulted in the longest hospitalisations (5.5 days) while for females, falls resulted in the longest hospitalisations (6.8 days).

Table 2.1.7: Length of stay for all community injury: case counts, total patient days, percentage of total patient days for injury and mean length of stay, Australia, 2008–09

External cause	Males				Females				Persons ^(a)			
	Count	LOS	Per cent	MLOS	Count	LOS	Per cent	MLOS	Count	LOS	Per cent	MLOS
Unintentional												
Transport	38,445	173,821	21.6	4.5	17,011	74,180	8.6	4.4	55,457	248,002	14.9	4.5
Drowning	323	868	0.1	2.7	152	364	0.0	2.4	475	1,232	0.1	2.6
Poisoning, pharmaceuticals	3,169	7,736	1.0	2.4	3,422	8,499	1.0	2.5	6,591	16,235	1.0	2.5
Poisoning, other substances	1,548	3,062	0.4	2.0	971	1,722	0.2	1.8	2,519	4,784	0.3	1.9
Falls	67,319	328,834	40.9	4.9	85,851	587,913	68.5	6.8	153,170	916,747	55.2	6.0
Fires, burns, scalds	3,721	20,497	2.5	5.5	2,046	10,423	1.2	5.1	5,767	30,920	1.9	5.4
Other unintentional injuries	92,123	178,286	22.2	1.9	38,032	99,792	11.6	2.6	130,157	278,080	16.7	2.1
Intentional												
Intentional self-harm	9,638	35,782	4.4	3.7	15,979	48,271	5.6	3.0	25,617	84,053	5.1	3.3
Assault	18,396	41,141	5.1	2.2	5,913	12,877	1.5	2.2	24,309	54,018	3.2	2.2
Undetermined intent	3,434	8,661	1.1	2.5	3,296	8,164	1.0	2.5	6,730	16,825	1.0	2.5
Other/missing	1,229	5,751	0.7	4.7	964	5,501	0.6	5.7	2,193	11,252	0.7	5.1
Total	239,345	804,439	100.0	3.4	173,637	857,706	100.0	4.9	412,985	1,662,148	100.0	4.0

Note: Length of stay (LOS) refers to total patient days.

(a) Includes separations where sex was not reported.

State and territory differences

Standard practice for these reports is to analyse rates of hospitalised Community injury cases according to the state of usual residence of the patient. It is recognised that this may not reflect the state that the injury occurred in or the state in which the patient was hospitalised. However, this is seen to be the best measure of the distribution of serious injury cases across Australia.

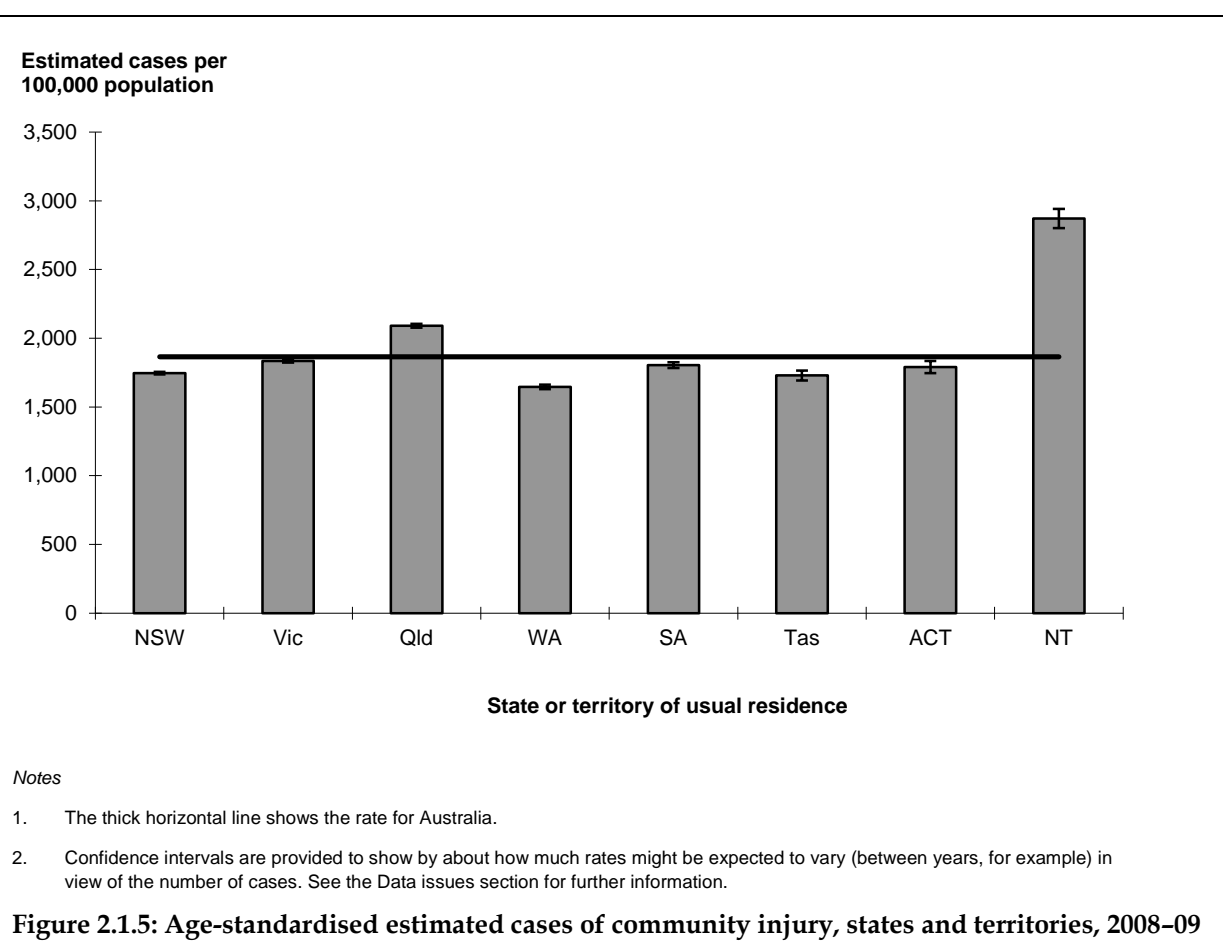
As in previous reports the Northern Territory and Queensland had the highest rates of hospitalised Community injury cases (Table 2.1.8 and Figure 2.1.5). The lowest rate was observed in the Western Australia. Less than one per cent of all cases did not have a state of usual residence reported (1%, $n = 2,878$) or were from other Territories (0.2%, $n = 925$). The other Territories consist of the Cocos and Keeling Islands, Christmas Island and Jervis Bay.

Table 2.1.8: Age-standardised estimated cases of community injury, states and territories, 2008–09

Jurisdiction	Age-standardised rate (per 100,000 population)	95% CI^(a)
NSW	1,746	1,736–1,756
Vic	1,835	1,824–1,846
Qld	2,090	2,077–2,104
WA	1,646	1,629–1,663
SA	1,804	1,784–1,824
Tas	1,729	1,693–1,765
ACT	1,790	1,745–1,835
NT	2,871	2,801–2,942
Australia^(b)	1,865	1,859–1,870

(a) Confidence intervals are provided to show by about how much rates might be expected to vary (between years, for example) in view of the number of cases. See the Data issues section for further information.

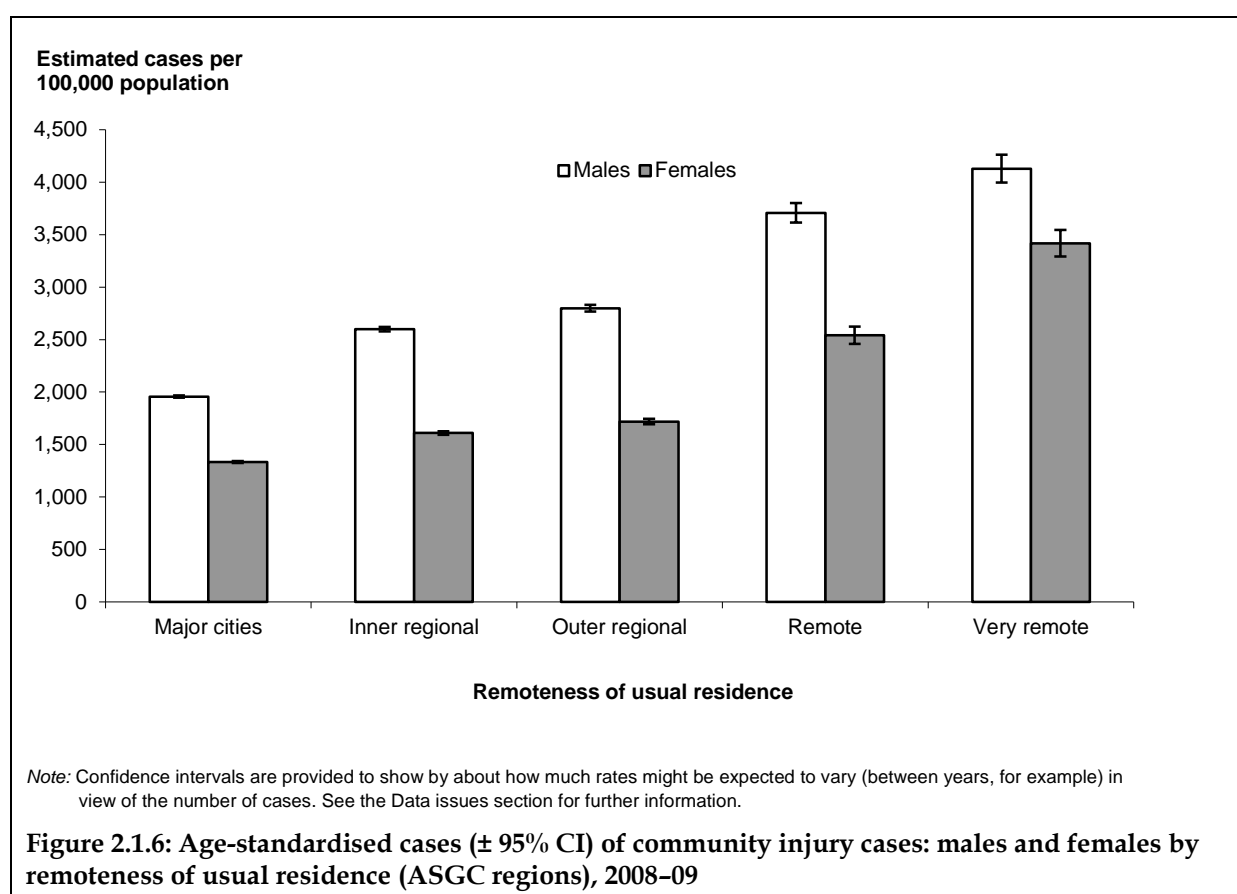
(b) Includes residents of other territories and persons with unspecified jurisdictions of residence.



Remoteness of usual residence

Rates of hospitalised Community injury cases were also analysed according to the remoteness classification of the person's usual residence. The Remoteness Structure of the Australian Standard Geographical Classification (ASGC) categorises census collection districts which share common characteristics into broad geographical regions called Remoteness Areas (RAs). The AGSC Remoteness Structure is more fully described in the Data Issues section.

The age-standardised rate of hospitalised Community injury cases in 2008–09 increased linearly with increasing remoteness of the person's place of usual residence; the lowest rate was observed for residents of Australia's *Major cities* (1,661.3 per 100,000 population) and the highest rate was observed for residents of Australia's *Very remote* regions (3,795.4 per 100,000 population). This pattern was also seen for both males and females (Figure 2.1.6).



Part A: Unintentional injuries

2.2 Transportation

ICD-10-AM case inclusion

Principal Diagnosis: S00–T75, T79 and

First reported external cause: V01–V99

Table 2.2.1: Key indicators for transport cases, Australia, 2008–09

Indicator	Males	Females	Persons ^(a)
Separations from hospital due to transport-related injury	42,342	18,543	60,886
Percentage of all community injury separations	16.4	9.9	13.7
Estimated cases ^(b)	38,445	17,011	55,457
Crude rate/100,000 population	355.5	155.9	255.2
Age-standardised rate/100,000 population ^(c)	355.0	155.3	255.9
Total patient days ^(d)	173,821	74,180	248,002
Mean length of stay (days)	4.5	4.4	4.5
Estimated cases with a high threat to life	9,304	3,725	13,029
Percentage of cases with a high threat to life	24.2	21.9	23.5

(a) Includes records for which sex was not reported.

(b) Excludes records with a mode of admission of 'transfer from another acute hospital'.

(c) Standardised to the Australian estimated resident population 30 June 2001.

(d) Includes records with a mode of admission of 'transfer from another acute hospital' as contributing to hospital burden due to injury.

This chapter covers all hospitalisations due to unintentional transport-related injuries, including cases occurring in railway, water, land and air transport. Transportation accidents were responsible for 14% of all injury hospitalisations in the financial year 2008–09 (Table 2.2.1).

This chapter excludes transport-related injury cases that were registered as *intentional self-harm by jumping or lying before a moving object* ($n = 37$), *intentional self-harm by crashing of motor vehicle* ($n = 63$), *assault by pushing or placing victim before moving object and assault by crashing of motor vehicle* ($n = 33$), *falling, lying or running before or into moving object, undetermined intent and crashing of motor vehicle, undetermined intent* ($n = 23$) and *sequelae of transport accidents* ($n = 59$).

Of the 55,457 transport injury cases in 2008–09, a small proportion consisted of water transport accidents (2% : male $n = 860$, female $n = 276$), air and space transport accidents (0.3%: male $n = 122$, female $n = 43$) and other and unspecified transport accidents (0.8%: male $n = 316$, female $n = 126$).

Age and sex distribution

More males than females were hospitalised for transport injury (based on age-standardised rates) with a M:F ratio of 2.3:1. Males had a higher rate of transport injury at all ages. The highest age-specific rate for males was 718.9 per 100,000 at ages 15–19. This was more than 2.5 times the rate of 278.6 per 100,000 for females of the same age (Figure 2.2.1). 58% of transport injuries occurred to people aged 15–44 (Table 2.2.2).

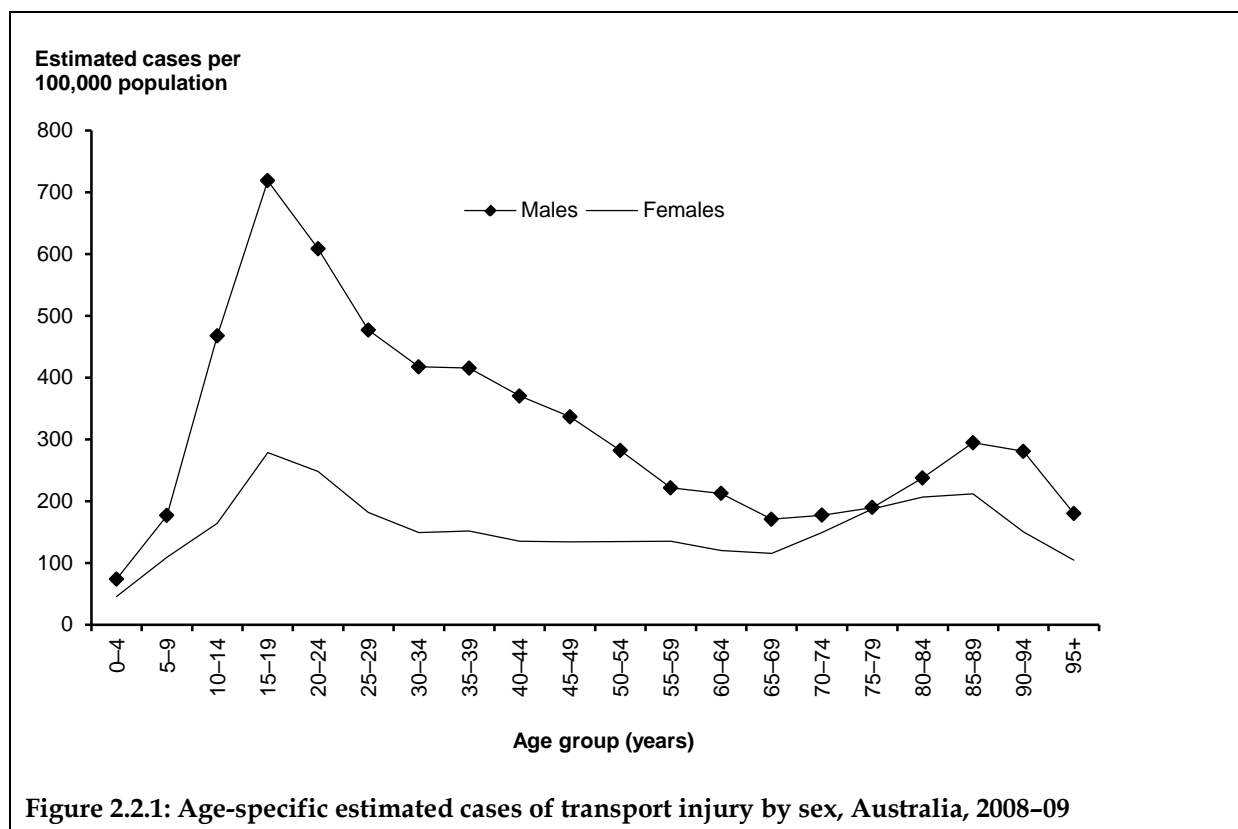


Table 2.2.2: Transportation cases by age group and sex, Australia, 2008–09

Age group	Males		Females		Persons ^(a)	
	Count	Per cent	Count	Per cent	Count	Per cent
0–4	530	1.4	311	1.8	841	1.5
5–14	4,596	12.0	1,845	10.8	6,441	11.6
15–24	10,483	27.3	3,922	23.1	14,405	26.0
25–44	13,030	33.9	4,793	28.2	17,823	32.1
45–64	7,242	18.8	3,602	21.2	10,845	19.6
65+	2,564	6.7	2,538	14.9	5,102	9.2
Total	38,445	100.0	17,011	100.0	55,457	100.0

(a) Includes cases where sex was not reported.

Injured person's vehicle

Table 2.2.3 shows age and sex differences for injuries by the mode of transport. Overall, 'car occupant injured in a transport accident' was the most common type of external cause attributed to transport related injury cases (33%; $n = 18,102$). The most common type of transport related external cause for males was 'motorcycle rider injured in transport accidents' (34%), and for females was 'car occupant injured in transport accidents' (51%). The highest proportion of both male and female car occupants who were injured were adults aged 25–44 (followed by young men and women aged 15–24).

Close to ten times more males than females were hospitalised due to motorcycle accidents. The highest proportion of motorcycle injuries occurred in adults aged 25–44 for both males (39%) and females (35%).

Males had four times as many pedal cycle accidents as females. The majority of pedal cycle accidents occurred to young children aged 0–14 (32% of male and 34% of female pedal cycle injuries).

More male pedestrians were injured compared with females. For males, the highest proportion of pedestrian accidents were in the 25–44 age group, whereas for females, pedestrians aged 65+ were most frequently injured.

More females were injured in bus accidents compared with males; the highest proportion of those injured was aged 65+ for both males (52%) and females (63%).

The frequency of injury to an animal rider or occupant of an animal-driven vehicle was greater for females than for males. For both males and females, the highest proportion of animal rider or occupant of an animal-driven vehicle accidents occurred among adults aged 25–44 (32% both males and females).

Table 2.2.3: Injured person's mode of transport by age group, Australia, 2008–09

Injured person's mode of transport	0–14	Per cent	15–24	Per cent	25–44	Per cent	45–64	Per cent	65+	Per cent	Total	Per cent
Males												
Pedestrian	336	14.8	539	23.7	646	28.4	376	16.5	378	16.6	2,275	100
Pedal cycle	2,479	31.9	1,623	20.9	2,044	26.3	1,323	17	305	3.9	7,774	100
Motorcycle	1,361	10.3	4,203	31.8	5,201	39.4	2,205	16.7	242	1.8	13,212	100
Car	450	4.8	3,045	32.2	3,089	32.7	1,756	18.6	1,102	11.7	9,442	100
Pick-up truck or van	17	5	76	22.2	127	37	102	29.7	21	6.1	343	100
Heavy transport	10	1.4	51	6.9	293	39.6	336	45.5	49	6.6	739	100
Bus	5	2.7	16	8.6	25	13.5	43	23.2	96	51.9	185	100
Animal or animal-driven	133	12.1	227	20.6	353	32	320	29	70	6.3	1,103	100
Special all-terrain or off-road	159	18.2	224	25.7	326	37.4	134	15.4	29	3.3	872	100
Other land transport	74	6.2	253	21	395	32.9	316	26.3	164	13.6	1,202	100
Water transport	46	5.3	173	20.1	345	40.1	232	27	64	7.4	860	100
Other and unspecified ^(b)	55	12.8	52	12.1	185	43.1	93	21.7	44	10.3	429	100
Total^(a)	5,125	13.3	10,482	27.3	13,029	33.9	7,236	18.8	2,564	6.7	38,436	100

(continued)

Table 2.2.3 (continued): Injured person's mode of transport by age group, Australia, 2008–09

Injured person's mode of transport	0–14	Per cent	15–24	Per cent	25–44	Per cent	45–64	Per cent	65+	Per cent	Total	Per cent
Females												
Pedestrian	204	14.0	262	18	322	22.2	266	18.3	398	27.4	1,452	100
Pedal cycle	619	34.0	210	11.5	483	26.5	445	24.4	66	3.6	1,823	100
Motorcycle	205	15.4	347	26	463	34.7	290	21.7	30	2.2	1,335	100
Car	397	4.6	2,296	26.5	2,490	28.8	1,903	22	1,574	18.2	8,660	100
Pick-up truck or van	n.p.	n.p.	27	30	26	28.9	19	21.1	n.p.	n.p.	90	100
Heavy transport	n.p.	n.p.	8	13.8	15	25.9	23	39.7	n.p.	n.p.	58	100
Bus	15	4.6	15	4.6	33	10.2	56	17.2	206	63.4	325	100
Animal or animal-driven	539	25.8	533	25.5	672	32.2	326	15.6	17	0.8	2,087	100
Special all-terrain or off-road	70	31.4	50	22.4	53	23.8	39	17.5	11	4.9	223	100
Other land transport	37	7.2	100	19.5	110	21.4	113	22	153	29.8	513	100
Water transport	36	13	52	18.8	78	28.3	79	28.6	31	11.2	276	100
Other and unspecified ^(b)	24	14.2	22	13.0	48	28.4	43	25.4	32	18.9	169	100
Total^(a)	2,156	12.7	3,922	23.1	4,793	28.2	3,602	21.2	2,538	14.9	17,011	100

n.p. = Not published. Small cell counts have been suppressed to prevent patient identification

(a) Persons includes nine cases that did not involve a motor vehicle.

(b) Includes 165 cases (122 males, 43 females) of air and space transport.

Principal Diagnosis and body part injured

Injuries sustained in transportation accidents involved all major body regions with similar frequency (Table 2.2.4).

Table 2.2.4: Principal Diagnosis by body region and sex for transport injury, Australia, 2008–09

Principal Diagnosis by body region	Males		Females		Persons ^(b)	
	Count	Per cent	Count	Per cent	Count	Per cent
Head	7,907	20.6	3,292	19.4	11,199	20.2
Trunk ^(a)	9,611	25.0	6,410	37.7	16,021	28.9
Shoulder and upper limb	11,194	29.1	3,763	22.1	14,958	27.0
Hip and lower limb	9,024	23.5	3,223	18.9	12,247	22.1
Other injuries not specified by body region	709	1.8	323	1.9	1,032	1.9
All body regions	38,445	100.0	17,011	100.0	55,457	100.0

(a) Trunk includes: neck, thorax, abdomen, lower back, lumbar spine and pelvis.

(b) Includes separations where sex was not reported.

Length of stay

Mean length of stay for transportation injury cases rose with age for both males and females (Figure 2.2.2). Mean length of stay for males ranged from 2.5 days for children aged 0–4 to a high of 9.4 days for those aged 85 and over, while the mean length of stay for females ranged from a low of 2.6 days for children aged 5–9 to a high of 9.5 days for those aged 85 and over.

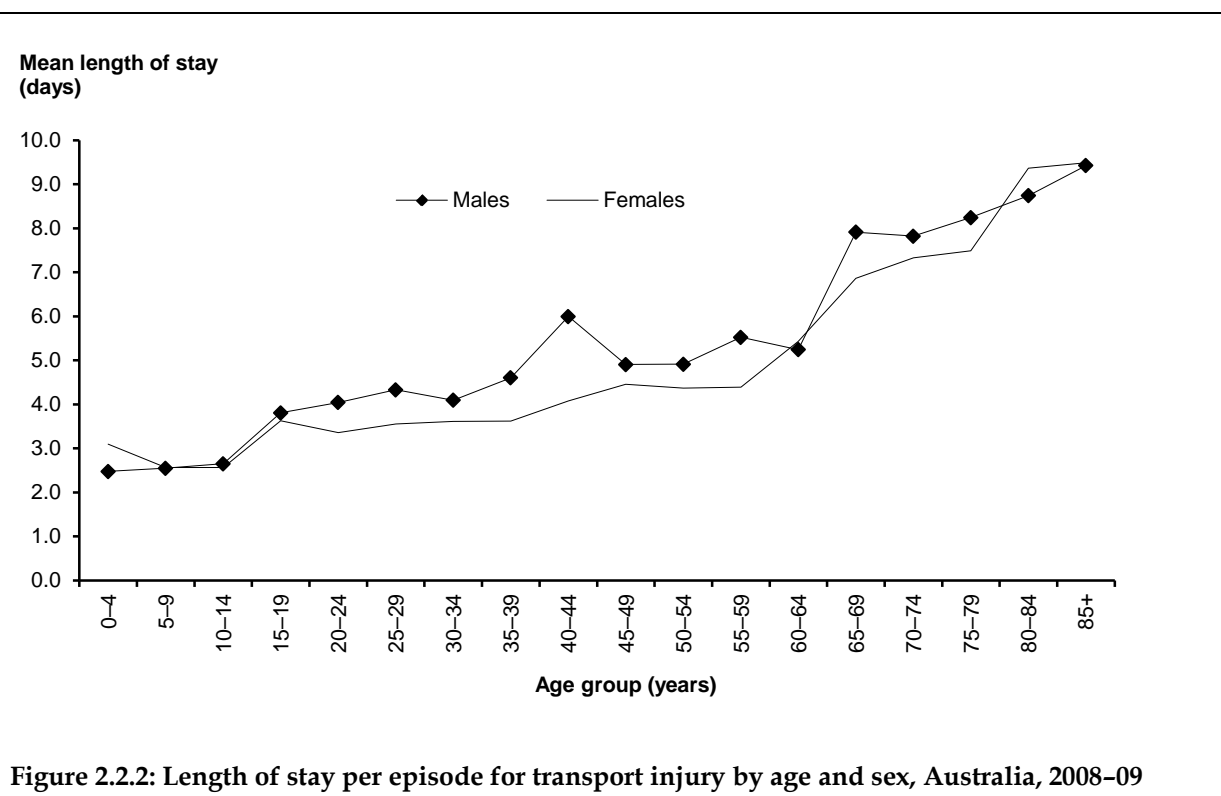


Figure 2.2.2: Length of stay per episode for transport injury by age and sex, Australia, 2008–09

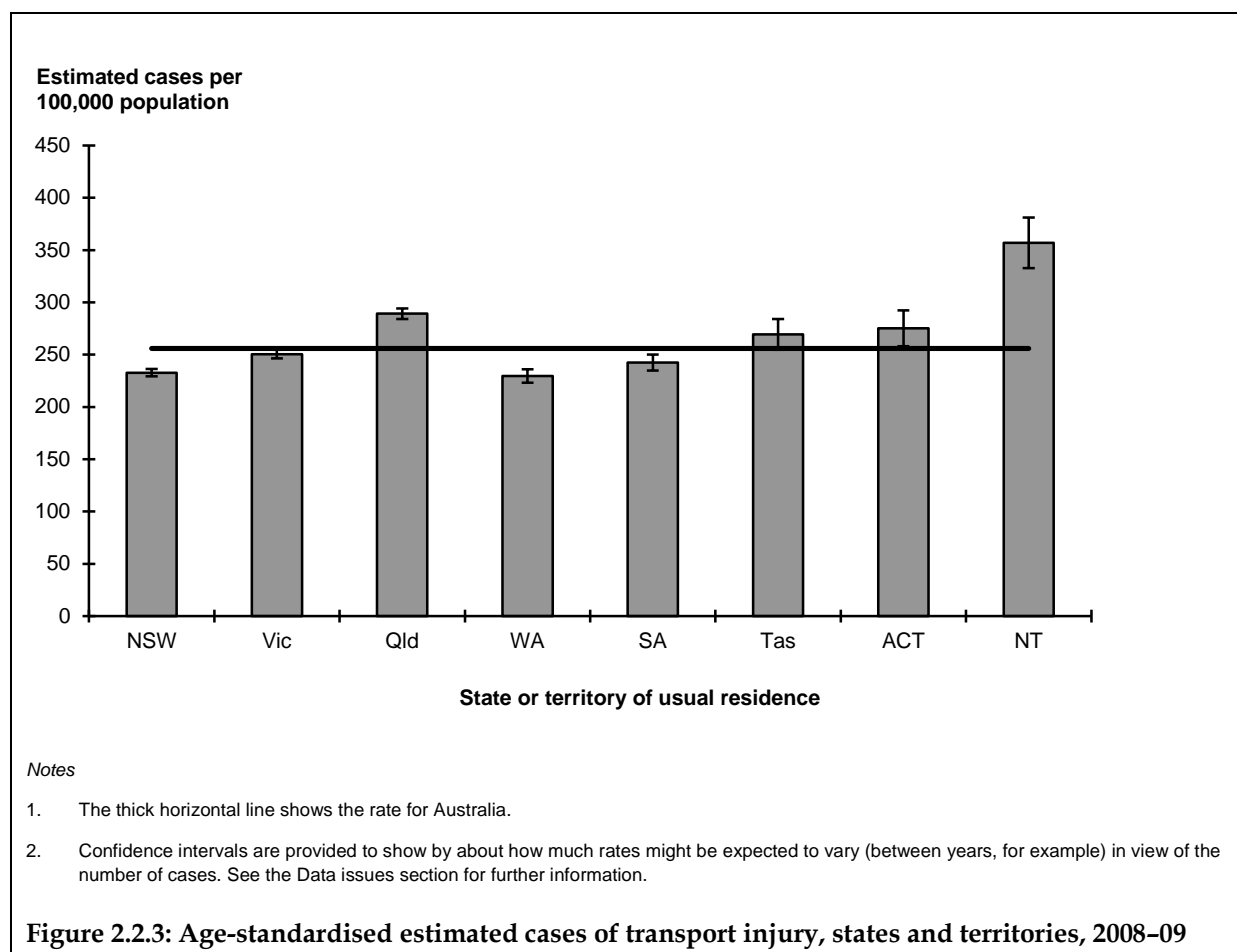
Transportation: State and territory differences

Victoria was the only state to have rates of transport injury that were relatively similar to the national rate (Table 2.2.5 and Figure 2.2.3). New South Wales, Western Australia and South Australia had rates that below the national rate. Rates of transport injury cases were highest for residents of Queensland, Tasmania, ACT and the Northern Territory.

Table 2.2.5: Age-standardised estimated cases of transport injury, states and territories, 2008–09

Jurisdiction	Age-standardised rate (per 100,000 population)	95% CI ^(a)
NSW	232.7	229.2–236.3
Vic	250.5	246.3–254.7
Qld	289.2	284.1–294.2
WA	229.5	223.2–235.8
SA	242.4	234.8–250.1
Tas	269.2	254.5–283.9
ACT	275.2	258.1–292.3
NT	356.9	332.8–381.1
Australia	255.9	253.8–258.0

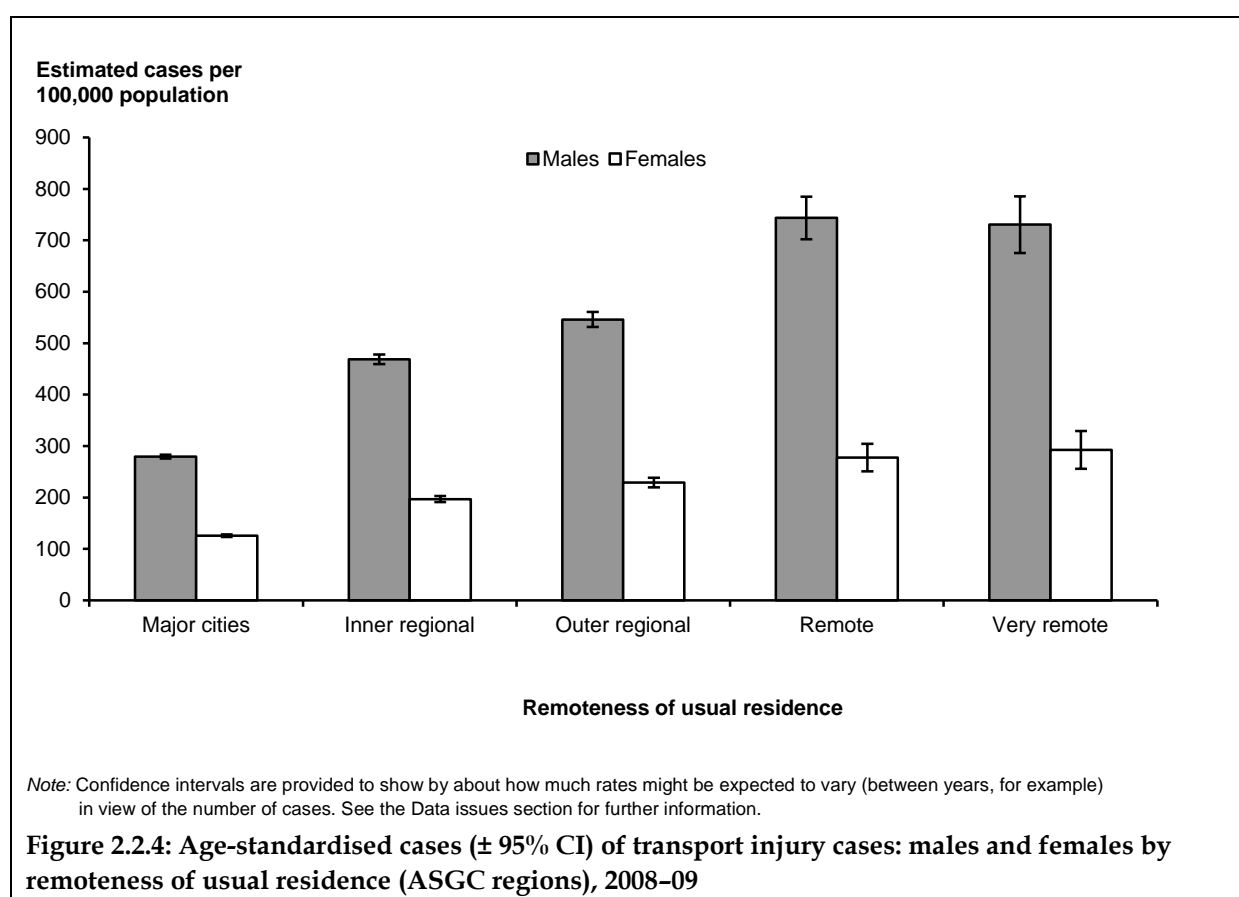
(a) Confidence intervals are provided to show by about how much rates might be expected to vary (between years, for example) in view of the number of cases. See the Data issues section for further information.



Remoteness of usual residence

The age-standardised rates of injury increased according to remoteness of the person's usual residence from an urban centre. Male rates of injury were 2.2 to 2.7 times the rate observed for females in each remoteness area (Figure 2.2.4). The lowest rate was observed for residents of Australia's *Major cities* (202.6 per 100,000 population) and the highest rate was observed for residents of Australia's *Very remote* regions (518 per 100,000).

The high rate of injury morbidity for residents of the more remote areas of Australia may be partly attributable to higher injury risk among Aboriginal and Torres Strait Islander Australians, who comprise a relatively large proportion of the remote area populations (Helps & Harrison 2006). Transport injury among Aboriginal and Torres Strait Islander Australians during 2008–09 has been the subject of a previous report in this series (Henley & Harrison 2010).



2.2.1 Land transportation

ICD-10-AM case inclusion

Principal Diagnosis: S00–T75, T79 and

First reported external cause: V01–V89

The following section concentrates on traffic and non-traffic land transport accidents ($n = 53,714$; see Table 2.2.6). In summary 34% of people hospitalised due to land transport accidents were car occupants ($n = 18,102$); more than one-quarter were motorcyclists (27%; $n = 14,547$); 18% ($n = 9,597$) were pedal cyclists; and 7% ($n = 3,728$) were pedestrians.

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, 64% were injured in traffic accidents.

Table 2.2.6 and Figure 2.2.5 describe modes of transport for traffic and non-traffic cases. For non-traffic accidents ($n = 13,830$), the most frequent mode of transport was a motorcycle (43%; $n = 5,943$) followed by a pedal cycle (29%; $n = 4,068$). The most common mode of transport for males injured in a non-traffic accident was a motorcycle (47%; $n = 5,475$) followed by a pedal cycle (29%; $n = 3,343$), whereas the most common mode of transport for females injured in a non-traffic accident was a pedal cycle (32%; $n = 725$) followed by a car (21%; $n = 469$) (not shown in table).

For traffic accident cases ($n = 34,434$), the most frequent mode of transport of the injured person was a car (47%; $n = 16,232$) followed by a motorcycle (24%; $n = 8,247$) (Table 2.2.6). There were gender differences; slightly more than one-third of males were car occupants (36%; $n = 8,403$), 32% were on a motorcycle ($n = 7,418$) and 18% were pedal cyclists ($n = 4,243$). In comparison, nearly three-quarters of females injured in traffic accidents were car occupants (69%; $n = 7,829$), 10% were pedestrians ($n = 1,095$), and 9% were pedal cyclists ($n = 1,040$) (not shown in table).

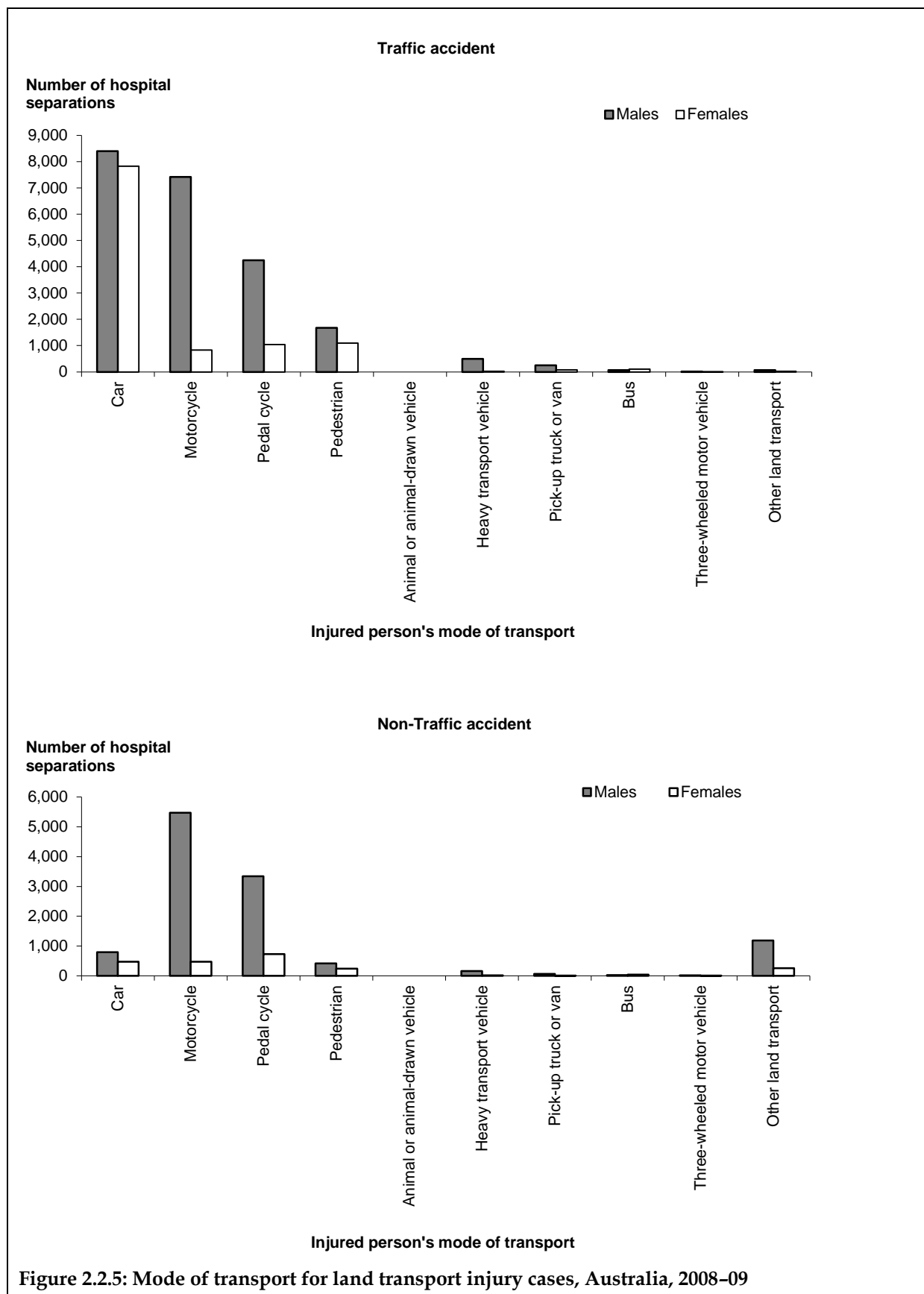
Of the accidents that were unspecified as to whether traffic or non-traffic (Table 2.2.6), more than half (58%; $n = 3,190$) involved an animal rider or occupant of an animal-drawn vehicle.

Table 2.2.6: Mode of transport for land transport injury cases, Australia, 2008–09

Injured person's mode of transport	Non-traffic accident	Traffic accident	Unspecified	Total
Males				
Car	796	8,403	243	9,442
Motorcycle	5,475	7,418	319	13,212
Pedal cycle	3,343	4,243	188	7,774
Pedestrian	413	1,674	188	2,275
Animal or animal-drawn vehicle	0	n.p.	1,103	1,103
Heavy transport vehicle	158	496	85	739
Pick-up truck or van	66	248	n.p.	343
Bus	19	68	98	185
Three-wheeled motor vehicle	17	n.p.	n.p.	31
Other land transport	1,184	71	136	1,391
Total	11,471	22,632	23,92	36,495
Females				
Car	469	7,829	362	8,660
Motorcycle	468	829	38	1,335
Pedal cycle	725	1,040	58	1,823
Pedestrian	241	1,095	116	1,452
Animal or animal-drawn vehicle	0	n.p.	2,087	2,087
Heavy transport vehicle	15	25	18	58
Pick-up truck or van	8	80	n.p.	90
Bus	39	103	183	325
Three-wheeled motor vehicle	8	n.p.	n.p.	11
Other land transport	255	24	110	389
Total	2,228	11,028	2,974	16,230
Persons^(a)				
Car	1,265	16,232	605	18,102
Motorcycle	5,943	8,247	357	14,547
Pedal cycle	4,068	5,283	246	9,597
Pedestrian	654	2,769	305	3,728
Animal or animal-drawn vehicle	0	0	3,190	3,190
Heavy transport vehicle	173	521	103	797
Pick-up truck or van	74	328	n.p.	433
Bus	58	171	281	510
Three-wheeled motor vehicle	25	14	n.p.	42
Other land transport	1,439	95	246	1,780
Total	13,699	336,60	5,367	52,726

n.p. = Not published. Small cell counts have been suppressed to prevent patient identification.

(a) Includes records where sex was not reported.



Mechanism of injury

Many injuries result from collision with another vehicle or collision with some other object. The other vehicle or object is often called the 'counterpart'. Table 2.2.7 details the counterpart in land transport crashes. However, some injuries result from non-collision events, such as car roll-over.

Table 2.2.7 summarises the common mechanisms of injury in land transport accidents. Of injured car occupants, 43% were involved in a collision with a car, pick-up truck or van, 26% were involved in a collision with a fixed or stationary object and 21% were involved in a non-collision transport accident.

Nearly half (52%) of motorcyclists were involved in a non-collision transport accident, 13% collided with a car, pick-up truck or van and 10.9% collided with a fixed or stationary object.

More than half (52%) of pedal cyclists were involved in a non-collision transport accident and 12% collided with a car, pick-up truck or van.

Of pedestrians injured, 82% were hit by a car, pick-up truck or van.

For animal riders or occupants of an animal-driven vehicle, 93% were injured in a non-collision accident. (These cases would usually be the result of falling from, or being thrown from, a horse.)

Of heavy transport vehicle occupants, 58% were involved in a non-collision transport accident, 6% collided with a fixed or stationary object, 14% collided with another heavy transport vehicle or bus and 8% hit a car, pick-up truck or van.

Of pick-up truck or van occupants, 43% were involved in a non-collision transport accident, 19% hit a car, pick-up truck or van or collided with a fixed or stationary object.

Sixty-six per cent of bus occupants and 55% of three wheeled vehicle occupants were involved in a non-collision transport accident.

Road user group

Tables 2.2.8 and 2.2.9 characterise the road user group (for example, the position of the injured in or outside of the vehicle) for land transport accidents according to whether they were traffic or non-traffic.

Excluding the other and unspecified road user group, 63% of car occupants injured in a traffic accident were drivers and 31% were passengers. Among motorcyclists injured in a traffic accident 68% were drivers and 3% were passengers however 29% did not have a road user type specified.

Again excluding the other and unspecified road user group, 57% of car occupants involved in a non-traffic accident were drivers and 26% were passengers. In comparison, 84% of those injured in a non-traffic accident while on a motorcycle were drivers and only 2% were passengers.

In cases where traffic status was unspecified as to traffic or non-traffic, more than half (59%) of injuries were involving an animal rider or occupant of animal driven vehicle. A further 9% were injured whilst boarding or alighting a car.

Table 2.2.7: Mechanism of injury for land transport injury cases, Australia, 2008–09

Injured person's mode of transport	Counterpart									
	Pedestrian or animal	Pedal cyclist	Two- or three-wheeled motor vehicle	Car, pick-up truck or van	Heavy transport vehicle or bus	Railway train or railway vehicle	Other non-motor vehicle	Fixed or stationary object	Non-collision transport accident	Other and unspecified transport
Car occupant	140	11	31	7,696	563	20	38	4,655	3,806	1,142
Motorcyclist	224	13	443	1,952	94	n.p.	15	1,585	7,509	2,710
Pedal cyclist	65	510	20	1,136	75	n.p.	11	542	5,298	1,937
Pedestrian	n.p.	117	86	3,046	168	30	35	n.p.	n.p.	246
Animal rider or occupant of animal-driven vehicle	5	n.p.	n.p.	n.p.	n.p.	n.p.	9	14	2,963	199
Occupant of heavy transport vehicle	9	n.p.	n.p.	61	114	n.p.	n.p.	51	461	96
Occupant of pick-up truck or van	11	n.p.	n.p.	84	25	n.p.	n.p.	83	187	41
Bus occupant	8	n.p.	n.p.	30	27	n.p.	n.p.	12	337	94
Three wheeled motor vehicle	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	6	23	7
Total (n = 50,946)^(a)	462	651	585	14,008	1,066	58	112	6,948	20,584	6,472

n.p. = Not published. Small cell counts have been suppressed to prevent patient identification.

(a) Excludes 1,780 cases that are 'Other land transport accidents' (V81–V89) and 1,589 cases due to water, air and space, and other and unspecified transport.

Table 2.2.8: Mode of transport for traffic land transport injury cases, Australia, 2008–09

Injured person's mode of transport	Pedestrian	Driver	Passenger	Person on outside of vehicle	Other and unspecified	Total
Pedestrian	2,769	0	0	0	0	2,769
Pedal cycle	0	3,212	28	0	2,043	5,283
Motorcycle	0	5,611	265	0	2,371	8,247
Car	0	10,189	4,959	82	1,002	16,232
Pick-up truck or van	0	190	83	35	20	328
Heavy transport vehicle	0	365	57	19	80	521
Bus	0	19	130	n.p.	n.p.	171
Three wheeled motor vehicle	0	9	0	n.p.	n.p.	14
Other land transport	0	51	27	9	8	95
Total	2,769	19,646	5,549	149	5,547	33,660

n.p. = Not published. Small cell counts have been suppressed to prevent patient identification.

Table 2.2.9: Mode of transport for non-traffic land transport injury cases, Australia, 2008–09

Injured person's mode of transport	Pedestrian	Driver	Passenger	Person on outside of vehicle	Other and unspecified	Total
Pedestrian	654	0	0	0	0	654
Pedal cycle	0	3,067	52	0	949	4,068
Motorcycle	0	5,159	125	0	659	5,943
Car	0	721	332	136	76	1,265
Pick-up truck or van	n.p.	n.p.	22	27	n.p.	74
Heavy transport vehicle	0	59	8	81	n.p.	173
Bus	0	n.p.	n.p.	n.p.	12	58
Three wheeled motor vehicle	0	21	n.p.	n.p.	n.p.	25
Other land transport	0	984	122	166	167	1,439
Total	654	10,027	701	414	1,903	13,699

n.p. = Not published. Small cell counts have been suppressed to prevent patient identification.

Age and sex distribution by traffic status

Traffic

For traffic accidents, hospitalised injury rates for males peaked at ages 20–24. This appears to be driven by the high rates of injury for motorcyclists and car drivers in this age group (144.5 per 100,000 for motorcyclists and 121.1 per 100,000 for car drivers) (Figure 2.2.6). For females, rates for car passengers peaked at age 15–19 (74.3 per 100,000 population) and rates for car drivers peaked at age 20–24 (82.9 per 100,000).

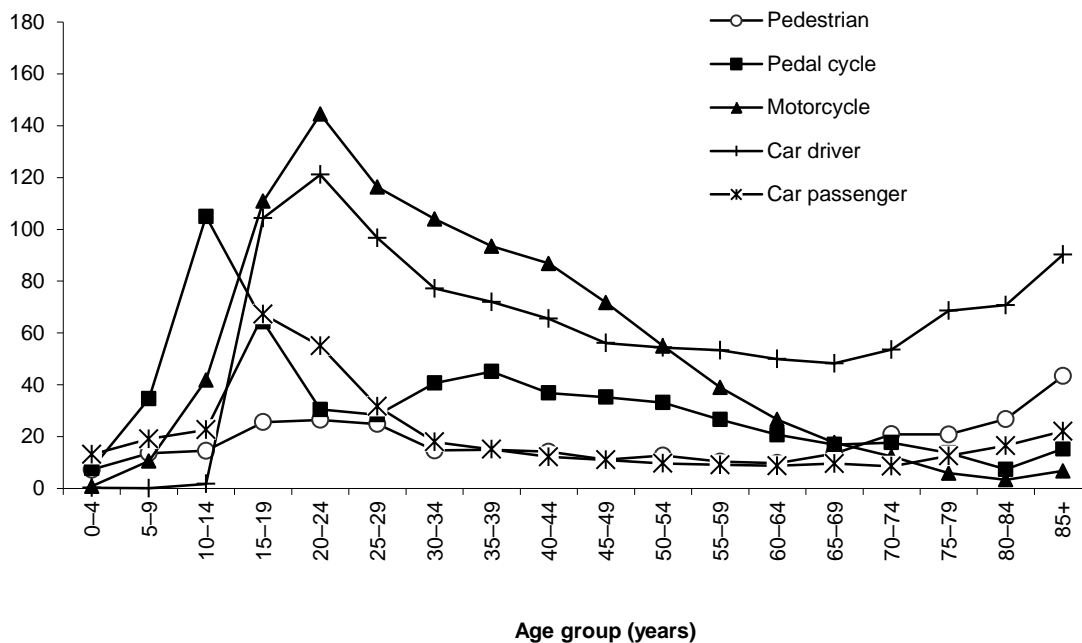
Rates of pedal cycle injury in traffic peaked in the 10–14 age group for both males and females (105.9 per 100,000 and 24.9 per 100,000, respectively). Pedestrian injury rates in traffic were highest in the oldest age groups (43.4 per 100,000 for males aged 85+ and 25.8 per 100,000 for females aged 80–84).

Non-traffic

For non-traffic accidents, hospitalised injury rates were highest for males and females aged 10–14. This can be attributed to the high injury rates among pedal cyclists (136.0 and 23.9 per 100,000, for males and females respectively) and motorcyclists (110.9 and 13.5 per 100,000, for males and females respectively). For both male and female car drivers rates peaked at ages 15–19 with rates of 17.6 and 11.2 per 100,000 respectively (Figure 2.2.7). For male car passengers, the injury rate was highest at 15–19 (11.7 per 100,000), while for female car passengers the rate was highest for those aged over 85 (7.7 per 100,000). Pedestrian injury rates in non-traffic was highest for males aged 80–84 (11.4 per 100,000) and for females 75–79 (6.7 per 100,000).

Hospitalisations per
100,000 population

Males



Hospitalisations per
100,000 population

Females

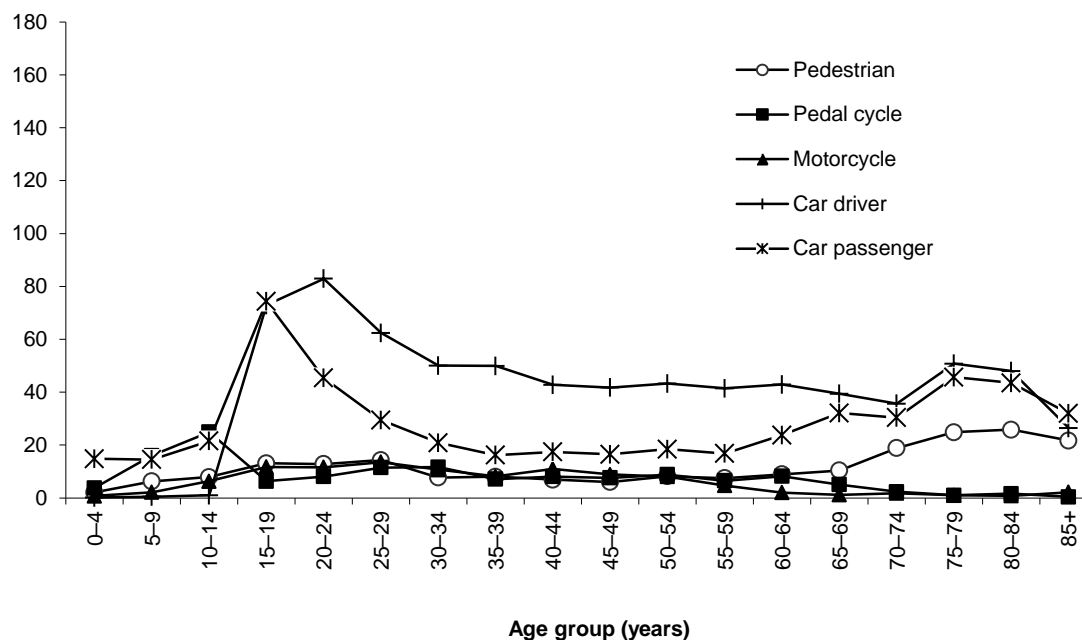


Figure 2.2.6: Traffic accidents – age-specific hospital separation rates by sex, Australia, 2008–09

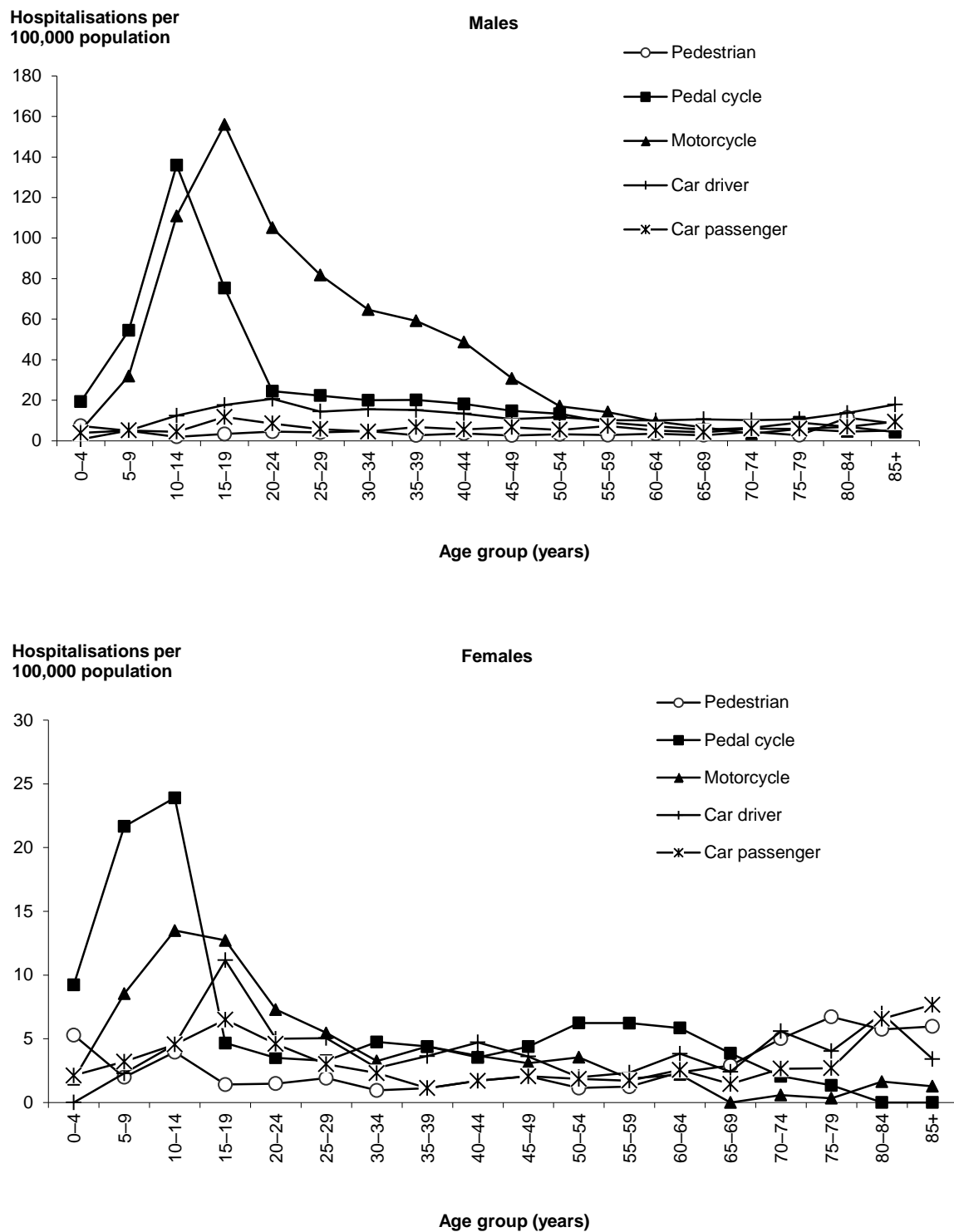


Figure 2.2.7: Non-traffic accidents – age-specific hospital separation rates by sex, Australia, 2008-09

2.3 Drowning and near-drowning

ICD-10-AM case inclusion

Principal Diagnosis: S00–T75, T79 and

First reported external cause: W65–W74

Table 2.3.1: Key indicators for drowning and near-drowning cases, Australia, 2008–09

Indicator	Males	Females	Persons
Separations from hospital due to drowning and near-drowning	353	164	517
Percentage of all community injury separations	0.14	0.09	0.12
Estimated cases ^(a)	323	152	475
Crude rate/100,000 population	3.0	1.4	2.2
Age-standardised rate/100,000 population ^(b)	3.0	1.5	2.2
Total patient days ^(c)	868	364	1,232
Mean length of stay (days)	2.7	2.4	2.7
Estimated cases with a high threat to life	260	131	391
Percentage of cases with a high threat to life	80.5	86.2	82.3

(a) Excludes records with a mode of admission of 'transfer from another acute hospital'.

(b) Standardised to the Australian estimated resident population 30 June 2001.

(c) Includes records with a mode of admission of 'transfer from another acute hospital' as contributing to hospital burden due to injury.

Increasingly, the term 'drowning' is used to refer to 'the process of experiencing respiratory impairment from submersion/immersion in liquid' (van Beek et al. 2005). Framed this way, drowning can have various outcomes: death, survival with lasting consequences of greater or lesser severity, survival with transient morbidity or survival with no detectable consequences. 'Near drowning' 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 (e.g. a person who becomes exhausted while swimming, but manages to reach a shore, perhaps with assistance). This chapter provides data on episodes of non-fatal drowning that resulted in admission to a hospital.

Drowning and near-drowning accounted for one per cent of all injury hospitalisations in the financial year 2008–09 (Table 2.3.1). This chapter predominantly focuses on estimated cases of *accidental drowning and submersion* that have an external cause in the ICD-10-AM range W65–W74 ($n = 475$). However, there were 102 additional cases that had an external cause code outside the range of *accidental drowning and submersion* (ICD-10-AM W65–W74) but had a principal diagnosis of T75.1 *drowning and nonfatal submersion*. These cases are not included in Table 2.3.1 but are summarised in Table 2.3.2.

Overview of all drowning and near-drowning cases

All identifiable hospitalised drowning and near-drowning cases in Australia in 2008–09 are summarised in Table 2.3.2. There are a small number of cases of drowning and submersion that fall outside the range W65–W74 but still specifically refer to drowning and submersion, for example V90 *Accident to water craft causing drowning and submersion*. These specific cases will be included in the coverage of other sections in this report, for example records with an external cause code of V90 will be included in the other transport section. In addition there are a number of cases without an explicit drowning and submersion external cause that do contain a principal diagnosis of T75.1, *drowning and nonfatal submersion* are summarised under the heading various external cause codes that do not mention drowning.

Table 2.3.2: All identifiable drowning and near-drowning cases, Australia, 2008–09

Number in 2008–09	Per cent of all drowning cases	ICD-10-AM Code	Description	Coverage in this report
475	82.3	W65–W74	Accidental drowning and submersion	Drowning
13	2.3	V90	Accident to water craft causing drowning and submersion	Other transport
n.p.	n.p.	V92	Water transport related drowning and submersion without accident to water craft	Other transport
14	2.4	X71	Intentional self-harm by drowning and submersion	Intentional, self-harm
n.p.	n.p.	X92	Assault by drowning and submersion	Assault
6	1.0	Y21	Drowning and submersion, undetermined intent	Undetermined intent
63	10.9		Various external cause codes that do not mention drowning (for example, fall)	Various
577	100.0			

n.p. = Not published. Small cell counts have been suppressed to prevent patient identification.

Note: The total number of drowning hospital separations is the sum of cases with a first reported external cause code in the range W65–W74 and cases where the first reported external cause code fell outside this range but the case had a principal diagnosis code of T75.1 Drowning and non-fatal submersion.

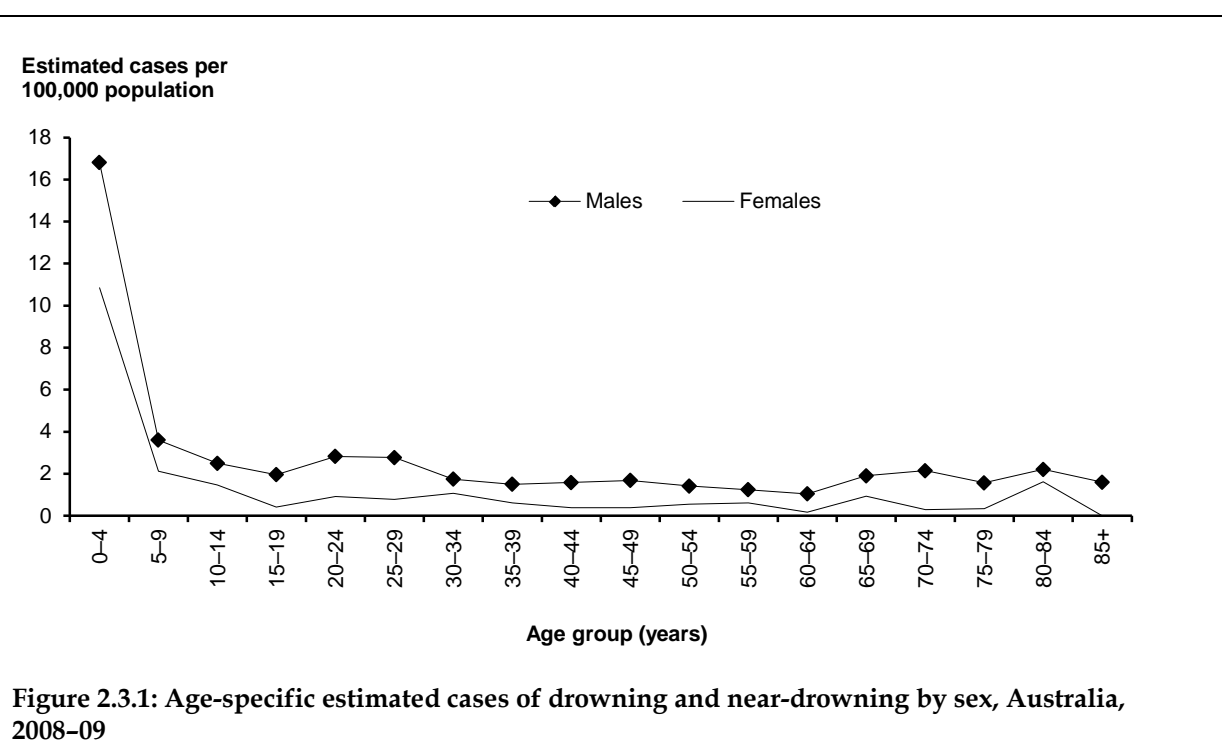
Age and sex distribution

The following sections focus on the *Accidental drowning and submersion* (ICD-10-AM W65–W74) category ($n = 475$ cases). Well over one-third of the drowning and near-drowning injury cases occurred in young children aged 0–4 (Table 2.3.3) and of these 63% involved males.

Table 2.3.3: Drowning and near-drowning cases by age group, Australia, 2008–09

Age group	Males		Females		Persons	
	Count	Per cent	Count	Per cent	Count	Per cent
0–4	121	37.5	74	48.7	195	41.1
5–14	43	13.3	24	15.8	67	14.1
15–24	38	11.8	10	6.6	48	10.1
25–44	59	18.3	22	14.5	81	17.1
45–64	37	11.5	12	7.9	49	10.3
65+	25	7.7	10	6.6	35	7.4
Total	323	100.0	152	100.0	475	100.0

The highest age-specific rates were in children aged 0–4 (males: 16.8 per 100,000, females: 10.8 per 100,000) (Figure 2.3.1) and rates were much lower at older ages. Caution should be exercised in interpreting rates over the age of about 85 due to extremely small numbers of separations. More males than females were hospitalised for drowning and near-drowning (based on age-standardised rates). The overall rate of drowning and near-drowning for males was 3.0 per 100,000 population while for females this rate was 1.5 per 100,000 population (M:F ratio 2.1:1).



Place of occurrence

Overall, swimming pools were the most common setting for drowning-related cases, constituting 28% of all drowning and near-drowning cases. Young children aged 0–4 made up a large proportion of this group; 46% of all drowning cases in that age group and 68% of all cases that occurred in swimming pools. Bodies of natural water (for example, rivers, lakes, the ocean) were the second most common setting of drowning and near-drowning overall and the principal setting for adults (48% in people aged 25–44). Drowning and near-drowning in bathtubs (9%) occurred less frequently with the majority of these cases involving children aged 0–4 (88%) (Table 2.3.4).

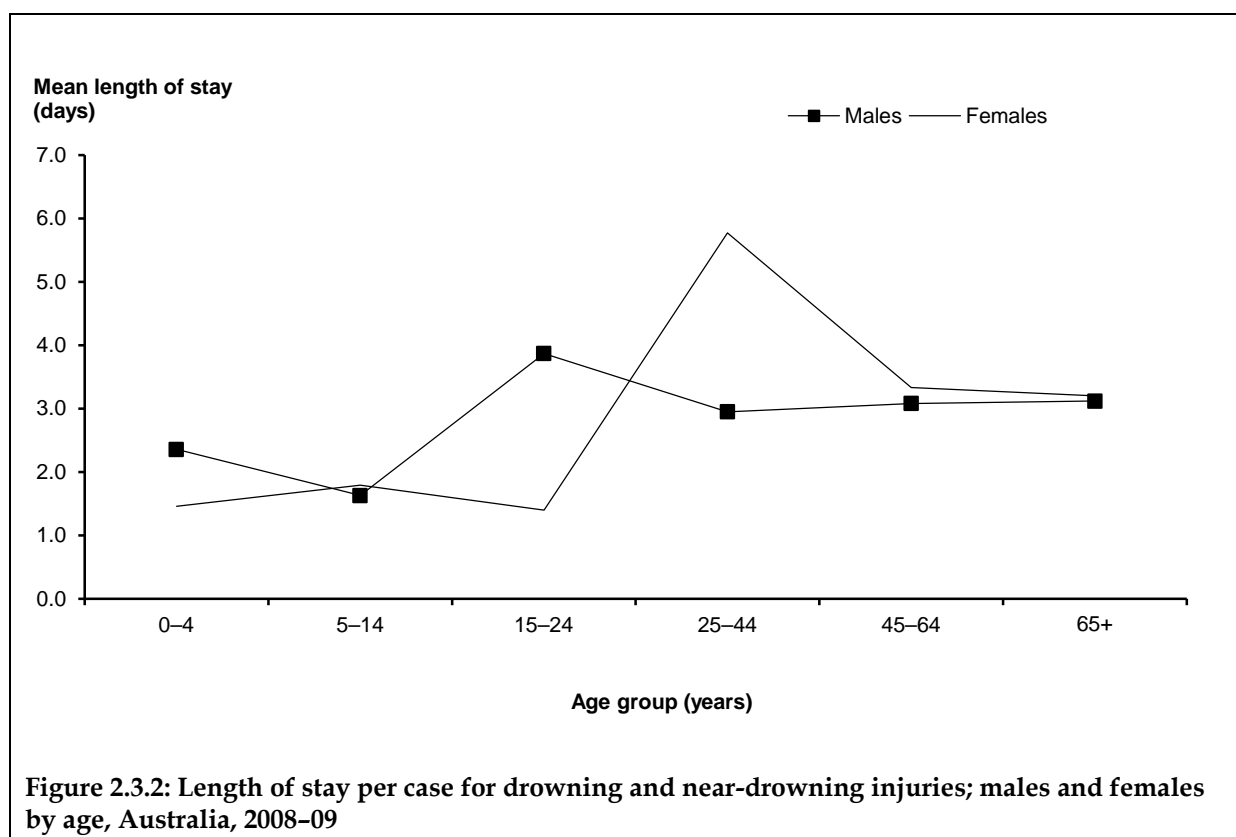
Table 2.3.4: Circumstances of accidental drowning and near-drowning cases by age, Australia, 2008–09

Circumstances of drowning	Age group (years)												All ages	
	0–4		5–14		15–24		25–44		45–64		65+			
	Count	Per cent	Count	Per cent	Count	Per cent	Count	Per cent	Count	Per cent	Count	Per cent	Total	Per cent
Swimming pool	90	46.2	24	35.8	6	12.5	n.p.	n.p.	6	12.2	n.p.	n.p.	133	28.0
Natural water	10	5.1	9	13.4	16	33.3	39	48.1	22	44.9	14	40.0	110	23.2
Bathtub	36	18.5	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	41	8.6
Other or unspecified	59	30.3	n.p.	n.p.	n.p.	n.p.	37	45.7	n.p.	n.p.	17	48.6	191	40.2
Group Total	195	100.0	67	100.0	48	100.0	81	100.0	49	100.0	35	100.0	475	100.0

n.p. = Not published. Small cell counts have been suppressed to prevent patient identification.

Length of stay

The total number of patient days attributed to hospitalised drowning and near-drowning in 2008–09 was 1,232. The mean length of stay (2.7 days) was relatively short compared with some other types of injuries; this was because a large number of drowning and near-drowning hospitalisations had a length of stay of one day or less ($n = 372$, 72%). The mean length of stay was shortest for children aged 5–14 (1.7 days) and longest for adults aged 45–64 (3.7 days).



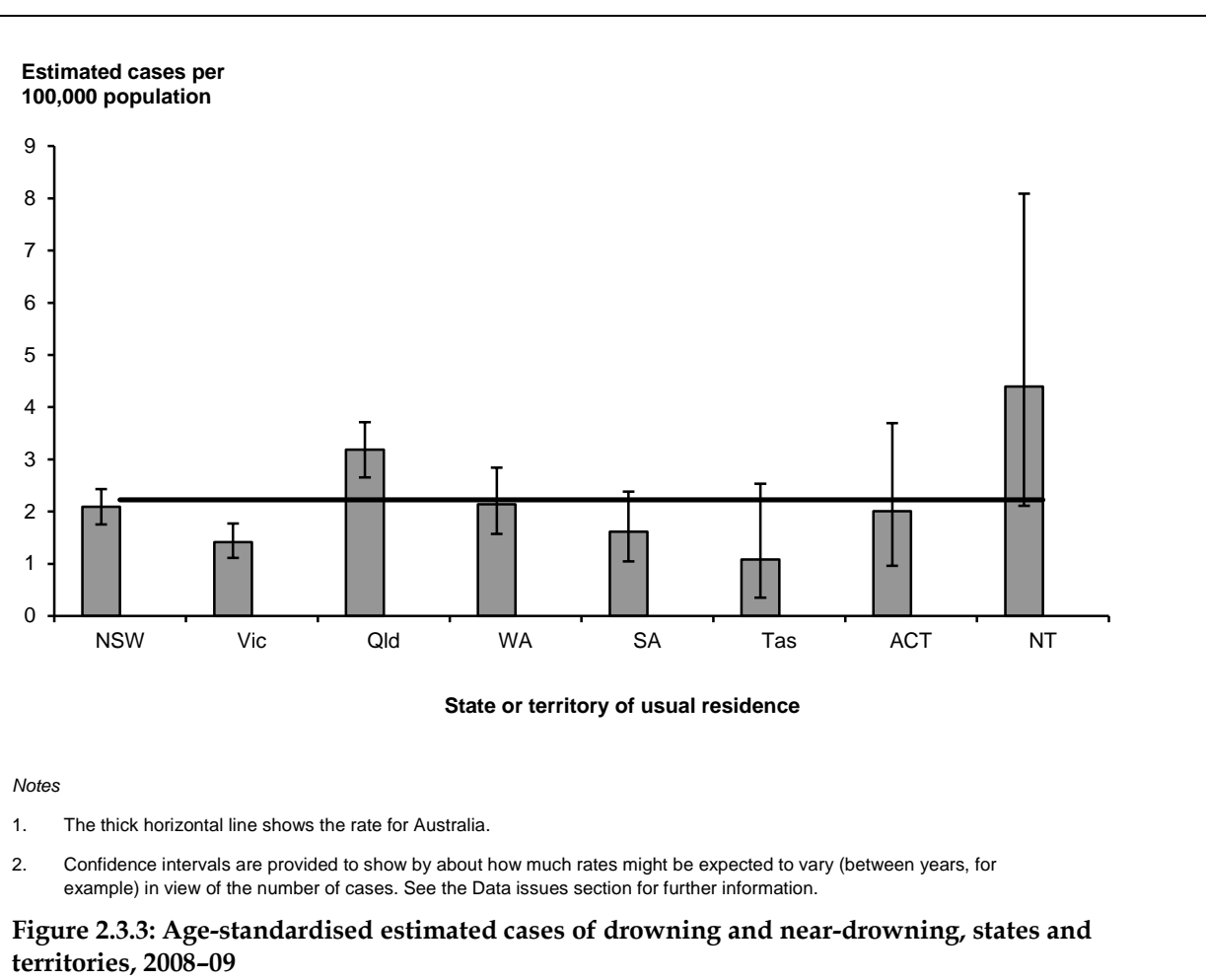
State and territory differences

Age-standardised rates of hospitalised drowning and near drowning for most states were lower than the national rate (2.2 per 100,000 population) (Table 2.3.5 and Figure 2.3.3). Queensland and the Northern Territory rates higher than the national rate, (3.2 per 100,000 population and 4.4 per 100,000 population respectively). With the exception of 2007–08, the previous years' rates for the Northern Territory have been higher than the national rate (4.6 and 5.1 per 100,000 in 2005–06 and 2006–07 respectively).

Table 2.3.5: Age-standardised estimated cases of drowning and near-drowning, states and territories, 2008–09

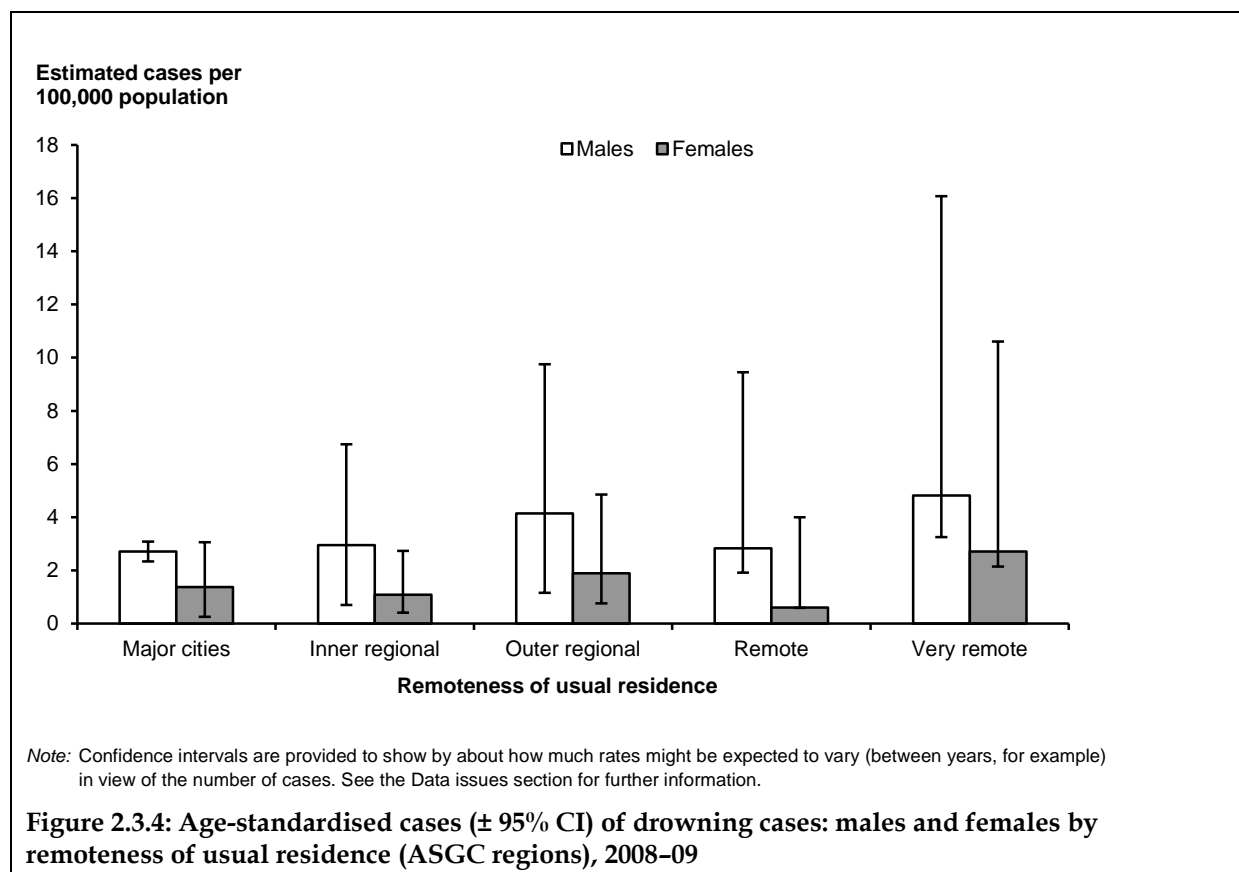
Jurisdiction	Age-standardised rate (per 100,000 population)	95% CI ^(a)
NSW	2.1	1.8–2.4
Vic	1.4	1.1–1.8
Qld	3.2	2.7–3.7
WA	2.1	1.6–2.8
SA	1.6	1.0–2.4
Tas	1.1	0.4–2.5
ACT	2.0	1.0–3.7
NT	4.4	2.1–8.1
Australia	2.2	2.0–2.4

(a) Confidence intervals are provided to show by about how much rates might be expected to vary (between years, for example) in view of the number of cases. See the Data issues section for further information.



Remoteness of usual residence

The age-standardised rate of drowning and near-drowning cases in 2008–09 is shown in Figure 2.3.4 according to remoteness of the person's place of usual residence. The lowest rate was observed for residents of Australia's *Remote* centres (1.8 per 100,000 population), the highest rate of 3.8 per 100,000 was observed for residents of Australia's *Very remote* regions. Both male and female residents in *Very remote* regions had the highest rates (4.8 per 100,000 population and 2.7 per 100,000 population, respectively). Care should be taken interpreting these data as numbers in each remoteness region are small.



2.4 Poisoning, pharmaceuticals

ICD-10-AM case inclusion

Principal Diagnosis: S00–T75, T79 and

First reported external cause: X40–X44

Table 2.4.1: Key indicators for poisoning by pharmaceutical cases, Australia, 2008–09

Indicator	Males	Females	Persons
Separations from hospital due to poisoning by pharmaceuticals	3,310	3,557	6,867
Percentage of all community injury separations	1.3	1.9	1.5
Estimated cases ^(a)	3,169	3,422	6,591
Crude rate/100,000 population	29.3	31.4	30.3
Age-standardised rate/100,000 population ^(b)	29.5	30.9	30.2
Total patient days ^(c)	7,736	8,499	16,235
Mean length of stay (days)	2.4	2.5	2.5
Estimated cases with a high threat to life	47	32	79
Percentage of cases with a high threat to life	1.5	0.9	1.2

(a) Excludes records with a mode of admission of 'transfer from another acute hospital'.

(b) Standardised to the Australian estimated resident population 30 June 2001.

(c) Includes records with a mode of admission of 'transfer from another acute hospital' as contributing to hospital burden due to injury.

This chapter describes injury 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. The data do not distinguish between prescribed and non-prescribed pharmaceuticals; illicitly used drugs would be included. Poisoning by pharmaceuticals accounted for 2% of all Community injury hospitalisations in the financial year 2008–09 (Table 2.4.1).

This chapter does not include poisoning from non-pharmaceutical substances ($n = 2,519$; see Chapter 2.5), intentional self-poisoning by drugs ($n = 18,319$; see Chapter 2.9), assault by drug-related poisoning ($n = 61$; see Chapter 2.10), or poisoning of undetermined intent ($n = 4,503$ see Chapter 2.11).

Age and sex distribution

Slightly more females than males were hospitalised for unintentional poisoning by pharmaceuticals (based on age-standardised rates) with a M:F rate ratio of 0.9:1. The age-standardised rate of poisoning by pharmaceuticals for females was 30.9 per 100,000 population, compared with 29.5 per 100,000 population for males. The highest age-specific rate was in children aged 0–4 (males: 105.2 per 100,000, females: 95.8 per 100,000) while the lowest rates were in children aged 5–14 (Figure 2.4.1). Rates increased for youth and young people (15–24) and decreased for older age groups – up to about 70, after which rates increased in each age group. Caution should be exercised in interpreting rates over the age of about 85 due to extremely small numbers of separations.

Estimated cases per
100,000 population

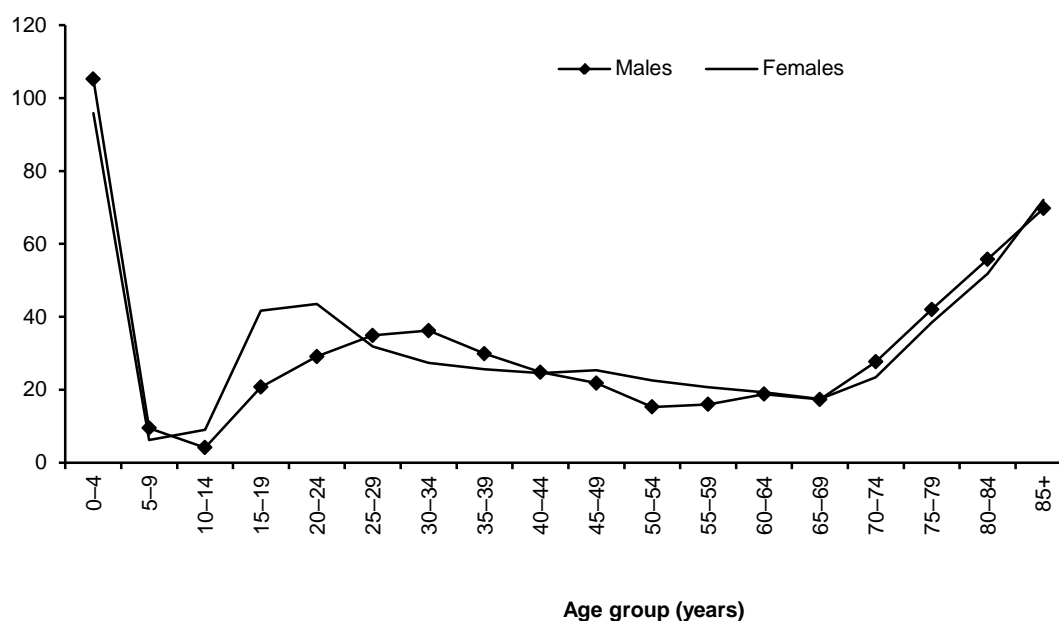


Figure 2.4.1: Age-specific estimated cases of poisoning by pharmaceuticals by sex, Australia, 2008-09

Just over one-fifth of cases of poisoning by pharmaceuticals occurred in young children aged 0-4 of age and more than one-quarter occurred in adults aged 25-44 (Table 2.4.2).

Table 2.4.2: Cases of poisoning by pharmaceuticals by age group and sex, Australia, 2008-09

Age group	Males		Females		Persons	
	Count	Per cent	Count	Per cent	Count	Per cent
0-4	757	23.9	654	19.1	1,411	21.4
5-14	96	3.0	103	3.0	199	3.0
15-24	396	12.5	636	18.6	1,032	15.7
25-44	974	30.7	846	24.7	1,820	27.6
45-64	488	15.4	608	17.8	1,096	16.6
65+	458	14.5	575	16.8	1,033	15.7
Total	3,169	100.0	3,422	100.0	6,591	100.0

Mechanism

Almost all (99.6%; $n = 6,562$) unintentional poisoning cases had a Principal Diagnosis classified as 'poisoning by drugs, medicaments and biological substances'. In this chapter, external causes are tabulated to describe the basic mechanism of poisoning cases. However, Principal Diagnoses offer a more detailed description of the substances involved. Therefore, we have also referred to Principal Diagnosis categories in the discussion below.

Forty per cent ($n = 2,623$) of cases were *accidental poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified* (Table 2.4.3). This category includes benzodiazepines (15% of all pharmaceutical poisonings cases; $n = 1,008$), other and unspecified antipsychotics and neuroleptics (5% of all pharmaceutical poisonings cases; $n = 335$), other and unspecified antidepressants, (5% of all pharmaceutical poisonings cases; $n = 325$) and psychostimulants with potential for use disorder (5% of all pharmaceutical poisonings cases; $n = 310$), among others.

Twenty-seven per cent ($n = 1,754$) of injury cases were *accidental poisoning by and exposure to other and unspecified drugs, medicaments, and biological substances*. This is a diverse group which includes a range of drugs in the broad categories of 'other and unspecified drugs, medicaments, and biological substances' ($n = 181$), other antihypertensive drugs, not elsewhere classified ($n = 161$), anticoagulants ($n = 158$), insulin and oral hypoglycaemic (anti-diabetic) drugs ($n = 138$) and antiallergic and antiemetic drugs ($n = 128$), and various others.

Fifteen per cent ($n = 1,001$) of cases were *accidental poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified*—of which 361 were other opioids such as codeine and morphine (6% of all pharmaceutical poisoning cases), 226 were heroin (3% of all poisoning cases) and 149 were other synthetic narcotics [pethidine] (2% of all poisoning cases).

Fifteen per cent ($n = 962$) of cases were *accidental poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics*—most of which were 4-aminophenol derivatives such as paracetamol (11% of all pharmaceutical poisoning cases; $n = 750$) and other non-steroidal anti-inflammatory drugs (2% of all poisoning cases; $n = 158$).

Three per cent ($n = 251$) were *accidental poisoning by and exposure to other drugs acting on the autonomic nervous system*.

Table 2.4.3: Mechanism of pharmaceutical poisoning by age and sex, Australia, 2008–09

ICD-10-AM Code	Accidental poisoning by and exposure to:	0–14	Per cent	15–24	Per cent	25–44	Per cent	45–64	Per cent	65+	Per cent	Total	Per cent
Males													
X40	Nonopioid analgesics, antipyretics and antirheumatics	113	13.2	74	17.2	119	12.2	43	8.8	32	7.0	377	11.9
X41	Antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs	299	35.1	169	39.4	438	45.0	195	40.0	74	16.2	1,203	38.0
X42	Narcotics and psychodysleptics [hallucinogens]	29	3.4	110	25.6	285	29.3	125	25.6	78	17.0	573	18.1
X43	Other drugs acting on the autonomic nervous system	66	7.7	n.p.	n.p.	16	1.6	10	2.0	37	8.1	137	4.3
X44	Other and unspecified drugs, medicaments and biological substances	346	40.6	n.p.	n.p.	116	11.9	115	23.6	237	51.7	879	27.7
Total		853	100.0	429	100.0	974	100.0	488	100.0	458	100.0	3,169	100.0
Females													
X40	Nonopioid analgesics, antipyretics and antirheumatics	114	15.1	190	29.9	166	19.6	77	12.7	38	6.6	585	17.1
X41	Antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs	271	35.8	289	45.4	433	51.2	292	48.0	135	23.5	1,420	41.5
X42	Narcotics and psychodysleptics [hallucinogens]	35	4.6	n.p.	n.p.	146	17.3	104	17.1	77	13.4	428	12.5
X43	Other drugs acting on the autonomic nervous system	43	5.7	n.p.	n.p.	12	1.4	12	2.0	44	7.7	114	3.3
X44	Other and unspecified drugs, medicaments and biological substances	294	38.8	88	13.8	89	10.5	123	20.2	281	48.9	875	25.6
Total		757	100.0	636	100.0	846	100.0	608	100.0	575	100.0	3,422	100.0

n.p. = Not published. Small cell counts have been suppressed to prevent patient identification.

Young children aged 0–4

A considerable proportion of accidental pharmaceutical poisonings occurred in young children aged 0–4 (21%; $n = 1,411$), and most of these (96%) occurred in young children aged 1–4, whereas only 5% occurred in infants aged less than 1 (Table 2.4.4).

Accidental poisoning by and exposure to other and unspecified drugs, medicaments, and biological substances (X44) accounted for 9% of all cases due to poisoning by pharmaceuticals in children aged 0–4 ($n = 573$). The drugs implicated were a diverse group, and included the broad categories of systemic antibiotics, ($n = 89$), other hypertensive drugs, not elsewhere classified ($n = 57$), dental drugs, topically applied ($n = 49$) and various others.

Accidental poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs (X41) in children aged 0–4 ($n = 496$) accounted for 8% of all cases due to poisoning by pharmaceuticals. This category included benzodiazepines ($n = 223$), other and unspecified antidepressants ($n = 93$) and other and unspecified antipsychotics and neuroleptics ($n = 33$), among others.

Accidental poisoning by and exposure to nonopioid analgesics, antipyretics, and antirheumatics (X40) in children aged 0–4 ($n = 190$) accounted for 3% of all cases due to poisoning by pharmaceuticals. Most were poisoning by 4-aminophenol derivatives such as paracetamol ($n = 140$) and other non-steroidal anti-inflammatory drugs ($n = 40$).

Accidental poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified (X42) in children aged 0–4 ($n = 56$) accounted for only 1% of all cases due to poisoning by pharmaceuticals. This category included other opioids such as codeine and morphine ($n = 29$) and other synthetic narcotics [pethidine] ($n = 21$).

Other drugs acting on the autonomic nervous system (X43) in children aged 0–4 also constituted only a small proportion (2%) of all cases due to poisoning by pharmaceuticals. Most poisoning cases were due to other *parasympatholytics* (anticholinergics and *antimuscarinics*) and *beta-adrenoreceptor antagonists* ($n = 41$, $n = 37$ respectively).

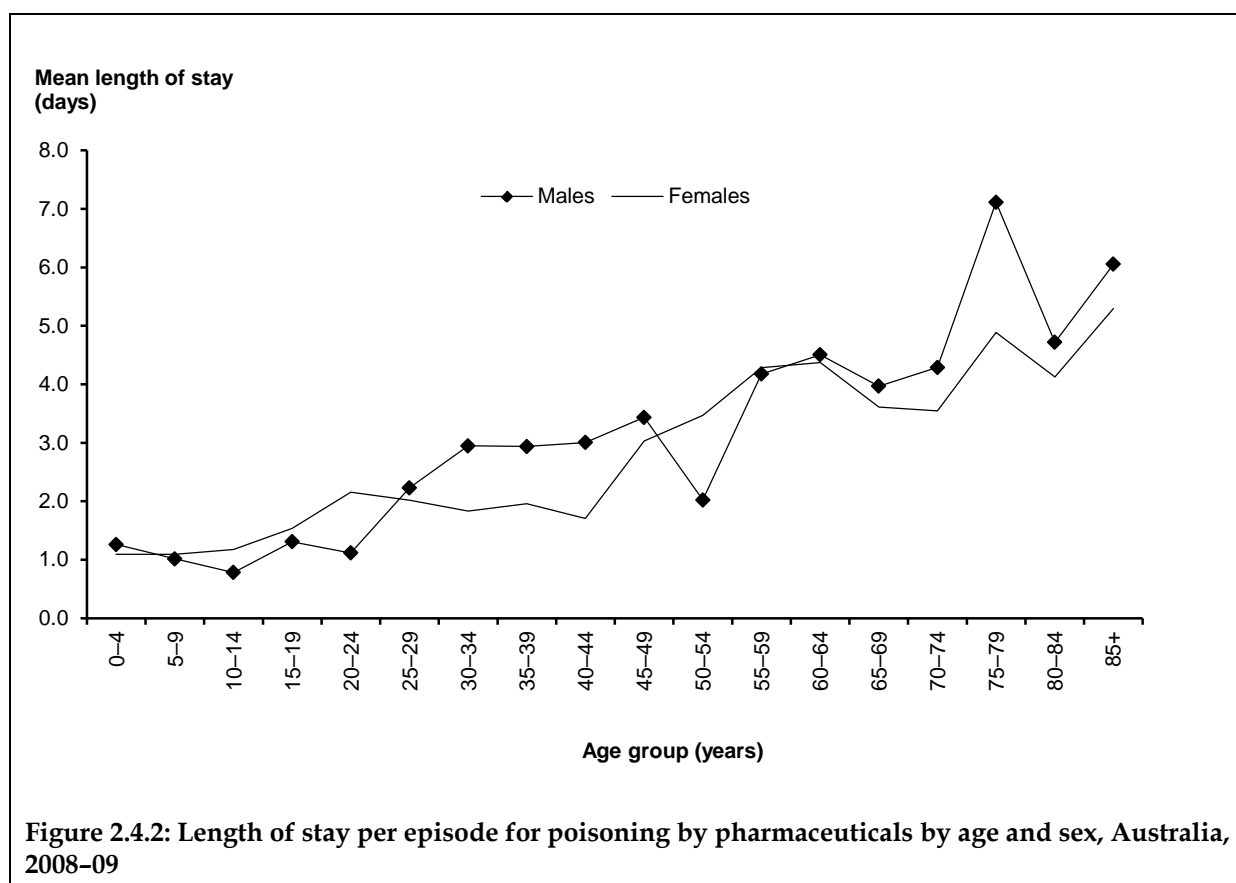
Table 2.4.4: Mechanism of poisoning by pharmaceuticals in children aged 0–4, Australia, 2008–09

ICD-10-AM Code	Accidental poisoning by and exposure to:	Age					Total
		< 1	1	2	3	4	
X40	Nonopioid analgesics, antipyretics and antirheumatics	n.p.	48	85	34	n.p.	190
X41	Antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs	14	120	220	103	39	496
X42	Narcotics and psychodysleptics [hallucinogens]	n.p.	15	28	10	n.p.	56
X43	Other drugs acting on the autonomic nervous system	n.p.	19	41	16	n.p.	96
X44	Other and unspecified drugs, medicaments and biological substances	32	174	220	106	41	573
Total		64	376	594	269	108	1,411
Per cent of all cases		4.5	26.6	42.1	19.1	7.7	100.0

n.p. = Not published. Small cell counts have been suppressed to prevent patient identification.

Length of stay

The majority (74%, $n = 5,112$) of unintentional poisoning separations had a hospital stay of one day. The number of LOS days per case steadily decreased to only 1 case over 100 days. The overall mean length of stay for poisoning by pharmaceuticals was 2.5 days. Mean LOS generally increased with age (Figure 2.4.3). For children aged 0–14 the mean LOS was 1.2 days, 1.6 days for young people aged 15–24, 2.3 days for adults aged 25–44, 3.6 days for adults aged 45–64 and 4.7 days for older people aged 65+.



Place of occurrence

Location was not specified or reported for 30% of cases (unspecified; $n = 1,973$, not reported/not applicable; $n = 12$). The following observations are restricted to those cases in which the place of occurrence was specified. The majority of hospitalised cases due to poisoning by pharmaceuticals occurred in the home (76%; $n = 3,498$) (Table 2.4.5). Of the 183 cases that occurred in a residential institution, almost three-quarters occurred in aged care facilities (71%; $n = 129$). Of the 97 cases that occurred in a trade and service area, 63% occurred in a café, hotel or restaurant ($n = 61$). For children aged 0–4 for whom a place of occurrence was specified ($n = 1,094$), almost all poisoning by pharmaceuticals occurred in the home (93%; $n = 1,018$).

Table 2.4.5: Place of occurrence for cases of poisoning by pharmaceuticals, Australia, 2008–09

Place	Persons	Per cent
Home	3,498	75.9
Residential institution	183	4.0
School	13	0.3
Health Service area	651	14.1
Other specified institution and public administrative area	19	0.4
Sports and athletics area	9	0.2
Street and highway	39	0.8
Trade and service area	97	2.1
Industrial and construction area	n.p.	n.p.
Farm	n.p.	n.p.
Other specified place of occurrence	87	1.9
Total	4,606	100.0

n.p.= Not published. Small cell counts have been suppressed to prevent patient identification.

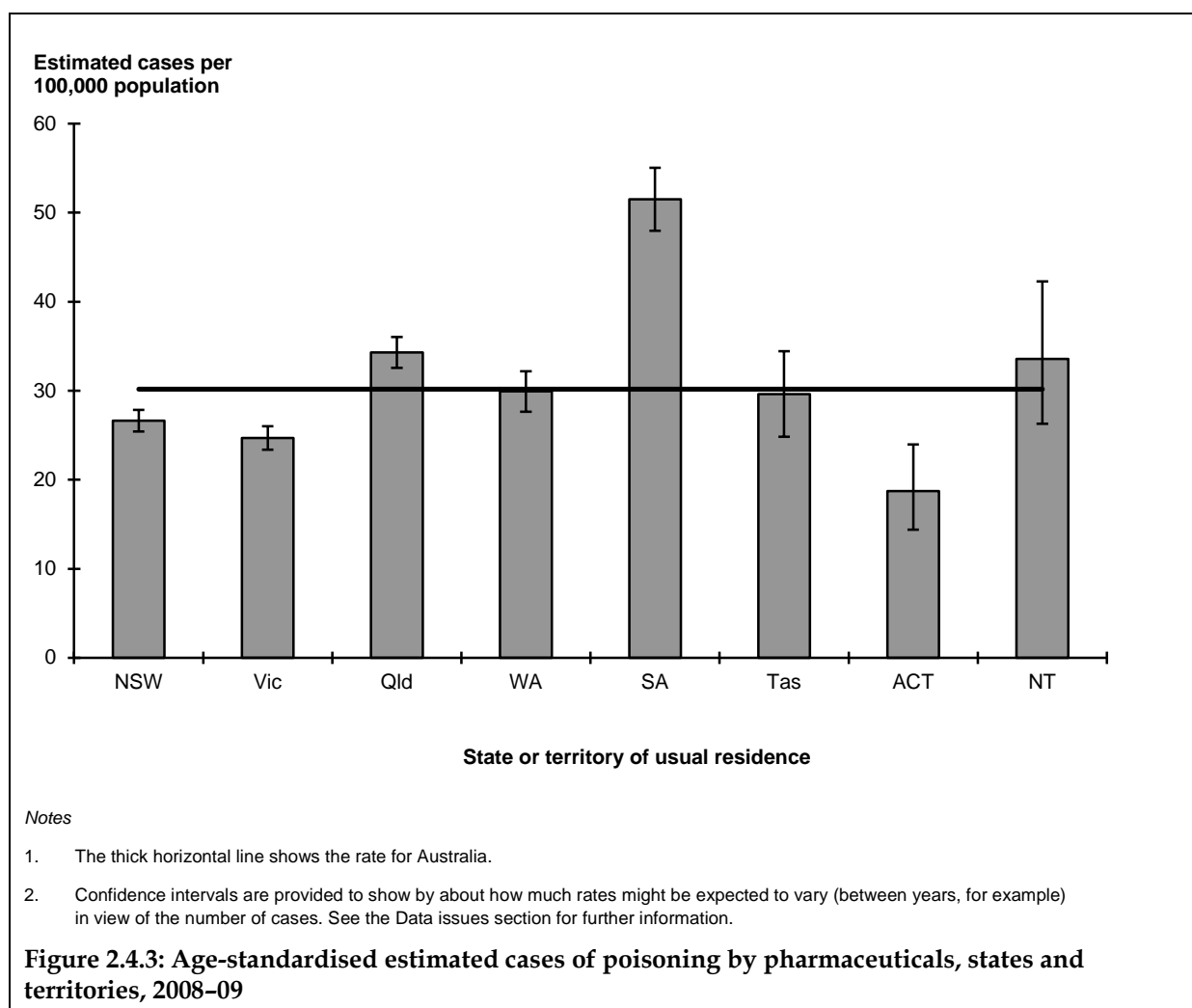
State and territory differences

Western Australia, Tasmania and the Northern Territory possess rates of hospitalised poisoning by pharmaceuticals that were similar to the national rate (Table 2.4.6 and Figure 2.4.3). New South Wales, Victoria and the Australian Capital Territory had rates that were lower than the national age-standardised rate. Higher rates were observed for Queensland and South Australia. As in previous reports, South Australia recorded the highest age-standardised rate (46.1 per 100,000 population in 2005–06, 51.3 per 100,000 population in 2006–07 and 50.8 per 100,000 population in 2007–08).

Table 2.4.6: Age-standardised estimated cases of poisoning by pharmaceuticals, states and territories, 2008–09

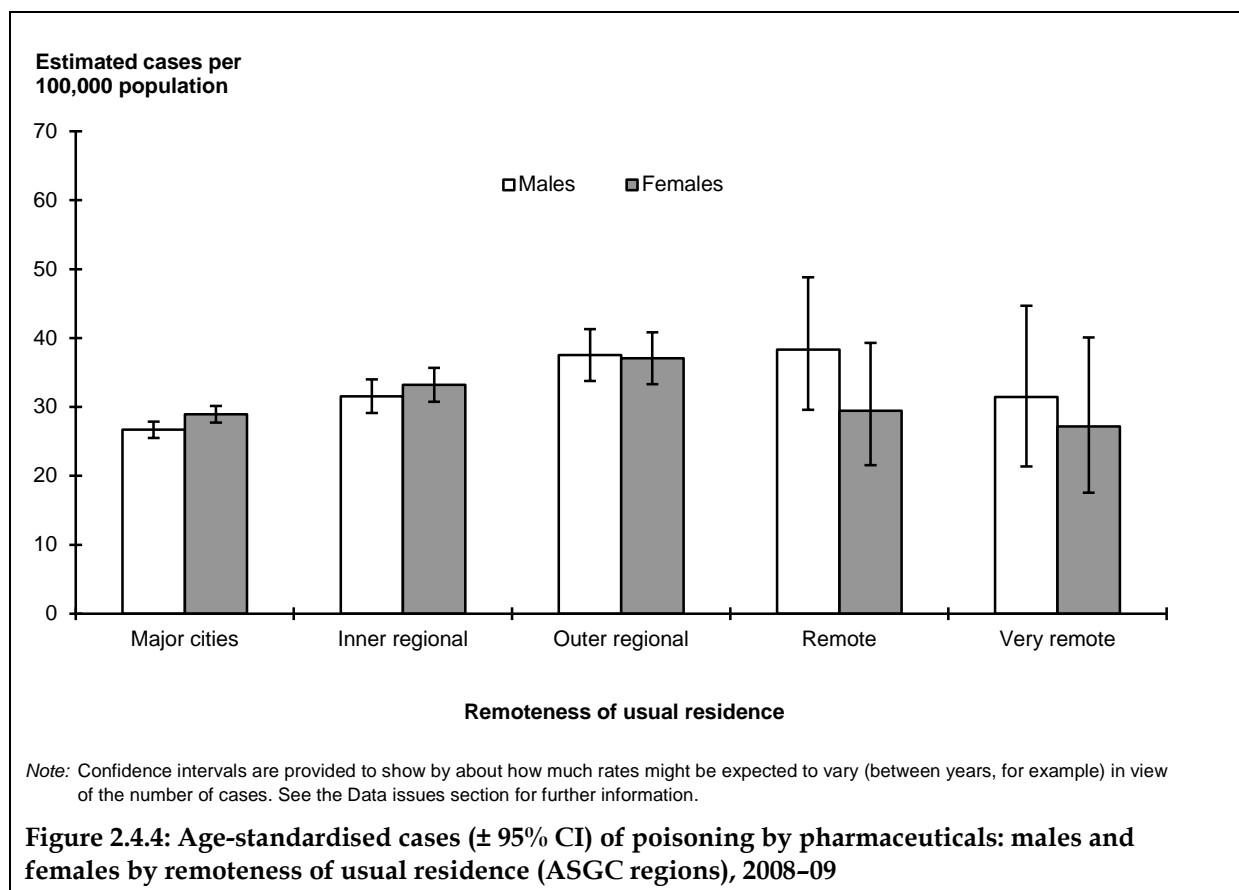
Jurisdiction	Age-standardised rate (per 100,000 population)	95% CI ^(a)
NSW	26.6	25.4–27.8
Vic	24.7	23.4–26.0
Qld	34.3	32.6–36.0
WA	29.9	27.6–32.2
SA	51.5	48.0–55.0
Tas	29.6	24.8–34.4
ACT	18.7	13.5–23.1
NT	33.6	24.9–40.9
Australia	30.2	29.4–30.9

(a) Confidence intervals are provided to show by about how much rates might be expected to vary (between years, for example) in view of the number of cases. See the Data issues section for further information.



Remoteness of usual residence

The age-standardised rate of hospitalised poisoning by pharmaceuticals in 2008–09 varied slightly according to remoteness of the person's place of usual residence. The lowest rate was observed for residents of Australia's *Major cities* (27.8 per 100,000 population) and the highest rate was observed for residents of Australia's *Outer regional* areas (37.3 per 100,000). The pattern of cases differed depending on sex and age (Figure 2.4.4). The rates observed for children 0–4 were the highest for all areas for both males and females. Rates were highest for youths and adult males (15–55) in *Outer regional* and *Remote* areas, whereas for females there was no such pattern and the highest rates were spread throughout the regions (not shown in table).



2.5 Poisoning, other substances

ICD-10-AM case inclusion

Principal Diagnosis: S00–T75, T79 and

First reported external cause: X45–X49

Table 2.5.1: Key indicators for poisoning by other substances cases, Australia, 2008–09

Indicator	Males	Females	Persons
Separations from hospital due to poisoning, other substances	1,635	1,007	2,642
Percentage of all community injury separations	0.6	0.5	0.6
Estimated cases ^(a)	1,548	971	2,519
Crude rate/100,000 population	14.3	8.9	11.6
Age-standardised rate/100,000 population ^(b)	14.3	8.9	11.6
Total patient days ^(c)	3,062	1,722	4,784
Mean length of stay (days)	2.0	1.8	1.9
Estimated cases with a high threat to life	76	26	102
Percentage of cases with a high threat to life	4.9	2.7	4.0

(a) Excludes records with a mode of admission of 'transfer from another acute hospital'.

(b) Standardised to the Australian estimated resident population 30 June 2001.

(c) Includes records with a mode of admission of 'transfer from another acute hospital' as contributing to hospital burden due to injury.

This chapter includes hospitalisations arising from the toxic effects of accidental contact with substances which are chiefly non-medicinal. These accounted for less than 1 per cent of all Community injury separations in the financial year 2008–09 (Table 2.5.1).

This chapter does not include intentional self-poisoning by drugs ($n = 18,319$; see Chapter 2.9), assault by drug-related poisoning ($n = 61$; see Chapter 2.10), or poisoning of undetermined intent ($n = 4,503$ see Chapter 2.11).

Age and sex distribution

More males than females were hospitalised for accidental poisoning by other substances (based on age-standardised rates) with a M:F rate ratio of 1.6:1 (Figure 2.5.1). Rates of poisoning from non-medicinal sources were highest in children aged 0–4 (males: 41.1 per 100,000, females: 22.1 per 100,000) but were lowest in older children aged 5–14. Rates rose for youth and young people (15–24) and remained relatively high for adults (24–54), declining gradually until the age of 75 when rates rose again for both sexes. Caution should be exercised in interpreting rates over the age of about 85 due to extremely small numbers of separations.

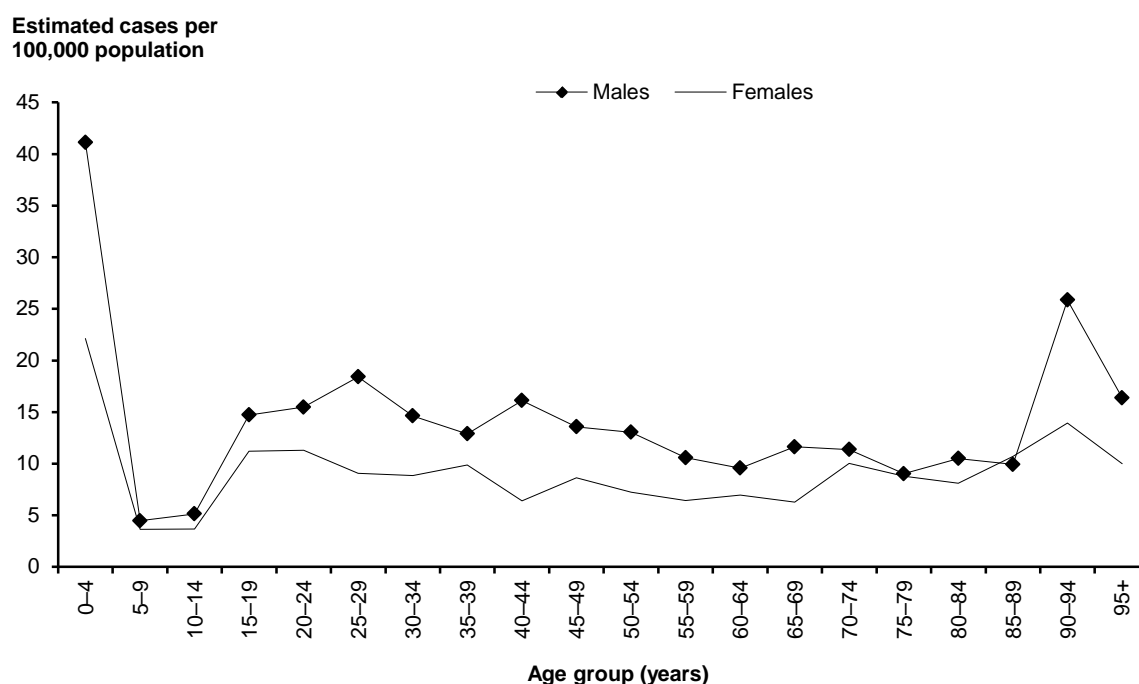


Figure 2.5.1: Age-specific hospitalisation rates for poisoning by other substances by sex, Australia, 2008-09

More than a quarter of poisonings by other substances occurred in adults aged 25-44 (Table 2.5.2).

Table 2.5.2: Cases of poisoning by other substances by age group, Australia, 2008-09

Age group	Males		Females		Persons	
	Count	Per cent	Count	Per cent	Count	Per cent
0-4	296	19.1	151	15.6	447	17.7
5-14	68	4.4	49	5.0	117	4.6
15-24	239	15.4	168	17.3	407	16.2
25-44	480	31.0	265	27.3	745	29.6
45-64	320	20.7	202	20.8	522	20.7
65+	145	9.4	136	14.0	281	11.2
Total	1,548	100.0	971	100.0	2,519	100.0

Mechanism

Around two-thirds of cases of unintentional poisoning by other substances were as a result of *accidental poisoning by and exposure to other and unspecified chemicals and noxious substances* X49 ($n = 1,575$). 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.

Sixteen per cent of cases were from *accidental poisoning by and exposure to other gases and vapours* X47 ($n = 400$). This category includes carbon monoxide and LPG, among various others.

Ten per cent of cases in this group were as a result of *accidental poisoning by and exposure to alcohol* X45 ($n = 260$). Cases of Community injury involving alcohol poisoning are only a small proportion of hospitalised alcohol-related admissions (Indig et al. 2008; Roxburgh & Degenhardt 2008).

Seven per cent of cases were from *accidental poisoning by and exposure to organic solvents and halogenated hydrocarbons and their vapours* X46 ($n = 172$).

Four per cent of cases were from *accidental poisoning by and exposure to pesticides* X48 ($n = 112$).

Table 2.5.3 shows the distribution of cases of poisoning by other substances by gender and age group. Poisoning by *other and unspecified chemicals and noxious substances* was the leading cause of poisoning across all age groups; the highest amount of poisonings occurring in the 25–44 age group ($n = 489$) and in children aged 0–14 ($n = 347$).

Alcohol poisoning was most common amongst youth and young people (15–24) and adults aged 25–44 (24% and 10% of their age groups, respectively). In older people (65+) *accidental poisoning by and exposure to other gases and vapours* was relatively common (27% of poisonings in this age group, $n = 75$).

Due to the variety of substances involved in the unintentional poisoning category, the types of injuries reported were varied. More than three-quarters of cases (78%, $n = 1,963$) reported toxic effects of substances non-medicinal while a further 18% ($n = 462$) reported burns.

Table 2.5.3: External causes of poisoning by other substances by age and sex, Australia, 2008–09

ICD-10-AM Code	Accidental poisoning by and exposure to:	0–14		15–24		25–44		45–64		65+		Total	
		Count	Per cent	Count	Per cent	Count	Per cent	Count	Per cent	Count	Per cent	Count	Per cent
Males													
X45	Alcohol	27	7.4	46	19.2	43	9.0	24	7.5	n.p.	n.p.	144	9.3
X46	Organic solvents and halogenated hydrocarbons and their vapours	82	22.5	12	5.0	19	4.0	13	4.1	n.p.	n.p.	131	8.5
X47	Other gases and vapours	13	3.6	33	13.8	95	19.8	82	25.6	41	28.3	264	17.1
X48	Pesticides	32	8.8	6	2.5	15	3.1	15	4.7	11	7.6	79	5.1
X49	Other and unspecified chemicals and noxious substances	210	57.7	142	59.4	308	64.2	186	58.1	84	57.9	930	60.1
Total		364	100.0	239	100.0	480	100.0	320	100.0	145	100.0	1,548	100.0
Females													
X45	Alcohol	10	5.0	50	29.8	33	12.5	17	8.4	17	8.4	116	11.9
X46	Organic solvents and halogenated hydrocarbons and their vapours	26	13.0	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	41	4.2
X47	Other gases and vapours	10	5.0	18	10.7	39	14.7	35	17.3	35	17.3	136	14.0
X48	Pesticides	17	8.5	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	33	3.4
X49	Other and unspecified chemicals and noxious substances	137	68.5	95	56.5	181	68.3	143	70.8	143	70.8	645	66.4
Total		200	100.0	168	100.0	265	100.0	202	100.0	202	100.0	971	100.0

n.p.= Not published. Small cell counts have been suppressed to prevent patient identification.

Young children aged 0–4

A considerable proportion of accidental poisonings from non-medicinal sources occurred in young children aged 0–4 (18%; $n = 447$), and most of these (82%) occurred before the third birthday (Table 2.5.4).

Accidental poisoning by and exposure to other and unspecified chemicals and noxious substances (X49) in children aged 0–4 of age accounted for 11% ($n = 272$) of all cases of poisoning due to other substances. This category included the toxic effects of corrosive alkalis ($n = 50$), other specified substances ($n = 34$) and tobacco and nicotine ($n = 22$) among others. Organic solvents and halogenated hydrocarbons and their vapours (X46) accounted for 4% ($n = 96$) of all cases of poisoning by other substances; most cases were other specified organic solvents ($n = 39$) and petroleum products ($n = 30$). Accidental poisoning and exposure to pesticides accounted for 2% ($n = 47$) of all cases of poisoning by other substances; most cases were pesticides ($n = 15$) and rodenticides ($n = 10$). Accidental poisoning by and exposure to alcohol and other gases and vapours in children aged 0–4 constituted only a small proportion of poisoning by other substances, 1% and 0.5%, respectively.

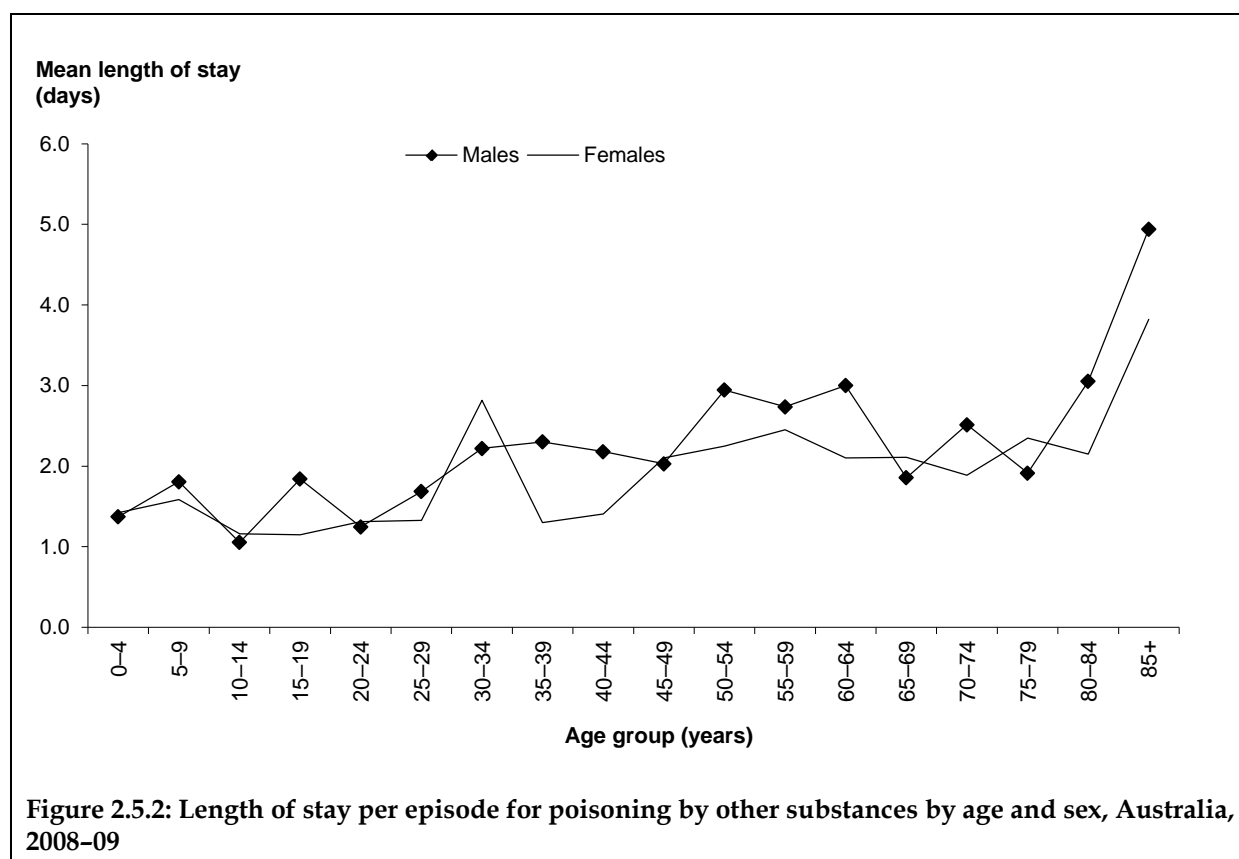
Table 2.5.4: Mechanism of poisoning by other substances in children aged 0–4, Australia, 2008–09

ICD-10-AM Code	Accidental poisoning by and exposure to:	Age					Total
		< 1	1	2	3	4	
X45	Alcohol	n.p.	n.p.	n.p.	n.p.	n.p.	20
X46	Organic solvents and halogenated hydrocarbons and their vapours	n.p.	52	26	10	n.p.	n.p.
X47	Other gases and vapours	n.p.	n.p.	n.p.	n.p.	n.p.	12
X48	Pesticides	8	15	15	n.p.	n.p.	47
X49	Other and unspecified chemicals and noxious substances	29	123	73	27	20	272
Total		42	203	120	49	33	447
Per cent of all cases		1.7	8.1	4.8	1.9	1.3	17.7

n.p.= Not published. Small cell counts have been suppressed to prevent patient identification.

Length of stay

Mean length of stay for unintentional poisoning by other substances was short (1.9 days for persons, all ages). Males had a slightly longer mean length of stay (2.0 days) than females (1.8 days). Mean length of stay increased with age, though less than for most types of Community injury (Figure 2.5.3). The mean length of stay was 1.6 days for children aged 0–14 for young people aged 15–24 was 1.4 days, 1.9 days for adults aged 25–44 and 2.5 days for adults aged 45–64 and older people aged 65+.



Place of occurrence

Location was not specified or reported for 43% of cases (unspecified $n = 1,079$). The following observations are restricted to those cases in which the place of occurrence was specified. Sixty-five per cent of injuries from poisoning by other substances occurred in the home ($n = 940$) (Table 2.5.5).

For children aged 0–4 for whom a place of occurrence was specified ($n = 287$), almost all poisoning by other substances occurred in the home (94%; $n = 324$).

Table 2.5.5: Place of occurrence for cases of poisoning by other substances, Australia, 2008–09

Place	Persons	Per cent
Home	940	65.3%
Residential institution	24	1.7%
School	16	1.1%
Health Service area	21	1.5%
Other specified institution and public administrative area	n.p.	n.p.
Sports and athletics area	n.p.	n.p.
Street and highway	15	1.0%
Trade and service area	142	9.9%
Industrial and construction area	144	10.0%
Farm	44	3.1%
Other specified place of occurrence	78	5.4%
Total	1,519	100.0

n.p.= Not published. Small cell counts have been suppressed to prevent patient identification.

State and territory differences

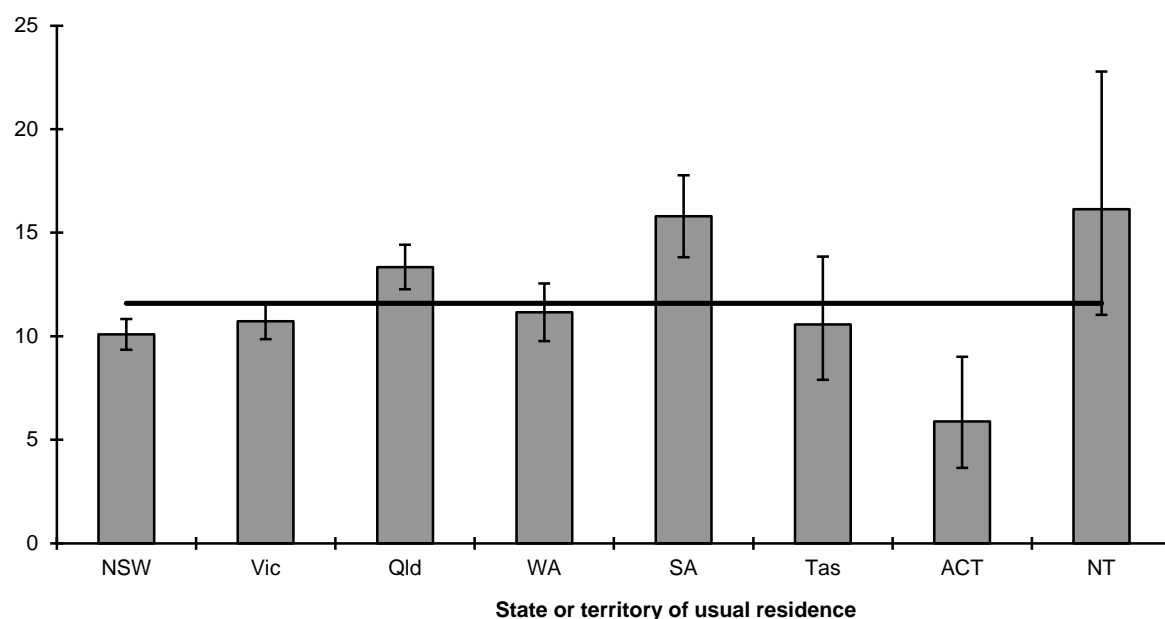
New South Wales, Victoria, Western Australia and Tasmania all had rates similar to the national age-standardised rate. South Australia and Queensland held higher rates, however, the highest rate was found in the Northern Territory. The lowest rate was observed for residents of the Australian Capital Territory (Table 2.5.6 and Figure 2.5.3).

Table 2.5.6: Age-standardised estimated cases of poisoning by other substances, states and territories, 2008–09

Jurisdiction	Age-standardised rate (per 100,000 population)	95% CI ^(a)
NSW	10.1	9.4–10.8
Vic	10.7	9.9–11.6
Qld	13.3	12.3–14.4
WA	11.2	9.8–12.6
SA	15.8	13.8–17.8
Tas	10.6	7.3–13.2
ACT	5.9	2.8–8.1
NT	16.1	9.5–21.2
Australia	11.6	11.1–12.0

(a) Confidence intervals are provided to show by about how much rates might be expected to vary (between years, for example) in view of the number of cases. See the Data issues section for further information.

Estimated cases per
100,000 population



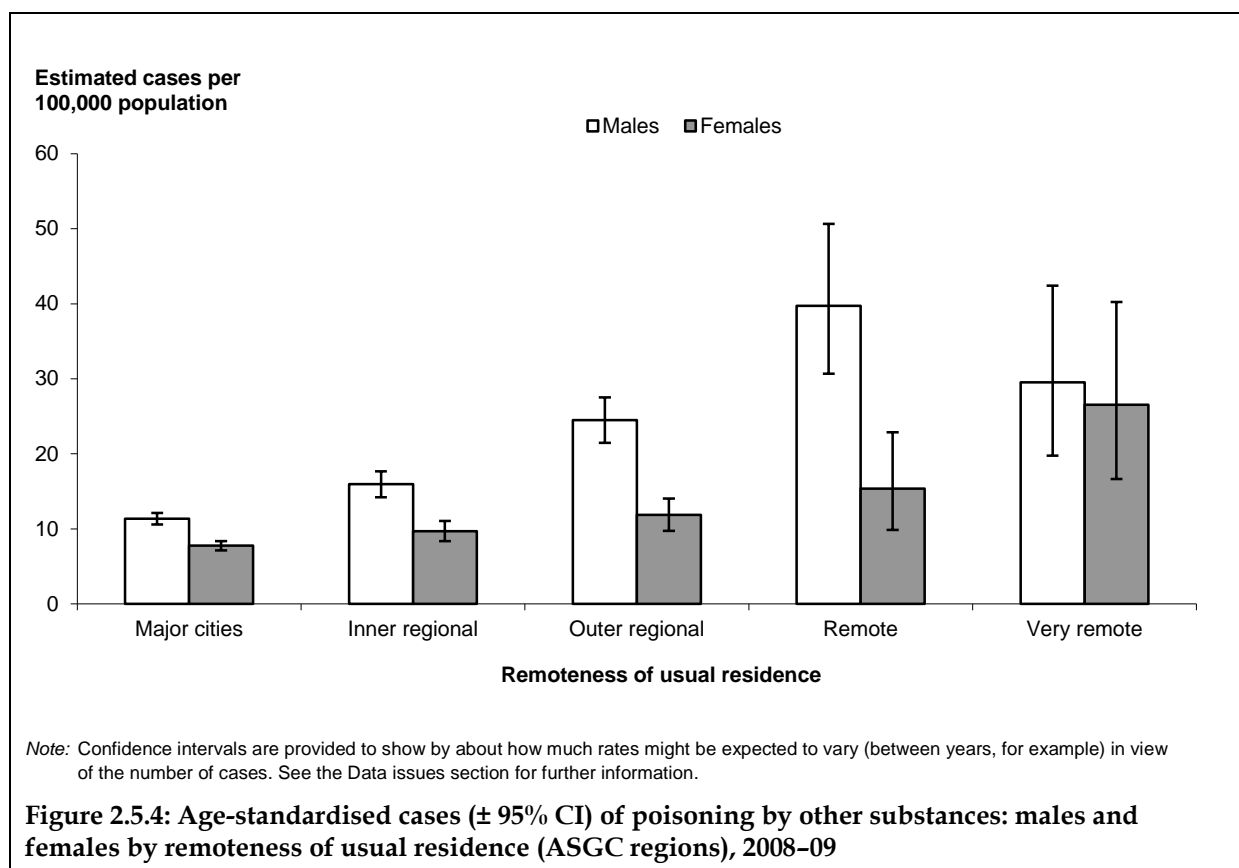
Notes

1. The thick horizontal line shows the rate for Australia.
2. Confidence intervals are provided to show by about how much rates might be expected to vary (between years, for example) in view of the number of cases. See the Data issues section for further information.

Figure 2.5.3: Age-standardised estimated cases of poisoning by other substances, states and territories, 2008–09

Remoteness of usual residence

The age-standardised rate of poisoning by other substances in 2008–09 varied according to remoteness of the person's place of usual residence. The lowest rate was observed for residents of Australia's *Major cities* (9.6 per 100,000 population) and the highest rate was observed for residents of Australia's *Remote* regions (27.7 per 100,000). Figure 2.5.4 illustrates the significant gender differences in rates for the *Outer regional* and *Remote* areas. For males rates were highest for residents in *Remote* areas (39.7 per 100,000 population), while for females rates in *Very remote* areas were highest (26.6 per 100,000 population).



2.6 Falls

ICD-10-AM case inclusion

Principal Diagnosis: S00–T75, T79 and

First reported external cause: W00–W19

Table 2.6.1: Key indicators for fall cases, Australia, 2008–09

Indicator	Males	Females	Persons
Separations from hospital due to falls	73,552	94,547	168,099
Percentage of all community injury separations	28.5	50.4	37.7
Estimated cases ^(a)	67,319	85,851	153,170
Crude rate/100,000 population	622.5	786.7	705.0
Age-standardised rate/100,000 population ^(b)	640.6	668.7	668.2
Total patient days ^(c)	328,834	587,913	916,747
Mean length of stay (days)	4.9	6.8	6.0
Estimated cases with a high threat to life	13,373	23,087	36,460
Percentage of cases with a high threat to life	19.9	26.9	23.8

(a) Excludes records with a mode of admission of 'transfer from another acute hospital'.

(b) Standardised to the Australian estimated resident population 30 June 2001.

(c) Includes records with a mode of admission of 'transfer from another acute hospital' as contributing to hospital burden due to injury.

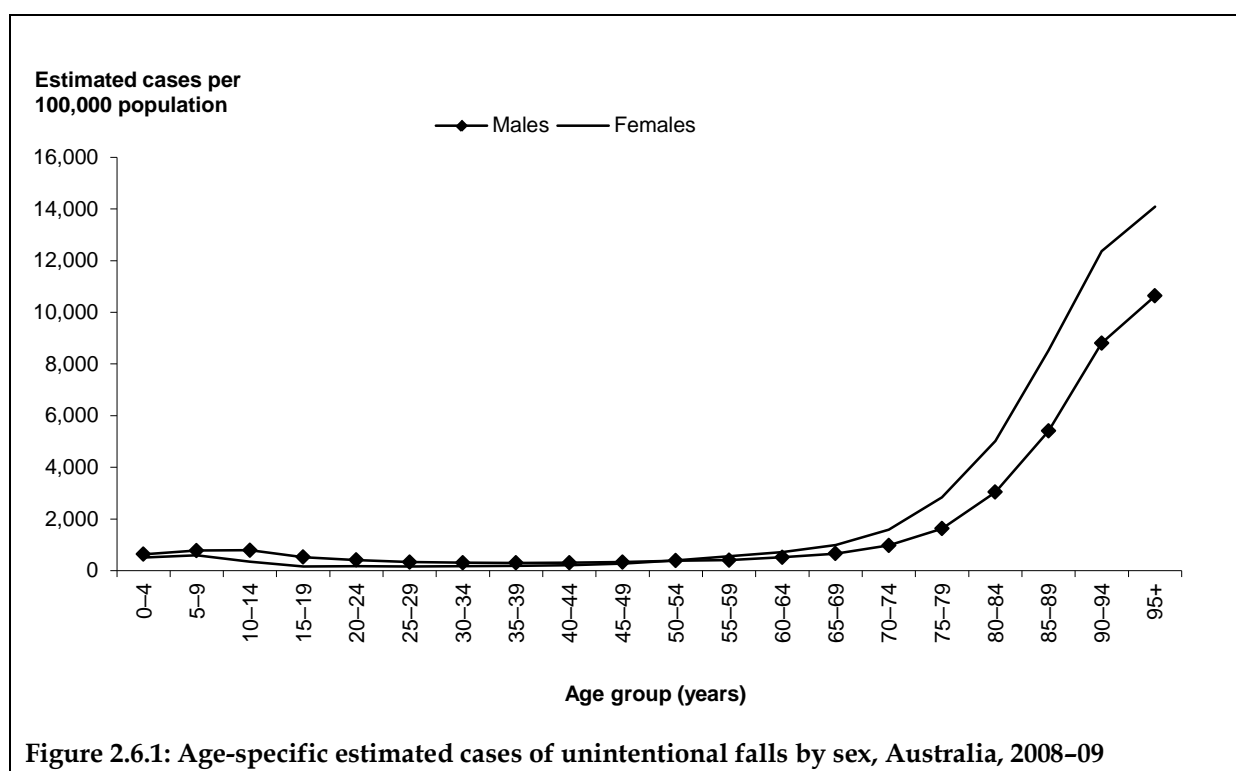
This chapter covers hospitalised injury due to unintentional falls. Falls were responsible for 38% of all Community injury hospitalisations in the financial year 2008–09 (Table 2.6.1).

This chapter does not include falls due to intentional self-harm (X80, X81; $n = 169$), assault (Y01, Y02; $n = 34$) or falls of undetermined intent (Y30, Y31; $n = 36$). Likewise transport related fall injuries have been included in chapter 2.2. Exposure to uncontrolled fire in a building or structure, which may include some fall cases, is included in chapter 2.7 ($n = 115$), and drowning and submersion following a fall into a bath-tub ($n = 8$), swimming pool ($n = 53$), or natural water ($n = 54$) are included in chapter 2.3.

Age and sex distribution

Age-standardised rates of hospitalised fall cases were slightly lower for males overall than for females (640.6 vs. 668.7 per 100,000 population, respectively) with a M:F rate ratio of 1.0:1.

The age-specific rates for males and females were similar until age 65 after which female rates exceeded male rates (Figure 2.6.1). For both sexes, rates increased in an exponential pattern from 65 years.



Slightly more than half of all fall injuries occurred in elderly adults aged 65+ and 16.6% occurred in children aged 0-14 (Table 2.6.2). Almost twice as many elderly females aged 65+ sustained a fall injury compared with elderly males aged 65+.

Table 2.6.2: Fall cases by age group, Australia, 2008-09

Age group	Males		Females		Persons	
	Count	Per cent	Count	Per cent	Count	Per cent
0-14	15,695	23.3	9,763	11.4	25,458	16.6
15-24	7,451	11.1	2,456	2.9	9,907	6.5
25-44	9,654	14.3	5,743	6.7	15,397	10.1
45-64	10,952	16.3	12,850	15.0	23,802	15.5
65+	23,567	35.0	55,039	64.1	78,606	51.3
Total	67,319	100.0	85,851	100.0	153,170	100.0

Mechanism

Falls on the same level from slipping, tripping and stumbling accounted for just over a quarter of all hospitalised accidental fall injuries ($n = 39,627$) (Table 2.6.3). Most were recorded as *fall on the same level from tripping* (15% of all fall injuries, $n = 23,596$). While *fall from slipping* and *fall from stumbling* accounted for 8% ($n = 12,683$) and 2% ($n = 3,348$) of cases, respectively.

Almost two-thirds of falls on the same level from slipping, tripping and stumbling involved older people aged 65+ (64% of falls from slipping, tripping and stumbling, $n = 25,346$), of which 16,153 cases were *fall on the same level from tripping* (males $n = 4,164$; females $n = 11,989$), 6,695 cases (males $n = 1,702$; females $n = 4,993$) were *fall on the same level from slipping* and 2,498 cases were *fall on the same level from stumbling* (males $n = 778$; females $n = 1,720$). Other fall on same level accounted for 16% of all hospitalised accidental fall injuries ($n = 24,969$). This category included fall from bumping against object ($n = 360$), fall from or off toilet ($n = 732$), fall in or into bath-tub or shower ($n = 521$).

Seven per cent of fall injuries ($n = 10,719$) were a *fall on and from stairs and steps* and 46.5% of such cases occurred in older people aged 65+ (males $n = 5,747$; females $n = 3,343$).

Falls involving beds and chairs were reported in 3% of cases. As with other external cause categories, the proportion of cases was highest in people over 65 (61%, $n = 6,040$), however, those aged 0–14 also accounted for 24% of cases ($n = 2,384$).

For children ages 0–14, the most common cause of injury was from *unspecified falls* ($n = 2,557$), followed by *fall involving playground climbing apparatus* ($n = 1,917$). Injuries from *fall involving trampoline* also rated quite high amongst the 0–14 old age group ($n = 1,891$).

The sorts of injuries where males outnumbered females 3:1 were for *fall on and from ladder*, *other fall on same level due to collision with, or pushing by, another person*, *fall from cliff* and for *falls on and from scaffolding*. Females were twice as likely as males to injure themselves due to *tripping, slipping, stumbling* or due to *fall involving bed*.

Table 2.6.3: External causes of fall injury by sex, Australia, 2008–09

ICD-10-AM Code	External cause	Males		Females		Persons	
		Count	Per cent	Count	Per cent	Count	Per cent
W00	Fall on same level involving ice and snow	63	0.1	45	0.1	108	0.1
W01.0	Fall on same level from slipping	4,100	6.1	8,583	10.0	12,683	8.3
W01.1	Fall on same level from tripping	7,604	11.3	15,992	18.6	23,596	15.4
W01.2	Fall on same level from stumbling	1,259	1.9	2,089	2.4	3,348	2.2
W02.0	Fall involving roller skates	119	0.2	216	0.3	335	0.2
W02.1	Fall involving skateboard	1,669	2.5	307	0.4	1,976	1.3
W02.2	Fall involving water ski	68	0.1	16	0.0	84	0.1
W02.3	Fall involving snow ski	161	0.2	153	0.2	314	0.2
W02.4	Fall involving snow board	128	0.2	60	0.1	188	0.1
W02.5	Fall involving ice skates	57	0.1	67	0.1	124	0.1
W02.6	Fall involving non-powered scooter	638	0.9	269	0.3	907	0.6
W02.7	Fall involving baby carriage	66	0.1	70	0.1	136	0.1

(continued)

Table 2.6.3 (continued): External causes of fall injury by sex, Australia, 2008–09

ICD-10-AM Code	External cause	Males		Females		Persons	
		Count	Per cent	Count	Per cent	Count	Per cent
W02.8	Fall involving baby walker	n.p.	n.p.	n.p.	n.p.	5	0.0
W02.9	Fall involving other & unspecified public conveyance (including powered scooter)	364	0.5	287	0.3	651	0.4
W03	Other fall on same level due to collision with, or pushing by, another person	3,325	4.9	547	0.6	3,872	2.5
W04	Fall while being carried or supported by other persons	277	0.4	261	0.3	538	0.4
W05	Fall involving wheelchair	381	0.6	449	0.5	830	0.5
W06	Fall involving bed	1,864	2.8	3,236	3.8	5,100	3.3
W07	Fall involving chair	1,779	2.6	2,951	3.4	4,730	3.1
W08	Fall involving other furniture	593	0.9	552	0.6	1,145	0.7
W09.0	Fall involving tree house	n.p.	n.p.	n.p.	n.p.	56	0.0
W09.1	Fall involving flying fox	177	0.3	173	0.2	350	0.2
W09.2	Fall involving playground climbing apparatus	937	1.4	1,001	1.2	1,938	1.3
W09.3	Fall involving slide	347	0.5	205	0.2	552	0.4
W09.4	Fall involving swing	301	0.4	221	0.3	522	0.3
W09.5	Fall involving seesaw	23	0.0	30	0.0	53	0.0
W09.6	Fall involving trampoline	1,171	1.7	856	1.0	2,027	1.3
W09.8	Fall involving other specified playground equipment	245	0.4	150	0.2	395	0.3
W09.9	Fall involving unspecified playground equipment	313	0.5	197	0.2	510	0.3
W10	Fall on and from stairs and steps	4,232	6.3	6,487	7.6	10,719	7.0
W11	Fall on and from ladder	3,394	5.0	794	0.9	4,188	2.7
W12	Fall on and from scaffolding	316	0.5	16	0.0	332	0.2
W13	Fall from, out of or through building or structure	3,367	5.0	977	1.1	4,344	2.8
W14	Fall from tree	893	1.3	253	0.3	1,146	0.7
W15	Fall from cliff	332	0.5	180	0.2	512	0.3
W16	Diving or jumping into water causing injury other than drowning or submersion	439	0.7	133	0.2	572	0.4
W17	Other fall from one level to another	3,224	4.8	1,703	2.0	4,927	3.2
W18	Other fall on same level	9,870	14.7	15,099	17.6	24,969	16.3
W19	Unspecified fall	13,183	19.6	21,205	24.7	34,388	22.5
Total		67,319	100.0	85,851	100.0	153,170	100.0

n.p.= Not published. Small cell counts have been suppressed to prevent patient identification.

Figure 2.6.2 depicts male and female age-specific rates for fall injuries for selected categories of external cause. The vertical axis in both figures has been cut off at 1,800 for clarity.

At ages 0–9 playground equipment was the most common cause of hospitalised fall cases for both males and females. The age-specific rate for those aged 5–9 was more than four times higher than the next most common cause of fall injuries, that is, *falls on the same level from slipping, tripping and stumbling* (274.1 vs. 64.9 per 100,000 population, respectively). The rate of playground equipment related falls was slightly higher for males than females (286.2 per 100,000 vs. 265.1 per 100,000, respectively).

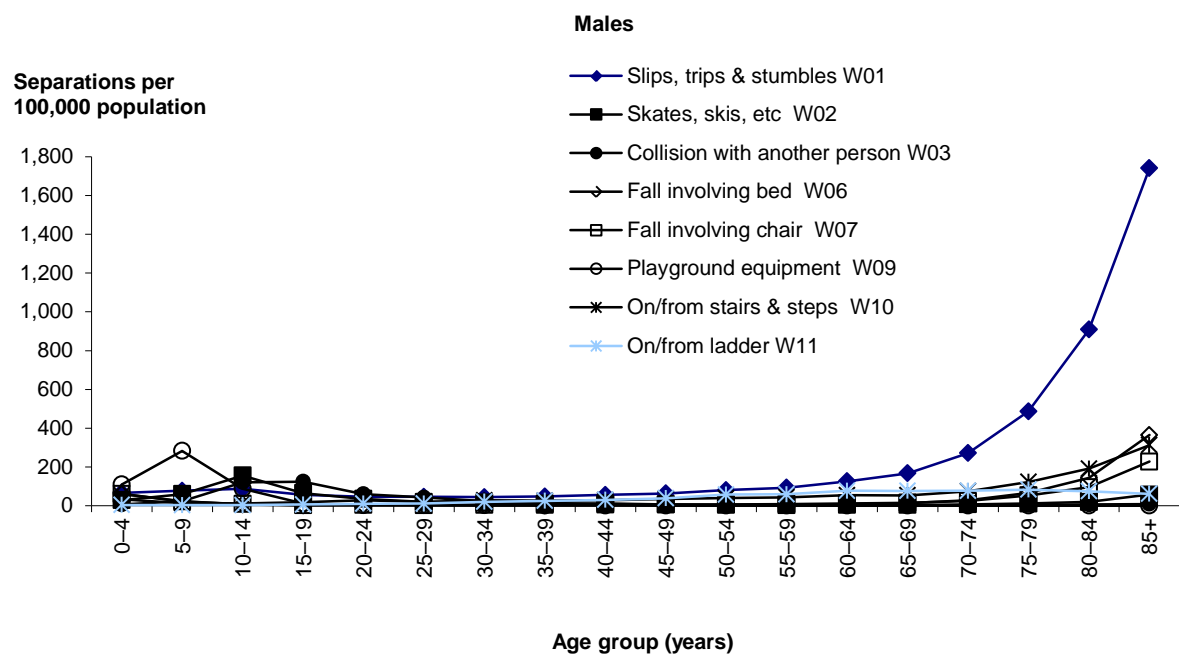
For males aged 10–14, the most frequent cause of fall related injury involved pedestrian conveyances (that is, ice-skates, skis, roller-skates or skateboards) (155.7 per 100,000). This was followed by *falls on the same level due to collision with, or pushing by, another person* (121.2 per 100,000). For females in this age group the most frequent cause of injury was from *falls involving playground equipment* (56.5 per 100,000) followed by *falls on the same level from slipping, tripping and stumbling* (51.9 per 100,000).

‘Slips, trips and stumbles’ were the predominant cause of fall injury for adults 25–29 and in older age groups, incrementally increasing up to 1,836 per 100,000 in males aged 85+. The second most frequent cause of fall related injury, for males aged between 40 and 74, involved a *fall from a ladder* (with age-specific rates ranging from 30.5 per 100,000 in the 40–44 age group to a high of 77.9 per 100,000 in the 70–74 age group).

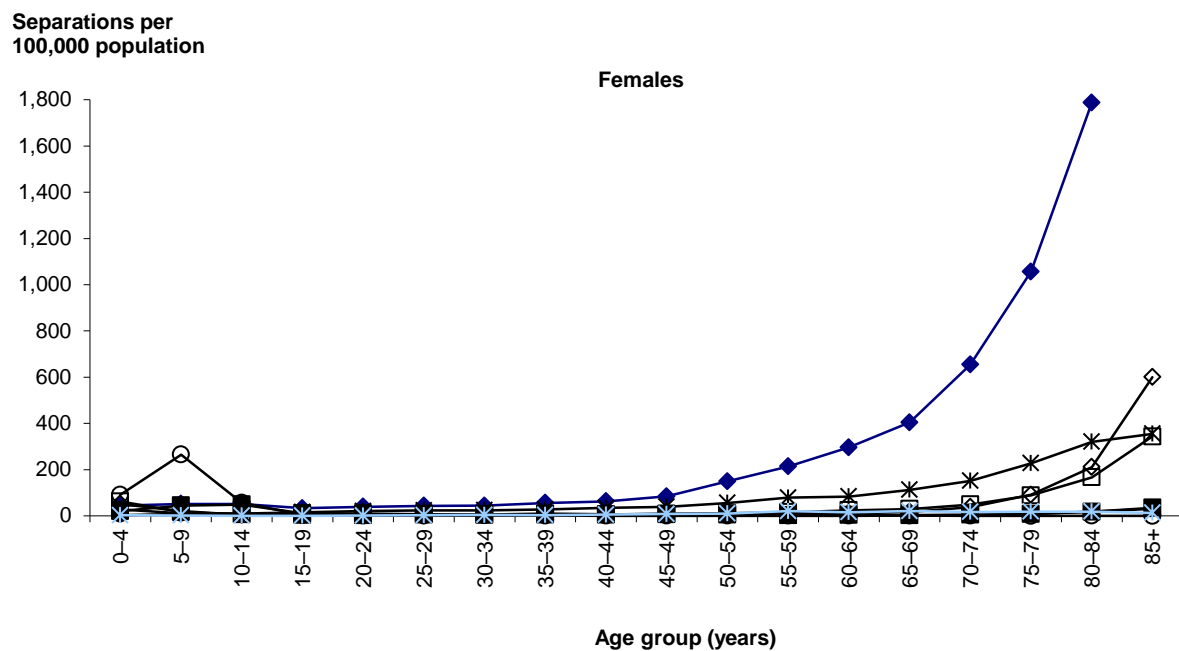
The most common cause of injury in females aged 15–19 was ‘slipping, tripping and stumbling’ (32.8 per 100,000 population). This remained the predominant cause of injury for females increasing in an exponential pattern, particularly across the older ages, to a peak of 2,923.3 per 100,000 in the 85+ age group.

Falls from a bed or a chair were associated with non-trivial rates of injuries in young children aged 0–4 (56.2 and 61.3 per 100,000 population, respectively). Rates were low between the ages of 10 and 64, followed by a marked increase in both from 65+. Age-specific rates for falls involving a bed were highest for females aged 85+ (600.5 per 100,000) compared with males aged 85+ (364.6 per 100,000). Similarly, age-specific rates for falls involving a chair were highest for females (342.2 per 100,000) compared with males (227.5 per 100,000).

As can be seen in Figure 2.6.2 a similar pattern was observed for falls from stairs. Rates rose sharply for males from 70+ and for females from 65+. Rates peaked for both sexes in the 85+ age group with 312.5 per 100,000 for males and 354.7 per 100,000 for females.



W01: 80-84: 980 per 100,000 population
W01: 85+: 1,741 per 100,000 population



W01: 75-79: 793 per 100,000 population
W01: 80-84: 1,416 per 100,000 population
W01: 85+: 2,523 per 100,000 population

Figure 2.6.2: Age-specific estimated cases of fall injury by sex, Australia, 2008-09

Principal diagnosis and body part injured

Injuries to the hip and lower limb were the most commonly reported body region associated with hospitalised falls (33% of cases) (Table 2.6.4). More than half of these, were injuries to the hip and thigh (53%, $n = 26,345$). Similarly, while 31.2 % of fall related injuries involved the shoulder and upper limb, 57% ($n = 27,177$) of these were injuries to the elbow and forearm. Head injuries were the third most commonly reported Principal Diagnosis (21%, $n = 31,688$).

Injuries to the hip and lower limb (37%) were the most commonly reported body region in females; of these, 58% ($n = 18,226$) involved the hip and thigh. For males the shoulder and upper limb accounted for 33% of injuries, and these were predominantly to the elbow and forearm ($n = 12,231$).

Table 2.6.4: Principal diagnosis by body region for fall injury, Australia, 2008–09

Principal Diagnosis by body region	Males		Females		Persons	
	Count	Per cent	Count	Per cent	Count	Per cent
Head	16,430	24.4	15,258	17.8	31,688	20.7
Trunk (neck, thorax, abdomen, lower back, lumbar spine and pelvis)	9,544	14.2	12,786	14.9	22,330	14.6
Shoulder and upper limb	22,090	32.8	25,695	29.9	47,785	31.2
Hip and lower limb	18,545	27.5	31,305	36.5	49,850	32.5
Other injuries not specified by body region	710	1.1	807	0.9	1,517	1.0
All body regions	67,319	100.0	85,851	100.0	153,170	100.0

Fractures were the most commonly reported injury type due to a fall in every age group and for both males and females (60%, $n = 91,342$). A high proportion was seen among children aged 0–14 (63% of injuries in this age group, $n = 16,076$). Specifically, the most common fracture site was the forearm ($n = 10,218$), followed by upper end humerus ($n = 2,873$) and the lower leg ($n = 1,291$).

Among youth and young people aged 15–24 injured in a fall, 53% ($n = 5,285$) were fractures. The most common injury being *fracture of forearm* ($n = 1,584$), followed by *fracture of lower leg, including ankle* ($n = 1,442$) and *fracture at wrist and hand level* ($n = 765$).

For adults aged 25–44 of age, 55% of fall injuries were fractures ($n = 8,396$), *fracture of lower leg, including ankle* ($n = 2,713$), *fracture of forearm* ($n = 2,306$) and *fracture at wrist and hand level* ($n = 808$) were the most common.

Among adults aged 45–64, 62% ($n = 14,867$) reported fractures, the most common fall related fractures were *fracture of forearm* ($n = 4,238$), *fracture of lower leg, including ankle* ($n = 4,107$), *fracture of upper end humerus* ($n = 1,567$) and *fracture of femur* ($n = 1,460$).

For older people aged 65+, 59% of fall injuries were fracture related ($n = 46,745$), *fracture of femur* ($n = 18,768$) was the most common injury site, followed by *fracture of forearm* ($n = 6,253$), *fracture of lumbar spine and pelvis* ($n = 6,109$) and *fracture of upper end humerus* ($n = 5,072$). Eighty-nine per cent of femur fractures occurred in those aged 65+ and of these 71% were females.

Table 2.6.5: Top 7 specific injuries for falls, Australia, 2008–09

Principal Diagnosis	Males		Females		Persons	
	Count	Per cent	Count	Per cent	Count	Per cent
Fracture forearm	10,828	29.5	13,771	25.2	24,599	26.9
Fracture femur	6,155	16.8	14,935	27.3	21,090	23.1
Fracture lower leg, including ankle	5,847	15.9	7,657	14.0	13,504	14.8
Fracture of shoulder and upper arm	3,895	10.6	6,574	12.0	10,469	11.5
Lumbar spine and pelvis	2,451	6.7	2,530	4.6	4,981	5.5
Fracture of ribs, sternum and thoracic spine	2,106	5.7	5,182	9.5	7,288	8.0
Fracture at wrist and hand level	2,011	5.5	1,159	2.1	3,170	3.5
Sub total	33,293	90.7	51,808	94.8	85,101	93.2

There were seven specific types of injuries seen in nearly two-thirds ($n = 85,101$) of all fall injuries (Table 2.6.5). *Fracture of forearm* was the most common injury (27%) and the lower end of the radius was most frequently broken (62.7%; $n = 15,415$).

For the second most common fall injury – *fracture of femur* (23%), 50% were neck of femur fractures (neck of femur $n = 10,432$; pertrochanteric fracture $n = 7,165$; subtrochanteric $n = 840$). More than twice as many females as males incurred a *fracture of femur* (27% vs. 17%).

Injuries classified as *fracture of lower leg, including ankle* commonly involved multiple fractures of the lower leg and ankle (S82.50–S82.88) ($n = 13,504$).

Well over three-quarters of *shoulder and upper arm* fractures involved the upper- and lower-end of the humerus ($n = 5,525$ and $n = 3,598$, respectively).

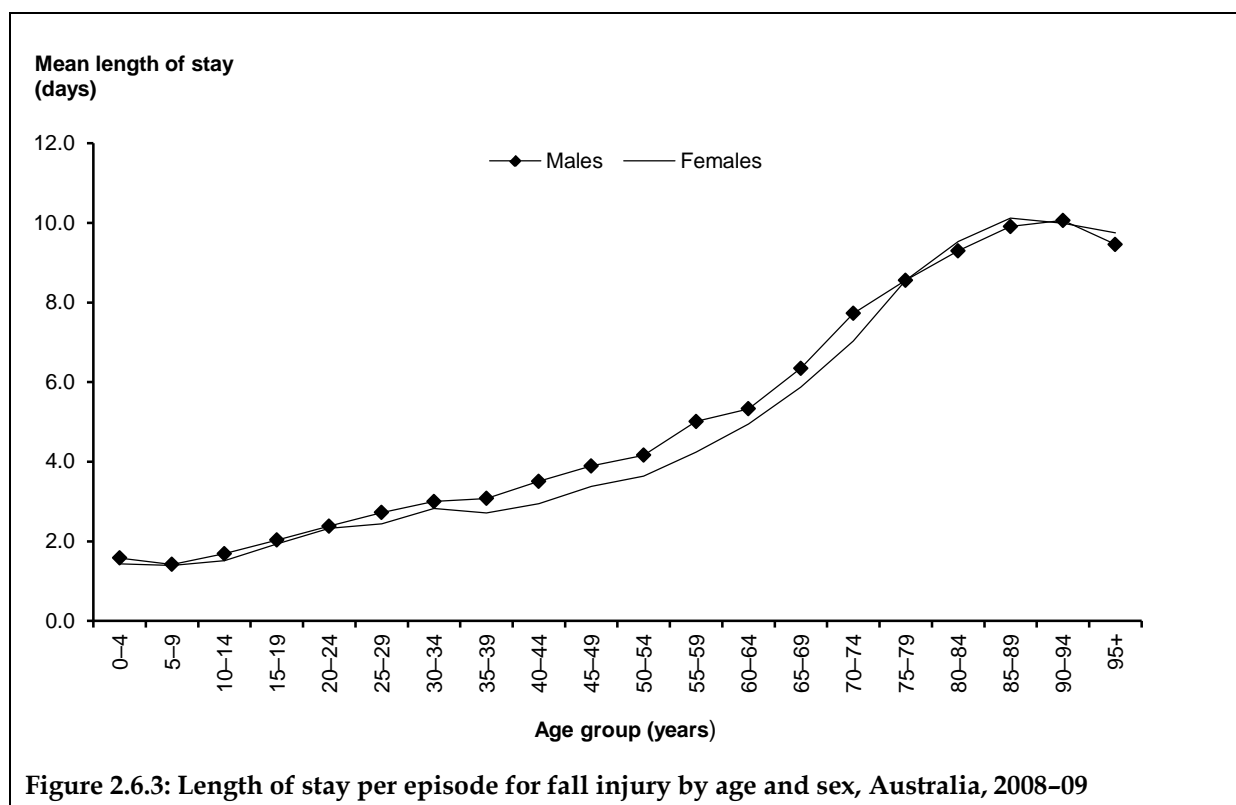
For *fracture of lumbar spine and pelvis*, 50% were fracture of pubis ($n = 3,700$) and 26% ($n = 1,887$) were fracture of lumbar vertebra.

Almost half of the cases of *fracture of ribs, sternum and thoracic spine* were *multiple rib fractures* ($n = 2,398$).

Length of stay

Mean length of stay (all ages) was longer for unintentional falls than for any of the other types of Community injury that are the topics of chapters in this report, an average of 6 days. This reflects the long mean length of stay for falls cases at older ages (Figure 2.6.3). The mean length of stay for fall injury cases rose with age ranging from 1.4 days for children aged 0–14, 2.2 days for young people aged 15–24, 2.9 days for adults aged 25–44, 4.4 days for adults aged 45–64 and 9.0 days for older people aged 65+.

Overall, the mean length of stay for males was 2 days shorter than for females (5.0 days vs. 7.0 days, respectively).



Place of occurrence

Most cases of hospitalised fall injury had a place of injury occurrence reported although quite a high proportion (41%) were unspecified or not reported ($n = 44,455$). The following observations are restricted to those cases in which the place of occurrence was specified (Table 2.6.6).

The most commonly reported place of occurrence for hospitalised fall injuries was in or around the home for both males (49%) and females (57%). Residential institutions were the next most frequently documented place of occurrence with 17% of all fall injuries ($n = 18,356$). Ninety-seven per cent of falls in residential institutions occurred in aged care facilities ($n = 17,784$) and, not surprisingly, most of these falls were among those aged 65 + ($n = 17,646$) with females outnumbering males by 3.1:1. Falls that occurred in sports and athletics areas accounted for 7% of hospitalised cases, with males outnumbering females 3:1.

Children aged 0-14 were most likely to sustain fall injuries in the home (males: 40%, females: 48%), followed by at school (males and females: 27%), and in sports and athletic areas (males: 18%, females: 9%).

Young men (15-24) were twice as likely as young women to sustain fall injuries in sports and athletic areas (males: 50%, females 24%). Injuries in the home (15%) were the next most common type of injury for young men, whereas the location for females of the same age was most commonly at home (37%).

Males aged 25–44 were most commonly injured in the home (35%), followed by sports and athletic areas (24%) and trade and service areas (9%). Just over half of females aged 25–44 were injured in the home, followed by trade and service areas and sports and athletic areas (12%).

Males and females aged 45–64 were most commonly injured in the home (58% and 63%, respectively). For males, this was followed by a trade and service area (9%) and a street or highway and (9%). For females, the most common places of occurrence after the home were a trade and service area (10%) then a street or highway (8%).

Older males and females aged 65+ were most commonly injured in the home (59%) followed by residential institutions (23% and 29% respectively). Most fall injuries in residential institutions were in aged care facilities for those aged 65+ (males $n = 4,231$, females $n = 13,189$).

Sixty four per cent of fall injuries on a street or highway occurred on the sidewalk (males $n = 778$, females $n = 1,558$). A considerable proportion of fall injuries that occurred in a trade and service area were in a shop or store (males $n = 342$, females $n = 1,164$) or cafés, hotel and restaurants (males $n = 280$, females $n = 451$).

Table 2.6.6: Place of occurrence of fall injury cases by age and sex, Australia, 2008–09

Place	0–14	Per cent	15–24	Per cent	25–44	Per cent	45–64	Per cent	65+	Per cent	Total	Per cent
Males												
Home	3,788	40.2	642	15.2	1,751	35.0	3,628	57.8	11,468	60.4	21,277	48.5
Residential institution	n.p.	n.p.	30	0.7	85	1.7	214	3.4	4,324	22.8	4,665	10.6
School	2,561	27.2	230	5.5	16	0.3	18	0.3	9	0.0	2,834	6.5
Health Service area	22	0.2	8	0.2	44	0.9	77	1.2	418	2.2	569	1.3
Other specified institution	102	1.1	40	0.9	36	0.7	43	0.7	103	0.5	324	0.7
Sports and athletics area	1,654	17.6	2,104	50.0	1,203	24.0	246	3.9	142	0.7	5,349	12.2
Street and highway	209	2.2	237	5.6	346	6.9	549	8.7	1,162	6.1	2,503	5.7
Trade and service area	195	2.1	245	5.8	464	9.3	555	8.8	788	4.1	2,247	5.1
Industrial and construction area	n.p.	n.p.	139	3.3	369	7.4	352	5.6	48	0.3	912	2.1
Farm	23	0.2	15	0.4	38	0.8	70	1.1	74	0.4	220	0.5
Other specified places	840	8.9	522	12.4	654	13.1	526	8.4	465	2.4	3,007	6.8
Total	9,410	100.0	4,212	100.0	5,006	100.0	6,278	100.0	19,001	100.0	43,907	100.0
Females												
Home	2,684	48.1	510	36.5	1,672	52.3	5,097	63.1	26,837	57.7	36,800	56.8
Residential institution	n.p.	n.p.	n.p.	n.p.	27	0.8	238	2.9	13,412	28.8	13,691	21.1
School	1,520	27.2	59	4.2	40	1.3	109	1.3	31	0.1	1,759	2.7
Health Service area	17	0.3	11	0.8	55	1.7	128	1.6	752	1.6	963	1.5
Other specified institution	93	1.7	25	1.8	43	1.3	82	1.0	299	0.6	542	0.8
Sports and athletics area	508	9.1	328	23.5	391	12.2	294	3.6	225	0.5	1,746	2.7
Street and highway	88	1.6	92	6.6	249	7.8	628	7.8	2,233	4.8	3,290	5.1
Trade and service area	176	3.2	186	13.3	385	12.1	769	9.5	1,890	4.1	3,406	5.3
Industrial and construction area	n.p.	n.p.	n.p.	n.p.	17	0.5	44	0.5	13	0.0	84	0.1
Farm	10	0.2	6	0.4	19	0.6	45	0.6	34	0.1	114	0.2
Other specified places	472	8.5	167	12.0	297	9.3	643	8.0	800	1.7	2,379	3.7
Total	5,580	100.0	1,396	100.0	3,195	100.0	8,077	100.0	46,526	100.0	64,774	100.0

n.p.= Not published. Small cell counts have been suppressed to prevent patient identification.

Note: Cases are restricted to those where place of occurrence is specified.

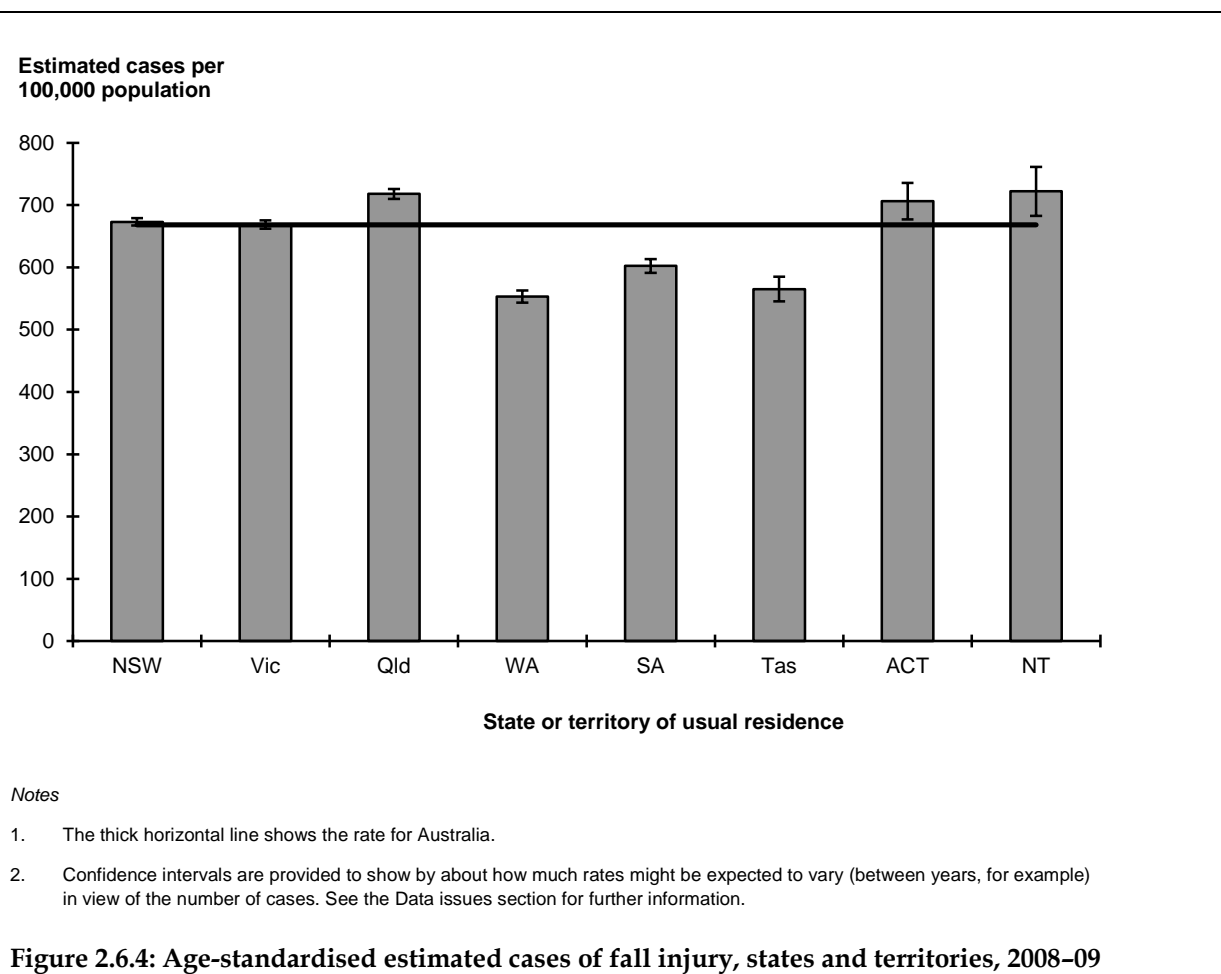
State and territory differences

New South Wales, Victoria, Queensland, the Australian Capital Territory and the Northern Territory had rates of hospitalised fall injury that were above the national rate (Table 2.6.7 and Figure 2.6.4). The remaining states; Western Australia, South Australia and Tasmania had a rate that was lower than the national rate.

Table 2.6.7: Age-standardised estimated cases of fall injury, states and territories, 2008–09

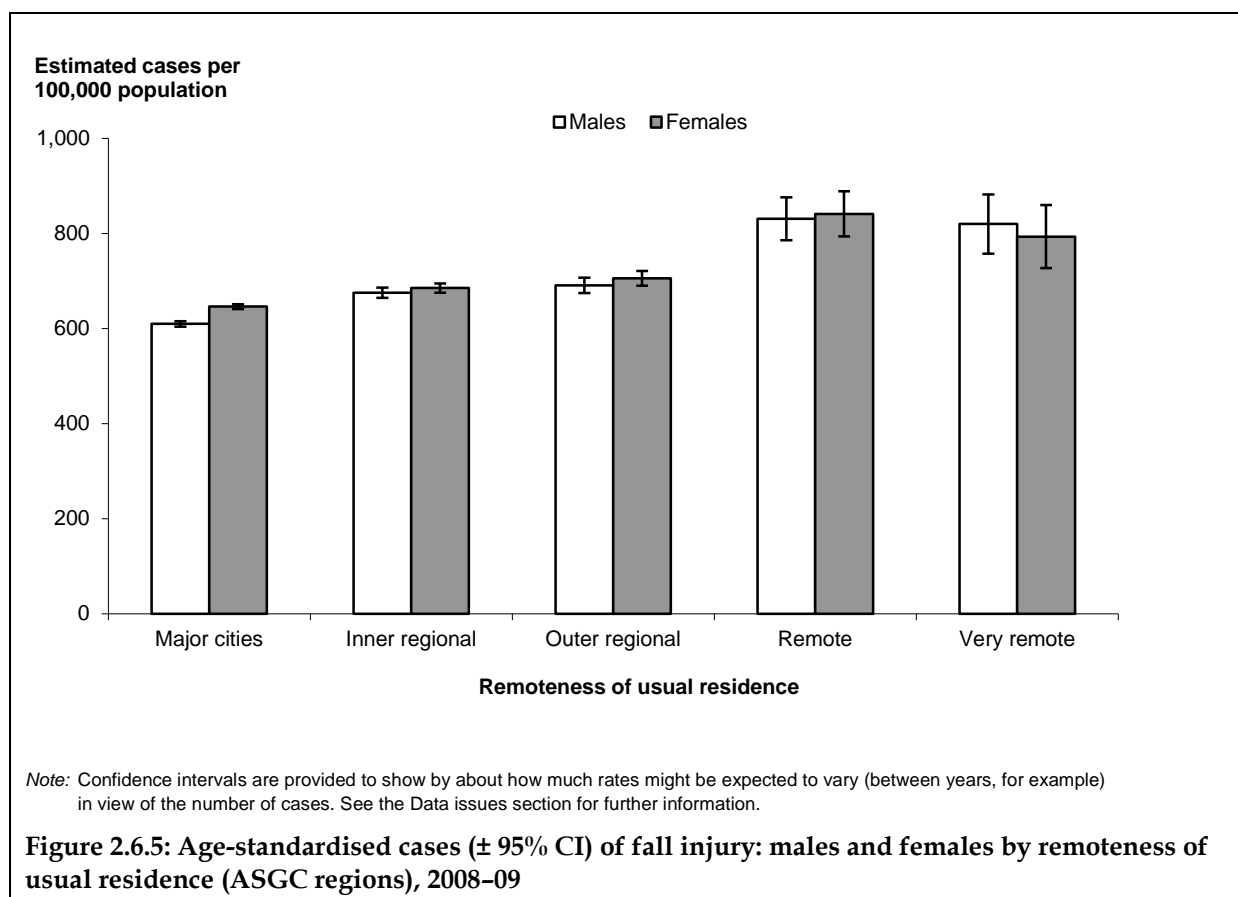
Jurisdiction	Age-standardised rate (per 100,000 population)	95% CI ^(a)
NSW	673.1	667.3–678.9
Vic	669.0	662.3–675.7
Qld	717.9	710.0–725.8
WA	553.3	543.5–563.2
SA	602.4	591.3–613.5
Tas	565.2	545.3–585.0
ACT	706.2	676.9–735.4
NT	722.2	682.9–761.5
Australia	668.2	664.8–671.5

(a) Confidence intervals are provided to show by about how much rates might be expected to vary (between years, for example) in view of the number of cases. See the Data issues section for further information.



Remoteness of usual residence

For both males and females hospitalised fall injury rates were highest in remote regions. For persons overall, the lowest rate was found for residents of major cities (642.4 per 100,000 population) while the highest rate was for residents in remote Australia (846.4 per 100,000 population).



2.7 Smoke, fire, heat and hot substances

ICD-10-AM case inclusion

Principal Diagnosis: S00–T75, T79 and

First reported external cause: X00–X19

Table 2.7.1: Key indicators for smoke, fire, heat and hot substances cases, Australia, 2008–09

Indicator	Males	Females	Persons
Separations from hospital due to smoke, fire, heat and hot substances	4,253	2,313	6,566
Percentage of all community injury separations	1.6	1.2	1.5
Estimated cases ^(a)	3,721	2,046	5,767
Crude rate/100,000 population	34.4	18.7	26.5
Age-standardised rate/100,000 population ^(b)	34.3	19.2	26.8
Total patient days ^(c)	20,497	10,423	30,920
Mean length of stay (days)	5.5	5.1	5.4
Estimated cases with a high threat to life	540	273	813
Percentage of cases with a high threat to life	18.1	13.3	14.1

(a) Excludes records with a mode of admission of 'transfer from another acute hospital'.

(b) Standardised to the Australian estimated resident population 30 June 2001.

(c) Includes records with a mode of admission of 'transfer from another acute hospital' as contributing to hospital burden due to injury.

This chapter includes Community 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). These include most, but not all, injuries due to thermal and related external causes. Smoke, fire, heat and hot substances injury accounted for less than 2% of all Community injury hospitalisations in the financial year 2008–09 (Table 2.7.1).

This chapter does not include injuries due to explosion and rupture of boilers ($n = 4$), explosion and rupture of gas cylinder ($n = 123$), discharge of fireworks ($n = 52$), explosion of other materials (for example, munitions, blasting material) ($n = 254$), exposure to electric current ($n = 543$), exposure to extreme heat of man-made origin ($n = 4$), or sunlight ($n = 59$), all of which are covered by Chapter 2.8. Injuries attributable to intentional self-harm by smoke, fire and flames ($n = 66$) or steam, hot vapours and hot objects ($n = 10$) are covered by Chapter 2.9. Injuries resulting from assault by means of explosive material ($n = 1$), smoke, fire and flames ($n = 42$) or steam, hot vapours and hot objects ($n = 36$) are covered by Chapter 2.10. Events of undetermined intent—exposure to smoke, fire and flames ($n = 153$) and steam, hot vapours and hot objects ($n = 45$) are included in Chapter 2.11.

Age and sex distribution

More males than females were injured by smoke, fire, heat and hot substances (based on age-standardised rates) by a ratio of 1.8:1 (Figure 2.7.1). Rates were highest for young children aged 0–4 (males: 123.1 per 100,000, females: 99.4 per 100,000). Caution should be exercised in interpreting rates over the age of about 85 due to extremely small numbers of separations.

Estimated cases per
100,000 population

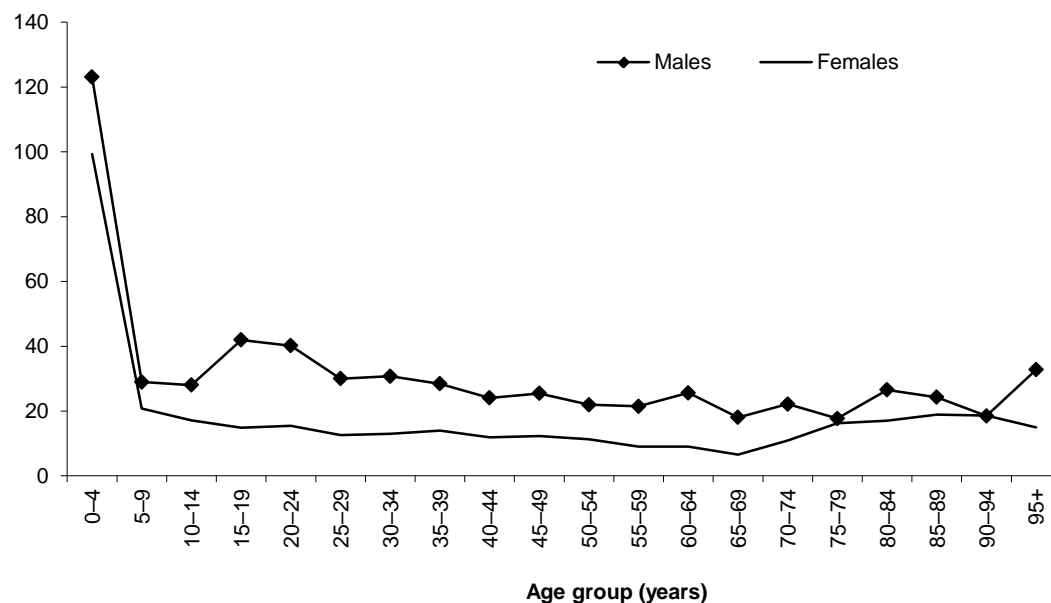


Figure 2.7.1: Age-specific estimated cases of smoke, fire, heat and hot substances injury by sex, Australia, 2008-09

Well over one-third of those injured were children aged 0-14; young children aged 0-4 comprised over a quarter of injury cases due to smoke, fire, heat and hot substances. Slightly less than a quarter of cases were adults aged 25-44, whereas less than 10% of those injured were older people aged 65+ (Table 2.7.2).

Table 2.7.2: Smoke, fire, heat and hot substances cases by age group and sex, Australia, 2008-09

Age group	Males		Females		Persons	
	Count	Per cent	Count	Per cent	Count	Per cent
0-4	886	23.8	678	33.1	1,564	27.1
5-14	403	10.8	254	12.4	657	11.4
15-24	649	17.4	226	11.0	875	15.2
25-44	876	23.5	398	19.5	1,274	22.1
45-64	637	17.1	289	14.1	926	16.1
65+	270	7.3	201	9.8	471	8.2
Total	3,721	100.0	2,046	100.0	5,767	100.0

External cause

For all ages, *contact with hot drinks, foods, fats and cooking oils* (21%) was the leading cause of hospitalised burns and scalds injuries, followed by *contact with other hot fluids* for example, water heated on a stove (17%) and *exposure to controlled fire, not in building or structure* for example, camp-fire (8%) (Table 2.7.3). There were some differences by gender; although the most common cause of hospitalisation for both sexes was *contact with hot drinks, food, fats and cooking oils* (17% for males and 27% for females). Around half as many women as men suffered hospitalised burns and scalds from *exposure to controlled fire, not in building or structure* for example, camp-fire (9% vs. 5%) and *exposure to ignition of highly flammable material* for example, gasoline, kerosene, petrol (8% vs. 3%).

Table 2.7.3: External causes of smoke, fire, heat and hot substances injury by sex, Australia, 2008–09

ICD-10-AM Code	External cause	Males		Females		Persons	
		Count	Per cent	Count	Per cent	Count	Per cent
X00	Exposure to uncontrolled fire in building or structure	87	2.3	28	1.4	115	2.0
X01	Exposure to uncontrolled fire, not in building or structure (for example, forest fire)	83	2.2	21	1.0	104	1.8
X02	Exposure to controlled fire in building or structure (for example, fireplace, stove)	101	2.7	42	2.1	143	2.5
X03	Exposure to controlled fire, not in building or structure (for example, camp-fire)	338	9.1	110	5.4	448	7.8
X04	Exposure to ignition of highly flammable material (for example, gasoline, kerosene, petrol)	314	8.4	64	3.1	378	6.6
X05	Exposure to ignition or melting of nightwear	n.p.	n.p.	n.p.	n.p.	8	0.1
X06	Exposure to ignition or melting of other clothing and apparel	54	1.5	13	0.6	67	1.2
X08	Exposure to other specified smoke, fire and flames	248	6.7	58	2.8	306	5.3
X09	Exposure to unspecified smoke, fire and flames	299	8.0	97	4.7	396	6.9
X10	Contact with hot drinks, food, fats and cooking oils	630	16.9	551	26.9	1,181	20.5
X11	Contact with hot tap-water	162	4.4	154	7.5	316	5.5
X12	Contact with other hot fluids (for example, water heated on stove)	507	13.6	455	22.2	962	16.7
X13	Contact with steam and hot vapours	76	2.0	44	2.2	120	2.1
X14	Contact with hot air and gases	10	0.3	6	0.3	16	0.3
X15	Contact with hot household appliances	235	6.3	151	7.4	386	6.7
X16	Contact with hot heating appliances, radiators and pipes	167	4.5	86	4.2	253	4.4
X17	Contact with hot engines, machinery and tools	179	4.8	48	2.3	227	3.9
X18	Contact with other hot metals	n.p.	n.p.	n.p.	n.p.	56	1.0
X19	Contact with other and unspecified heat and hot substances	172	4.6	113	5.5	285	4.9
Total		3,721	100.0	2,046	100.0	5,767	100.0

n.p. = Not published. Small cell counts have been suppressed to prevent patient identification.

Admission to hospital due to *exposure to uncontrolled fire in building or structure* was the most common cause of smoke, fire, heat and hot substances injury in those aged 15–24 ($n = 121$). The most common cause of injury for adults aged 25–44 was *contact with other hot fluids* for example, water heated on stove ($n = 193$).

The main causes of smoke, fire, heat and hot substances injury in older people aged 65+ were *contact with hot drinks, food, fats and cooking oils* and *contact with other hot fluids* (both, $n = 80$; 1.2% of all smoke, fire, heat and hot substances cases).

There were eight cases of *exposure to ignition or melting of nightwear*, half of them were in young people aged less than 14.

Young children aged 0–4

Almost one quarter of smoke, fire, heat and hot substances injury occurred in young children aged 0–4 ($n = 1,654$), and most of these (84%) occurred before the third birthday (Table 2.7.4). The greatest proportion of injuries were from *contact with hot drinks, foods, fats and cooking oils* ($n = 549$), while just under one-quarter were from *contact with other hot fluids*. The number of injuries was highest at one year and declined after two years of age. The other leading causes of smoke, fire, heat and hot substances injury for young children were *contact with hot household appliances* such as hotplates, stoves and toasters (14% of all smoke, fire, heat and hot substances cases in children 0–4) and *contact with hot tap water* (7% of all cases in children 0–4).

Table 2.7.4: Top 6 mechanisms of smoke, fire, heat and hot substances for young children aged 0–4, Australia, 2008–09

ICD-10-AM Code	External cause	Age					Total	Per cent
		< 1	1	2	3	4		
X10	Contact with hot drinks, food, fats and cooking oils	77	313	66	39	17	512	32.7
X12	Contact with other hot fluids (for example, water heated on stove)	67	138	73	35	22	335	21.4
X15	Contact with hot household appliances	44	109	35	25	10	223	14.3
X11	Contact with hot tap-water	26	53	25	n.p.	n.p.	116	7.4
X16	Contact with hot heating appliances, radiators and pipes	n.p.	27	8	n.p.	n.p.	71	4.5
X03	Exposure to controlled fire, not in building or structure (for example, camp-fire)	n.p.	32	13	n.p.	11	66	4.2
	<i>Sub-total</i>	236	672	220	125	70	1,323	84.6
X00–X02, X04–X09, X13, X17–X19	Other causes	27	97	55	37	25	241	15.4
Total		263	769	275	162	95	1,564	100.0

n.p. = Not published. Small cell counts have been suppressed to prevent patient identification.

Principal diagnosis and body part injured

The majority of smoke, fire, heat and hot substances injuries were ascribed to the six specific sites shown in Table 2.7.5 (94%, $n = 5,437$). The most common site of burns injury for males and females was the wrist and hand (21%). For females, injuries to the head and neck followed (19% of cases) while for males injuries to the trunk accounted for 16% of cases.

Table 2.7.5: Top 6 specific injuries for smoke, fire, heat and hot substances, Australia, 2008–09

Principal Diagnosis	Males		Females		Persons	
	Count	Per cent	Count	Per cent	Count	Per cent
Burn of wrist and hand	770	20.7	420	20.5	1,190	20.6
Burn of hip and lower limb, except ankle and foot	575	15.5	390	19.1	965	16.7
Burn of head and neck	492	13.2	393	19.2	885	15.3
Burn of trunk	598	16.1	267	13.0	865	15.0
Burn of shoulder and upper limb, except wrist and hand	528	14.2	275	13.4	803	13.9
Burn of ankle and foot	526	14.1	203	9.9	729	12.6
Sub-total	3,489	93.8	1,948	95.2	5,437	94.3

Note: Per cent of total diagnoses.

Length of stay

More than two-thirds of all smoke, fire, heat and hot substances separations had a length of stay of one day (69%, $n = 3,996$). However, a small proportion of prolonged hospital admissions of more than 100 days were also reported (0.2%, $n = 10$). The average length of stay for smoke, fire, heat and hot substances injury was 5.4 days (5.5 days for males and 5.1 days for females). This is the second longest overall length of stay for a Community injury category in this report.

Length of stay increased with age as shown in Figure 2.7.2. The mean length of stay was shortest, at 2.8 days, for children aged 5–9 and longest at 19.4 days for older people aged 95+.

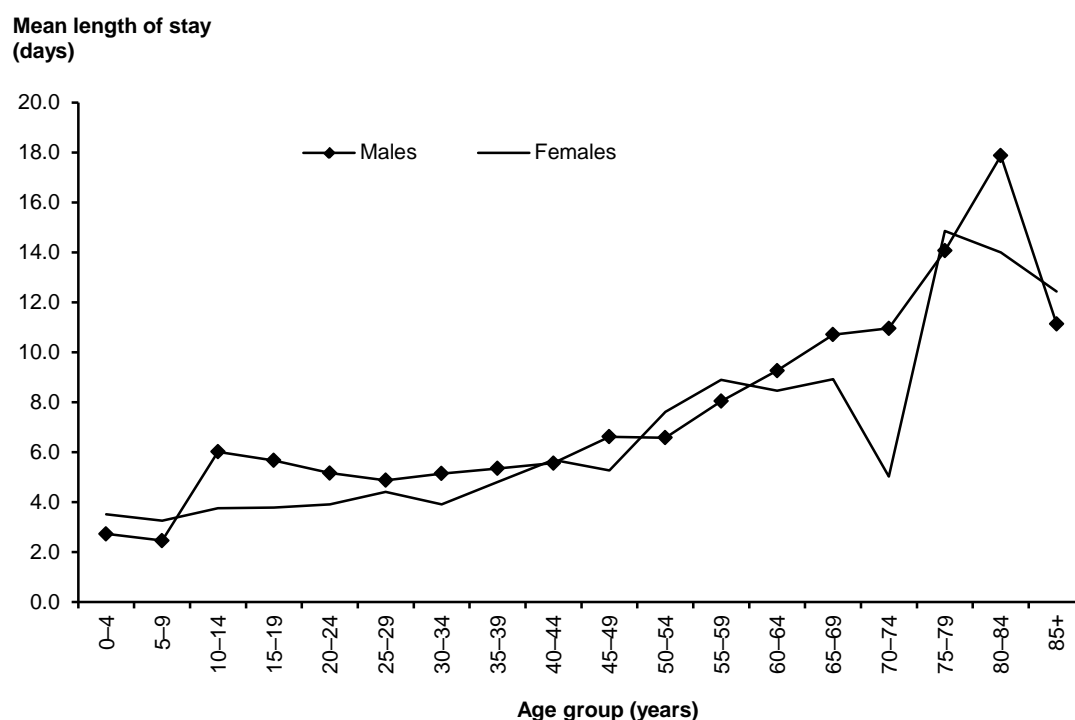


Figure 2.7.2: Length of stay per episode for smoke, fire, heat and hot substances injury by age and sex, Australia, 2008-09

Place of occurrence

Location was not specified or reported for 40% of cases (unspecified; $n = 2,296$). The following observations are restricted to those cases in which the place of occurrence was specified. More than three-quarters of cases resulted from injuries that occurred in the home (79%; $n = 2,742$) (Table 2.7.6). For children aged 0-4 for whom a place of occurrence was specified ($n = 1,214$), almost all smoke, fire, heat and hot substances injuries occurred in the home (92%; $n = 1,114$).

Of the 182 cases that occurred in a trade and service area, 100 (55%) occurred in a café, hotel or restaurant. Of the 117 cases that occurred in an industrial or construction area, 77 occurred in a factory or plant. Of the 30 cases that occurred in a residential institution, 23 occurred in aged care facilities.

Table 2.7.6: Place of occurrence for cases of smoke, fire, heat and hot substances, Australia, 2008–09

Place	Persons	
	Count	Per cent
Home	2,742	79.0
Residential institution	30	0.9
School	18	0.5
Health service area	19	0.5
Other specified institution and public administrative area	n.p.	n.p.
Sports and athletics area	n.p.	n.p.
Street and highway	60	1.7
Trade and service area	182	5.2
Industrial and construction area	117	3.4
Farm	65	1.9
Other specified places	218	6.3
Total	3,471	100.0

n.p. = Not published. Small cell counts have been suppressed to prevent patient identification.

Note: Cases are restricted to those where place of occurrence is specified.

State and territory differences

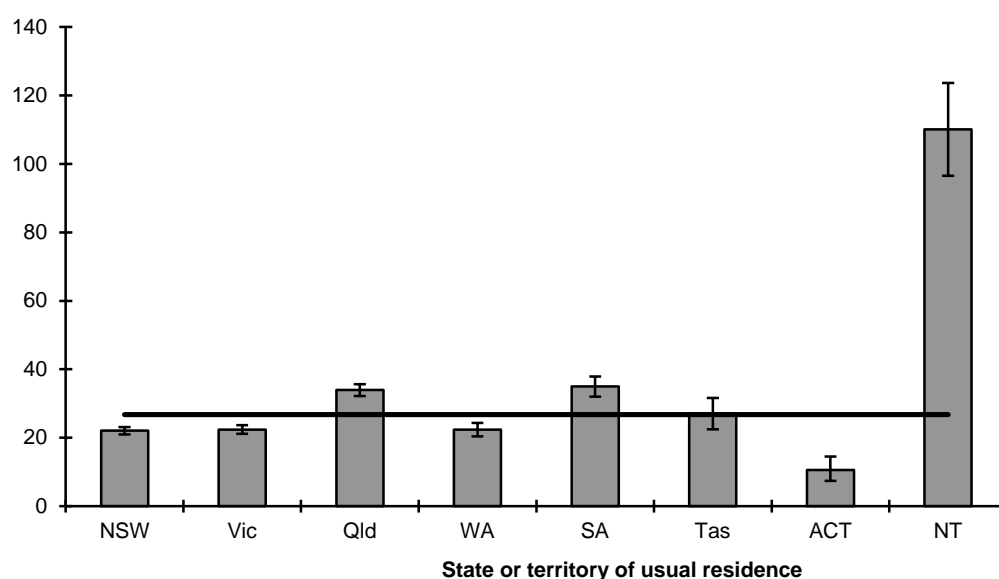
Victoria, Western Australia and the Australian Capital Territory had rates of injury from smoke, fire, heat and hot substances that were below the national rate (Table 2.7.7 and Figure 2.7.3). New South Wales and Tasmania had rates that were similar to the national rate. Rates that were above the national rate were found in Queensland, South Australia and the Northern Territory. Aboriginal and Torres Strait Islander persons accounted for more than half of the hospitalised cases recorded in the Northern Territory (132 of 254 cases, 52.0%).

Table 2.7.7: Age-standardised estimated cases of smoke, fire, heat and hot substances, states and territories, 2008–09

Jurisdiction	Age-standardised rate (per 100,000 population)	95% CI ^(a)
NSW	25.8	20.9–23.1
Vic	21.8	21.1–23.7
Qld	33.0	32.2–35.6
WA	22.4	20.4–24.3
SA	37.4	32.0–37.9
Tas	26.2	22.5–31.7
ACT	11.0	6.6–13.7
NT	97.8	96.5–123.6
Australia	27.7	26.1–27.5

(a) Confidence intervals are provided to show by about how much rates might be expected to vary (between years, for example) in view of the number of cases. See the Data issues section for further information.

Estimated cases per 100,000 population



Notes

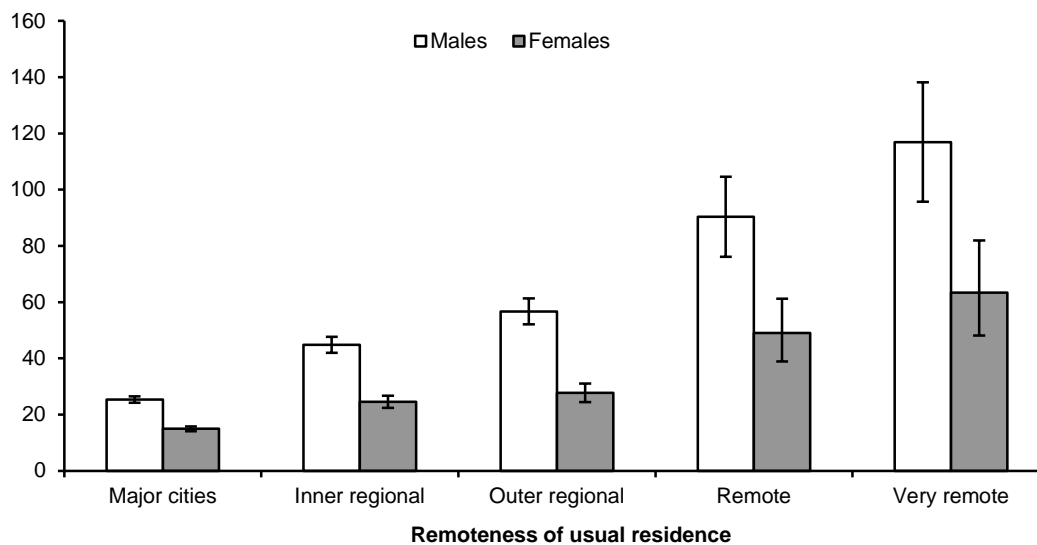
1. The thick horizontal line shows the rate for Australia.
2. Confidence intervals are provided to show by about how much rates might be expected to vary (between years, for example) in view of the number of cases. See the Data issues section for further information.

Figure 2.7.3: Age-standardised estimated cases of smoke, fire heat and hot substances injury, states and territories, 2008–09

Remoteness of usual residence

Rates of hospitalised smoke, fire, heat and hot substances injury increased markedly across remoteness regions for both sexes (Figure 2.7.4). For persons overall, the lowest rate was found for residents of *Major cities* (20.2 per 100,000 population) while the highest rate was for residents in *Very remote* Australia (91.2 per 100,000 population). Rates for males were almost double that of the rates for females in every regional and remoteness category.

Estimated cases per
100,000 population



Note: Confidence intervals are provided to show by about how much rates might be expected to vary (between years, for example) in view of the number of cases. See the Data issues section for further information.

Figure 2.7.4: Age-standardised cases (\pm 95% CI) of smoke, fire, heat and hot substances injury: males and females by remoteness of usual residence (ASGC regions), 2008–09

2.8 Other unintentional injuries

ICD-10-AM case inclusion

Principal Diagnosis: S00–T75, T79 and

First reported external cause: W20–W64, W75–W99, X20–X39, X50–X59

Table 2.8.1: Key indicators for other unintentional injury cases, Australia, 2008–09

Indicator	Males	Females	Persons ^(a)
Separations from hospital due to other unintentional injuries	97,771	40,182	137,955
Percentage of all community injury separations	37.9	21.4	31.0
Estimated cases ^(b)	92,123	38,032	130,157
Crude rate/100,000 population	851.9	348.5	599.1
Age-standardised rate/100,000 population ^(c)	847.9	342.0	597.7
Total patient days ^(d)	178,286	99,792	278,080
Mean length of stay (days)	1.9	2.6	2.1
Estimated cases with a high threat to life	3,066	1,872	4,938
Percentage of cases with a high threat to life	3.3	4.9	3.8

(a) Includes cases for which no sex was reported.

(b) Excludes records with a mode of admission of 'transfer from another acute hospital'.

(c) Standardised to the Australian estimated resident population 30 June 2001.

(d) Includes records with a mode of admission of 'transfer from another acute hospital' as contributing to hospital burden due to injury.

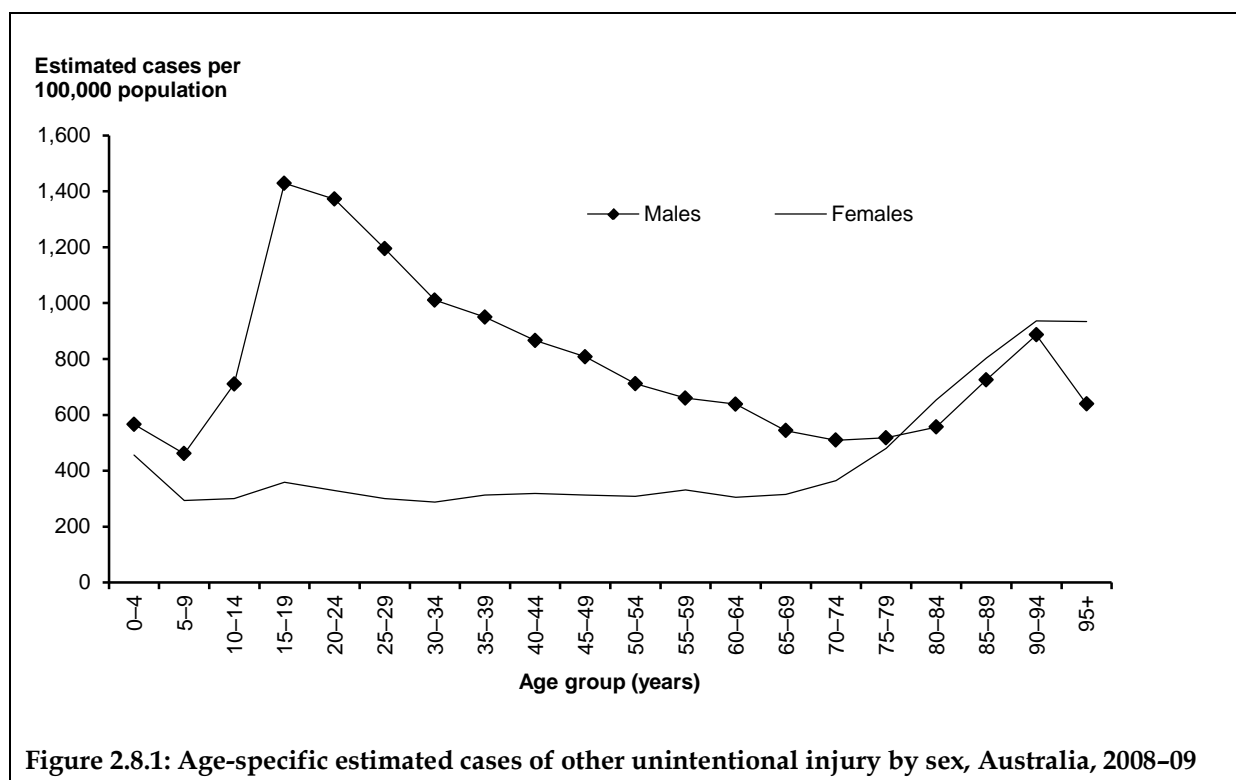
This category includes all injury hospitalisation recorded as unintentional and not included in chapters 2.2 to 2.7. Other unintentional injuries accounted for 31% of all injury hospitalisations in the financial year 2008–09 (Table 2.8.1). A summary of the key components of other unintentional injury cases is provided in Table 2.8.2. A complete listing of the first reported external cause codes for other unintentional injuries is provided in Table 2.8.5.

Table 2.8.2: Summary of key components of other unintentional injury cases, Australia, 2008–09

External cause	Persons	Per cent
Exposure to inanimate mechanical forces (W20–W49)	58,596	45.0
Exposure to animate mechanical forces (W50–W64)	14,544	11.2
Other accidental threats to breathing (W75–W84)	653	0.5
Exposure to electric current, radiation & extreme ambient air temperature & pressure (W85–W99)	839	0.6
Contact with venomous animals and plants (X20–W29)	2,934	2.3
Exposure to forces of nature (X30–X39)	994	0.8
Overexertion, travel and privation (X50–X57)	10,741	8.3
Accidental exposure to other and unspecified factors (X58–X59)	40,856	31.4
Total	130,157	100.0

Age and sex distribution

More males than females were effected by other unintentional injuries (based on age-standardised rates) by 2.5:1 (Figure 2.8.1). Male rates were lower in childhood and then peaked in youth and young men aged 15–24 and then steadily declined with age. Female rates were constant between the ages of 10–74 after which they increased steadily.



Much of the excess in male rates, especially between the ages of 15–59, is associated with injuries that occur at work or during sport. Nearly three-quarters of those injured were male (70.8 %) (Table 2.8.3).

Table 2.8.3: Other unintentional injury cases by age group, Australia, 2008–09

Age group	Males		Females		Persons ^(a)	
	Count	Per cent	Count	Per cent	Count	Per cent
0–14	12,394	13.5	7,104	18.7	19,498	15.0
15–24	22,155	24.0	5,128	13.5	27,283	21.0
25–44	31,181	33.8	9,457	24.9	40,639	31.2
45–64	19,179	20.8	8,610	22.6	27,790	21.4
65+	7,214	7.8	7,733	20.3	14,947	11.5
Total	92,123	100.0	38,032	100.0	130,157	100.0

(a) Includes cases where sex was not reported.

Principal diagnosis and body part injured

The shoulder and upper limb was the most commonly injured body region for other unintentional injuries (46%) this was followed by the hip and lower limb (26%) (Table 2.8.4).

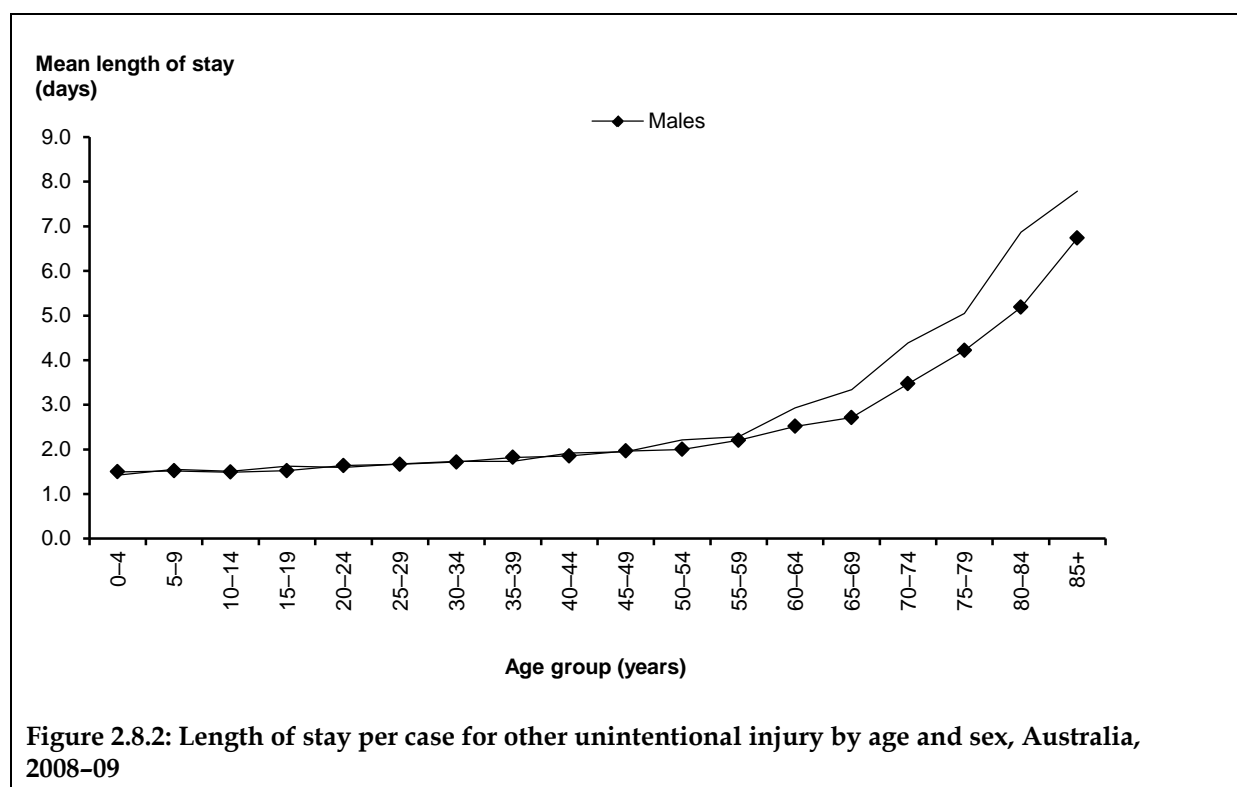
Table 2.8.4: Principal Diagnosis by body region for other unintentional injury, Australia, 2008–09

Principal Diagnosis by body region	Males		Females		Persons ^(a)	
	Count	Per cent	Count	Per cent	Count	Per cent
Head	11,402	12.4	4,382	11.5	15,785	12.1
Trunk (neck, thorax, abdomen, lower back, lumbar spine and pelvis)	4,884	5.3	2,809	7.4	7,693	5.9
Shoulder and upper limb	45,645	49.5	13,568	35.7	59,214	45.5
Hip and lower limb	21,378	23.2	12,205	32.1	33,583	25.8
Other injuries not specified by body region	8,814	9.6	5,068	13.3	13,882	10.7
All body regions	92,123	100.0	38,032	100.0	13,0157	100.0

(a) Includes cases where sex was not reported.

Length of stay

Mean length of stay for other unintentional injuries rose with age (Figure 2.8.2) and overall, was shorter for males (1.9 days) than for females (2.6 days), this can be attributed to the longer hospitalisations for females in the older age groups. The shortest mean length of stay was 1.4 days for children aged 0–4. It increased to 1.5 days for children aged 9–15 and steadily climbed to 1.9 days for 40–44. The highest mean length of stay was for those over 65 of age (4.9 days).



External cause

The majority (88%) of unintentional hospitalised injury cases could be classified into three broad external cause categories.

The most common category of external causes was *exposure to inanimate mechanical forces* ($n = 58,596$, 45%). This group includes W22; *striking against or struck by other object* ($n = 7,690$), W44; *foreign body entering into or through eye or natural orifice* ($n = 6,585$) and W25; *contact with sharp glass* ($n = 6,896$). For W22 the highest age-specific rate occurred in those aged 85 and older (87.5 per 100,000 population), this probably reflects an age-related decrease in balance and stability that is also reflected in the high rates for falls in the elderly. The highest age-specific rates for foreign bodies were seen among the youngest age group 0–4 (89.6 per 100,000 population).

The second most common category, *accidental exposure to other and unspecified factors*, accounted for 31% ($n = 40,856$) of other unintentional hospitalised injury cases. The majority of these were attributed to unspecified factors (95%, $n = 38,617$).

The third most common type of external cause, for cases coded as other unintentional injury, described exposure to animate mechanical forces (W50–W64). Over a quarter of these were coded as being ‘hit, struck, kicked, twisted, bitten or scratched by another person’ (36%, $n = 5,247$). Dog bites accounted for 17% of hospitalised injuries ascribed to animate mechanical forces ($n = 2,499$) and a further 13% were classified as ‘striking against or bumped into by another person’.

This category also includes being bitten or struck by animals, in particular being ‘bitten or crushed by other reptiles’ ($n = 1,075$) specifically non-venomous snakes ($n = 214$) and snakes which were not identified as being either venomous or non-venomous ($n = 845$). There were 487 cases of hospitalised injury with a first external cause code recorded as ‘contact with a venomous snake’ (X20); just over one-third of these (32%) involved snakes of the brown snake immunotype. A detailed analysis of hospitalised separations attributed to venomous animals and plants (Bradley 2008) is available at the AIHW website <www.aihw.gov.au> and the Research Centre for Injury Studies website <www.nisu.flinders.edu.au>.

Table 2.8.5: External causes of other unintentional injury cases, Australia, 2008–09

ICD-10-AM Code	External cause	Count	Per cent
W20	Struck by thrown, projected or falling object	4,543	3.5
W21	Striking against or struck by sports equipment	2,724	2.1
W22	Striking against or struck by other objects	7,690	5.9
W23	Caught, crushed, jammed or pinched in or between objects	5,649	4.3
W24	Contact with lifting and transmission devices, not elsewhere classified	573	0.4
W25	Contact with sharp glass	6,096	4.7
W26	Contact with knife, sword or dagger	4,061	3.1
W27	Contact with non-powered hand tool	1,929	1.5
W28	Contact with powered lawnmower	621	0.5
W29	Contact with other powered hand tools and household machinery	3,698	2.8
W30	Contact with agricultural machinery	328	0.3
W31	Contact with other and unspecified machinery	5,147	4.0
W32	Handgun discharge	15	0.0
W34	Discharge from other and unspecified firearms	150	0.1
W35	Explosion and rupture of boiler	n.p.	0.0
W36	Explosion and rupture of gas cylinder	123	0.1
W37	Explosion and rupture of pressurised tyre, pipe or hose	39	0.0
W38	Explosion and rupture of other specified pressurised devices	29	0.0
W39	Discharge of firework	52	0.0
W40	Explosion of other materials	254	0.2
W41	Exposure to high-pressure jet	16	0.0
W44	Foreign body entering into or through eye or natural orifice	6,585	5.1
W45	Foreign body or object entering through skin	2,803	2.2
W46	Contact with hypodermic needle	114	0.1
W49	Exposure to other and unspecified inanimate mechanical forces	5,353	4.1
W50	Hit, struck, kicked, twisted, bitten or scratched by another person	5,247	4.0
W51	Striking against or bumped into by another person	1,916	1.5
W52	Crushed, pushed or stepped on by crowd or human stampede	148	0.1
W53	Bitten by a rat	6	0.0
W54	Bitten or struck by dog	2,499	1.9
W55	Bitten or struck by other mammals	2,092	1.6
W56	Contact with marine animal	138	0.1
W57	Bitten or stung by nonvenomous insect and other nonvenomous arthropods	684	0.5
W58	Bitten or struck by crocodile or alligator	7	0.0
W59	Bitten or crushed by other reptiles	1,075	0.8
W60	Contact with plant thorns and spines and sharp leaves	307	0.2
W61	Contact with plant thorns and spines and sharp leaves	24	0.0
W64	Exposure to other and unspecified animate mechanical forces	401	0.3
W75	Accidental suffocation and strangulation in bed	n.p.	0.0
W76	Other accidental hanging and strangulation	13	0.0
W78	Inhalation of gastric contents	34	0.0

continued

Table 2.8.5 (continued): External causes of other unintentional injury cases, Australia, 2008–09

ICD-10-AM Code	External cause	Count	Per cent
W79	Inhalation and ingestion of food causing obstruction of respiratory tract	344	0.3
W80	Inhalation and ingestion of other objects causing obstruction of respiratory tract	186	0.1
W81	Confined to or trapped in a low-oxygen environment	34	0.0
W83	Other specified threats to breathing	n.p.	0.0
W84	Unspecified threat to breathing	34	0.0
W85	Exposure to electric transmission lines	71	0.1
W86	Exposure to other specified electric current	364	0.3
W87	Exposure to unspecified electric current	108	0.1
W89	Exposure to man-made visible and ultraviolet light	n.p.	0.0
W90	Exposure to other non-ionising radiation	n.p.	0.0
W91	Exposure to unspecified type of radiation	6	0.0
W92	Exposure to excessive heat of man-made origin	n.p.	0.0
W93	Exposure to excessive cold of man-made origin	11	0.0
W94	Exposure to high and low air pressure and changes in air pressure	271	0.2
W99	Exposure to other and unspecified man-made environmental factors	n.p.	0.0
X20	Contact with venomous snakes and lizards	491	0.4
X21	Contact with venomous spiders	881	0.7
X22	Contact with scorpions	n.p.	0.0
X23	Contact with hornets, wasps and bees	888	0.7
X24	Contact with centipedes and venomous millipedes (tropical)	7	0.0
X25	Contact with other specified venomous arthropods	269	0.2
X26	Contact with venomous marine animals and plants	346	0.3
X27	Contact with other specified venomous animals	25	0.0
X28	Contact with other specified venomous plants	n.p.	0.0
X29	Contact with unspecified venomous animal or plant	23	0.0
X30	Exposure to excessive natural heat	739	0.6
X31	Exposure to excessive natural cold	111	0.1
X32	Exposure to sunlight	59	0.0
X33	Victim of lightning	13	0.0
X36	Victim of avalanche, landslide and other earth movements	9	0.0
X37	Victim of cataclysmic storm	n.p.	0.0
X38	Victim of flood	n.p.	0.0
X39	Exposure to other and unspecified forces of nature	55	0.0
X50	Overexertion and strenuous or repetitive movements	10,710	8.2
X51	Travel and motion	24	0.0
X53	Lack of food	n.p.	0.0
X54	Lack of water	n.p.	0.0
X58	Exposure to other specified factors	2,239	1.7
X59	Exposure to unspecified factor	38,617	29.7
Total		130,157	100.0

n.p. = Not published. Small cell counts have been suppressed to prevent patient identification.

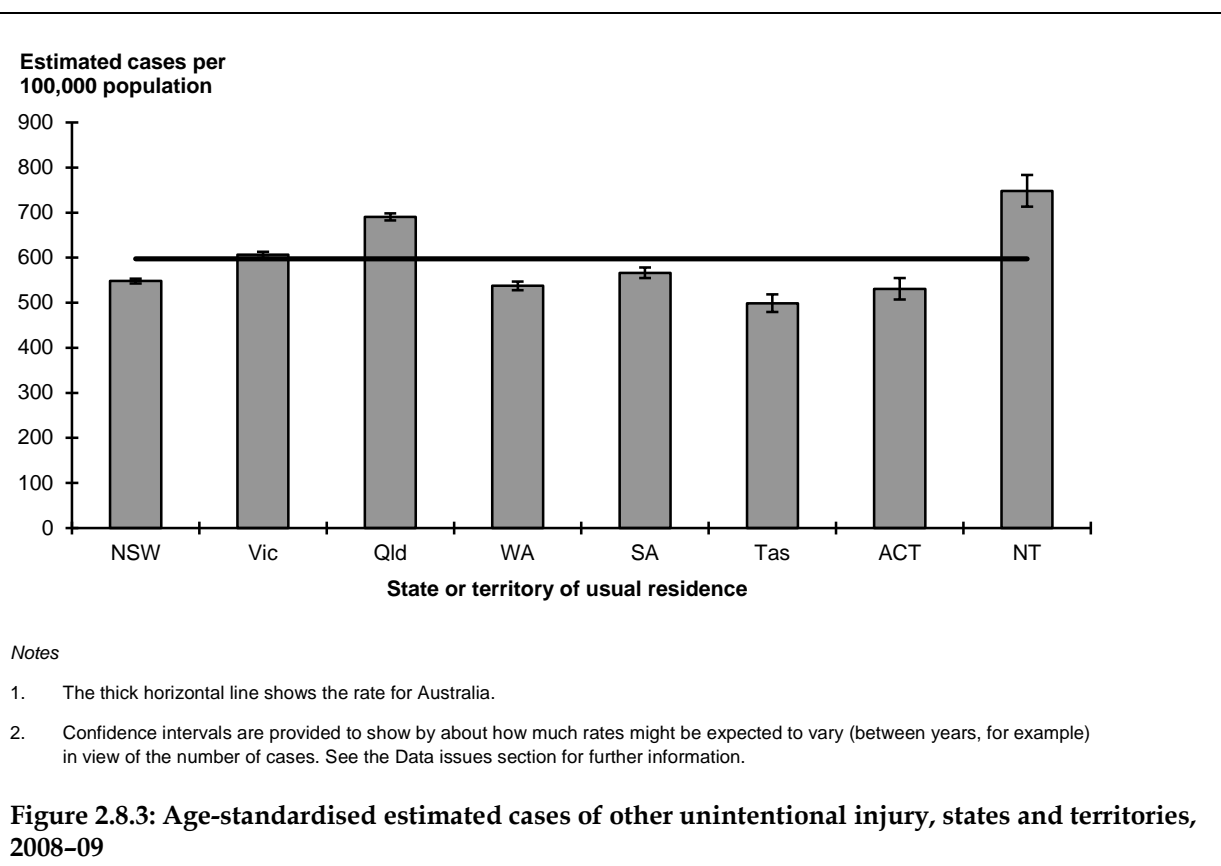
State and territory differences

The Northern Territory, Victoria and Queensland had rates of other unintentional injury that were higher than the national (Table 2.8.6 and Figure 2.8.3). New South Wales, Western Australia, South Australia, Tasmania, and the Australian Capital Territory all had rates that were lower than the national rate.

Table 2.8.6: Age-standardised estimated cases of other unintentional injury, states and territories, 2008–09

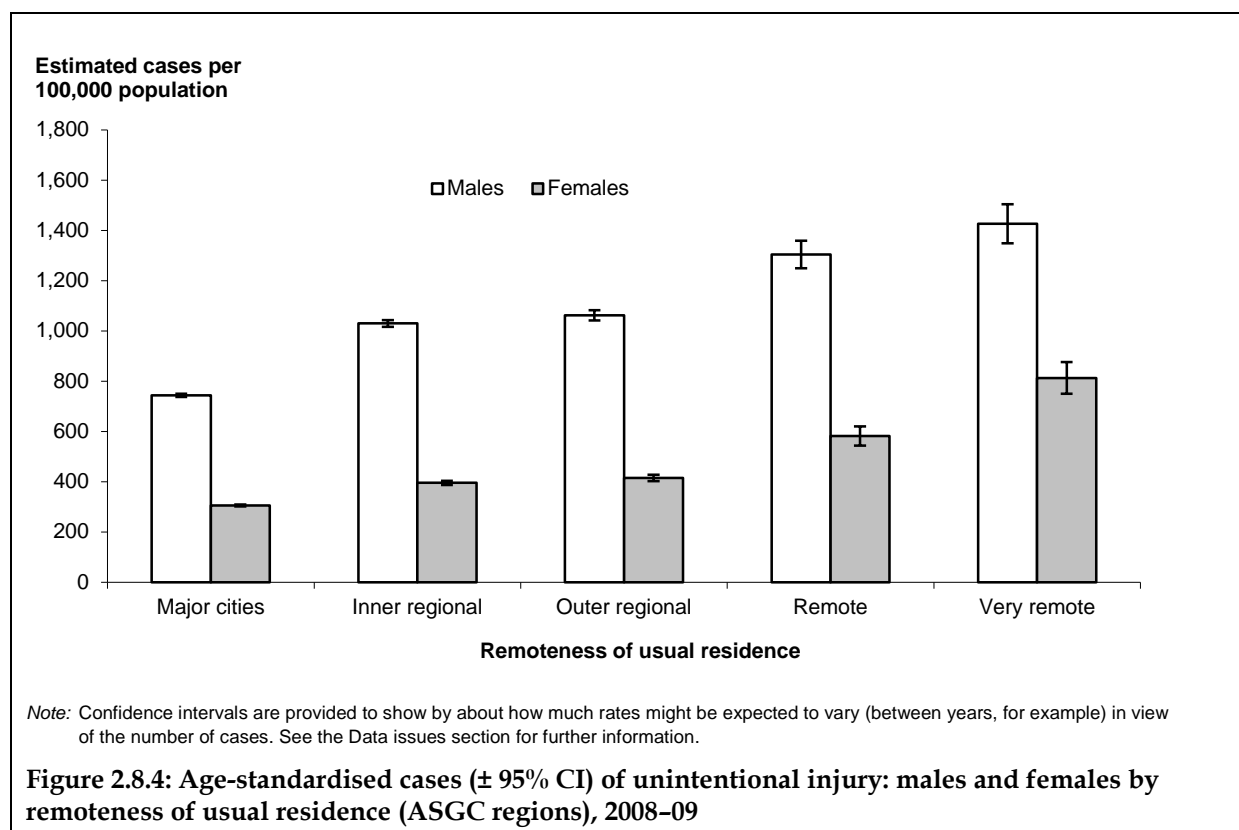
Jurisdiction	Age-standardised rate (per 100,000 population)	95% CI ^(a)
NSW	548.1	542.6–553.6
Vic	606.4	599.8–613.0
Qld	690.4	682.6–698.2
WA	537.6	528.0–547.2
SA	566.4	554.8–578.0
Tas	498.9	497.1–518.7
ACT	531.0	507.2–554.8
NT	748.4	713.2–783.6
Australia	597.7	594.4–601.0

(a) Confidence intervals are provided to show by about how much rates might be expected to vary (between years, for example) in view of the number of cases. See the Data issues section for further information.



Remoteness of usual residence

Rates of hospitalised unintentional injury increased across remoteness regions for both males and females (Figure 2.8.4). As with previous chapters, overall the lowest injury rate was found for residents of *Major cities* (526.6 per 100,000 population) while the highest rate was for residents in *Very remote* Australia (1,124.9 per 100,000 population). Rates for males were significantly higher than the rates for females in each remoteness category.



Part B: Intentional injuries

2.9 Intentional self-harm

ICD-10-AM case inclusion

Principal Diagnosis: S00–T75, T79 and

First reported external cause: X60–X84

Table 2.9.1: Key indicators for intentional self-harm cases, Australia, 2008–09

Indicator	Males	Females	Persons
Separations from hospital due to intentional self-harm	10,209	16,726	26,935
Percentage of all community injury separations	4.0	8.9	6.0
Estimated cases ^(a)	9,638	15,979	25,617
Crude rate/100,000 population	89.1	146.4	117.9
Age-standardised rate/100,000 population ^(b)	89.2	148.7	118.5
Total patient days ^(c)	31,496	42,364	73,865
Mean length of stay (days)	3.3	2.7	2.9
Estimated cases with a high threat to life	647	423	1,070
Percentage of cases with a high threat to life	6.7	2.6	4.2

(a) Excludes records with a mode of admission of 'transfer from another acute hospital'

(b) Standardised to the Australian estimated resident population 30 June 2001.

(c) Includes records with a mode of admission of 'transfer from another acute hospital' as contributing to hospital burden due to injury.

Intentional self-harm accounted for 6% of all injury hospitalisations in the financial year 2008–09 (Table 2.9.1). It includes suicide and attempts of suicide, as well as cases where people have intentionally hurt themselves, but not necessarily with the intention to kill for example, self-mutilation. This chapter does not include cases where the intent was unspecified, unstated or could not be determined (see Chapter 2.11).

Age and sex distribution

Females had higher rates of hospitalised intentional self-harm compared with males up to the age of 80 (Figure 2.9.1 and Table 2.9.2). More females than males were hospitalised for intentional self-harm (148.7 per 100,000 population vs. 89.2 per 100,000 population, based on age-standardised rates) with a M:F ratio of 0.6:1. The highest age-specific rate for cases of hospitalised self-harm was for females aged 15–19 (365.8 per 100,000 population). For males, rates of hospitalised self-harm were highest in those aged 30–34 (161.9 per 100,000 population).

Due to the small number of cases of intentional self-harm coded to the 0–9 age groups, these numbers have been suppressed in the chart (Figure 2.9.1) but are included as a part of the 0–14 group in Table 2.9.2. Cases of intentional self-harm in the 0–9 age group can be subject to misinterpretation given the difficulties in assigning intent to the actions of small children. Intentional self-harm in the context of this section may not necessarily reflect suicidal intent among children.

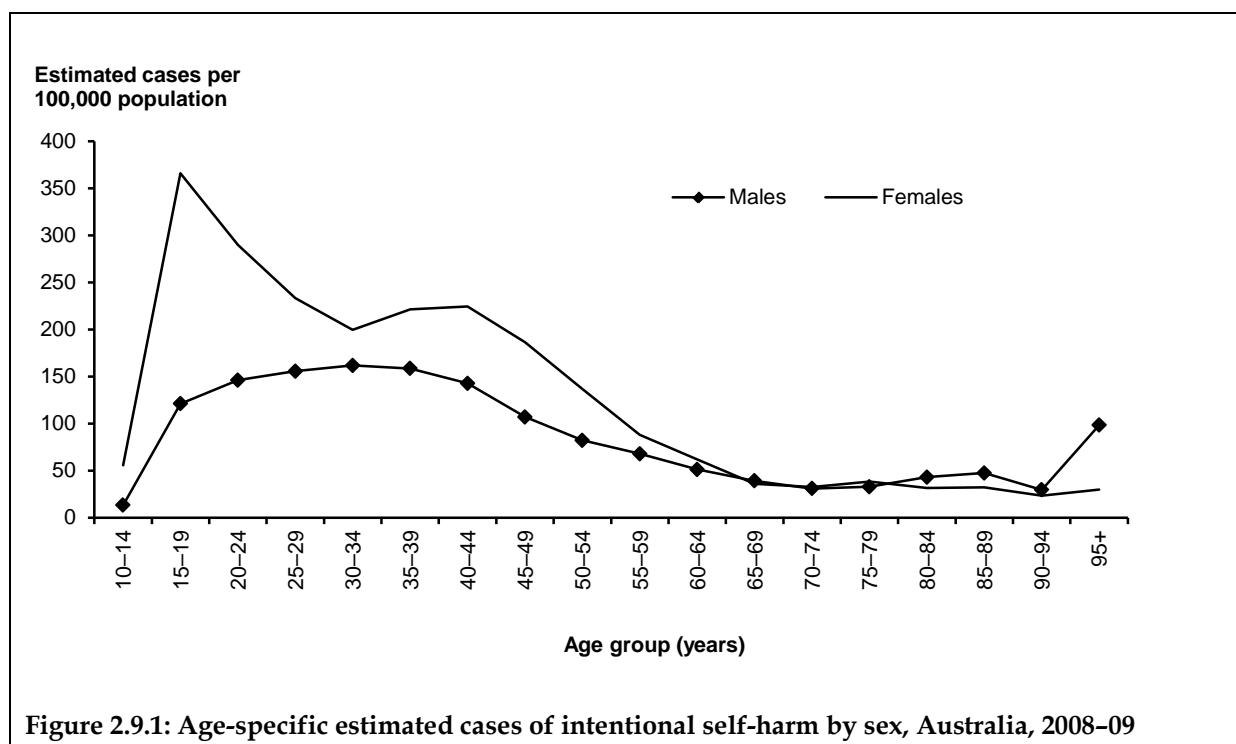


Table 2.9.2: Intentional self-harm cases by age group, Australia, 2008-09

Age group	Males		Females		Persons	
	Count	Per cent	Count	Per cent	Count	Per cent
0-14	101	1.0	382	2.4	483	1.9
15-24	2,122	22.0	4,873	30.5	6,995	27.3
25-44	4,791	49.7	6,809	42.6	11,600	45.3
45-64	2,139	22.2	3,383	21.2	5,522	21.6
65+	485	5.0	532	3.3	1,017	4.0
Total	9,638	100.0	15,979	100.0	25,617	100.0

Principal diagnosis and body part injured

The majority of admitted injury cases due to intentional self-harm did not specify a particular body region that was injured (Table 2.9.3). This reflects the fact that the mechanism in most cases was poisoning. Of the intentional self-harm cases involving the shoulder and upper limb 93% ($n = 2,324$) had an external cause related to self-harm by a sharp object. Similarly, 74% of injuries to the hip and lower limb had an external cause related to self-harm by a sharp object ($n = 202$), (figures not shown in table).

Table 2.9.3: Principal Diagnosis by body region and sex for intentional self-harm cases, Australia, 2008–09

Principal Diagnosis by body region	Males		Females		Persons	
	Count	Per cent	Count	Per cent	Count	Per cent
Head	181	1.9	69	0.4	250	1.0
Trunk (neck, thorax, abdomen, lower back, lumbar spine and pelvis)	455	4.7	325	2.0	780	3.0
Shoulder and upper limb	11,26	11.7	1,364	8.5	2,490	9.7
Hip and lower limb	116	1.2	159	1.0	275	1.1
Other injuries not specified by body region	7,760	80.5	14,062	88.0	21,822	85.2
All body regions	9,638	100.0	15,979	100.0	25,617	100.0

Mechanism

There were 25,617 cases of hospitalised intentional self-harm in the financial year 2008–09 (Table 2.9.4). The majority of cases (82%) of self-harm were intentional self-poisoning and almost twice as many females as males used this method. Intentional self-harm by a sharp object accounted for 13% of cases of self-harm and slightly more females than males used this method. Hanging, strangulation and suffocation accounted for 2% of self-harm cases (of which 70% were males) and shooting by handgun or firearm was even less common ($n = 9$; all were males).

Forty-seven per cent of all cases of intentional self-harm were ‘poisoning with *antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs*’ ($n = 12,212$). This category includes *benzodiazepines*, other and unspecified antidepressants – likely to be selective *serotonin reuptake inhibitors*, other and unspecified *antipsychotics* and *neuroleptics*, other *antiepileptic and sedative-hypnotic drugs*, *tricyclic and tetracyclic antidepressants*, *phenothiazene antipsychotics* and *neuroleptics* and *psychostimulants* with potential for use disorder.

The second most frequent category of self-poisoning was poisoning with *nonopioid analgesics, antipyretics* and *antirheumatics* ($n = 4,681$; 18% of all cases of intentional self-harm). This category includes *paracetamol*, *nonsteroidal anti-inflammatory drugs* and *salicylates* such as *aspirin*.

Poisoning by narcotics and *psychodysleptics* (hallucinogens) accounted for 5% of self-harm cases ($n = 1,183$). The numbers were relatively evenly spread between males and females. This category includes *cannabis* (and derivatives), *cocaine*, *heroin*, *codeine* and *LSD* among others.

The profile of mechanisms reported here partly reflects the profile of mechanisms used in episodes of intentional self-harm, but it also reflects the fact that some means of self-harm are more likely than others to result in an injury in which the person attends hospital and is admitted.

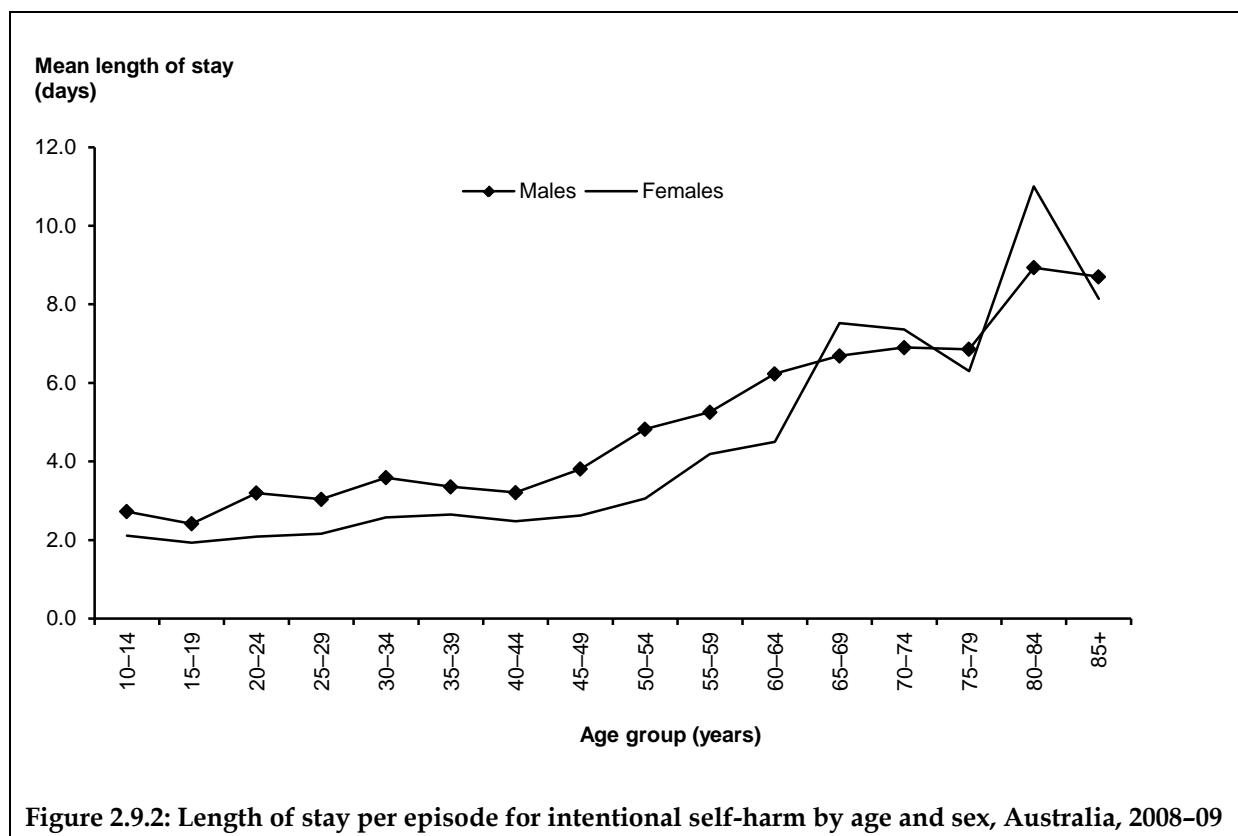
Table 2.9.4: External cause of intentional self-harm injury cases, Australia, 2008–09

ICD-10-AM Code	External cause	Males		Females		Persons	
		Count	Per cent	Count	Per cent	Count	Per cent
	Intentional self-poisoning by and exposure to:	7,363	76.4	13,714	85.8	21,077	82.3
X60	Nonopioid analgesics, antipyretics and antirheumatics	1,210	12.6	3,471	21.7	4,681	18.3
X61	Antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs	4,326	44.9	7,886	49.4	12,212	47.7
X62	Narcotics and psychodysleptics [hallucinogens]	537	5.6	646	4.0	1,183	4.6
X63	Other drugs acting on the autonomic nervous system	93	1.0	150	0.9	243	0.9
X64	Other and unspecified drugs, medicaments and biological substances	579	6.0	1,005	6.3	1,584	6.2
X65	Alcohol	146	1.5	172	1.1	318	1.2
X66	Organic solvents and their halogenated hydrocarbons and their vapours	26	0.3	23	0.1	49	0.2
X67	Other gases and vapours (for example, carbon monoxide)	251	2.6	108	0.7	359	1.4
X68	Pesticides	72	0.7	60	0.4	132	0.5
X69	Other and unspecified chemicals and noxious substances	123	1.3	193	1.2	316	1.2
X70	Intentional self-harm by hanging, strangulation and suffocation	391	4.1	166	1.0	557	2.2
X71	Intentional self-harm by drowning and submersion	n.p.	n.p.	n.p.	n.p.	19	0.1
X72	Intentional self-harm by handgun discharge	9	0.1	n.p.	n.p.	9	0.0
X74	Intentional self-harm by other and unspecified firearm discharge	25	0.3	n.p.	n.p.	28	0.1
X76	Intentional self-harm by smoke, fire and flames	33	0.3	33	0.2	66	0.3
X77	Intentional self-harm by steam, hot vapours and hot objects	n.p.	n.p.	n.p.	n.p.	10	0.0
X78	Intentional self-harm by sharp object	1,508	15.6	1,747	10.9	3,255	12.7
X79	Intentional self-harm by blunt object	31	0.3	32	0.2	63	0.2
X80	Intentional self-harm by jumping from a high place	80	0.8	52	0.3	132	0.5
X81	Intentional self-harm by jumping or lying before moving object	28	0.3	9	0.1	37	0.1
X82	Intentional self-harm by crashing of motor vehicle	35	0.4	28	0.2	63	0.2
X83	Intentional self-harm by other specified means	82	0.9	106	0.7	188	0.7
X84	Intentional self-harm by unspecified means	42	0.4	71	0.4	113	0.4
Total		9,638	100.0	15,979	100.0	25,617	100.0

n.p. = Not published. Small cell counts have been suppressed to prevent patient identification.

Length of stay

The mean length of stay for intentional self-harm cases was 2.9 days and was greater for males than females (3.3 days vs. 2.7 days). MLOS generally rose with age with the longest average hospital stay in females aged 80–84 (11.0 days). Thereafter, MLOS fell slightly but still remained higher than at younger age groups (Figure 2.9.3). The mean length of stay was 2.7 days for children aged 10–14, 2.5 days for young people aged 15–24, 3.0 days for adults aged 25–44, 4.1 days for adults aged 45–64 and 7.6 days for older people aged 65+.



Place of occurrence

For just over a third of records, place of occurrence was unspecified (34%; $n = 8,768$) or not reported (0.1%; $n = 32$). The following observations are restricted to those records in which the place of occurrence was specified (Table 2.9.5). The majority of the intentional self-harm injury hospitalisations occurred in the home (83%; $n = 13,902$).

Table 2.9.5: Place of occurrence for cases of intentional self-harm, Australia, 2008–09

Place	Persons	Per cent
Home	13,902	82.7
Residential institution	390	2.3
School	77	0.5
Health service area	1,064	6.3
Other specified institution and public administrative area	77	0.5
Sports and athletics area	15	0.1
Street and highway	320	1.9
Trade and service area	370	2.2
Industrial and construction area	11	0.1
Farm	12	0.1
Other specified places	579	3.4
Total	16,817	100.0

Note: Cases are restricted to those where place of occurrence is specified.

State and territory differences

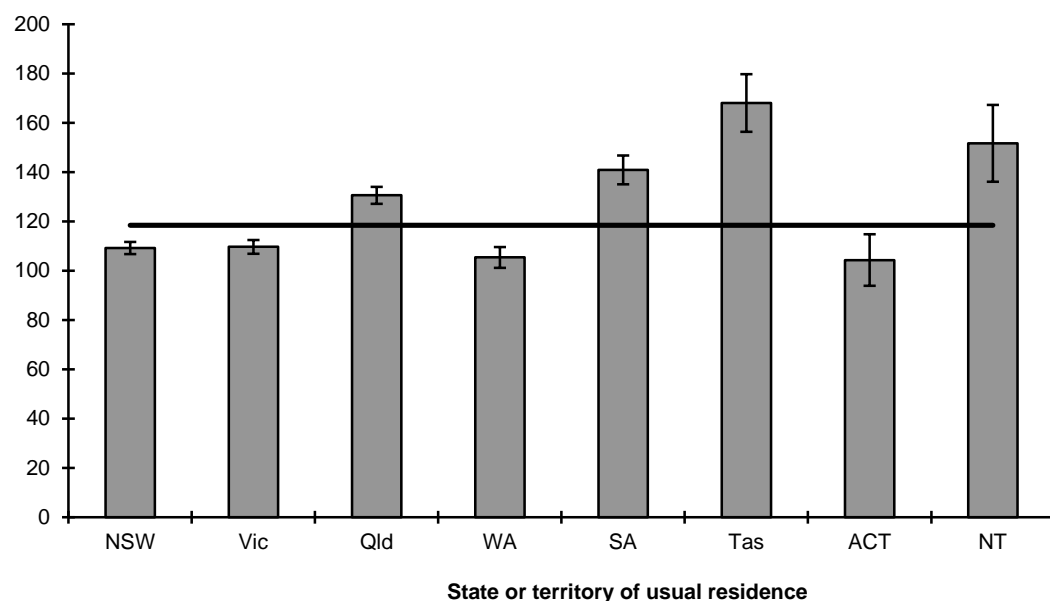
New South Wales, Victoria, Western Australia and the Australian Capital Territory had rates that were lower than the national rate (Table 2.9.6 and Figure 2.9.3). Queensland, South Australia, Tasmania and the Northern Territory had rates that were above the national rate.

Table 2.9.6: Age-standardised estimated cases of intentional self-harm, states and territories, 2008–09

Jurisdiction	Age-standardised rate (per 100,000 population)	95% CI ^(a)
NSW	109.2	106.8–111.6
Vic	109.7	106.9–112.5
Qld	130.6	127.2–134.0
WA	105.4	101.1–109.7
SA	140.9	135.0–146.8
Tas	168.1	156.4–179.8
ACT	104.3	93.8–114.8
NT	151.7	136.1–167.3
Australia	118.5	117.1–119.9

(a) Confidence intervals are provided to show by about how much rates might be expected to vary (between years, for example) in view of the number of cases. See the Data issues section for further information.

Estimated cases per
100,000 population



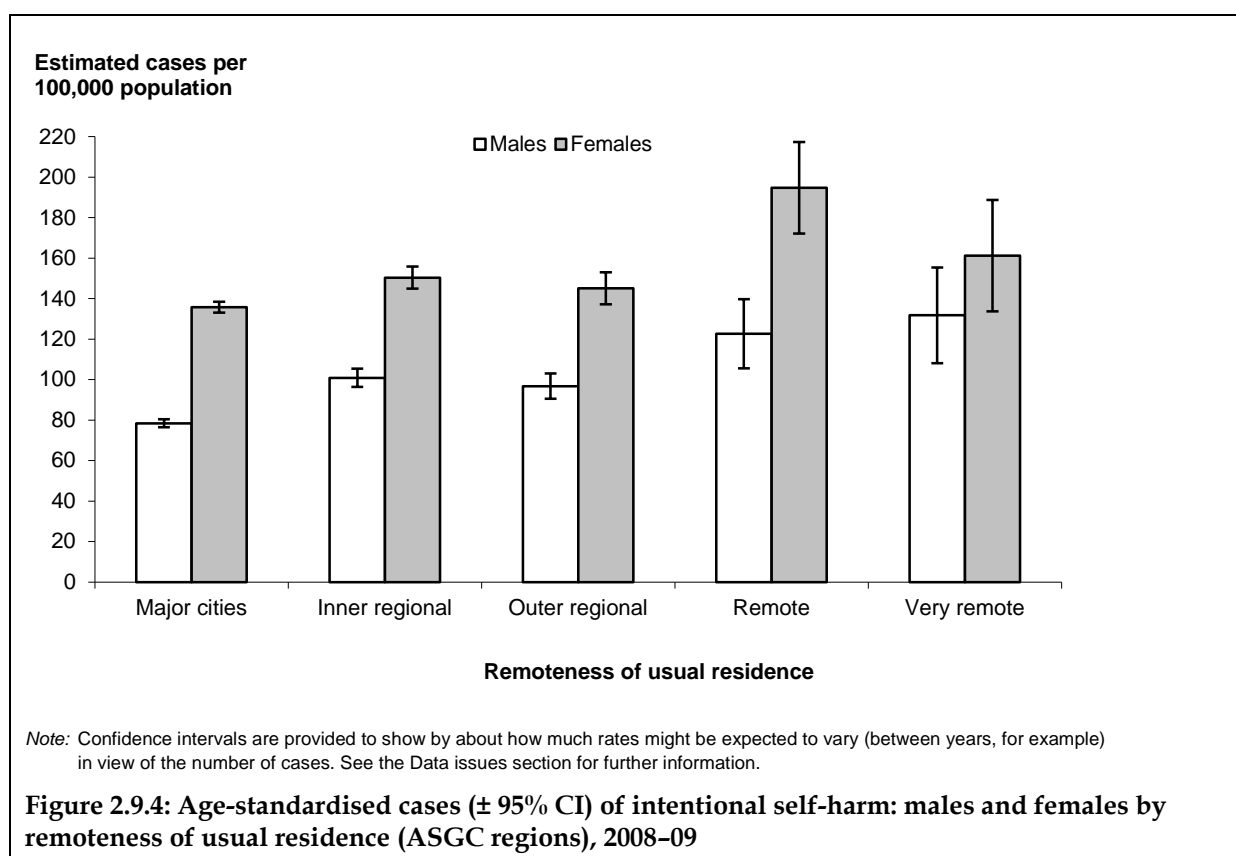
Notes

1. The thick horizontal line shows the rate for Australia.
2. Confidence intervals are provided to show by about how much rates might be expected to vary (between years, for example) in view of the number of cases. See the Data issues section for further information.

Figure 2.9.3: Age-standardised estimated cases of intentional self-harm, states and territories, 2008–09

Remoteness of usual residence

Rates of hospitalised intentional self-harm injury followed a similar pattern for both sexes (Figure 2.9.5). For persons overall, the lowest rate was found for residents of *Major cities* (106.9 per 100,000 population) while the highest rate was for residents in *Remote Australia* (1,576.9 per 100,000 population). Rates for males were significantly lower than the rates for females in most regions. In *Very remote* regions rates for males were lower than for females however they were not significantly different.



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 are purposely self-inflicted poisoning or injury, suicide, or attempted suicide (NCCH 2006). 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*).

It is possible that through the coding process, some types of injury may be more readily attributed to intentional self-harm than others, for example, ‘intentional self-harm by hanging’ as opposed to ‘falling from a building structure’ (for example, W13, out of a window, bridge or roof). 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. Such sources of uncertainty about the assignment of intent limit the certainty of any estimates of intentional self-harm based on routine hospital data. Coding categories provided for use when intent is recognised to be undetermined are a partial solution to this (see Chapter 2.11).

2.10 Assault

ICD-10-AM case inclusion

Principal Diagnosis: S00–T75, T79 and

First reported external cause: X85–Y09, Y35–Y36

Table 2.10.1: Key indicators for assault cases, Australia, 2008–09

Indicator	Males	Females	Persons
Separations from hospital due to assault	19,598	6,177	25,775
Percentage of all community injury separations	7.6	3.3	5.8
Estimated cases ^(a)	18,396	5,913	24,309
Crude rate/100,000 population	170.1	54.2	111.9
Age-standardised rate/100,000 population ^(b)	168.5	55.5	112.6
Total patient days ^(c)	41,141	12,877	54,018
Mean length of stay (days)	2.3	2.4	2.3
Estimated cases with a high threat to life	3,482	777	4,259
Percentage of cases with a high threat to life	18.9	13.1	17.5

(a) Excludes records with a mode of admission of 'transfer from another acute hospital'.

(b) Standardised to the Australian estimated resident population 30 June 2001.

(c) Includes records with a mode of admission of 'transfer from another acute hospital' as contributing to hospital burden due to injury.

An estimated 6% of all injury hospitalisations were due to assault in 2008–09 (Table 2.10.1). As defined here, this category includes all cases in which a person, or more than one person, intentionally injured another person. This chapter does not include cases where the intent was unspecified, unstated or cannot be determined (see Chapter 2.11).

Age and sex distribution

Three times as many males as females were hospitalised for injury resulting from assault (based on age-standardised rates) (Table 2.10.2). Age-specific rates for males were significantly higher than for females for almost all age groups (Figure 2.10.1). Male rates peaked in the 20–24 age group with an age-specific rate of 470.1 hospitalisations for assault per 100,000 compared with 111.0 per 100,000 for females in the same age range. From 25 onwards, age-specific rates of assault declined with age for both sexes rising slightly again for males 85+. Caution should be exercised in interpreting rates over the age of about 85 due to extremely small numbers of separations.

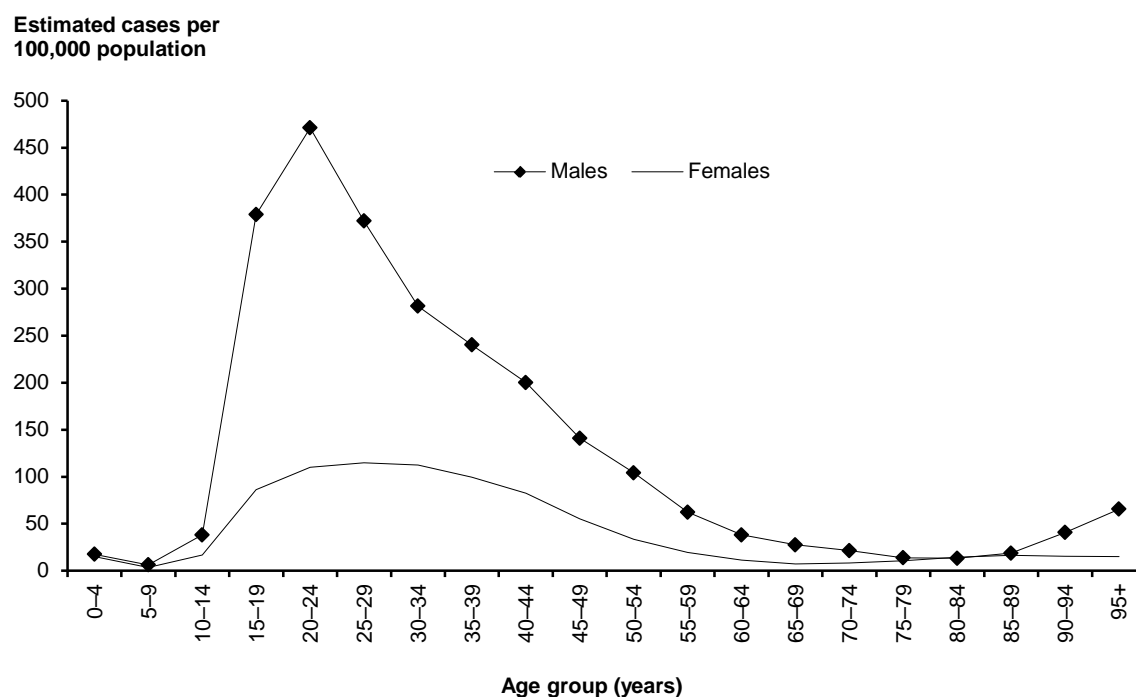


Figure 2.10.1: Age-specific estimated cases of assault by sex, Australia, 2008-09

Just over one-third of male assault cases occurred in people aged 15-24 and 46% cases were in people aged 25-44 (Table 2.10.2). One-quarter of female assault cases involved young people aged 15-24 and over half involved people aged 45-64. Only 3% involved children aged 0-14.

Table 2.10.2: Assault cases by age group, Australia, 2008-09

Age group	Males		Females		Persons	
	Count	Per cent	Count	Per cent	Count	Per cent
0-14	446	2.4	242	4.1	688	2.8
15-24	6,743	36.7	1,468	24.8	8,211	33.8
25-44	8,485	46.1	3,167	53.6	11,652	47.9
45-64	2,445	13.3	869	14.7	3,314	13.6
65+	277	1.5	167	2.8	444	1.8
Total	18,396	100	5,913	100	24,309	100

Principal diagnosis and body part injured

Nearly two-thirds of all hospitalised cases due to assault involved injuries to the head (Table 2.10.3). This was the most common Principal Diagnosis associated with assault cases for every age group. Injuries to the wrist and hand were the second most common diagnosis associated with assault cases.

Table 2.10.3: Principal Diagnosis by body region for assault cases, Australia, 2008–09

Principal Diagnosis by body region	Males		Females		Persons	
	Count	Per cent	Count	Per cent	Count	Per cent
Head	12,594	68.5	3,290	55.6	15,884	65.3
Trunk (neck, thorax, abdomen, lower back, lumbar spine and pelvis)	1,939	10.5	950	16.1	2,889	11.9
Shoulder and upper limb	2,804	15.2	928	15.7	3,732	15.4
Hip and lower limb	788	4.3	372	6.3	1,160	4.8
Other injuries not specified by body region	271	1.5	373	6.3	644	2.6
All body regions	18,396	100.0	5,913	100.0	24,309	100.0

Mechanism

The most common mechanism by which injury occurred was *Assault by bodily force*, 58% of cases ($n = 14,109$). The second most common mechanism of injury was *Assault by blunt object*, (13%, $n = 3,206$). A higher proportion of cases involving females were attributed to assault by blunt object (15% of female injuries vs. 13% of male injuries). *Assault by sharp object* was documented in 13% ($n = 3,102$) of hospitalised assault cases with a higher proportion of males injured in this way (13%, $n = 2,451$) compared with females (11%, $n = 651$). *Assault by unspecified means* accounted for 11% of cases ($n = 2,576$) (Table 2.10.4).

Forty-eight per cent of assault cases in children aged 0–14 ($n = 330$) were due to *Assault by bodily force* (males $n = 254$; females $n = 76$). More female than male children suffered *Other maltreatment syndromes* (21%, males $n = 68$; females $n = 75$) and *Neglect and abandonment* accounted for six per cent of assault cases in children 0–14 (males $n = 19$; females $n = 23$).

Sixty-two per cent of assault cases in youth and young people aged 15–24 ($n = 5,118$) were due to *Assault by bodily force* (males $n = 4,271$; females $n = 847$), *Assault by sharp object* (males $n = 963$; females $n = 178$), and *Assault by blunt object* (males $n = 690$; females $n = 176$).

Fifty-six per cent of assault cases in adults aged 25–44 ($n = 6,493$) were due to *Assault by bodily force* (males $n = 4,840$; females $n = 1,653$), *Assault by blunt object* (males $n = 1,153$; females $n = 557$), and *Assault by sharp object* (males $n = 1,156$; females $n = 370$).

Fifty-seven per cent of assault cases in adults aged 45–64 ($n = 1,886$) were due to *Assault by bodily force* (males $n = 1,372$; females $n = 514$), *Assault by blunt object* (males $n = 397$; females $n = 127$) and *Assault by unspecified means* (males $n = 298$; females $n = 78$).

Sixty-four per cent of assault cases in older people aged 65+ ($n = 282$) were due to *Assault by bodily force* (males $n = 168$; females $n = 114$), *Assault by blunt object* (males $n = 47$; females $n = 18$) and *Assault by sharp object* (males $n = 28$; females $n = 11$).

Table 2.10.4: External cause of assault cases, Australia, 2008–09

ICD-10-AM Code	External cause	Males		Females		Persons	
		Count	Per cent	Count	Per cent	Count	Per cent
X85	Assault by drugs, medicaments and biological substances	21	0.1	40	0.7	61	0.3
X86–X90	Assault by corrosive substances, pesticides, gases and vapours, other specified or unspecified chemicals and noxious substances	16	0.1	11	0.2	27	0.1
X91	Assault by hanging, strangulation and suffocation	11	0.1	44	0.7	55	0.2
X92	Assault by drowning and submersion	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
X93	Assault by handgun discharge	n.p.	n.p.	n.p.	n.p.	17	0.1
X95	Assault by other and unspecified firearm discharge	82	0.4	6	0.1	88	0.4
X96	Assault by explosive material	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
X97	Assault by smoke, fire and flames	31	0.2	11	0.2	42	0.2
X98	Assault by steam, hot vapours and hot objects	24	0.1	12	0.2	36	0.1
X99	Assault by sharp object	2,451	13.3	651	11.0	3,102	12.8
Y00	Assault by blunt object	2,318	12.6	888	15.0	3,206	13.2
Y01	Assault by pushing from a high place	18	0.1	13	0.2	31	0.1
Y02	Assault by pushing or placing victim before moving object	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Y03	Assault by crashing of motor vehicle	n.p.	n.p.	n.p.	n.p.	28	0.1
Y04	Assault by bodily force	10,905	59.3	3,204	54.2	14,109	58.0
Y05	Sexual assault by bodily force	14	0.1	149	2.5	163	0.7
Y06	Neglect and abandonment	22	0.1	26	0.4	48	0.2
Y07	Other maltreatment syndromes	81	0.4	175	3.0	256	1.1
Y08	Assault by other specified means	284	1.5	91	1.5	375	1.5
Y09	Assault by unspecified means	2,007	10.9	569	9.6	2,576	10.6
Y35	Legal intervention	61	0.3	7	0.1	68	0.3
Y36	Operations of war	14	0.1	n.p.	n.p.	14	0.1
Total		18,396	100.0	5,913	100.0	24,309	100.0

n.p. = Not published. Small cell counts have been suppressed to prevent patient identification.

Perpetrator

Codes describing the relationship of the victim of assault to the perpetrator were added to ICD-10-AM 3rd edition. The perpetrator code is only applicable within the range of external cause categories X85–Y09. According to this criterion, 24,145 cases were eligible to receive a perpetrator code. A perpetrator was specified for only 44% ($n = 10,601$) of eligible cases and varied by age and gender (for example, the perpetrator was an *unspecified person* in 64% of male cases and 33% of female cases). The large number of separations lacking detail on the perpetrator limits meaningful interpretation of these counts. The following observations are restricted to those records in which the perpetrator was specified (Table 2.10.5).

For males, the perpetrator was most commonly unknown to the victim (28%, $n = 1,881$). For females, a spouse or partner was the most commonly reported perpetrator (58%, $n = 2,260$).

Table 2.10.5: Relationship of the perpetrator to the victim of assault, Australia, 2008–09

Perpetrator	Males		Females		Persons	
	Count	Per cent	Count	Per cent	Count	Per cent
Spouse or domestic partner	431	6.5	2,260	57.5	2,691	25.4
Parent	185	2.8	167	4.2	352	3.3
Other family member	751	11.3	533	13.6	1,284	12.1
Carer	7	0.1	7	0.2	14	0.1
Acquaintance or friend	1,150	17.2	365	9.3	1,515	14.3
Official authorities	156	2.3	25	0.6	181	1.7
Person unknown to the victim	1,397	20.9	190	4.8	1,587	15.0
Multiple persons unknown to the victim	1,881	28.2	151	3.8	2,032	19.2
Other specified person	712	10.7	233	5.9	945	8.9
Total of cases where perpetrator is specified	6,670	100.0	3,931	100.0	10,601	100.0

Length of stay

Mean length of stay for assault was higher in young children 0–4 than for other age groups (below 75). The mean length of stay was 3.0 days for children aged 0–14, 1.8 days for young people aged 15–24, 2.2 days for adults aged 25–44, 2.7 days for adults aged 45–64 and 5.1 days for older people aged 65+ (Figure 2.10.2).

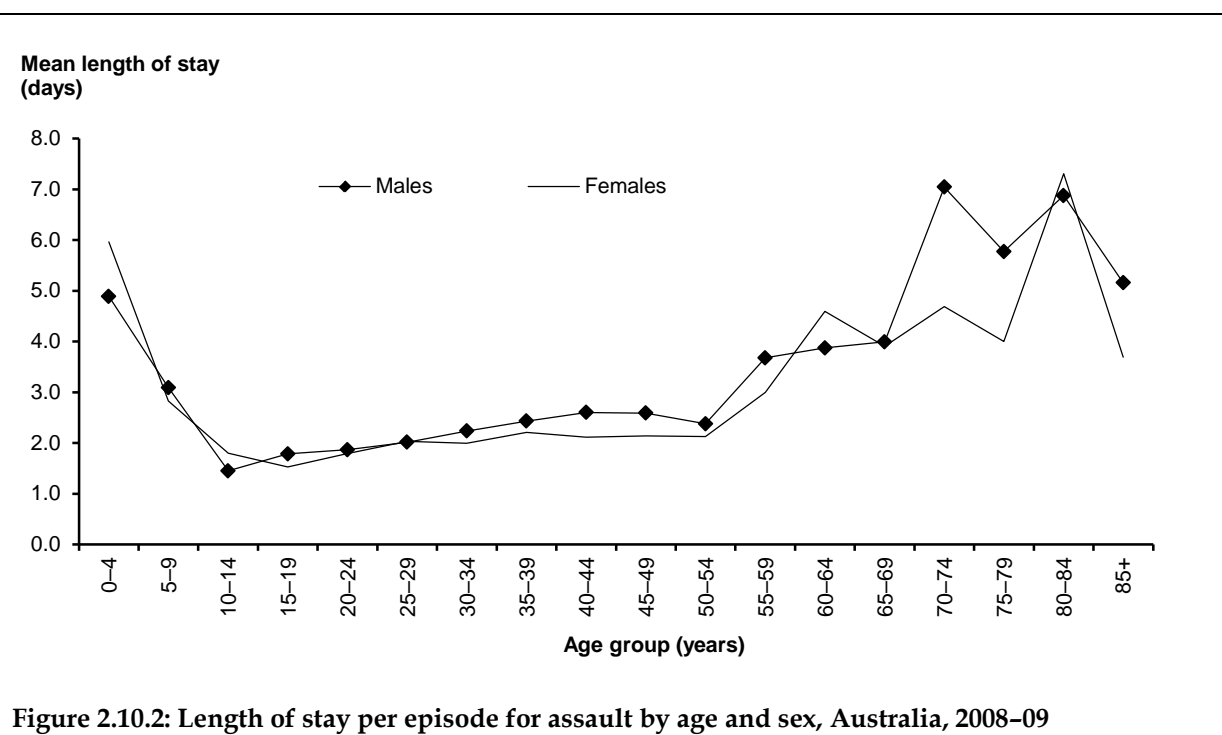


Figure 2.10.2: Length of stay per episode for assault by age and sex, Australia, 2008–09

Place of occurrence

The hospitalisations from assault injury occurred mainly in the home, especially for females (64% $n = 1,682$). Many were unspecified (58%; $n = 14,080$) or not reported (0.04%; $n = 12$).

The following observations are restricted to those cases in which the place of occurrence was specified. Overall, the most common place for an assault injury to occur was in the home (36% of cases) followed by a trade or service area (26% of cases). However, there were large differences between the sexes. Assaults in the home the most common place for females in each age category. Trade and service areas were the second (11%) and street or highway were the third (9%) most common places of injury for women. (Table 2.10.6).

For males aged 0–14 school was the most common place of assaults (40% of assaults in that age category). Trade and service areas (which include hotels and many other entertainment venues) were the most common place of assaults in males aged 15–24 and 25–44, (31 % and 33% respectively).

Table 2.10.6: Place of occurrence for assault cases by age and sex, Australia, 2008–09

Place	0–14	Per cent	15–24	Per cent	25–44	Per cent	45–64	Per cent	65+	Per cent	Total	Per cent
Males												
Home	103	36.3	409	15.9	865	25.4	487	42.9	95	51.4	1,959	25.8
Residential institution	n.p.	n.p.	36	1.4	128	3.8	38	3.4	n.p.	n.p.	230	3.0
School	113	39.8	78	3.0	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	198	2.6
Health service area	n.p.	n.p.	n.p.	n.p.	13	0.4	13	1.1	n.p.	n.p.	36	0.5
Other specified institution	n.p.	n.p.	48	1.9	64	1.9	10	0.9	n.p.	n.p.	130	1.7
Sports and athletics area	6	2.1	77	3.0	56	1.6	n.p.	n.p.	n.p.	n.p.	144	1.9
Street and highway	16	5.6	709	27.5	771	22.6	192	16.9	14	7.6	1,702	22.4
Trade and service area	15	5.3	918	35.6	1,134	33.3	289	25.5	31	16.8	2,387	31.4
Industrial and construction area	n.p.	n.p.	8	0.3	20	0.6	n.p.	n.p.	n.p.	n.p.	32	0.4
Farm	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	8	0.1
Other specified places	19	6.7	289	11.2	348	10.2	93	8.2	16	8.6	765	10.1
Total	284	100.0	2,580	100.0	3,408	100.0	1,134	100.0	185	100.0	7,591	100.0
Females												
Home	94	67.1	310	51.7	858	66.4	331	73.2	89	63.1	1,682	64.1
Residential institution	n.p.	n.p.	n.p.	n.p.	15	1.2	10	2.2	33	23.4	64	2.4
School	11	7.9	6	1.0	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	18	0.7
Health service area	n.p.	n.p.	n.p.	n.p.	12	0.9	8	1.8	n.p.	n.p.	26	1.0
Other specified institution	n.p.	n.p.	7	1.2	9	0.7	n.p.	n.p.	n.p.	n.p.	17	0.6
Sports and athletics area	n.p.	n.p.	6	1.0	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	14	0.5
Street and highway	11	7.9	80	13.3	103	8.0	29	6.4	9	6.4	232	8.8
Trade and service area	n.p.	n.p.	107	17.8	128	9.9	37	8.2	n.p.	n.p.	279	10.6
Industrial and construction area	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Farm	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Other specified places	9	6.4	78	13.0	161	12.5	37	8.2	n.p.	n.p.	290	11.0
Total	140	100.0	600	100.0	1,293	100.0	452	100.0	141	100.0	2,626	100.0

n.p. = Not published. Small cell counts have been suppressed to prevent patient identification.

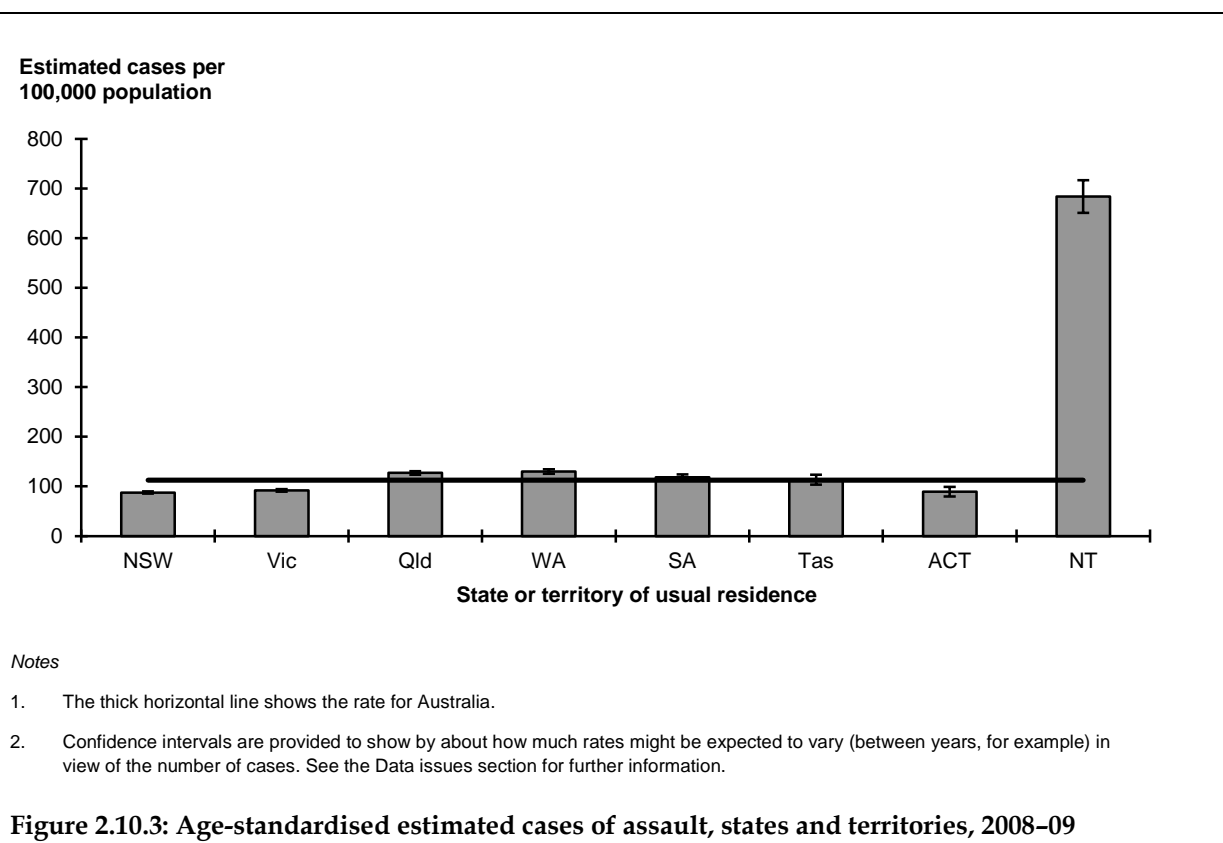
State and territory differences

The rates of hospitalisation due to assault in New South Wales, Victoria and the Australian Capital Territory were below the national rate (Table 2.10.7 and Figure 2.10.3). Tasmania had rates that were similar to the national rate. Queensland, Western Australia, South Australia and the Northern Territory had rates of hospitalisation due to assault that were above the national rate. The rates in the Northern Territory were almost seven times higher than the national rate. Of the 1,642 cases of residents in the Northern Territory, 85.7% ($n = 1,407$) were recorded as being Aboriginal and Torres Strait Islander persons.

Table 2.10.7: Age-standardised estimated cases of assault, states and territories, 2008–09

Jurisdiction	Age-standardised rate (per 100,000 population)	95% CI ^(a)
NSW	87.5	85.3–89.7
Vic	92.0	89.4–94.6
Qld	127.2	123.8–130.6
WA	130.0	125.3–134.7
SA	118.4	112.9–123.9
Tas	113.7	103.8–123.6
ACT	89.4	79.9–98.9
NT	684.0	650.9–717.1
Australia	112.6	111.2–114.0

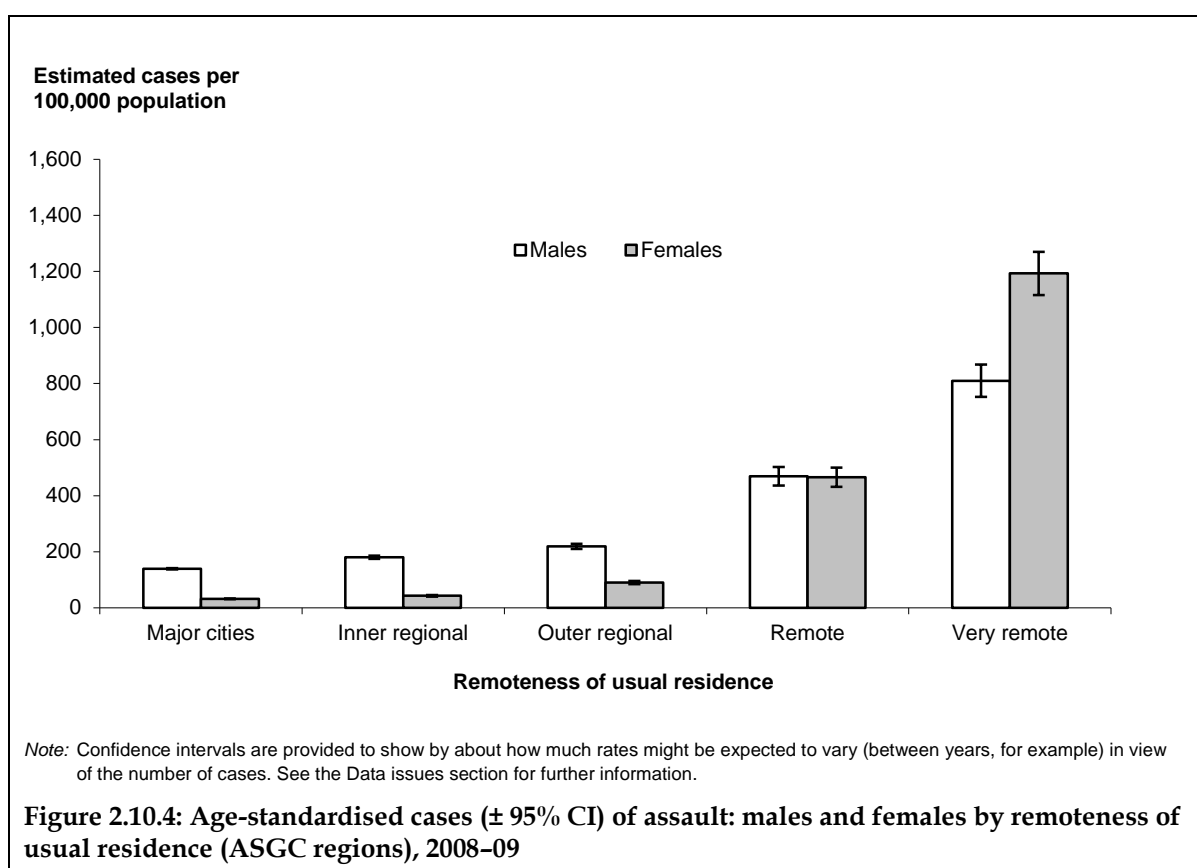
(a) Confidence intervals are provided to show by about how much rates might be expected to vary (between years, for example) in view of the number of cases. See the Data issues section for further information.



Remoteness of usual residence

Rates of hospitalised assault injuries increased significantly with remoteness (Figure 2.10.4). As with many of the previous injury categories, the lowest rate of hospitalised assaults for both males and females was for residents of *Major cities* (139.5 per 100,000 population for males, 32.3 per 100,000 population for females). The highest rate was among residents of *Very remote* areas.

Rates for males were significantly higher than for females in *Major cities*, *Inner regional* (four times greater respectively) and *Outer regional* areas (nearly three times the rate for females). In *Remote* areas the rate for males and females was similar. This changed in *Very remote* areas with the rate for females (1,193.1 per 100,000 population) significantly exceeding that for males (810.2 per 100,000 population).



Ascertainment of assault

As for 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 (see Chapter 2.11).

2.11 Undetermined intent

ICD-10-AM case inclusion

Principal Diagnosis: S00–T75, T79 and

First reported external cause: Y10–Y34

Table 2.11.1: Key indicators for undetermined intent cases, Australia, 2008–09

Indicator	Males	Females	Persons
Separations from hospital due to undetermined intent	3,564	3,397	6,961
Percentage of all community injury separations	1.4	1.8	1.6
Estimated cases ^(a)	3,434	3,296	6,730
Crude rate/100,000 population	31.8	30.2	31.0
Age-standardised rate/100,000 population ^(b)	31.7	30.5	31.1
Total patient days ^(c)	8,661	8,164	16,825
Mean length of stay (days)	2.5	2.5	2.5
Estimated cases with a high threat to life	169	78	247
Percentage of cases with a high threat to life	4.9	2.4	3.7

(a) Excludes records with a mode of admission of 'transfer from another acute hospital'.

(b) Standardised to the Australian estimated resident population 30 June 2001.

(c) Includes records with a mode of admission of 'transfer from another acute hospital' as contributing to hospital burden due to injury.

This chapter includes cases where intent was unspecified, unstated or could not be determined. Injuries where the intent is undetermined accounted for 1.6% of all injury hospitalisations in the financial year 2008–09 (Table 2.11.1).

The coding of the external cause of injury is based on a review of the patients discharge summary and hospital record by medical coders. The external cause codes Y10–Y34, undetermined intent, 'are designed for use when the intent is unspecified, unstated or cannot be determined. That is, the injuries are not specified as accidental (unintentional), self-inflicted with intent to self-harm, or assault (NCCH 2006). This is different to the use of external cause codes in mortality data where undetermined intent is used only when it has been explicitly stated on a death certificate or following formal investigation. If a death has not been specified as being due to intentional self-harm or assault, nor specified as being of undetermined intent, then it is supposed to be coded as accidental, even if there are reasons to think that it might have been intentional. In hospitals data, such doubtful cases can be coded to undetermined intent.

While cases that are suggestive of being due to assault can be assigned to this category certain characteristics of the data suggest that most are possible self-harm. In particular, like self-harm cases, (and unlike assault cases) the great majority of undetermined intent cases involve poisoning by and exposure to pharmaceutical drugs.

Age and sex distribution

Slightly more males than females were hospitalised for injuries of undetermined intent. Rates were lowest for children (5–9), highest in youth and young people aged 15–29, and declined with age up until about 75 before rising slowly into older age groups (Figure 2.11.1). Forty-six per cent of injuries of undetermined intent occurred in adults aged 25–44 (Table 2.11.2). Caution should be exercised in interpreting rates over the age of about 85 due to extremely small numbers of separations.

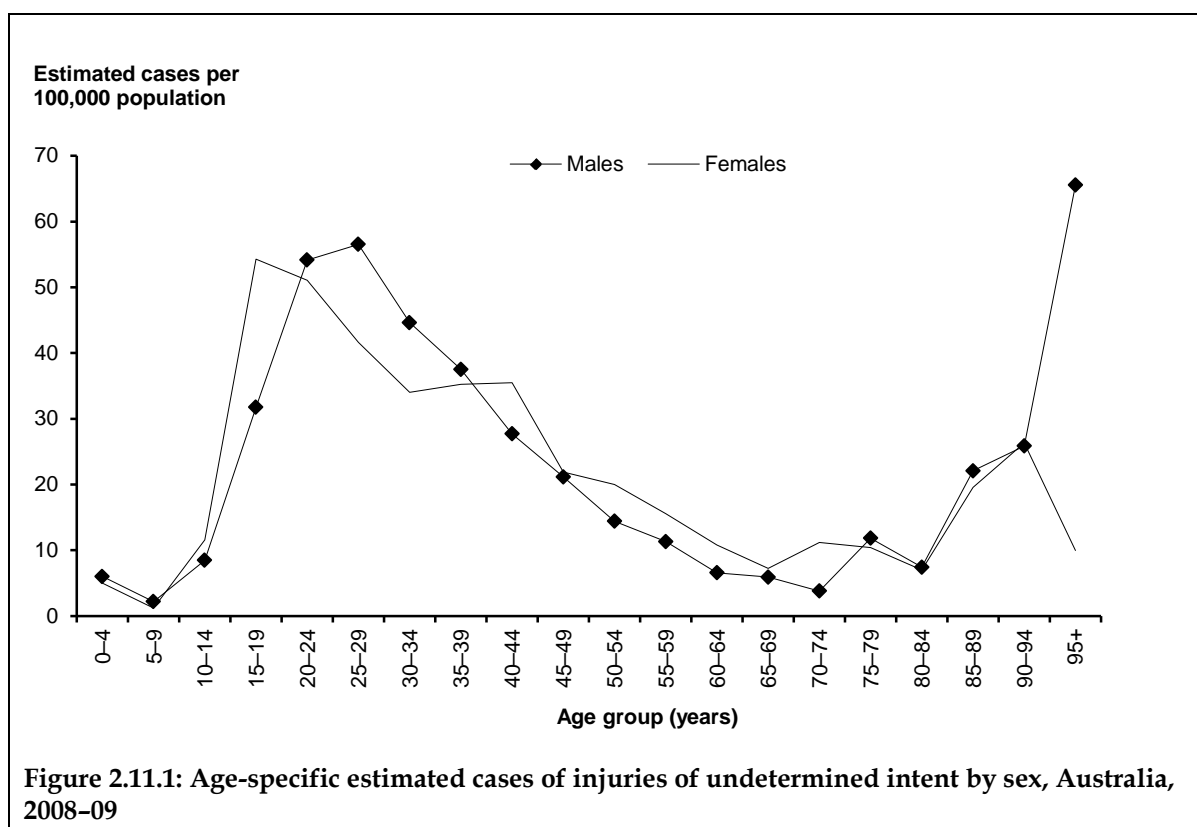


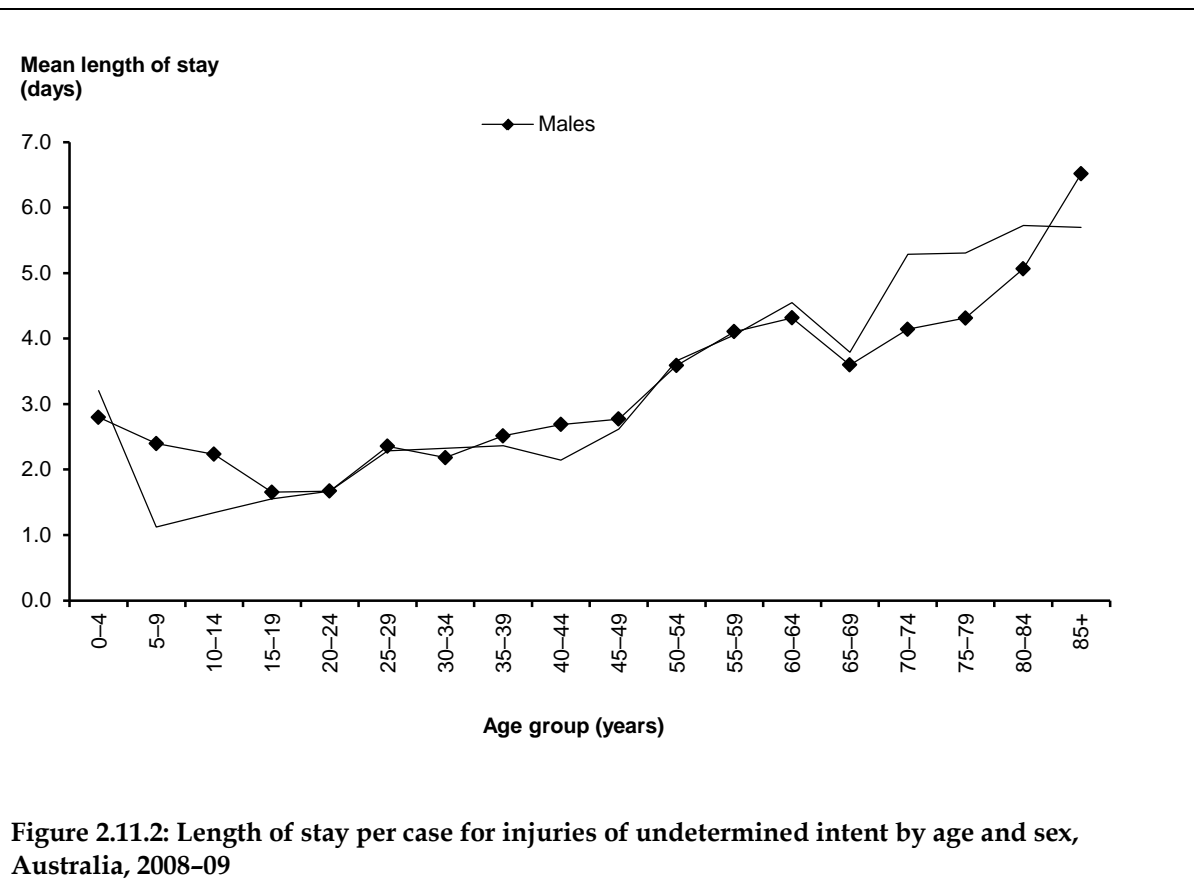
Table 2.11.2: Injuries of undetermined intent by age group, Australia, 2008–09

Age group	Males		Females		Persons	
	Count	Per cent	Count	Per cent	Count	Per cent
0–14	205	4.7	164	4.6	369	4.7
15–24	875	26.4	946	29.2	1,821	27.8
25–44	1,576	50.4	1,342	42.4	2,918	46.3
45–64	584	14.8	618	18.0	1,202	16.4
65+	194	3.7	226	5.8	420	4.8
Total	3,434	100.0	3,296	100.0	6,730	100.0

Length of stay

The overall mean length of stay for injuries of undetermined intent was 2.5 days. The general trend was for an increasing length of stay with age. Small case numbers in some age groups appear as large fluctuations in the average length of stay, particularly in the older age groups (Figure 2.11.2).

The mean length of stay was 2.2 days for children aged 0–14, 1.6 days for young people aged 15–24, 2.3 days for adults aged 25–44, 3.5 days for adults aged 45–64 and 4.8 days for older people aged 65+.



Principal diagnosis and body part injured

The majority of admitted injury cases due to undetermined intent did not specify a particular body region that was injured (Table 2.11.3). This reflects the fact that the mechanism in most cases was poisoning.

Table 2.11.3: Principal Diagnosis by body region for injuries of undetermined intent, Australia, 2008–09

Principal Diagnosis by body region	Males		Females		Persons	
	Count	Per cent	Count	Per cent	Count	Per cent
Head	65	2.6	25	1.0	90	1.8
Trunk (neck, thorax, abdomen, lower back, lumbar spine and pelvis)	49	2.0	23	0.9	72	1.4
Shoulder and upper limb	183	7.3	95	3.6	278	5.4
Hip and lower limb	62	2.5	32	1.2	94	1.8
Other injuries not specified by body region	2,132	85.6	2,436	93.3	4,568	89.5
All body regions	2,491	100.0	2,611	100.0	5,102	100.0

Mechanism

Overall, 76% of injuries of undetermined intent resulted from poisoning. A higher proportion of cases involving females were coded as poisoning (86%) than cases involving males (66%). The second most common mechanism of injury for both males and females was *contact with blunt object* (15% and 5%, respectively) (Table 2.11.4).

Table 2.11.4: External cause of injuries of undetermined intent, Australia, 2008–09

ICD-10-AM Code	External cause	Males		Females		Persons	
		Count	Per cent	Count	Per cent	Count	Per cent
	Poisoning by and exposure to:	2,254	65.6	2,844	86.3	5,098	75.8
Y10	Nonopioid analgesics, antipyretics and antirheumatics	219	6.4	534	16.2	753	11.2
Y11	Antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs	943	27.5	1,372	41.6	2,315	34.4
Y12	Narcotics and psychodysleptics [hallucinogens]	412	12.0	266	8.1	678	10.1
Y13	Other drugs acting on the autonomic nervous system	35	1.0	22	0.7	57	0.8
Y14	Other and unspecified drugs, medicaments and biological substances	342	10.0	358	10.9	700	10.4
Y15	Alcohol	124	3.6	129	3.9	253	3.8
Y16	Organic solvents and their halogenated hydrocarbons and their vapours	15	0.4	7	0.2	22	0.3
Y17	Other gases and vapours (for example, Carbon monoxide)	27	0.8	19	0.6	46	0.7
Y18	Pesticides	16	0.5	8	0.2	24	0.4
Y19	Other and unspecified chemicals and noxious substances	121	3.5	129	3.9	250	3.7
Y20	Hanging, strangulation and suffocation	19	0.6	10	0.3	29	0.4
Y21	Drowning and submersion	n.p.	n.p.	n.p.	n.p.	7	0.1
Y22	Handgun discharge	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Y24	Other and unspecified firearm discharge	47	1.4	4	0.1	51	0.8
Y25	Contact with explosive material	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Y26	Exposure to smoke, fire and flames	110	3.2	43	1.3	153	2.3
Y27	Contact with steam, hot vapours and hot objects	24	0.7	21	0.6	45	0.7
Y28	Contact with sharp object	239	7.0	132	4.0	371	5.5
Y29	Contact with blunt object	505	14.7	161	4.9	666	9.9
Y30	Falling, jumping or pushed from a high place	35	1.0	13	0.4	48	0.7
Y31	Falling, lying or running before or into moving object	n.p.	n.p.	n.p.	n.p.	22	0.3
Y32	Crashing of motor vehicle	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Y33	Other specified events	134	3.9	31	0.9	165	2.5
Y34	Unspecified event	39	1.1	29	0.9	68	1.0
Total		3,434	100.0	3,296	100.0	6,730	100.0

n.p. = Not published. Small cell counts have been suppressed to prevent patient identification.

Poisoning by *antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs* comprised 34% ($n = 2,315$) of injuries of undetermined intent. Eleven per cent ($n = 753$) of injuries of undetermined intent were from *nonopioid analgesics, antipyretics and antirheumatics*. A further 10% ($n = 678$) were from *narcotics and psychodysleptics* [hallucinogens].

Place of occurrence

Location was not specified or reported for 50% of cases (unspecified; $n = 3,377$, not reported; $n = 9$). The following observations are restricted to those cases in which the place of occurrence was specified. The majority of cases resulted from injuries that occurred in the home (69%; $n = 2,318$) (Table 2.11.5).

Table 2.11.5: Place of occurrence for injury cases of undetermined intent, Australia, 2008–09

Place	Persons	Per cent
Home	2,318	69.3
Residential institution	99	3.0
School	37	1.1
Health service area	328	9.8
Other specified institution and public administrative area	18	0.5
Sports and athletics area	37	1.1
Street and highway	95	2.8
Trade and service area	199	6.0
Industrial and construction area	35	1.0
Farm	9	0.3
Other specified places	169	5.1
Total	3,344	100

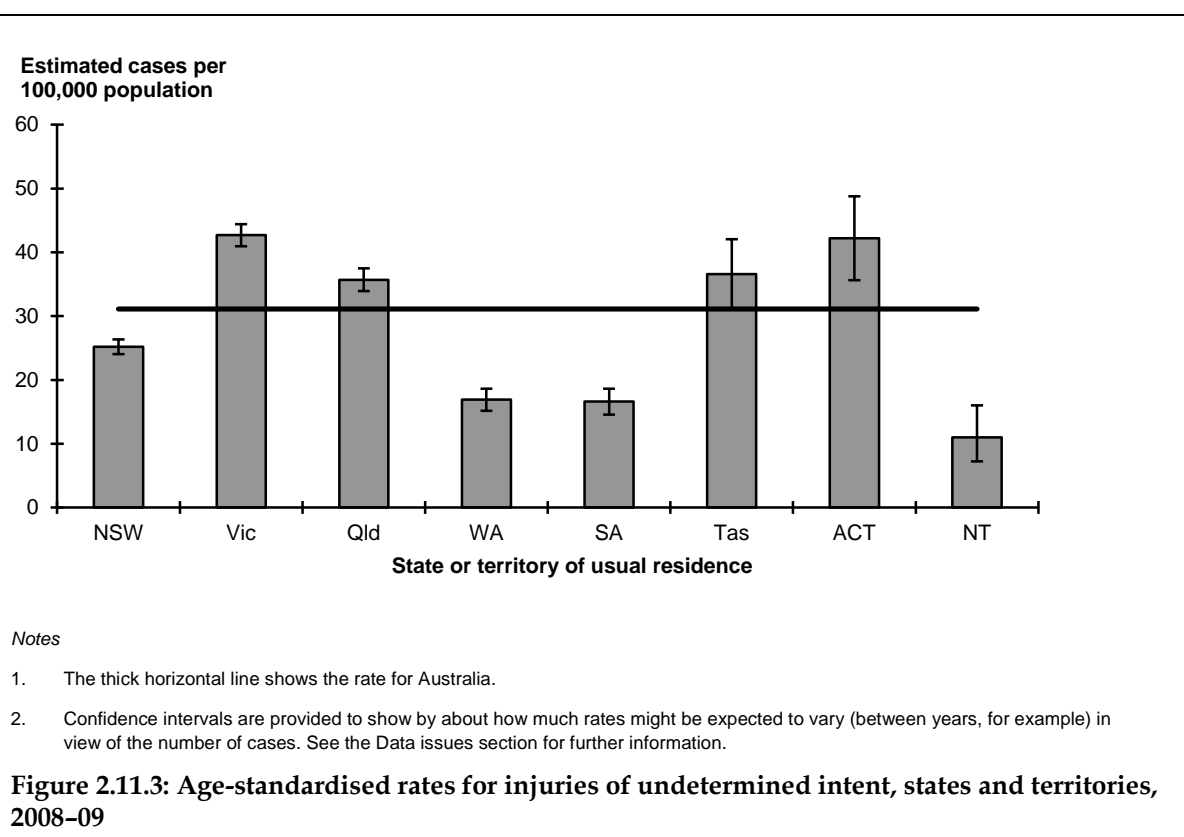
State and territory differences

Rates of injuries of undetermined intent that were below the national rate of 31.1 per 100,000 population were found in New South Wales, Western Australia, South Australia and the Northern Territory (Table 2.11.6 and Figure 2.11.3). The rate for residents of Queensland, Victoria, Tasmania and the Australian Capital Territory were higher than the all-Australia rate.

Table 2.11.6: Age-standardised estimated cases of injuries of undetermined intent, states and territories, 2008–09

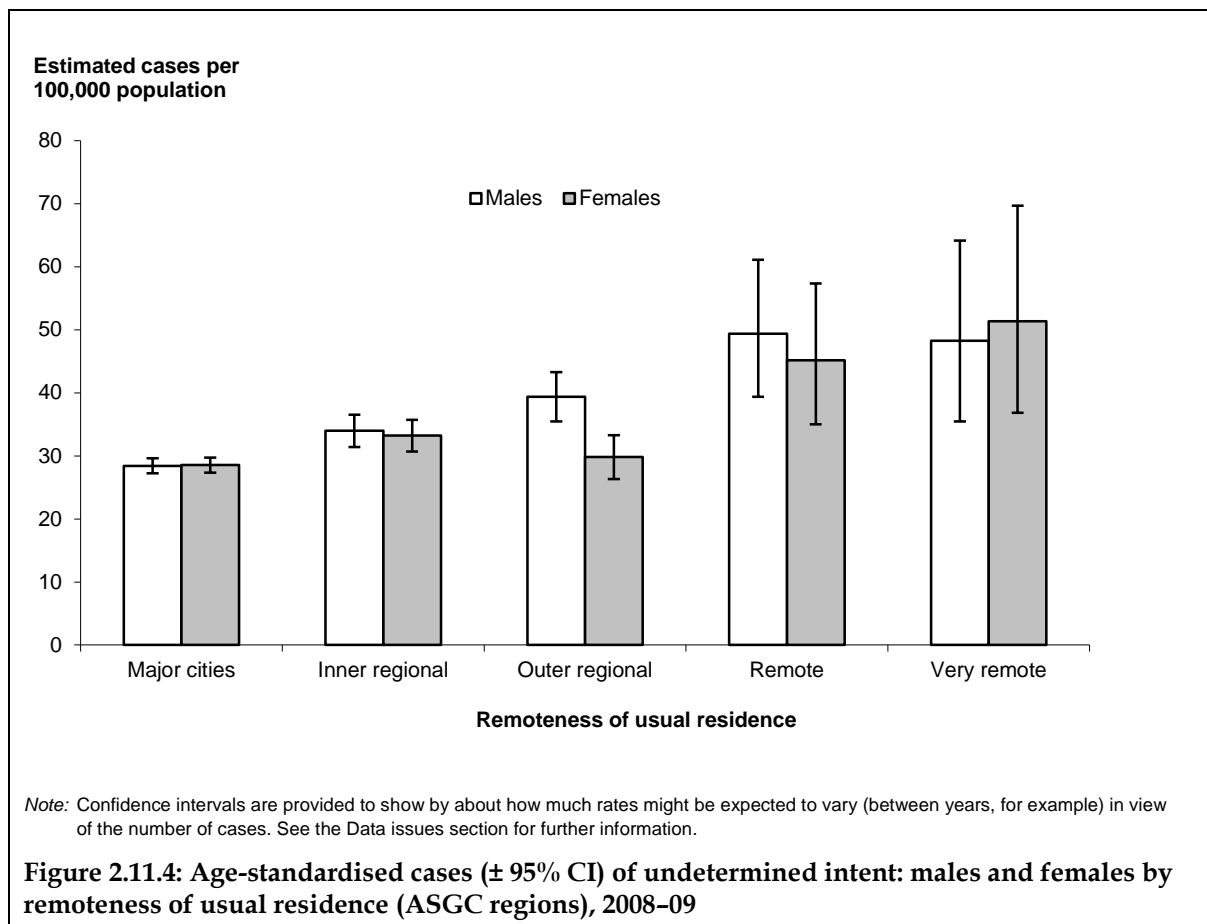
Jurisdiction	Age-standardised rate (per 100,000 population)	95% CI ^(a)
NSW	25.2	24.0–26.4
Vic	42.7	41.0–44.4
Qld	35.7	33.9–37.5
WA	16.9	15.2–18.6
SA	16.6	14.6–18.6
Tas	36.6	31.2–42.0
ACT	42.2	35.6–48.8
NT	11.0	6.0–14.8
Australia	31.1	30.4–31.8

(a) Confidence intervals are provided to show by about how much rates might be expected to vary (between years, for example) in view of the number of cases. See the Data issues section for further information.



Remoteness of usual residence

The regional rates of hospitalised cases of injuries of undetermined intent were similar for both males and females (Figure 2.11.5). The lowest rates were found in *Major cities* for both males (28.4 per 100,000 population) and for females (28.5 per 100,000 population). The highest rates were in *Very remote* regions (males 48.2 per 100,000 population, females 51.3 per 100,000 population).



3 Work-related community injury

ICD-10-AM case inclusion

Principal Diagnosis: S00–T75, T79 and

First reported external cause: V01–Y34 and

Activity code: U73.0

Table 3.1.1: Key indicators for hospitalised work-related injury: males, females and persons, Australia 2008–09

Key indicators	Males	Females	Persons
Separations from hospital due to work-related injury	25,502	4,817	30,319
Percentage of all community injury separations	9.9	2.6	6.8
Estimated cases ^(a)	23,557	4,505	28,062
Crude rate/100,000 population	217.8	41.2	129.2
Age-standardised rate/100,000 population ^(b)	215.3	40.6	128.1
Total patient days ^(c)	56,589	9,762	66,351
Mean length of stay (days)	2.4	2.2	2.4

(a) Excludes records with a mode of admission of 'transfer from another acute hospital'.

(b) Standardised to the Australian estimated resident population 30 June 2001.

(c) Includes records with a mode of admission of 'transfer from another acute hospital' as contributing to hospital burden due to injury.

This chapter includes those cases with a first external cause code in the range V01–Y34 and an activity code U73.0 *while working for income*. Three-quarters of injury cases in this category had a non-specific activity code (that is, coded as 'other specified, unspecified', and 'not reported/not applicable') which constrains meaningful interpretation of work-relatedness.

An estimated 28,062 Community injury cases in 2008–09 were sustained while working for income (Table 3.1.1). The age-standardised rate of hospitalised work-related injuries was 128.1 per 100,000 population.

Most work-related community injuries involved males (84%, $n = 23,557$). Accordingly, the age-standardised rate of hospitalised injuries due to work-related injury was much higher for males (215.3 per 100,000 population) than for females (40.6 per 100,000).

The majority of cases were classified as 'other unintentional injuries' while falls were the second most common type of injury sustained while working for income (Table 3.1.2).

The top five causes of work-related injury in the other unintentional injuries category were *exposure to unspecified factor* X59 (males $n = 2,864$, females $n = 612$), W31, *contact with other and unspecified machinery* (males $n = 2,673$, females $n = 200$), X50, *overexertion and strenuous or repetitive movement* (males $n = 1,248$, females $n = 142$), W20, *struck by thrown, projected or falling object* (males $n = 1,329$, females $n = 93$) and W23, *caught, crushed, jammed or pinched in or between objects* (males $n = 1,254$, females $n = 101$).

For falls injuries the most common causes of work-related injury were *fall on the same level from slipping, tripping and stumbling* W01, (males $n = 600$, females $n = 580$), *unspecified fall* W19, (males $n = 538$, females $n = 263$), W11, *fall on and from ladder* (males $n = 662$, females $n = 64$), W17, *other fall from one level to another* (males $n = 568$, females $n = 60$) and W13, *fall from, out or through building or structure*, (males $n = 478$, females $n = 13$).

For transportation injuries the most common cause of work-related injuries were V68, *occupant of heavy transport vehicle injured in non-collision transport accident* (males $n = 129$, females $n = 188$), V80, *animal-rider or occupant of animal-driven vehicle injured in transport accident* (males $n = 205$, females $n = 91$), and V43, *car occupant injured in collision with car, pick-up truck or van* (males $n = 261$, females $n = 5$).

More detailed information on work-related injury hospitalisation can be found in the 2004–05 edition of this series (Bradley & Harrison 2008; Harrison et al. 2007).

Table 3.1.2: Major external cause groups for work-related injury cases: males, females and persons, Australia, 2008–09

External cause	Males		Females		Persons	
	Count	Per cent	Count	Per cent	Count	Per cent
Transportation	2,373	10.1	553	12.3	2,926	10.4
Drowning	n.p.	n.p.	n.p.	n.p.	6	0.0
Poisoning, pharmaceuticals	16	0.1	13	0.3	29	0.1
Poisoning, other substances	338	1.4	94	2.1	432	1.5
Falls	3,605	15.3	1,369	30.4	4,974	17.7
Smoke, fire, heat and hot substances	362	1.5	82	1.8	444	1.6
Other unintentional injuries	16,328	69.3	2,291	50.9	18,619	66.3
Intentional, self-inflicted (self-harm)	n.p.	n.p.	n.p.	n.p.	38	0.1
Intentional, inflicted by another (assault)	416	1.8	64	1.4	480	1.7
Undetermined intent	101	0.4	n.p.	n.p.	114	0.4
Total	23,557	100.0	4,505	100.0	28,062	100.0

n.p. = Not published. Small cell counts have been suppressed to prevent patient identification.

4 Sport-related community injury

ICD-10-AM case inclusion

Principal Diagnosis S00-T75 or T79, and

Activity code U50-U71

Table 4.1.1: Key indicators for hospitalised sport-related injury: males, females and persons, Australia, 2008–09

Key indicators	Males	Females	Persons
Separations from hospital due to sport-related injury	34,789	10,204	44,993
Percentage of all community injury separations	12.6	5.1	9.5
Estimated cases ^(a)	32,539	9,622	42,161
Crude rate/100,000 population	300.9	88.2	194.0
Age-standardised rate/100,000 population ^(b)	301.3	91.1	198.0
Total patient-days ^(c)	70,887	21,615	92,502
Mean length of stay	2.2	2.2	2.2

(a) Excludes records with a mode of admission of 'transfer from another acute hospital'.

(b) Standardised to the Australian estimated resident population 30 June 2001.

(c) Includes records with a mode of admission of 'transfer from another acute hospital' as contributing to hospital burden due to injury.

This chapter covers all hospitalised injury cases recorded as occurring while engaged in sports, that is with an activity code in the range U50–U71.

An estimated 42,161 hospitalised Community injury cases in 2008–09 were due to injuries sustained while engaged in sport (Table 4.1.1). The age-standardised rate of these sport-related injury cases was 194.0 per 100,000 population. This is similar to the rate reported by Norton and Harrison for the year 2007–08 (2012).

Most sports-related injury hospitalisations involved males (77%; $n = 34,789$) (Table 4.1.1). Accordingly the age-standardised rate of sport-related injuries was much higher for males (301.3 per 100,000 population) than for females (91.1 per 100,000 population). The highest rates of hospitalised sport-related injury were for males aged 15–19 (12,362.6 per 100,000) and for females aged 10–14 (3,524.9 per 100,000 population).

The majority (91%) of sport-related injury cases hospitalised during 2008–09 could be classified into three broad external cause groups, 'other unintentional', falls and transportation (Table 4.1.2). Almost half of the sport-related Community injury cases were attributed to other unintentional external causes (48%; $n = 19,230$). The top five other unintentional causes of sports-related injury were X59, *exposure to unspecified factor* (males $n = 4,426$; females $n = 1,181$), W50, *hit, struck, kicked, twisted, bitten or scratched by another person* (males $n = 3,507$; females $n = 311$), X50, *overexertion and strenuous or repetitive movement* (males $n = 2,641$; females $n = 1,115$), W21, *striking against or struck by sports equipment* (males $n = 1,764$; females $n = 394$), and X58, *exposure to other specified factors* (males $n = 785$; females $n = 177$).

Falls were the second most common cause of sport-related injuries accounting for 33% of all cases ($n = 12,956$). The most common causes of sport-related falls injury were W03, *other fall on same level due to collision with, or pushing by, another person* (males $n = 2,897$; females $n = 162$), W18, *other fall on same level* (males $n = 1,996$; females $n = 921$), W02, *fall involving ice-skates, skis, roller-skates or skateboards* (males $n = 1,865$; females $n = 727$), and W01, *fall on the same level from slipping, tripping and stumbling* (males $n = 869$; females $n = 811$).

Transportation injuries accounted for 21% of all sport-related injuries ($n = 8,572$). The most common causes of sport-related transport injuries were V18, *Pedal cyclist injured in non-collision transport accident* (males $n = 1,876$; females $n = 373$), V28, *Motorcycle rider injured in non-collision transport accident* (males $n = 1,988$; females $n = 106$), V80, *animal-rider or occupant of animal-drawn vehicle injured in transport accident* (males $n = 444$; females $n = 1,119$), and V19, *Pedal cyclist injured in other and unspecified transport accidents* (males $n = 525$; females $n = 106$).

Table 4.1.2: Case counts and proportions by sex for sports injury cases, Australia, 2008–09

External cause	Males		Females		Persons	
	Count	Per cent	Count	Per cent	Count	Per cent
Transportation	7,367	24.0	2,165	24.1	9,532	24.0
Drowning	103	0.3	42	0.5	145	0.4
Poisoning, pharmaceuticals	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Poisoning, other substances	n.p.	n.p.	n.p.	n.p.	9	0.0
Falls	9,392	30.5	3,564	39.6	12,956	32.6
Smoke, fire, heat and hot substances	n.p.	n.p.	n.p.	n.p.	38	0.1
Other unintentional	15,420	50.1	3,810	42.3	19,230	48.4
Intentional, self-inflicted	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Intentional, inflicted by another	126	0.4	15	0.2	141	0.4
Undetermined intent	49	0.2	10	0.1	59	0.1
Total	32,539	100.0	9,622	100.0	42,161	100.0

n.p. = Not published. Small cell counts have been suppressed to prevent patient identification.

The total number of patient-days attributed to hospitalised sports injuries in 2008–09 was 92,502, giving a mean length of stay of 2.2 days per case. Under a fifth of sport-related injury separations were discharged from hospital on the same day as admitted (18%, $n = 16,460$) and including these, 35% of sport-related injury separations had a length of stay of only one day ($n = 32,203$).

A detailed analysis of hospitalised sports injury has been reported by Flood and Harrison (2006).

5 Complications of surgical and medical care

ICD-10-AM case inclusion

Principal Diagnosis: T80–T88

Table 5.1.1: Key indicators for cases due to complications of surgical and medical care, Australia, 2008–09

Indicator	Males	Females	Persons
All hospital separations ^(a)	3,854,100	4,292,291	8,148,448
Separations from hospital due to complications of surgical and medical care	46,644	44,363	91,007
Percentage of all separations	1.2	1.0	1.1
Crude rate/100,000 population	398.4	378.2	388.2
Age-standardised rate/100,000 population ^(b)	397.2	357.5	373.6
Total patient days ^(c)	259,459	239,252	498,713
Mean length of stay (days)	6.0	5.8	5.9

(a) Includes separations and cases for which sex was not reported.

(b) Standardised to the Australian estimated resident population 30 June 2001.

(c) Includes records with a mode of admission of 'transfer from another acute hospital' as contributing to hospital burden due to injury.

Overview

Hospital separations with a Principal Diagnosis of T80–T88 *Complications of surgical and medical care, not elsewhere classified* can provide a rudimentary measure of the frequency of occurrence of adverse events related to medical care. The words “not elsewhere classified” in the title indicate that some complications of care can be coded to other categories in ICD-10-AM, including codes outside the injury chapter, which is the subject of this report. The method used in this chapter uses different specifications to those used in the Australian Hospital Statistics 2008–09, and results in lower estimates here than in that publication (AIHW 2009).

The method used here should include cases in which complications of surgical or medical care occurred:

- in the course of the episode of admitted patient care during which the care giving rise to the complication was provided or
- because of care delivered during a previous episode of admitted care, or in another context (for example, outpatient care), complications of which caused or contributed to the current episode of admitted patient care.

Inclusion of a case in the data available for analysis here depends on conditions having been recognised, recorded and coded as complications of care. Sometimes a complication of care is the chief reason for an episode of admitted care (in which case it should have been coded as the principal diagnosis), or it may be an additional condition that affects patient management (that is, an additional diagnosis). The focus of this chapter is cases where a complication was coded as the principal diagnosis, but it should be noted that a

slightly larger number of records included complications of care as additional diagnoses (see Table A1).

If a complication of care resulted in more than one episode of admitted care then it might have been counted more than once. The nature of the data available to us did not permit precise accounting for this. Cases admitted after transfer from another hospital are likely to result in multiple counting, though whether this occurred for a particular case depends on how it was coded at the referring hospital. In keeping with other sections of this report, inward transfers were omitted from the estimate of case numbers. No allowance could be made for multiple counting due to readmissions.

The condition onset flag is a means of differentiating those conditions which arise during, or arose before, an admitted patient episode of care. The item became part of the National Minimum Data Set (NMDS) for admitted patient care on 1 July 2008. It is anticipated that when condition onset flag data suitable for reporting become available the item will be used to extend the analysis in this section.

Caution is needed when interpreting the data in this section due to uncertainty about the completeness of coding, difficulties in identifying some complications as well as limitations of the classification and data systems. The limitations of these data are elsewhere described (Pidd et al. 2006).

In 2008–09, *Complications of surgical and medical care, not elsewhere classified* was the Principal Diagnosis assigned to 91,007 separate episodes of hospital patient care. The male to female rate ratio based on age-standardised rates was 1.1:1.0, indicating slightly more males than females were hospitalised for complications of surgical and medical care.

Major types of injury

Table 5.1.2: Major types of injury for complications of surgical and medical care, Australia, 2008–09

Principal Diagnosis	Males		Females		Persons	
	Count	Per cent	Count	Per cent	Count	Per cent
Complications following infusion, transfusion and therapeutic injection	347	0.8	338	0.8	685	0.8
Complications of procedures, not elsewhere classified	17,395	40.4	16,655	40.4	34,050	40.4
Complications of cardiac and vascular prosthetic devices, implants and grafts	5,957	13.8	4,263	10.3	10,220	12.1
Complications of genitourinary prosthetic devices, implants and grafts	2,960	6.9	1,848	4.5	4,808	5.7
Complications of internal orthopaedic prosthetic devices, implants and grafts	7,860	18.2	7,103	17.2	14,963	17.7
Complications of other internal prosthetic devices, implants and grafts	4,776	11.1	8,474	20.5	13,250	15.7
Failure and rejection of transplanted organs and tissues	2,264	5.3	1,249	3.0	3,513	4.2
Complications peculiar to reattachment and amputation	791	1.8	235	.6	1,026	1.2
Other complications of surgical and medical care, not elsewhere classified	729	1.7	1,103	2.7	1,832	2.2
Total	43,079	100.0	41,268	100.0	84,347	100.0

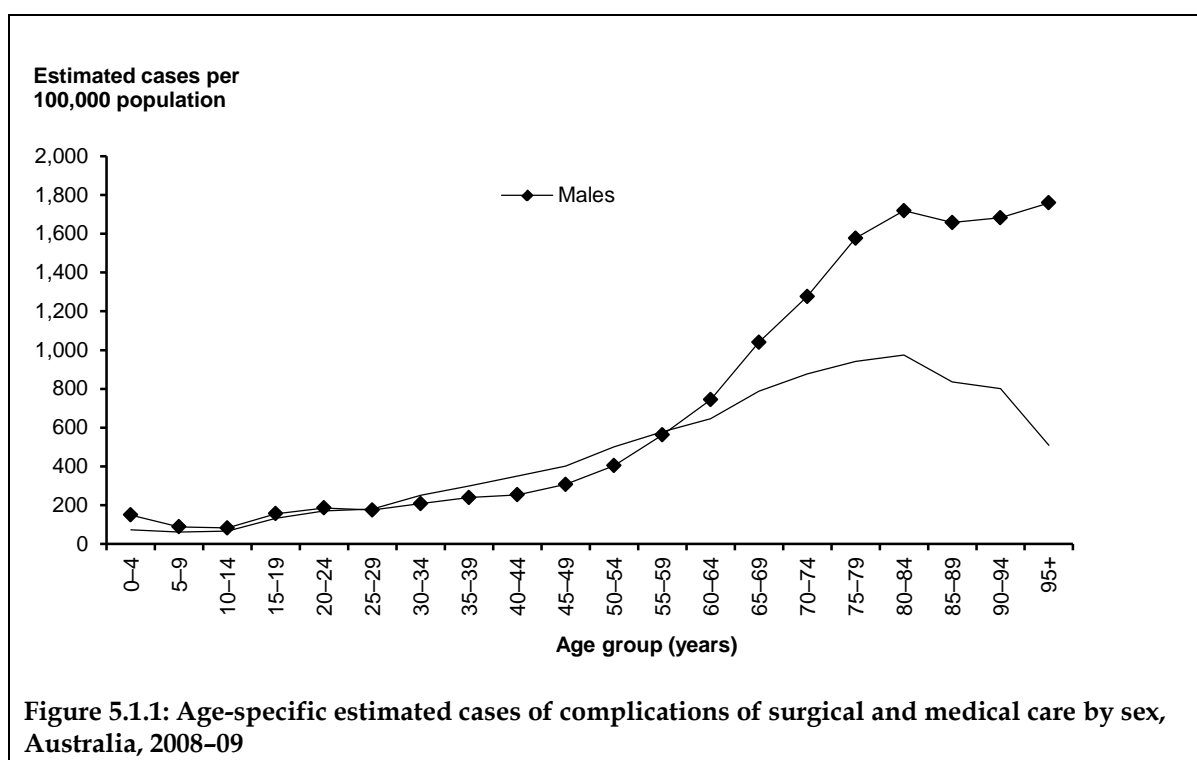
The major types of injury related to complications of surgical and medical care are shown in Table 5.1.2. *Complications of procedures, not elsewhere classified* (ICD-10-AM Principal Diagnosis code T81) accounted for 40% of injury cases in 2008–09. The most common specific adverse event was in the T81.41 category, *Wound infection following a procedure* ($n = 14,776$, 18% of all adverse events). The second most common specific adverse event was also in the T81 category, T81.0, *Haemorrhage and haematoma complicating a procedure, not elsewhere classified* ($n = 10,054$; 13% of all adverse events).

Complications of cardiac and vascular prosthetic devices, implants and grafts (T82) accounted for 6% ($n = 4,816$) of all adverse events and *Complications of internal orthopaedic prosthetic devices, implants and grafts* (T84) and *Other complications of procedures, not elsewhere classified* (T84) accounted for 5% each ($n = 4,574$ and $n = 4,587$, respectively).

Most of these common adverse events were given an external cause code of Y83 ($n = 71,517$, 85%), indicating a surgical operation and other surgical procedure was the cause of the abnormal reaction of the patient, or of later complication, without mention of misadventure at the time of the procedure. Alternatively, Y84 ($n = 9,852$, 12%), other medical procedures as the cause of the abnormal reaction of the patient, or of later complication, without mention of misadventure at the time of the procedure was the external cause given.

Age and sex distribution

Rates of hospitalised injury were similar for males and females at ages up to 30 (Figure 5.1.1). Female rates exceeded male rates at ages 30–59. At ages 60 and older, male rates far exceeded those for females.



Length of stay

In general, mean length of stay due to complications of surgical and medical care increased with age (Figure 5.1.2). Rates for females 0–5 were higher than males, dropping lower from ages 9–64 and then rising again to be higher than male rates in the later years.

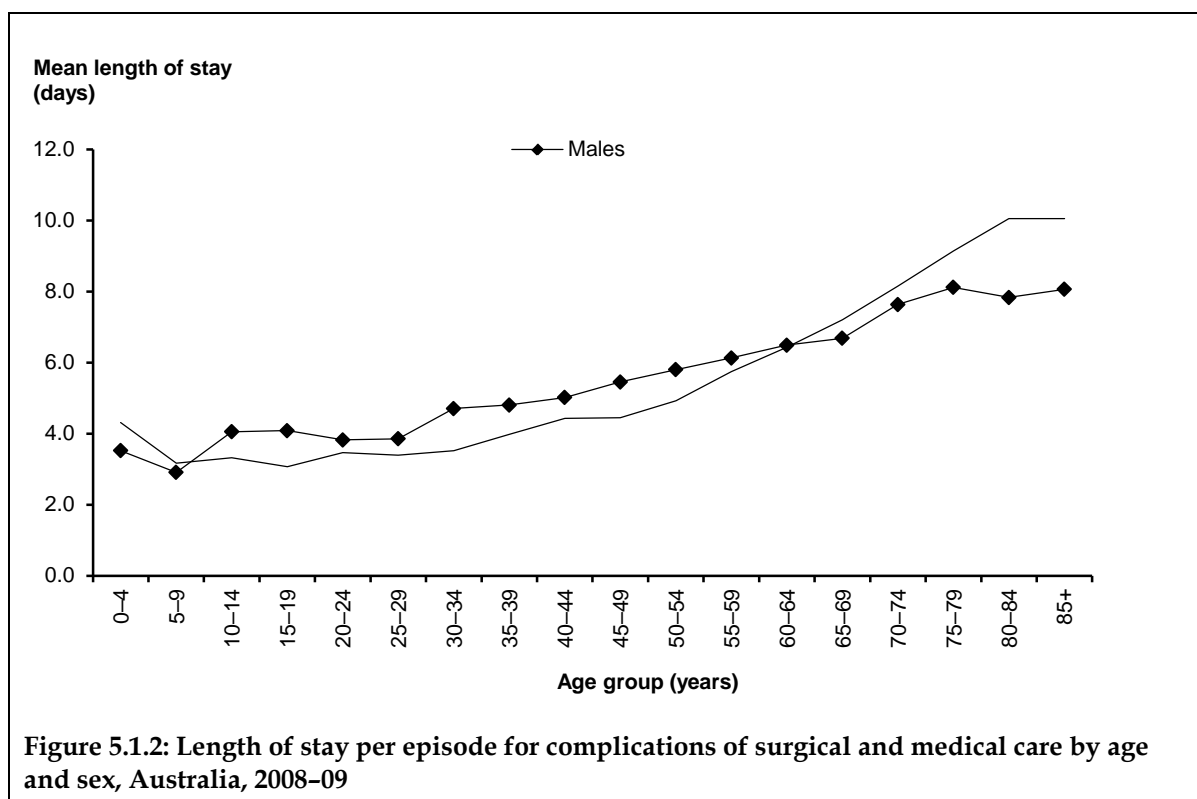


Figure 5.1.2: Length of stay per episode for complications of surgical and medical care by age and sex, Australia, 2008–09

Place of occurrence

The majority of cases where a place of occurrence was recorded ($n = 83,892$) occurred in a health service area (99.6%; $n = 83,548$). The remaining 0.4% occurred in the home, a residential institution or in another location. It may be that these cases refer to the place where the complication became apparent, or to complications of care delivered at home or in another location, for example a residential institution.

6 Residual groups

ICD-10-AM case inclusion

Principal Diagnosis: T78, T89 or T90–T98

This chapter includes hospital separations where the Principal Diagnosis was in the ICD-10-AM Chapter XIX *Injury, poisoning and certain other consequences of external causes* but was not classified as *Community injury* or *Complications of surgical and medical care*. Principal diagnoses coded to T78, T89 or T90–T98 accounted for 6,621 hospital separations. When inward transfers from another acute care hospital were excluded there remained 6,496 estimated cases. Most of these cases were coded T78 *Adverse effects, not elsewhere classified* ($n = 6,274$) (Table 6.1.1). The remainder were T89, *Other specified complications of trauma* ($n = 221$) or T90–T98, *Sequelae of injuries, of poisoning and of other consequences of external causes* ($n = 1$).

Table 6.1.1: Case counts for ICD-10-AM Principal Diagnosis T78, T89 or T90–T98, Australia, 2008–09

Principal Diagnosis	Males		Females		Persons	
	Count	Per cent	Count	Per cent	Count	Per cent
Anaphylactic shock due to adverse food reaction (T78.0)	605	19.6	627	18.4	1,232	19.0
Other adverse food reactions, not elsewhere classified (T78.1)	624	20.2	657	19.3	1,281	19.7
Anaphylactic shock, unspecified (T78.2)	437	14.1	491	14.4	928	14.3
Angioneurotic oedema (T78.3)	642	20.8	786	23.1	1,428	22.0
Allergy, unspecified (T78.4)	616	19.9	774	22.7	1,390	21.4
Other adverse effects, not elsewhere classified or unspecified (T78.8)	n.p.	n.p.	n.p.	n.p.	10	0.2
Adverse effect, unspecified (T78.9)	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
<i>All adverse effects not elsewhere classified (T78)</i>	2,932	94.9	3,342	98.1	6,274	96.6
Complications of open wound, unspecified (T89.00)	n.p.	n.p.	n.p.	n.p.	n.p.	0.1
Open wound with foreign body (T89.01)	69	2.2	13	0.4	82	1.3
Open wound with infection (T89.02)	74	2.4	40	1.2	114	1.8
Other complications of open wound (T89.03)	n.p.	n.p.	n.p.	n.p.	21	0.3
<i>All complications of open wound (T89)</i>	156	5.1	65	1.9	221	3.4
Sequelae (T90–T98)	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Total	3,089	100.0	3,407	100.0	6,496	100.0

n.p. = Not published. Small cell counts have been suppressed to prevent patient identification.

Appendix A: Data issues

Data sources

The data on hospital separations were provided by the Australian Institute of Health and Welfare (AIHW), from the National Hospital Morbidity Database (NHMD).

Crude and age-specific rates were calculated using as population data the final estimate of the estimated resident population as at 31 December 2008, obtained from the AIHW.

Selection criteria

This report is intended to describe the population incidence of injuries newly occurring in Australia and resulting 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 inpatient episodes that ended in the period 1 July 2008 to 30 June 2009.

For purposes of injury prevention, it would be preferable to specify cases in terms of date of injury occurrence. Date of injury occurrence is not available in the NHMD (though it is available in equivalent data in New Zealand).

Most hospital episodes due to injury are brief (mean duration of 3.1 days for Community injury) and hospital admission (if it occurs at all) usually follows soon after occurrence of an injury. Hence injury data reported – as here – in terms of date of separation should not, overall, differ greatly from reporting in terms of date of occurrence, though caution should be taken in making this assumption for some types of case (for example, spinal cord injuries, for which mean length of stay is several months (Cripps 2009)).

Scope

We included data from all hospitals that contributed to the NHMD in 2008–09. This includes nearly all public and private hospitals in Australia that provide acute care services. Further information on inclusion scope can be found in Australian Hospital Statistics 2008–09 (AIHW 2009).

Injury

The operational definition of injury used in this report is NHMD records that were assigned, as the Principal Diagnosis, an ICD-10-AM code in particular ranges. The code range S00–T75 and T79 has been used to designate Community injury and the range T80–T88 designates *Complications of surgical and medical care, not elsewhere classified*.

About 99% of all NHMD records in the period of interest that have any code from ICD-10-AM Chapter XIX (*Injury, poisoning and certain other consequences of external causes* S00–T98) as their Principal Diagnosis fall into one of these two groups (Table A1).

Table A1: Selection criteria for cases due to injury and poisoning, Australia, 2008–09

Selection criteria	Males	Females	Persons ^(a)
Community injury (ICD-10-AM Principal Diagnosis range S00–T75, T79), and			
• lack any external cause code	279	136	415
• have a first reported external cause code of <i>Complications of surgical and medical care</i>	728	722	1,450
• have a first reported external cause code in the range V01–Y36, Y85–Y87, Y89	238,338	172,779	411,120
Total case numbers for Community injury	239,345	173,637	412,985
Do not have a Principal diagnosis of community injury, but Additional Diagnosis codes are in range (ICD-10-AM range S00–T75, T79)	46,077	52,612	98,691
Total case numbers where there is a code for community injury in the Principal or Additional diagnosis fields	285,422	226,249	511,676
<i>Complications of surgical and medical care</i> (ICD-10-AM Principal diagnosis range T80–T88), and			
• lack any external cause code	31	28	59
• have a first reported external cause code of community injury	157	130	287
• have a first reported external cause in the range Y40–T84, Y88	42,891	41,110	84,001
Total case numbers for <i>Complications of surgical and medical care</i>	43,079	41,268	84,347
Do not have a Principal Diagnosis of <i>Complications of surgical and medical care</i> , but Additional Diagnosis codes are in range (ICD-10-AM range T80–T88)	134,346	109,441	378,860
Total case numbers where there is a code for <i>Complications of surgical and medical care</i> in the Principal or Additional Diagnosis fields	177,425	150,709	463,207
Case numbers where Principal Diagnosis is in ICD-10-AM Chapter XIX <i>Injury and poisoning</i> but is not classified as community injury or <i>Complications of surgical and medical care</i>			
• Adverse effects, not elsewhere classified (ICD-10-AM Principal Diagnosis T78)—includes adverse food reactions for example, anaphylactic shock.	2,932	3,342	6,274
• Other complications of trauma not elsewhere classified (ICD-10-AM Principal Diagnosis T89)	156	65	221
• Sequelae of injuries, of poisoning and of other consequences of external causes (ICD-10-AM Principal Diagnosis T90–T98)	1	0	1
All cases with Principal Diagnosis in the ICD-10-AM range S00–T98	285,513	218,312	503,828

(a) Includes separations where no sex was reported.

Note: To correct for double-counting, 39,401 separations were omitted from the estimate of incident cases as they were inward transfers from another acute care hospital. Without this exclusion, the separations from hospital according to Principal Diagnosis were 445,601 for Community injury, 91,007 for Complications of surgical and medical care and 6,621 for the remainder of separations (residual) in the Chapter XIX Injury and poisoning chapter.

The distinction between these two groups reflects contemporary injury prevention practice. For example, the current National Injury Prevention and Safety Promotion Plan, in common with previous Australian injury prevention policies and plans, has a scope corresponding to Community injury (NPHP 2005).

Community injury generally occurs outside the context of medical care, but (if serious) prompts one or more episodes of care, sometimes including admission to a hospital. A complication of surgical and medical care always occurs within the context of medical care and often arises in a hospital, although the concept can include complications of surgical and medical care in other settings.

There is some potential overlap between these types of injury. For example, an injurious fall sustained by a hospital inpatient can be seen as part of the Community injury issue of falls, and also as a complication of surgical and medical care. In this document, such cases have been assigned on the basis of Principal Diagnosis.

A small proportion of records were ambiguous as to whether they should be treated as Community injury or complications of surgical and medical care. These records have a Principal Diagnosis in the Community injury range and a first reported external cause code meaning complications of surgical and medical care ($n = 1,450$) or a Principal Diagnosis in the complications of surgical and medical care range and a first reported external cause code indicating Community injury ($n = 287$). These records, were included in the analysis according to their Principal Diagnosis.

Residual groups

Hospital separations coded to T78, T89 or T90–T98 have been included in a separate section for this report (p125). These codes fall in the ICD-10-AM chapter XIX *Injury, poisoning and certain other consequences of external causes* but are not classified as either Community injury or complications of surgical and medical care. They describe ‘adverse effects, not elsewhere classified’ (T78); ‘other specified complications of trauma’ (T89) and ‘sequelae of injuries, of poisoning and of other consequences of external causes’ (T90–T98). This group accounted for 6,621 injury separations in 2008–09 and 98.1% ($n = 6,496$) were determined to be injury cases.

Injury solely as Additional Diagnosis (excluded)

Records in the NHMD for 2008–09 can report up to 50 additional diagnosis codes as well as a Principal Diagnosis code. Hence, records can occur that have a Principal Diagnosis code outside the range designating Community injury, but have one or more additional diagnosis codes within that range. The same is true for complications of surgical and medical care. The numbers of records of these types are shown in Table A1.

Records in which injury codes appear only as additional diagnoses have not been used in the analysis presented in this report, mainly because injury was not recorded as being the main reason for these episodes in hospital. Principal Diagnosis means ‘The diagnosis established after study to be chiefly responsible for occasioning an episode of admitted patient care...’ (AIHW 2009). Hence, while many or all of the people represented by these records will, at some time, have sustained an injury as defined above, that injury was not recorded as being the main reason for their current episode in hospital.

Many of these records with an additional diagnosis of injury will have been counted in incidence estimates on the basis of a previous episode in hospital, the current episode

being for rehabilitation. In some other instances, the additional diagnosis injury referred to in the record may have been incidental to the reason for admission and would not, on its own, have prompted admission. Availability of person-linked hospital morbidity data would do much to enable appropriate assignment of this group of records.

External cause codes

According to Australian Coding Standards (NCCH 2006) all records in the NHMD that meet either of the injury definitions stated above should include one or more ICD-10-AM external cause codes. In practice, only 0.1% of NHMD records that met all other selection criteria had no external cause code. Since the main focus of this report is to describe injury cases in terms of the external causes that brought them about, injury cases without an external cause code are only included in the Community injury and complications of surgical and medical care chapters.

Records that have a Principal Diagnosis within a specified injury range, but no accompanying external cause code, numbered 415 (0.1%) of the Community injury subset, and 59 (0.06%) of the complications of surgical and medical care subset (see Table A1).

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; 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 due to 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. This potential exists when a single incident injury case results in two or more NHMD records, 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 commenced with inward transfer from another acute care hospital. Episodes of this type with injury as the Principal Diagnosis are likely to have been preceded by another episode, also meeting the case selection criteria for injury. Hence, these records ($n = 39,401$) were omitted from the estimates of incident cases that are shown in Table A1 and elsewhere in this report.

This procedure should correct for overestimation of cases that is due to transfers, but will not correct for overestimation that is due to readmissions.

The patient days reported during the episodes omitted to reduce overestimation of incident cases are part of the burden of acute hospital care provided to the incident cases. Hence, these patient days were retained when calculating mean and total length of stay. Note that this method does not include all patient days potentially attributable to injury. In particular, it does not include days for most aspects of injury rehabilitation, which are difficult to assign correctly without information enabling identification of all inpatient episodes associated with an injury case.

Rates for Australia include all cases meeting the selection criteria described above. Rates for Australian states and territories and for remoteness zones are based on place of usual residence (as are the population data used as denominators). Some cases lack data on place of residence (because it is missing or because the person was not a resident of Australia), or specify residence in one of the 'Other Australian territories' (that is, Jervis Bay Territory; Cocos (Keeling) Islands; Christmas Island). These cases are included in rates for Australia but not in the sub-national rates.

Quantifying variability in the counts presented in this report

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

Non-random error: Some amount of non-random error is to be expected in administrative data collections such as the hospital inpatient data on which this report relies. For example, non-random error could occur if the approach to assigning cause codes to cases were to differ systematically between jurisdictions or over time. Systems are in place to encourage uniform data collection and coding and scrutiny of data during analysis includes checking for patterns that might reflect non-random error. Nevertheless, some non-random error is likely to remain. Identified or suspected non-random errors large enough to materially affect findings are mentioned in reports.

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

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

In this situation, and similar ones, guidance is provided to readers concerning how much variation of values can be expected due to random variation of small counts. Confidence Intervals (CIs) are calculated for this purpose.

Confidence intervals

Nearly all injury/poisoning cases are thought to be included in the data reported, representing minimal risk of sampling error. Data are 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 are small. Confidence intervals (95%; based on a Poisson distribution) were calculated using the method described by (Anderson & Rosenberg 1998). Asymmetrical confidence intervals were calculated for

case numbers up to 100. Symmetrical intervals, based on a normal approximation, were calculated where case numbers exceed 100.

The AIHW is currently undertaking a review to assess the provision of confidence intervals and statistical tests when data arise from sources that provide information on all subjects, rather than from a sample survey. This review will include analysis of the methods used to calculate confidence intervals, as well as the appropriateness of reporting confidence intervals and undertaking statistical testing for such data. This review aims to ensure that statistical methods used in AIHW reports remain robust and appropriately inform understanding and decision making. As a consequence, the type of information reported in future editions of this publication may change.

Age adjustment

Most all-ages rates have been adjusted for age to allow comparison of injury risk free from the distortion introduced by one population having a different age distribution to another. Direct standardisation was employed, using the Australian population in 2001 as the standard (ABS 2003) (Table B1). Where crude rates or age-specific rates are reported, this is noted.

Suppression of small cell counts in data tables

Cell counts in tables that have 5 cases or fewer have been suppressed as have rates derived from them, to protect confidentiality 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 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 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.

Appendix B: Additional tables

Table B1: Age-specific rates and age-standardised estimated cases of separations due to external causes in males, Australia, 2008–09

ICD-10-AM E-code Major groups	Age group (years)																		All ages (crude)	Age Std
	0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85+	Rate	Rate
Unintentional																				
Transportation	73.6	176.7	467.7	718.9	610.0	478.0	417.7	415.7	370.2	336.9	282.0	221.7	212.4	170.7	177.3	190.1	237.6	283.6	355.5	355.0
Drowning and near-drowning	16.8	3.6	2.5	2.0	2.8	2.8	1.7	1.5	1.6	1.7	1.4	1.2	1.0	1.9	2.2	1.6	2.2	1.6	3.0	3.0
Poisoning, pharmaceuticals	105.2	9.5	4.2	20.7	29.1	34.9	36.2	29.9	24.8	21.8	15.3	16.0	18.8	17.3	27.7	42.0	55.8	69.7	29.3	29.5
Poisoning, other substances	41.1	4.5	5.1	14.7	15.5	18.4	14.6	12.9	16.1	13.6	13.0	10.6	9.6	11.6	11.4	9.0	10.5	13.6	14.3	14.3
Falls	636.8	778.8	792.1	528.1	417.4	333.9	306.9	299.7	306.8	332.6	391.2	409.4	520.0	663.8	976.2	1,634.7	3,038.8	6,356.9	622.5	640.6
Smoke, fire, heat and hot substances	123.1	29.0	28.0	42.0	40.2	30.0	30.7	28.4	24.0	25.5	22.0	21.5	25.6	18.0	22.1	17.7	26.5	23.2	34.4	34.3
Other unintentional injuries	565.7	461.3	710.7	1,428.7	1,374.6	1,197.3	1,011.2	949.8	866.0	807.9	711.6	660.1	638.0	543.8	509.8	519.4	556.4	749.9	851.9	848.0
Intentional																				
Intentional self-harm	0.4	0.4	13.2	121.2	146.4	155.9	161.9	158.5	142.7	107.0	82.2	67.9	51.2	39.2	31.0	33.0	43.1	45.7	89.1	89.2
Assault	17.6	6.3	38.2	378.9	471.1	372.0	281.4	240.2	200.3	140.9	104.2	62.4	38.1	27.5	21.5	13.8	13.3	25.6	170.1	168.5
Undetermined intent	11.7	6.9	10.1	49.4	60.9	66.8	57.4	45.7	33.4	28.7	23.7	19.0	12.7	12.3	15.1	12.6	16.6	24.8	31.8	31.7
Community Injury	1,594.0	1,479.9	2,074.9	3,312.1	3,176.2	2,697.1	2,328.1	2,189.3	1,992.1	1,826.1	1,655.8	1,512.0	1,540.2	1,529.4	1,827.7	2,505.3	4,067.6	7,650.0	2,213.3	2,225.4
Complications of surgical and medical care	135.7	91.8	87.2	154.1	179.4	176.4	191.6	229.1	268.2	325.0	436.4	559.1	790.5	1,021.9	1,295.5	1,524.7	1,762.5	1,752.3	398.4	397.2

Note: Rates per 100,000 population.

Table B2: Age-specific rates and age-standardised estimated cases of separations due to external causes in females, Australia, 2008–09

ICD-10-AM E-code Major groups	Age group (years)																		All ages (crude)	Age Std
	0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85+	Rate	Rate
Unintentional																				
Transportation	45.6	109.3	164.5	278.6	248.3	182.3	149.5	152.1	135.5	134.4	134.9	135.1	120.1	115.5	149.1	187.7	206.9	186.0	155.9	155.3
Drowning and near-drowning	10.8	2.1	1.5	0.4	0.9	0.8	1.1	0.6	0.4	0.4	0.6	0.6	0.2	0.9	0.3	0.3	1.6	0.0	1.4	1.5
Poisoning, pharmaceuticals	95.8	6.2	9.1	41.7	43.6	31.9	27.3	25.7	24.5	25.4	22.5	20.7	19.3	17.5	23.5	38.5	51.8	72.1	31.4	30.9
Poisoning, other substances	22.1	3.6	3.7	11.2	11.3	9.1	8.8	9.9	6.4	8.6	7.2	6.4	7.0	6.3	10.0	8.8	8.1	11.5	8.9	8.9
Falls	504.3	602.6	343.2	159.6	169.5	166.1	176.2	192.0	207.5	269.3	404.4	557.9	726.7	999.7	1,591.6	2,849.1	5,031.4	9,962.6	786.7	668.7
Smoke, fire, heat and hot substances	99.4	20.8	17.1	14.8	15.5	12.6	13.0	13.9	11.9	12.3	11.3	9.0	9.1	6.5	10.9	16.2	17.0	18.4	18.7	19.2
Other unintentional injuries	456.1	294.2	300.1	359.3	329.3	300.5	288.5	313.4	319.1	312.8	309.2	331.6	305.4	315.8	364.3	480.8	654.0	845.8	348.5	342.0
Intentional																				
Intentional self-harm	0.1	0.2	55.6	365.8	290.0	233.7	199.6	221.5	224.5	186.4	136.7	88.1	61.8	35.9	32.6	38.5	31.6	29.5	146.4	148.7
Assault	15.2	3.5	16.8	86.1	110.0	114.9	112.6	99.5	82.6	55.2	33.4	19.6	11.5	7.2	8.3	10.8	14.6	16.0	54.2	55.5
Undetermined intent	7.9	3.8	12.4	68.9	58.3	48.7	41.2	41.3	42.3	31.7	25.0	15.9	14.6	13.3	10.0	12.2	19.4	20.5	30.2	30.5
Community injury	1,258.7	1,047.9	926.9	1,389.4	1,281.8	1,104.6	1,021.8	1,075.5	1,063.9	1,043.6	1,097.8	1,200.5	1,288.5	1,534.0	2,223.5	3,661.7	6,062.9	11,201.6	1,591.1	1,469.2
Complications of surgical and medical care	80.2	69.3	74.8	148.8	174.3	189.7	269.7	317.5	364.8	406.9	514.5	595.4	658.1	796.1	904.1	988.9	989.4	805.3	378.2	357.5

Note: Rates per 100,000 population.

Table B3: Age-specific rates and age-standardised estimated cases of separations due to external causes in persons, Australia, 2008–09

ICD-10-AM E-code	Age group																		All ages (crude)	Age Std
	0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69	70–74	75–79	80–84	85+		
Major groups	Rate	Rate	Rate	Rate	Rate	Rate	Rate	Rate	Rate	Rate	Rate	Rate	Rate	Rate	Rate	Rate	Rate	Rate	Rate	Rate
Unintentional																				
Transportation	60.0	143.8	320.1	505.4	434.3	332.2	283.6	282.9	252.1	234.7	207.7	178.2	166.3	142.9	162.7	188.8	219.9	219.0	255.2	255.9
Drowning and near-drowning	13.9	2.9	2.0	1.2	1.9	1.8	1.4	1.1	1.0	1.0	1.0	0.9	0.6	1.4	1.2	0.9	1.9	0.5	2.2	2.2
Poisoning, pharmaceuticals	100.6	7.9	6.6	30.9	36.1	33.4	31.8	27.8	24.7	23.6	18.9	18.4	19.1	17.4	25.5	40.1	53.5	71.3	30.3	30.2
Poisoning, other substances	31.9	4.1	4.4	13.0	13.5	13.8	11.7	11.4	11.2	11.1	10.1	8.5	8.3	8.9	10.7	8.9	9.1	12.2	11.6	11.6
Falls	572.3	692.9	573.6	349.4	297.0	251.2	241.5	245.5	256.9	300.7	397.9	484.2	623.3	833.3	1,294.8	2,287.8	4,188.7	8,742.8	705.0	668.2
Smoke, fire, heat and hot substances	111.5	25.0	22.7	28.8	28.2	21.4	21.9	21.1	17.9	18.8	16.6	15.2	17.3	12.2	16.3	16.9	21.0	20.1	26.5	26.8
Other unintentional injuries	512.3	379.9	510.8	910.1	866.9	755.1	649.8	629.3	590.9	558.0	508.5	494.6	471.8	428.7	434.5	498.6	612.7	813.4	599.1	597.7
Intentional																				
Intentional self-harm	0.3	0.3	33.8	239.8	216.1	194.3	180.8	190.3	183.8	147.1	109.7	78.1	56.5	37.5	31.9	36.0	36.5	35.0	117.9	118.5
Assault	16.5	4.9	27.8	236.9	295.7	245.2	197.0	169.4	141.1	97.6	68.4	40.8	24.8	17.3	14.7	12.2	14.0	19.2	111.9	112.6
Undetermined intent	9.8	5.4	11.3	58.9	59.6	57.9	49.3	43.5	37.9	30.2	24.4	17.4	13.7	12.8	12.4	12.3	18.2	22.0	31.0	31.1
Community injury	1,430.8	1,269.3	1,516.0	2,379.7	2,256.1	1,911.8	1,674.8	1,628.4	1,525.2	1,431.1	1,374.1	1,355.1	1,414.4	1,531.7	2,032.6	3,127.3	5,219.0	10,000.2	1,900.8	1,864.5
Complications of surgical and medical care	108.7	80.8	81.1	151.5	176.9	182.9	230.7	273.6	316.8	366.4	475.8	577.4	724.3	907.9	1,092.8	1,236.5	1,316.4	1,125.6	388.2	373.6

Note: Rates per 100,000 population.

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This report is the seventh in a series on hospitalisations due to injury and poisoning in Australia, and covers the financial year 2008–09. A total of 412,985 injury cases required hospitalisation during the 12 months (239,345 males and 173,637 females). Overall rates of injury were higher among people aged 65 and over, and lower in children aged 0–14. The leading causes of hospitalised injury were unintentional falls (38% of cases), followed by transport accidents (14%).